

The Danish Government

APRIL 2021

A child wearing a pink helmet and a red and white striped shirt is riding a bicycle away from the camera on a paved path. The path is lined with green grass and leads through a vast field of bright yellow flowers under a clear blue sky. The child is wearing a pink helmet, a red and white striped shirt, and blue leggings. The path has a dashed white line on the left side.

Denmark's Recovery and Resilience Plan

– accelerating the green transition

Ministry of Finance

Denmark's Recovery and Resilience Plan

- accelerating the green transition

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Preface

”As a response to the COVID-19 crisis, the Danish government and Parliament have adopted a number of comprehensive green deals that will kick-start the Danish economy and accelerate the green transition. Denmark’s Recovery and Resilience Plan will secure a large part of the financing for these green deals and will thus first and foremost support massive investments that will accelerate the green transition. The investments will both stimulate the growth of a more green economy and support jobs and companies. At the same time, the plan contributes to realising Denmark’s ambitious climate targets on reducing greenhouse gas emissions by 70 per cent in 2030.”



Nicolai Wammen, Minister of Finance for Denmark

Global, European and Danish context

In July 2020, the EU heads of states and governments adopted a historical 750 bn. euro recovery package. The package, Next Generation EU, is the joint answer to the severe health and economic crisis caused by COVID-19. The decision to supplement national crisis management with the ambitious and common recovery is a strong signal of solidarity showing that that we must find our way out of the crisis together.

The consequences from COVID-19 are enormous. Globally more than 3 million have died of the virus. Assembly bans have limited the scope of social activities, and many have had to avoid physical contact with friends, family and loved ones for several months. At the same time, the virus has caused a recession in the global economy – the first recession since the financial crisis in 2007-08 and just the second in recent history. In 2020, global economic activity fell by 3.3 per cent and the EU countries experienced an economic setback of 6.1 per cent.

In Denmark too, the pandemic has had large negative consequences. The latest data shows a contraction in the Danish economy of 2.7 per cent of GDP in 2020. However, through an unprecedented expansive fiscal policy response that included emergency relief packages, liquidity support and stimulus, it has been possible to support tens of thousands of jobs and companies. This has limited the drop in employment to 0.7 per cent in 2020.

As an open and export-oriented economy, Denmark has a significant interest in the recovery of the European economies. One out of four Danish jobs is directly linked to the export sector and approximately 60 per cent of Danish exports goes to countries in the Single Market. In 2020, Danish exports fell by 7.7 per cent. Regaining momentum in exports crucially depends on the recovery of Denmark's closest trading partners. EU's common recovery package is thus not only an expression of European solidarity. It is also a recognition of the fact that each country has a large interest in securing a strong recovery throughout the EU.

Denmark's Recovery and Resilience Plan: *Accelerating the green transition*

Denmark is expected to receive approximately 11½ bn. DKK from the EU's Recovery and Resilience Facility. The Danish recovery plan shows how Denmark intends to utilise the funds in accordance with the criteria. The funds in the Danish recovery plan are supplemented by approximately the same amount of national funds.

The key cornerstone in the Danish plan is to support the massive investments in the green transition, which are necessary to reach the target of lowering greenhouse gas emissions in Denmark by 70 per cent in 2030. This reduction target is one of the most ambitious in the world.

The foundation for the Danish Recovery Plan is thus to utilise the need to stimulate the economy to support and accelerate investments in the green transition.

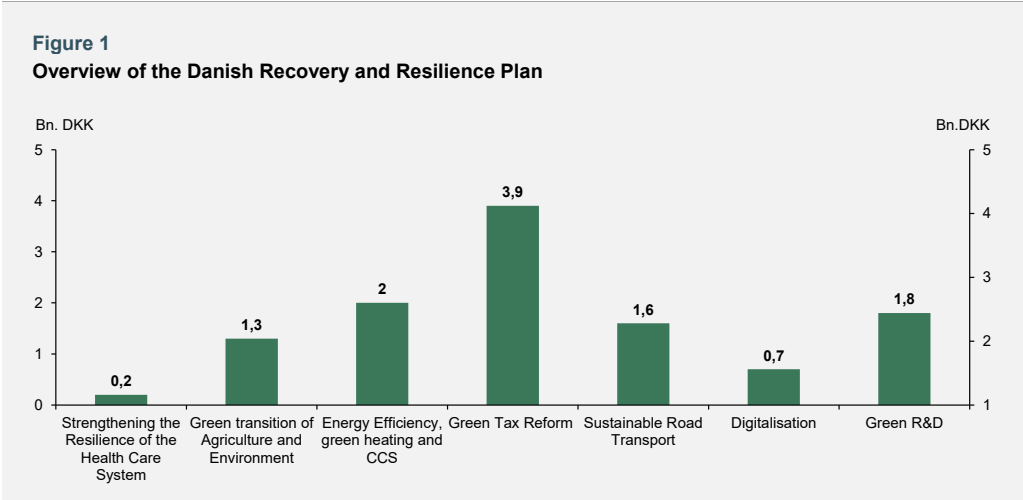
While the funds in the short run will help stimulate the economy and support jobs and companies, they will also contribute to speeding up the green transition in the medium to long run. This effort is crucial to realise Denmark's ambitious climate target and to underpin the common European climate targets. Since the Government came into office a year and a half ago, decisions and political agreements has been made, which contributes to a reduction of Denmark's greenhouse gas emissions by 9.1 Mt in 2030, of which the initiatives in the recovery plan contribute with 2.8 Mt. This amounts to one third of the way towards the 70 per cent reduction target.

Getting all the way to 70 per cent will require large investments in inter alia research, technology and infrastructure. The Danish recovery plan therefore channels 60 per cent of the funds towards green initiatives, according to the Commission's definition. This is significantly above the EU's criteria that at least 37 per cent of the allocation should contribute to the green transition.

The Danish plan builds on a close dialogue with civil society as well as business and industry. Last summer, the Danish government set up eight "restart teams" on central lines of business with participation from the social partners. They investigated possible initiatives with a special emphasis on strengthening Danish export opportunities and regularly reported to the government on their conclusions. In addition, the Danish recovery plan builds on the recommendations from the 13

climate partnerships with business and industry. The climate partnerships were tasked with identifying and developing new green solutions, which would both reduce business and industry’s emissions and strengthen companies’ green competitiveness. Each of the 13 climate partnerships presented their recommendations to the government and several have been incorporated into the Danish recovery plan. Furthermore, the Ministry of Finance has had dialogue with a wide range of stakeholders and has received many proposals in this context. These have been taken into consideration during the preparation of the plan.

The Danish Recovery and Resilience Plan is categorised into seven components, which will contribute to reaching the Danish climate targets, job-creation, digitalisation and health.



Strengthening the Resilience of the Health Care System

Health care systems all over the globe have been - and are - under immense pressure due to the COVID-19 crisis. Uncertainty of sufficient supply chains for critical pharmaceutical products has spread, as Denmark - as well as other countries - has been highly dependent on deliveries from abroad. The Danish recovery plan will therefore contribute to making the health care system more resilient and better prepared for unexpected crises like COVID-19. This includes ensuring strategic storages of medicine, which can reduce the vulnerability of supply chains. Furthermore, Denmark will strengthen the digitalisation of the health system, making it ready for the future today.



Green Transition of Agriculture and Environment

The agricultural sector produces approximately a third of Denmark's greenhouse gas emissions. To reduce the carbon footprint from the agricultural sector the Danish recovery plan supports the conversion to organic agriculture, rewetting and taking carbon rich soils out of production and it invests in demonstration of concrete and promising green research solutions. The recovery plan will also provide part of the funding for cleaning up large generational pollutions across the Danish landscape.



Energy Efficiency, Green Heating and Carbon Capture and Storage

Securing energy efficiency is a crucial component in realising both the EU's and Denmark's ambitious climate targets in a cost-effective way. At the same time, investments in energy efficiency in inter alia buildings have the potential to stimulate the economy and promote job creation. Based on the recommendations from the Danish climate partnerships, Denmark will accelerate the conversion from oil- and gas furnaces to electrical heat pumps, district heating as well as energy renovations in private and public buildings. Furthermore, carbon capture and storage (CCS) is a key tool to reach Danish reductions targets.



Green Tax Reform

Greenhouse gasses from service and industry accounts for approximately one fifth of Denmark's emissions. A uniform tax on greenhouse gasses is one of the most cost-effective ways of reducing these emissions. The Danish recovery plan provides funding for the first phase of the green tax reform, which contains a window of opportunity for green and digital investments. This will create clear incentives and make it possible for companies to accelerate the green transformation of production capabilities, reducing their emissions up front and adapt to phase two of the tax reform and a future tax on carbon emissions. This two-phased approach ensures that jobs and competitiveness will not be jeopardised.



Sustainable Road Transport

The transport sector produces approximately a third of Denmark's greenhouse gas emissions. The Danish recovery plan therefore provides financing for a more sustainable road transport, aiming towards 1 m. green cars on Danish roads in 2030, and to reduce CO₂e emissions with 2.1 Mt. A cornerstone in this endeavour is the reprioritisation of the registration tax on cars, which ensures significant financial support for increasing the uptake of green cars. This is coupled with e.g. a premium for scrapping old, polluting diesel cars. The recovery plan also contains financing for investments in green infrastructure and technology, more bicycle lanes, more climate friendly ferries and car-sharing.



Digitalisation

A crucial precondition for rebooting the economies after COVID-19 is harnessing the potential of digitalisation in both the private and public sector. Digitalisation is thus central in the Danish recovery plan. With a new digital strategy, Denmark will promote the digital transformation across sectors to strengthen welfare, equality, growth, employment and the green transition. A new digital strategy will be implemented, building upon the recommendations from a digitalisation partnership. The digitalisation partnership consists of high-level representatives of the Danish business community, trade unions, government and a range of other central actors.



Green Research and Development

Denmark is a world leader on green solutions and technology. Denmark's recovery plan contributes to maintain this position with investments in new technologies with significant green potentials. This includes carbon capture and storage and green fuels for transport and industry (e.g. Power-to-X as proposed by the climate partnerships). These technologies possess great potential to contribute to the green transformations, to promote digitalisation as well as maintain and create new jobs in the green sector. At the same time, the Danish recovery plan provides clear financial incentives for companies to increase their green R&D spending to develop the solutions for a greener economy.



Part 1. Introduction

The COVID-19 pandemic poses an unprecedented challenge to world health, economy and society as a whole. It has had profound impact on all activities in societies all over the world. In Denmark, the economic activity dropped as social distancing measures were put in place, which led to a massive decline in supply and demand.

The most recent estimate puts GDP growth at -2.7 per cent in 2020 while unemployment went up by 29,000 persons. During the first wave of COVID-19, the economy was severely affected by the pandemic and the restrictions adopted to control it. However, during the spring and summer, the economy started to recover. During the renewed wave of infections in fall and winter, when renewed restrictions have been necessary, the setback to the economy has been markedly smaller than during the first wave. Beginning in March, restrictions are being gradually lifted. The reopening has led to increasing economic activity, which according to high-frequency indicators is reflected in, among other things, rising private consumption and falling unemployment.

The Danish Recovery and Resilience Plan combined with national stimulus funds aims at ensuring a swift and green recovery from the pandemic. The combined stimulus funds will simultaneously accelerate the green transition of the Danish society. Massive investments are necessary to ensure 70 per cent reductions of greenhouse gas emissions by 2030 and climate neutrality by 2050, which is why more than 90 per cent of the funds in the Danish Recovery and Resilience Plan are allocated to initiatives that support the green transition *cf. Table 1.1*¹. The Danish Recovery and Resilience Plan combined with national funds contributes significantly to these overall goals of a swift and green recovery.

The Danish approach to the green recovery has been recognised by the UN Environment Programme and Global Recovery Observatory². They estimate that among the 50 largest economies in the world, Denmark has used the largest share of recovery spending on the green transition. Furthermore, they estimate that approximately 60 per cent of the *total* Danish recovery spending is used on green initiatives.

¹ According to the Commission's official tagging methodology, 60 per cent of the funds can be tagged as green.

² O'Callaghan, B. J. & Murdock, E. (2021): Are we building back better? evidence from 2020 and pathways for inclusive green recovery spending; UN Environment Programme and Global Recovery Observatory.

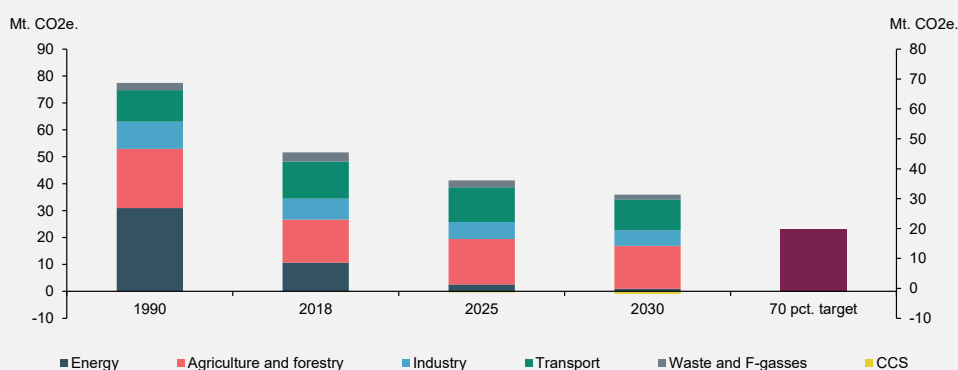
Table 1.1
Initiatives in the Danish Recovery and Resilience Plan

	Bn. DKK	Share (pct.)	CO ₂ e 2030 (Mt)	GDP (% , 2 yrs)
1.1. Strengthening the Resilience of the Healthcare System	0.2	2.1	-	0.00
1.2. Green transition of Agriculture and Environment	1.3	11.4	-0.1	0.00
1.3. Energy Efficiency, green heating and CCS	2.0	17.6	-0.1	0.03
1.4. Green Tax Reform (phase 1)	3.9	33.7	-0.5	0.22
1.5. Sustainable Road Transport	1.6	14.0	-2.1	0.02
1.6. Digitalisation	0.7	5.7	-	0.01
1.7. Green Research and Development	1.8	15.5	-	0.03
Initiatives in total	11.6	100	-2.8	0.31

Note: CO₂e reduction effects are the total effects of the combined national stimulus funds and the funds from the Recovery and Resilience Facility. The reduction effects are estimated partially and the estimated effects may thus be overlapping.

The initiatives in the recovery plan are in line with the priorities in the European Green Deal and contributes to Denmark’s climate targets. By adopting the Danish Climate Act, the Danish government along with a large majority in parliament committed itself to the world’s most ambitious climate target of reducing greenhouse gas emissions by 70 per cent in 2030 compared to the 1990 level, and achieving climate neutrality in 2050. When the law came into effect on July 2020, it was estimated that Denmark needed to reduce its domestic greenhouse gas emissions by 20 Mt by 2030 to reach this target. This scenario is depicted in *figure 1.1*.

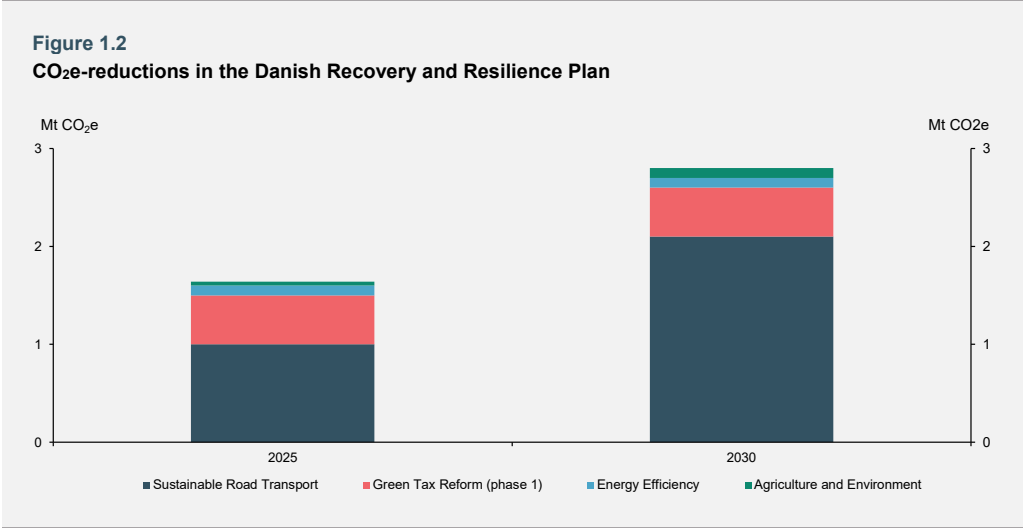
Figure 1.1
Total emissions by sector 1990-2030m.



Note: The figure shows emissions under a frozen-policy scenario.
Source: Danish Energy Agency.

Under the incumbent government, annual greenhouse gas emissions have been reduced by approximately 9.1 Mt of CO₂e by 2030. This corresponds to approximately 41 per cent of what must be achieved by 2030 to fulfil the Danish Climate

Act, and has lowered the reduction residual from 20 to 11.8 Mt. Of these reductions, the initiatives in the Danish Recovery and Resilience Plan contributes with 1.7 Mt in 2025 and 2.8 Mt in 2030. The plan thus makes a significant contribution to the Danish and European climate reduction target in 2030, cf. figure 1.2.



Note: CO₂e-reduction effects are the total effects of the combined national stimulus funds and the funds from the Recovery and Resilience Facility. The reduction effects are estimated partially and the estimated effects may thus be overlapping.

In addition to the concrete reductions from the initiatives in the plan, the different measures pave the way for further reductions. The component on green tax reform regards the first phase of the reform, and prepare industry to future higher and more uniform taxes on greenhouse gasses. In the end of 2021, an expert group will deliver its roadmap on how to implement a uniform tax on greenhouse gas emissions. This tax is expected to be a key element in fulfilling the Danish climate targets.

Furthermore, the plan contributes to realising the large technical reduction potentials of promising technologies, which are crucial to reach the climate targets.

Table 1.2 shows an overview of all the components and measures in the Danish Recovery and Resilience Plan.

Table 1.2
Overview of the Danish Recovery and Resilience Plan

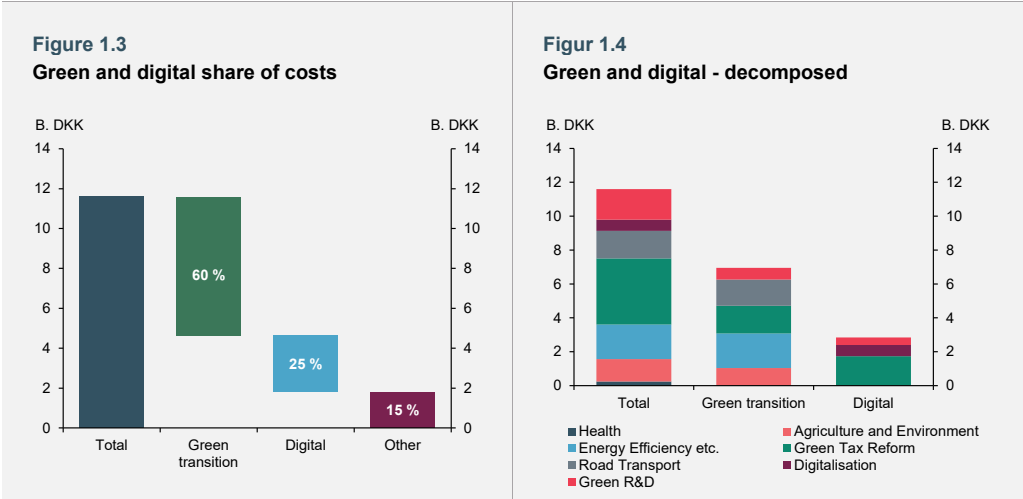
M. DKK (2021-prices)	Expenditures					Total
	2021	2022	2023	2024	2025	
1. Strengthening the Resilience of the Healthcare System	153	66	25	-	-	244
1.1. Measures to ensure stocks of critical drugs	52	-	-	-	-	52
1.2. Digital solutions in the healthcare sector	12	2	-	-	-	14
1.3. Clinical study on effect of COVID-19 vaccines	49	29	25	-	-	102
1.4. Emergency management & monitoring of critical medical products	40	36	-	-	-	76
2. Green transition of Agriculture and Environment	360	360	260	265	75	1,320
2.1. Organic farming	20	20	20	20	-	80
2.2. Plant based organic projects	5	5	5	5	-	20
2.3. Organic transition of public kitchens	10	10	10	10	-	40
2.4. Organic Innovation Centre	10	10	10	10	-	40
2.5. Climate technologies in agriculture	100	100	-	-	-	200
2.6. Carbon rich soils	165	165	165	165	-	660
2.7. Rehabilitation of industrial sites and contaminated land	50	50	50	55	75	280
3. Energy Efficiency, Green Heating and CCS	775	600	275	290	100	2,040
3.1. Replacing oil burners and gas furnaces	225	170	125	65	60	645
3.2. Energy efficiency in industry	-	100	100	105	10	315
3.3. Energy renovations in public buildings	150	150	5	5	5	315
3.4. Energy efficiency in households	300	80	45	115	25	565
3.5. CCS-storage potential	100	100	-	-	-	200
4. Green Tax Reform	1,039	1,351	758	539	218	3,905
4.1. Investment window	626	1,038	608	439	318	3,029
4.2. Accelerated depreciation	410	310	240	180	140	1,280
4.3. Expert group to prepare proposals for a CO ₂ e-tax	3	3	-	-	-	6
4.4. Emission taxes on industries	-	-	-90	-80	-240	-410
5. Sustainable Road Transport	589	422	333	151	132	1,625
5.1. Incentives to choose green cars	254	182	163	141	132	870
5.2. Analysis, tests and campaigns for greener transport	5	20	-	-	-	25
5.3. Green transportation and infrastructure	330	220	170	10	-	730
6. Digitalisation	125	145	145	125	125	665
6.1. Digital strategy	-	125	125	125	125	500
6.2. Broadband pool	100	-	-	-	-	100
6.3. SME's digital transition and export	25	20	20	-	-	65
7. Green Research and Development	700	1,100	-	-	-	1,800
7.1. Research in green solutions	700	-	-	-	-	700
7.2. Incentives to boost R&D in companies	-	1,100	-	-	-	1,100
Initiatives in total	3,741	4,044	1,795	1,370	650	11,600

The Danish Recovery and Resilience Plan contributes significantly more to fulfilling green and digital objectives³. *Table 1.3* shows the share with which each component contributes to fulfilling the green and digital objectives respectively.

Table 1.3
Green and digital

M. DKK	Total	Green transition	Digital
1.1. Strengthening the Resilience of the Healthcare System	244	0	14
1.2. Green transition of Agriculture and Environment	1,320	1,040	0
1.3. Energy Efficiency, green heating and CCS	2,040	2,040	0
1.4. Green Tax Reform (phase 1)	3,905	1,628	1,724
1.5. Sustainable Road Transport	1,625	1,550	0
1.6. Digitalisation	665	0	665
1.7. Green Research and Development	1,800	700	440
Total	11,600	60 %	25 %

The Danish recovery plan thus contains measures where 60 per cent of the plan’s total allocation contributes to the green transition and 25 per cent contribute to the digital transition. *Figure 1.3* provides an overview of the green and digital shares of the plan *figure 1.4* shows how each component contributes to the fulfilment of the objectives.



³ The Danish Recovery and Resilience Plan thus contains measures that effectively contribute to the green transition which represents 60 per cent of the recovery and resilience plan’s total allocation, based on the methodology for climate tracking set out in Annex VI of Regulation (EU) 2021/241. Furthermore, the Danish recovery plan contains measures that effectively contribute to the digital transition which represents 25 % of the total allocation, based on the methodology for digital tracking set out in Annex VII.

1.1 Economic outlook

Table 1.4 lists key figures from the latest economic forecast in the development in the real GDP and unemployment during the pandemic.

The Danish economy contracted in 2020 as a consequence of the pandemic. However, the setback is expected to be relatively short-lived and the recovery fast. Thus, real GDP is expected to grow by more than 2 per cent in 2021 and almost 4 per cent in 2022. The unemployment rate is set to remain above pre-pandemic levels but on a declining path.

Table 1.4
Key figures from Denmark's Convergence Programme, April 2021

	2019	2020	2021	2022
Real GDP, growth, per cent	2.8	-2.7	2.1	3.8
Inflation, per cent	0.7	0.4	1.1	1.5
Nominal wages, growth, per cent	2.5	2.2	2.4	2.6
Employment, 1,000 persons	3,003	2,981	2,988	3,025
Employment, change, 1,000 persons	37	-22	6	37
Unemployment, 1,000 persons	104	133	124	118
Unemployment, change, 1,000 persons	-4	29	-9	-7
Unemployment, per cent of labour force	3.4	4.3	4.0	3.8
Labour force, 1,000 persons	3,105	3,113	3,109	3,140
Labour force participation rate, per cent	82.9	82.3	81.4	81.3

Source: *Denmark's Convergence Programme*, April 2021.

Similar to Denmark, other EU Member States as well as non-EU countries have experienced contractions of GDP and spikes in unemployment rates. Countries are now generally facing and trying to curb the spread of different mutations of the coronavirus. The global economy remains in a vulnerable situation.

As a small open economy, Denmark is reliant on both the EU's Single Market and the global market. The recovery of the economies in the Single Market is therefore crucial to the recovery of the Danish economy. Next Generation EU will underpin the recovery of the European economies and therefore the Danish economy. Up to 500.000 jobs – equivalent to every sixth Danish job – are connected to trade within the single market. This indicates how important a common European effort is. The EU Recovery and Resilience Facility will help the Danish and other European economies recover.

Mitigating measures to recover

The Danish government has initiated measures to mitigate the consequences of the pandemic by introducing historically large financial support packages in order to avoid a deep and lasting economic crisis. For instance, the government has financed parts of the salaries for workers during lockdowns in order to ensure that companies can keep workers employed until the economy opens up again. The

government has also introduced tax-related liquidity measures that have immediately increased companies' liquidity and thereby resilience. Combined, the efforts are estimated to support around 55.000 jobs in 2020, around 85.000 jobs in 2021 and around 40.000 jobs in 2022.

The support packages have saved jobs and helped to secure that no one is left behind. Mitigating the consequences in a socially just and balanced way has been of great importance, and will be a strength during the recovery, as it has avoided big layoffs and job destruction. This leaves Denmark with a solid foundation when the recovery begins.

More needs to be done – a unique opportunity to accelerate the green transition

Despite successful support packages, the Danish, European, and global economies enter a period of economic uncertainty as second and third waves of COVID-19 hit during winter season in the northern hemisphere as well as new mutations of the coronavirus. Economic forecasts are marked with a high level of uncertainty and further state interventions in the economy are necessary to pull countries out of the recession that the pandemic has caused.

This calls for further action and economic stimuli across the European Union. Ensuring an immediate recovery is pivotal in national recovery and resilience plans to avoid that the COVID-19 pandemic develops into a lasting economic crisis. Hence, recovery and resilience plans should have a great emphasis on job creation. Furthermore, governments all over the EU have an exceptional opportunity to use the crisis to invest in solving the issue of climate change. By investing in green growth, it is possible to bring the EU out of the crisis stronger, greener, more coherent and more resilient than ever before. These are the guiding principles of the Danish Recovery and Resilience Plan.

The recovery of the European economy provides a unique opportunity to invest in a greener future. The focus must be to prioritise measures that will kick-start a green and rapid recovery of the European economy. This includes underpinning the objectives of agreement of The European Council in December 2020 on a new binding EU reduction target of at least 55 per cent in greenhouse gas emissions by 2030 compared to 1990. This will set the EU on track to become climate neutral by 2050.

A broad variety of Danish and European companies possesses unique knowledge and knowhow on green and digital technologies. Investing in new green and digital technologies will contribute to the EU being a world leader within green technology and future job creation. Because of the high level of knowledge and green entrepreneurship amongst Danish and other European companies, investing in new green and digital solutions will benefit all European citizens as new technologies and products will be broadened globally. This provides a great potential for

the Danish and European economy to enter a period of significant green growth providing a contribution of great importance to the mitigation of climate change.

The Danish economy was well balanced and resistant to crises before the pandemic hit. Combined with the funds from the Recovery and Resilience Facility, Denmark is now making the necessary investments that will push the Danish economy out of the recession and into a greener and more digital future.

Box 1.1

Examples of green reforms and investments in the Danish Recovery and Resilience Plan

Reforms

- The first phase of The Green Tax Reform creates strong incentives for companies to immediately invest in green and digital technology, which at the same time leaves a smaller carbon footprint. This is done by increasing taxes on the industries' process fossil energy while easing companies' transition to clean energy.
- Initiatives in the Sustainable Road Transport include reforms such as the re-prioritization of registration taxes that incentivises consumers to shift to zero- or low-emission vehicles. This is combined with a subsidy scheme to increase incentives to change old cars into new, greener cars.
- Less productive carbon rich soils are taken out of production in order to reform the agricultural sector because growing crops on carbon rich soils entails larger emissions of greenhouse gases and nitrogen compared to production elsewhere. Furthermore, the agricultural sector is reformed to focus more on organic production than today.

Investments

- Initiatives in the component on Energy Efficiency, green heating and CCS concern for instance the replacement of gas and oil furnaces with electric heat pumps and district heating. Furthermore, subsidy schemes are targeting green renovations of buildings with poor energy performance and private households.
- Large investments are made in research and development of green technologies. This includes projects such as brown bio-refining utilising pyrolysis technology that will be able to deliver large reductions in the future within areas that have shown the greatest reduction potentials, e.g. 1) Carbon Capture and Storage and use of CO₂, 2) Green fuels, 3) Climate friendly agriculture and 4) Circular economy.

1.2 General objectives/Executive summary

The Danish Recovery Plan consists of seven components. The main focus of the recovery plan is the transition to a green and climate-neutral society, which is one of the biggest structural challenges in Denmark. Massive investments are necessary to underpin the green transition. Therefore, the plan entails fundamental reforms and investments in the green transition within the sectors with the largest greenhouse gas emissions in Denmark and underpins potential significant greenhouse gas reductions.

Furthermore, the plan includes a variety of initiatives supporting a more resilient, cohesive and socially just society. This is done by stimulating growth and job creation as well as strengthening the resilience of the healthcare system, thereby mitigating the consequences of the COVID-19 pandemic. The plan also includes wide-ranging reforms and investments that will promote a digital transformation across sectors of society advancing welfare and equality, growth and employment, the green transition and the recovery of the Danish economy.

The composition of the Danish Recovery and Resilience Plan is described below.

Component 2.1: Strengthening the Resilience of the Healthcare System



Investments in new technology in the healthcare sector in order to broaden the use of digital solutions is needed. This will help vulnerable and elderly people with safe medical consultations during a pandemic. Furthermore, investments will ensure the management of sufficient stocks of critical medical products to avoid depletion during potential future rises in demand for medical products. Monitoring and reporting of the supply of critical medical products will also be strengthened with recovery funds. In addition, a large-scale clinical cohort study of the various COVID-19 vaccines is conducted in order to increase the knowledge on the effects and side effects of the vaccines. The study will increase the resilience and sustainability of the healthcare system by targeting the vaccines towards the population groups where they are most efficient.

Table 1.5
Component 2.1: Strengthening the Resilience of the Healthcare System

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
1.1 Measures to ensure stocks of critical drugs	52	52	-	-	-	-
1.2 Digital solutions in the healthcare sector	14	12	2	-	-	-
1.3 Clinical study on effect of Covid-19 vaccine	102	49	29	25	-	-
1.4 Emergency management & monitoring of critical medical products	76	40	36	-	-	-
In total	244	153	66	25	-	-

Component: 2.2: Green transition of Agriculture and Environment



The agricultural sector is a key sector in the green transition. The Danish agricultural sector is responsible for approximately one third of the Danish emission of greenhouse gasses. By initiating a green transition in the agricultural sector, investments will cut greenhouse gas emissions immediately. Further, investments in concrete research and development projects such as brown bio-refining will be able to potentially deliver large reductions in the future. In total, the component will reduce the greenhouse gas emissions by estimated 0.1 Mt by 2030 while minimising the reduction in production output. Additionally, new technologies in the agricultural sector – primarily brown bio-refining utilising pyrolysis technology – are estimated to hold a technical potential for further reductions of greenhouse gas emission by 2 Mt in 2030. Investments in research and development will help these potentials to materialise. Furthermore, the green transition of the agriculture industry will lead to significant reductions of nitrogen emissions. The transition is possible due to measures taking carbon rich soils out of production and promoting transition to organic farming. Additionally, funds are provided to rehabilitate industrial sites and contaminated lands thereby removing dangerous substances and hazardous waste from the nature.

Table 1.6
Component 2.2: Green transition of Agriculture and Environment

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
2.1 Organic Farming	80	20	20	20	20	-
2.2 Organic transition of public kitchens	40	10	10	10	10	-
2.3 Organic Innovation Centre	40	10	10	10	10	-
2.4 Plant based organic projects	20	5	5	5	5	-
2.5 Climate technologies in agriculture	200	100	100	-	-	-
2.6 Carbon rich soils	660	165	165	165	165	-
2.7 Rehabilitation of industrial sites and contaminated land	280	50	50	50	55	75
In total	1,320	360	360	260	265	75

Component 2.3: Energy Efficiency, Green Heating and Carbon Capture and Storage



This component follows up on the recommendations from the 13 climate partnerships representing key actors from across the society on a financially sustainable green transition. To this end, Denmark seeks to prioritise additional initiatives based on the recommendations by the Danish climate partnerships to generate social, environmental and economic benefits by stimulating job-creation and growth potentials, and at the same time contribute to the green transition by reducing greenhouse emissions with 0.1 Mt in 2030.

One of the initiatives in this component is the replacement of gas and oil furnaces with electric heat pumps and district heating.

Many of the initiatives are targeted at green energy renovations of buildings with poor energy performance. Several of the initiatives in this component include replacement of oil burners and gas furnaces with electric heat pumps and district heating in order to reduce energy consumption and greenhouse gas emissions. As also highlighted in the Commission's *Renovation Wave*, investing in buildings will inject a much-needed stimulus in the construction ecosystem and the broader economy. These investments are in alignment with the EU Green Deal and COVID-19 recovery and kick-start a green and rapid recovery of the European economy.

Table 1.7
Component 2.3: Energy Efficiency, green heating and CCS

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
3.1 Replacing oil burners and gas furnaces	645	225	170	125	65	60
3.2 Energy efficiency in industry	315	-	100	100	105	10
3.3 Energy renovations in public buildings	315	150	150	5	5	5
3.4 CCS-storage potential	200	100	100	-	-	-
3.5 Energy efficiency in households	565	300	80	45	115	25
In total	2,040	775	600	275	290	100

Component 2.4: Green Tax Reform



The tax system is one of the most efficient instruments in creating incentives for citizens and businesses to lower greenhouse gas emissions. However, fundamentally reforming the tax system is not done overnight. That is why a broad parliamentary coalition, consisting of three fourths of the Danish parliament, has made a politically binding agreement to enact a Green Tax Reform in two phases. Phase 1 will take the initial steps of redirecting current energy taxes towards CO₂e-emissions, while providing incentives for frontloading green and digital investments. Phase 2 will fundamentally rewrite the tax code by introducing a broad tax on all greenhouse gas emissions including the non-energy related emissions in the agricultural sector. The ambition is that the second phase will be the determining factor in delivering a 70 per cent reduction in Danish emissions in 2030.

The subcomponents under the green tax reform should be seen in context: The increased emissions tax on industry in first phase of the green tax reform, and the broadly anchored political ambition to implement a uniform, economy-wide carbon tax in the second phase, sends a strong message to market participants that now is the time to transition away from carbon emission activities.

To provide companies with the incentive and the opportunity to accelerate this transition and prepare for such a carbon tax, the green tax reform includes tax deductions for frontloading green investments. The strong incentives for companies to immediately invest in green and digital technologies will simultaneously assist Denmark in recovering from the COVID-19 recession. This will lead to an increased demand and a rise in employment as well as a reduction of greenhouse gas emissions and further digitalisation of the Danish society.

The first phase of the green tax reform will lower greenhouse gas emissions by 0.5 Mt by 2030. This is due to the increased taxes on the industries' process fossil energy. The intention is that this initial increase in fossil energy taxation will become directly targeted at the CO₂-content of the different fossil fuels before the Green Tax Reform moves to the second phase.

To ease companies' transition to clean energy and boost growth potentials, the tax reform also implies an increased tax deduction for companies investing in capacity costs, e.g. technology and software.

The investment window will not include machinery running on fossil fuels to ensure a green transition of industry. This will boost the companies' growth potential and job creation, while encouraging companies to invest in new hardware and technology that can reduce emissions in the longer run.

For the second phase of the Green Tax Reform, an expert group has been established, which will draw the road map for the next phase of CO₂e taxation in a manner consistent with protecting competitiveness, social balance and minimising leakage. It is the ambition in the long term to make a comprehensive tax reform with a high and uniform CO₂e tax on all emissions, but it will require significant development work, especially with regard to emissions that are not currently subject to taxation.

Table 1.8
Component 2.4: Green Tax Reform

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
4.1 Investment window	3,029	626	1,038	608	439	318
4.2. Accelerated depreciation	1,280	410	310	240	180	140
4.3. Expert group to prepare proposals for a uniform CO ₂ e-tax	6	3	3	-	-	-
4.4 Emission taxes on industries	-410	-	-	-90	-80	-240
In total	3,905	1,039	1,351	758	539	218

Component 2.5: Sustainable Road Transport



The transport sector is one of the largest emitters of greenhouse gasses in Denmark. The sector alone is responsible for approximately 25 per cent of the Danish emissions. In order to reach the ambitious target of reducing greenhouse gas emissions by 70 per cent by 2030, reductions in the transport sector are essential. Within road transportation, new technology allows for a transition towards greener and more environmentally sustainable solutions. With this component, new technologies are utilised to reach a reduction in greenhouse gas emissions by 2.1 Mt in 2030 and sets forth the ambition of having 1 m. zero- and low-emission cars by 2030.

This is achieved by re-prioritising the registration tax to incentivise more consumers to choose zero and low-emission cars. Furthermore, the tax on electricity for zero and low-emission vehicles is lowered and a premium for scrapping old diesel cars is introduced to ensure that older cars are rapidly changed into new and less polluting cars.

Significant investments and subsidies in green infrastructure and new technologies further incentivises green mobility, supporting public health and reducing congestion.

Table 1.9
Component 2.5: Sustainable Road Transport

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
5.1. Incentives to choose green cars	870	254	182	163	141	132
5.2. Analyses, tests and campaigns for greener transport	25	5	20	-	-	-
5.3. Green transportation and infrastructure	730	330	220	170	10	-
In total	1,625	589	422	333	151	132

Component 2.6: Digitalisation



Denmark is among the leading digital countries in the world and therefore has a strong foundation to build upon. This has resulted in the UN labelling Denmark as the global leader in terms of digital government – capturing the scope and quality of online services, status of telecommunication infrastructure and existing human capacity – among the 193 UN member states⁴. Through a new digital strategy that will cover a set of wide-ranging reforms and investments, the aim is to promote a digital transformation across all sectors of society advancing welfare and equality, growth and employment, the green transition and the restart of the Danish economy after the COVID-19 crisis.

As part of this process, the Danish government has established a digitalisation partnership consisting of top managers and experts from the Danish business community, municipalities and regions, academia, and social partners. The broad anchoring and involvement of stakeholders across society can qualify digital aspects and needs broadly in society in relation to citizens, businesses and the welfare state, and will contribute with recommendations for a new digital strategy. Such a process involving all relevant actors is needed to ensure a consistent and cross-sectoral digital strategy for Denmark.

In addition to the digital partnership leading to a new digital strategy, the Recovery and Resilience Plan will support the digital transition through investments in strengthened connectivity and increased digital export opportunities for SMEs.

⁴ <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2020>

Table 1.10
Component 2.6: Digitalisation

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
6.1. Digital strategy	500	-	125	125	125	125
6.2. Broadband pool	100	100	-	-	-	-
6.3. SME's digital transition and export	65	25	20	20	-	-
In total	665	125	145	145	125	125

Component 2.7: Green Research and Development



In order to realise Denmark's high climate ambitions, new technologies and tools to reduce emissions of greenhouse gasses have to be developed. Therefore, a component on investing in the development of new green technologies is a crucial part of the Danish Recovery and Resilience Plan. The funding will be targeted towards four research and development missions and support for private R&D. The four missions focus on 1) CCS and use of CO₂, 2) Green fuels, 3) Climate friendly agriculture and 4) Circular economy. These areas have shown big potential in reducing greenhouse gas emissions and the Danish climate partnerships' have recommended targeting research, development and demonstration efforts within these four missions. The intention with the missions is to build green public-private partnerships of research institutions, private businesses, public institutions and innovation actors. The green partnerships is a new instrument in the Danish research and innovation system, where private and public institutions will cooperate by sharing knowledge and best practice to focus and accelerate innovations targeted specific challenges of the green transition.

Table 1.11
Component 2.7: Green Research and Development

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
7.1. Research in green solutions	700	700	-	-	-	-
7.2. Incentives to boost R&D in companies	1,100	-	1,100	-	-	-
In total	1,800	700	1,100	-	-	-

1.3 Comprehensive and adequately balanced response to the economic and social situation

The Danish recovery and resilience plan has a clear and strong focus on initiatives that support the green transition. That includes both reforms and investments that deliver immediate reductions in greenhouse gas emissions as well as initiatives that will provide the basis for significant further reductions in the future. As mentioned, Denmark has committed to the world's most ambitious climate target of reducing greenhouse gas emissions by 70 per cent by 2030, and the Danish recovery plan contributes significantly to the achievement of that target. The Danish recovery plan therefore provides a sustainable recovery of the Danish economy facing the largest challenge.

It is estimated that the components in the Danish recovery plan contribute to CO_{2e} reductions of 1.7 Mt in 2025 and 2.8 Mt in 2030 and thus make a significant contribution to the Danish and European climate reduction target in 2030, *cf. table 1.12*.

Table 1.12
CO_{2e}-reductions in the Danish Recovery and Resilience Plan

Components	Reductions Mt CO ₂	
	2025	2030
Agriculture and Environment	0.04	0.1
Energy Efficiency, Green heating and CCS	0.1	0.1
Green Tax Reform	0.5	0.5
Sustainable Road Transport	1.0	2.1
Reductions, in total	1.7	2.8

Note: CO_{2e}-reduction effects are the total effects of the combined national stimulus funds and the funds from the Recovery and Resilience Facility. The reduction effects are estimated partially and the estimated effects may thus be overlapping. Total reductions may diverge from the sum of individual reductions due to roundings of decimals.

In addition, significant future reduction contributions from the green research and development programs must be expected *cf. table 1.13*. For instance, development of brown and green refinery can potentially deliver a reduction of 2 Mt CO₂ by 2030 if the preliminary results hold true.

Furthermore, the four green research missions might lead to significant potential greenhouse gas reductions in the near future, e.g. new Power-to-X solutions have the potential of reducing the Danish greenhouse gas emission with somewhere between 0.5 and 3.5 Mt CO₂ per year in 2030.

Table 1.13
Technical reduction potentials in key technologies

Research and development programs	Mt CO _{2e} in 2030
CCUS	4-9
PtX	0.5-3.5
Brown bio-refinement	2
Agriculture	2
Reduction of plastic and textile waste	0.2
Total¹⁾	8.7-16.7

Note: ¹⁾Total does not reflect the aggregate technical reduction potential. The technical potentials for CO_{2e}-reductions are estimated separately and the potentials may overlap. This is especially pertinent for PtX and CCUS. The estimates signal the theoretically possible reductions and are subject to a very high degree of uncertainty.

Greenhouse gas emissions is not the only target of the recovery plan. The environment will benefit from the plan as well, as the plan consists of initiatives, which also lowers the amount of harmful substances and particles emitted to the atmosphere and the aquatic environment. The reforms and investments in the transition of the car-stock from conventional cars to zero- or low-emission vehicles are examples hereof due to the mitigation of particulate matter and NO_x. Hence, the recovery plan targets emission of particles to the atmosphere and nitrogen to the aquatic environment.

The Danish Recovery and Resilience Plan will prove that economic growth and green transition are not opposites. The solution to both climate change and the restoration of the economy following the COVID-19 pandemic is to invest in the creation of green jobs and growth. For the economy to recover, it is crucial that the Danish government contributes to bring back the lost jobs by restoring demand. The Danish recovery plan contains measures that will contribute to job creation in 2021 and 2022 as well as investments in technologies that will potentially create many more jobs in the future. Job creation will contribute to maintaining a high degree of social cohesion and making sure that no one will be left behind as the economy recovers from the pandemic. The macroeconomic effects of the recovery plan are set out in *Part 4: Overall impact*.

The plan addresses the green transition by spreading out initiatives to different sectors and industries as well as securing a good regional and social balance. Furthermore, investments are made in initiatives that have the potential to become important contributors to the green transition on the EU-level and globally. For instance, research and innovation in the partnership of the mission regarding carbon capture and storage or use of CO₂ will strengthen research in the geological

preconditions for storing CO₂ in Denmark. It will also contribute to the reduction of the general price of carbon capture, utilisation and storage, which is a necessity in order to implement cost-effective solutions that can be carried out on a larger scale.

Hence, while this plan is time limited and geographically targeted to Denmark specifically, the impact of the plan on the green transition will be both lasting and global. Thereby, the plan aims at responding to the great challenges of the next decades, and making sure that Denmark will deliver on the promise and common obligation to transition the economy to being greener and more sustainable.

The green transition has beneficial effects on the quality of life of all Danish citizens as it supports public health and reduces congestion. At the same time, it ensures new opportunities in the form of Danish jobs with equal opportunities for all. With the Budget Bill for 2021, the Danish government has decided to set aside a pool for upskilling and education in climate transition and green transition in a broad sense. This ensures that everyone has equal access to participate in the employment opportunities that will arise with the green transition.

The COVID-19 pandemic has shown how important a broad and resistant digital infrastructure is. Denmark is among the leading digital countries in the world with almost all contact between citizens, businesses, and the public sector being digitalised. This plan strengthens Denmark's position as a pioneering digital country, as it contains ambitious initiatives to further promote digitalisation and improve existing digital solutions. The initiatives on digitalisation are aimed at both the public and the private sector with a strong focus on incentivising private businesses to invest directly in digital solutions already from this year. This will contribute to job creation and an even more digitalised and productive economy.

Finally, the plan comprises initiatives aimed at strengthening the resilience of the healthcare system, which has been challenged by the large numbers of hospitalisations during the COVID-19 pandemic. It is important that the healthcare system has the necessary resources to handle the aftermaths of the COVID-19 pandemic as well as being ready to handle future pandemics or other large disease outbreaks.

1.4 Links with the European Semester

As part of the European Semester, Denmark received the Council's opinion on Denmark's economic policy on 20 July 2020. The opinion was based on Denmark's 2020 Convergence Programme and Denmark's 2020 National Reform Programme. Denmark received three recommendations *cf. Box 1.2*.

Box 1.2**The Country Specific Recommendations for Denmark 2020**

The Council recommends that Denmark take action in 2020 and 2021 to:

1. Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment. Enhance the resilience of the health system, including by ensuring sufficient critical medical products and addressing the shortage of health workers.
2. Front-load mature public investment projects and promote private investment to foster the economic recovery. Focus investment on the green and digital transition, in particular on clean and efficient production and use of energy, sustainable transport as well as research and innovation. Support an integrated innovation strategy with a broader investment base.
3. Improve the effectiveness of anti-money laundering supervision and effectively enforce the anti-money laundering framework.

The Country Specific Recommendations addressed to Denmark generally reflects the priorities of the Danish government and its efforts to ensure the recovery of the Danish economy with great emphasis on the green transition.

The Country Specific Recommendations addressed to Denmark in 2019 cover the same policy areas as for 2020, including research and innovation, sustainable transport and anti-money laundering. However, in 2019, Denmark also received a recommendation to focus investment-related economic policy on education and skills.

Below is a description of how Denmark addresses the Country Specific Recommendations with the Danish Recovery and Resilience Plan, but also other efforts to address the Country Specific Recommendations that have been implemented.

1.4.1 Addressing of the CSRs in the Danish Recovery and Resilience Plan

The Danish Recovery and Resilience Plan seeks to respond to the recommendations that Denmark has received through the European Semester. The most important Country Specific Recommendation for Denmark is to support and implement the necessary reforms and investments in relation to the green transition. The Danish government has a clear ambition to be a pioneering country and lead the way in this process for the rest of the world.

Box 1.3 gives an overview of how the different components of the recovery and resilience plan addresses the Country Specific Recommendations for Denmark.

Box 1.3

Compliance with Country Specific Recommendations in the Danish recovery plan

The reforms and investments in the Danish recovery plan contribute to the compliance with the Country Specific Recommendations addressed to Denmark. Below, the recommendations are listed together with the components that address the recommendations:

- **Recommendation to effectively address the pandemic, sustain the economy, support the ensuing recovery, and enhance resilience of the health system:**

Since the COVID-19 crisis hit Denmark in the spring of 2020, a pronounced expansive fiscal policy strategy has been implemented to support the economy and the labour market through the crisis. Fiscal policy efforts include a wide range of policy agreements that contribute to a green, fair and socially just recovery of the Danish economy. Political agreements have been made ensuring more than 160 bn. DKK in compensation and relief packages for businesses and employees. In addition, the initiatives in the component on *Strengthening the Resilience of the Healthcare System* comply with the Country Specific Recommendations by investing in the Danish healthcare system. The investments have a focus on ensuring availability of critical medical products, strengthening the digitisation, and utilising telemedicine in order to ensure a more resilient health system that are prepared to handle this and future epidemics.

- **Recommendation to front-load mature public investment projects and promote private investments to foster the economic recovery. Focus investment of the green and digital transition. Support an integrated green innovation strategy with a broader investment base:**

The initiatives in components *Green Transition of Agricultural and Environment; Energy Efficiency, green heating and CCS; Green Tax Reform; Sustainable Road Transport; Digitalisation; Green Research and Development* all comply with the Country Specific Recommendations. This is by investing and introducing reforms that support the green and digital transition through various efficient measures that contribute to reducing CO₂e emissions in all the most emitting sectors in Denmark and in a cost-effective and socially just way. This includes green and digital investments supported by the Danish government through various subsidy schemes as well as tax deductions for citizens and enterprises investing in new green and digital technology, research and development.

- **Recommendation to improve the effectiveness of anti-money laundering supervision and effectively enforce the anti-money laundering framework:**

Denmark has made significant progress in its efforts against money laundering and financing of terrorism. The Danish government, together with a broad majority in the Danish Parliament, has significantly strengthened the Danish Financial Supervisory Agency by increasing staff by 60 per cent. This has led to an increase in inspections from 35 in 2019 to 45 in 2020 and the inspections have been targeted at areas with increased risk of money laundering. Furthermore, the Danish Financial Intelligence unit has doubled its number of employees between 2017 and 2020 and fines have been raised by up to 700 per cent.

Denmark was recommended to frontload public and private investments in green and digital transition. The Danish Recovery and Resilience Plan has a great emphasis on both elements, and with the funds from the Recovery and Resilience Facility it has been possible to further accelerate the accomplishment of Denmark's extremely high green ambitions. With the green transition of agriculture and the environment (component 2.2) and the Green Tax Reform (component 2.4), the plan includes incentivising businesses to frontload their investments in green and digital technologies and thereby supporting efficient production and use of energy. At the same time, the investments in the green transition will ensure growth potentials and job creation both now and in the coming years.

Furthermore, the plan addresses recommendations on sustainable transport (component 2.5) as well as an integrated innovation strategy with a broader investment base in research and innovation within the four green research and development missions (component 2.7). In addition, the Danish government has initiated 13

climate partnerships with representatives from civil society that have contributed with ideas and suggestions on how to accelerate the green transition while making the acceleration economically sustainable. The initiatives on energy efficiency (component 2.3) follow from these recommendations, among other things.

Moreover, The European Semester recommended Denmark to address the pandemic including securing sufficient critical medical equipment to prevent shortages (component 2.1). With the Danish Recovery and Resilience Plan, measures are taken to ensure availability of critical medical equipment and free up extra hands in the healthcare sector, which may be used and allocated for the handling of COVID-19 patients etc.

The components in the Danish recovery plan regarding the green transition and digitalisation also reflect the recommendations Denmark have received in the National Energy and Climate Plans and the Digital Economy and Society Index. This applies, for example, to measures to promote energy efficiency through building renovation and sustainable heating sources (component 2.3) as well as measures to promote a green tax reform while ensuring a just transition for the most affected households and companies. In addition, measures to promote a continued expansion of high-speed internet throughout the country and funds to support the digital transformation of SMEs. Finally, the funds from the Recovery and Resilience Facility contribute to a new digital strategy (component 2.6) that will pave the way for new advanced digital technologies for businesses and digital public services.

Recommendation on anti-money laundering

Combating money laundering and terrorist financing is of high priority to the Danish government. In recent years, Denmark has made significant progress in the efforts against money laundering and financing of terrorism. The Danish government, together with a broad majority in the Danish Parliament, has adopted several measures to strengthen the Anti-Money Laundering and Counter-Terror Financing framework and intensify supervision.

The initiatives include, among others, that:

- From January 2020, the Danish Financial Supervisory Authority has broad access to issuing administrative fine notices in cases of violation of the Anti-Money Laundering legislation.
- Fines for not being compliant with anti-money laundering and terrorist financing regulations was significantly increased in 2019.
- For large banks, fines can be increased by up to 700 per cent compared to the previous level.

- The Danish Financial Supervisory Authority has in January 2020 been given the option of appointing a qualified person who may monitor the daily operations of the banks where it is necessary, in order to monitor a company in risk of being used to commit a financial crime.
- In February 2021, the Danish Financial Supervisory Authority has made a decision to insert independent experts in Danske Bank in relation to the supervision of the execution of the bank's financial crime plan.
- The staff in the Anti-Money Laundering/Counter-Terror Financing Division in the Danish Financial Supervisory Authority has increased by 60 per cent since 2019. In 2020, the Danish Financial Supervisory employed three additional full-time equivalents to conduct administrative sanctions.
- The number of inspections has increased from 35 in 2019 to 45 in 2020. In 2010, the number of inspections was 0-5 per year.
- The Danish Financial Intelligence Unit has since 2018 been granted additional resources. The number of staff has increased from 28 in 2019 to 35 full-time equivalents by the end of 2020. Since 2017, the number of employees has more than doubled.

The number of suspicious transaction reports, suspicious activity reports and terror financing reports disseminated from the Danish Financial Intelligence Unit to the police and the State Prosecutor of Serious Economic and International Crime has increased significantly, from 5,234 in 2019 to 8,499 in 2020. In comparison, the number of reports disseminated to the police and the State Prosecutor of Serious Economic and International Crime was 1,588 in 2017⁵.

In November 2019, the Danish government set up the Operational Government Forum as part of the national strategy for combatting money laundering and terror financing. The forum was set up in an effort to strengthen the operative cooperation and coordination between Danish police authorities, tax authorities and other authorities involved in combatting money laundering and terror financing. The members of the forum convene on a monthly basis to share multilateral and bilateral information, subjects, trends and coordination of specific cases.

With regard to the risk-based supervision, the Danish Financial Supervisory Authority has built a new risk assessment model that strengthens the risk-based approach by allowing the Anti-Money Laundering /Counter-Terror Financing Division of the Danish Financial Supervisory Authority to target its activities toward high-risk areas. Based on data submitted by obliged entities, the scoreboard model estimates the inherent risk on a variety of data points. In addition, it makes an es-

⁵ A single report may have been disseminated in multiple years.

timisation of the residual risk, using various indicators as proxies for control effectiveness. The risk assessment is based on quarterly/annual reports from all 1,900 obliged financial entities. They will report on 26 parameters. The new databased risk assessment will start with the first dataset in May 2021, and the model will be used in the Danish Financial Supervisory Authority's inspection plan from 2021.

In addition, the Danish Financial Supervisory Authority is just about to implement a new supervisory strategy, which will encounter a more flexible use of supervisory tools, including increased use of "deep dive" inspections and off-site investigations, thereby giving a more efficient use of the resources.

The Anti-Money Laundering/Counter-Terror Financing supervision has only to a very limited degree been affected by the COVID-19 situation. Hence, all inspections and other supervisory activities have been carried out. Some inspections have been made on a virtual basis but with the normal scope in all respects.

In 2020, the Danish government put forward a draft bill containing a proposal to include exchange services providers regarding virtual currencies, transfer of virtual assets and providers of administration services related to virtual asset activity under the scope of the Anti-Money Laundering act, in full compliance with the Financial Action Task Force definition of virtual asset service providers. The draft bill also includes a proposal to lower the legal limit on the size of cash transactions from 50,000 DKK to 20,000 DKK.

In February 2021, the Danish government has set up a public-private project group, which will examine the possibilities for the development of an effective joint system for monitoring of cash flows across banks in the fight against money laundering, terror financing and value added tax fraud. An initial study completed in 2020 has shown that, by correlating banks' transaction data with value added tax, business and reporting data, the authorities can better identify suspicious behaviour, take more proactive action against criminals and discard non-relevant cases. The project group is expected to report their findings to the Danish government during the summer of 2021.

By initiating all of the above-mentioned measures, Denmark has made large efforts to accommodate the country specific recommendation on anti-money laundering. Therefore, the Danish Recovery and Resilience plan does not contain specific measure targeted money laundering.

However, the Danish government will continue the efforts against money laundering and terror financing. The government will continue to take the necessary measures to further improve the effectiveness of the anti-money laundering supervision and effectively enforce the anti-money laundering framework.

Recommendation on investments in education and skills

The Danish government has continuously invested in new policies targeted at education and skills, increasing funding for these areas significantly.

Public investment in tertiary education amounted to 14 bn. DKK in 2019 (excluding SU grants and research). This is in an increase of approximately 23 per cent since 2008. During the same period, the admission to tertiary education in Denmark has increased by 42 per cent.

From 2020 and onwards, the existing "re-prioritisation contribution" (Omprioriteringsbidraget) has been cancelled, increasing funding for educational institutions by approximately 678 m. DKK per year. In 2020, Denmark made a law on the minimum amount of preschool teachers per child. With this law, Denmark will be investing an additional 1.8 bn. DKK yearly in extra preschool teachers from 2024. From 2020, the funding for basic education increased, adding 275 m. DKK in 2020 and an additional 807 m. DKK from 2023 and onwards.

Furthermore, the Danish government and the Danish employee and labour organisations reached a number of tripartite agreements in 2020 aimed at vocational education and training. With these agreements, a total of 6.1 bn. DKK have been invested in vocational education in 2020, with an additional 500 m. DKK yearly earmarked to new initiatives from 2021 and onwards. The Danish government and the parties in the Danish Parliament have allocated 18.2 bn. DKK on research and development, where 2.7 bn. DKK will be targeted at research areas within the green transition and climate change. This corresponds to an increase of 420 m. DKK from 2020.

Further measures taken to address the pandemic, sustain the economy, and support the recovery

Since the beginning of the COVID-19 crisis, Denmark has pursued a very expansive fiscal policy to support the economy. The Danish government has implemented both comprehensive temporary compensation schemes and a number of expansionary fiscal policy measures in order to stimulate the Danish economy.

In August 2020, the Danish government presented an updated framework for the fiscal policy towards 2025. This updated framework consists of expansionary fiscal policy, including a boost of public investments, in the coming years, which will support economic recovery. In 2021, the structural budget balance reaches the limit, set by the Danish Budget Law, with a structural deficit of 0.5 per cent of GDP (large one-offs primarily related to COVID-19 handling and disbursement of previously saved holiday pay are not included in this measure). Towards 2025, fiscal policy is planned based on an adjusted profile for the structural budget balance, which supports the recovery of the economy. The updated framework includes an unchanged target of the structural fiscal balance in 2025, which contributes to stabilise the development of public debt and to support the credibility of public finances.

Furthermore, the 2021 Budget Bill and related agreements include several measures, which further support the recovery of economic activity. These measures include the distribution of the remaining frozen holiday pay, support for the experience industry, Danish exports etc.

The fiscal policy approach described above, consisting of the updated financial framework towards 2025, the Budget Bill and related agreements, is assessed to substantially support economic activity in the coming years. The planned fiscal policy is considered appropriate and in line with the economic outlook.

The Danish approach to control COVID-19 has been to act timely and decisive with actions taken both on a national level and on a local level depending on the specific situation and severity of outbreaks. The aim is to ensure that the spread of COVID-19 is limited and well within the available healthcare capacity. A combination of testing, tracking and isolation is the first line of defence against the spread of the coronavirus. Funding for new measures is allocated on an ongoing basis.

Additional measures in relation to investment actions

The expansive fiscal policy to support the economy through 2020-21 also entails efforts to frontload public investment projects in order to stimulate the economy. In choosing projects to frontload, there is a particular focus on investments in municipalities and regions. In March of 2020, the Danish government made an agreement with the Local Government Denmark and Danish Regions, which releases municipalities and regions from the construction ceiling in 2020. This provides municipalities and regions the opportunity to invest in projects immediately that would otherwise have been carried out later. Furthermore, the government prioritized 15 bn. DKK to raise the ceiling for public investments in 2021-2025, which will increase public investments.

During 2020, the Danish government made several agreements with a strong green focus. This includes the Agreement on Green Renovation of Social Housing that earmarks 30.2 bn. DKK from the National Building Foundation for social housing sector renovation in 2020-2026. Furthermore, the Climate Agreement for Energy and Industry prioritises 22.5 bn. DKK to the green transition towards 2030.

Investment in research is also a priority for Denmark. The public research and development budget has been approximately 1 per cent of GDP since 2009, and the public research and development budget amount to approximately 24.2 bn. DKK in 2021. This corresponds to more than 1.03 per cent of GDP and makes Denmark one of the European countries that spends the most on research and innovation measured in per cent of GDP.

1.4.2 European flagship areas

The seven European flagship areas are reflected in all of the components in the Danish Recovery and Resilience Plan. It is important to deliver a common European response to future challenges, and the flagships act as way to align policies across the EU.

Box 1.4 provides an overview of how the contents of the Danish Recovery Plan are in line with the aims of the flagship areas.

Box 1.4

European flagships the Danish Recovery and Resilience Plan contribute to

The Danish Recovery and Resilience Plan accommodates several of the European flagships. Below, selected initiatives are highlighted:

- **Power up:** Large investments are made in increasing support schemes for replacing oil burners and gas furnaces with electric heat pumps. This initiative will support an electrification of society and thereby increase the use of green power. Furthermore, an investment window will incentivise companies to frontload their investments in green and digital technologies. Deductions for R&D-expenses in 2022 will additionally promote especially SME's to invest in the development of new green technologies.
- **Renovate:** The recovery plan includes subsidy schemes for energy renovations in private and public buildings in municipalities and regions. Moreover, a subsidy scheme for energy efficiency in industry will increase the renovation rate and fostering of deep renovation.
- **Recharge and refuel:** Re-prioritising the registration taxes and lowering the electricity tax to charging of zero- and low emission cars will increase the demand for green cars and future construction of more charging points.
- **Connect:** The broadband pool will promote high-speed internet access for citizens, households, and companies across the country, including promoted access in some less densely populated areas.
- **Modernise:** A strategic digitalisation effort will ensure that the new technologies and digital solutions discovered during the COVID-19 pandemics are used to create a more resilient and sustainable healthcare system, which is more coherent and closer to the citizen.
- **Scale-up:** The Danish government's new digital strategy – funded by the Recovery and Resilience Facility – will aim to address administrative and bureaucratic barriers, increase efficiency and growth, stimulate the competitiveness and digital transition of businesses, and simultaneously strengthen the quality of the public digital services that citizens and businesses meet.
- **Reskill and upskill:** The measures in the digitalisation plan aims to promote accessible and interoperable digital public services, e.g. supporting digital skills and training.

1.5 Gender equality and equal opportunities for all

Successive Danish governments have continuously improved legislation and other legally binding regulations in order to achieve gender equality and equal opportunities for all. As a result, women share the same formal rights, obligations and opportunities in society as men.

The advancement of gender equality as well as equal opportunities for all is regarded as a prerequisite for economic growth, democracy and welfare. Women's full enjoyment of their human rights, their sexual and reproductive health and rights, and gender equality is regarded as fundamental for the Danish society. Today, Danish women participate in the labour market almost on an equal footing with men. The early childhood education and care system allows women – and men – to balance their work and private life. Women generally enjoy equal opportunities in political, economic, social, cultural and civil spheres of life.

As a result, Denmark has been rated among the top of gender equal societies in several ratings.

However, the Danish government fully acknowledges that women still lag behind men in a range of areas, and there is still a lot of work to be done when aiming to achieve full equality for all women in society and to secure de facto gender equality.

Within the last 12 months, the Danish parliament has adopted legislation and funds for combatting violence against women including widening the scope of criminal law and allocating funds for expanding support services and raising awareness. This includes:

- New rape legislation criminalising intercourse without consent. The legislation includes a hotline for victims of rape.
- Funds for strengthening support services for female victims of domestic abuse, including the establishment of additional permanent shelters for battered women and increased funding for NGOs providing ambulatory counselling services for victims.
- Further funding to increase the capacity of ambulatory counselling and treatment programs. Moreover, shelters for victims of domestic abuse will receive funding to establish additional temporary rooms across the country in order to mitigate the challenges caused by the crisis. This is pertinent, as the COVID-19 pandemic has had a serious impact on victims of domestic violence.

In November 2020, the Danish government launched 14 new initiatives to combat sexual harassment in the workplace and in education. The measures are broad and cover subjects like raising awareness, prevention and monitoring of sexual harassment. For example, Denmark has established a tripartite dialogue with social partners on how to improve the prevention of sexual harassment and strengthen the sanctions for sexual harassment in the workplace. An alliance between relevant NGOs, organisations and social partners is also being established to promote broad cooperation and sharing of knowledge on how to change the culture in the workplace.

Specific initiatives to comply with recommendations

Women's participation in the labour market is key for their economic empowerment and for their access to decision-making. In Denmark, women have a high participation rate and they are breadwinners in one third of the families. However, Denmark is committed to promote women in decision-making, the continued problems with the segregation on the labour market and in academia, and the gender pay gap, as recommended by the Commission.

For these reasons, Denmark has initiated a range of activities such as

- *A commitment to promote equality in parents' share of their parental leave.* This will benefit children, fathers, and the family as a whole as well as allow women to return to the labour market and to pursue the career they want. Likewise, sharing the parental leave equally between parents can help reduce the gender pay gap.
- *Promotion of female entrepreneurship.* Denmark has established a Maternity Equalization Scheme for self-employed persons to increase their financial compensation during maternity, paternity and parental leave.
- *Promotion of women in academia.* In 2021, the Danish government has allocated 110 m. DKK to strengthen the talent program 'Inge Lehmann' in order to promote a more equal gender balance in academia.
- *Promotion of women in STEM* and combating the gender segregated education system. Examples of this are the yearly national campaign "Girls' Day in Science" and the Danish government's Strategy for Natural Sciences from 2018. The latter includes exploring how 'technological comprehension' can be taught in ways that motivates all students, regardless of gender, age and family background, thereby making technological studies more attractive for all – including especially girls in primary and lower secondary school.

In sum, Denmark strives to be a frontrunner on gender equality, and the Danish government is fully committed to continue to improve women's empowerment and equal opportunity for all. Therefore, the focus on gender and equality is mainstreamed across policy areas and is seen as a precondition to growth and welfare. Furthermore, initiatives countering COVID-19 induced gender inequalities such as increased violence against women have been funded by the state. The initiatives in the recovery plan complement these efforts and have a positive impact on gender equality. Studies show that women are more vulnerable to COVID-19 related economic effects, as the virus *inter alia* increases the burden of unpaid care, which disproportionately falls on women⁶. Furthermore, Danish women are more often than men employed in the service sector, which has been severely hit by the lockdown. By combining the ongoing Danish efforts to counter structural inequality with the recovery plan's investments in health and stimulus of the economy, the COVID-19 induced economic inequalities are mitigated and will be prevented in future health crises.

In addition to promoting equality between genders, the Danish recovery plan also seeks to promote equal opportunities for all. To illustrate, the terms of reference for the Danish government's *digitalisation partnership* state, that the partnership

⁶ McKinsey Global Institute (2020): COVID-19 and gender equality: Countering the regressive effects. <https://www.mckinsey.com/featured-insights/future-of-work/covid-19-and-gender-equality-countering-the-regressive-effects>

must provide recommendations on how the new digital strategy can ensure that the digital transformation happens in a way, which ensures equal opportunities and cohesion. Furthermore, the *health component* will improve equality within healthcare by creating better conditions for vulnerable patients. The initiatives in the Recovery and Resilience Plan also contribute to equal access to e.g. green heating and broadband, as these initiatives are mostly relevant for households in rural areas, where low-income households are overrepresented. Finally, by having a very strong green component and accelerating the green transition, the Danish Recovery and Resilience Plan also contributes to equality between generations. It is thus in line with the core purpose of *Next Generation EU*, as it contributes to ensuring, that younger generations will inherit a healthy, green society.

1.6 Cohesion

The initiatives in the Danish Recovery and Resilience Plan are assessed to broadly support employment both across industries and geographically. This includes several measures aimed at strengthening cohesion, e.g. a broadband initiative, which promotes high-speed internet access for citizens, households and companies across the country (i.e. including in some less densely populated and rural areas) as well as support for organic farming.

The focus on cohesion also applies in investments in energy efficiency regarding renovation and measures to ensure energy efficiency for households, private enterprises and public sector buildings, which are expected to temporarily increase the number of local jobs and investments but also reduce energy bills. The effect of the recovery plan on cohesion is set out in *Part 4: Overall impact*.

Box 1.5 provides examples on how the initiatives in the Danish Recovery and Resilience Plan contributes to social and territorial cohesion.

Box 1.5

Social and territorial cohesion and convergence in the Danish Recovery and Resilience Plan

Several components in the Danish Recovery and Resilience Plan support the social and territorial cohesion and convergence:

- **Strengthening the Resilience of the Healthcare System:** A strategic digitalisation effort ensures that the new technologies and digital solutions discovered during the COVID-19 pandemic are used to create a more resilient and sustainable healthcare system, which is more coherent and closer to the citizen. This includes telemedicine, which has potential to benefit especially people living in less densely populated areas, as the distance to medical treatments often is longer.
- **Green Transition of Agriculture and Environment:** The Danish agricultural sector faces structural challenges, which makes the sector vulnerable to increases in costs as a result of the green transition and declines in earnings. The employment and social cohesion in especially rural areas is dependent on a continued competitive agricultural sector. Therefore, the initiatives aim to provide economic incentives to farmers, in order to reduce greenhouse gas emissions with respect to the farmers' situation, and to ensure the social and territorial cohesion and convergence. The agricultural reform also contains investments in research and development that promotes sustainable growth in the agricultural sector and fosters high quality employment creation.
- **Energy Efficiency, Green Heating and CCS:** The additional funds provided by the Recovery and Resilience Facility will promote improvement of essential welfare institutions, and are expected to be allocated to renovation of e.g. day-care institutions, schools, and hospitals. This will support the coherence and resilience in society by maintaining and ensuring the right facilities can deliver a high quality of public services. Moreover, the renovations will temporarily increase the number of local jobs and investments, and reduce energy bills, which constitute a larger share of less wealthy household's income. Improving energy efficiency contributes to a cost efficient way of realising the target of climate neutrality by 2050.
- **Digitalisation:** The initiatives create the digital public sector of the future by a continuous modernisation of the digital infrastructure meeting the needs of all citizens and businesses, and strengthening connectivity. Especially, the broadband pool will promote high-speed internet access for citizens, households, and companies across the country located in less densely populated areas, which will enable all citizens in Denmark to take part in the upward social and economic convergence driven by the digitalisation. This is in particular the case, as the distribution of funds and the draft digitalisation plan will be done in close collaboration with a broad range of actors in the civil society.



Component 2.1

Strengthening the Resilience of the Healthcare System

Healthcare systems around Europe are facing a wide variety of unforeseen challenges in the wake of the COVID-19 pandemic. The capacity in primary and secondary care is under pressure, supply-chains for critical medical products are breaking, and isolation and social distancing brings new challenges in treating patients in risk groups.

It is therefore crucial to strengthen the resilience of the healthcare systems. The Danish recovery plan provides funding to strengthen the resilience and preparedness of the Danish healthcare system e.g. by analysing the effects of COVID-19 vaccines, implementing digital solutions, improving monitoring systems for stocks and ensuring sufficient stocks of strategic medical supplies. The funds will not be used for procurement of medicine.



Description of the component

Box 2.1.1

Strengthening the resilience of the healthcare system

Policy area/domain:

Healthcare, care for the elderly, vulnerable groups, public health, primary care, secondary care, digital healthcare, telemedicine, patient engagement, preparation plans, supply chains of critical medical products, surveillance of side effects of vaccines.

Objective:

The overall objective of this component is to strengthen the resilience of the healthcare system through the following measures:

- **Clinical study on effect of COVID-19 vaccines:** With the RRP Denmark will invest in a large-scale clinical cohort study of the various COVID-19 vaccines in order to increase the knowledge on the effects and side effects of the vaccines. The study will be conducted in order to examine the degree and the duration of the immunity, as well as establishing whether the efficiency of the vaccines differs between different population groups. Furthermore, the study will increase the expertise on the new technologies utilised in some of the vaccines. Results from the study can help increase the resilience and sustainability of the healthcare system if the results suggest e.g. that it will be more efficient to target the various vaccines towards specific population groups. Hereby, the side effects are minimised for the individual and the overall strain on the healthcare system can be reduced. Furthermore, knowledge is improved of whether re-vaccination is needed. The increased knowledge might further improve the confidence regarding the vaccines.
- **Measures to ensure stocks of critical drugs:** In order to avoid critical situations with shortages of important drugs, Denmark has established, and now extends measures to maintain and ensure strategic stocks of critical drugs in the secondary health sector. This will help enhance the resilience of the healthcare system by ensuring a sufficient amount of critical medical products will be at disposal.
- **Digital solutions in the healthcare sector:** During the COVID-19 pandemic new digital solutions have been used to make citizens and the healthcare system more connected. That has helped to protect vulnerable patient groups. A strategic digitalisation effort would ensure that new technologies and digital solutions developed during the COVID-19 pandemic are used to create a more resilient and sustainable healthcare system, which is more coherent and closer to the citizen.
- **Emergency management & monitoring of critical medical products:** COVID-19 has introduced a crucial need for acute planning and monitoring both concerning shortages and supply problems and potential side effects of the COVID-19 vaccines. A strengthening of the emergency management in the Danish Medicines Agency can ensure sufficient monitoring of shortages and supply problems, improve overall planning, and create a robust foundation for efficient monitoring of potential side effects to the COVID-19 vaccines.

Examples of reforms and/or investments:

- I. Clinical study on effect of COVID-19 vaccines: 102 m. DKK
- II. Measures to ensure stocks of critical drugs: 52 m. DKK
- III. Digital solutions in the healthcare sector: 14 m. DKK
- IV. Emergency management & monitoring of critical medical products: 76 m. DKK

Estimated cost: 244 m. DKK, of which 100 per cent is covered by the Recovery and Resilience Facility.

Main challenges and objectives

2.1.1 Main challenges

A pillar of the Danish healthcare sector is the delivery of efficient, and high quality care. The Danish healthcare sector has proven to be extremely adaptable in dealing with COVID-19. However, the COVID-19 pandemic has increased the need for digital solutions in healthcare, as in-person-care has suddenly become a potentially lethal risk for vulnerable groups. One of the most extensive vaccination programmes in Danish history has been launched, whilst knowledge on especially the effects but also side effects of the COVID-19 vaccines are still being elaborated. Lastly, the COVID-19 crisis increases the demand for emergency management coordination and monitoring. To sum up, the main challenges are:

Need for further knowledge concerning effects and side effects of the COVID-19 vaccines

The effect of the COVID-19 vaccines and their potential side effects have been studied during the European Medicines Agency's approval of the vaccines. However, these studies have been conducted over a relatively short period of two months. The main areas still in need of further research are:

The long-term effects of the vaccines are unknown: The duration of the immunity granted by the vaccines and the potential long-term side effects are unknown. The currently approved vaccines have shown evidence for granting immunity for two months, corresponding to the duration of the previously conducted clinical trials. For this reason, it is also uncertain if more than two injections with the vaccine are required to obtain enduring immunity. A clinical study with a longer time perspective can provide knowledge of the duration of the immunity granted by the vaccines.

The vaccines have not yet been tested on all population groups: It has not yet been established for whom the different vaccines have the largest efficacy. No study has compared the effects and side effects of the different vaccines within different population groups. Doctors can thus not prescribe a specific vaccine based on solid comparative clinical evidence.

Uncertainty concerning new technologies: Some of the approved vaccines use new technologies that have not been approved or used before. Thus, there is a need for solid evidence of the overall efficacy and usability of these technologies.

Ensure availability of critical medical products

COVID-19 has demonstrated that the market for medicine is very dependent on the situation and level of production in countries outside the EU. The sensitivity stems from the fact that most active substances for medicine are produced outside of the EU. The supply of critical medical products is therefore extremely susceptible to new COVID-19 closures or export restrictions. Furthermore, Denmark is a small market for pharmaceutical companies in a global context. In order

to avoid critical situations with a shortage of important drugs under COVID-19, Denmark has decided to extend and maintain measures to ensure strategic stocks of critical drugs in the secondary sector until the end of 2021.

Strategic focus on digital solutions and protection of fragile and vulnerable patient groups

The healthcare service must continue to make efforts to adapt to the conditions of the COVID-19 pandemic, including providing treatment and care to citizens and patients, where physical encounters should be limited as much as possible. We must continue to seize the opportunities that technology holds for the mitigation of the consequences of the pandemic.

When selecting new digital solutions in dealing with COVID-19 it is, however, important to strike a balance between the need for developing new solutions and further developing existing solutions, in order to ensure that authorities' need for an effective management of the pandemic is met. When implementing new technologies, it is furthermore crucial to make sure that implementation will not disrupt the core resources of the healthcare system. The main challenges are:

Digital slow-down and risk of ad hoc digitalisation: The widespread use of technology in the healthcare sector has slowed down during the pandemic because of lacking strategic focus and political prioritisation of digital solutions. COVID-19 has led to a higher degree of ad hoc digitalisation, which brings about a need for a strategic direction and anchoring to ensure the sustainability of the initiatives, and to ensure that they support the right long-term priorities (e.g. a coherent infrastructure and sustainable digital solutions in the Danish healthcare service).

Protecting fragile and vulnerable patient groups: It is important to protect fragile and vulnerable patient groups with digital solutions. This is especially the case in situations with an increasing infection rate, where vulnerable citizens have to self-isolate, and physical consultations at the hospital and general practitioners happen at a high risk for the patient. There is a need for further development of video consultation solutions as many elderly and fragile patients in nursing homes are not able to access video consultations because they do not have NemID (National electronic identification). Furthermore, a recent analysis from the organisation Danish Patients shows that the vast majority of patients, who have experience with video consultations and other digital contact with the healthcare system, would like to see an increased use of these types of digital solutions even after the pandemic has ended.

Unused potential for increased patient engagement: Digitalisation and new channels for communication provides the possibility for a healthcare system increasingly based on the needs of the individual patient. The way in which patients interact with the health system is changing concurrent with digitalisation and the development of new digital channels for communication. This gives patients a

more flexible interaction with the health system that can cater to individual needs to a greater extent. For example, there are indications of an increasing amount of patients suffering from unease triggered by COVID-19, which could be relieved by adapting certain digital solutions.

Emergency management of critical medical products and monitoring on side effects of COVID-19 vaccines

The spread of COVID-19 has put a strain on critical supply chains. At the moment, the infrastructure for monitoring of shortages and supply chain problems of critical medical products needs a re-examination. There is a need to strengthen the monitoring supply chains, coordinate between the primary and secondary sector, and secure a balanced national distribution of critical medical products in times of crisis.

Furthermore, mass-vaccination of the population creates a need for efficient and high quality reporting, monitoring and processing of side effects of the COVID-19 vaccines.

2.1.2 Objectives

To resolve the outlined challenges, Denmark will work towards four goals. The four goals all contribute fulfilling the Country Specific Recommendation for Denmark regarding a more resilient health system. This is done by extending and maintaining measures to ensure availability of critical medical products, implementation of digital solutions to shield elderly and vulnerable patient groups, increasing the knowledge of the effects and side effects of the COVID-19 vaccines and by strengthening of the emergency management of critical medical products:

Increase knowledge of the effects and side effects of the COVID-19 vaccines

In order to fill the gap of knowledge concerning the long term effects of the COVID-19 vaccines and side effects Denmark will initiate a large-scale cohort study of 10.000 patients. The study will run from 2021-2023 and will focus on the following objectives:

Measuring the long-term effect of the vaccines: The suggested clinical cohort study enables the possibility of clarifying the duration of the immunity granted by the different vaccines, and thus whether there is a need to re-vaccinate in order to maintain the effects of the vaccine. This knowledge is instrumental in preserving the health of the public, and especially elderly and vulnerable patient groups. Knowledge on the long-term effects of the vaccines can furthermore qualify decisions regarding how long the period between the first and second injection should be, as decisions are currently being made on a limited amount of data.

Additionally, the study will enable systematic data collection of long-term side effects of the vaccines. The data will be compared to a control group in order to determine if the vaccines cause the side effects or not. The study can thus be used to refute some of the false information regarding the vaccines, which will improve

the confidence in the vaccines and commitment to the continuous use of vaccines to battle COVID-19. If a vaccine shows signs of significant side effects, the specific vaccine could be quickly removed from active use.

Determine which vaccines are most effective for different population groups:

The clinical study enables head-to-head comparisons of the different vaccines in order to determine which vaccines are most effective for different population groups. Adjustments of which groups get which vaccine can be made concurrent with the preliminary results of the study on a more enlightened basis.

Obtain knowledge on the effect of the new technologies: There is a very limited amount of evidence of the effect of the new technologies utilised in some of the COVID-19 vaccines. By examining the long-term effects it is possible to obtain more knowledge on these technologies and if they could prove useful in different settings and in combating other viruses or diseases.

Ensure availability of critical medical products

In order to maintain and secure the Danish supply of medicines, and thus avoid critical situations with a shortage of important medicine and drugs during the COVID-19 pandemic, Denmark has decided to extend and maintain measures to ensure strategic stocks of critical medicines in the secondary sectors until the end of 2021.

Ensure availability of critical medical products in the secondary sector: In the secondary sector, the Danish regions' procurement organisation, Amgros, procures medicine for the hospitals. Amgros has taken on the task of purchasing medicine for a stock that covers three, six and nine months' normal consumption of all medicine. The size of stocks depends on the criticality of the drugs as well as signals of international supply difficulties. The list of critical medicine has been prepared based on input from the clinical pharmacologists in the regions and includes, among other things, medicine for use in anaesthesia, in intensive care units, antibiotics and medicine for the treatment of COVID-19. Only the indirect costs of the measures to ensure the stocks will be funded. This includes costs for administration and logistics expenses in relation with procurement and operating expenses regarding stocks as well as the associated risk that the extraordinary stocks of critical medicines will lead to increased disposal, e.g. as a result of several damaged packages or medicine exceeding the expiration date and falling prices in relation to the purchase price. The medicine will still be sold at market rate to the hospitals and the specific cost of the medicine is not subsidised.

Strengthen the digitalisation of the Danish healthcare system

Digital solutions in the healthcare sector can shield vulnerable patients and ensure effective monitoring and triage of patients. COVID-19 has demonstrated that there is a need for strategic efforts to provide tools for healthcare professionals and patients that support virtual treatment.

Support digital solutions: New technologies are developing rapidly and they promise great benefits for the healthcare sector, e.g. by enabling a more individually tailored process and increased digital communication. The technology package will build on the already initiated measures as well as additional initiatives for digital solutions that can strengthen the healthcare system during COVID-19 with a special focus on supporting efforts to shield vulnerable patient groups.

Video consultations: The use of video consultations can reduce the risks associated with patients having physical contact with the healthcare system and healthcare providers; this includes reducing the risk of contracting an infection in the waiting room and on the way to the doctor. This is especially important for elderly and vulnerable patient groups. Furthermore, if doctors and healthcare professionals become subject to home quarantine, they can continue to see patients through video consultations.

There is a need to increase the use of video consultations with general practitioners, when and where it makes sense for patients. By increasing the use of video consultations, the risks associated with physical visits to the doctor or home visits to nursing homes, accommodation and hostels, etc. decreases.

Patient engagement and increased use of telemedicine: Patient engagement can be increased by further involvement of the patient in their treatment i.e. through questionnaires and increased flexibility in the communication before and after treatment. Furthermore, initiatives will target more widespread use of telemedicine, i.e. for internet-based treatment of unease caused by COVID-19.

Strengthen the infrastructure for monitoring of shortages and supply problems of medicines and side effects of COVID-19 vaccines

The objective is to strengthen the infrastructure for the monitoring of shortages and supply problems regarding medicines and side effects of the COVID-19 vaccines. The initiatives concerning shortages and supply problems of medicines would complement those initiated on EU-level. The initiatives fall into three different categories:

Infrastructure for monitoring supply chains: The Danish Medicines Agency will develop and initiate a wide variety of initiatives to create a robust infrastructure for the monitoring of shortages and supply problems of medicines. Among other things, they will operate and further develop an IT-system that provides insight in the pharmacists and wholesalers' stocks of critical medicine. The system will allow the Danish Medicines Agency to contact wholesalers preventively when supply of specific medical products is low which can lower the cases of supply

failure. Furthermore, the Danish Medicines Agency will establish a national counsel for security of supply. The Counsel will be sharing knowledge between primary and secondary sector regarding potential shortages and supply problems. The Danish Medicines Agency will also secure a balanced distribution of critical medical products between different parts of Denmark to avert hoarding.

Monitoring of the COVID-19 vaccines: The Danish Medicines Agency is responsible for monitoring and evaluating the new vaccines as well as processing the many reports of potential side effects from the vaccines. As the COVID-19 vaccination program is a mass-vaccination program in a scale and pace never seen before, there is a need to strengthen the overall monitoring of both national and European reports of side effects of the vaccines to ensure public support for and trust in the vaccines. Adjacently, there is a need to increase the resources going to knowledge sharing with other European countries and EMA. There is also a need for increasing the resources going to inspection of the vaccines. Furthermore, The Danish Medicines Agency expect, and have already experienced, an extraordinary amount of reports, and it is of the outmost importance that the reports can be used swiftly to detect significant side effects. Thus, the Danish Medicines Agency have extended the use of the IT-system “The side effect web service” to general practitioners. The IT-system provides automation of reports of side effects, which will support quicker and better quality reports from general practitioners. Lastly, the Danish Medicines Agency will invest in real time monitoring of vaccines and potential side effects through thorough data analysis, which will ensure early identification of side effects.

Strengthening general emergency planning: An actual emergency plan concerning medical products was not established until COVID-19. Thus, there is a need to strengthen the overall emergency planning. This will be done by monitoring crucial incidents, which can affect the general supply of medical products, facilitating a more flexible emergency management with possibilities of quick reactions to issues, and provide guidance to municipalities and regions concerning their emergency management plans.

Summary description of the reforms and investments of the component

2.1.3 Clinical study on effect of COVID-19 vaccines

Addressing challenges: To further increase the knowledge regarding the effectiveness and side effects of the COVID-19 vaccines. This by examining long-term effects of the different types of COVID-19 vaccines and improving knowledge on whether their efficiency depend on population group.

Objectives: To measure long-term effects concerning immunity and side effects of the vaccines. This information can be used to improve the COVID-19 vaccination program. Furthermore, by examining the effect within different population groups, the study will grant insight into which vaccines are most efficient for different groups. The study will also result in increased knowledge on the new technologies utilised in some of the vaccines.

The conduction and the final results of the clinical study will not be available until earliest 2023. The study will be parallel to the pharmacovigilance and will not affect Denmark's other obligations regarding pharmacovigilance. Important findings from the study could be shared.

Implementation: The study is designed as an open-labelled, non-randomized, parallel phase 4 study with a control group based on historical data. The study will be based on approximately 10,000 trial participants and include a follow-up for two years after vaccination. The operational components of the study will primarily be undertaken by the two largest hospitals in Denmark (Rigshospitalet and Aarhus Universitshospital). The hospitals will in association recruit, coordinate and establish the infrastructure of the study. The collection, storage and analysis of blood samples will also be conducted by the two hospitals. The hospitals are supported by an operational steering group consisting of representatives from the five Danish regions and infectious disease medicines network and a scientific steering group consisting of several governmental bodies.

Target group: Recipients of one of the COVID-19 vaccines. Selection will be based on group characteristics in order to increase the external validity of the study.

Timeline: The study will be conducted from 2021 until 2023.

State aid: It is the assessment, that the initiative is conform with state aid rules. The funds from the Recovery and Resilience Facility is given to the researchers conducting the study.

Do no significant harm:

Table 2.1.1
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	None of the measures are expected to lead to significant greenhouse gas emissions. The clinical study of the effects and side effects of the COVID-19 vaccines will be undertaken by the two largest hospitals in Denmark. The study is likely to increase operations and transport of e.g. clinical trial subjects, but it is not expected to lead to significant greenhouse gas emissions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	None of the measures are expected to lead to an increased adverse impact of the current climate or on people, nature or assets. As mentioned above, the study is likely to increase operations and transport of e.g. clinical trial subjects, but it is not expected to lead to significant adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	None of the measures are expected to have a direct or indirect implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	This measure is not expected to harm the transition to a circular economy, including waste prevention and recycling. Due to the efficiency of the Danish waste management system, it is not expected that the clinical study will have implications for the circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	None of the measures are expected to lead to a significant increase in the emissions of pollutants into air, water or land.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives concerned strengthening the resilience of the healthcare system.

2.1.4 Measures to ensure stocks of critical drugs

Addressing challenges: To address the challenge of a volatile and erratic global pharmaceutical market and the uncertainty surrounding the Danish supply of medicines. Furthermore, to ensure a supply of critical medical products in Denmark.

Objectives: In order to strengthen the Danish security of supply of medicines, and thus avoid critical situations with a shortage of important medicine during the COVID-19 pandemic, Denmark has decided to extend and maintain measures to ensure strategic stocks of critical medicines in the secondary sector until the end of 2021.

Implementation: Amgros (the Danish Regions' procurement organisation) will ensure a stock that covers three, six and nine months of normal consumption of all medicine within the secondary sector. The size of stocks depends on the criticality of the drugs as well as signals of international supply difficulties. The list of critical medicines has been prepared on the basis of input from the clinical pharmacologists in the regions and includes, although not limited to; medicines for use in anaesthesia, in intensive care units, antibiotics and medicines for the treatment of COVID-19.

The funds from the Recovery and Resilience Facility cover the indirect costs of ensuring the strategic stocks. This includes the costs related to administration and logistics expenses in relation to procurement, operating expenses regarding the strategic stocks, as well as the associated risk that the extraordinary purchases of medicines will lead to increased disposal. The funds will not be used for procurement of medicine.

The Danish Medicines Agency will monitor the stock level. In addition, the Danish Medicine Agency will follow the development in the world market in relation to the general security of supply. The Danish Medicines Agency will quarterly assess and report to the Ministry of Health whether there is a need to scale up or the possibility to scale down inventories. This prevents unnecessarily large stocks of medicine and ensures that the general supply situation is considered. When deciding the size of the stocks The Danish Medicines Agency will receive information from Amgros, the Regions' procurement organisation, which re-distributes medicine to hospitals, and data regarding the consumption of drugs in hospitals.

Target group: The stocks will reduce risks of low supply of critical medicines e.g. patients admitted to intensive care units or treatment of COVID-19.

Timeline: The initiative covers a temporary setup to manage and ensure strategic stocks of critical drugs in 2021.

State aid: It is the assessment that ensuring stocks of critical medicine in the secondary sector conforms to the state aid rules as Amgros, the regions' purchasing organisation, is responsible for the initiative. Amgros is already in charge of supplying the Danish hospitals with sufficient medicines via procurement. The funds from the Recovery and Resilience Facility cover the indirect costs of ensuring the strategic stocks, e.g. the costs related to administration and logistics expenses in relation to procurement, operating expenses regarding the strategic stocks, as well

as the associated risk that the extraordinary purchases of medicines will lead to increased disposal. The funds will not be used for procurement of medicine.

Do no significant harm:

Table 2.1.2
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	None of the measures are expected to lead to significant greenhouse gas emissions. The measures to ensure strategic stocks of medicines will to a limited extent increase transport, but it is not expected to lead to significant greenhouse gas emissions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	None of the measures are expected to lead to an increased adverse impact of the current climate or on people, nature or assets. The measures to ensure strategic stocks of medicines will to a limited extent increase the risk of waste as of damaged or expired medicines, but the investments in strengthening the management and monitoring of critical drugs and medicines is assessed to address this issue efficiently.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	None of the measures are expected to have a direct or indirect implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	Certain initiatives, e.g. the measures to ensure strategic stocks of critical drugs are expected to raise the risk of waste of damaged medicines packages. However, due to the efficiency of the Danish waste management system and the strengthened management and monitoring of critical medicines and drugs, it is not expected that the initiative will have any implications for the circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	None of the measures are expected to lead to a significant increase in the emissions of pollutants into air, water or land.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives concerned strengthening the resilience of the healthcare system.

2.1.5 Digital solutions in the healthcare sector

Addressing challenges:

A) Slowdown of widespread use of technology because of lack of strategic focus and political prioritisation of the digital solutions. Risk of COVID-19 leading to a higher degree of fragmented ad hoc digitalisation. *B)* Citizens not being able to participate in video consultations. *C)* Patients should be more involved in their own treatment, so that the health system interacts with the patient on their own terms. It is important to put the needs of the patient first in the treatment situation, as well as to provide more flexible interaction before and after treatment.

Objectives:

Digital solutions in the healthcare sector can shield vulnerable patients and ensure effective monitoring and triage of patients. COVID-19 has demonstrated that there is a need for strategic efforts to provide tools for healthcare professionals and patients that support virtual treatment. The Ministry of Health will further develop and increase the use of these new digital solutions as listed below:

A) Widespread use of digital solutions: Across the Danish health system, there has been an extended use of already developed digital solutions and a number of digital solutions, which have been developed due to the COVID-19 pandemic. The success of this digital transformation is critically dependent on the increasingly widespread use of digital solutions in the health sector and the resulting development of new forms of cooperation and models for how health services can be provided.

New technology will also make it easier for patients to take part in their own treatment. Providing the patient with easier access to information enhances the possibility of cooperating on more equal terms with health professionals regarding their own treatment.

There is a need to ensure progress in and prioritisation of common digital solutions to support treatment and care across the health system. In addition, the expected acceleration of both pace of treatment and the development of new technology will foster a growing need to control, prioritise, and coordinate these developments to maintain a common focus on achieving goals of proximity, higher quality, and coherence for patients and employees throughout the Danish health system.

There is also a need for strategic direction and anchoring to ensure the sustainability of the initiatives, and to ensure that they support the right long-term priorities (e.g. overall and coherent infrastructure, the most relevant focus areas etc.). Therefore, digital efforts must be implemented so that they do not disrupt core resources in the healthcare system. The Ministry of Health will work to ensure that the right digital solutions are selected and implemented in collaboration with relevant actors in the health field.

B) Video consultations: During the COVID-19 pandemic, a number of hospitals, general practitioners, psychologists etc. have made the change from physical consultations to video consultations. In the primary sector, the use of video consultations has risen. By now, all citizens in Denmark can be offered video consultations with their general practitioner and private practicing specialist via the app “MinLæge”.

By expanding existing solutions for video consultations and developing and implementing new solutions, the conversion of physical consultations to video consultations is made possible. In the primary sector (general practice), there has been an accelerated development of a “virtual waiting room”, which is a prerequisite for the primary sector to offer video consultations through the app “MinLæge” (MyDoctor). In 2020, 479,649 consultations have been held on the video infrastructure VDX.

A number of citizens do not have NemID (National electronic identification) and they can therefore not participate in video consultations with their doctor. This is especially true of elderly and frail citizens in nursing homes and in home care, as well as socially vulnerable citizens, etc. Therefore, the Municipality of Copenhagen has developed a customized version of “MinLæge”, known as “KontaktLæge”. Through this app, selected municipality workers on e.g. nursing homes can login with their employee signature on behalf of citizens without NemID so the citizen can have video consultations with the general practitioner.

It is a prerequisite for the desired change in the healthcare system that employees and citizens master digital competencies that match their new roles in the healthcare system. Authorities will therefore work to strengthen the competences of both citizens and employees to ensure that everyone can benefit from the digital opportunities.

It is a prerequisite for the increased number of video consultations in the healthcare system that the video infrastructure, VDX, has sufficient capacity. Therefore, MedCom is expanding capacity through new server purchases and new licenses. MedCom is a Non-profit organization financed and owned by The Ministry of Health, Danish Regions and Local Government Denmark to facilitate cooperation between authorities, organisations and private firms linked to the Danish healthcare sector.

C) Patient involvements and widespread use of telemedicine: The way in which patients interact with the health system is changing concurrent with digitalisation and the development of new digital channels for communication. This paves the way for a more flexible interaction with the health system, which can consider individual needs to a greater extent.

For example, telemedicine makes treatment and care of patients possible in or close to the citizen's own home in a safe environment. Especially due to the

COVID-19 situation, there is an even greater need for telemedicine solutions that ensure effective monitoring of citizens' health in their own homes. Citizens must have more health services closer to home, including via telemedicine solutions and video solutions, so that citizens' physical contacts and visits to the hospital can be reduced. Solutions with telemedicine support the need to keep as much distance as possible and limit physical contact and it can help free up time for the necessary specialised treatment that requires visits. The solutions help to shield vulnerable citizens.

Another example of the many possibilities of telemedicine is the use of electronic questionnaires in apps, where the patients before or as part of a course of treatment answers questions about their health. The health professionals can use the patient-reported data (PRO) as part of their assessment of the right treatment. Hereby, the patient can avoid unnecessary consultations and consultations at hospitals and general practitioners are more efficient.

These types of patient-reported data (PRO) are being integrated into the "MinLæge" app. All citizens in Denmark can be offered video consultations with their general practitioner and private practicing specialist via the app "MinLæge". The questionnaires can be initiated automatically by the app, e.g. based on age criteria, or initiated manually by the clinic. Based on the patient's response, the clinic can ultimately decide whether to book an appointment for the patient to be vaccinated against pneumococcus, influenza, etc. The pneumococcus questionnaire is currently being implemented and tested, while the influenza, as well as a pregnancy questionnaire, will be developed and implemented in Q3 and Q4 of 2021 respectively. The PRO-functionality will be further developed, making it possible to conceptualise and implement new questionnaires as the need arises.

The COVID-19 pandemic has triggered health anxiety in some patients, who may be isolated in their own homes due to the fear of infection. This greatly affects the patients' handling of daily chores such as shopping, work and socialising. Funds are used by the Central Denmark Region in collaboration with Danish Ministry of Health and Danish Regions. The funds must be used to adapt existing internet-based treatment program to also include anxiety about COVID-19 and health anxiety triggered by COVID-19.

Implementation: The Ministry of Health will organise a dialogue with relevant actors in the field of health to ensure the implementation and dissemination of digital initiatives. This involves both the Danish Regions, Local Government Denmark, The Danish organisation of general practitioners, etc. A roundtable will be set up to discuss the steps of setting up the relevant stakeholders.

Concerning the extended use of video consultations, the implementation, including in particular the spread of KontaktLægen, will take place in close collaboration

in a small steering group with MedCom and municipalities. MedCom provides implementation support to all municipalities. In addition, a user group will be set up, which will consist of municipal representatives, data consultants and MedCom.

Concerning the use of PRO regarding pneumococcus, influenza and pregnancy questionnaire, the implementation are rooted in the steering committee digital general practice. The steering group involves The Danish Health Data Authority Danish Regions, MedCom, and the Danish Organisation of General Practitioners. Their purpose is to strengthen the coherence and quality of treatment in general practice and to strengthen the digital cooperation between the sectors in the healthcare system.

Target Group: Generally citizens who are in contact with the health service, and particularly vulnerable patient groups.

Timeline: The initiatives covers 2021-2022 with ongoing implementation.

State aid: The funds will be allocated by the state directly to regions and municipalities, including Danish Organization of General Practitioners. The funds are held internally within public companies. The funds support a free accessibility offer for citizens in the public health service. The overall assessment is therefore that the initiative complies with the state aid rules.

Do no significant harm:

Table 2.1.3
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	None of the measures are expected to lead to significant greenhouse gas emissions. With the digital solutions in the healthcare sector, the digital CO2 footprint will not be increased in Denmark. A new calculation from Danish Chamber of Commerce and Copenhagen Economics also shows that if every fifth consultation with a general practitioner is handled digitally, it will save almost 8,000 tonnes of CO2 annually in addition to other effects such as time savings, better service for the user and potential for efficient use of scarce medical resources. Therefore, telemedicine is a source to lower the CO2 footprint.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	None of the measures are expected to lead to an increased adverse impact of the current climate or on people, nature or assets.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	None of the measures are expected to have a direct or indirect implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	This measure is not expected to harm the transition to a circular economy, including waste prevention and recycling. Due to the efficiency of the Danish waste management system, it is not expected that the initiative will have any implications for the circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	None of the measures are expected to lead to a significant increase in the emissions of pollutants into air, water or land. On the contrary, increased digital consultations and telemedicine are expected to have positive side effects as time savings, less transport to general practitioners, better service for the user and potential for efficient use of scarce medical resources.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition5 and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives concerned strengthening the resilience of the healthcare system.

2.1.6 Emergency management & monitoring of critical medical products

Addressing challenges: The COVID-19 crisis has proved that the infrastructure of Danish emergency management of critical medical products needs a going over to tackle the vast challenges presented. The emergency management is particularly characterised by a lack of coordination and inflexible planning across governmental bodies, unstable supply of critical medical products and uncertainty of side effects of COVID-19 vaccines.

Objectives: The objective is to improve the infrastructure for monitoring shortages and supply problems and for monitoring and acting upon potential side effects of the COVID-19 vaccines, and to strengthen the overall emergency planning.

- *Infrastructure for monitoring supply chains:* The Danish Medicines Agency will develop and initiate a wide variety of initiatives to create a robust infrastructure for the monitoring of shortages and supply problems of medicines. Among other things, they will operate and further develop an IT-system that provides insight in the pharmacists' and wholesalers' stocks of critical medicine. Furthermore, the Danish Medicines Agency will establish a national counsel for security of supply. The Danish Medicines Agency will also secure that the distribution of critical medical products is balanced between different parts of Denmark to avert hoarding.
- *Monitoring of the COVID-19 vaccines:* There is a need to strengthen the overall monitoring of both national and European reports of side effects of the vaccines to ensure public support for and trust in the vaccines. Furthermore, the Danish Medicines Agency have extended the use of the IT-system "The side effect web service" to general practitioners to detect significant side effects. Lastly, the Danish Medicines Agency will invest in real time monitoring of vaccines and potential side effects through thorough data analysis, which will ensure early identification of side effects. The Danish Medicines Agency will on a weekly basis provide overviews and a status on how many of the Danish population have been vaccinated and reports of suspected side effects related to the COVID-19 vaccines that have been assessed and reviewed.
- *Strengthening general emergency planning:* There is a need to strengthen the overall emergency planning. This will be done by monitoring crucial incidents, which can affect the general supply of medical products, facilitating a more flexible emergency management with possibilities of quick reactions to issues, and provide guidance to municipalities and regions concerning their emergency management plans.

Implementation: Most of the initiatives will be implemented within the Danish Medicines Agency. However, the IT-system concerning efficient reporting of side

effects of the COVID-19 vaccines have been implemented in collaboration with the Danish General Practitioners Organisation (PLO).

Timeline: The initiative covers 2021 and 2022.

State aid: It is the assessment, that the initiative is conform with state aid rules. The initiatives will be implemented by the Danish Medicines Agency, as such funds are given from one governmental organisation to another, and covers administration, IT-systems and operation expenses.

Do no significant harm:

Table 2.1.4
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	None of the measures are expected to lead to significant greenhouse gas emissions
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	None of the measures are expected to lead to an increased adverse impact of the current climate or on people, nature or assets. On the contrary, the investments in strengthening the management and monitoring of critical drugs and medicines is expected to increase the efficient use of medicines.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	None of the measures are expected to have a direct or indirect implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	This measure is not expected to harm the transition to a circular economy, including waste prevention and recycling. Due to the efficiency of the Danish waste management system and the strengthened management and monitoring of medicines, it is not expected the initiative will have any implications for the circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	None of the measures are expected to lead to a significant increase in the emissions of pollutants into air, water or land.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition5 and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives concerned strengthening the resilience of the healthcare system.

Green and digital dimensions of the component

Digital transition

The Danish health service is among the most digitalised in the world, and workflows at hospitals, GPs and municipal health services are already digitally supported throughout Denmark. This has improved patient treatment and safety, reduced paper-based workflows for employees and made better utilization of the health systems' resources possible.

The health system is already undergoing large-scale reorganisations to address the demographic challenge that Denmark faces. Treatment is being centralised at fewer, bigger and increasingly specialised hospitals, and more tasks will be performed close to or in the patient's own home. For example when home care nurse visits the homes of elderly patients, the nurses can perform an increasingly amount of more specialised tasks while in with a specialist at the hospital.

During the COVID-19 crisis, the healthcare system has experienced a digital shift. The crisis has proven that digital technologies are a "driver" in transforming the healthcare system towards more homebased treatment and care, and with patient engagement as a key component. A great example of this is the fact that video consultations were implemented rapidly in general practice through the MinLæge app in the beginning of the COVID-19 pandemic to make sure that citizens had access to a video consultation with their own doctor.

The initiatives presented in this component focus on improving conditions for and extending use of video as a tool for providing care, increase use of PRO-data and digitalised treatment solutions. The presented initiatives in this component will not only strengthen the resilience of the Danish healthcare sector, it will also most importantly pave the way for even further digitalisation of the Danish healthcare sector, and perhaps in the long term challenge the foundations of how care is delivered.

Open strategic autonomy and security issues

The initiatives concerning measures to ensure strategic stocks of critical medicine and strengthening the infrastructure for monitoring supply chains of critical medicine will support the strategic autonomy of the Union as the Danish medicine supply, and thereby also the EUs medicine supply, will be less sensitive to frail supply chains caused by COVID-19.

It should be noted that Denmark can donate a possible surplus of medicines, including vaccines, to countries that need help. This is stated in the Act on epidemics¹. The act was passed by the Danish parliament on 23 February 2021. In addition hereto, it is important that the EU legal rules on the distribution of medicines are complied with, which i.e. includes requirements for the necessary authorizations under the Medicines Directive (Directive 2001/83).

Do no significant harm

None of the initiatives in this component will do significant harm to the ongoing efforts concerning climate and sustainable development.

Financing and costs

The costs of the initiatives in the component regarding strengthening of the Danish healthcare system are listed in *Table 2.1.5*:

Table 2.1.5
Cost of initiatives in Component 1: Strengthening the Resilience of the Healthcare system

M. DKK, 2021-prices	Investment/ reform	Total	2021	2022	2023	2024	2025	Funding from other sources
I. Clinical study on effect of COVID-19 vaccines	Investment	102	49	29	25	-	-	-
II. Measures to ensure stocks of critical drugs	Investment	52	52	-	-	-	-	120
III. Digital solutions in the healthcare sector	Reform	14	12	2	-	-	-	-
IV. Emergency management & monitoring of critical medical products	Investment	76	40	36	-	-	-	-
In total		244	153	66	25	-	-	-

Clinical study on effect of COVID-19 vaccines

The total cost of 102 m. DKK in 2021-2023 is comprised of costs to recruitment of participants, coordination of the study, storage of plasma, serum and living cells, analysis of antibodies ect. The higher costs in 2021 compared to the following years are due to initial expenses concerning recruitment and coordination.

Measures to ensure stocks of critical drugs

The estimated costs are based on the Danish Medicines Agency's dialogue, regarding estimated costs, with Amgros. The costs for measures to ensure the stocks in the secondary sector cover administration and logistics expenses in relation with procurement and operating expenses regarding stocks as well as the

¹ Lov om epidemier m.v. (epidemiloven) - https://www.ft.dk/ripdf/samling/20201/lov-forslag/1134/20201_1134_som_vedtaget.pdf

associated risk that the extraordinary purchases of medicines will lead to increased disposal, e.g. as a result of several damaged packages or medicine exceeding the expiration date and falling prices in relation to the purchase price. The drugs will still be sold at market rate or the hospitals and the costs do not cover procurement of medicine.

Digital solutions in the healthcare sector

The cost of the digital solutions in the healthcare sector is based on the ministry's many years of experience working with work breakdown structure in digital initiatives. Early in the COVID-19 phase, for example, the Ministry of Health had expenses for video consultation, complete development of digital initiatives, licenses, infrastructure, etc. This also applies to telemedicine solutions. These experiences are included in the budget for the digital solutions. All the projects have submitted clear budgets, so it is easy and clear to follow the finances.

The estimated cost to increase the spread of video consultation (KontaktLæge) are based on the shared experience of the Danish Ministry of Health and MedCom. The costs cover payroll for employees, activities targeted at the municipalities so that they can use the app, information material, IT-working on that the app should be available on at least 2 platforms etc. Furthermore integrations, development, web app and backend support and general interfaces are part of the budget on MinLæge.

The estimated costs on patient involvements and widespread use of telemedicine are based on the shared experience of Central Denmark Region in collaboration with Danish Ministry of Health and Danish Regions. The costs cover payroll for employees, especially staff for video diagnostic assessment and 12-week treatment with psychologist / doctor and service agreements, support, integration, maintenance etc.

Emergency management & monitoring of critical medical products

The Ministry of Health are responsible for ensuring that the granted funds in 2021-2022 are used according to the plan of strengthening the emergency management of critical medical products. The estimated costs are based on the shared experience of the Ministry of Health and the Danish Medicines Agency. The costs cover a temporary increase in the number of staffing, as well as costs for the IT-system for monitoring stock of critical medical products and IT-consultants.



Component 2.2

Green Transition of Agriculture and Environment

Without additional measures to curb emissions, the Danish agricultural sector will be responsible for more than one third of the greenhouse gas emissions in Denmark by 2030. Reducing emissions in the agricultural sector is thus essential to reach the ambitious target of reducing greenhouse gas emissions by 70 per cent by 2030.



The initiatives in this component utilise known and effective instruments to lower greenhouse gas emissions in the agricultural sector by estimated 0.1 Mt CO₂e while minimising the reduction in production output.

Additionally, significant investments are made in demonstration of new promising technologies in the agricultural sector, such as so-called brown biorefining, which has a technical potential for reductions of greenhouse gas emission by 2 Mt in 2030.

Further, in line with the EU's Farm to Fork Strategy, environment-friendly organic farming is promoted in this component. The initiatives combined will reduce nitrogen emissions by an estimated 198 tonnes. The RRF funds thus deliver an important impetus to the green transition of Danish agriculture.

Finally, major investments are made in rehabilitation of the largest soil- and groundwater polluted hot spots of national concern from former industrial production. The investments will rehabilitate industrial sites and land that were contaminated due to unsustainable production in the past and thereby eliminate the current environmental risk posed by these sites.

Description of the component

Box 2.2.1

Green transition of agriculture and environment lowering the emission of greenhouse gasses and nitrogen

Policy area/domain: Climate, green transition, agriculture, environment, large-scale contaminations.

Objective: The objective of this component is threefold:

- 1) **Green transition:** The proposed initiatives will utilise known and effective instruments to lower greenhouse gas emissions in the Danish agriculture while minimising the reduction in production output. This aims to reduce greenhouse gas emissions by estimated 0.1 Mt CO₂e by 2030. Further, emissions of nitrogen to coastal waters will be reduced by an estimated 198 tonnes by 2030. By doing so, the Danish agricultural sector will contribute to the achievement of Denmark's climate target, which is to lower greenhouse gas emissions by 70 percent by 2030, as well as to improve environmental conditions. Increased organic farming serves as both a mean to achieve this target as well as a goal in the green transition of the Danish agriculture sector.
- 2) **Research and development:** As a supplement to the Danish government's green research strategy, significant funds in research and development towards promising technologies in the agricultural sector is introduced. The aim is to document and demonstrate the greenhouse gas effects of the so-called brown biorefinement technology. The technology has an estimated technical potential of reductions by 2 Mt CO₂e in 2030. That equals around 1/8 of the greenhouse gas emission of the agricultural sector. Hence, research and development of such new solutions and technologies are key to the green transition of the Danish agriculture sector – both in reducing national emissions and in showcasing the rest of the world a way for reducing agricultural emissions without lowering the production output of the sector.
- 3) **Improving environment:** Production in the past has caused severe pollutions of the environment and contamination of soil. In some instances chemicals and harmful substances have been emitted directly into nature. These pollutions are a result of a lack of knowledge about the harmful effect of dumping chemicals into nature, and the harm it would cause for future generations. In this component investments are made in rehabilitating industrial sites and land that was contaminated due to unsustainable production in the past.

Examples of reforms and/or investments:

Reforms:

- I. Carbon rich soils (660 m. DKK)

Investments:

- II. Organic farming (180 m. DKK)
- III. Climate technologies in agriculture (200 m. DKK)
- IV. Rehabilitation of industrial sites and contaminated land (280 m. DKK)

The total expenses are 1,320 m. DKK.

Main challenges and objectives

2.2.1 Main challenges

The agricultural sector (incl. land use, land-use change and forestry (LULUCF)) is expected to be responsible for more than 1/3 of the Danish greenhouse gas emissions in 2030, unless additional measures to curb emissions are implemented. Additionally, the sector is responsible for appx. 70 per cent of nitrogen emissions to coastal waters - despite major reductions since the 1990's. Thus, a central goal of this component is to draft policies that enable the agricultural sector to contribute

significantly to the green transition in Denmark. However, the agricultural sector faces structural challenges and competition, which makes the sector vulnerable to increases in costs and declines in earnings. This must be taken into account when designing initiatives to lower greenhouse gas emissions from the agricultural sector. Therefore, the aim of initiatives targeting the agricultural sector is to reduce both greenhouse gas and nitrogen emissions while sustaining the sector's contribution to the Danish economy, employment and social coherence.

This component also focuses on the environmental challenges that production methods in the past have caused. During the 1950's and 1960's, several large companies emitted harmful chemicals into the nature without knowing the consequences. In total, 10 sites in Denmark have been marked as so-called "generation contaminations" and many of them are not accessible to the public today due to contamination and the risk of spreading harmful chemicals. Summing up, this component addresses the following challenges:

- *Greenhouse gas emissions:* The Danish climate law commits Denmark to achieve a national 70 per cent reduction in greenhouse gas emissions by 2030 compared to the emissions in 1990. The agricultural sector is one of the key sectors in achieving this ambition. Several agricultural sources contribute to the emission of greenhouse gases, including e.g. production of crops, utilisation of residues and tributaries from the agricultural production through biorefining, the digestion systems of cattle and handling of manure.
- *Aquatic environment:* Excess emission of nitrogen to the aquatic environment is harmful to plants and animals, as it leads to oxygen depletion. Therefore, it is essential to lower the emission of nitrogen from the agricultural sector, especially to coastal waters.
- *Organic farming:* The Danish government has an ambition of doubling the organic farmland area, doubling the consumption of organic goods, and doubling the export of organic goods by 2030. Research shows that organic farming reduces emission of greenhouse gas and nitrogen compared to conventional farming. Doubling the organic farmland area in Denmark has the potential to reduce greenhouse gas emissions by 0.5 Mt CO_{2e} in 2030.
- *Contaminated land and industrial sites:* Industrial production and disposal of hazardous waste and poisonous substances in the nature during the 1950's and 1960's has caused pollution and contamination of soil. The chemicals are still present in the nature, and a professional and specialised effort is needed to rehabilitate the areas.

2.2.2 Objectives

- *Reducing greenhouse gas emissions:* With the initiatives in this component, the emission of greenhouse gasses will be lowered by 0.1 Mt in 2030. Furthermore, steps are taken to provide new technologies, e.g. brown bio refining, with significant potentials for further greenhouse gas reductions in the future.
- *Supporting sustainable farming methods:* The agricultural sector makes up more than 60 per cent of the Danish land area and will be responsible for 1/3 of the Danish greenhouse gas emissions by 2030 if further action is not taken. Improving the sustainability of farming therefore has a large potential. With this plan, investments are made to support, improve and promote the transformation towards a more sustainable agricultural industry.
- *Improving environment by rehabilitating contaminated industrial sites:* The rehabilitation of industrial sites and contaminated land includes removing substantial amounts of harmful chemicals and hazardous substances from the nature. Rehabilitation of large contaminated lands is a challenging task that requires specialised expertise, and the Recovery and Resilience Facility makes it possible to make the necessary investments. The aim is to provide a significant and lasting improvement of the environment.

Summary description of the reforms and investments of the component

2.2.3 Carbon rich soils

Addressing challenges: The initiative addresses the challenge of land use related emissions linked to agricultural production. Agriculture plays an important role in obtaining reductions in greenhouse gas emissions. There exists rather few methods to reduce emission of greenhouse gasses in the agriculture without lowering the output of the industry. However, an effective way of reducing the emission of greenhouse gasses is by taking carbon rich agricultural soils out of production and restoring natural hydrology. Not only is it beneficial for the climate by lowering greenhouse gas emissions, the carbon rich soils can also be less productive than other soils, thereby minimising the loss by taking the soils out of production. In sum, the measure contributes to a more optimal use of Danish land resources.

Objectives: The aim of the initiative is to provide a significant reduction in the emission of greenhouse gasses from the production on carbon rich soils. Furthermore, rewetting and taking carbon rich soils out of production will contribute to a reduction of nitrogen emission as well. Taking carbon rich soils out of production is estimated to reduce the emission of greenhouse gasses by 0.1 Mt CO₂e by 2030. Furthermore, the initiative will reduce the emission of nitrogen by 198 tonnes by 2030. The estimated cost of the initiative is 660 m. DKK from 2021 to 2024.

Implementation: The initiative will be implemented through existing subsidy schemes providing support to farmers to rewet and take carbon rich soils out of production. By doing so, the farmers will be compensated for taking the carbon rich soils out of production. The Danish authorities will closely monitor the speed and effects of the initiative. As an integral part of the initiative, land consolidation will often be a necessity. Land consolidation involves the redistribution of land parcels between multitudes of actors. In this way, a multitude of benefits can be achieved (e.g. nature, biodiversity, water quality, land development), depending on the specific priorities.

Link to reforms: With the climate law, Denmark has committed itself to reducing greenhouse gas emissions by 70 per cent in 2030. Furthermore, EU directives commit Denmark to lower the emissions from nitrogen. Taking carbon rich soils out of production contributes to both.

Target group: The target group of the initiative is Danish farmers and landowners owning land containing areas of carbon rich soil.

Timeline: The subsidy scheme is set to start by 2021 and run until 2024. No later than 2023, the government will evaluate, whether the subsidy scheme leads to sufficient reduction of the production on carbon rich soils. The evaluation will also be based on the effect of the current scheme e.g. in 2021.

State aid: The existing national schemes to take out carbon rich soils are currently in the process of being state-aid approved (SA.58791 (2020/N)). The measure funded by the recovery plan will supplement the existing national scheme.

Do no significant harm: In general, Denmark imposes strict regulation regarding land use and nature protection. This includes i.e. the Nature Protection Act aimed at the protection of existing habitats, the Planning Act regulating land use and activities. This legislation applies to initiatives such as rewetting of carbon rich soils in which all projects are subject to an examination of impacts on existing habitats, surrounding areas, infrastructure etc. This includes an obligation for all authorities to specifically estimate any potential damage to adjacent Natura2000 areas in accordance with the obligations in the Bird Protection- and Habitats Directive. Projects that are assessed not to be in compliance with relevant acts are readjusted or not executed.

Regarding the control of the funding of specific projects, it is expected that the initiative will be implemented through existing subsidy schemes with existing control mechanisms. Restored wetlands are permanently secured against conversion.

Table 1.2.1
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	Rewetting of carbon rich soils is expected to reduce emissions of greenhouse gasses. Rewetting of carbon rich soils is expected to reduce annual emissions by app. 15 tonnes CO ₂ e pr. ha. As such, the measure is considered compliant with DNSH for climate change mitigation.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	Rewetting of carbon rich soils may enhance natural hydrological dynamics allowing for improved water retention on an upland scale. The measure is expected to reduce emissions of greenhouse gasses and therefore will not increase adverse impact of the current climate and the expected future climate. As such, the remediation of contaminated soil is considered compliant with DNSH for climate change adaption.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	Taking carbon rich soils out of production reduces emissions of nitrogen to the marine waters. The measure therefore supports the improvement of the good environmental status of marine waters. The measure is considered compliant with DNSH for sustainable use and protection of water and marine resources.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	The measure is expected to have no or an insignificant foreseeable impact on circular economy, including waste prevention and recycling.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	Taking out lowland soils lowers emission of nitrogen to the marine waters. Hence, the measure is considered to support the objective of pollution prevention and control and is considered compliant with DNSH for the prevention and control of pollution to air, water or land.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition ⁵ and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	In general, the rewetting of carbon rich soils and restoration of peatlands will have a positive impact on biodiversity. Positive effects are i.a. linked to the extensification of intensive agricultural activities including fertilisation, drainage, tillage and the use of pesticides. The reestablishment of natural hydrological conditions may improve the variation and dynamics between habitats. There may be certain situations where habitats such as rich fens may be subject to an increased exposure to nutrient rich surface water due to increased flood frequency following the reestablishment of natural hydrology. Project involving the rewetting of carbon rich soils are required to undergo an examination of consequences including any impacts on existing habitats i.e. in connection to Natura 2000-habitats and KBAs. If negative impacts are identified a project may be subject to a rejection or modification. The measure is considered compliant with DNSH for the protection and restoration of biodiversity and ecosystems.

2.2.4 Organic Farming

This component includes four separate initiatives aimed at promoting organic farming. Promotion of organic farming is ensured by reforming the way in which public kitchens buy food and, in general, by supporting sustainable organic food production in Denmark through various initiatives. The initiatives also include pools for funding of e.g. marketing of organic products, promotion of export, and development & innovation projects regarding organic products.

Addressing challenges: Farming of organic produce is often more environmentally friendly than conventional farming. Experience shows that professional kitchens with a clear aim of serving organic meals often serve more plant-based meals and, as such, promote a more healthy and sustainable diet. Thus, these initiatives address environmental as well as climate change concerns. However, the awareness of the benefits of organic food production has to be improved, both in Denmark and globally, in order to make organic food the primary choice of more consumers, thereby raising demand for organic produce compared to conventionally farmed agricultural products. Promotion and marketing of organic food call for innovative solutions, which are therefore included in this initiative.

Objectives: The aim of the measure is to incentivise more farmers to make the transition from conventional to organic farming. The government has an ambition of doubling the consumption of organic products in Denmark by 2030. The achievement of that ambition relies on an expected demand-driven rise in consumption of organic products. Promoting organic food and farming helps this process underway. Moreover, the initiatives will help increase Danish export of organic agricultural goods. Reaching the target has the potential to reduce greenhouse gas emissions in Denmark by up to 0.5 Mt CO_{2e} by 2030.

Implementation: With the initiatives, investments in transitioning to organic farming will be increased by investing a further 45 m. DKK per year in 2021-2024. 10 m. DKK per year will go to an 'organic innovation centre', 20 m. DKK per year will go to 'The Foundation for Organic Farming', 10 m. DKK per year will go to transitioning public kitchens, and 5 m. DKK per year will fund development of the plant-based organic sector. The initiatives regarding public kitchens and the plant-based sector will be implemented as distinct pools of funding within 'The Foundation for Organic Farming'.

Link to reforms: In the long term, the reform on transitioning to organic farming will contribute to the overall target of reducing the emission of greenhouse gasses, nitrogen, and ammonia. The investments are consistent with the intent set out in the EU-Commission Farm to Fork and Biodiversity Strategies that target reaching 25 per cent of agricultural land under organic farming by 2030.

Target group: The target group will be public kitchens transitioning to organic food, but also farmers and consumers. Through the initiatives initiated by The

Foundation for Organic Farming, the target group will be households who are expected to demand more organic food due to the initiatives.

Timeline: As outlined in the “implementation” section, the initiatives will lead to an increase in the funding for organic transition by a further investment of 45 m. DKK per year in 2021-2024. The ambition is that the land area with organic production doubles by 2030, and the four initiatives described in this component contributes to realising that ambition.

State aid: The proposed initiatives complies with State Aid rules by belonging under the existing aid scheme, which has already been notified (cf. SA.57228 (2020/N)).

Do no significant harm: In 2007, the EU Council agreed Council Regulation 834/2007 setting out the principles, aims and overarching rules of organic production and defining how organic products should be labelled. This Regulation, still in force, is also complemented by several Commission implementing acts on the production, distribution and marketing of organic goods. New organic legislation will enter into force on 1 January 2022. The rules will reflect the changing nature of this rapidly growing sector. The new regulation is designed to ensure fair competition for farmers whilst preventing fraud and maintaining consumer trust through strengthening the control system with tighter precautionary measures and robust checks along the entire supply chain. The regulation for organic agriculture insures at least one annual inspection of each organic farm is carried out by the Danish Agricultural Agency.

Organic production is an overall system of farm management and food production that combines best environmental and climate action practices, a higher level of biodiversity, the preservation of natural resources and the application of high animal welfare standards and high production standards. This is in line with the demand of a growing number of consumers for products produced using natural substances and processes. Organic production thus plays a dual societal role, where, on the one hand, it provides for a specific market responding to consumer demand for organic products and, on the other hand, it delivers public goods contributing to the protection of the environment and animal welfare, as well as to rural development.

The Foundation of Organic Farming is a public body which is run by a board of directors appointed by the minister for food, agriculture and fisheries. The foundation is funded by the Danish government and aims to support the development and competitiveness of the organic agricultural sector. The board is responsible for the management and for distributing the subsidies in accordance with the law. The Danish Agricultural Agency performs five accounts of supervision with the administration of the foundation. This includes account and budget supervision in addition to the general supervision with the administration, the effects of the work of the foundation and an annually thematic supervision.

Given the nature of organic farming, the measure either is contributing substantially or have no or an insignificant foreseeable impact on the relevant environmental objectives. This measure is considered compliant with Do No Significant Harm for the environmental objectives, and a simplified approach to the Do No Significant Harm assessment has been taken for the measure.

Table 2.2.2
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	Organic farming have decreased greenhouse gas emissions per hectare field compared to conventional farming.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	Organic farming maintain or increase soil organic matter through multiannual crop rotation including mandatory leguminous crops as the main or cover crop for rotating crops and other green manure crops.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	Nitrate leaching is lower from organic fields than conventional agricultural fields and far less chemicals are allowed and used for plant protection. Also organic aquaculture must comply with the rules set out in the organic EU-regulation.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	The measure is expected to have no or an insignificant foreseeable impact on circular economy, including waste prevention and recycling.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	Nitrate leaching is lower from organic fields than conventional agricultural fields and far less chemicals are allowed and used for plant protection.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition5 and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	When converting conventional farms to organic farms the biodiversity in the margins of the fields increases with around 30%. Far less chemicals are allowed and used for plant protection. Because it is existing non-organic farmland that is convertet into organic farmland the activities do not lead to the conversion, fragmentation or unsustainable intensification of high-nature-value land, wetlands, forests, or other lands of high-biodiversity value. Should the non-organic farms be located in or near to biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas ('KBAs'), as well as other protected areas): their conversion to organic farming practices do not lead to the deterioration of natural habitats and the habitats of species and to disturbance of the species for which the protected area has been designated.

2.2.5 Climate technologies in agriculture

Addressing challenges: There are few cost-efficient instruments to reduce greenhouse gas emissions in the agricultural sector without lowering production output and thereby put farmers under financial strain. In order to sustain a strong,

modern and green agricultural sector that contributes to the Danish economy, employment and social coherence, significant funds are allocated to research and development of new cost-efficient solutions and technologies such as brown bio refining through the utilisation of pyrolysis technology.

Objectives: The overall objective is to accelerate the development of new technologies and solutions that can lower greenhouse gas emissions and, subsequently, can be included in the Danish National Inventory Report, thereby contributing to the green transition of the Danish and potentially the European agricultural sector. With this component, Denmark will further invest in the upscaling of the most promising technologies on the market, e.g. biorefining using pyrolysis, including upstream and downstream technologies and products. The estimated technical potential to reduce the greenhouse gas emissions in the Danish agricultural sector is 2 Mt CO_{2e} before 2030. The research in new technologies not only benefits the climate and the environment. It also benefits job creation in Denmark by contributing to Denmark and thus the EU remaining among the leaders in the world when it comes to green technologies. Thus, investing in new green technologies is also an investment in the creation of green jobs in the future. The investments are additional to other green research and development initiatives that have been initiated in component 2.7 in the Danish Recovery and Resilience Plan.

The initiative can be categorised as follow-up research of a specific new technology to reduce greenhouse gas emissions in the agriculture sector, specifically from the production of livestock.

Biorefining is a highly promising technology. It is possible to refine different kinds of biomass into an array of different bio-based products with a sustainable climate and environmental profile. The refinement of “brown” and “green” biomass is of special interest, where “brown” refers to the utilisation of organic waste and residue from the agricultural sector by converting it into products such as bio-char and bio fuels. The Danish Climate Council has estimated that if the preliminary results hold true, the technology can reduce emissions by up to 2 Mt CO_{2e} by 2030. The refinement of “green” biomass refers to converting grass and clover to proteins for humans and monogastric animals to eat as well as fibres and sugars for bioenergy and feed for ruminants.

Implementation: A 200 m. DKK grant financed by the Recovery and Resilience Facility has been allocated to the initiative in 2021-2022. When implementing the measure and assigning funds to projects, it will be ensured that there are no overlaps to the projects on e.g. brown biorefining in component 2.7 of the Recovery and Resilience Plan. This is to ensure that no projects will receive double funding.

Link to reforms: The link from the research and development initiatives to the reforms on green transition is clear. In order to be able to reduce greenhouse gas emissions in the Danish agricultural sector without reducing production output, it is necessary to research and test new technologies. At the same time, Denmark

has developed a research strategy for green research focusing among other things on agriculture. In order to reach the goal of reducing greenhouse gas emissions by 70 per cent by 2030 and realise the potential of new technologies, the research and development effort is essential.

Target group: The target group is Danish research institutions and other actors doing research and development on green technologies, which also includes front-runners from the private sector with regard to the development of brown biorefinery.

Timeline: The grant will open for applications in 2021.

State aid: Investment in support of the development of brown bio refinement will be implemented based on of existing state aid schemes under GBER with the reference SA.60955, SA.40175 (GUDP) and SA.61789 (EUDP).

Do no significant harm: Given the nature of brown bio refining the measure is considered either as significantly supporting, or to have no or an insignificant foreseeable impact the relevant environmental objectives. This measure is in general considered compliant with Do No Significant Harm for the environmental objectives, and a simplified approach to the Do No Significant Harm assessment has been taken for the measure.

Further, the results of the R&D&I process in brown bio refining are considered technologically neutral at the level of their application and the intended R&D&I does not involve any form of “brown” R&D&I.

Denmark has implemented relevant directives in national legislation including the Renewable Energy Directive 2018/2001/EU (REDII), the Air quality Directive 2008/50/EU and the Industrial Emissions Directive (Directive 2010/75/EU). All applicants are obliged to comply with national regulations and project activities are subject to inspection by the relevant national authority at local or national level. Compliance is also assessed administratively by the granting authorities (GUDP and EUDP) prior to commencement of project activities and upon project completion.

Table 2.2.3
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?	X		The measure is expected to support climate change mitigation with a coefficient of 100% given that the output of the refining process net contributes to sustainable renewable energy production and carbon sequestration in agricultural soils. As such, the measure is considered compliant with DNSH for climate change mitigation.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?	X		The measure is expected to provide for a minor improvement in climate change adaptation given that the recycling of carbon in the form of biochar to the soils will improve agricultural soils water retention capacity. As such, the brown biorefining is considered compliant with DNSH for climate change adaptation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?	X		Today, the handling and utilisation of brown biomass including livestock manure is a substantial contributor to the emission of nitrate and phosphorus to water and marine resources. The measure is expected to improve the good status or the good ecological status of fresh and ground water and to improve the good environmental status of marine waters. The measure is considered compliant with DNSH for sustainable use and protection of water and marine resources.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?	X		The measure is expected to substantially support the circular economy within agriculture given that the input used to a large extent consists of waste and crop residues origination from agriculture and that a substantial part of the output is recycled as carbon to agricultural soils. As such, it is considered compliant with DNSH for circular economy, including waste prevention and recycling.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?	X		The measure is expected to reduce emissions of pollutants from agricultural residues and livestock manures to air, water and land by refining these into usable products in the form of renewable energy and carbon for sequestration in agricultural soils. Hence, the measure is considered to support the objective of pollution prevention and control and is considered compliant with DNSH for the prevention and control of pollution to air, water or land.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition ⁵ and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?	X		The measure has no or an insignificant foreseeable impact on the protection and restoration of biodiversity and ecosystems. In this respect, the measure will not lead to activities involving the conversion, fragmentation or unsustainable intensification of high-nature-value land, wetlands, forests, or other lands of high-biodiversity value, including highly biodiverse grassland. The measure is considered compliant with DNSH for The protection and restoration of biodiversity and ecosystems.

2.2.6 Rehabilitation of industrial sites and contaminated land

Addressing challenges: The initiative addresses the challenge of large-scale soil contamination on ten former industrial sites in Denmark. Due to extensive pollution from previous production activities on the sites and disposal of waste from these industries, the contaminated sites constitute a risk for the environment. The government and parliament agreed that at least five sites, which have already undergone extensive survey, have to be prioritised, cf. the Regional Councils priority-scheme for the ten sites. However, the Regional Council still needs to survey the last five sites according to the priority scheme. Remediating the contaminated soil will remove the risk for harmful effects on surface water, groundwater, human health and nature in the areas. Some of the ten contaminated sites, which are located near coastal waters, constitute a risk for the marine environment near the sites. Rehabilitation of the sites makes recreational use possible in rural areas. Furthermore, rehabilitation of industrial sites and contaminated lands will contribute to local economic activity and restore the environmental status around the sites.

Objectives: The aim of the initiative is to initiate the removal of the risk that the ten large-scale soil contaminations constitute and to rehabilitate the contaminated lands. Furthermore, rehabilitation of the areas provide a permanent improvement of the local environment while creating economic activity in rural areas.

Implementation: The initiative will be implemented by granting a subsidy to the Danish Regions (administrative entity on regional level) which holds the administrative responsibility for contaminated soil. The grant will be given on the condition that the Regions submit a project description in order to ensure cost effectiveness and focus on prioritised areas. In this process, the Danish state and Danish Regions will examine the possibilities of private co-funding in order to increase the speed of the effort. Furthermore, the government plans to evaluate the effort in 2023 in cooperation with parliament.

Target Group: The target group of the initiative is the Danish Regions, in which the former industrial sites are located.

Timeline: The Danish government plans to agree on a subsidy scheme with Danish Regions in May 2021. Immediately thereafter, the Regional Councils begin the process of prioritising needed actions for the specific sites according to site-status and characteristics, e.g. prepare tenders, agreeing on terms with contractors. In 2023, the government will evaluate the initiative with parliament and decide on whether further governmental intervention is necessary in order to ensure the remediation of the contaminated sites. The rehabilitation of the industrial sites and contaminated land is completed in steps; the first area is expected to be remediated in 2024, three areas in 2026/27, while the remediation of the last area will be completed in approximately 2033.

State aid: The rehabilitation of contaminated land will not constitute state aid in the sense of Article 107 (1) TFEU since no aid is given to any particular industry.

Entrepreneurs and consultants are contracted to do part of the remediation. The normal regulation of public procurement will cover these cases. The rehabilitation process will take place under the Act of Contaminated Soil that has been in force since 2000. The principle in this act is that the polluter should pay for the remediation process. Public financed remediation does only occur in the cases where it is not possible to make the polluter pay. The remediation process will reduce the risk of the soil contamination of ground water, surface water or the present use of the land. The public financed remediation process is not expected to increase the value of that particular site, since it does not change the functions that the site can be used for. If the remediated industrial land is to be developed to a more sensitive use in the future, the development and further remediation of the land for e.g. housing will be the cost of the property developer.

Do no significant harm:

Table 2.2.4
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>The measure is expected to have no or an insignificant foreseeable impact on climate change mitigation, since the remediation of soil contamination is expected to be conducted with in-situ remediation methods.</p> <p>Hence, a reduction of greenhouse gas emissions is foreseen due to less transport of excavated soil than with ex-site methods and a reduction of heavily contaminated excavated soil that needs to be treated ex-situ on existing thermic plants constructed for incinerating non-recyclable hazardous waste/soil.</p> <p>As such, the measure is considered compliant with DNSH for climate change mitigation</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	<p>The measure is expected to have no or an insignificant foreseeable impact on climate change adaptation given the nature of the measure, which is to remediate contaminated sites and prevent harmful effects from contaminated soil on e.g. people and nature. The remediation only last for a limited time and is not expected to lead to an increased adverse impact of the current climate and the expected future climate.</p> <p>As such, the remediation of contaminated soil is considered compliant with DNSH for climate change adaptation.</p>
<p>The sustainable use and protection of water and marine resources.</p> <p>Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?</p>		X	<p>Today the ten sites of contaminated soil considered in this measure constitute a risk to either e.g. surface water, marine water or groundwater.</p> <p>The remediation of the contaminated sites is expected to remove the harmful effects of the polluting chemicals and harmful substances, and the measure is expected to support sustainable protection of water and marine resources with a coefficient of 100 per cent.</p> <p>The measure is expected to improve the good status or the good ecological potential of bodies of water, including surface water and groundwater, and to improve the good environmental status of marine waters. The measure is considered compliant with DNSH for sustainable use and protection of water and marine resources.</p>
The transition to a circular economy, including waste prevention and recycling.		X	<p>The measure is expected to have no or an insignificant foreseeable impact on circular economy, including waste prevention and recycling related to the direct and primary indirect effects of the measure across its life cycle. The activity will be carried out in accordance with Danish environmental legislation on disposal and use of contaminated soil.</p>

<p>Is the measure expected to:</p> <p>(i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or</p> <p>(ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or</p> <p>(iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>	<p>The remediation of soil contamination is expected to be conducted with possible in-situ remediation methods with on-site treatment of waste water. It is not expected to lead to a significant increase in the generation, incineration or disposal of waste. Restoration and re-establishment of remediated sites is expected to happen in accordance with the surrounding environment.</p> <p>Given the nature of the measure, it is considered compliant with DNSH for circular economy, including waste prevention and recycling.</p>
<p>Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?</p>	<p>X The measure prevents emissions of pollutants from contaminated sites into air, water or land by remedial measures. Hence, the measure is considered to support the environmental objective with a coefficient of 100 per cent, and as such is considered compliant with DNSH for the prevention and control of pollution to air, water or land.</p>
<p>The protection and restoration of biodiversity and ecosystems.</p> <p>Is the measure expected to be:</p> <p>(i) significantly detrimental to the good condition⁵ and resilience of ecosystems; or</p> <p>(ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>	<p>X The activity that is supported by the measure has no or an insignificant foreseeable impact on this environmental objective, taking into account both the direct and primary indirect effects across the life cycle. The operation is intended to prevent e.g. harmful effects on nature such as biodiversity-sensitive areas, including the Natura 2000 protected areas and sustain a good ecological and chemical condition in surface waters. This is in accordance with Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.</p> <p>The measure is considered compliant with DNSH for The protection and restoration of biodiversity and ecosystems.</p>

Green and digital dimensions of the component

Green transition

The initiatives in this component on promoting a greener agricultural sector and improving the environment target the climate- and environment challenges from several angles and perspectives. The initiatives lower the greenhouse gas emissions from the agriculture sector, which is crucial in realising the Danish climate target of a 70 per cent reduction. The plan utilises well-known and cost-efficient instruments to lower greenhouse gas emissions without lowering production output. Furthermore, organic farming is promoted, which targets both greenhouse gas emissions as well as environmental issues. The initiatives targeted the agricultural sector lowers the greenhouse gas emissions by 0.1 Mt CO₂e in 2030.

The climate action plan also contributes to an improvement of the quality of the aquatic environment by lowering the emission of nitrogen as carbon rich soils are not only emitting greenhouse gases. By cultivation they are also more likely to emit nitrogen into the aquatic environment. Thus, the reform on carbon rich soils also contributes to improving the aquatic environment. Furthermore, the environment is improved by rehabilitating industrial sites and contaminated land. This eliminates the risk of chemicals and hazardous waste being spread into forests or the sea.

Furthermore, the climate action plan contributes to the green transition by research and development of new technologies, which have the potential of reducing the emission of greenhouse gasses in the future. This includes documenting

the effect of existing technologies and scaling up known technologies. Thus, the investments in research and development contribute to the green transition on a short-term basis as well as in the long term. The Recovery and Resilience Facility funding makes it possible to advance investments in green research and development and heavily boost investments in green transition promptly. The investments made possible by the Recovery and Resilience Facility funding will in time pay off in the form of job creation and constitute a large economic growth potential. Furthermore, the advancement of research in green technologies will make a lasting impact on the green transition, as new green technologies will be implemented earlier than what would have been the case without the Recovery and Resilience Facility funding.

Digital transition

This component is primarily focused on the green transition. Thus, the digital transition has been addressed in other components of the Recovery and Resilience Plan. However, there will be focus on a smooth and digital implementation of initiatives.

Financing and costs

Table 2.2.5
Overview of RRF-funding for the agriculture and environment component

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
Carbon rich soils	660	165	165	165	165	-
Organic Farming	80	20	20	20	20	-
Organic transition of public kitchens	40	10	10	10	10	-
Organic Innovation Centre	40	10	10	10	10	-
Plant-based organic projects	20	5	5	5	5	-
Climate technologies in agriculture	200	100	100	-	-	-
Rehabilitation of industrial sites contaminated land	280	50	50	50	55	75
In total	1,320	360	360	260	265	75

The initiative consists of initiatives of 1,320 m. DKK of which all is financed by Recovery and Resilience Facility. *Table 2.2.5* provides an overview of the funding. The measures in this component are financed primarily by funds from the RRF with the rehabilitation of contaminated land being an exemption as it is also partly financed by government or private funding. The distribution of the CAP is by April 30 2021 not yet decided upon politically, and therefore it is not included in the financing of the measures in this component.

Carbon rich soils

The initiative will be implemented through existing subsidy schemes (carbon rich soil) providing compensation to support farmers rewetting and taking carbon rich

soils out of production and existing scheme to provide land consolidation (MUFJO). The cost are based on experience with figures from existing low land schemes incl. national schemes. Cost pr. hectare: 1) Feasibility studies (9,300 DKK) 2) Project establishment (32,500 DKK) 3) Compensation (86,200 DKK) 4) Land distribution (5,000 DKK). Total cost on average pr. hectare: 133,000 DKK. The estimated cost of land consolidation is based on figures from experience with the existing MUFJO-scheme.

Organic Farming

Funds for the organic sector will be implemented through the Foundation for Organic Farming. Projects are supported on an annual basis through one-year grants. An application round is carried out yearly, and the projects are prioritised after the closing of the round. The Ministry for Food, Agriculture and Fisheries annually performs account and budget supervision of The Foundation of Organic Farming. The overall aim is to support the development and competitiveness of the organic sector by strengthening The Foundation for Organic Farming.

The sales of organic food has risen steadily in Denmark during the past fifteen years. This budget allocation is similar to the budgets of previous efforts to develop the domestic market for organic food sales in Denmark in The Foundation of Organic Farming. For this reason, it is expected to be a fitting and effective budget in regards to the aim of the pool.

Organic transition of public kitchens

Funds for transitioning of public kitchens will be implemented through the Foundation for Organic Farming. The funds will be dedicated to a wide-ranging suite of educational programmes and support curriculums facilitating the transition to more organic, healthy and sustainable food in public kitchens.

Organic Innovation Centre

Funds for innovation projects will be transferred to a new Innovation Centre. The purpose of the Innovation Centre is to conduct research, experiments and development within organic agriculture and food and to collect and disseminate knowledge about organic products to create development for the benefit of the agricultural sector in a technically, economically and environmentally optimal way in accordance with good research practice and independent of other interests. The programs, including project descriptions and budgets, will be approved by the Danish Agricultural Agency. The overall aim is to support organic innovation projects that include research, experiments and development of the organic sector.

Plant-based organic projects

Establishment of a yearly pool in 'The Foundation of Organic Farming' that aims to support the development of a more organic, plant-based food system from farm to fork.

Climate technologies in agriculture

The possibility of co-financing from the EU Recovery and Resilience Facility has contributed to the Danish Government and Parliament decision to increase investment in research and development in emerging technologies with large potentials for synergy between CO₂e reductions in the energy sector and carbon sequestration in agriculture and also improved circularity of carbon and nutrients from agricultural residues and waste.

The measure has been developed in partnership and collaboration with stakeholders, including the Government partnership with industry on climate and will provide for the establishment of 4-10 research and development facilities including pilot plants and the associated research and development work.

It is expected that the measure will bring the technology to a stage ready for commercial investment and implementation in 2023 and make a technical potential of up to 2 Mt of CO₂ reductions feasible towards 2030.

Rehabilitation of industrial sites and contaminated land

Co-financing from the EU enables Denmark to speed up the process of cleaning the large-scale cases of soil pollution in Denmark.

Tabel 2.2.6
Measurable effects of the agricultural reform

Reduction	Mt CO ₂ e per year	
	2030	Ton N per year
Carbon rich soils	0.1	198
Organic farming	-	-
Climate technologies in agriculture	-	-
Rehabilitation of industrial sites and contaminated land	-	-
In total	0.1	198

The expected costs are estimated by the Danish Regions and are assessed based on the present knowledge of the different large-scale soil contaminations. The public clean-up of contaminated soil is the responsibility of the regions. The uncertainty of costs and time plan is greater for the sites that are in the early stages of investigation and clean up. Experience shows that costs and time plans will change during the clean-up process.



Component 2.3

Energy Efficiency, Green Heating and Carbon Capture and Storage

To achieve the ambitious EU and Danish climate reduction targets in the most cost-effective way, energy efficiency improvements must be accelerated – especially in buildings. As highlighted in the Commission's *Renovation Wave*, investing in buildings can also inject a much-needed stimulus in the construction ecosystem and the broader economy in alignment with the EU Green Deal and COVID-19 recovery.



The recovery of the European economy provides a unique opportunity to invest in a greener future. The Danish focus is to prioritise measures that will kick-start a green and rapid recovery.

To this end, Denmark has prioritised additional actions, based on the recommendations by the Danish climate partnerships on energy efficiency to generate social, environmental, and economic benefits by stimulating job creation and growth potentials.

Simultaneously, these actions contribute to the green transition by reducing greenhouse gas emissions by 0.1 Mt CO_{2e} in 2025.

With technical reductions potential of 4-9 Mt. CO₂ by 2030, carbon capture and storage (CCS) is a key tool to reach the carbon reductions targets. The development and demonstrations of possibilities to store CO₂ in depleted oil and gas fields under the North Sea is a crucial element to secure the full CCS value chain and holds a potential to store CO₂ from other EU Member States.

Description of the component

Box 2.3.1

Energy efficiency, green heating and carbon capture and storage: Follow-up on recommendations by the Danish Climate Partnerships

Policy area/domain:

Climate policy, energy efficiency, conversion of heat supply, building renovation, construction/housing.

Objective:

The initiatives in component 3 are aligned with the climate partnerships' recommendations on the green transition. The initiatives in component 3 furthermore mitigate implications by COVID-19 by stimulating sustainable growth potentials and job creation. Energy efficiency initiatives and initiatives to promote a green heating sector will reduce greenhouse emissions by 0.1 Mt in 2025. Other initiatives such as CCS can help foster future potential reductions.

- 1) *Local job creation and growth by investing in renovation, energy efficiency and CCS sites:* The financial impact of the COVID-19 pandemic is mitigated by new investments in renovation and measures to ensure energy efficiency in industry, private households and public buildings. The initiatives will increase the number of local jobs, stimulate local investments, foster the adoption of digital technologies and improve the resilience and energy efficiency of the building stock.
- 2) *Coherence and resilience:* Energy efficiency measures and renovation of the existing building stock will improve the indoor environment and reduce energy bills and consumption for consumers and businesses as well as the public sector. Furthermore, CCS is a prerequisite for reaching net zero emission targets – national and European – in a cost efficient manner without jeopardizing standard of living and social equality.
- 3) *Green and digital transition:* Investments in clean and efficient use of energy, green heating, CCS and establishment of new development and demonstration programs will contribute to reducing Danish greenhouse gas emissions by 70 per cent by 2030, compared with 1990, and achieve climate neutrality by 2050 at the latest. Investments in energy efficiency measures can also encompass investments in a better digital control of energy consumption in housing and in industry.

Investments to support the objectives

- I. Replacing Oil Burners and Gas Furnaces: 645 m. DKK
- II. Energy Efficiency in Industry: 315 m. DKK
- III. Energy Savings in Public Buildings: 315 m. DKK
- IV. CCS Storage Potential: 200 m. DKK
- V. Energy Efficiency in Households: 565 m. DKK

Estimated costs:

Approximately 2,040 m. DKK in total in the period 2021-2025, of which 100 per cent are covered by the Recovery and Resilience Facility. All of the proposed initiatives are additional and require new funding.

Main challenges and objectives

2.3.1 Main challenges

The green transition requires better solutions, new technologies, and behavioural changes in various aspects of and across sectors and industries. It also requires implementation of new greenhouse gas mitigation technologies such as CCS. The challenges mentioned below relate to a segment of these. E.g. conversion of heat supply and renovation of the existing building stock to make them more energy and resource efficient.

Building stock with poor energy rating: Some of the existing buildings in Denmark were built in a time period, where there was less of a focus on energy efficiency. The vast majority of the current building stock will also be in use in 2050. Therefore, implementation of energy efficiency measures and renovation in existing buildings can support the efforts to reach the Danish and European climate targets by reducing energy consumption in buildings and phasing out fossil fuels for heating purposes. Energy renovations can also reduce the need for new energy infrastructure and create better buildings through improvements of the indoor climate.

Usage of fossil fuels for heating: In Denmark there is a widespread use of district heating, which is almost entirely based on renewable energy sources like wood pellets, wood chips, etc. Some households and businesses use oil burners or gas furnaces as the main heating source. Households with oil burners are typically placed in rural areas and small towns with an overrepresentation of low-income households. It is a challenge to phase out and convert oil burners and gas furnaces to alternative and green energy sources like heating pumps etc., as it can require rather large up-front investments.

Carbon Capture and Storage – need for development and demonstration of storage sites in depleted oil and gas fields: The Danish government foresees the use of CCS as a crucial component of Danish climate policy. One current obstacle to this objective is the need for demonstration of possible storage sites for CO₂ in depleted oil- and gas fields. This requires further analyses, testing of injections wells and demonstration of storage possibilities.

2.3.2 Objective

The Danish Government has initiated 13 climate partnerships in cooperation with key stakeholders from the Danish business community. The objective of the Climate Partnerships is to help Denmark reach the goal of reducing the greenhouse gas emissions with 70 per cent by 2030 (compared to 1990). To fulfil this goal, key stakeholders from a wide range of sectors across Denmark have taken responsibility and an active role in the partnerships.

The 13 climate partnerships each represent an industry and have presented more than 400 recommendations to the Danish government altogether. The Danish government has already implemented many of these recommendations in various climate deals comprising the government's climate action plan.

Furthermore, and as part of the ongoing collaboration with the business community, the Danish Minister of Finance has asked the climate partnerships to select the most urgent decisions and initiatives that would help stimulate the economy by creating new growth potentials and jobs, and at the same time contribute to the green transition.

Jobs and growth: Investing in energy efficient measures and the renovation of buildings will support the construction sector and subcontractors. Renovation works are labour-intensive and create jobs temporarily in supported businesses.

Because investments are often rooted in local supply chains, they can furthermore generate demand for energy and resource-efficient equipment and bring long-term value to properties. For these reasons, energy efficiency, including the renovation of buildings, is a priority to support the economic recovery.

There has been great progress and development in heating and insulation technologies that are used as an integrated part of today's construction projects that can be integrated in older buildings, which do not comply with modern energy efficiency standards.

Supporting CCS development and demonstration projects is an important step in order to create a solid foundation for investments in cost-efficient, operational storage sites. This holds a significant potential for creating new jobs in e.g. the transport sector as well as for workers from the traditional oil and gas industry.

Coherence and resilience: Subsidy schemes targeted at both public sector buildings with poor energy labels and energy efficiency measures in the industrial sector can support the economic recovery across Denmark. The additional funds from the recovery fund will also promote improvement of welfare institutions and are expected to be allocated to renovation of e.g. day care institutions, schools, and hospitals. This will support societal coherence and resilience by ensuring facilities to deliver high quality public services.

Renovation of buildings and conversion to sustainable heating sources will not only reduce the emissions of greenhouse gases but also reduce energy bills for households, private enterprises, and public sector building owners. A cost-efficient and environmentally safe green transition is important to ensure civil support and social coherence.

Furthermore, the demographics of the expected job effects will also contribute to national coherence and resilience, substituting jobs in the oil and gas sector.

Green transition: Investments and subsidy schemes targeted energy efficiency measures, conversion of oil and gas burners to sustainable heating sources and renovation of households, industries, and public buildings will reduce energy consumption and greenhouse gas emissions.

Preliminary investigation, research, and analyses exhibit promising results for storage in depleted gas fields in the Danish part of the North Sea. This holds potential for both Danish and European storage.

In addition, there is a potential for increasing the use of digital tools in order to ensure optimal operation of buildings and maintenance of building systems as well as integration of renewables in buildings, which will support the digital transition.

Furthermore, the Danish government will initiate and extend different development and demonstration programs that will address the twin transitions and contribute to an even further reduction of greenhouse gases in the coming years within some of the high-emission sectors and industries such as the transport and maritime sector.

The policies presented below focus on clean energy supply across the economy including measures targeted towards industry, production and consumption by:

- (i) proposing more ambitious policies and measures;
- (ii) substantially increasing the level of ambition for energy efficiency. Thus, the initiatives are consistent across the different areas of the National Energy and Climate Plan and lead to further reductions of greenhouse gas emissions.

Moreover, the initiatives delivers on the Country Specific Recommendations, as Denmark will pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability while also enhancing green investment. The initiatives will front-load new but mature and green public investment projects and promote green private investment in order to foster the economic recovery. Investments are targeted the green and digital transition, in particular on clean and efficient production and use of energy.

Summary description of the reforms and investments of the component

Overall, the Danish government is proposing a subsidy of approximately 2.040 m. DKK in total in 2021-2025 to increase energy efficiency in buildings and in industry, green heating and CCS.

The subsidies will consist of a number of initiatives supporting a transition towards green energy and an increased energy efficiency in buildings and in industry. Among these are competitive subsidy schemes related to public sector buildings, and increased support schemes for replacing oil burners and gas furnaces with electric heat pumps and district heating to further this goal.

2.3.3 Replacing Oil Burners and Gas Furnaces

Addressing challenges: Oil and natural gas are sought to be phased out of the heating system and replaced with electric heat pumps and district heating from renewable sources. To speed up the phasing out of oil burners and gas furnaces and

reduce the cost of consumers of the conversion to green heating, funds are allocated to subsidies for conversions to green solutions. For instance, allocated funds could be used to subsidize heat pumps.

The initiative follows the objectives of the European Green Deal, which also aims to expand power production from renewable energy complemented by the rapid phasing out of coal and by the deployment of an increasing amount of renewables in the energy system. Moreover, the initiative supports the *Renovation Wave* recommendation of addressing energy efficiency of private buildings.

Objectives: The aim is to speed up the removal of oil burners and gas furnaces as heat sources and support the transition to heating based on green and sustainable sources while simultaneously promoting energy renovations.

The measure supports three subsidy schemes for replacement of oil burners and gas furnaces. The schemes already exist in Denmark and contain 984 m. DKK from national funds from 2021-2025 (excluding derived tax loss) with 900 m. DKK stemming from the climate agreement for energy and industry. The total effort for phasing out oil and gas boilers in the climate agreement is estimated to reduce CO₂e emissions by 0.5 Mt in 2025 and 0.7 Mt in 2030.

With the Recovery and Resilience Facility, these initiatives are increased by 645 m. DKK in the period 2021-2025 (including derived tax loss) to further incentivize the replacement of heating by oil burners and gas furnaces with renewable energy sources in residential, commercial and public buildings. This is expected to reduce CO₂e emissions by a further 0.04 Mt by 2025. The complementary Recovery and Resilience Facility funding will ensure the increased support and thus more green house gas reductions. Scaling up already an existing scheme with additional funds is regarded the most cost-efficient use of the funding.

The proposal is also expected to mitigate pollution, create labour-intensive renovation jobs, support local supply chains, while generating demand for highly energy and resource-efficient equipment, and bring long-term value to properties. This is achieved by potentially lowering energy bills while boosting the construction sector and support SMEs and local jobs.

Furthermore, the scaling up of this support scheme accommodates the recommendations of the National Energy and Climate Plan and the Country Specific Recommendation on particularly focusing investments on clean and efficient production and use of energy.

Finally, an existing setup is considered optimal due to the existing state aid allowance. The initial experiences from the introduction of the subsidy scheme for energy efficiency in buildings in October 2020 show that there has been great interest in the scheme.

It is expected that an increase of the funds will accelerate the conversion to sustainable heating sources and support energy renovations.

The application of the support scheme for replacing oil burners and gas furnaces are distributed into the following three sub-schemes:

I. Sub-scheme for district heating ("Fjernvarmepuljen"): Provides a subsidy to expand district heating grids into new areas. Each project earns a subsidy at 20.000 DKK per converted oil burner or gas furnace that constitute "the minimum connection". "The minimum connection" is the number of converted oil and gas heated households that bring balance in the business economy of the project. The pledge for a subsidy is given in advance of the physical establishment and the subsidy is paid based on the actual number of converted households, though not above the pledge. The subsidy is paid to the district heating companies that redistribute it to the consumers. It is expected that the subsidy will be used to lower the costs for those consumers who are connected to the district heating grid, because it can induce a higher connection share to the district heating grid and provide a better business case for district heating.

II. Sub-scheme for decoupling ("Afkoblingsordningen"): When decoupling from the gas network, the Danish state gas distribution company EVIDA charges a fee of approx. 8.000 DKK to cover the cost of decoupling. With this subsidy scheme, a finite group of households can be exempted from the fee.

III. Sub-scheme for scrapping ("Skrotningsordningen"): Gives a subsidy for companies that offer heat pumps on subscription for private year-round housing. The scheme is designed to support citizens who wish to convert to a heat pump but who have limited financing opportunities for example because of low property values. The subsidy will amount to 25.000 DKK per heat pump.

The initiatives are expected to reduce greenhouse gas emissions by 0.04 Mt CO_{2e} in 2025. The decommissioning of the remaining oil burners and gas furnaces must be considered in the context of the fact that many gas furnaces will still be operational in 2030. Given the subsidy, more gas furnace owners will have a financial incentive to convert to district heating or a heat pump when, or even before, the gas furnace breaks down.

By 2030, there will be few oil burners left, which may be difficult to decommission. The difficulty arises due to the fact that for the oil burner owners in question, there can be a great difficulty and large costs associated with changing the type of heating, despite large average private economic benefits of replacing the oil burners.

It is possible for all households to apply for the schemes and the schemes are targeted various income groups. Most oil burners are located in rural areas and small towns with an overrepresentation of low-income households and low property

values. The subsidy scheme would make it financially viable for such households to replace an oil burner, e.g. with a heat pump.

In their priority recommendations to the Danish government, the Climate Partnership of energy and supply, production companies, construction and the financial sector have emphasized that further measures should be taken aiming at individual heating and energy efficiency. Increasing the existing pools will accommodate this. Moreover, it will comply with the National Energy and Climate Plan and the Country Specific Recommendation providing clear policies and savings through this measure to meet the potential for energy efficiency in the sector.

Implementation: The support schemes will be managed by the Ministry of Climate, Energy and Utilities in coordination with other relevant ministries.

Funds have been allocated for replacing oil burners and gas furnaces with electric heat pumps up until 2026, while the funds for district heating are allocated from 2021-2023. This distribution is due to an expectation of the demand for the different sub-schemes. Furthermore, it is taken into consideration that it takes time to expand the district heating network (typically between 1 to 5 years), which means that it is advisable to focus on expanding this in the early 2020s.

State Aid compliance: The support scheme for scrapping individual oil burners or gas furnaces and replacing them with heat pumps is group-exempted from EU state aid regulations under GBER article 41 regarding investment aid for the promotion of energy from renewable sources (SA.59221).

The Danish Energy Agency has implemented and notified the support scheme for aid to projects rolling out district heating schemes in accordance with Article 46 of the General Block Exemption Regulation regarding investment aid for energy efficient district heating and cooling (SA.61697).

The temporary scheme, where households can be exempted from the fee related to decoupling from the gas system does not constitute state aid within the meaning of Treaty on the Functioning of the European Union, since it targets households without economic activity on the address in question. It is thus not covered by EU state aid rules.

Target group: Remaining households with gas furnaces or oil burners in operation and residential buildings in need of energy renovation. Households with oil burners are typically located in rural areas and small towns with an overrepresentation of low-income households.

Timeline: The additional means will be allocated to eligible applicants from 2021.

Do No Significant Harm:

Table 2.3.1
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	The activities will not lead to significant greenhouse gas emissions. The replacement of oil burners and gas furnaces with electric heat pumps and district heating leads to a <i>reduction</i> in greenhouse gas emissions. The measure thus supports this objective substantially. It should be noted that the subsidy scheme for district heating supports deployment of district heating grids in new areas – not the facility producing heat. Furthermore, only energy efficient district heating grids are eligible meaning they have a heat production based on at least 50% renewable energy, 50% waste energy or 75% cogenerated heat or 50% of a combination of such energy and heat.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	This initiative is not foreseen to lead to increased adverse impacts requiring additional climate change adaptation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	This initiative is not foreseen to affect the ecological state of waterbodies and marine resources.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	This initiative is not expected to result in inefficiencies in use of material or natural resources.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	Significant emissions of pollutants to the environment are not foreseen by any of the initiatives or by the activities supported by the subsidy schemes.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	Adverse effects on biodiversity and ecosystems are not expected as a result of any of the initiatives including the activities supported by the subsidy schemes.

2.3.4 Energy efficiency in industry

Addressing challenges: Green transitioning and energy efficiency of the industry's fossil production are important elements in the green transition of society. However, the current incentives for the industry to switch away from the use of fossil energy and to improve energy efficiency in processes are not fully financially

sufficient for all companies. Thus, the subsidies are targeted this transition in order to incentivize businesses to convert to more energy efficient processes etc.

The initiative follows the objectives of the European Green Deal, which also aims to expand power production from renewable energy complemented by the rapid phasing out of coal.

Objectives: The initiative will speed up energy efficiency measures and transition to green energy in industry, and lead to a reduction in greenhouse gas emissions.

The measure supports a subsidy scheme for energy efficiency in industry. The scheme already exists in Denmark and contains 2,400 m. DKK from national funds from 2021-2025. It is estimated that these funds will have a CO₂e reduction effect of 0.1 Mt CO₂e in 2025 and 0.2 Mt of CO₂e in 2030.

The existing subsidy scheme for energy efficiency in industry is supplemented with an additional 315 m. DKK from the Recovery and Resilience Facility. The additional funds will help ensure that the full potential for the scheme is reached in the period 2022-2024 and lead to a reduction of another 0.03 Mt CO₂e in 2025 and in 2030. Scaling up an already existing scheme with additional funds is regarded as the most cost-efficient use of the Recovery and Resilience Facility funding.

Furthermore, the scaling up of this support scheme accommodates the recommendations of the National Energy and Climate Plan and the Country Specific Recommendations as focusing investment on clean and efficient production and use of energy. In addition, the subsidy scheme for energy efficiency in industry is a substantial part of the Danish contribution towards fulfilling the national energy savings requirements of the Energy Efficiency Directive.

The initiative will enhance projects and programmes that ensure long-term value production while creating labour-intensive jobs, support local supply chains, while generating demand for highly energy- and resource-efficient equipment. In addition, it will result in lower energy bills, while boosting the construction sector and supporting SMEs and local jobs.

In their priority recommendations to the Danish government, the Climate Partnership of production companies, construction and the financial sector have recommended that further measures should be taken to increase energy efficiency, which is why Denmark is proposing this initiative. Moreover, it will comply with the National Energy and Climate Plan and the Country Specific Recommendations, providing clear policies and savings through this measure to meet the potential for energy efficiency in the sector.

Implementation: The Energy Agency, under the Ministry of Climate, Energy and Utilities, is managing the subsidy scheme for energy efficiency. The scheme

targets energy savings in all private businesses and the funds are allocated to the applicants after a competitive process based on a criterion of highest energy savings pr. received subsidy. With the Climate Agreement of 2020 projects with a conversion of fossil fuels to electricity receive a competitive advantage in the allocation process. The maximum level of subsidy is set at 0.07 DKK per saved kWh over the additional lifetime of the individual savings achieved. In order to receive the subsidy the applicant must carry out projects that result in energy savings in the final energy consumption of the applicant company. There are five annual application rounds. Businesses will have to apply for support under the scheme prior to project implementation. Payments are granted subsequent to project implementation and depends on documented effects.

The Danish subsidy scheme for businesses fulfils the general state aid requirements as laid out in chapter III in the General Block Exemption Regulation and more specifically is reported under Article 38 of the Regulation. The Scheme is therefore considered compatible with the internal market in accordance with Article 107(3) of the Treaty on the Functioning of the European Union and therefore to be exempted from the notification requirement of Article 108(3) of the Treaty on the Functioning of the European Union.

Target group: Private-owned production, trade and service companies, including agriculture, horticulture and fishery. Subsidies are distributed to projects that reduce the overall final energy consumption in Denmark.

Timeline: The increased support schemes and additional means will be allocated to eligible applicants from primo 2022.

Do No Significant Harm:

Table 2.3.2
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>The activities are not foreseen to result in significant greenhouse gas emissions.</p> <p>The subsidy scheme for energy efficiency in industry is expected to reduce greenhouse gas emissions by supporting the conversion from fossil fuels to electricity and projects that reduce the need for fossil fuels. It therefore supports this objective substantially.</p> <p>The subsidy scheme does not include subsidy to any investments that are related to district heating networks.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	This initiative is not foreseen to lead to increased adverse impacts requiring additional climate change adaptation.
The sustainable use and protection of water and marine resources.		X	This initiative is not foreseen to affect the ecological state of waterbodies and marine resources.
<p>Is the measure expected to be detrimental:</p> <p>(i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or</p> <p>(ii) to the good environmental status of marine waters?</p>			
The transition to a circular economy, including waste prevention and recycling.		X	This initiative is not expected to result in inefficiencies in use of material or natural resources.
<p>Is the measure expected to:</p> <p>(i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or</p> <p>(ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or</p> <p>(iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>			
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	<p>Significant emissions of pollutants to the environment are not foreseen by the initiative or by the activities supported by the subsidy schemes.</p> <p>The subsidy scheme for energy efficiency in industry supports the shift away from fossil fuels and will thus lead to lower air pollution.</p>
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be:		X	Adverse effects on biodiversity and ecosystems are not expected as a result of any of the initiatives including the activities supported by the subsidy scheme.
<p>(i) significantly detrimental to the good condition and resilience of ecosystems; or</p> <p>(ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>			

2.3.5 Energy savings in public buildings

Addressing challenges: Many public buildings are not energy efficient and some still rely on fossil fuels for heating purposes. Around two-thirds of municipal and regional buildings have a poor energy performance. In order to strengthen energy renovations in public sector buildings, the Danish government is investing in en-

ergy savings in municipal and regional buildings by renovation of schools, retirement homes, nurseries and hospitals etc. and phasing out of oil burners and gas furnaces.

Thus, this is an initiative in line with the European Green Deal focusing on boosting the efficient use of energy and other resources while also decarbonizing the energy sector and ensuring energy efficient buildings. Moreover, the initiative supports the *Renovation Wave* by extending targeted energy efficiency measures in public buildings on the municipal and regional level, which are not covered by the obligations in the Energy Efficiency Directive. This is done by incentivizing energy renovations of public sector buildings while boosting the construction sector and supporting SMEs and local jobs.

Objectives: The measure supports a subsidy scheme of 315 m. DKK, which is targeted energy savings in public buildings. The subsidy will focus on energy renovations in regional and municipal buildings with the lowest energy performance certificate standards (D-G) as well as buildings that are heated by oil burners and gas furnaces. It is estimated that the effort can reduce greenhouse gas emissions by 0.004 Mt CO_{2e} in 2025 and 2030. The initiative will also help achieving additional energy savings by 2030 as recommended by the Commission based on the review of the Danish National Energy and Climate Plan.

Strengthening the opportunities for energy renovations will create labour-intensive building renovation jobs and support local supply chains while generating demand for highly energy and resource-efficient equipment. Additionally, it will bring long-term value to properties.

This measure is new and not an existing part of the current Danish support schemes, and will thus depend on Recovery and Resilience Facility funding. It is regarded as an efficient tool in order to accommodate the recommendations of the National Energy and Climate Plan and the Country Specific Recommendations as focusing investment in particular on clean and efficient production and use of energy.

It has been taken into consideration that buildings with a poor energy performance and/or oil burners or natural gas furnaces are the buildings that will benefit the most from an energy renovation and contribute the most to energy savings and CO₂ reductions. Part of the funds will be targeted digital solutions and intelligent control of energy consumption in buildings with energy management systems based on data.

In their priority recommendations to the Danish government, the Climate Partnerships for production companies, construction and the financial sector have recommended that further measures aimed at energy efficiency should be taken. The initiative will thus accommodate the partnerships' recommendation.

Moreover, it will comply with the National Energy and Climate Plan and the Country Specific Recommendations providing clear policies and savings through this measure to meet the potential for increased energy efficiency in the sector.

In addition, a subsidy scheme for energy renovations in public buildings could also contribute to the fulfilment of the Danish contribution to the energy efficiency obligation in the Energy Efficiency Directive.

Implementation: The Danish Energy Agency will be managing the subsidy scheme for energy savings in collaboration with the relevant ministries. The subsidy scheme will be available for all municipalities and regions. The design of the subsidy scheme for energy savings in existing public buildings at local and regional level is still under development, including features like the minimum and maximum grant size for each project. The minimum and maximum grant size will be set in order to ensure that the renovations will at least be medium-depth level renovations. The objective for the subsidy scheme is to target, but not limited to, public infrastructure such as hospitals, schools etc. Among other considerations, it will be designed to comply with EU state-aid rules etc. As the scheme is limited to municipally and regionally owned and used buildings, it is considered possible to implement the scheme so that the subsidy not will constitute State aid within the meaning of Article 107 (1) Treaty on the Functioning of the European Union.

The covered building stock will be delimited so that the subsidy can only be granted to energy improvement projects in those of the municipalities and regions' buildings that house activities of a non-economic nature (one of the cumulative criteria in the state aid assessment). It is found possible under state aid law to determine with sufficient clarity which of the municipalities and regions' activities that can be considered as economic and non-economic, respectively. As the vast majority of the municipalities and regions activities are of a non-economic nature, this is also considered a sustainable solution that should not significantly reduce the range of the scheme. For the administration of the scheme there will be developed a non-exhaustive list of activities that will not involve economic activity and for which subsidies can be granted.

Target group: Buildings owned and used by municipalities and regions.

Timeline: It is expected that a first round of subsidies can be distributed in 2021 and two further rounds will follow in 2022 for the remaining subsidies.

Do No Significant Harm:

Table 2.3.3
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?	X		<p>The activities are not foreseen to result in significant greenhouse gas emissions.</p> <p>The subsidy scheme for energy renovations in public buildings are expected to reduce greenhouse gas emissions and therefore supports this objective substantially.</p> <p>The replacement of oil burners and gas furnaces with electric heat pumps and district heating lead to a reduction in greenhouse gas emissions. Measures that target energy efficiency, e.g. insulation of the climate screen (e.g. new windows), will lower the amount of energy for heating purposes that the building uses, which especially in the short term will reduce greenhouse gas emissions.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?	X		<p>This initiative is not foreseen to lead to increased adverse impacts requiring additional climate change adaptation.</p>
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?	X		<p>This initiative is not foreseen to affect the ecological state of waterbodies and marine resources.</p>
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?	X		<p>This initiative is not expected to result in inefficiencies in use of material or natural resources.</p>
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?	X		<p>Significant emissions of pollutants to the environment are not foreseen by any of the initiatives or by the activities supported by the subsidy schemes.</p>
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?	X		<p>Adverse effects on biodiversity and ecosystems are not expected due to any of the initiatives including the activities supported by the subsidy schemes.</p>

2.3.6 CCS Storage Potential

Addressing challenges: Major CCS activities are essential for realising EU's ambition to reach carbon neutrality by 2050.

A prerequisite to realise the mitigation potential of CCS is that the full value chain capture-transport-storage is established and early use of CCS as a mitigation technology in Denmark and Europe is dependent on the implementation of capture technology and the availability of operational storage sites.

This initiative targets development and demonstration of the technical and economic feasibility of CO₂ storage in depleted oil and gas fields in the Danish part of the North Sea.

The initiative is in line with the European Green Deal regarding mobilising research and fostering innovation. New technologies, sustainable solutions, and disruptive innovation are critical to achieve the objectives of the European Green Deal, and conventional approaches will not be sufficient.

Objectives: 200 m. DKK has been allocated for a subsidy scheme to support the development and demonstration of CO₂ storage sites in depleted oil and gas fields in the Danish part of the North Sea.

Description of initiative/ subsidy scheme

While a growing number of countries in Europe realise the need for CCS in their efforts to reduce greenhouse gas emissions, limited storage capacity may impede the implementation of CCS for at least the coming decades.

Ongoing investigations and analyses in depleted gas fields in the Danish part of the North Sea show promising results for storage of CO₂ and confirm that depleted fields could be well suited for storage. However, further development, testing, and demonstration of CO₂ storage need to be carried out in order to determine the technical and financial feasibility before any depleted gas and oil fields will become operational.

The initiative will support the development and demonstration of CO₂ storage facilities in depleted oil and gas fields in the North Sea and its associated infrastructure development needs.

This is an important first step to secure sufficient long-term capacity for safe storage of CO₂ from European sources and for the creation of a European infrastructure for CO₂ storage.

Application and allocation

The initiative covers support to the development of one or more demonstration projects for CO₂ storage facilities in suitable depleted oil and gas fields in the Danish part of the North Sea.

The support will not cover investments needed to implement operational CO₂ storage facilities.

The measure is not an existing part of the CCS support scheme from the Action Plan for Energy and Industry, and will depend on Recovery and Resilience Facility funding. However, the use of capture and storage or usage is an essential element of the Climate Action Plan for Energy and Industry and several Climate Partnerships entered by the Danish Government and relevant sectors recommend CCS and carbon capture and usage (CCU) as important tools to mitigate emissions. Thus, it is regarded as an efficient tool in order to accommodate the recommendations of the National Energy and Climate Plan and the CSR as focusing investment in particular on clean and efficient production and use of energy, etc.

Implementation: The Ministry of Climate, Energy and Utilities in collaboration with relevant ministries will manage the scheme.

The support scheme for development and demonstration of CO₂ storage in depleted oil and gas fields is group-exempted from EU state aid regulations under article 25 regarding research, education and demonstrations.

Target group: Private companies.

Timeline: It is expected that subsidies can be allocated in 2021, and 2022 through yearly allocations of 100 m. DKK each year.

Do no significant harm:

Table 2.3.4
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	The activities are not foreseen to result in significant greenhouse gas emissions. The CCS-initiative will contribute to securing storage capacity for captured carbon and will not increase greenhouse gas emissions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	This initiative is not foreseen to lead to increased adverse impacts requiring additional climate change adaptation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	This initiative is not foreseen to affect the ecological state of waterbodies and marine resources. The preparation and demonstration of CO ₂ -storage will happen in depleted gas and oil fields for which extensive EIAs have been performed. Foreseen activities have a similar character to those activities carried out today in these areas and will use existing structures and new major construction is not foreseen.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	This initiative is not expected to result in inefficiencies in use of material or natural resources. CCS activities will use existing structures and potentially open possibilities for the reuse of oil and gas platforms.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	Significant emissions of pollutants to the environment are not foreseen by any of the initiatives or by the activities supported by the subsidy schemes.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	Adverse effects on biodiversity and ecosystems are not expected due to any of the initiatives including the activities supported by the subsidy schemes.

2.3.7 Energy Efficiency in Households

Addressing challenges: Many residential buildings are not energy-efficient.

The initiative follows the objectives of the European Green Deal which also aims to expand power production from renewable energy complemented by the rapid phasing out of coal and by the deployment of an increasing amount of renewables in the energy system. Moreover, it engages in the *Renovation Wave* by increasing the renovation rate of private buildings.

Objectives: To ensure that residential buildings are renovated and energy efficient and to speed up transition from oil burners and gas furnaces to heat pumps.

The measure supports a subsidy scheme called “the Building Pool”. The scheme already exists in Denmark and contains 1,623 m. DKK from national funds from 2021-2025 (excluding derived tax loss).

With the RRF the Building Pool is increased by 565 m. DKK to further incentivize energy renovation and the replacement of heating by oil burners and gas furnaces with heat pumps in residential buildings (including derived tax loss). The initiative is expected to result in a reduction of CO₂e in 2025 by further 0.05 Mt CO₂. The complementary RRF funding will further ensure the increased support. Scaling up an already existing scheme with additional funds is regarded the most cost-efficient use of RRF funding.

The initiative will mitigate pollution, create labour-intensive renovation jobs, support local supply chains, while generating demand for highly energy and resource-efficient equipment, and bring long-term value to properties. This is done by potentially lowering energy bills while boosting the construction sector and support SMEs and local jobs.

The Building pool targets energy savings in private year-round housing. Among others, the subsidy pool supports insulation of the climate screen and optimization of the operation of the building. 60 per cent of the pool is targeted at projects, which include conversion to heat pumps under the condition that the building is located outside an area, where it has been decided to establish district heating. The subsidy rates of the pool are set according to estimated market prices and the pool's subsidy ceiling amounts to a maximum of 27.5 per cent of the estimated market prices,

Implementation: The support schemes will be managed by the Ministry of Climate, Energy and Utilities in coordination with other relevant ministries. The subsidy scheme for energy savings in existing buildings is implemented in compliance with the conditions set in the Commission Regulation regarding de minimis aid (1407/2013).

Target group: Year-round homeowners. This includes amongst others private building owners, owner’s associations, cooperative housing associations, public housing associations, colleges and landlords.

Timeline: The additional means will be allocated to eligible applicants from primo 2021 (April).

Do No Significant Harm:

Table 2.3.5
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?	X		<p>The measure is not foreseen to result in significant greenhouse gas emissions.</p> <p>The replacement of oil burners and gas furnaces with electric heat pumps and district heating lead to a reduction in greenhouse gas emissions. Measures that alone targets energy efficiency, e.g. insulation of the climate screen (e.g. new windows), will lower the amount of energy for heating purposes that the building uses, which especially in the short term will reduce greenhouse gas emissions.</p> <p>By reducing greenhouse gas emissions the measure therefore supports this objective substantially</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?	X		This initiative is not foreseen to lead to increased adverse impacts requiring additional climate change adaptation.
The sustainable use and protection of water and marine resources.	X		This initiative is not foreseen to affect the ecological state of waterbodies and marine resources.
<p>Is the measure expected to be detrimental:</p> <p>(i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or</p> <p>(ii) to the good environmental status of marine waters?</p>			
<p>The transition to a circular economy, including waste prevention and recycling.</p> <p>Is the measure expected to:</p> <p>(i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or</p> <p>(ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or</p> <p>(iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>	X		This initiative is not expected to result in inefficiencies in use of material or natural resources.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?	X		<p>Significant emissions of pollutants to the environment are not foreseen by any of the initiatives or by the activities supported by the subsidy schemes.</p> <p>The measure supports the shift away from fossil fuels, but also from wood pellet stoves and other biomass boilers for individual heating to electric heat pumps and will thus lead to lower air pollution.</p>
<p>The protection and restoration of biodiversity and ecosystems.</p> <p>Is the measure expected to be:</p> <p>(i) significantly detrimental to the good condition and resilience of ecosystems; or</p> <p>(ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>	X		Adverse effects on biodiversity and ecosystems are not expected due to any of the initiatives including the activities supported by the subsidy schemes.

Green and digital dimensions of the component

Green transition

The initiatives are a part of the Danish government's climate action plan that aims for a 70 per cent reduction in CO₂e emissions (compared to 1990).

The energy efficiency initiatives contribute with a general reduction in greenhouse gas emissions by approximately 0.1 Mt CO₂ eq. in 2025 and in 2030.

The CCS storage site development and demonstration initiative will facilitate early implementation of CCS as a climate mitigation technology, which in a Danish context has a technical CO₂ reduction potential of 4-9 m. tons CO₂ by 2030.

The initiatives supplement the already existing efforts focusing on a cost-effective and market-oriented energy savings effort, a national CCS strategy and a national CCS support scheme under preparation. Together with targeted efforts from business, public institutions and private consumers, they have resulted in major savings in this area.

Energy efficiency efforts will continue to play a role in the overall energy system although the reductions of greenhouse gas emissions due to energy efficiency efforts will decrease as the share of renewable energy in the energy system is increased. Energy efficiency contributes, among other things, to limiting the system load associated with the increasing amount of renewable energy and changeable energy production from, for example, wind turbines. In this way, energy efficiency can reduce the need for investment in infrastructure and reduce the need for more space to new wind turbines and solar cells.

Energy efficiency measures also reduces consumption of bio mass for energy purposes, contributes to improved security of supply and supports a more flexible energy system where demand and supply are more easily matched. By lowering energy consumption, Denmark:

- Reduces the impact on the climate and the environment
- Reduces the costs of the green transition
- Becomes less vulnerable to fluctuations in energy prices
- Increase its security of energy supply
- Reduces consumption of fossil fuels and bio mass for heating purposes

The development and demonstration of CO₂ storage facilities in depleted oil and gas fields will contribute to the enabling of CCS as a cost effective CO₂ mitigation tool. CCS is foreseen to contribute significantly to the achievement of Danish greenhouse gas reduction targets of 70 per cent in 2030 and net-zero emissions by 2050.

Further-more operating storage sites for CO₂ in depleted Danish oil and gas fields could play an important role in storage of CO₂ from other EU member states.

Digital transition

The initiatives supports the digital transition. Better management of energy in industry and buildings through digital control systems can support reductions of greenhouse gas emissions, while enhancing job creation.

Do no significant harm

The initiatives are in line with the do no significant harm principle. This assessment accounts for the proposed initiatives in the energy efficiency component. The proposed initiatives provides energy savings, will reduce CO₂ emissions, and are not expected to lead to pollution, harm biodiversity etc.

Financing and costs

In many of the pools, the amount of the subsidy schemes are based on an analysis of the energy savings potential. The amount applied for to the subsidy schemes to phase out oil burners and gas furnaces is based on an assessment on a combination of the number of expected applications and the costs of the subsidy.

The assessment of the subsidy size is based on current market prices for the relevant technologies and an assessment of the subsidy size needed to incentivize possible applicants to e.g. convert from a gas furnace to a heat pump. The assessment of subsidy sizes and criteria for the proposed initiatives for instance per heat pump, retrofits of buildings etc. will be based on the knowledge and experience of the Building Pool (“Bygningspuljen”) and the subsidy scheme for energy efficiency in industry (“Erhvervspuljen”) which were both launched in October 2020.

Furthermore, the design of the subsidy scheme builds on the former agreements on the energy companies’ energy savings effort between the minister for climate, energy and utilities and the network of distribution companies within the fields of electricity, natural gas, district heating and oil.

In deciding the size of the subsidy in the district heating pool it has been an important factor to approximately match the subsidy size for heating pumps so that the customers will chose the most appropriate source of heating.

In regards to the subsidy scheme for energy savings in public buildings (municipalities and regions) the size of the subsidy scheme will fulfil a part of the potential for energy savings in public buildings. The projects will be prioritised according to a principle of the most possible energy savings and a list of eligible energy improvement measures is drawn up. The subsidy can cover up to 30 per cent of

the eligible costs of a project in order to give the best incentives to redeem the most possible energy savings.

The size of the subsidy scheme for development and demonstration of CO₂ storage is based on the expected needs for support for the development and demonstration of at least one storage site.

There are no previous experiences of CO₂ storage in depleted oil- and gas field, but current investigations supported by the Danish Technology Development and Demonstrations Program indicate that an investigated reservoir is suitable. However, further pre final-investment-decision (FID) studies are needed. Such studies include tests of possible reuse of infrastructure for on-site storage and proof of concept for transport and transfer to storage site by ship. Based on results of the ongoing study, pre-FID costs are estimated at 600 m. DKK. and it anticipated that a grant scheme of 200 m. DKK will provide sufficient risk coverage for the development of at least one operational of-shore storage site. Call, evaluation and disbursement of subsidies shall be part of the Danish Technology Development and Demonstration Program.

5-7 per cent of the subsidies has been reserved for administration by the Danish Ministry of Climate, Energy and Utilities covering IT-systems, information and guidance on the subsidy schemes for relevant applicants and target groups, evaluations etc.

Table 2.3.6
Initiatives in Component 3: Energy efficiency, electric chargers, CCS etc.

M. DKK, 2021-prices	Investment/ reform	Total	2021	2022	2023	2024	2025	Funding from other sources
I. Replacing Oil Burners and Gas Furnaces	Investment	645	225	170	125	65	60	981
II. Energy Efficiency in Industry	Investment	315	-	100	100	105	10	2,400
III. Energy Renovations in Public Buildings	Investment	315	150	150	5	5	5	-
IV. CCS Storage Potential	Investment	200	100	100	-	-	-	-
V. Energy Efficiency in Households	Investment	565	300	80	45	115	25	1,623
Total		2,040	775	600	275	290	100	5,004



Component 2.4

Green Tax Reform

With the first phase of the Green Tax Reform, energy tax rates on fossil fuel use are increased for industries to ensure a greenhouse gas reduction by 0.5 Mt in 2025. The second phase is to introduce a uniform carbon tax.

The Recovery and Resilience Facility funding ensures financing for the first phase and a just transition for affected companies.

Tax deductions will provide a window of opportunity for increasing investments in green and digital production capabilities, ensuring that companies have the incentive and the opportunity to prepare for increased and harmonised carbon taxation.



Description of the component

Box 2.4.1

Green Tax Reform

Policy area/domain:

Tax reform, uniform tax on greenhouse gas emission, energy taxes, green and digital transition in production, climate policy, investment in new technologies and job growth, avoid carbon leakage.

Objective:

The objective of this component is threefold:

- 1. Uniform tax on greenhouse gasses:** One of the most cost-efficient ways of regulating greenhouse gas emissions is by imposing a uniform tax on emissions of CO₂e. However, imposing a uniform tax on greenhouse gas emissions is not technically possible in the short run. Thus, reforming the tax system to ensure the right incentives to reduce greenhouse emissions will run in multiple steps. The green tax reform is the first step in the making of a uniform tax on greenhouse gases, as it looks into leveling the differences in pollution taxes from sector to sector.
- 2. Frontloading investments in the green and digital transition:** This component will promote the green and digital transition by introducing stronger incentives for companies to reduce their emissions of greenhouse gasses. Thereby, the Green Tax Reform is the first step towards a more even regulation of greenhouse gas emissions across sectors. Furthermore, the reform aims at ensuring a just transition for the most affected companies by creating strong incentives for frontloading investments in new and greener technologies. One of the challenges of green and digital investments is that the up-front costs are high and the return on investment comes in the future. The Green Tax Reform will address this issue by creating an investment window for companies. This will provide a basis for green and digital growth in the future while avoiding carbon leakage.
- 3. Job creation:** The tax reform aims at immediate job creation, creating jobs related to the green transition as companies are expected to invest in more green and digital production capabilities preparing them for the increased carbon taxation. The first phase of the tax reform is estimated to create 2,400 jobs in 2021, 4,700 jobs in 2022 and 1,000 in 2023, thereby providing a large contribution to driving unemployment rates down fast.

Examples of reforms and/or investments:

Reforms:

- I. Emission taxes on industries: -410 m. DKK (2023-2025)
- II. Expert group to prepare proposals for a CO₂e-tax: 6 m. DKK

Investments:

- III. Investment window: 3,029 m. DKK
- IV. Accelerated depreciation: 1,280 m. DKK

Estimated cost:

Approximately 4 bn. DKK over the period 2021-2025, of which 96 per cent is covered by the Recovery and Resilience Facility, as 6.5 per cent of the costs for the investment window initiative is not covered by the Recovery and Resilience Facility (to ensure compliance with the DNSH-principle). The Green Tax Reform will generate fiscal losses in all years until 2029 (due to the tail expenditures in the investment window and the depreciation allowance). However, Denmark is only applying for the Recovery and Resilience Facility to cover the fiscal losses up until 2025. From 2029 the increased taxes on emissions will be larger than the tax expenditures, but the political parties in Parliament have agreed that any tax surplus will be redirected back to the firms most affected by the increased taxation on fossil fuels.

Main challenges and objectives

2.4.1 Main challenges

The emissions from industry and services account for about 20 per cent of the total emissions in Denmark. Therefore, ensuring a green transition and reduction in greenhouse gas emissions in industry is essential. One efficient tool to achieve that is a tax reform making it more expensive to emit greenhouse gasses while supporting businesses in making investments in new green technology. The main challenges in this transition are highlighted below:

- *Reducing greenhouse gas emissions:* The Danish government has an ambitious target of reducing greenhouse gas emissions by 70 per cent by 2030. One way of further reducing greenhouse gas emissions is by creating incentives for companies and the industry sector through changes in the tax system. However, imposing taxes on companies potentially harms the competitiveness of the companies and poses a risk of carbon leakage. Carbon leakage refers to a transfer of production to other countries with fewer emission constraints. Thus, a tax reform has to balance making a strong financial incentive to reduce emissions and mitigating loss of competitiveness, carbon leakage and other interests.
- *Maintaining high competitiveness for Danish companies:* The current taxation of emissions is rather unevenly distributed as emissions in some sectors/types of production processes are taxed significantly harder than emissions in others. However, a uniform CO₂e-tax in all sectors is not technically feasible in the short run. A uniform CO₂e-tax will affect the competitiveness of especially the CO₂e- and energy-intensive companies. Thus, future steps in reforming the tax system will need to provide measures that support the transition, while maintaining the competitiveness of the Danish companies. In the first step, this is achieved by phasing in the increased energy taxation while providing large investment support in a transition period. A large share of this investment support is expected to be covered by the Recovery and Resilience Facility. The Danish government has committed to refunding all tax revenue from the green tax reform to businesses.
- *Incentivizing businesses to increase green investments:* The green transition is a large expenditure for businesses and investing in new green technologies has high up-front costs. Currently, Danish businesses invest in the green transition, but the large costs leads to a potential loss of competitiveness in the short run. Therefore, this component aims at speeding up the green transition in preparation for a higher CO₂e-tax by increasing green investments, resulting in an immediately greener production with a lasting effect on the climate. Moreover, green investments creates jobs in the short run and ensure a green recovery of the economy.

2.4.2 Objectives

The component is in line with the Country Specific Recommendations for Denmark, which recommend Denmark to invest in the green transition. The tax reform specifically aims at lowering greenhouse gas emissions from Danish businesses. This will be achieved through a variety of changes in the incentive structure for Danish businesses focusing on incentivizing businesses to emit fewer greenhouse gasses as well as increasing investments in new green technologies. Funding from the Recovery and Resilience Facility ensures frontloaded investments in green and digital production while maintaining companies' competitiveness.

- *Uniform tax on greenhouse gases will reduce emissions:* The current taxes on greenhouse gasses differ widely across sectors and usage, and the most energy-intensive companies are offered different rebates related to fossil energy consumption/emissions of carbon dioxide. A sufficiently high and uniform tax on greenhouse gas emissions will ensure that the climate target for national emissions is met at the lowest costs. However, there will be both technical difficulties and large consequences for business, if the phase-in is not gradual and well thought out. Therefore, it will require multiple steps to phase in a new tax system with a uniform tax on greenhouse gas emissions.
- *Being socially just and balanced:* A green tax reform will also have to consider social equality. As the government imposes a tax on companies that produce goods or services, customers could potentially end up bearing the cost. The first phase of the green tax reform is expected to have no negative distributional impacts and the Danish government is committed to ensure that this will also be the case for the following phases.
- *Investment window will ease companies' transition to clean energy and boost growth potentials:* The tax reform implies temporarily increased tax deduction for companies investing in capacity costs, e.g. technology and software that can help increase business operations, and at the same time reduce greenhouse gas emissions. The investment window will not include machinery running on fossil fuels to ensure a green transition of industry and compliance with the "do no significant harm" principle. The investment window will boost the companies' growth potential and job creation, while encouraging companies to invest in new hardware and technology that can reduce emissions in the longer run. The investment window will moreover help ease leakage problems.

Summary description of the reforms and investments of the component

The tax system is one of the most efficient instruments in creating incentives for citizens and businesses to lower greenhouse gas emissions. However, fundamentally reforming the tax system is not done overnight. That is why a broad parliamentary coalition, consisting of three fourths of the Danish parliament, has made a politically binding agreement to enact a Green Tax Reform in two phases. Phase 1 will take the initial steps of redirecting current energy taxes towards CO₂-emissions. Phase 2 will fundamentally rewrite the tax code by introducing a broad tax on all greenhouse gas emissions including the non-energy related emissions in the agricultural sector. The ambition is that the second phase will be the determining factor in delivering a 70 per cent reduction in Danish emissions in 2030 compared to 1990.

With the first phase of the Green Tax Reform, which will assist Denmark in recovering from the COVID-19 recession, strong incentives are created for companies to immediately invest in green and digital technology. This will lead to an increase in demand and a rise in employment as well as a reduction of greenhouse gas emissions and further the digitalization of the Danish society. The first phase of the Green Tax Reform will lower greenhouse gas emissions by 0.5 Mt by 2030. This is done by increasing the taxes on industry's process fossil energy. The intention is that this initial increase in fossil energy taxation will be directly targeted at the CO₂-content of the different fossil fuels before the Green Tax Reform moves to the second phase. To ease companies' transition to clean energy, boost growth potentials, and prepare for a higher carbon tax, the reform also implies an increased tax deduction for companies investing in capacity costs, e.g. technology. This investment window will not include machinery running on fossil fuels to ensure a green transition of industry and compliance with the "Do No Significant Harm" principle. The investment window will boost the companies' growth potential and job creation, while encouraging companies to invest in new hardware and technology that can reduce emissions in the longer run.

The first phase of the Green Tax Reform is primarily financed by Recovery and Resilience Facility funds making a fast, just, and green transition possible while avoiding carbon leakage.

To prepare for the second phase of the Green Tax Reform, an expert group¹ has been established. This expert group will draw the road map for the next phase of CO₂e taxation in a manner consistent with protecting Danish competitiveness, social balance, and minimizing leakage. The ambition is to make a comprehensive

¹ See <https://www.skm.dk/media/8328/kommissorium-for-groen-skattereform.pdf> for the terms of reference and composition of the expert group.

tax reform with a higher and harmonised CO₂e-tax on all emissions. This will require significant development work, especially with regard to emissions that are not currently subject to tax.

The funding from the Recovery and Resilience Facility primarily covers the costs of Phase 1 of the Green Tax Reform, but also paves the way for Phase 2 by covering the expenses for the expert group that will draw up a road map for higher and harmonised taxation of greenhouse gas emissions. The Recovery and Resilience Facility has therefore made it possible to implement a green tax reform that will lead to massive cost effective reductions of greenhouse gas emissions, but in a socially just and balanced way, where Danish companies are able to maintain their high competitiveness and avoid carbon leakage. Funding from the Recovery and Resilience Facility is thus instrumental in ensuring a green transition of the Danish society in line with the Paris Agreement.

Reforms

2.4.3 Emission taxes on industries

Addressing challenges: Denmark has an ambitious target of reducing greenhouse gas emissions by 70 per cent in 2030 compared to 1990. Increasing the taxes on emission will provide a financial incentive to reduce emissions. The industry energy taxes on fossils are relatively low, thus increasing these can provide cost-efficient reductions of greenhouse gases. It is one of the recommendations in the EU Green Deal that well-designed tax reforms can help boost economic growth and resilience to climate shocks and providing the right incentives for sustainable behaviour by producers.

Objectives: Uniform tax rates on all CO₂e emissions will be the most cost-effective way to reduce CO₂e emissions. In the current tax system, the level of CO₂ taxation is uneven. The charges for emissions in transport are very high. There are also high taxes on emissions from households and industry's heating, while the taxes on emissions from production are relatively low. In addition, non-energy-related CO₂ emissions from, e.g. agriculture are not covered by taxes.

The Danish government and a broad coalition of parties have agreed on the Green Tax Reform, which in the short term consists of an increase in taxes on industry' process fossil energy, which has comparatively low taxes currently. With the first stage of the tax reform, the Danish government has increased the process energy tax by DKK 6 / GJ/ app. 100 DKK/ton CO₂. The model raises the fossil energy taxation for all industries equally. Consequently, the existing differentiations in the energy tax rates for companies will be maintained in 2025, but at a higher level for all industries. The model is estimated to entail a CO₂ reduction of 0.5 Mt in 2025.

Moreover, the initiative complies with the recommendations for Denmark in the National Energy and Climate Plan and the Country Specific Recommendations to

promote a green tax reform while ensuring a just transition for the most affected companies.

The second phase of the Green Tax Reform will entail a comprehensive tax reform with a high and harmonised CO₂e tax on all emissions. This will require significant development work, especially in regard to emissions that are not currently subject to tax. This includes tax-exempt emissions such as oil extraction and refining, as well as agriculture's non-energy-related emissions. In addition, a high and harmonised tax will have a number of consequences, including large shifts in the business structure, carbon leakage in all sectors as well as distributional and fiscal effects. These elements will need to be considered carefully, before it is possible to implement a uniform CO₂e tax on all emissions. Therefore, the full and comprehensive Green Tax Reform will be implemented in several stages and spread over a number of years.

Implementation: The tax increases are phased in gradually from 2023 to 2025. The increase for mineralogical processes and agriculture is expected by 2025.

State aid: The gradual increase of the taxes is to be implemented from 2023, and the Danish tax authorities will ensure that the State aid rules and the Energy Taxation Directive are complied with. If relevant, it will be done on the basis of a dialogue with the Commission.

Target Group: The first phase of the tax reform cover fossil energy emissions in business used for processing. The next phase is targeted to cover all Danish companies, uses and industries.

Timeline: A politically binding agreement has been concluded on 8 December 2020. The tax increases will be phased in gradually from 2023.

Do No Significant Harm:

Table 2.4.1
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	On the contrary – Increasing the emission tax on industry will lower carbon emissions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	On the contrary – Increasing the emission tax on industry will lower carbon emissions.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No – increasing the emission tax on industry has no negative implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No – the first phase of the Green Tax Reform, of which the increased emission tax on industry is a part, has no implication for the waste handling or the circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No – pollutants are strictly regulated in Danish environmental laws and this does not change with the Green Tax Reform.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the measure has no implication for the protection and restoration of biodiversity and ecosystems.

2.4.4 Expert group to prepare proposals for a CO₂e-tax

Addressing challenges: The Danish government has an ambitious target of reducing greenhouse gas emissions by 70 per cent by 2030 compared to 1990. A cost-effective way to ensure reductions of greenhouse gas emissions is by creating incentives for companies, consumers, and the industry sector through changes in the tax system. However, imposing taxes on companies potentially harms the competitiveness of the companies and poses a risk of carbon leakage. To assist in designing a reform that best address these challenges, an expert group¹ of leading researchers and practitioners will help draw up proposals of a broad CO₂e-taxation.

Objectives: To draw up proposals for the development of a uniform CO₂e regulation. The expert group will therefore help draw the road map for the second phase of CO₂e taxation in a manner consistent with protecting Danish competitiveness, social balance, and minimizing leakage.

The expert group will assess the advantages and disadvantages of a regulatory solution for the agricultural sector and a CO₂e tax. The expert group will also propose possible ways to construct compensation mechanisms, including, for example, deductions, but also other possible mechanisms. The expert group will also describe possible phase-in profiles and compensation mechanisms, including for the 2023-2025 period.

Implementation: The expert group has been established in January 2021 and consists of five members who are the leading experts within CO₂e-regulation. The group is supported by a secretariat of public officials.

State aid: An expert group has been established to make recommendations for a uniform CO₂e tax. This expert group has no links to state aid compliance.

Target Group: All Danish CO₂e emitters.

Link to reforms: The expert group will help deliver on the Danish target of reducing greenhouse gas emissions by 70 per cent by 2030 compared to 1990 in a manner consistent with protecting competitiveness, social balance, and minimising leakage.

Timeline: The expert group will deliver their first report at the end of 2021 detailing the suggested principles of an effective, efficient, and socially just CO₂e-tax model. The first report will furthermore give practical guidance on how to transform current energy-taxation to a more CO₂e-targeted model. The group will deliver their second and final report in the fall of 2022, which details different scenarios for CO₂e-taxation, covering all emissions including non-energy emissions from farming. The group will detail the trade-offs between minimising the economic cost of CO₂e reductions and minimising leakage, ensuring social balance and keeping Danish firms competitive.

Do No Significant Harm:

Table 2.4.2
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	On the contrary – the establishment of an expert group is an important part of the second phase of the Green Tax Reform. The expert group is tasked with drawing up a roadmap for a comprehensive tax reform with a high and uniform CO ₂ e tax on all emissions. Such a tax reform can be expected to be an important driver of emission reductions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	On the contrary – the establishment of an expert group is an important part of the second phase of the Green Tax Reform. The expert group is tasked with drawing up a roadmap for a comprehensive tax reform with a high and uniform CO ₂ e tax on all emissions. Such a tax reform can be expected to be an important driver of emission reductions.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No – the establishment of an expert group as a part of the Green Tax Reform has no negative implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No – the first phase of the Green Tax Reform has no implication for the waste handling or the circular economy. The second phase – of which the establishment of an expert group is a part - aims to lower all carbon emissions.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No – pollutants are strictly regulated in Danish environmental laws and this does not change with the establishment of the Green Tax Reform.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the measure has no implication for the protection and restoration of biodiversity and ecosystems.

Investments

2.4.5 Investment window

Addressing challenges: The European economies have been highly affected by the COVID-19 crisis. The economic situation continues to be challenging and highly uncertain and will remain so for some time. To address these challenges and underpin the green transition, the investment window will frontload and incentivise companies' investments in a green and digital transition but also mitigate the economic consequences and unemployment.

Objectives: The Danish government has together with other political parties, forming a comfortable majority in the Danish parliament, agreed to increase the depreciation basis for investments in fixed assets (machinery, equipment, software etc.) by a further 16 per cent of the investment cost. This applies to investments made from November 23 2020, and in 2021 and 2022. The initiative will entail an additional cost of 3.2 bn. DKK over the period 2021-2025 of which 3.0 bn. DKK is financed by the Recovery and Resilience Facility while 0.2 bn. DKK is financed by national funds.

Investments in machines that are or can be powered by fossil fuels are not covered by the investment window. Fossil fuels includes coal, petrochemicals, natural gas, and liquefied petroleum gas. In addition, cars for passenger transport and ships are not included in the investment window. This means that when purchasing these machines and cars, the company will not benefit from the additional depreciation right.

However, it is possible to use the investment window on fossil driven non-passenger vehicles (trucks and vans). This is due to the fact that there are no or very limited non-fossil alternatives to fossil vans and trucks etc. yet. At the same time, changing an old truck to a new model will increase the energy efficiency as the available new models are more energy efficient than the old ones.

It is estimated that 6.5 per cent of the investments through the investment window will be in non-passenger vehicles. In order to ensure full compliance with the “Do No Significant Harm”-principle, the estimated costs for investments in fossil driven trucks and vans are excluded from the funding from the Recovery and Resilience Facility. Therefore, the Recovery and Resilience Facility-funding for the investment window is lowered and readjusted with 6.5 per cent from 3.2 bn. DKK to 3.0 bn. DKK.

The initiative entails that a company within the investment window acquires, for example, a 3D-printer worth 1,000,000 DKK, can increase its depreciation basis by 160,000 DKK. Each year from the acquisition, the company can deduct 25 per cent hereof from the basis of the company’s corporate tax.

The deduction will mean that the companies' capital costs for investments in fixed assets will be temporarily lower, and therefore it is expected to lead to an increase in investments in 2020, 2021, and 2022. In addition, companies are expected to advance and frontload investments that are otherwise planned for 2023 and later.

A frontloading of investments can be expected to increase employment (demand effect) to a certain extent in the coming years, especially in a situation where Denmark is hit by a significant downturn. Furthermore, a temporary increase in the depreciation basis will improve the companies' liquidity in the short and medium term.

Thus, the initiative delivers on the recommendations for Denmark in the National Energy and Climate Plan and the Country Specific Recommendations to frontload investments in a green and digital transition, also by ensuring a just transition for the most affected companies with the implementation of the Green Tax Reform.

Implementation: The Danish Ministry of Taxation will be managing the investment window, including the applicable depreciation basis and tax deductions for the companies.

State aid: An assessment has been made of whether the initiative conform to state aid rules. The initiative applies to all undertakings on equal terms and therefore does not constitute state aid.

Link to reforms: The investment window will provide companies with liquidity and incentives to invest in fixed assets that can lead to a reduction of greenhouse gases in production, and ease carbon leakage problems when increasing taxes on greenhouse gases. The investment window will further allow firms to enter into the new industrial age with smarter and greener machinery.

Target group: The initiative entails all companies and self-employed. It is noted that it is only enterprises with a taxable profit, which will be able to take advantage of the increase in the short term. Companies without taxable profits will however in general be able to utilize the increased deductions to offset profits in recent years.

Timeline: A politically binding agreement has been concluded on 8 December 2020. New bills were submitted to Parliament on February 24, 2021. The bill has passed the Parliament on 13. April 2021. The investment window has entered into force on 23 November 2020.

Do No Significant Harm:

Table 2.4.3
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
<p>Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?</p>		X	<p>No – to ensure no negative impacts, the investment window will not include machinery running on fossil fuels, ships or passenger cars. This will boost the companies' growth potential and job creation, while encouraging companies to invest in new hardware and technology that can reduce emissions in the longer run.</p> <p>The investment window should also be viewed in the broader context of the Green Tax Reform, in which companies are being incentivized to frontload green investments in preparation for a higher CO₂e-tax.</p> <p>The investment window, increased R&D incentive and accelerated depreciation will moreover help ease leakage problems since the initiatives will make a transition through green investments possible and thus reduce the risk of production moving abroad.</p>
<p>Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?</p>		X	<p>To ensure no negative impacts, the investment window will not include machinery running on fossil fuels, ships or passenger cars to ensure a green transition of industry. This will boost the companies' growth potential and job creation, while encouraging companies to invest in new hardware and technology that can reduce emissions in the longer run.</p> <p>The investment window should also be viewed in the broader context of the green tax reform, in which companies are being incentivized to frontload green investments in preparation for a higher CO₂e-tax.</p> <p>The investment window, increased R&D incentive and accelerated depreciation will moreover help ease leakage problems since the initiatives will make a transition through green investments possible and thus reduce the risk of production moving abroad.</p>
<p>The sustainable use and protection of water and marine resources.</p> <p>Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?</p>		X	<p>No part of the Green Tax Reform has negative implications for the use and protection of water services. The overall reduction in fossil fuel usage as a result of the green tax reform can on the contrary help protect pollutants from entering into marine resources.</p>
<p>The transition to a circular economy, including waste prevention and recycling.</p> <p>Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>		X	<p>No – the first phase of the Green Tax Reform, of which the investment window is a part, has no implications for the waste handling or the circular economy.</p>
<p>Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?</p>		X	<p>No – pollutants are strictly regulated in Danish environmental laws and this does not change with the Green Tax Reform.</p>
<p>The protection and restoration of biodiversity and ecosystems.</p> <p>Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>		X	<p>No – the measure has no implication for the protection and restoration of biodiversity and ecosystems.</p>

2.4.6 Accelerated depreciation

Addressing challenges: The European economies have been highly affected by the COVID-19 crisis. To address the challenges, the threshold for accelerated depreciation is increased to frontload and incentivize companies' investments in a green and digital transition and to mitigate the economic consequences and unemployment.

Objectives: According to current rules, companies' investments in fixed assets (machinery, equipment, computer-hardware etc.) with an acquisition price below 14.100 DKK can be depreciated immediately. This lower limit is raised to DKK 30.000. This increased limit will be permanent. An increase in the threshold will work as a short-term stimulus initiative, as it generates a lot of additional liquidity for firms in the initial years (where all small investments are depreciated at 100 per cent) but naturally declines over time as future depreciations are reduced (already depreciated in year 1). After 2025, the increased limit will result in fiscal losses for Denmark. These losses will be covered by reducing the overall budget for fiscal expenditures.

An increase in the threshold will in particular strengthen the incentive to invest in information and communications technology, and can help strengthen liquidity among companies that earn profits. The increased threshold to 30.000 DKK is estimated, with some uncertainty, to increase the scope of investments that can be depreciated immediately by approx. 3 bn. DKK.

Thus, the initiative delivers on the recommendations for Denmark in the National Energy and Climate Plan and the Country Specific Recommendations to frontload investments in a green and digital transition, and by ensuring a just transition for the most affected companies with the implementation of a green tax reform.

Implementation: The Danish Ministry of Taxation will be managing the initiative.

State aid: An assessment has been made of whether the initiative conforms with state aid rules. The initiative applies to all undertakings on equal terms and therefore does not constitute state aid.

Link to reforms: The investment window will provide companies with liquidity and incentives to invest in fixed assets – In particular information and communications technology – that can bring Denmark closer to the new industrial age and ease carbon leakage problems when introducing higher taxes on greenhouse gases.

Target group: The initiative entails all companies and self-employed. It is noted that it is only enterprises with a taxable profit, which will be able to take advantage of the increase in the short term. Companies without taxable profits will however in general be able to utilize the increased deductions to offset profits in recent years.

Timeline: A politically binding agreement has been concluded on 8 December 2020. New bills have been submitted to parliament on February 24, 2021. The bill has passed the Parliament on 13. April 2021. The increase in the threshold for accelerated depreciation has entered into force on 23 November 2020.

Do No Significant Harm:

Table 2.4.4
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
<p>Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?</p>	X	No.	<p>Investments which could violate the “Do No Significant Harm”-principle such as internal combustion engines or other fossil-fuel driven machinery etc., would have a much higher costs than the threshold, and thus will not qualify for the accelerated depreciation.</p> <p>Further, the raised threshold for accelerated depreciation must be viewed in the context of the Green Tax Reform, in which companies are being incentivized to frontload green investments in preparation for a higher CO₂e-tax. All Danish companies thus have very clear incentives to use the accelerated depreciation to reduce their carbon emissions as a preparation for the upcoming CO₂e-tax.</p> <p>The investment window, increased R&D incentive and accelerated depreciation will moreover help ease leakage problems since the initiatives will make a transition through green investments possible and thus reduce the risk of production moving abroad.</p>
<p>Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?</p>	X	No	<p>– the raised threshold for accelerated depreciation will incentivize companies to frontload green investments in preparation for a higher CO₂e-tax.</p> <p>The investment window, increased R&D incentive and accelerated depreciation will moreover help ease leakage problems since the initiatives will make a transition through green investments possible and thus reduce the risk of production moving abroad.</p>
<p>The sustainable use and protection of water and marine resources.</p> <p>Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?</p>	X	No	<p>part of the Green Tax Reform has negative implications for the use and protection of water services. The overall reduction in fossil fuel usage as a result of the Green Tax Reform can on the contrary help protect pollutants from entering marine resources.</p>
<p>The transition to a circular economy, including waste prevention and recycling.</p> <p>Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>	X	No	<p>– the first phase of the Green Tax Reform, of which the raised threshold for accelerated depreciation is a part, has no implications for the waste handling or the circular economy. The second phase aims to lower all carbon emissions, which includes better waste management and promoting more free nature (to capture CO₂).</p>
<p>Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?</p>	X	No	<p>– pollutants are strictly regulated in Danish environmental laws and this does not change with the Green Tax Reform.</p>
<p>The protection and restoration of biodiversity and ecosystems.</p> <p>Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>	X	No	<p>– the measure has no implication for the protection and restoration of biodiversity and ecosystems.</p>

Green and digital dimensions of the component

Green transition

The Danish government has an ambitious target of reducing greenhouse gas emissions by 70 per cent by 2030 compared to 1990. The business sector is an essential partner in achieving that ambition. The green transition of businesses in Denmark is the focus of the Green Tax Reform. The tax reform promotes the green transition by increasing taxes on greenhouse gas emissions in industry in the first phase and sending a strong signal of higher carbon taxation in the second phase. At the same time, the reform provides tax cuts on green and digital investments to insure that companies have the incentive and the opportunity to prepare for increased carbon taxation. This will incentivize companies to reduce greenhouse gas emissions, and by moving in the direction of a uniform tax on greenhouse gas emissions, the tax reform will make the reductions happen in areas where the cost is the lowest. Thus, the Green Tax Reform makes the regulation of greenhouse gas emissions more efficient.

The introducing an investment window will contribute significantly to create the right incentives for the green transition and promote new growth potentials. The investment window is a temporary measure that will instantly increase employment. However, at the same time, the initiative will create a lasting impact on the companies' production by letting companies invest in new and greener technology and inventory, which will make the production greener and cleaner in the years to come. The investment window will exclude fossil-fuel driven machinery to ensure the investments made by firms are in fact green. Furthermore, the investments will make a basis for green growth in the future with a potentially large job creation effect.

With the first phase of the green tax reform greenhouse gas emissions are lowered by 0.5 Mt by 2030. For the second phase of the Green Tax Reform, an expert group has been established, which will draw the road map for the next phase of CO₂e taxation in a manner consistent with protecting Danish competitiveness, social balance and minimizing leakage. It is the ambition in the long term to make a comprehensive tax reform with a high and uniform CO₂e tax on all emissions. This will require significant development work, especially with regard to emissions that are not currently subject to taxation.

Digital transition

Danish firms have historically proven to aim their investments in fixed assets towards digitalization. This is true both for the large share of Danish private investments in ICT and in smart machinery (3D printers, robotics, AI etc.). That is why Denmark consistently ranks in the very top of the EU-commissions digitalization index²: Danish firms are ranked 4th in the EU business digitalization index, 3rd in

² <https://ec.europa.eu/digital-single-market/en/digital-economy-and-society-index-desi>

the e-commerce index and 1st on the share of business with “very high digitalization”. These achievements are the result of Danish businesses’ commitment to investing in the future.

The initiatives under the green tax reform will contribute to furthering the digital agenda. Specifically, a sizeable share of the investments supported through the investment window and the raised threshold for accelerated depreciation will drive digitalisation. In 2017, the last year in which there is an effect from a similar investment window with additional depreciation allowance introduced in 2012-2013, ICT and other digitalized equipment constituted an estimated 40 per cent of Danish companies’ investments in fixed assets (excl. vehicles), *cf. table 2.4.5.*

Table 2.4.5
Gross fixed capital formation in 2017

	2017	Share (per cent)
M. DKK		
ICT equipment	19.444	25 %
Other digital equipment	10.779	14 %
Other non-digital eq./machinery	46.078	60 %
Total	76.301	100 %
- hereof total digital investments	30.223	40 %

Source: Statistics Denmark and own calculations based on the definition on digital tagging in annex VII under the regulation establishing the Recovery and Resilience Facility.

Moving forward, Danish firms’ investments in smart machinery are expected to be the key investment focus throughout 2020-2023, guided by the Danish digitalization investment effort through a suite of public-private-partnerships, *see Box 2.4.2.*³ The key focus area going forward, will be to lift small enterprises to the level of digitalization of larger enterprises.

The Danish digitalization investment effort, combined with the large fiscal incentives to expand investments in ICT and machinery in the Green Tax Reform, will expectantly drive a surge in digitalization. It is therefore the Danish government’s expectation, that at least 40 per cent of the investments made through the investment window and the raised threshold for accelerated depreciation will be in digitalization efforts, i.e. ICT or intelligent production assets. The 40 per cent should be seen as a conservative estimate, as it is based on data from 2017, and the digitalisation share is expected to continue from 2017-2022, as has been the case in 2015-2017. Further, many of the investments in categories, in which the digital equipment part is estimated to be small, is counted as completely non-digital investments. Therefore the share of digital investments is under-estimated.

³ https://erhvervsfremmebestyrelsen.dk/sites/default/files/2020-03/Erhvervsfremme-i-Danmark-2020-2023_Strategi.pdf

Box 2.4.2

The Danish Business Promotion will support a coherent business promotion effort by coordinating with other actors in the area, including:

- **Small and medium sized enterprises: *Digital***, which is a comprehensive program with several initiatives targeted at the digitalization of small and medium sized enterprises. Among other things, support is provided for private advice on digitalization including e-commerce, and digital sprints as well as competence development.
- **The Fund of Innovation**, which supports digital innovation, among other things, through the InnoBooster program, just as companies are supported in finding solutions to major societal challenges through, among other things, digital solutions.
- **The Growth Fund**, which invests in companies with digital business models and companies that use advanced digital technologies.
- **Digital Hub Denmark**, which aims to make Denmark a European frontrunner in digital development and market Danish digital strengths
- **The Approved Technological Service Institutes (GTS'er)**, which support technological development in Danish companies through research and development collaborations and provide access to test, demonstration and research facilities.
- **The Technology Pact**, which has been established across the public sector, companies, educational institutions and organizations with the aim of getting more people to work with, take an interest in and educate themselves within STEM (science, technology, engineering and math).
- **The Council of Data Ethics**, which among other things, is to create a data ethics debate, continuously support responsible data use in business and the public sector, as well as work to ensure that responsible data use can become a competitive parameter.
- **The Danish innovation centers**, which help Danish companies to acquire knowledge about the latest technologies and business models in, among other things, the digital area. The municipalities and the local business service are often the first entrance to the business promotion system. The inter-municipal business hubs provide specialized business services and function partly as entrances and partly as hubs in business promotion system, which refers to relevant business promotion schemes and actors as well as private advisers, investors, etc.

Source: https://erhvervsfremmestyrelsen.dk/sites/default/files/2020-03/Erhvervsfremme-i-Danmark-2020-2023_Strategi.pdf

Cross-border and multi-country projects

All investment incentives in the Green Tax Reform will be available for foreign firms doing business in Denmark. The Green Tax Reform is therefore expected to attract foreign investment, expertise and labour by promoting investment through the investment window, accelerated depreciation and R&D incentives (R&D incentives are described under component 7). This will spur growth and investment in Denmark, but at the same time increase cohesion and cross-border activity throughout the EU.

Do No Significant Harm

It is the expectation that no aspects of the Green Tax Reform will harm the climate, environment or sustainable development. To the contrary, the reform will reduce CO₂-emissions by 0.5 Mt by raising the price on carbon emissions and fostering green investments.

To ensure no negative impacts the investment window will not include machinery running on fossil fuels to ensure a green transition of industry. This will boost the companies' growth potential and job creation, while encouraging companies to invest in new hardware and technology that can reduce emissions in the longer run. The investment, window, increased R&D incentive and accelerated depreciation will moreover help ease leakage problems since the investment window will make a transition through green investments possible and thus not lead to moving production out of the country.

It is estimated that 6.5 per cent of the investments through the investment window will be in non-passenger vehicles. In order to ensure full compliance with the DNSH-principle, the estimated costs for investments in fossil driven trucks and vans are exempted from the funding from the RRF. Therefore, the RRF-funding for the investment window is lowered and readjusted with 6.5 per cent from 3.2 bn. DKK to 3.0 bn. DKK.

Financing and costs

The costs of the Green Tax Reform (after accounting for dynamic behaviour) are listed in *Table 2.4.2*. The methodology for estimating the tax consequences follows the standard methodology of the Danish Ministry of Taxation. Concretely:

- I. The mechanical effect of increased taxes of fossil energy usage is computed using the forecast of Danish Energy Authority. The behavioural effect is estimated based on the elasticities described in the official Danish excise, tariff and subsidy analysis⁴
- II. The establishment of the expert group will have a total budget of 6 m. to be spent from 2021-2022
- III. The mechanical effect of extended deductions for the Investment window is based on data from Denmark Statistics on firm investments. The behavioural effect is based on the empirical observed response from the Danish investment window in 2012/2013.⁵

⁴ <https://www.skm.dk/media/6046/afgifts-og-tilskudsanalysen-delanalyse-3.pdf>

⁵ <https://fm.dk/nyheder/nyhedsarkiv/2012/juni/investeringsvindue-skaffer-job-og-ny-vaekst/>

- IV. The mechanical effect of extended deductions for raising the threshold for accelerated depreciation is based on data from Denmark Statistics on firm investments. The behavioural effect on investment, profits, employment and wages is based on the standard calculation of corporate tax changes by the Ministry of Finance/Taxation documented [here](#).

Table 2.4.6
Cost of Initiatives in Component 3: Green Tax Reform

M. DKK, 2021-prices	Investment/ reform	Total	2021	2022	2023	2024	2025	Funding from other sources
I. Emission taxes on industries	Reform	-410	-	-	-90	-80	-240	-
II. Expert group to prepare proposals for a CO ₂ e-tax	Reform	6	3	3	-	-	-	-
III. Investment window	Investment	3,029	626	1,038	608	439	318	210
IV. Accelerated depreciation	Investment	1,280	410	310	240	180	140	-
Total		3,905	1,039	1,351	758	539	218	

Table 2.4.7
Measurable effects of the Green Tax Reform

	CO ₂ -reduction in 2030	Employment effects (1.000)					GDP effects (%)				
		2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
I. Emission taxes on industries	0.5 Mt	0.0	0.0	0.0	-0.1	-0.1	0.00	0.00	0.00	0.00	0.00
III. Investment window	-	2.3	4.5	0.7	-1.0	-0.7	0.15	0.25	0.00	-0.10	-0.05
IV. Accelerated depreciation	-	0.1	0.2	0.2	0.3	0.3	0.00	0.00	0.00	0.00	0.00
Total	0.5 Mt	2.4	4.7	1.0	-0.7	-0.5	0.15	0.25	0.00	-0.05	-0.05



Component 2.5

Sustainable road transport

The transport sector is one of the largest emitters of greenhouse gasses in Denmark. In order to reach the ambitious target of reducing greenhouse gas emissions by 70 per cent by 2030, reductions in the transport sector is essential.

Increasing the sustainability of the road transport sector, which accounts for about 90 per cent of the greenhouse gas emissions in the transport sector in Denmark, is especially crucial.

The initiatives in this component on the green transition of road transport sets out strong measures and contributes to lower greenhouse gas emissions in the road transport sector by 2.1 Mt in 2030 and set forth the ambition of having 1 m. zero- or low-emission cars on the roads by 2030.

Re-prioritisation of the registration tax, reducing GHG intensity of fuels, significant investments, subsidies for green infrastructure and new technologies further incentivises green mobility.



Description of the component

Box 2.5.1

Sustainable road transport

Climate policy, sustainable consumer behaviour, pollution mitigation, protection of health and well-being of citizens, just and inclusive transition, competitiveness between conventional and low emission cars.

Objective:

- **Better environment and health:** Reducing the greenhouse gas intensity of fuels on a well-to-wheel basis will reduce GHG-emissions from conventional cars in the transition towards zero-emission cars. The subsidy pool targeted the scrapping of old diesel cars will further support clean air in the cities and the general health of citizens by reducing emissions of particles and NOx. Furthermore, owners of old diesel cars are incentivised to substitute to greener alternatives, due to the re-prioritisation of the registration tax and low electricity tax on charging electric vehicles that are also introduced.
- **Smart and sustainable mobility:** Re-prioritising registration taxes of vehicles and low electricity tax on charging electric vehicles support the consumers and incentivises users to choose transportation options to mitigate greenhouse gas emissions and air pollution, while limiting the effects of congestion and promoting public health. The re-prioritisation of registration taxes will ensure it is more robust to technological development and solely dependent on the car's value and CO₂ emissions.
- **Green transition:** Re-prioritisation of the registration tax, increasing the obligation to reduce GHG will improve the use of sustainable energy sources and reduce greenhouse gas emissions. By incentivising electric and plug-in hybrid cars, decreasing the stock of conventional cars and reflecting the impact emissions and pollution have on the environment, the initiatives support the ambition of reducing greenhouse gas emissions by 70 % by 2030 compared to 1990, and achieve climate neutrality by 2050 at the latest.

Reforms/investments to underpin the objectives

- I. Incentives to choose green cars (870 mill. DKK)
 - a. Re-prioritisation of the registration tax of vehicles and low electricity tax on charging electric vehicles
 - b. Temporary increase in the scrapping premium for old diesel cars
- II. Analyses, tests and campaigns for greener transport (25 mill. DKK)
 - c. Development test of road-pricing
 - d. Car sharing and carpooling (awareness)
 - e. Analysis of test scheme with double trailers
 - f. Analysis of the regulation on weight and dimensions to optimise heavy haulage
- III. Green transportation and infrastructure (730 mill. DKK)
 - g. Scheme to infrastructure for electric bicycles
 - h. Investments in bike paths in state roads and bicycle subsidy scheme for municipalities
 - i. Subsidy scheme to green ferries

Estimated Cost:

Approximately 1.6 bn. DKK in total from 2021-2025 covered by the RFF. The total cost of the reforms and investments on green road transportation is 1.2 bn. DKK in 2021 increasing to 2.9 bn. DKK in 2030. The residual costs are covered by increasing taxes on conventional cars, existing reserves and a new road-pricing toll for heavy vehicles based on CO₂-emissions from 2025.

Main challenges and objectives

2.5.1 Main challenges

The green transition requires better solutions, new technologies and behavioural change across sectors and industries. The challenges mentioned below relate to a

segment of these e.g. shifting from the use of conventional to low- and zero-emission cars:

- *Lack of sufficient market competition between conventional vs. low- and zero-emission cars:* Low- and zero-emission cars are relatively new technologies and thus not competitively priced compared to conventional cars. The conversion of the car fleet to zero- and low-emission cars is a long process, as the average lifetime of a new car is approximately 15 years, so it is important to take the necessary steps early. Therefore, a re-prioritisation of the registration tax and low electricity tax on charging will support Danish efforts to reach our climate targets and increase the stock of zero- and low-emission cars in the short- and long-term.
- *Requirements to reduce CO₂ emissions from fossil fuel cars:* Conventional cars will constitute a majority of the general car stock over the coming decades, necessitating initiatives to reduce the CO₂-emissions stemming from conventional cars. This could e.g. include campaigns about car-sharing and carpooling, analysis of heavy haulage and investments in infrastructure for bicycles.

2.5.2 Objective

The Danish Government along with several parties of parliament have agreed on a number of reforms and investments that sets out strong measures to lower greenhouse gas emissions in the road transport sector. It is estimated that this will lead to a substantial reduction in greenhouse gas emissions of 1.0 m. tonnes in 2025 increasing to 2.1 m. tonnes in 2030. The parties have an ambition of having 1 m. zero- and low-emissions cars on Danish roads by 2030. Moreover, this will ensure long-term regulation of green fuels to fossil-driven cars, and from 2025, the heavy haulage industry will be covered by a new, CO₂-differentiated road-pricing toll. This is an important step towards reaching the 2030 climate target of reducing greenhouse gas emissions by 70 per cent. The initiatives in the agreement will support the objectives below and is possible due to the funds from the recovery and resilience fund.

- *Better environment and health:* Enhancing and increasing the obligation to reduce the greenhouse gas intensity of fuels on a well-to-wheel basis will reduce greenhouse gas emissions from conventional cars in the transition towards zero-emission cars. The subsidy pool targeted at the scrapping of old diesel cars will, combined with the other initiatives, support clean air in the cities and the general health of citizens by reducing emissions of particles and NO_x.
- *Smart and sustainable mobility:* Re-prioritising the registration tax of vehicles supports the consumers and incentivises users to choose transportation options to mitigate greenhouse gas emissions and air pollution, while simultaneously promoting public health. The re-prioritisation entails that the registration tax

for low- and zero-emissions cars is reduced significantly until 2035. Further, the re-prioritisation of the registration tax simplifies the tax, making it solely dependent on the car's value and CO₂ emissions.

- *Green transition:* Re-prioritisation of the registration tax, obligation to reduce greenhouse gas emissions from fuel will improve the use of sustainable energy sources and reduce greenhouse gas emissions. By enhancing the incentive to buy low- and zero-emission cars, decreasing the stock of conventional cars and reflecting the impact emissions have on environment, the initiatives support the ambition of reducing greenhouse gas emissions by 70 per cent by 2030 compared to 1990 and achieve climate neutrality by 2050 at the latest.

The measures and initiatives are coherent and compliant with the European Green Deal. The measures presented below focus on accelerating the shift to sustainable and smart mobility, sustainable consumer behaviour, just and inclusive transition. In general, the initiatives will ensure that the price of transport more accurately reflects the impact it has on the environment and on public health. At the same time, the initiatives comply with the National Energy and Climate Plan (NECP). In general, the initiatives are supporting measures aimed at ensuring more efficient transport and vehicles. In addition, they put forward trajectories in the transport sector to meet the emission targets. Moreover, the initiatives are in line with the CSR, where Denmark will invest in sustainable fuels industry in order to take action and address initiatives in one of the country's largest sources of greenhouse gas emission.

Summary description of the reforms and investments of the component

Overall, the Danish government is proposing a package of initiatives regarding green road transport of approximately 1.2 bn. DKK in 2021 increasing to 2.9 bn. DKK in 2030.

The package contains reforms and investments in supporting the transition towards the use of sustainable energy sources in the road transport sector. Among these are measures that increases the incentive to choose green cars. These include a re-prioritisation of the registration tax and a low electricity tax to electric charging of zero- and low-emission cars. In addition, the component contains analyses, tests and campaigns that can support a further reduction in greenhouse gas emissions from road transport in the long term. Finally, the component contains initiatives that promote and support green transportation and infrastructure, including for example investments in bike paths. Thus, there is devoted means targeted at road transport, supporting green infrastructure, including milestones of low- and zero-emission vehicles.

Reforms

2.5.3 Incentives to choose green cars

A) Re-prioritisation of the registration tax and low electricity tax on charging electric vehicles

Addressing challenges: Currently, the purchase of low- and zero-emission cars is less favourable compared to conventional cars, as the purchasing prices of these low- and zero-emission cars are higher. In order to enable an affordable transition from conventional cars to low- and zero-emission cars it is important to support sustainable cars and provide better terms for these.

Achieving sustainable transport means putting users first and providing them with more affordable, accessible, and cleaner alternatives to their current mobility habits. Consequently, the initiative is in line with the European Green Deal, as it accelerates the shift towards sustainable and smart mobility.

Objectives: The Danish government and several parties of the parliament are determined to implement a re-prioritisation of the registration tax of vehicles in order to enhance and strengthen the market competition of low- and zero-emission cars. The re-prioritisation entails that the registration tax for low- and zero-emission cars is reduced significantly until 2035. Furthermore, the re-prioritisation of the registration tax simplifies the tax, making it solely dependent on the car's value and CO₂ emissions. In addition, the special scheme with low electricity tax to charging of zero- and low-emission cars will be extended to 2030. The scheme was already in place through 2021. By extending the scheme, reduced costs for charging an electrical vehicle are ensured until 2030, further incentivising the uptake of low- and zero-emission cars.

The registration tax will be based on CO₂ emissions and is thus independent of used technology, promoting zero- and low-emission cars, as they will be subject to lower registration taxes. Zero-emission cars (typically electric cars) are defined as emitting 0 gram of CO₂ per kilometre, while low-emission cars are defined as emitting less than 50 grams of CO₂ per kilometre. Cars that emit at least 50 grams of CO₂ per kilometre are in the taxation scheme defined as conventional.

The model proposed is estimated to result in 1) a stock of approx. 775,000 green cars in 2030, of which 715,000 are passenger cars and 60,000 are vans, 2) a CO₂ reduction of approx. 0.5 m. tonnes in 2030, and 3) a shadow price of CO₂-reductions of approx. 2,600 DKK per tonnes of CO₂.

The re-prioritisation of the registration tax is estimated to include a substantial financial allocation, *cf. table 2.5.1*. The green transportation deal is fully financed from 2026-2030. Hence, the re-prioritisation of the registration taxes requires complementary RRF funding in 2021-2025 in order to be achieved and reinforced. This use of RRF funding reinforces the recommendations of the NECP

and the CSR, as they focus on the clean and efficient use of energy and sustainable transport.

Table 2.5.1
Total costs of the re-prioritisation of the registration tax 2021-2030

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
M. DKK										
Costs	500	600	800	1,000	1,100	1,000	900	800	700	500

In addition, a financing element through an increase in the existing ownership tax is included by an increase of 3 % in 2022, 6.5 % annually in 2023-2025 and 10 % in 2026. The model also entails a re-prioritisation of registration tax for vans, which is estimated to result in additional revenue after reflux and behaviour of 100 m. DKK annually from 2021 to 2030, a CO₂ reduction of approx. 0.05 m. tonnes in 2030 and a stock of 60.000 green vans in 2030.

The special scheme with low electricity tax to charging of electric cars has been in place since 2012 and was set to expire at the end of 2021. The scheme has previously been discussed with the Commission, who recognised that it did not constitute a State aid problem.

Estimates of the financial allocation for the extension of the special scheme are illustrated in *table 2.5.2*.

Table 2.5.2
Total costs of the extension of the special scheme with low electricity tax for charging 2022-2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030
M. DKK									
Costs	100	200	200	300	400	500	700	800	900

Implementation: The re-prioritisation of the registration tax has been in place since December 18th 2020. The extension of the scheme from 2022 through 2030 was formally adopted by the Danish parliament on February 9th 2021.

Target group: Households and companies.

Timeline: The initiatives are implemented.

Do no significant harm:

Table 2.5.3
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No - on the contrary, the measure is expected to lead to significant reductions in the greenhouse gas emissions as a consequence of incentivising the transition from polluting cars to low- or zero-emission vehicles. The government and the parties behind the agreement has an ambition of having 1 million low- and zero emission vehicles on danish roads by 2030.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	The measure is interlinked with the objective to transform the car-stock from gas and diesel to sustainable and electrical cars. The re-prioritisation of the registration tax and lowering the electricity tax for charging are expected to significantly raise the incentive for consumers to buy zero- or low emission cars.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	The measure encourages the usage of sustainable road transport, and limits the consumption of polluting and emitting vehicles. The measure is not expected to have an implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	The measure has no implication for the waste handling or the circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	The measure is directly and indirectly expected to reduce emissions of pollutants into air, water and land. This especially concerns GHG emissions and the support of clean air in the cities by reducing emissions of particles and NOx.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition ⁵ and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the measure will not conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are strictly regulated in Danish environmental laws and this does not change with the re-prioritisation of the registration tax and low electricity tax on charging electric vehicles.

B) Temporary increase in the scrapping premium for old diesel cars

Addressing challenges: Older diesel cars are a source of harmful particulate matter and NOx gases, especially in the larger cities, and generally emit more CO2 than newer (diesel) cars. There are incentives to discard older and polluting diesel cars, but the process of scrapping is currently too slow in order to reinforce the green transition of the car-stock.

Objectives: In order to support the transition from old conventional cars to zero- or low-emission cars (particulate matter, NOx and CO2) the scrapping premium for old diesel cars is increased, increasing the incentive for households to scrap their old diesel cars in favour of newer, less emitting cars, including zero- and low-emission cars. The re-prioritisation of the registration tax in initiative I.a. incentivises consumers to choose cars with lower emissions by making greener cars relatively cheaper. Combined with the temporary increase in the scrapping premium for old diesel cars, consumers are provided with incentives to scrap their older, polluting car and replace it with a zero- or low-emission car. Thus, the initiatives are intertwined and will reform the incentive structure in order to reinforce the green transition of the car-stock.

Implementation: A subsidy scheme will be initiated to increase the scrapping premium in 2021, so owners of diesel cars from before 2006 will receive a scrapping premium of 5.000 DKK, if they scrap their old diesel car, and their application is approved. The administration set up will be digital. The digital set up will be developed as a part of the costs of the administration scheme.

There will be allocated 100 m. DKK to the initiative in 2021. Moreover, there is allocated 5 m. DKK in 2021, 10 m. DKK in 2022 and 5 m. DKK in 2023 to finance the derivative consequences of the initiative.

In total, the initiative is expected to reduce the emission of PM2.5 by 17 tonnes and the emission of CO2 by approximately 7.000 tonnes.

Target group: Households.

Timeline: The Ministry of Environment will manage the initiative, which is to be carried out from early 2021.

State aid: The scrapping premium does not constitute state aid within the meaning of TEUF art. 107(1), as the premium is not selective, and as any effect on trade or distortion of competition is merely hypothetical.

Do no significant harm:

Table 2.5.4
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
<p>Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?</p>		X	<p>Conventional cars will constitute a majority of the general car stock over the coming decades, necessitating initiatives to reduce the CO₂-emissions stemming from conventional cars. The scrapping scheme for old diesel cars is expected to lead to reductions in the GHG emissions. The premium is not tied up in the purchase of new cars or anything else, but merely the scrapping of old diesel cars to discard them from the existing car stock.</p> <p>The re-prioritisation of registration taxes and lowering the electricity tax for charging significantly raises the incentive for consumers to buy zero- or low emission cars. The scrapping scheme is thereby mutual supportive to the other measures in the component. As a whole, these aim at speeding up the green transition in transport, either by incentivizing the up-take of low- and zero emission vehicles, accelerating the transition away from polluting cars or into alternative green means of transport.</p>
<p>Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?</p>		X	<p>The scrapping scheme for old diesel cars is expected to lead to reductions in the GHG emissions.</p> <p>The measures are associated and interlinked with the objective to transform the car-stock from gas and diesel to sustainable and electrical cars. Thus, the initiatives work together by increasing the incentive to discard emitting and polluting cars and replace them with sustainable ones. Moreover, the investments in infrastructure for bicycles also raises the incentive to use types of sustainable transportation.</p>
<p>The sustainable use and protection of water and marine resources.</p> <p>Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?</p>		X	<p>The measure encourages the usage of less polluting road transport, and reduces the stock of the most polluting and emitting vehicles. The measure is not expected to have an implication for the use and protection of water services.</p>
<p>The transition to a circular economy, including waste prevention and recycling.</p> <p>Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>		X	<p>Since the scrapping premium provides incentive to hand in old diesel cars to authorized car wreckers, it is expected to increase the amount of cars handed in for scrapping, and therefore increase the amount of waste for a temporary period. However, the cars will be scrapped sustainably and the recyclable materials will be part of the ordinary recycling streams as for other scrapped cars due to the efficiency of the Danish waste management system. Therefore it is not expected that this initiative will have harmful implications for the circular economy.</p>
<p>Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?</p>		X	<p>The scrapping scheme for old diesel cars are expected to lead to reductions in pollutants especially particular matter (PM) into air, water and land. This support clean air in the cities by reducing emissions of particles and NO_x.</p>
<p>The protection and restoration of biodiversity and ecosystems.</p> <p>Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>		X	<p>The initiative will not conflict with the protection and restoration of biodiversity and ecosystems.</p> <p>Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiative.</p>

Investments

2.5.4 Analyses, tests and campaigns for greener transport

A) Development test of road-pricing

Addressing challenges: A road-pricing scheme can, among other things, contribute to decrease congestion, mitigate CO₂ emissions and reduce air pollutions. However, the technical solutions need further development and a development test can contribute to valuable knowledge about e.g. the associated costs and benefits related to a road-pricing scheme.

Objectives: There is a clear theoretical potential of creating socio-economic benefits from road pricing in Denmark, with key benefits stemming from decreased congestion. Other expected benefits will be a mitigation of CO₂ emissions from road transport, lower levels of air pollution, noise and accidents. A number of theoretical studies have been carried out on road-pricing in the last two decades – the most recent was published by a government expert commission (Bilkommissionen) in September 2020 (national scheme), and February 2021 (scheme for Copenhagen). However, the technical solutions that can implement road pricing schemes needs further development and the associated costs are key to understanding the expected return of a project that holds many risks and uncertainties. Therefore, the parties of the transportation agreement are committed to initiate development tests of road pricing in order to explore efficient ways of taxing congestion and the damage and health costs associated with driving.

Implementation: The parties agreed to allocate 20 m. DKK in 2022 to a public-private development partnership that can investigate the technological and administrative challenges related to road-pricing of cars. The project management and dissemination of results is expected to be assigned to a University with scientific knowledge in the area of transport economics.

Target group: Households and companies.

Timeline: The public-private development partnership will be initiated in 2022.

EU state aid rules: It will not be regarded as state aid as long as it is ensured that there will not be an economic advantage given when awarding the funds to a Danish university. It has to be ensured that it is a purchase of a service at a market price.

Do no significant harm:

Table 2.5.5
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No. A road-pricing scheme can among other things contribute to decrease congestion, mitigate CO ₂ emissions and reduce air pollutions. However, the technical solutions need further development and a development test can contribute to valuable knowledge about e.g. the associated costs and benefits related to a road-pricing scheme.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No. As mentioned before, a road-pricing scheme can among other things contribute to decrease congestion, mitigate CO ₂ emissions and reduce air pollutions. However, the technical solutions need further development and a development test can contribute to valuable knowledge about e.g. the associated costs and benefits related to a road-pricing scheme.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No. A road-pricing scheme will contribute to knowledge about how to implement a large-scale roadpricing scheme that among other things contribute to decrease congestion, mitigate CO ₂ emissions and reduce air pollutions.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No. A test scheme could help quantifying potential reductions in emissions.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No. A test scheme could help quantifying potential reductions in emissions and the measure is expected to indirectly reduce emissions of pollutants into air, water and land, if there is results that shows that there will be benefits in implementing a large scale roadpricing scheme that among other things contribute to decrease congestion, mitigate CO ₂ emissions and reduce air pollutions.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the analysis will not conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives of the sustainable road transport.

B) Car sharing and carpooling (awareness)

Addressing challenges: The initiative aims at addressing challenges related to the use of cars, where the capacity is not fully used and time is wasted due to congestion. These challenges are termed ‘transport waste’.

Objectives: With 1.05 persons per car and commuters spending up to 30 percent of the travel time in queues, there are challenges with ‘transport waste’. Additionally, there is an increasing pressure on parking in the bigger cities.

On this basis, there is potential for making the transport sector more efficient and limit the number of cars in the cities by increasing car sharing and carpooling.

However, most citizens are unaware of the benefits, carpooling and sharing vehicles offers for the individual and for society as a whole. Carpooling can help reduce transportation time, congestion, the emission of particles and CO₂-emissions while simultaneously offering economic and social benefits for companies and citizens alike e.g. lower fuel costs. Additionally, car sharing can help reduce the increasing pressure on parking spots in the bigger cities. The campaigns can also be an inspiration for Danish cities to integrate shared mobility forms in their urban mobility planning such as the sustainable urban mobility plans (SUMP).

Implementation: The parties of the green transportation deal have allocated 3 m. DKK in 2021 to initiate information- and behavioural campaigns aimed at informing about the challenges related to ‘transport waste’ as well as highlighting the benefits for citizens, companies and society at large associated with car sharing and carpooling.

Target group: The target groups of the campaigns will be based on an initial analysis conducted in 2021 by the Danish Ministry of Transport and the Danish Road Directorate. The current expectation is that the target group will be commuters and companies.

Timeline: The campaigns will be initiated during 2021-2022.

EU state aid rules: As the aid will be provided by the EU to the Danish Ministry of Transport, the aid will not be considered as state aid in the sense of Article 107(1) TFEU.

Do no significant harm:

Table 2.5.6
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No – on the contrary, the measure is expected to lead to reductions in the greenhouse gas emissions by informing about the potentials by car sharing and carpooling.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No – the measure has the objective to create awareness about the positive and aspects of sustainable ways of using cars.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	The measure encourages the usage of sustainable road transport, and limits the consumption of polluting and emitting vehicles. The measure is not expected to have an implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No – on the contrary, the measure aims at preventing 'transport waste' by sharing cars and car seats.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No – the measure is expected to lead to minor indirect reductions in emissions of pollutants into air, water and land.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the measure will not conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives of the sustainable road transport.

C) Analysis of test scheme with double trailers

Addressing challenges: In achieving the government's goal of reducing CO₂ emissions across all sectors by 70 percent by 2030, solutions that support the green transition must be found. This also applies to the transport sector, which in 2030 is expected to emit almost 14 m. tonnes of CO₂, corresponding to approx. 32 percent of Denmark's total greenhouse gas emissions. The analysis will disclose whether the permit of double trailers will contribute to reducing road transport's CO₂ emissions.

Objectives: Double trailers can potentially contribute to make freight transport more efficient and correspondingly reducing CO₂-emission while offering economic benefits as more freight can be carried by fewer lorries. However, there is

uncertainty surrounding whether the Danish infrastructure network can accommodate longer lorries, potentially leading to accidents, economic externalities and congestion, if the use of double trailers is allowed haphazardly.

Optimal capacity utilisation of trucks requires efficient logistics, route optimisation, etc. Experiences with the ongoing adjustment of the weight and dimension regulations, including increased total weights for ordinary lorries and experiments with modular lorries, are positive - also in relation to fuel consumption relative to the amount of transported goods.

If double trailers are to be able and allowed to drive on the Danish road network, it is necessary that the road network is modified to support this. As the overall road network is state-owned, it is a state task to examine the existing road conditions in relation to a number of traffic safety conditions, such as driving curves.

Implementation: An analysis will be carried out by the Danish Road Directorate and the Danish Road Traffic Authority covering the efficiency of the road design, planning and test rides etc. Based on the analysis it will be possible to decide which reconstructions can and should be carried out in order to ensure both traffic safety and traffic flow on the certain road network. There is allocated 1 m. DKK in 2021 to the analysis.

Target group: Heavy haulage.

Timeline: The analysis will be carried out in 2021.

EU state aid rules: Infrastructure investments are tasks for the public authorities, as roads are owned by either the state or municipalities. The initiative does not involve user-financing. Thus, it is not economic activity. Accordingly, the cost for the analysis are not covered by EU state aid rules.

Do no significant harm:

Table 2.5.7
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No. A report on the findings of the analysis of test scheme with double trailers could help quantifying potential reductions in emissions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No. A report on the findings of the analysis of test scheme with double trailers could help quantifying potential reductions in emissions.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No. The measure encourages the usage of sustainable road transport, and limits the consumption of polluting and emitting vehicles. The measure is not expected to have an implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No. A report on the findings of the analysis of test scheme with double trailers could help quantifying potential reductions in emissions.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No. A report on the findings of the analysis of test scheme with double trailers could help quantifying potential reductions in emissions and the measure is expected to indirectly reduce emissions of pollutants into air, water and land, if the analysis shows positive results on reducing reductions in emissions from lorries.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the analysis will not conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives of the sustainable road transport.

D) Analysis of the regulation on weight and dimensions to optimise heavy haulage

Addressing challenges: There is an unused potential of optimising the national regulation on weight and dimensions, which, if used, can improve the efficiency and reduce emissions related to the transportation of goods.

Objectives: The Danish Road Traffic Authority has assessed that there is a potential in improving the efficiency and reduce emissions from heavy haulage by optimising the regulation on weight and dimensions. A thorough analysis of further reduction potentials in the regulation is assumed to lead to a further reduction of emissions and optimisation of the transportation of goods.

Implementation: An analysis concerning the potential of lower emissions through further adjustments of the current regulation on weight and dimensions will be carried out. Besides estimating the potential reduction in emissions, the analysis will also estimate financial consequences for the transport sector and the society - such as increased wear and tear on roads. The Danish Ministry of Transport will perform the analysis.

1 m. DKK in 2021 is allocated to carry out the analysis.

Target group: Companies in the transport sector and derived sectors.

Timeline: The analysis will be carried out in 2021.

EU state aid rules: The EU funding provided to the Danish Ministry of Transport in respect of performing the analysis of the regulation on weight and dimensions to optimise heavy haulage does not fall within the concept of state aid in Article 107 TFEU since the EU funding does not involve state resources and since the funding will not be passed on to undertakings.

Do no significant harm:

Table 2.5.8
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No. A report on the findings of the regulation on weight and dimensions to optimise heave haulage could help quantifying potential reductions in emissions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No. A report on the findings of the regulation on weight and dimensions to optimise heave haulage could help quantifying potential reductions in emissions.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No. The measure encourages the usage of sustainable road transport, and limits the consumption and usage of polluting and emitting vehicles. The measure is not expected to have an implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No. A report on the findings of the regulation on weight and dimensions to optimise heave haulage could help quantifying potential reductions in emissions.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No. A report on the findings of the regulation on weight and dimensions to optimise heave haulage could help quantifying potential reductions in emissions. The measure is expected to indirectly reduce emissions of pollutants into air, water and land if the analysis shows positive results on how to reduce reductions in emissions from lorries by optimising the national regulation on weight and dimensions.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the analysis will not conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives of optimising the national regulation on weight and dimensions.

2.5.5 Green transportation and infrastructure

A) Scheme to infrastructure for electric bicycles

Addressing challenges: With electric bicycles, longer distances can be covered by bike. This new mode of transportation requires the possibility to charge the bike along the way, so that the battery's range does not limit the length of the bike ride. Therefore, it is necessary to invest in publicly available charging to electric bicycles to make it more attractive to choose the bike for longer distances.

Objectives: Cycling combines mobility with exercise and contributes to improving public health, while at the same time being a very environmentally and climate-friendly form of transport. Denmark is among the world's best cycling nations. However, continued focus on cycling and investments in bicycle infrastructure is necessary, if this leading position is to be maintained and more people are to choose the bicycle.

The bicycle can be used as an alternative to other modes of transport both in the cities and in the rural areas to a much greater extent than today. Especially electric bicycles can expand the bikeable distances while also improving public health.

Whether the funds will be targeted at cycling commuters or for recreational cycling, has not yet been decided, as the funds will not be allocated until 2024. In that light, the decision of which area to invest in will depend on the speed and direction of the development of battery technology.

As it is not decided whether the funds will be targeted cycling commuters or recreational cycling, it is not possible to estimate exactly how many e.g. bike charging stations the investment will be able to finance. If the funds are targeted cycling commuters it will be easier to install the bike charging station compared to installing a station where there are no existing power outlets.

The Danish Road Directorate estimates that a pool of 10 million DKK is able to finance approx. 200 locations, assuming that dedicated electric bike chargers are installed where there are no existing power outlets. On the other hand, the Danish Road Directorate points out that an additional socket in addition to an already existing electrical installation has very limited installation costs compared to bike charging stations where there are no existing power outlets.

Implementation: The parties of the transportation agreement have allocated 10 m. DKK in 2024 to public accessible charging stations of electric bicycles.

The investment in infrastructure for bicycles will integrate the EU Commissions Sustainable and Smart Mobility Strategy by contributing to urban planning, and on connectivity with rural and suburban areas, so that commuters are given sustainable mobility options by public accessible charging stations of electric bicycles. The electric bicycles enables the commuter to choose the bike for longer distances. At the same time, the investment will contribute to clean and climate friendly tourism as the public charging stations will make it possible and more attractive for tourists to choose cycling tourism.

Target group: Households and companies.

Timeline: The scheme is supposed to be initiated in 2024.

EU state aid rules: The investments are tasks for the public authorities, as the state and the municipalities respectively own the roads. The initiative does not involve user-financing. Thus, it is not economic activity. Accordingly, the investments are not covered by EU state aid rules.

Do no significant harm:

Table 2.5.9
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No – the measure promotes green transportation and infrastructure.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No – the investments in infrastructure for bicycles raises the incentive to use types of sustainable transportation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	The initiative encourages the usage of sustainable road transport. The initiative is not expected to have an implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No. the investments in infrastructure for bicycles raises the incentive to use types of sustainable transportation. The measure is not expected to lead to an increase in disposal of waste, lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage or cause significant and long-term harm to the environment.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	The measure is expected to reduce emissions of pollutants into air. This especially concerns the support of clean air in the cities by promoting green transportation and infrastructure through the subsidy schemes to infrastructure for electric bicycles and investments in bike paths in state roads and municipalities.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the initiatives in this component will not conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives of the sustainable road transport.

B) Investments in bike paths in state roads and bicycle subsidy scheme for municipalities

Addressing challenges: In Denmark, the bicycle traffic has been stagnant or even declining for a number of years. Only in the larger cities, where cycling is a faster and easier choice than other modes of transport, bicycle traffic has been in-

creasing. Outside the urban areas, the bicycle is not a natural first choice in everyday life. Therefore, it is necessary to make it more attractive to choose the healthy and CO₂ neutral bike instead of the car.

Objectives: To incentivize citizens to choose bicycles rather than cars it is important to prioritize and support the development of green mobility. This is advantageous for public health, and it can limit congestion and reduce CO₂ emissions. The investments are tasks for the public authorities, as the state and the municipalities respectively own the roads.

Implementation: The parties of the transportation agreement have allocated 30 m. DKK in 2021 and 170 m. DKK annually in 2022-2023 to the construction of bicycle infrastructure. This will support access to a more coherent bicycle road network for citizens and thereby better opportunities to choose the bicycle rather than other modes of transport.

In addition, 150 m. DKK will be allocated to a scheme targeting municipal bicycle construction projects. This presupposes municipal co-financing of 50 % of the costs, meaning that in total 300 m. DKK worth of municipal bicycle paths will be constructed. The municipal contribution will have to be prioritised within the municipalities' construction budget. In total this means an allocation of 180 m. DKK in 2021 and 170 m. DKK annually in 2022-2023.

The investments in cycling infrastructure will integrate the EU Commissions Sustainable and Smart Mobility Strategy by contributing to urban planning, and on connectivity with rural and suburban areas, so that commuters are given sustainable mobility options. Studies show that urban planning has an impact on the use of the bicycle, which is why municipal urban planning, transformation of existing urban spaces and urban policy are also tools that can contribute to bicycle promotion locally and nationally. Pools targeted at municipalities can therefore help to promote cycling locally.

The Bicycle subsidy scheme to the state roads will integrate the EU Commissions Sustainable and Smart Mobility Strategy by investing in safer cycling infrastructure on state roads. The investment consists primarily of the construction of new cycle paths, especially for the benefit of commuting to work and school, as well as improved crossing options on sections where the state road is a barrier.

Target group: Households and companies.

Timeline: The subsidy scheme will be initiated at the beginning of 2021 and the investments in bike paths on state roads will be carried out in the period 2021-2023. The construction of the bike paths on state roads is expected to be completed in Q4 2025.

EU state aid rules: The investments are tasks for the public authorities, as the state and the municipalities respectively own the roads. The initiative does not involve user-financing. Thus, it is not economic activity. Accordingly, the investments are not covered by EU state aid rules.

Do no significant harm:

Table 2.5.10
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No – the measure promote green transportation and infrastructure.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No – the investments in infrastructure for bicycles raises the incentive to use types of sustainable transportation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	The initiative encourages the usage of sustainable road transport. The initiative is not expected to have an implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No. the investments in infrastructure for bicycles raises the incentive to use types of sustainable transportation. The measure is not expected to lead to an increase in disposal of waste, lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage or cause significant and long-term harm to the environment.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	The measure is expected to reduce emissions of pollutants into air. This especially concerns the support of clean air in the cities by promoting green transportation and infrastructure through the subsidy schemes to infrastructure for electric bicycles and investments in bike paths in state roads and municipalities.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the initiatives in this component will not conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are strictly regulated in Danish environmental laws and this does not change with the initiatives of the sustainable road transport.

C) Subsidy scheme to green ferries

Addressing challenges: The transport sector constitutes a substantial share of the emission of greenhouse gasses. The transition to green transportation requires significant public investments as private agents might not take the benefits from

reduced greenhouse gas emissions properly into account in their own investment decisions.

Objectives: To promote the green transition of the transportation sector it is important to strengthen schemes that support initiatives contributing to this. The support scheme covers co-financing of a green transition of municipal ferries.

The initiative follows up on the recommendations from relevant business organisations across the transport sector and contributes to a green boost of the economy. The support scheme is part of a larger agreement with additional funds to those covered by RRF. At present, there are ongoing political negotiations about the scale of the additional funds.

Co-financing of a green transition of municipal ferries: In December 2020, an analysis documenting the total societal benefits and the potential of a green transition of Danish ferries, most of them run by municipalities, was completed. Denmark has many islands, and most ferry routes are the primary connection between the islands and the rest of Denmark, so the ferries are an important mode of transport in Denmark. Most of the current ferries are conventional ferries, which sail on diesel fuel. Alternatives to conventional propulsion can thus reduce the greenhouse gas emissions significantly.¹ The magnitude of the investments required to make the transition is too costly for the municipals to conduct on their own. In addition, as the monetary payoff of the investment is negative when greenhouse gas reductions are not included, central government support is necessary for the green transition of municipal ferries. In total, DKK 200 million from RRF are allocated to the green transition of municipal ferries (DKK 150 million in 2021 and DKK 50 million in 2022). With a subsidy percentage of 15-25, the DKK 200 million DKK will enable a green transition of approximately 23 ferries.

The following overall criteria will be used for the subsidy for green transition of ferries: The CO₂ effect and environmental effect per invested DKK. The funds will only be used for investments in e.g. new green ferries, retrofit or other necessary infrastructure such as charging stations for the ferries. In total, RRF's contribution to the scheme consists of 150 m. DKK in 2021 and 50 m. DKK in 2022.

Target group: Municipals.

Timeline: The allocated funds will go to a support scheme together with potential additional funds, where municipalities can apply for co-financing. It is expected, that the application deadline will be sometime in the autumn of 2021, so that an announcement of commitment to support/not support can be given to applicants in 2021 and 2022.

¹ "Grøn omstilling af danske indenrigsfærger", COWI (2020).

EU state aid rules: The investments are tasks for the public authorities, as the municipalities respectively operates the ferries included. The ferries in question can generally be considered as services of general economic interest to the public, because they are important to the citizens and would not be supplied without public intervention. The municipalities will take the RRF support into account in the compensation mechanism to the operator, and if the co-financed ferry is not owned by the municipality, the operator will have to pay back its residual value at the end of the contract.

Do no significant harm:

**Table 2.5.11
Substantive DNSH assessment**

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No – on the contrary, the measure is expected to lead to reductions in the greenhouse gas emissions by exchanging ferries from diesel ferries to ferries with reduced emissions such as electric ferries or ferries that sail on biofuels.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No – the measure has the objective to reduce emissions from ferries and thereby improving the climate.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No - the measure encourages the usage of sustainable ferries and limits the number of polluting and emitting ferries. The measure is expected to have positive implications for the use and protection of water and marine resources because it limits the emission of CO2 and particles.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No – the measure aims at preventing 'transport waste' by getting more sustainable ferries, and it will therefore not cause significant and longtime harm to the environment. The exchanging of ferries can lead to an earlier replacement of some ferries and thereby create some waste at an earlier state than without the subsidy. However, because the subsidy will apply to both retrofit of existing ferries, when this is possible, as well as renewal of ferries, when this is optimal, it will not lead to a significant increase in the disposal of waste. In addition, the co-financing will not go to propellants, and will therefore not lead to significant inefficiencies in the direct or indirect use of any natural resources.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No – the measure is expected to lead to reductions in emissions of pollutants into air, water and land.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No – the measure is not expected to conflict with the protection and restoration of biodiversity and ecosystems. Pollutants are regulated in Danish environmental laws and this does not change with the initiatives of exchanging ferries to sustainable ferries.

Green and digital dimensions of the component

Green transition

Ensuring a green and sustainable future is one of the Danish Government's main priorities. The Danish government has set an ambitious reduction target for greenhouse gas emissions of 70 per cent in 2030 compared to 1990. The transport sector will play an important role in reaching this target as it will require a comprehensive green transformation of the transport sector. As such, it is necessary to explore the potential of all transport modes to ensure that the transport sector also contributes to reaching the 70 per cent target.

However, given that road transport's share of the transport emissions are 90 per cent, initiatives must focus especially on delivering emissions reductions from this sub-sector. Therefore, the Danish government and its supporting parties have agreed on a deal of green transition of the road transport sector initiating measures that will reduce emissions from passenger cars and heavy road freight transport by a total of 2,1 m. tonnes CO₂e. Some of these measures are presented in this component and will contribute to ensure a green transition of the road transport sector in Denmark.

The green transition requires better solutions, new technologies and behavioural change across sectors and industries and the measures presented in this component contribute to this development.

Do no significant harm

The initiatives presented in this component will contribute to ensure a green transition of the road transport sector. The aim of the initiatives is to ensure a transition to green cars and reduce the use of fossil fuel cars.

At the same time it acknowledges that conventional cars will constitute a majority of the general car stock over the coming decades, necessitating initiatives to reduce the CO₂-emissions stemming from conventional cars, which is why this component also include measures to ensure this, e.g. the campaign about car-sharing and carpooling, analysis of heavy haulage and investments in infrastructure for bicycles.

The initiatives in this component will not conflict with the protection and restoration of biodiversity and ecosystems.

Financing and costs

The recovery funds will partly finance the initiatives below with 1.6 bn. DKK in total in 2021-25. The remaining costs are covered by increasing the ownership tax

on cars, existing reserves and a new road-pricing toll for heavy vehicles based on CO₂-emissions from 2025.

The effects on the sale of green cars and the financial cost of the initiative regarding a re-prioritisation of the registration tax and the low electricity charge are estimated by the Ministry of Taxations CES-model for car selection and ministry's car choice model. Using this model, it is estimated that the costs of the initiative in 2021-2025 amounts to 4.9 bn. DKK, cf. *Table 2.5.4*, of which 750 m. DKK is funded from the RRF.

The CES-model was developed during the work with *Commission for the green conversion of passenger cars* in 2019-2020 and is thus documented in their first report on taxation on cars from September 20th. The model evaluates the effects on chances in the car taxation on the choice of purchasing a new car based on its total cost of ownership.

The loss (or gain) of revenue due to the changes on the sale of cars is then calculated in the ministry's car choice model. The model is based on a large dataset of the total car sales in one year and thus includes both mechanical effects and effects from changes in behaviour.

Regarding the investments in bike paths along state roads, it is expected that 370 m. DKK for investments in bicycle projects along state roads will be able to finance approx. 50 km bicycle path in total and ensure improvement of five safe road crossings for bicycles. This is based on the specific projects calculations from the Danish Road Directorate, which estimates the cost of 1 km of bicycle path to be in the range of 3-12 m. DKK depending on local conditions expropriation costs etc. The average cost is approximately 7.4 m. DKK per km bicycle path.

It is expected that a subsidy scheme of 150 m. DKK for co-financing (50 %) municipal bicycle projects will encourage the municipalities to prioritise the construction of bicycle paths and thereby green mobility. Studies show that urban planning has an impact on the use of the bicycle, which is why municipal urban planning, transformation of existing urban spaces and urban policy are tools that can contribute to bicycle promotion locally and nationally. Pools targeted municipalities can therefore help to promote cycling locally in the municipalities through e.g. investments in new bicycle infrastructure, such as super cycle trail. Furthermore, Denmark has good experience with pools for co-financing of municipal bicycle projects in Denmark, with high application levels. In the period 2009-2020, approx. 1.1 bn. DKK was given as a subsidy for bicycle projects in the municipalities from the Danish state.

Regarding the analyses and campaign in this component, the costs are estimated from experiences with earlier work from similar projects. The Danish Road Directorate has estimated the cost of the analyses on double trailers to 1 m. DKK,

which corresponds to the expected use of one full-time employee including overhead to carry out, e.g. analyses of road safety, vehicle technical, road technical and environmental conditions etc.

The road-pricing test can be considered a complex research project, and the funding thus covers investments in equipment, IT support and external assistance including project management and dissemination of results. There has not been made a political decision yet on how the test will be conducted. This is expected in the fall of 2021. However, computationally it can likely be assumed that the test will be a smaller version of a project description from the so-called “Trængselkommission” which in 2013 suggested a large road-pricing-test-scheme of 100 m. DKK. Since there is allocated 20 m. DKK for this project, it will not be possible to do the same test-scheme, but it is expected that a lot of inspiration can be found in the material from 2013².

A national campaign to the promotion of carpooling and car sharing needs to target the culture, habits and prejudices regarding carpooling and car sharing among the Danish road users. These aspects are difficult to change, therefore, the campaign will need a substantial amount of advertising funds during a long period of time and a well working concept to have a real effect. The expenses for the campaign are estimated to 3 m. DKK. In January 2021, the anti-litter campaign "Thank you for nothing ... on the road" (Tak for ingenting ... i vejkanten.) was launched with a budget on 1.2 m. DKK. The campaign was primary centred on the capital of Denmark, Copenhagen. While the expenses to developing campaign material in the two campaigns are similar, it will require extra funding to run a national campaign on social media compared to a campaign centred on Copenhagen.

Regarding the green transition on ferries, the Danish Ministry of Transport estimates that the 200 m. DKK will enable a green transition of approximately 23 ferries with a support percentage of 15-25. This is based on an analysis by COWI³ of all Danish inland ferries assessing the societal economy in transforming the routes into a greener profile e.g. electrified ferries or other alternative zero-emission fuels. The 23 ferries are identified by calculating the routes, which have the most potential in terms of societal economy. This is done by including parameters like age of the current, length of route, current emissions (CO₂, SO₂, NO_x and particles).

² ² <https://www.trm.dk/publikationer/2013/traengselkommissionens-betaenkning-og-sammenfatning/>

³ COWI (2020): Grøn omstilling af danske indenrigsfærger.

Tabel 2.5.12

Overview of RRF-funding for the initiatives in component of sustainable road transport

M. DKK, 2021-prices	Total	2021	2022	2023	2024	2025
I) Incentives to choose green cars	870	254	182	163	141	132
<i>a. Re-prioritisation of the registration tax and the low electricity charge</i>	750	149	172	158	141	132
<i>b. Temporary increase in the scrapping premium for old diesel cars</i>	120	105	10	5	-	-
II) Analysis, tests and campaigns for greener transport	25	5	20	-	-	-
<i>a. Development test of road-pricing</i>	20	-	20	-	-	-
<i>b. Sharing cars and car-pooling (awareness)</i>	3	3	-	-	-	-
<i>c. Analysis of test scheme with double trailers</i>	1	1	-	-	-	-
<i>d. Analysis of the regulation on weight and dimensions to optimise heavy haulage</i>	1	1	-	-	-	-
III) Green transportation and infrastructure	730	330	220	170	10	-
<i>a. Scheme to infrastructure for electric bicycles</i>	10	-	-	-	10	-
<i>b. Bicycle subsidy scheme to the state and municipalities</i>	520	180	170	170	-	-
<i>c. Subsidy scheme for green ferries</i>	200	150	50	-	-	-
In total	1,625	589	422	333	151	132

Table 2.5.13

Financial consequences in total of the full reform on green road transportation

Bn. DKK (2021-level)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Initiatives	-0,8	-0,8	-0,7	-0,6	-0,5	0,0	0,0	0,1	0,1	-0,2
Re-prioritisation of the registration tax and the low electricity charge ¹	-0,5	-0,8	-1,0	-1,2	-1,4	-1,4	-1,4	-1,4	-1,5	-1,4
Obligation to reduce GHG intensity of fuels on a well-to-wheel basis:	-	0,0	0,0	0,0	-0,3	-0,3	-0,3	-0,7	-0,7	-1,0
Kilometre-based toll for heavy duty vehicles based on CO ₂ -differentiation					0,5	0,5	0,5	1,0	1,0	1,0
Financing the lack of missing indexing of the registration tax	-0,3	-0,4	-0,5	-0,5	-0,6	-0,6	-0,6	-0,5	-0,5	-0,4
Analysis of test scheme with double trailers	-0,001									
Analysis of the regulation on weight and dimensions to optimise heavy haulage	-0,001									
Temporary increase in the scrapping premium for old diesel cars	-0,11	-0,01	-0,01							
Development test of road-pricing		-0,02								
Sharing cars and carpooling	-0,003									
Scheme to infrastructure for electric bicycles				-0,01						
Subsidy scheme for green ferries	-0,15	-0,05								
Bicycle subsidy scheme to the state and municipalities	-0,18	-0,17	-0,17							
Adjustment of the taxation of company cars	0,00	0,00	0,00	0,01	0,00	0,01	0,00	0,00	-0,01	-0,02
Increased economic deduction for shared green cars	-0,001	-0,001	-0,001	-0,001	-0,001	-0,002	-0,002	-0,003	-0,004	-0,005
Increase of the countervailing charge	0,5	0,5	0,4	0,4	0,4	0,4	0,3	0,3	0,3	0,3
Increase of the ownership tax		0,1	0,4	0,7	1,0	1,4	1,3	1,2	1,2	1,1
Financing from previous political agreement from 2017	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,2	0,2	0,3

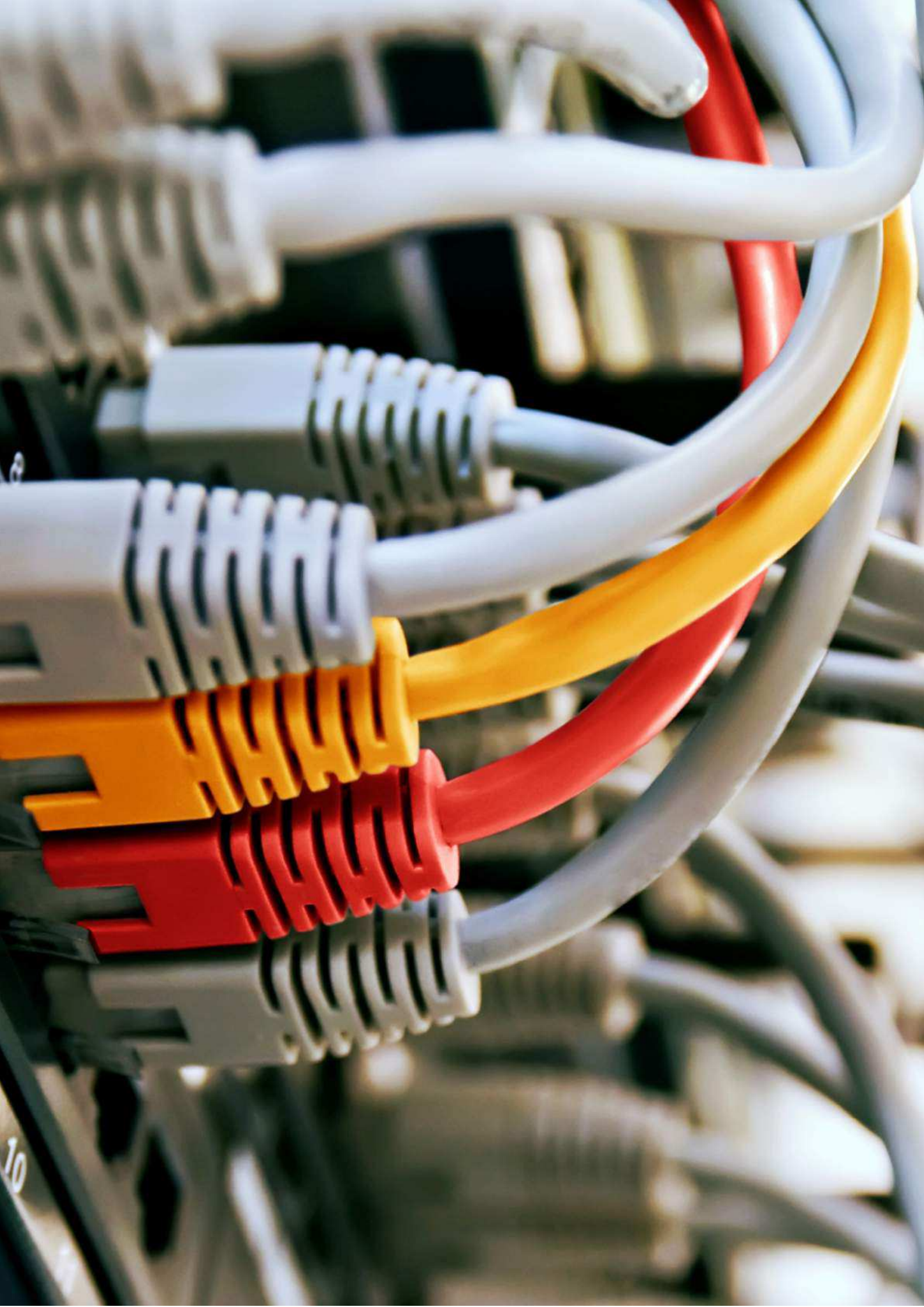
1) The revenue includes a change in the registration and ownership tax for new registrations and the decrease profit from a low electricity charge to electrical charging until 2030. 2) The obligation to reduce GHG intensity of fuels is phased in from 3,4 % in 2022-2024 increasing currently to 5,2 % in 2025, 6 % in 2028 and 7 % in 2030 and beyond.

Resources: Own calculations.

Tabel 2.5.14

Measurable effects of the full reform of green road transportation

	CO ₂ e-reduction	
	2025	2030
Transportation	Mt CO ₂ e	
Re-prioritisation of the registration tax and the low electricity charge	0,2	0,5
Obligation to reduce GHG intensity of fuels on a well-to-wheel basis: Increasing and improving requirements of sustainability criteria ²	0,7	1,4
Kilometer-based toll for heavy duty vehicles based on CO ₂ -differentiation	0,1	0,2
Analysis of test scheme with double trailers	not relevant	not relevant
Analysis of the regulation on weight and dimensions to optimise heavy haulage	not relevant	not relevant
Temporary increase in the scrapping premium for old diesel cars	-	-
Development test of road-pricing	not relevant	not relevant
Sharing cars and car-pooling	-	-
Scheme to infrastructure for bicycles	-	-
Subsidy scheme for green ferries	0,018	0,018
Bicycle subsidy scheme to the state and municipalities	-	-



Component 2.6

Digitalisation

As a part of the Danish government's reform agenda, digitalisation will be a flagship in leading Denmark stronger through the COVID-19 crisis and accelerate the transition to a more modern and digital welfare society.

Through a reform push consisting of a new digital strategy, the aim is to promote a digital transformation across all sectors of society advancing welfare and equality, growth and employment, the green transition and the restart of the Danish economy after the COVID-19 crisis.

Denmark is one of the leading digital countries in the world and therefore further reformation requires well-thought solutions. As part of the process, the government has established a digitalisation partnership that will qualify and contribute with recommendations for the new strategy. By doing so, Denmark will build its very strong digital foundation in cooperation with a broad variety of stakeholders.

In addition, Denmark is proposing investments supporting the digital transition through strengthened broadband connectivity enabling more citizens to connect to and utilise digital solutions. Furthermore, investments in increasing digital export opportunities for SME's are included.



Description of the component

Box 2.6.1

Digitalisation

Digitalisation, New digital strategy, Digitalisation partnership, Digital Business Transformation, Digital Transition, Public Sector Efficiency, Adoption of new technologies

Objective:

Overall, the aim is to promote a just and inclusive digital transition that will support the development of better welfare services, job creation and growth, as well as the green transition. To promote this digital reform agenda, Denmark will formulate and implement a new digital strategy covering all sectors of society. The digital strategy will consist of five sub-reforms.

The objectives of the new digital strategy are:

- **Sub-reform 1 – Strategy for the digital public sector and services of the future:** Creating the digital public sector of the future. This is done by a continuous modernisation of the digital infrastructure meeting the needs of all citizens and businesses and strengthening connectivity.
- **Sub-reform 2 – Strategy for the digital professions and jobs of the future:** Securing the digital professions and jobs of the future and supporting growth and export of goods and services by strengthening digitalisation within business and industry.
- **Sub-reform 3 – Framework for innovation, public-private partnerships and use of new technology:** Creating better opportunities for co-creation and innovation. This is done by using new technologies and public-private partnerships to streamline and improve public digital services, accelerate digital transition of businesses, and support climate change mitigation.
- **Sub-reform 4 – Framework for a data-driven society:** Creating a data-driven society and improving the digitalisation of SMEs, health systems and digital services by promoting better access to data, secure and interoperable data infrastructures, and a digital-ready regulatory framework.
- **Sub-reform 5 – Framework for Denmark fit for a digital future:** Creating a framework for Denmark fit for a digital future whilst preserving the best of our society by e.g. enhancing the cyber- and information security, digital skills and competencies benefitting all citizens, businesses and employees.

The Danish government has established a digitalisation partnership consisting of top managers and experts who will qualify and contribute with recommendations for each of the sub-reforms, cf. the terms of reference for the digitalisation partnership. This approach ensures that the digital reform will include the most demanded and effective solutions in the further digital transformation of the Danish society. Building upon the recommendations of the partnership, the underlying initiatives of the digital strategy will be subject to political negotiations before the government initiates the specific actions in public authorities within the five sub-reforms. The Danish government has announced the publication of the new digital strategy by the end of 2021, cf. the terms of reference for the digitalisation partnership.

In addition to the digital strategy, the component also consists of measures concerning the strengthening of the SME-digitalisation programme and continuation of the broadband pool. The objectives of these measures are to support especially SME's in overcoming barriers to invest in and use new and advanced technology and e-commerce solutions as well as to promote connectivity by means of high-speed internet access in rural areas across the country.

Reforms and investments:

The digital strategy will consist of five sub-reforms building on the partnership's recommendations:

- I. Digital strategy: 500 m. DKK.
 - a) *Strategy for the digital public sector and services of the future*
 - b) *Strategy for the digital professions and jobs of the future*
 - c) *Framework for innovation, public-private partnerships and use of new technology*
 - d) *Framework for a data-driven society*
 - e) *Framework for Denmark fit for a digital future*

In addition, the promotion of digital transition in Denmark will consist of two investments that are reinforcements of existing initiatives:

II. SME's digital transition and export: 65 m. DKK.

III. Broadband pool: 100 m. DKK.

Estimated cost:

665 m. DKK of which 100 per cent is covered by Recovery and Resilience Facility. Additional national funds may be granted to support and reinforce the realisation and implementation of the digital strategy.

Main challenges and objectives

2.6.1 Main challenges

Continuous digital transition of the public and private sector is a prerequisite for a modernised economy and public sector reaping the benefits of digitalisation and new technology. In promoting the digital transformation, the Danish government's digital strategy will seek to address key challenges within the following areas:

- *Modern digital infrastructure and closing the digital divide.* In Denmark, a common digital infrastructure and national digital solutions are well known, used and trusted by almost all citizens and businesses across the public and private sector. Although the general user satisfaction is high, some users still experience that the digital world can be too complex and difficult to navigate. As an example, 23 per cent of citizens indicate that they needed help when they most recently used a digital self-service solution. This highlights the importance of promoting digital inclusion and online digital services accessible to all as well as continued investments in and modernisation of our national digital infrastructure and solutions. Therefore, it is crucial to ensure a modern digital infrastructure and strong digital connectivity across the country in order to address the needs of all citizens and businesses.
- *Digitising businesses.* Digitisation is a driving force for increased productivity. Denmark is digitally well established and suited for seizing the digital opportunities. Danish companies continue to be among the most digital in the EU. The progress in the digital transition in Denmark is slightly below the EU average. These include companies' use of new and advanced digital technologies for data analysis and artificial intelligence. Especially the small and medium-sized enterprises' use of newer technologies lags behind comparable countries, e.g. in relation to Big Data. Furthermore, the Danish financial sector uses enormous amounts of resources to counteract financial crime. While significant resources are invested in the fight against financial crime, the system has weaknesses that are not solvable in the current setup.

- *Innovation and new technologies.* Even though Denmark is among the digital front-runners in the world, the upscale and dissemination of successful new technologies and digital solutions across the public sector – typically in close collaboration with businesses – are often slow and fragmented. This is despite the fact that emerging technologies and digital welfare solutions, such as artificial intelligence (AI), cloud services and robotics, offer opportunities to link the various parts of the public sector closer together and create better and more secure services. Therefore, the utilisation and dissemination of emerging technologies and innovative solutions from the private sector remain an important area of development. As an example, while 33 per cent of Danish public authorities apply AI or machine learning today, 91 per cent expect to apply the technologies in 2023.
- *Better utilisation of data.* The global climate crisis requires that we find new ways to reduce the climate footprint of citizens, businesses and the public sector. At the same time, the COVID-19 crisis has highlighted the importance of improving the effectiveness of our health and care systems. The utilisation of data holds great potentials in these respects, but today the accessibility, quality, and interoperability of data are often a challenge. Coupled with complex regulation that often are difficult to administer digitally, these barriers inhibit better exchange and access to different types of data in order to support healthcare delivery, research and the green transition of society, e.g. by reducing the energy consumption of buildings, which accounts for almost 40 per cent of the total energy consumption in Denmark.
- *Strong digital skills and competences.* Due to the continuous digital development of society and our need to be able to support e.g. the green transition by developing and using new technology, Denmark faces a need for reskilling and upskilling the Danish workforce across the private and public sector. It remains crucial for the digital transformation of the Danish economy to address the shortage of digital technology experts and specialists, especially women. Furthermore, the technological and digital development puts great demands on citizens', businesses' and public employees' general digital knowledge and competencies. This includes abilities to use digital technologies in a meaningful way for working, studying and for everyday life in general as well as increased awareness among citizens, businesses and public employees on how to critically evaluate digital technologies and navigate in the digital culture of society.
- *Enhanced cyber security.* Denmark is one of the leading digital countries in the world, and our digital solutions are crucial to a functioning society. As such, we are also constantly at risk of cyber-attacks, and it is considered one of the main threats to our society, critical infrastructure, businesses and public authorities. Technological development and digitisation provides a number of positive gains, but it also provides new areas of attack and potential vulnerabilities. According to the Danish Centre for Cyber Security, a very high cyber

threat has become a basic condition. The development necessitates that the level of ambition and focus in the national efforts are continuously adjusted.

2.6.2 Objectives

E-government, digital business transformation, digital public services, and common digital ecosystems have been a Danish political priority the last 20 years. Therefore, Denmark has a strong digital foundation to stand and build upon. For example, Denmark was in 2020 ranked as the most digital country in the world by the UN E-Government Survey and was furthermore ranked 3rd by the European Commission in their 2020 Digital Economy and Society Index (DESI).

However, we need to use this favourable position to support that Denmark also in the future remains fit for the digital age. Lately, the COVID-19 pandemic has also underlined how digital capabilities are paramount in supporting sustainable economic recovery and the everyday work of employees – both in Danish businesses and within the public sector.

Collectively, the reforms and investments of the component will aim to address administrative and bureaucratic barriers, increase efficiency and growth, stimulate the competitiveness and digital transition of businesses, and, at the same time, strengthen green transition as well as the quality of the public digital services that citizens and businesses meet.

Furthermore, the ambition is to ensure resilient, secure and user-friendly digital services, including e-health services, by supporting the modernisation of the national digital infrastructure and the utilisation of new technology across the public and private sector. This will also enhance national resilience, crisis preparedness and Denmark's capacity to initiate effective government measures in the future and to address challenges like those witnessed during the COVID-19 crisis.

The ambitions of these reforms and investments are also in line with the country specific recommendations from the European Semester, emphasizing that Denmark would need to invest in digital infrastructure as well in education, training and upskilling in order to maintain our strong position in the long term and to ensure our competitiveness and benefit from the digital transformation. The measures will also improve Denmark's digital performance as measured in the Digital Economy and Society Index, e.g. by continuing the digitisation of public services; raising awareness and improving knowledge of citizens, businesses and authorities; and helping non-digital citizens to use digital public services.

In particular, measures of this component are expected to contribute to the European Flagship initiatives “Modernise” and “Reskill and upskill” by promoting accessible and interoperable digital public services, ensuring cross-border electronic identification and authentication, as well as supporting digital skills, education and training. Moreover, the component will contribute to the flagship “Connect” by enhancing connectivity in rural areas across the country.

However, the Danish ambitions in the digital requires a thorough process where it is carefully considered how to spend the funds wisely. Therefore, the Danish government has established a digitalisation partnership. The broad anchoring and involvement of stakeholders across society can qualify digital aspects and will contribute with recommendations for the digital strategy and which efforts need to be prioritised. Such a process involving all relevant actors is needed to ensure a consistent and cross-sectoral digitalisation strategy for Denmark.

Summary description of the reforms and investments of the component

As a part of the Danish government's reform agenda, the Danish government will promote a digital transformation through a new digital strategy that consists of five sub-reforms covering all sectors of society. The strategy will aim to address administrative and bureaucratic barriers, increase efficiency and growth, stimulate the competitiveness and digital transition of businesses, and, at the same time, strengthen the green transition as well as the quality of the public digital services that citizens and businesses meet.

In addition to the new digital strategy, the component will consist of measures concerning the strengthening of the SME-digitalisation programme and continuation of the broadband pool. The objectives of these measures are to support SMEs in overcoming barriers to invest in and use new and advanced technology and e-commerce solutions as well as to promote connectivity by means of high-speed internet access in rural areas across the country.

Together, these reforms and investments in digitalisation will be a flagship in leading Denmark and Danish companies stronger through the COVID-19 crisis by advancing welfare and equality, growth and employment, the green transition and the restart of the Danish economy.

Denmark will provide more detailed descriptions on concrete initiatives, beneficiaries, target groups, financing and costs etc. before the end of 2021 once the digital partnership has submitted its recommendations and the government has launched the new digital strategy. Denmark will receive no RRF-funding for the digital strategy before these detailed descriptions has been submitted to the Commission. This approach will ensure that Denmark will not receive RRF-funding for initiatives that could be in conflict with the criteria within the regulation for the Recovery and Resilience Facility.

Reforms

2.6.3 Digital strategy

To promote this digital reform agenda in Denmark, the Danish government will establish a new digital strategy covering all sectors of society. The strategy will consist of five new sub-reforms:

- *Sub-reform 1:* Creating the digital public sector of the future by continuous modernisation of our digital infrastructure meeting the needs of all citizens and businesses and strengthening connectivity.
- *Sub-reform 2:* Securing the digital professions and jobs of the future by strengthening digitisation within business and industry supporting growth and export of goods and services.
- *Sub-reform 3:* Creating better opportunities for co-creation and innovation by using new technologies and public-private partnerships to streamline and improve public digital services, accelerate digital transition of businesses, and support climate change mitigation.
- *Sub-reform 4:* Creating a data-driven society by promoting better access to data, secure and interoperable data infrastructures, and digital-ready regulatory framework to improve the digitalisation of SMEs, health systems and digital services.
- *Sub-reform 5:* Creating a framework for Denmark fit for a digital future whilst preserving the best of our society by e.g. enhancing our cyber- and information security, digital skills and competencies benefitting all citizens, businesses and employees.

As part of the process to formulate and elaborate the five sub-reforms, the Danish government has established a digitalisation partnership that will deliver recommendations for the five sub-reforms. The partnership consists of top managers and experts from the Danish business community, including SMEs, representatives of municipalities and regions, academia, civil society and labour market parties. The broad anchoring and involvement of stakeholders across society, government levels and the public and private sector will qualify the digital aspects and needs in relation to citizens, businesses, the green transition and the welfare society and thereby creating a better foundation for the five new sub-reforms.

Considering the recommendations of the partnership, the specific initiatives of the new digital strategy and its five sub-reforms will then be subject to political negotiations and approval. The elaboration of the digital strategy's five sub-reforms will therefore rely on the partnership's recommendations, which are delivered

through 2021. Following political negotiations, the government will initiate specific initiatives and actions in public authorities as part of the five sub-reforms. Thus, the Danish government has announced the publication of a new digital strategy by the end of 2021.

In connection with the partnership, a digitalisation unit will be established with the responsibility of providing secretarial assistance for the partnership, including the preparation of the partnership's discussions and the integration of its recommendations in the new digital strategy for Denmark. The unit consists of the Ministry of Finance (chair); the Ministry of Industry, Business and Financial Affairs; the Ministry of Climate, Energy and Utilities; the Ministry of Health; the Ministry of Foreign Affairs as well as Local Government Denmark (representing municipalities), Danish Regions (representing regions) and representatives of the social partners (trade unions).

1a. Sub-reform: Creating the digital public sector and services of the future

Addressing challenges: The measure will address the bridging of the digital divide by modernising digital infrastructure, digital public services and public administrations. Moreover, the measure will address the interoperability between central, regional and local administrations, the acceleration of administrative processes, and the improvement of the digital interaction between administrations, citizens, and businesses.

Objectives: Since 2001, local, regional and central governments have collaborated on joint-public digital strategies setting the course for public sector digitisation in Denmark, including the public interaction with businesses and industry. The current joint-public digital strategy expires in 2021. The objective of this sub-reform will be on improving the digital infrastructure and solutions that citizens, businesses and authorities use across the public administration on the central, regional and municipal government level.

The modernisation of the national digital infrastructure in Denmark will also support the development and implementation of cross-border and interoperable digital services, e.g. eID gateway and Single Digital Gateway.

The terms of reference for the digitalisation partnership states that it must prepare recommendations and initiatives for the work on a new joint public digitalisation strategy and for the ongoing development and adaptation of the strategy throughout the strategy period.

Example of possible measure creating the digital public sector and services of the future:

- A new joint-public digital strategy could set the framework for how digitisation, data and new technologies can be used actively to promote welfare, strengthen coherence across the public sector, strengthen digital inclusion efforts, contribute to the growth conditions of companies, and support the green transition.

Implementation: The digitalisation partnership is expected to deliver its recommendations for sub-reform 1 by the end of September 2021 with a launch of the government's new digital strategy by the end of October 2021. The Ministry of Finance (Agency for Digitisation) will be responsible for the general implementation and follow-up on the digital strategy. The Agency for Digitisation will be responsible for the implementation and follow-up on initiatives within this sub-reform.

Target group: Citizens, public authorities (including digital solutions and infrastructure used by central government as well as local and regional administrations) and the private sector (businesses).

Compliance with State Aid Rules: Prior to the agreement, it will be ensured that all initiatives in the sub-reform for creating the digital public sector and services of the future will comply with State Aid rules. Possible private providers of goods or services will be selected on the basis of competitive, transparent, non-discriminatory and unconditional tenders in line with the principles of the TFEU in public procurement.

Timeline: 2022-2025.

Do no significant harm:

Table 2.6.1
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and primary indirect effects across the life cycle of the measure. By improving the digital infrastructure and solutions that citizens, businesses and authorities use across the public administration on the central, regional and municipal government level, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change mitigation will be addressed in the analysis.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and primary indirect effects across the life cycle of the measure. By improving the digital infrastructure and solutions that citizens, businesses and authorities use across the public administration on the central, regional and municipal government level, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change adaptation will be addressed in the analysis.</p>
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and primary indirect effects across the life cycle of the measure. No degradation risks related to sustainable use and protection of water and marine resources are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of the sustainable use and protection of water and marine resources will be addressed in the analysis.</p>
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and primary indirect effects across the life cycle of the measure. The sub-reform is consistent with the national waste management plan.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk against the transition to a circular economy will be addressed in the analysis.</p>
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and primary indirect effects across the life cycle of the measure. No degradation risks related to pollution prevention and control to air, water or land are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to pollution prevention and control will be addressed in the analysis.</p>
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and primary indirect effects across the life cycle of the measure. No degradation risks related to protection and restoration of biodiversity and ecosystems are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to the protection and restoration of biodiversity and ecosystems will be addressed in the analysis.</p>

1b. Sub-reform: Securing digital professions and the digital jobs of the future

Addressing challenges: If we are to create the digital foundation to support our ambitions for the data-driven society in the future, we need to initiate a large-scale digital transformation for all small and medium-sized enterprises in Denmark e.g. in order to automate the processes handling of economic and financial data transactions.

Objectives: The measure aims to strengthen the digitalisation and digital readiness of Danish companies, in particular SMEs, as well as to support the companies' access to employees with adequate digital and technological skills as well as use of advanced technologies. This will help ensure that the digital transition is used to support good and well-paid jobs, increase Danish companies' productivity and competitiveness and ensure a readiness for change and robust business.

This is in line with the terms of reference for the Digitalisation Partnership. The partnership will prepare recommendations and initiatives to strengthen the digitisation readiness of SMEs and companies, the use of advanced technologies, productivity and competitiveness etc.

Examples of possible measures securing digital professions and the digital jobs of the future:

- Strengthening the standardization and automation of key bookkeeping and accounting processes in SME's. For example, by using a digital standard chart of accounts, electronic invoicing and automatic bookkeeping. Electronic invoicing using the European format, Peppol, will enable automation of the SME' bookkeeping, thus reducing administrative costs and errors associated with bookkeeping.
- Development and implementation of a national electronic platform for public procurement to be used by all contracting authorities when tendering out public contracts. The system would handle all electronic communication in relation to public procurement and thus the digitisation in SMEs without regular participation in public procurement processes.
- Focusing on getting more people in the workforce with STEM competencies, including IT competencies. This could cover initiatives with both a short- and long-term focus and a broad target group, from relatively small schoolchildren to experienced workers.

Implementation: The digitalisation partnership is expected to deliver its recommendations for sub-reform 2 by the end of September 2021 with a launch of the governments new digital strategy by the end October 2021. The Ministry of Finance (Agency for Digitisation) will be responsible for the general implementation

and follow-up on the digital strategy. The Ministry of Business, Industry and Financial Affairs will be responsible for the implementation and follow-up on initiatives within this sub-reform.

Target Group: The private sector, businesses and SME's.

Compliance with State Aid Rules: Prior to the agreement, it will be ensured that all initiatives in the proposed sub-reform for securing digital professions and the digital jobs of the future will comply with State Aid rules. Possible private providers of goods or services will be selected on the basis of competitive, transparent, non-discriminatory and unconditional tenders in line with the principles of the TFEU in public procurement.

Timeline: 2022-2025.

Do no significant harm:

Table 2.6.2
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By strengthening the digitalisation and digital readiness of Danish companies, in particular SMEs, as well as to support the companies' access to employees with adequate digital and technological skills as well as use of advanced technologies, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change mitigation will be addressed in the analysis.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By strengthening the digitalisation and digital readiness of Danish companies, in particular SMEs, as well as to support the companies' access to employees with adequate digital and technological skills as well as use of advanced technologies, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change adaption will be addressed in the analysis.</p>
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle. No degradation risks related to sustainable use and protection of water and marine resources are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of the sustainable use and protection of water and marine resources will be addressed in the analysis.</p>
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The sub-reform is consistent with the national waste management plan.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk against the transition to a circular economy will be addressed in the analysis.</p>
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle. No degradation risks related to pollution prevention and control to air, water or land are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to pollution prevention and control will be addressed in the analysis.</p>
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle. No degradation risks related to protection and restoration of biodiversity and ecosystems are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to the protection and restoration of biodiversity and ecosystems will be addressed in the analysis.</p>

1c. Sub-reform: Better opportunities for co-creation, public-private partnerships and innovation

Addressing challenges: New technologies, such as artificial intelligence, have the potential to improve and optimize e.g. the public service. However, there is currently limited experience with systematic development, implementation and up-scale of advanced technology among businesses and public entities.

Moreover, untapped potentials exist in advancing innovation through stronger public-private partnerships and cross-sectoral collaboration. This is among other things due to lack of access to investments, uncertainty about the benefits, challenging data availability and quality as well as the need for legal clarity.

Objectives: By investing in innovation, development and up-scale new technologies and solutions, including artificial intelligence deployed in the public and private sector, the aim of this measure is to contribute to the modernisation of the economy, digital infrastructure, digital public services and public administrations.

Among other things, this could help improve public services, the competitiveness of businesses and contribute to the green transition using advanced digital technologies to address problems in e.g. public health, climate (e.g. CO₂-emission) and public administration efficiency for the benefit of citizens and businesses.¹

The terms of reference for the digitalisation partnership thus states that recommendations must be made to strengthen coordination and cooperation across sectors of society, so that experience, competencies and solutions from the business community, the public sector and the research world, respectively, are utilized in the best possible way create innovation in the public sector.

Example of possible measure creating better opportunities for public-private partnerships and innovation:

- The establishment of an investment fund with a particular focus on the implementation and upscaling of promising AI solutions in the state, municipalities and regions (i.e. hospitals) in collaboration with the private sector. The fund, which would build upon experiences from an existing fund established as part of Denmark's National Strategy for Artificial Intelligence, will provide grants to signature projects using artificial intelligence within climate, health, social and employment as well as public administration and case processing.

Implementation: The digitalisation partnership is expected to deliver its recommendations for sub-reform 3 by the end of September 2021 with a launch of the governments new digital strategy by the end October 2021. The Ministry of Finance (Agency for Digitisation) will be responsible for the general implementation

¹ In their report "An AI Nation – Harnessing the opportunity of artificial intelligence in Denmark (2019)", McKinsey estimates that AI has the potential to significantly improve the welfare of Danish citizens by up to 0.4 per cent annually in GDP equivalents (corresponding to around 9 billion DKK annually in economic value).

and follow-up on the digital strategy. Depending on the content of this sub-reform, other ministries and authorities can be responsible for the implementation of underlying initiatives.

Target group: Public authorities (state, municipal and regional level), private actors and citizens.

Compliance with State Aid Rules: Prior to the agreement, it will be ensured that all initiatives in the proposed sub-reform for better opportunities for co-creation, public-private partnerships and innovation will comply with State Aid. Possible private providers of goods or services will be selected on the basis of competitive, transparent, non-discriminatory and unconditional tenders in line with the principles of the TFEU in public procurement.

Timeline: 2022-2025.

Do no significant harm:

Table 2.6.3
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By investing in innovation, development and up-scale of new technologies and solutions, including artificial intelligence deployed in the public and private sector, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change mitigation will be addressed in the analysis.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By investing in innovation, development and up-scale of new technologies and solutions, including artificial intelligence deployed in the public and private sector, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change adaptation will be addressed in the analysis.</p>
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to sustainable use and protection of water and marine resources are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of the sustainable use and protection of water and marine resources will be addressed in the analysis.</p>
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The sub-reform is consistent with the national waste management plan.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk against the transition to a circular economy will be addressed in the analysis.</p>
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to pollution prevention and control to air, water or land are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to pollution prevention and control will be addressed in the analysis.</p>
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to protection and restoration of biodiversity and ecosystems are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to the protection and restoration of biodiversity and ecosystems will be addressed in the analysis.</p>

1d. Sub-reform: Creating a data-driven society

Addressing challenges: Access to and utilization of high-quality data are a prerequisite for digital development and for realizing the potentials of digitalisation. Moreover, the measure will address the need for cutting red tape by creating a simpler regulatory framework that is easy to administer.

Objectives: The measure aims to provide better overview of data, including public data, as well as to improve the accessibility of data on climate, environment, geography, and health in order to support businesses and researchers in the development of new, better and/or citizen-centred solutions.

The terms of reference for the digitalisation partnership states that it must prepare recommendations and initiatives that will contribute with recommendations regarding how Denmark can benefit even more from the use of data in the future, e.g. climate data, by promoting responsible use of data and taking into account privacy protection across the public and private sectors. The partnership will also give recommendations on optimised use of e.g. health data and intelligent data-driven control as well as on how data can support the green transition.

Examples of possible measures creating a data-driven society:

- Making data available as a basis for the development of new business models or further reductions greenhouse gas emissions in a digital and data-driven green transition. As well as by strengthen digital collaboration on health and contribute to citizens experiencing processes that are more coherent across sectoral boundaries and actors.
- Strengthening coherence between IT and legislation in order to secure translation of legislation into the public digital administration.

Implementation: The digitalisation partnership is expected to deliver its recommendations for sub-reform 4 by the end of September 2021 with a launch of the governments new digital strategy by the end October 2021. The Ministry of Finance (Agency for Digitisation) will be responsible for the general implementation and follow-up on the digital strategy. Depending on the content of this sub-reform, other ministries and authorities can be responsible for the implementation of underlying initiatives.

Target group: Public authorities, private actors and citizens.

Compliance with State Aid Rules: Prior to the agreement, it will be ensured that all initiatives in the proposed sub-reform for creating a data-driven society will comply with State Aid rules. Possible private providers of goods or services will be selected on the basis of competitive, transparent, non-discriminatory and unconditional tenders in line with the principles of the TFEU in public procurement.

Timeline: 2022-2025.

Do no significant harm:

**Table 2.6.4
Substantive DNSH assessment**

DNSH objective	Yes	No	Significant negative impact?
<p>Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?</p>		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By providing better overview of data, including public data, as well as improving the accessibility of data on climate, environment, geography, and health in order to support businesses and researchers in the development of new, better and/or citizen-centred solutions, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change mitigation will be addressed in the analysis</p>
<p>Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?</p>		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By providing better overview of data, including public data, as well as improving the accessibility of data on climate, environment, geography, and health in order to support businesses and researchers in the development of new, better and/or citizen-centred solutions, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change adaptation will be addressed in the analysis.</p>
<p>The sustainable use and protection of water and marine resources.</p> <p>Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?</p>		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to sustainable use and protection of water and marine resources are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of the sustainable use and protection of water and marine resources will be addressed in the analysis.</p>
<p>The transition to a circular economy, including waste prevention and recycling.</p> <p>Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The sub-reform is consistent with the national waste management plan.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk against the transition to a circular economy will be addressed in the analysis.</p>
<p>Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?</p>		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to pollution prevention and control to air, water or land are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to pollution prevention and control will be addressed in the analysis.</p>

<p>The protection and restoration of biodiversity and ecosystems.</p>	<p>X The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to protection and restoration of biodiversity and ecosystems are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to the protection and restoration of biodiversity and ecosystems will be addressed in the analysis.</p>
<p>Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>	

1e. Sub-reform: Denmark fit for a digital future

Addressing challenges: Securing the direction for the digitalisation of Denmark in the future and the good, responsible digital society.

Objectives: The digitalisation partnership will contribute with recommendations on how to create a digital framework for Denmark in the future. Therefore, the terms of reference for the digitalisation partnership states that it must prepare recommendations and initiatives for the future direction of Denmark’s digitalisation. This includes recommendations for the good, responsible digital society, as well as how we can continue to benefit from the technological development and digitalisation of society in accordance with our democratic core values of coherence, transparency, trust, equal opportunities.

Examples of possible measures supporting the ambition of Denmark fit for a digital future:

- New strategy for cyber and information security that will raise awareness and help citizens, businesses and authorities protect themselves digitally; address the security and resilience of critical sectors of society; and strengthen national coordination and cooperation on cyber and information security.
- Efforts related to digital and technological skills as well as increased awareness among citizens, businesses and public employees on how to critically evaluate digital technologies and navigate our digital world. For example, continued focus on promotion of teaching in digital skills in schools, enrolment in higher specialized IT education as well as enhanced digital skills among public employees in central government, regions and municipalities.

Implementation: The digitalisation partnership is expected to deliver its recommendations for sub-reform 5 by the end of September 2021 with a launch of the governments new digital strategy by the end October 2021. The Ministry of Finance (Agency for Digitisation) will be responsible for the general implementation and follow-up on the digital strategy. Depending on the content of this sub-reform, other ministries and authorities can be responsible for the implementation of underlying initiatives.

Target group: Public authorities, private actors and citizens.

Compliance with State Aid Rules: Prior to the agreement, it will be ensured that all initiatives in the proposed sub-reform for Denmark fit for a digital future will comply with State Aid rules. Possible private providers of goods or services will be selected on the basis of competitive, transparent, non-discriminatory and unconditional tenders in line with the principles of the TFEU in public procurement.

Timeline: 2022-2025.

Do no significant harm:

Table 2.6.5
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By providing recommendations for the good, responsible digital society, as well as how we can continue to benefit from the technological development and digitalisation of society in accordance with our democratic core values of coherence, transparency, trust, equal opportunities, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change mitigation will be addressed in the analysis.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. By providing recommendations for the good, responsible digital society, as well as how we can continue to benefit from the technological development and digitalisation of society in accordance with our democratic core values of coherence, transparency, trust, equal opportunities, the sub-reform supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of climate change adaption will be addressed in the analysis.</p>
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to sustainable use and protection of water and marine resources are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk of the sustainable use and protection of water and marine resources will be addressed in the analysis.</p>
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The sub-reform is consistent with the national waste management plan.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk against the transition to a circular economy will be addressed in the analysis.</p>

<p>Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?</p>	X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to pollution prevention and control to air, water or land are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to pollution prevention and control will be addressed in the analysis.</p>
<p>The protection and restoration of biodiversity and ecosystems.</p> <p>Is the measure expected to be:</p> <p>(i) significantly detrimental to the good condition and resilience of ecosystems; or</p> <p>(ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>	X	<p>The activity that is supported by this sub-reform has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. No degradation risks related to protection and restoration of biodiversity and ecosystems are identified.</p> <p>The digitalisation partnership has not yet delivered its final recommendations, but the reoccurring and including dialogue between different stakeholders ensures that any risk to the protection and restoration of biodiversity and ecosystems will be addressed in the analysis.</p>

Investments

2.6.4 SME's digital transition and export

Addressing challenges: Digitisation is a driver for productivity and growth in businesses and has proven to be a way to maintain production and sales under COVID-19. Small and medium-sized enterprises (SME's) do not invest as much as the larger enterprises in digitalisation and therefore risk losing competitiveness with the risk of job losses.

Objectives: It is important that Danish companies take advantage of the business opportunities within digital transition and e-commerce. This applies both to the current COVID-19 crisis and in the longer term as more and more of trade and retailing move online. However, SMEs in particular need help to overcome barriers to invest in and use new and advanced technology and e-commerce solutions in their business models that can help strengthen e-business and export.

Therefore, the existing efforts in the program SME:Digital need to be strengthened. Hence, more SMEs will have the opportunity to apply for grants for co-financing purchases of counselling on for example the development of the companies' e-export capacity, implementation of new e-commerce solutions and technical support for upstart, development and integration of digital sales for new international markets. Furthermore, companies will also be able to apply for grants for the purchase of new technologies and digital solutions, as for example automation technology and software.

SME:Digital is an application pool for SMEs to apply for a subsidy to purchase private consulting on digital transformation and development of the company. The scheme is run by the Danish Business Authority (Erhvervsstyrelsen). The scheme aims in particular to support the digital transformation of SMEs. In the period, 2018-2020 143m DKK has been allocated to the program. In this period,

the program has ensured grants for approx. 1.600 SMEs. Companies have either received grants of 25.000 DKK or 100.000 DKK depending on the size of the company and complexity of the digital project. The mean size of the grants has been 90.000 DKK. The majority of the funds were allocated in 2020 in the light of the COVID-19 crisis. In 2020, 920 grants were given amounting to approx. 91m. DKK. The fund received 1.820 applications in 2020, amounting to 172m DKK, which exceeded the funds available. Information on the recipients of the funds is not publicly available.

Due to the high demand and the importance of supporting SMEs in the digital transition, especially in a time of the COVID-19 pandemic, it is therefore essential to increase the pool for SMEs further with recovery funds, so that even more SMEs can benefit from the programme.

The grant scheme is open for applications multiple times each year, where applications are assessed on a first-come, first-served basis. In order to receive a grant, SMEs will have to make probable that their grants and associated digital projects will raise their technology levels and help them realise their growth ambitions.

Implementation: The SME:Digital programme under the Ministry of Business, Industry and Financial Affairs will be responsible for the implementation. The investment will be carried out over three years. Approximately 550 SMEs will be expected to benefit from the investment of 65 m. DKK. 59.4 m. DKK will be spent on subsidies to companies, while 5.6 m. DKK will be spent on administration of the SME:Digital program. It is assumed that only grants of 100.000 will be given, due to uncertainty about the future grant size, which varies from application rounds.

The expenditure implications for the SME:Digital export fund will be approximately 65 m. DKK.

Target Group: SME's.

Compliance with State Aid Rules: The investment will follow the de minimis regulation, as applicants are only eligible for funding from the initiative if the total support for the company does not exceed 200,000 EUR in three consecutive years. Applicants are informed about this, and they are required to sign a de minimis declaration in order to receive funds.

Timeline: 2021-2023.

Do no significant harm:

Table 2.6.6
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	The activity that is supported by strengthening the programme SME:Digital has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. The programme is an existing programme in national legislation and is not assessed with any risk to this objective. By promoting better and increased use of modern technology, the SME:Digital programme supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	The activity that is supported by strengthening the programme SME:Digital has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure. The programme is an existing programme in national legislation and is not assessed with any risk to this objective. By promoting better and increased use of modern technology, the SME:Digital programme supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	The activity that is supported by strengthening the programme SME:Digital has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The programme is an existing programme in national legislation and is not assessed with any risk to this objective. No degradation risks related to sustainable use and protection of water and marine resources are identified
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	The activity that is supported by strengthening the programme SME:Digital has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The programme is an existing programme in national legislation and is not assessed with any risk to this objective. The initiative is consistent with the national waste management plan.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	The activity that is supported by strengthening the programme SME:Digital has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The programme is an existing programme in national legislation and is not assessed with any risk to this objective. No degradation risks related to pollution prevention and control to air, water or land are identified.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	The activity that is supported by strengthening the programme SME:Digital has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The programme is an existing programme in national legislation and is not assessed with any risk to this objective. No degradation risks related to protection and restoration of biodiversity and ecosystems are identified.

2.6.5 Broadband pool

Addressing challenges: There is a great need for high-speed internet access for all households and companies across the country. This is crucial for the digital transition of society, productivity of companies and connectivity of households. This has also become very evident in the light of the COVID-19 crisis, where many have worked from home. However, 6 per cent of the Danish addresses, corresponding to 100.000 households and/or companies still do not have access to very high-speed internet access through broadband.

Objectives: The goal of the investment is to promote very high-speed (min. 100 Mbps coverage) internet access for citizens, households and companies in rural areas across the country.

The Broadband pool is a demand-oriented (applicant-based) funding scheme that provides grants for broadband projects in rural areas with poor coverage where there is no prospect that the market itself will provide fast broadband. The pool has existed since 2016, and it contributes to the political objective that all households and businesses have access to broadband connections with a minimum of 100 Mbps download and 30 Mbps upload by 2020. Alongside the market driven rollout of broadband, the continuation of the pool in 2021 has the objective of expanding the connectivity to these last addresses.

It is a prerequisite that the funded broadband projects roll out broadband technologies within the Very High Capacity Networks (VHCN) category, and are thus in line with the 2025 Gigabit society targets (at least 100 Mbps upgradeable to Gigabit speeds). Further, the Broadband pool addresses the European Green Deal objective of 100 per cent fast broadband coverage by 2025 for all households.

Besides the above investments, the Danish Energy Agency is continuously working to facilitate deployment of wireless networks. Lastly through the timely implementation of the EU directive 2018/1972/EU (establishing the European Electronic Communications Code) which eases deployment. Further, the Agency is working on new guidelines for public landowners regarding the financial aspects of contracts to make it easier for industry.

In the period, 2016-2020 485m DKK has been allocated to the broadband pool. In this period, the pool has secured high-speed internet access to more than 21.000 households. The yearly mean grant per address has been between approximately 22.000 DKK and 29.000 DKK. In 2020, 342 applications for the broadband pool were received, corresponding to around 9.000 addresses and an amount of 220m DKK, which is more than double the amount that was allocated to the pool in 2020. Therefore, a continuation the broadband pool in 2021 provides an opportunity for more households to gain access to high-speed internet connectivity – besides from the opportunities already provided by market rollout. Information about the recipients of the grants can be found at:

<https://ens.dk/ansvarsomraader/bredbaand/bredbaandspuljen/resultatet-af-bredbaandspuljerne>.

In 2019, the broadband providers contributed 13.500 DKK in subsidies per address, while in 2020 they contributed 14.500 DKK per address. In addition, the citizens must pay a minimum of 4.000 in self-payment, preferably more. In the years 2018-2020, the average self-payment from citizens was between 4.300 and 4.500 DKK. This is in addition to the broadband pool subsidy. Based on experience, private funding is leveraged close to 1:1.

Implementation: The Ministry of Climate, Energy and Utilities will be responsible for the roll-out of the broadband pool in close collaboration with the broadband providers. A one-year time frame is sufficient to carry out the investment. Approx. 3.500-5.000 households and/or companies will benefit from the investment. This investment will not ensure full coverage of very high-speed internet for all the remaining households and companies. The Danish Energy Authority projects that up to 99 per cent of Danish households and businesses to be covered with very high-speed internet around 2025 due to the market driven rollout. Hence, this investment is to complement the market rollout in rural areas where the business case is weak.

The expenditure implications for the broadband pool will be approximately 100m DKK in 2021. The broadband pool was established in 2016, and was initially set to last for four years. It was prolonged in 2020 and now again in 2021. The funds for the Broadband pool will be a continuation of the existing pool, and will not be additional.

Target Group: Citizens, households and businesses in rural areas and with poor internet connection.

Compliance with State Aid Rules: The proposed investment complies with State Aid rules by being a continuation of the existing broadband pool, which is already notified (cf. SA.57862 Bredbaandspuljen 2020). The Danish Energy Authority will notify the new measure to the Commission by July 2021 the latest according the General Block Exemption Regulation

Timeline: 2021.

Do no significant harm:

Table 2.6.7
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>The activity that is supported by allocating additional funds for the broadband pool has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure.</p> <p>Establishing further broadband connections potentially increases transportation and construction of additional cables. However, the fund is an existing fund in national legislation and is not assessed with any risk to this objective. By promoting very high-speed (min. 100 Mbps coverage) internet access for citizens, households and companies in rural areas across the country, the broadband pool supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions. Furthermore, it should be noted, that potential effects due to more energy efficient solutions are permanent positive effects, whereas the possible negative effects from eg. transportation are one-off effects.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	<p>The activity that is supported by allocating additional funds for the broadband pool has an insignificant foreseeable impact on this climate related objective, taking into account both the direct and indirect effects across the life cycle of the measure.</p> <p>Establishing further broadband connections potentially increases transportation and construction of additional cables. However, the fund is an existing fund in national legislation and is not assessed with any risk to this objective. By promoting very high-speed (min. 100 Mbps coverage) internet access for citizens, households and companies in rural areas across the country, the broadband pool supports the objective of improved climate change mitigation and adaptation through more energy efficient solutions and reduced emissions. Furthermore, it should be noted, that potential effects due to more energy efficient solutions are permanent positive effects, whereas the possible negative effects from e.g. transportation are one-off effects.</p>
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	<p>The activity that is supported by allocating additional funds for the broadband pool has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure.</p> <p>The fund is an existing fund in national legislation and is not assessed with any risk to this objective. No degradation risks related to sustainable use and protection of water and marine resources are identified.</p> <p>Erection of mobile masts or laying of cables may not commence until the appropriate authorities have issued a building permit or a digging permit. A permit cannot be issued unless they are in accordance with regulation concerning the environment, protection of valuable landscapes, coast line regulation, cultural heritage regulation etc.</p>
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	<p>The activity that is supported by allocating additional funds for the broadband pool has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The fund is an existing fund in national legislation and is not assessed with any risk to this objective. The broadband pool is consistent with the national waste management plan.</p>
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	<p>The activity that is supported by allocating additional funds for the broadband pool has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The fund is an existing fund in national legislation and is not assessed with any risk to this objective. No degradation risks related to pollution prevention and control to air, water or land are identified.</p> <p>When building digital infrastructure (e.g. mobile masts or laying of cables) regulation concerning Natura2000 sites or other sensitive areas</p>

The protection and restoration of biodiversity and ecosystems.	X	must be observed. The relevant authorities must consider this before issuing building and digging permits.
Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		The activity that is supported by allocating additional funds for the broadband pool has an insignificant foreseeable impact on this environmental objective, taking into account both the direct and indirect effects across the life cycle of the measure. The fund is an existing fund in national legislation and is not assessed with any risk to this objective. No degradation risks related to protection and restoration of biodiversity and ecosystems are identified.

Green and digital dimensions of the component

Green transition

The regulation establishing a Recovery and Resilience Facility sets a binding target that at least 37 per cent of each national recovery and resilience plan includes expenditures related to climate. The Commission has set a target to achieve EU climate-neutrality in 2050. At the same time, Denmark has adopted a climate law, committing to reach 70 per cent below its 1990 emissions in 2030.

Overall, the green and digital transitions are complementary goals. Digital solutions have a critical role to play in helping Europe transition to a more sustainable economy and society. By investing in the modernisation of digital infrastructure as well as in the development, implementation and upscale of the new technology, the measures will boost the development of digital solutions that support the reduction greenhouse gas emissions in all sectors.

Specifically, the digitalisation partnership's recommendations concerning the framework for innovation, public-private partnerships and use of new technology (sub-reform 1c) as well as better access to data and digital-ready legislation (sub-reform 1d) are expected to contribute to the green transition.

Digital transition

The regulation establishing a Recovery and Resilience Facility sets a binding target that at least 20 per cent of each national recovery and resilience plan includes expenditures related to the digital transition and or to challenges resulting from it.

The reforms and investments of this component will contribute to a coherent and coordinated digital transition across all levels of society. The measures proposed will benefit public administrations, citizens and businesses, support economic recovery and competitiveness and contribute to better, more inclusive, secure, innovative, cross-border and interoperable digital public services to citizens and businesses.

Measures described in this component, including investments in digital infrastructure, digital skills, and the digital transition of businesses and new technologies, have important effects on the growth and competitiveness of the digital sector as well as across sectors of the economy, such as health, transport, education, mobility and public administration.

On this background, this component contributes to the flagship initiatives “Modernise”, “Reskill and upskill”, and “Scale-up” by promoting accessible and interoperable digital public services; ensuring cross-border electronic identification and authentication; as well as building and fostering the uptake of AI solutions.

By comprising 100 per cent digital expenditures, this component contributes principally to the 20 per cent digital target.

Open strategic autonomy and security issues

The proposed initiatives are expected to positively influence the resilience of Union supply chains in primarily two ways. Firstly, investments in SME’s digital transition and exports will increase SME’s digital capabilities and enhance competition on the Unions internal market. Secondly, an increased focus on public sector investments in new technology such as AI in collaboration with the private sector could help develop a part of the technology market that is increasingly important to our national and EU wide the strategic autonomy.

Furthermore, a new cyber- and information security strategy would strengthen digital security across the public and private sector. Moreover, the Broadband pool will increase internet connectivity in remote and rural areas.

Cross-border and multi-country projects

The modernisation of the national digital infrastructure in Denmark will also support the development and implementation of cross-border and interoperable digital services, e.g. eID gateway and Single Digital Gateway.

Financing and costs

The Recovery and Resilience Fund will provide funding for a total of 665m DKK to this component of which 500m DKK will be for the digital strategy and its sub-reforms, and 165m DKK will be for the two investments, which are continuations and reinforcements of existing initiatives that would otherwise have ended.

The 500 m. DKK for the five sub-reforms is based on the levels of expenditure for previous and existing digital strategies that soon expire, e.g. the current joint-public strategy and the national cyber and information security strategy, and are expected to be replaced by the digital strategy. Each of the five sub-reforms within the digital strategy will be allocated around [50 to 150] m. DKK from the RRF depending on the specific recommendations and political ambitions. The RRF-funding will support specific initiatives within the five sub-reforms and not the strategy preparation as such. Furthermore, due to the high ambitions for the new digital strategy, it is expected that further funding from other resources than

the RRF are needed. This will depend on the political negotiations. In that case, it will be ensured that no double funding takes place.

The 165m DKK for the two investments is a continuation of the expenditure level on the existing two initiatives. As regard to the investment 'SME's digital transition and export' 20m DKK in 2021 is already funded and the investment is thus additional. Based on previous years' experience with the two programs, it's expected that approx. 590 companies will benefit from the 'SME's digital transition and export' and approx. 3.500-5.000 households and/or companies will benefit from the 'Broadband pool'.

Table 2.6.8
Initiatives in Component 5: Digitalisation Plan

M. DKK, 2021-prices	Investment/ reform	Total	2021	2022	2023	2024	2025	Funding from other sources
1. Digital strategy	-	500	-	125	125	125	125	
1a. Digital public sector and services of the future	Reform	[50-150]	-	-	-	-	-	-
1b. Securing digital professions and the digital jobs of the future	Reform	[50-150]	-	-	-	-	-	-
1c. Better opportunities for co-creation, public-private partnerships and innovation	Reform	[50-150]	-	-	-	-	-	-
1d. Creating a data-driven society	Reform	[50-150]	-	-	-	-	-	-
1e. Denmark fit for a digital future	Reform	[50-150]	-	-	-	-	-	-
Further digitalisation measures	-	165	125	20	20	-	-	20
2. SME's digital transition and export	Investment	65	25	20	20	-	-	20
3. Broadband pool	Investment	100	100	-	-	-	-	0
In total		665	125	145	145	125	125	0



Component 2.7

Investing in Green Research and Development

The Danish recovery plan contains funding for investments in green research and innovation. The investments focus on incentives to boost R&D in companies and four specific missions:

- I) Carbon capture and storage or use of CO₂,
- II) Green fuels for transport and industry,
- III) Climate- and environmental friendly agriculture and food production and
- IV) Reuse and reduction of plastic waste through circular economy.

Each mission aims at contributing to long-term growth, supporting the green and digital transition and diversifying research in Denmark.



Description of the component

Box 2.7.1

Reforms and initiatives for investing in green research and innovation

Policy area/domain:

Research and development, green transition, carbon capture and storage or use of CO₂ (CCUS), energy efficiency, development and demonstration programs within transportation and industry, climate and environment friendly agriculture, circular economy.

Objective:

The initiatives are aligned with the focused research program concerning the green transition, which the Danish government has initiated and will implement in 2021. The research program focuses mainly on four specific missions that each aim at contributing to long-term growth, supporting the green and digital transition and diversifying research in Denmark. Further, private green research and development is stimulated through the extension of a tax deduction for private expenses on R&D through 2022. The missions and initiatives seek the following objectives:

- 1) Create long-term growth potential by increasing investment in new green technologies:** Denmark will mitigate the potential costs of switching to a decarbonized society by frontloading investment projects regarding new technologies that can mitigate greenhouse gas emissions. In the future, economic growth has to be based on a sustainable use of the world's resources. Investments in new green solutions and providing alternatives to current solutions will support stimulus within especially the transport, industry, agricultural and food sector. This is expected to create jobs and create demand for Danish businesses' innovative solutions in the long term.
- 2) Make progress in the green and digital transition:** Investing in green, low- or negative-emission alternatives will positively contribute to the Danish 2030 target of 70 per cent reduction of greenhouse gases. Digitalization is an important driver of the green transition, as digitalization enables more efficient use of energy, creates new opportunities for existing solutions and provides consumers with measures to adapt to a sustainable behaviour. The green and digital transition are thus interconnected.
- 3) Diversify research in Denmark:** The outcomes of investment efforts in research and demonstration projects are the most optimal when adapted to a diverse research strategy. Large-scale greenhouse gas reductions demand multiple solutions in multiple sectors from multiple actors. A fruitful way forward in this regard is to broaden the scope of research efforts and rely on more than one solution.

Investments to underpin the objectives

The Danish government will create a number of new public-private partnerships of research institutions, private businesses, public authorities, and innovation actors contributing with solutions to four mission-based challenges in enabling the green transition.

Further, as a part of the green tax reform, green research and development is subsidised through an extension of a tax deduction for private sector expenses on research and development through 2022.

- I. Carbon capture and storage or use of CO₂ (CCUS)
- II. Green fuels for transport and industry (i.e. Power-to-X)
- III. Climate- and environment friendly agriculture and food production
- IV. Circular economy focusing on reuse and reduction of plastic and textile waste
- V. Incentives to boost R&D in companies

Estimated cost:

Research in green solutions:

700 m. DKK in 2021. The means will be allocated to Innovation Fund Denmark. To receive funding from the program, private and public institutions must join together to form a partnership and file an application within the four mission-based challenges. The selection of green research and innovation partnerships will be the result of a two phased call process: 1) Development and decision on mission roadmaps and 2) Call for partnerships. Innovation Fund Denmark will choose which partnerships to receive funding based on the best applications.

Incentives to boost R&D in companies:

1,100 m. DKK in 2022. To qualify for the deduction, R&D undertakings will have to satisfy criteria relating to innovativeness, creativity and uncertainty.

Main challenges and objectives

2.7.1 Main challenges

The global pollution of air, soil and water, the increasing use of the Earth's resources and global climate changes pose great challenges for nature, the environment and human health. At the same time, biodiversity is under great pressure. Both in Denmark and internationally, there is an urgent need for increased knowledge and environmental technological solutions to combat these challenges and ensure a more efficient and sustainable use of the earth's resources. The main challenges are set out below:

- *Net-zero greenhouse gas emissions:* Denmark will not be able to meet the 70 per cent reduction greenhouse gas emissions target in 2030 or climate-neutrality in 2050 by only reducing current greenhouse gas emissions. Thus, there is a need to develop new technologies focusing on negative emissions.
- *Emissions in the transport and industry sector:* In order for Denmark to have an energy system fully reliant on renewable energy in 2050, greenhouse gas emissions from the transport and industry sector must be reduced. The transportation sector is expected to account for about a third of the greenhouse gas emissions in 2030, in which road transport will account for about 90 per cent. Thus, there is an urgent need to develop solutions to create new and green fuels.¹
- *Emissions from the agriculture and food sector:* The total food system in Denmark, including land and forests, must reduce its net climate impact significantly in order to contribute to the national target of 70 per cent greenhouse gas reduction in 2030 and climate-neutrality by 2050. Currently, a number of existing measures will be able to deliver an effect, but there is a need to invest in new technologies to maintain sustainable production and earnings in the long term.
- *Emissions from waste incineration:* Both internationally and in the EU, Denmark is one of the countries with the highest production of waste per capita. Thus, there is a need for a circular economy in Denmark with a focus on waste reduction and recycling.

2.7.2 Objective

The Danish government has initiated a focused program, where a number of green research and innovation partnerships consisting of research institutions, companies, and innovation actors will perform mission-driven research and development towards a societal green transition. Further, as a part of the green tax reform, private sector research and development is subsidised through 2022.

¹ Basisfremskrivningen, 2020.

The research will contribute to reach the objectives of the Danish Climate Act of 70 per cent reduction of greenhouse gas emission in 2030 compared to 1990, climate neutrality by 2050 as well as to reach international goals of the Paris Agreement.

The research program focuses on four specific missions: 1) *carbon capture and storage or use of CO₂*, 2) *green fuels for transport and industry*, 3) *climate- and environmental friendly agriculture and food production* and 4) *reuse and reduction of plastic waste through circular economy*. Each mission aims at contributing to long-term growth, supporting the green and digital transition and diversifying research in Denmark. In addition, the government's climate partnerships in the business community have recommended targeting research, development and demonstration efforts within specific areas of these four missions. The objectives of the missions and the R&D subsidies are explained further below.

- *Create long-term growth potential by investing in new green technologies:* Long-term economic growth must be based on a more effective use of the world's resources. This demands investments in initiatives that will bring forth the green transition – not only in Denmark but also globally. Investing in energy efficient solutions as well as finding cost-effective technologies to reduce greenhouse gas emissions will support stimulus within multiple sectors, including the transport, industry, agricultural and food sector.

There is great potential for reducing CO₂-emissions through energy efficiency, where Danish research and business strengths can contribute to competitive solutions for other countries. Expanded research on energy efficiency can thus lead to new production jobs, generate further demand for highly energy and resource-efficient equipment and bring long-term value to energy efficient alternatives. The same applies for development of new environmental technologies and solutions within the agricultural and food sector and in regards to reuse and reduction of plastic waste through circular economy. Finally, a targeted research effort that supports the development of new green solutions within the transport, industry and production sector implies a great potential for growth, new production jobs and strengthened competitiveness in multiple Danish business sectors, as it can strengthen companies' opportunities to seek new areas for growth.

- *Make progress in the green and digital transition:* Denmark is a pioneer when it comes to research and development of green initiatives, and we can expect that the green research and innovation partner companies will contribute to the green transition both inside and outside of Denmark. Focus on digitalization is a great vehicle for progressing the green transition. Public availability of data and implementation of digital technologies are important components for developing flexible energy systems and providing consumers with incentives for a sustainable behaviour.

Scientists from the Geological Survey of Denmark and Greenland estimate that there is a storage potential of 22 bn. tonnes CO₂ in Denmark. This is 2,000 times the estimated Danish CO₂-emissions from large CO₂-sources in 2030 to 2040², suggesting that Denmark cannot only store its own CO₂-emissions, but some of the emissions from other countries as well. Furthermore, Denmark has multiple comparative advantages in regards to reducing greenhouse gas emissions from the parts of the transport and industry sector that cannot be directly electrified with power from a renewable energy source. Denmark also has an internationally competitive agricultural and food sector that focuses on sustainability and climate efficiency. Finally, within the business sector, Denmark has a significant position and global potential when it comes to developing new environmental technology concerning circular economy. In addition, the Danish public sector is a key collaboration partner in this area.

- *Diversify research in Denmark:* A key element in both the European Green Deal and the Energy Union is to diversify Europe's energy sources and making use of energy produced within the EU more efficient. An important component of this is to diversify the research initiatives and funding projects. Europe needs to develop new technologies to be competitive in the future; hence, Europe needs a diverse research strategy with a broader focus on multiple sectors and technologies instead of just some. A mission-based approach as this will make it possible for small and medium-sized Danish enterprises to get a share of the funds as public-private research and innovation partnerships are expected to include large companies, SMEs as well as start ups to broaden the innovation base and, thus, enabling research efforts from multiple fronts. The degree of innovation, including the composition of partnerships, will be important criteria in the selection of partnerships.

This catalogue is a good example of such a diverse strategy, as the individual initiatives all solve different tasks and rely on different knowledge and technology. Carbon capture and storage is an important component in many of the initiatives, but CCS alone cannot solve the issue of developing new green fuels or transitioning agriculture into a sustainable state. This diverse research strategy is an innovative way of working with the green transition.

Summary description of the reforms and investments of the component

In September 2020 the Danish government published a new national green research and innovation strategy *Green solutions of the future – Strategy for investments in green research, technology, and innovation*. The strategy sets a clear direction for the

² GEUS: <https://www.geus.dk/udforsk-geologien/fangst-og-lagring-af-co2-ccs>

Danish green research and innovation effort in order to accelerate the development of technologies and solutions, which can help protect our climate, nature and environment. The mission-oriented research program described above is a key part of the national green research strategy focusing on challenges where the need for new solutions and the potential for meeting the green objectives are the largest in Denmark as well as on a global scale. The missions are to be accomplished by green partnerships in which knowledge institutions, businesses, public authorities, and private players join forces in a strategic research and innovation effort over several years.

On the basis of the strategy, the Danish government, along with the Danish parliament, has decided to set aside 700 m. DKK in 2021 for the above-mentioned green research and innovation program to accelerate the development of new green technologies and solutions. The funding of the program is part of an extraordinary priority of research in green innovation and solutions. This is both an addition to the Danish national research means already allocated, as well as an addition to the research means allocated from the EU such as from Horizon Europe.

The intention with the program is to build green public-private partnerships of research institutions (universities, etc.), private businesses, public institutions and innovation actors. The green partnerships are a new instrument in the Danish research and innovation system, where private and public institutions will cooperate by sharing knowledge and best practice to focus and accelerate innovations targeted specific challenges of the green transition. This is the best way to reach lasting and sustainable solutions. This approach will allow research institutions, private businesses, SMEs, public institutions, etc. to apply for funding for research, demonstration and development projects. This will create positive incentives for businesses to develop and use these innovative green solutions. The research, demonstration and development projects must support the green transition in Denmark, and hopefully also in the rest of Europe. The partnerships will cover the whole value chain, from basic science to large-scale demonstration projects. The mission-oriented partnerships complement broader green thematically calls and existing instruments in the Danish research and innovation system. The creation of the new green partnerships also addresses the Country Specific Recommendation for Denmark by promoting and investing in research and innovation. With the new green partnerships, the innovation base will be expanded and targeted essential areas for the green transition in the coming years. The partnerships will be accessible to both established and new players specializing in the green transition, thus creating opportunities for both SMEs and companies of tomorrow.

To receive funding from the program, private and public institutions must join together to form a partnership. The selection of green research and innovation partnerships will be the result of a two phased call process:

Phase 1: Development and decision on mission roadmaps

All relevant players in the Danish innovation system are called upon to develop a socio-technical roadmap, back-tracking from 2050 describing challenges and gaps within the mission, strongholds and potentials and sketch key activities and relevant work stream themes for future partnerships. An international panel of experts is expected to assist the Innovation Fund Denmark board of directors in selecting one or more roadmaps under each mission to form the backbone of the activities in the future mission-driven partnerships.

Phase 2: Call for partnerships

The call for partnerships will be announced following the selection of roadmaps. The selection of partnerships will be based on a thorough evaluation and selection process, including international peer reviewers, on the actions within the scope of the selected roadmaps. There can be one or more partnerships within each mission.

The total cost of the program amounts to 700 m. DKK in 2021 from the RRF and Innovation Fund Denmark will decide the split between the four missions. Each mission is expected to receive around 100 to 400 m. DKK from the program. The split of the 700 m. DKK and the number of partnerships within the four missions will depend on which applications that have the highest quality and potential. Hence, it is now not possible to tell the exact means allocated to each mission.

Innovation Fund Denmark will, in its choice of partnership, seek co-funding from other public research and innovation programs. Furthermore, the partners in the partnership must also contribute with funding to the partnership so that each partnership has seed capital of at least 200 m. DKK. The seed capital is intended for 5 years of research. After 2021, the partnerships' additional funding will depend on their results and ability to attract funding from private businesses, national and international research funds, e.g. Horizon Europe.

By letting Innovation Fund Denmark be in charge of choosing which partnerships to receive funding, the arm's length principle and a competitive approach to selecting the best partnerships is ensured. Innovation Fund Denmark has since it was established in 2014 had expertise regarding selecting innovative and sustainable projects with large returns and societal value. The fund evaluates projects based on research quality and societal impact in the light of the two main purposes of the fund: To contribute to solving societal challenges and create growth and employment. The fund invests in projects with high risk but also high potential. E.g. earlier in 2020, the fund invested around 20 m. DKK in a camera based

machine for sorting plastic waste, an innovation with large potential to improve the abilities of recycling plastic waste.

Innovation Fund Denmark regularly tracks the gender balance in its research and innovation grants and gender balance and diversity of research teams will be taken into account as part of the overall assessment of partnership applications.

The partnerships must deal with one of four green *missions*. The four missions are:

- I. Carbon capture and storage or use of CO₂
- II. Green fuels for transport and industry (i.e. Power-to-X)
- III. Climate- and environment friendly agriculture and food production
- IV. Circular economy focusing on reuse and reduction of plastic and textile waste

The missions are all targeted green challenges that we need innovative solutions for in order to meet the 70 per cent reduction of greenhouse gas emissions target in 2030 and climate-neutrality in 2050. The missions are chosen based on their 1) green potential, 2) commercial strengths and potentials, 3) research-related strengths and 4) partnership potentials.

The extended tax deductions to boost R&D in companies was agreed by the government and a broad coalition in the Danish parliament in December 2020 as a part of the green tax reform. As such, the increased incentives for green R&D should also be viewed in the broader context of the green tax reform, in which companies are being incentivized to frontload green R&D and investments in preparation for a higher CO₂e-tax.

The following section reviews the addressed challenges and objectives of the four missions and the extended tax deduction to boost R&D in companies.

2.7.3 Carbon capture and storage or use of CO₂ (CCUS)

Addressing challenges: The UN's IPCC points to the necessity of negative emissions if we are to reach the goals of the Paris Agreement. Reducing Europe's current emissions is not enough to meet these targets. A condition for success is to develop new technologies that can reduce the greenhouse gases already emitted. If we are to succeed, we have to promote negative emissions. An innovative vehicle for driving this new agenda is by investing in technologies and research in carbon capture and storage or use of CO₂ (CCUS).

Objectives: The goal is to develop cost-effective solutions to capture CO₂ from the largest emitters or directly from the atmosphere and permanently store or use the carbon in new climate neutral energy sources, such as airplane fuel, textiles and plastic.

The International Energy Agency (IEA) expects that multiple international energy companies will demand and invest in CCUS infrastructure and technology in the near future. Scientists from the Geological Survey of Denmark and Greenland estimate that in Denmark alone, areas below the surface have a storage potential of 22 bn. tonnes CO₂. This is 2,000 times the estimated Danish CO₂-emissions from large CO₂-sources in 2030 to 2040. This large storage potential suggests that Denmark could not only store its own CO₂-emissions, but some of the emissions from other countries as well.

Next step on the path towards implementing CCUS is to create economic incentives to use the technology, including developing cheaper and more efficient capturing-technologies. This is the main obstacle for a broader prevalence and distribution of the technology. A second need is to strengthen research in the geological preconditions for storing CO₂ in Denmark, for development and optimization of the materials used in CO₂-capturing, and for the development of robust methods of analysis that can monitor and prevent the emission of greenhouse gases from the storages. Research and innovation in the partnerships will contribute to reducing the price of CCUS, which is a necessity to implement cost-effective solutions that can be carried out on a larger scale. It should be noted that CCUS is only one element of the Danish climate effort that complements other measures to reduce green house gas emissions from industry, transport, agriculture etc.

It is estimated that new CCUS solutions have the potential of reducing the Danish greenhouse gas emission with somewhere between 4 and 9 Mt CO₂e per year in 2030 in addition to the greenhouse gas reductions, that has already been resolved.³

Implementation: Private-public partnerships with projects within CCUS technologies can apply for funding through Innovation Fund Denmark. Innovation Fund Denmark will fund the partnership with the greatest potential. The review of applications is expected to take into account the relation with the development and demonstration project of CO₂ storage sites in depleted oil and gas fields in the Danish sector of North Sea that are initiated in component 2.3 on Energy efficiency, green heating and Carbon Capture and Storage to avoid overlap.

Target group: Well-established research environments working with CCUS in multiple research institutes already exist in Denmark, however the use of CCS in Denmark is still at the demonstration stage. CCUS is expected to be a growing industry. Furthermore, Denmark has substantial commercial potentials and a good basis for storing CO₂ from other countries. Potential partners in a partnership working with CCUS come from industries such as the present oil industry, the cement industry, waste incineration plants and other energy heavy manufacturing industries. The research and innovation activities in the partnership are expected to include an international perspective, e.g. collaboration with relevant international

³ [https://kefm.dk/Media/6/4/Klimaprogram_2020%20\(2\).pdf](https://kefm.dk/Media/6/4/Klimaprogram_2020%20(2).pdf)

research groups/partners, and take into account relevant strategies such as the European Hydrogen Strategy, including the European Clean Hydrogen Alliance.

Timeline: Call for mission roadmaps are expected to open primo 2021 and the selection of roadmaps takes place mid 2021. Call for partnership applications are expected to open mid 2021. Selection of partnerships and awarding of grants are expected to be completed ultimo 2021.

State aid: In the application, the partnership will propose a budget based on partners/activities and that will be subject to evaluation and approval of appliance with thresholds in GBER.

Do no significant harm:

Table 2.7.1
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No, the aim of the CCUS-mission is to develop cost-effective solutions to capture CO ₂ from the largest emitters or directly from the atmosphere and permanently store or use the carbon in new climate neutral energy sources, such as airplane fuel, textiles and plastic. This mission will not contribute to fossil fuel projects.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No, the CCUS-mission is not expected to be detrimental to climate change adaptation. Climate change adaptation is one of the main aspects which will be relevant for the mission partnerships to take into account in their research and innovation activities.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No, the CCUS-mission is not expected to be detrimental to the sustainable use and protection of water and marine resources. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards and relevant law so the mission does not put into risk the sustainable use and protection of water and marine resources.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No, the CCUS-mission is not expected to be detrimental to the transition to a circular economy. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the transition to a circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No, the aim of the CCUS-mission is to develop cost-effective solutions to capture CO ₂ from the largest emitters or directly from the atmosphere and permanently store or use the carbon in new climate neutral energy sources, such as airplane fuel, textiles and plastic. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk pollution prevention and control.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No, the CCUS-mission is not expected to be detrimental to the protection and restoration of biodiversity and ecosystems. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the protection and restoration of biodiversity and ecosystems.

2.7.4 Green fuels for transport and industry (i.e. Power-to-X)

Addressing challenges: There is an urgent need to reduce greenhouse gas emissions from the parts of the transport and industry sector that cannot be directly electrified with power from a renewable energy source. Heavy transport, airplanes and ships make up the largest concerns in the transport sector, while the production of steel and cement is a concern in the industry sector. Both in Denmark and

globally, there is a growing demand for transportation and in Denmark, the transportation sector is expected to account for around a third of the combined greenhouse gas emissions, in which road transport will account for around 90 per cent. Without a targeted effort to reduce emissions from these sectors, Denmark is not expected to have an energy system fully reliant on renewable energy in 2050.

Objectives: The goal of this mission is to develop new solutions to create new green fuels, i.e. development of solutions to convert electricity from renewable energy to products that can be used to reduce emissions from parts of the transport and energy sectors where there are no existing cost-effective alternatives to fossil energy. One way of making green fuels is by converting electricity from a renewable energy source to products that can be used to reduce emissions from parts of the transport- and industry sector with no cost-efficient alternative to fossil fuels. In order to develop green fuels, we need to develop large-scale power storage solutions from renewable energy sources in chemical form of hydrogen by using electrolysis. Hydrogen can in itself be used directly as a fuel in heat production or as a fuel in cars. However, hydrogen is also the first substance used in the development of a collection of other carbonaceous fuels that would be able to replace conventional fossil fuels in airplanes and ships. Use of captured CO₂ is a precondition for producing these carbonaceous Power-to-X-products.

The current demand for green hydrogen and other Power-to-X products such as renewable fuels is not sufficient for a market driven expansion. One explanation is high production costs, which makes the price for hydrogen-based products relatively high compared to fossil alternatives. Renewable fuels will only become viable if they become competitive. There is a need for a targeted research-, development-, and demonstration effort to bring these technologies to a level of technological maturity that can facilitate commercial use. There is furthermore a need to demonstrate how Power-to-X-systems can be integrated in the whole energy system, such as the heating sector.

The potential for CO₂-reduction from Power-to-X is vast as it in theory can replace all fossil fuel if there is enough electricity from renewables. Countries producing excess electricity from renewable sources will especially profit from developing Power-to-X technologies. Furthermore, there are several positive externalities associated with increased research in Power-to-X because finding new ways for sector coupling optimization and interconnecting national and international energy systems facilitates greater diversification of energy sources. The Danish framework suits the European Green Deal perfectly, as diversification of energy sources, decarbonizing the energy sector as well as promoting sustainable mobility are all key components of the plan.

It is estimated that new Power-to-X solutions have the potential of reducing the Danish greenhouse gas emission with somewhere between 0.5 and 3.5 Mt CO₂e

per year in 2030 in addition to the greenhouse gas reductions, that has already been resolved⁴.

Implementation: Private-public partnerships with projects within Power-to-X technologies can apply for funding through Innovation Fund Denmark. Innovation Fund Denmark will fund the partnership with the greatest potential.

Target group: Due to its advanced energy sector and placement, Denmark has multiple comparative advantages, such as competitive electricity prices, a large renewable energy potential and a district heating system that can utilize excess heat in energy conversion. There are strong traditions for working with hydrogen and electrolysis at multiple well-established research environments at the Danish universities. There is furthermore a large commercial potential of Power-to-X. Potential private partners in the partnerships include industries such as maritime industry, transport industry, chemical industry etc. The research and innovation activities in the partnership are expected to include an international perspective, e.g. collaboration with relevant international research groups/partners, and take into account relevant strategies such as the European Hydrogen Strategy, including the European Clean Hydrogen Alliance.

Timeline: Call for mission roadmaps are expected to open primo 2021 and the selection of roadmaps takes place mid 2021. Call for partnership applications are expected to open mid 2021. Selection of partnerships and awarding of grants are expected to be completed ultimo 2021.

State aid: In the application, the partnership will propose a budget based on partners/activities and that will be subject to evaluation and approval of appliance with thresholds in GBER.

⁴ [https://kefm.dk/Media/6/4/Klimaprogram_2020%20\(2\).pdf](https://kefm.dk/Media/6/4/Klimaprogram_2020%20(2).pdf)

Do no significant harm:

Table 2.7.2
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?	X		No, the aim of this mission is to reduce greenhouse gas emissions by developing new solutions to create new green fuels. This mission will not contribute to fossil fuel projects, as the objective of the mission is the development of solutions to convert electricity from renewable energy to products that can be used to reduce emissions from parts of the transport and energy sectors where there are no existing cost-effective alternatives to fossil energy.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?	X		No, the mission concerning green fuels for transport and industry is not expected to be detrimental to climate change adaptation. Climate change adaptation is one of the main aspects which will be relevant for the mission partnerships to take into account in their research and innovation activities.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?	X		No, this mission is not expected to be detrimental to the sustainable use and protection of water and marine resources. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the sustainable use and protection of water and marine resources.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?	X		No, this mission is not expected to be detrimental to the transition to a circular economy. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the transition to a circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?	X		No, the aim of this mission is to reduce greenhouse gas emissions by developing new solutions to create new green fuels. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk pollution prevention and control.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?	X		No, this mission is not expected to be detrimental to the protection and restoration of biodiversity and ecosystems. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the protection and restoration of biodiversity and ecosystems.

2.7.5 Climate- and environment friendly agriculture and food production

Addressing challenges: Greenhouse gas emissions from agriculture and food production constitute a significant and growing share of Denmark's and the world's climate impact. Specifically, the agricultural and forestry sector is expected

to account for approximately 37 per cent of Denmark's total greenhouse emissions in 2030.⁵ The most important greenhouse gases in agriculture are nitrous oxide and methane, which make up approximately 43 per cent and 55 per cent of the sector's total greenhouse gas emissions.⁶ Currently, a number of existing measures will be able to deliver a great effect as described in the component of *Climate action plan for agriculture*, but there is a need for more investments in new technology and partnerships to reduce the emissions even further and maintain sustainable production and earnings in the long term.

Objectives: A number of new solutions on cost-effective technologies and measures to reduce greenhouse gas emissions and increase CO₂-uptake within the field of agriculture and food are already under development in Denmark. The goal of the mission is to accelerate the development of cost-effective solutions that can reduce the emission of greenhouse gases and increase the capture and store of CO₂ from the agriculture, increase the focus on circular and sustainable solutions and increase the knowledge about existing agriculture activities and emissions.

There is a need for development of a more climate-friendly plant production, including research and innovation in new breeding techniques, further development of precision agriculture and the establishment of new cultivation and fertilization systems that are more efficient and ensure increased uptake of excipients. The research must support the development of productive agricultural systems and contribute positively to biodiversity in the cultivated fields and landscapes.

Existing research projects within feed additives, slurry additives and bio refining appear to have great prospects. One of the most promising feed additives has shown potential to reduce methane emissions from dairy cattle by approximately 35-40 per cent⁷. In addition, a new additive for manure could potentially reduce methane emissions from stables and warehouses by up to 50 per cent⁸. Finally, there is great potential for reductions in bio refining, including the pyrolysis process, which converts biomass into bio char as well as oil and gas. It should be noted that the mentioned technical reduction potentials are currently subject to some uncertainty in terms of effect, documentation and distribution.

It is estimated that new solutions within climate- and environment friendly agriculture and food production have the potential of reducing the Danish greenhouse gas emission with somewhere around 4 m. CO₂e tonnes per year in 2030 in addition to the greenhouse gas reductions, that has already been resolved.⁹

⁵ Basisfremskrivningen, 2020.

⁶ Miljøstyrelsen: <https://mst.dk/erhverv/groen-virksomhed/groent-udviklings-og-demonstrationsprogram-gudp/gudp-s-klimaprojekter/>

⁷ Klima-, Energi- og Forsyningsministeriet: https://kefm.dk/Media/6/E/Borgerting_TG.pdf

⁸ Aarhus Universitet: https://pure.au.dk/portal/files/192003968/Opdatering_af_klimatabellen_08072020.pdf

⁹ [https://kefm.dk/Media/6/4/Klimaprogram_2020%20\(2\).pdf](https://kefm.dk/Media/6/4/Klimaprogram_2020%20(2).pdf)

Implementation: Private-public partnerships with projects within Climate- and environment friendly agriculture and food production technologies can apply for funding through Innovation Fund Denmark. Innovation Fund Denmark will fund the partnership with the greatest potential. The review of applications is expected to take into account the relation with the research, development, and demonstration projects that are initiated in the *component on Green transition of Agriculture and the Environment* to avoid overlap.

Target group: Denmark has an internationally competitive agricultural and food sector that focuses on sustainability and climate efficiency. Within the industry, there is also a clear recognition of the need for a targeted focus on research and innovation in the use of new technologies that can reduce greenhouse gas emissions and promote the development of new sustainable foods, production methods, feed types and ingredients.

High quality research environments working with agriculture and food science at the Danish universities already exist, however the capacity at these research environments is limited. Thus, it is crucial that the capacity is strengthened, such that we can meet future research needs.

Thus, Denmark is one of the pioneers of research and development within the field of agriculture and food, hence it makes sense to place funds intended this area in Denmark. Potential private partners for the partnerships include e.g. the agriculture and food industry.

Timeline: Call for mission roadmaps are expected to open primo 2021 and the selection of roadmaps takes place medio 2021. Call for partnership applications are expected to open medio 2021. Selection of partnerships and awarding of grants are expected to be completed ultimo 2021.

State aid: In the application, the partnership will propose a budget based on partners/activities and that will be subject to evaluation and approval of appliance with thresholds in GBER.

Do no significant harm:

Table 2.7.3
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No, the aim of this mission is to accelerate the development of cost-effective solutions that can reduce the emission of greenhouse gases from agriculture, increase the focus on circular and sustainable solutions and increase the knowledge about existing agriculture activities and emissions. This mission will not contribute to fossil fuel projects.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No, this mission is not expected to be detrimental to climate change adaptation. Climate change adaptation is one of the main aspects which will be relevant for the mission partnerships to take into account in their research and innovation activities, e.g. in relation to the development of future solutions for more sustainable agriculture and food production.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No, this mission is not expected to be detrimental to the sustainable use and protection of water and marine resources. On the contrary, one of the targets of this mission is to reduce the negative effects on nature and environment. For instance, the development of more sustainable solutions within agriculture and food production is expected to benefit the status of surface water, groundwater, and marine waters.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No, the aim of this mission is to accelerate the development of cost-effective solutions that can reduce the emission of greenhouse gases from the agriculture, increase the focus on circular and sustainable solutions and increase the knowledge about existing agriculture activities and emissions. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the transition to a circular economy.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No, the aim of this mission is to accelerate the development of cost-effective solutions that can reduce the emission of greenhouse gases from the agriculture, reduce negative environmental impact, increase the focus on circular and sustainable solutions, and increase the knowledge about existing agriculture activities and emissions. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk pollution prevention and control.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No, this mission is not expected to be detrimental to the protection and restoration of biodiversity and ecosystems. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the protection and restoration of biodiversity and ecosystems.

2.7.6 Circular economy focusing on reuse and reduction of plastic and textile waste

Addressing challenges: Denmark is both internationally and in the EU one of the countries with the highest production of waste per capita. Plastic waste is the largest of Denmark's CO₂-emissions from waste incineration. Moreover, textile waste often include plastic, and thereby emits CO₂ when burnt. Thus, there is a need for Denmark to reduce plastic and textile waste and recycle such waste, such

that new products are produced largely from renewable resources instead of fossil raw materials.

Objectives: The goal of this mission is to develop solutions to increase the resource productivity, decrease plastic and textile waste, increase the quantity and quality of reusable materials, and reduce the products' climate and environmental impact. This is necessary in order to reach the targets of the Danish Climate Act and to support the effort planned in the Danish Agreement on a green waste sector and circular economy.

In relation to better use and reuse of the earth's resources, there is a need for more knowledge and research on the use of circular economy in Denmark. Furthermore, circular economy can help reduce the combustion of plastics and textiles. This requires new design solutions that both minimize plastic consumption and prolong the life of plastic products and textiles. There is also a need for research into how the use of problematic chemical substances in plastics is phased out.

There is a special need for solutions that can ensure tracking, sorting and recycling of plastic as well as reduction of plastic waste. Technologies and solutions that provide a high quality in recycling and a low loss of materials are estimated to reduce the Danish amount of plastic and fossil textile waste by approximately 53.000 ton.¹⁰ This is an addition to the planned reduction in *the Danish Agreement on a green waste sector and circular economy* and, thus, the mission supplements the effort planned in the agreement. Both actions will make sure that Denmark accomplishes the goal of removing 80 per cent of the plastic waste from incineration in 2030.¹¹

The mission-driven effort may at the same time contribute to promote circular economy in broader terms through the development of solutions to improve resource productivity, reduce the amount of waste, increase the amount and quality of reuse, and reduce negative effects on the climate and environment from products, e.g. through a changes in design, production, and consumer behaviour.

There is a need to focus on all steps of the value chain from product design and production processes to consumption, maintenance, recycling, and reuse. In that way the research and innovation effort can promote the development of new business and consumption models so that products and materials are used in the best way and as long as possible – and are suitable for repair and reuse.

¹⁰ Aftale om fordeling af forskningsreserven 2021.

¹¹ The potential is subject to very high uncertainty both in terms of effect, documentation and distribution. A significant reservation must therefore be made in relation to the realization of the potential. Estimates for the four missions cannot be combined due to multiple possible overlaps. No equation can thus be drawn between the initiation of the research missions and the realization of the reduction potentials.

It is estimated that new solutions within reuse and reduction of plastic and textile waste have potential of reducing the Danish greenhouse gas emission with about 0.2 Mt CO₂e per year in 2030 in addition to the greenhouse gas reductions, that has already been resolved.¹²

Implementation: Private-public partnerships with projects within circular economy and technologies that can help reuse and reduce plastic and textile waste can apply for funding through Innovation Fund Denmark. Innovation Fund Denmark will fund the partnership with the greatest potential.

Target group: Well-established research environments at the Danish universities working with circular economy and the related scientific fields already exist. This research has a high scientific impact – both in relation to the world average and to Danish research in general. Thus, there are many competencies within life cycle assessments, environmental considerations in product development, consumer behaviour, waste and recycling, etc. at Danish universities and at GTS-institutions today.

Within the business sector, Denmark has a significant position and global potential when it comes to environmental technology solutions that ensure clean air, clean water, clean soil and optimal resource utilization. Denmark has several large companies in the area as well as strong research and development departments. At the same time, there are experiments among Danish companies with the organization of circular economic solutions, and there is already a large sector within traditionally linear design, production and sale of plastic and textile products. In addition, the Danish public sector is a significant player – both as a knowledge and collaboration partner in relation to the development and use of environmental technology and the development of the circular economy.

Thus, there is a large potential to create a well-established industry around recycling plastic waste in Denmark and a variety of potential partners for the partnerships.

Timeline: Call for mission roadmaps are expected to open primo 2021 and the selection of roadmaps takes place mid 2021. Call for partnership applications are expected to open mid 2021. Selection of partnerships and awarding of grants are expected to be completed in ultimo 2021.

State aid: In the application, the partnership will propose a budget based on partners/activities and that will be subject to evaluation and approval of appliance with thresholds in GBER.

Do no significant harm:

¹² [https://kefm.dk/Media/6/4/Klimaprogram_2020%20\(2\).pdf](https://kefm.dk/Media/6/4/Klimaprogram_2020%20(2).pdf)

Table 2.7.4

Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No, the aim of this mission is to develop solutions to increase the resource productivity, decrease plastic and textile waste, increase the quantity and quality of reusable materials, and reduce the products' climate and environmental impact. The mission will not contribute to fossil fuel projects.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	No, the mission concerning circular economy is not expected to be detrimental to climate change adaptation. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not lead to climate change adaptation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No, this mission is not expected to be detrimental to the sustainable use and protection of water and marine resources. On the contrary, the aim of the mission on circular economy is to reduce the amount of plastic waste and thereby reduce the negative impacts of micro- and macro plastic waste ending up in groundwater and marine waters.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No, on the contrary this mission on circular economy focusing on reuse and reduction of plastic and textile waste aims at developing solutions to increase resource productivity, decrease plastic and textile waste, increase the quantity and quality of reusable materials, and reduce products' climate and environmental impact.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No, the aim of this mission is to develop solutions to increase the resource productivity, decrease plastic and textile waste, increase the quantity and quality of reusable materials, and reduce the products' climate and environmental impact. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk pollution prevention and control.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No, this mission concerning circular economy is not expected to be detrimental to the protection and restoration of biodiversity and ecosystems. Innovation Fund Denmark will review applications, select partnerships and award grants in line with general standards so the mission does not put into risk the protection and restoration of biodiversity and ecosystems.

2.7.7 Incentives to boost R&D in companies

Addressing challenges: The European economies have been highly affected by the COVID-19 crisis. To address the challenges, the incentives for companies to invest in R&D are increased to ensure a green and digital transition and to mitigate the economic consequences and unemployment.

Objectives: The basis for depreciation and the basis for deduction will be extended to include the financial year 2022 by 130 per cent of all R&D expenses including equipment, rental of property, labour force (salary expenses) etc.

The initiative will incentivize companies to increase their overall R&D spending and at the same time encourage smaller firms to engage in R&D. Furthermore, the Danish government anticipates that more than 40 per cent of firms' expenditures on R&D will be in digitalization efforts based on the historical R&D expenditure. Thus, the initiative delivers on the recommendations for Denmark in the CSR to frontload investments in research and innovation.

Implementation: The temporary scheme will be extended to include the financial year 2022.

State aid: An assessment has been made of whether the initiative is conform with state aid rules. The initiative applies to all undertakings on equal terms and therefore does not constitute state aid.

Link to reforms: The R&D incentive will provide companies with liquidity and incentives to invest in R&D that can bring Denmark closer to the new industrial age.

Target Group: All enterprises including companies and self-employed will be able to benefit from the additional depreciation and deduction right.

Timeline: A politically binding agreement has been concluded on 8 December 2020. A proposal has been submitted to the Danish Parliament in February 2021. The bill has passed the Parliament on 13. April 2021. The initiative is effective as from January 1, 2022.

Do no significant harm

Table 2.7.5
Substantive DNSH assessment

DNSH objective	Yes	No	Significant negative impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	<p>No. R&D related to exploration and extraction of fossil fuels and raw materials does not qualify for the deduction. Further, historical data on private R&D expenditures in Denmark underline that no R&D is conducted in areas inconsistent with the DNSH-principle.</p> <p>This projection is based detailed historical data on private sector R&D spending provided by Statistics Denmark (the central authority on Danish statistics) for the period 2015-2019.</p> <p>The vast majority (>99 percent) of Danish private sector R&D is undertaken in Industry, Trade, ICT, Finance & Insurance and Business service. For the ICT, Trade, and Finance & Insurance sectors, the majority of R&D is conducted within the fields of computer science, electronics, communication and other technical sciences, as shown. As such, these cannot be expected to significantly harm any of any of the six environmental objectives.</p> <p>The business service sector refers to various companies offering a broad range of services to other companies, e.g. cleaning, accounting assistance, consulting services, security services etc. R&D in this sector is unrelated to the six environmental objectives.</p> <p>The largest sector in terms of private sector R&D is Industry, which is a broad category covering a multitude of different R&D purposes. The main R&D subsectors within the industry relates to pharmaceuticals, measuring equipment, medical equipment etc. These are by nature unrelated to the six environmental objectives set out by the technical guidance on the application of "do no significant harm".</p> <p>Further, national regulation and EU-regulation ensures that strong economic incentives to transition to greener production, transportation, heating, energy production exits etc. As a consequence of increasingly ambitious climate and environmental goals, these green economic incentives have been increasing.</p> <p>The green initiatives in the Danish RRP further increases these incentives significantly, and the Green Tax Reform includes a commitment to implementing an economy-wide uniform carbon tax, sending a clear signal to market participants. As such, there is no reason to expect private sector R&D to become less aligned with the "do no significant harm"-principle for the duration of the tax deduction (2020-2022) or beyond than what has been the case for 2015-2019</p> <p>The investment window, increased R&D incentive and accelerated depreciation will moreover help ease leakage problems since the initiatives will make a transition through green investments possible and thus not lead to moving production out of the country.</p>
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	<p>No. R&D related to exploration and extraction of fossil fuels and raw materials does not qualify for the deduction. Further, historical data on private R&D expenditures in Denmark underline that no R&D is conducted in areas inconsistent with the DNSH-principle.</p> <p>The investment window, increased R&D incentive and accelerated depreciation will moreover help ease leakage problems since the initiatives will make a transition</p>

		through green investments possible and thus not lead to moving production out of the country.
<p>The sustainable use and protection of water and marine resources.</p> <p>Is the measure expected to be detrimental:</p> <p>(i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or</p> <p>(ii) to the good environmental status of marine waters?</p>	X	No – the extended deductions for R&D expenditures have no negative implication for the use and protection of water services.
<p>The transition to a circular economy, including waste prevention and recycling.</p> <p>Is the measure expected to:</p> <p>(i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of non-recyclable hazardous waste; or</p> <p>(ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or</p> <p>(iii) cause significant and long-term harm to the environment in respect to the circular economy?</p>	X	No – the extended deductions for R&D expenditures have no implication for the waste handling or the circular economy.
<p>Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?</p>	X	No – pollutants are strictly regulated in Danish environmental laws and this is unaffected by the measure.
<p>The protection and restoration of biodiversity and ecosystems.</p> <p>Is the measure expected to be:</p> <p>(i) significantly detrimental to the good condition and resilience of ecosystems; or</p> <p>(ii) detrimental to the conservation status of habitats and species, including those of Union interest?</p>	X	No – the measure has no implication for the protection and restoration of biodiversity and ecosystems.

Green and digital dimensions of the component

Green transition

The aim of the initiatives is to help drive the green transition and for Denmark to reach its goal of 70 per cent reduction of greenhouse gas emissions in 2030 compared to 1990. However, the initiatives can also be considered a part of the European Green Deal framework, as the initiatives fit well into policy areas such as biodiversity, the farm to fork strategy, sustainable agriculture, clean energy, sustainable mobility and climate action.

Denmark is an internationally recognized green frontrunner with expertise in green energy technology after decades of working towards a climate-neutral energy system. The initiatives mentioned here fit into this larger framework. Some of the initiatives contributes with general reductions in greenhouse gas emissions, while others provide support for the development of innovative technologies that will help incentivize green solutions.

The initiatives complement the already existing efforts in the Danish Green Research Strategy of 2020. The purpose of such a cohesive strategy is to accelerate the development of new green solutions. Hopefully, the strategy can lower the costs of a green transition and make actual reductions possible towards 2030 and 2050. A core element of the strategy is to expand Danish businesses' leading position in green solutions and create jobs in both Denmark and the EU. The strategy has been developed in close cooperation with private businesses. Such a cohesive strategy was requested by the Commission in its recommendations for the Danish NECP.

As an initiative in the green research strategy, the government proposed an adjustment of the legal basis of Innovation Fund Denmark. On 23 November 2020 a broad majority of parties in the Danish parliament entered into a political agreement which renews the political mandate of Innovation Fund Denmark. The agreement emphasizes that Innovation Fund Denmark, among other things, should focus on long-term capacity-building and on developing strategic instruments in order to create long term growth and jobs in Denmark and to contribute to solving significant societal challenges, e.g. the green transition.

Both the green research strategy and the political agreement on Innovation Fund Denmark follow up on the recommendations made by an international expert panel which reviewed the Danish innovation system in 2019. The European Commission's Horizon 2020 Policy Support Facility facilitated the review and provided secretariat support to the panel together with the Danish Ministry of Higher Education and Science and with contribution from other ministries.

As part of the green research strategy, The Ministry of Higher Education and Science and the Ministry of Industry, Business and Financial Affairs will also jointly launch an initiative concerning the framework for cooperation between

knowledge institutions and companies in the field of innovation. The aim is to even more turn Denmark's strong knowledge and research position into innovation, growth in companies, attractive investment options, and more high-productive jobs all over the country. This work will also build on the recommendations from the international panel that evaluated the Danish innovation system in 2019. It will, among other things, look at the framework for commercialisation of research results and the strengthening of an entrepreneurial culture among researchers and students. The work will support the government's climate action plan and green research strategy by supporting the conversion of green research into new green solutions that are brought into real life.

Digital transition

In the Commission's recommendation to Denmark, the Commission stated that Denmark performed well in the field of digitalization, but that Denmark would need to invest further in digital infrastructure and focus on the green transition.

Consumer behavior and intelligent design are important pillars for sustainability, and are equally important if the outcomes from the research programs are to reach their full potential. Digitalization, use and public availability of data as well as implementation of new technologies are all important components. We need to develop flexible energy systems where energy consumption is constantly adapted to the energy production.

The tax deduction to boost R&D in companies will contribute to furthering the digital agenda and the digitalisation of Denmark. Based on recent private R&D expenditure patterns, it is expected that at least 40 per cent of private R&D will be related to digitalisation, *cf. table 2.7.6*. This estimate of the digital share includes only research and development that are strictly within the interdisciplinary fields of Software, Hardware and Robotics & Drone technology. These fields alone account for 40 per cent of the total private R&D expenditures in 2019, while other research fields (e.g health, defense etc.) will also have ICT-related R&D expenditures that are not captured by this definition.

Table 2.7.6
Private R&D expenditures in digital interdisciplinary research areas (2019)

	Total R&D expenditure	Software	Hardware	Robotics and drone technology	Digital share of R&D expenditure
M. DKK					
Industry	21.147	3.157	1.719	226	24%
Construction	30	5	1	1	23%
Trade	1.980	635	427	15	54%
Transport	39	2	21	5	71%
Hotel, restauration	10	0	0	0	0%
ICT	3.912	3.211	145	28	87%
Finance and Insurance	6.346	5.947	3	77	95%
Business service	8.853	822	396	107	15%
Other	228	60	12	5	33%
Total	42.545	13.838	2.723	463	40%

Source: Statistics Denmark.

Further, in connection with the initiative ‘*Green fuels for transport and industry (i.e. Power-to-X)*’, it is important that we use the transportation capacity and the infrastructure as efficiently as possible. This can be done through innovative digital technologies. Denmark is a frontrunner in technology regarding geographic positioning and availability of geo data.

Digitalization in agriculture is important as well. Research in digital agriculture is needed in order to collect, analyse and share data to optimize and improve the use of resources. Farmers are increasingly using more sophisticated digital technology to monitor, collect, and analyse data about the condition of the landmass. Precision farming has the potential to tell the farmer the exact amount of fertilizer or water to use, thereby optimizing resource use. The Danish Agricultural Agency has already set up a pilot project in precision agriculture in 2018, and other sustainable projects are planned to integrate the agricultural sector in the green transition.

Open strategic autonomy and security issues

The green research and development partnerships are intended to develop new green solutions that can support Denmark and the Member States of the European Union reach the goals to reduce carbon emissions by at least 55 per cent relative to 1990 levels in 2030 and climate neutrality in 2050. The research and development projects will cover the whole value chain, from basic science to large-scale demonstration projects. The partnerships can thereby make the Union more resilient by diversifying key supply chains of the innovation of new green solutions and thereby strengthening the strategic autonomy of the Union.

Cross-border and multi-country projects

The research and innovation activities in the partnership are expected to include an international perspective, e.g. collaboration with relevant international research groups/partners, and take into account relevant strategies such as the European Hydrogen Strategy, including the European Clean Hydrogen Alliance. This may help to bring together the leading research and innovation institutions, which can cooperate by sharing knowledge and best practice to focus and accelerate innovations targeted specific challenges of the green transition. Also, an international panel of experts is expected to assist the Innovation Fund Denmark in the selection and scoping process for the roadmaps under each mission.

Do no significant harm

As outlined for each initiative above, the initiatives on green research and development will not do any harm to the environment, as the project are specifically aimed at reducing green house gas emissions and protect the environment. For the partnerships, projects that are in conflict with the 'Do no significant harm'-principle will be screened out in the application process. For the R&D tax deduction, R&D related to exploration and extraction of fossil fuels and raw materials does not qualify for the deduction, while historical data on private R&D expenditures in Denmark underline that no R&D is conducted in areas inconsistent with the DNSH-principle.

Financing and costs

The proposed initiatives regarding the four missions are all a part of the Danish government's research program. The means for the four missions are an extraordinary green innovation and research priority and in addition to other Danish national research means, as well as an addition to the research means allocated from the EU such as from Horizon Europe.

The total cost of the program amounts to 700 m. DKK in 2021 from the Recovery and Resilience Facility. Innovation Fund Denmark will be in charge of choosing which projects are funded. Innovation Fund Denmark will also decide the split between the four missions. The split between the four missions will depend which applications that has the highest quality and potential. Hence, it is now not possible to tell the exact means allocated to each mission. However, it is expected that each of the four missions should be covered by one or more partnerships.

The mission-partnerships will be very broad with partners that span the whole value chain from basic research to experimental development. The partnerships will set a long-term vision (2050) and back-track their activities and milestones to the partnership where the initial investment will be committed for a 5 year period.

Covering both research and development will be a vital selection criteria. In the application the partnership will propose a budget based on partners/activities and that will be subject to evaluation and approval of appliance with thresholds in GBER.

Means from the Innovation Fund Denmark are thought to be geared towards co-financing from the participating stakeholders and companies with an amount of roughly the same magnitude. It is also expected that the partnerships should attempt to attract additional funding in the coming years from private companies, national public or private funds as well as from international sources such as EU's Horizon Europe. The Ministry of Higher Education and Science will ensure that additional funds in addition to the recovery funds will not lead to double funding but increase the overall support for the partnerships. In the application process, applicants are specially required by Innovation Fund Denmark to declare application or funding from other sources (public and private) on activities similar to what is proposed in the partnership application. During the partnership period, mission-partnerships will be evaluated on a yearly basis based on a yearly progress report and a revised financial account report. Innovation Fund Denmark can hold back payouts in case of double funding of activities.

Estimating the costs of the extended R&D tax deductions (after accounting for dynamic behaviour) follows the standard methodology of the Danish Ministry of Taxation for estimating the tax consequences. Concretely, the mechanical effect of extended deductions for R&D is based on data from *Statistics Denmark* on firm expenditures on R&D. The behavioural effect on investment, profits, employment and wages is based on the standard calculation of corporate tax changes by the Ministry of Finance/Taxation documented [here](#).

Table 2.7.7
Funding of the project

M. DKK, 2021-prices	Investment/ reform	Total	2021	2022	2023	2024	2025	Funding from other sources
I. Carbon capture and storage or use of CO ₂ *	Investment	[175]	[175]	-	-	-	-	[175]
II. Green fuels for transport and industry (i.e. Power-to-X)*	Investment	[175]	[175]	-	-	-	-	[175]
III. Climate- and environment friendly agriculture and food production*	Investment	[175]	[175]	-	-	-	-	[175]
IV. Circular economy focusing on reuse and reduction of plastic and textile waste*	Investment	[175]	[175]	-	-	-	-	[175]
V. Incentives to boost R&D in companies	Investment	1.100	-	1.100	-	-	-	-
In total		1.800	700	1.100	-	-	-	

Note: *175 m. DKK is the expected average allocated to each mission. The split of the 700 m. DKK and number of partnerships within the four missions will depend on the applications with the highest quality and potential.



3. Complementarity and Implementation

Part 3 of the Danish Recovery and Resilience Plan (RRP) describes how the initiatives in the RRP are consistent with national policy targets. This includes a description of the links between the RRP and the Danish Energy and Climate Plan.

Furthermore, this part contains descriptions of the rigorous and comprehensive Danish control and audit system that is in place to prevent fraud with RRP funds.

Finally, part 3 explains how the Danish RRP is based on input from civil society, enterprises and social partners and how the implementation of the plan will be communicated.

3.1 Pre-financing request

Denmark files for 13 per cent pre-financing of the RRP in order to frontload the investments in the green and digital transition and ensure financial support in the initial years after the crisis.

3.2 Consistency with other initiatives

National Energy and Climate Plan

The Danish RRP contributes significantly to the realization of the targets outlined in the Danish National Energy and Climate Plan. This section describes the links between the RRP and these national policy targets.

On December 6 2019, 8 of the 10 parties in the Danish Parliament and the government reached an agreement on a new Climate Act¹. The act includes a legally binding target to reduce greenhouse gas emissions by 70 per cent by 2030 (relative to 1990 level), to reach net zero emissions by 2050 at the latest, and to set milestone targets based on a five-year cycle.

The climate target of reducing greenhouse gas emissions by 70 per cent by 2030 require widespread action in all parts of society. Thus, one of the main goals of the National Energy and Climate Plan is decarbonisation.

The Danish RRP contributes to this objective by providing investments that will lower greenhouse gas emissions by 2.8 Mt CO₂e by 2030. The Danish RRP also provides funding for potential further reductions of greenhouse gas emissions by

¹ <https://kefm.dk/Media/1/D/aftale-om-klimalov-af-6-december-2019%20FINAL-a-webtilg%C3%A6nge-lig.pdf>

8.7-16.7 Mt CO₂e by 2030 via development and research projects. Furthermore, the Danish RRP provides funding for the first phase of the Green Tax Reform, which will pave the way for the introduction of a uniform carbon tax in Denmark by 2023.



Road transport

A central part of the decarbonisation is a green transition of the transport sector. With the RRP, road transportation in Denmark will become greener. The initiatives financed by the Recovery and Resilience Facility contributes to an agreement that reduces greenhouse gas emissions from road transport by 2.1 Mt CO₂e by 2030. The revised registration tax for vehicles is making green cars cheaper to buy, thereby incentivizing consumers to buy green cars. This is combined with a temporary increase of an existing scrapping premium for old diesel cars, thereby incentivizing owners of some of the most polluting cars in the Danish car fleet, to scrap them. Furthermore, an analysis of a test-scheme for large trucks is initiated, providing knowledge on initiatives, which can potentially lower greenhouse gas emissions from freight transport.



Environment and agriculture

The National Energy and Climate Plan also includes an ambition of ensuring reduced greenhouse gas emissions from the agricultural sector. This is a challenge, as the farmers' finances are generally vulnerable, and it is difficult to lower greenhouse gas emissions with existing technologies without lowering production output as well. The RRP targets this in several ways. Firstly, it includes an initiative on restoring wetlands, thereby taking carbon rich soils out of agricultural production. This lowers the greenhouse gas emissions by 0.1 Mt CO₂e by 2030 as well as emissions of nitrogen to the aquatic environment. Secondly, the Danish RRP contains research and demonstration projects particularly aimed at demonstrating and scaling up existing technologies within the agriculture industry that allows farmers to lower greenhouse gas emissions with 2 Mt CO₂e by 2030 *without* lowering production output.



Renewable energy

Renewable energy is central in reaching Denmark's climate targets. Therefore, one of the targets in the Danish National Energy and Climate Plan is to promote renewable energy. The RRP includes initiatives, which does exactly that, with investments in Power-to-X. Power-to-X technology will become crucial in the future when more and more energy will come from renewables and there is an increasing need for energy stability and storage of renewable energy. Power-to-X is estimated to hold a technical reduction potential of 0.5 to 3.5 Mt CO₂e by 2030, which the RRP contributes to realise.



Energy efficiency

The National Energy and Climate Plan also emphasizes energy efficiency, and the government climate partnerships have recommended investments in that area as well. The RRP includes initiatives targeted at energy efficiency with energy renovations of public and private buildings as well as replacing outdated and polluting energy sources with new green technology. The initiatives combined will reduce greenhouse gas emissions of 0.1 Mt CO₂e by 2030.



Research and development

The climate target of 70 per cent cannot be realized with existing technologies. The National Energy and Climate Plan includes a target of promoting green research, development, and entrepreneurship. Therefore, the RRP contains investments in demonstration of existing technologies as well as research and development of new technologies that will contribute to the lowering of greenhouse gas emissions. It is estimated that these technologies combined have a technical reduction potential of between 8.7 and 16.7 Mt CO₂e by 2030, which the investments in the RRP contribute to realise. Furthermore, green entrepreneurship is supported, for instance by introducing tax deductions for R&D initiatives for SMEs. Thus, the Danish RRP targets both research and development as well as the introduction of new technologies in SMEs, ensuring that new technologies will in fact be applied by enterprises.

To summarize, the Danish RRP contributes significantly to the reduction of Denmark's greenhouse gas emissions as set out in the Danish Climate Act and the National Energy and Climate Plan by reducing greenhouse gas emissions by 2.8 Mt CO_{2e} in 2030. This is done by promoting investments especially in decarbonisation, energy efficiency, and green research, development, and entrepreneurship. Furthermore, research and development initiatives contribute to unleash the potential of key technologies, which combined can lead to further greenhouse gas reductions in the scale of 8.7-16.7 Mt CO_{2e} by 2030.

National Reform Programme

In the context of the European Semester, all EU Member States forward national reform programs every spring, which accounts for the countries structural reforms.

Denmark's National Reform Programme 2021 is an integrated part of the Danish Recovery and Resilience Plan. The National Reform Programme 2021 accounts for the measures taken by Denmark to comply with the 2019 and 2020 country specific recommendations from the EU.

The Danish recovery plan responds to the country specific recommendations that Denmark has received through the European Semester (Part 1, section 2). Furthermore, the National Reform Programme 2021 describes Denmark's progress in reaching the UN's Sustainable Development Goals (annex 1).

European Regional Development Fund

The Danish RRP takes funding from other EU funds into consideration in order to ensure complementarity and to avoid double funding. The complementarities are most prominent within support for digitalisation and green transition of SME's and start-ups.

The main focus in the distribution of the funds from the European Regional Development Fund is the recovery of SMEs, where the funds are targeted towards making the recovery as green and digital as possible. SMEs operate in an ever-changing environment and they need to be able to transition rapidly in order to meet the consumers' growing demand for green and digital solutions. Therefore, the European Regional Development Fund focusses on strengthening the competitiveness of SMEs by providing funds for advice and investments in fixed assets.

Furthermore, the European Regional Development Fund will fund implementation of recommendations from the government's regional growth teams. The local growth teams will provide recommendations that considers the local context. The growth teams will focus on delivering recommendations that will bring enterprises and businesses strengthened out of the COVID-19 pandemic.

European Social Fund

The European Social Fund will provide support for start-ups and enhancing competencies for leaders as well as employees.

The support of entrepreneurship will materialise through initiatives to promote entrepreneurship within all genders, backgrounds, and throughout all of Denmark. This effort will have a focus on businesses within digital and green industries. The effort also includes providing advice and business development as well as strengthening entrepreneurs' abilities to attract external financing.

The effort on enhancing knowledge and competencies will focus on both upskilling of leaders and employees as well as pairing unemployed people with enterprises in order to provide the enterprises with the competencies they need.

It applies to both the European Regional Development Fund and the European Social Fund that they will not fund any of the initiatives in the Danish RRP, as to comply with rules on double funding.

Just Transition Fund

By April 30 2021, the programming of the Just Transition Fund in Denmark is awaiting the regional transition plans. The Just Transition Fund is expected to develop business infrastructure and promote private investments to alleviate the negative economic impacts of an ambitious transition to a greener and more climate friendly economy. It will be ensured that no overlaps between projects financed by the Recovery and Resilience Facility and the Just Transition Fund will occur.

European Agriculture Guarantee Fund & European Agricultural Fund for Rural Development

On April 28 2021, the Danish government presented a proposal for a reform of the agricultural sector in Denmark. This proposal includes how to utilise the funds stemming from the Common Agricultural Policy. Negotiations between the government and parties in the Danish Parliament are thus ongoing on the agricultural reform and the use of funds from Common Agricultural Policy.

3.3 Complementarity of funding

In section 6 of this chapter, the control and audit setup is described in detail. One of the main purposes of the control and audit setup is to ensure that no double funding will occur when the funds from the RRP is disbursed to recipients. This is done by supplementing the current rigorous Danish control systems with new management declarations in which the management in each responsible, implementing authority pledges to be able to document at all times that double funding is prevented and that all funds have been implemented according to relevant national and EU regulation.

In the descriptions of each component throughout part 2 in the RRP, descriptions are included on how double funding is prevented where relevant. For instance, in funds that recipients can apply for, one of the application criteria is not to double fund. This is an important criterion when assessing applications for all funds within the Danish RRP, and only projects respecting the regulations on double funding will be eligible for disbursements.

Initiatives financed by both the Recovery and Resilience Facility and additional funding (e.g. national or European funds) will be disbursed at central level with budget and appropriation authority in the Budget Bill. The central distribution ensures that the same applicant cannot receive double funding for the same project, as the disbursement of funds will be handled within the same responsible ministry and unit.

The funding for the recovery plan will be registered as revenue in the Budget Bill for 2021 via a supplementary appropriation to be adopted by the Danish Parliament's Finance Committee. This ensures that it will be possible to separate funding from the Recovery and Resilience Facility from other funding.

3.4 Implementation

In section 3.6 in this chapter it is described how maladministration, fraud, and corruption is prevented through the existing, rigorous Danish control and audit system as well as additional layers of control and audit aimed specifically at the administration of the RRP. Therefore, this section focuses on the decision-making process leading up to the submission of the RRP.

During the COVID-19 pandemic, the Danish government has utilized a large number of financial instruments to mitigate the economic consequences of the pandemic. This includes a green stimulus package that was negotiated together with the annual budget bill in the fall of 2020. Large parts of the Danish RRP is comprised of initiatives that was negotiated as part of the stimulus packages with the Danish Parliament.

The Green Stimulus Package contains initiatives that was recommended by “green restart teams” and the governments “climate partnerships” which are comprised of key stakeholders and enterprises.

In November 2019, the government launched 13 climate partnerships². The partnerships consisted of enterprises and trade unions and were set to deliver recommendations on how to deal with climate change and realise a green transition. The partnerships were monitored by a “green business forum” comprised of government representatives, enterprises, trade unions, scientists and green NGOs. The partnerships have continuously delivered recommendations, and the Danish RRP

² <https://kefm.dk/klima-og-vejrl/regeringens-klimapartnerskaber-og-groent-erhvervsforum>

reflects these. For instance, the component on energy efficiency is entirely devoted to following up on recommendations from the climate partnerships.

Eight green restart teams³ were formed in August 2020 with the purpose of providing recommendations on ensuring a green restart of Danish exports after the COVID-19 pandemic. The teams were led by CEOs and chairs of large companies and were comprised of representatives from enterprises and trade unions. The teams delivered their recommendations in September 2020. The recommendations were taken into account when the Danish RRP was drafted, and it includes initiatives recommended by the restart teams, such as investments in green transition and digital transformation as well as tax deductions for research and development just to mention a few.

The government has received valuable advice from the climate partnerships and the green restart teams and thus the foundation of the Danish RRP builds on recommendations from civil society stakeholders.

Other initiatives in the Danish RRP have been negotiated separately between the Danish government and a majority of the Danish Parliament in the relevant line ministries, and have been undergoing the usual thorough process of consulting stakeholders as well as hearing local and regional authorities, social partners, civil society organizations, youth organizations, and other relevant stakeholders, during the legislative procedure.

3.5 Consultation process

This section contains a description of how stakeholders have been consulted as part of the preparatory process when drafting the Danish RRP. It also contains considerations and plans on how to consult stakeholders as part of the implementation of the RRP.

Overall, the Danish RRP consists of components made in agreements between the government and a broad majority of the Danish parliament. Stakeholders have been consulted during the preparatory process through each individual component – especially in relation to the recommendations of the climate partnerships and the green restart teams, *cf. above*.

The consultation of stakeholders in the preparatory process has been conducted through a variety of forums and channels. The government has established 13 climate partnerships with a broad variety of stakeholders from corporations and businesses that has given recommendations to the government on the green transition. The component on energy efficiency in the Danish RRP is entirely devoted to follow-up on the recommendations from the climate partnerships.

³ <https://em.dk/ministeriet/arbejdsomraader/samfundsoekonomi-konkurrenceevne-og-digitalisering/genstart-af-danmark/>

In the light of the COVID-19 pandemic, the government has summoned eight “green restart teams” comprised of different stakeholders, including representatives from the largest companies in Denmark. The green restart teams have delivered a large bundle of recommendations that – to a large extent – have been incorporated into the Danish RRP.

Throughout drafting of the Danish RRP, the Danish Ministry of Finance has been in contact with many stakeholders, who provided ideas and inputs to the RRP. Many stakeholders have also addressed the Minister of Finance directly with input. To the extent that the inputs have contributed to fulfilling the purposes and requirements for the Danish RRP, many suggestions from civil society have been included in the plan. This includes e.g. electrification of road transport, energy renovations of public and private buildings, investments in wind power including Power-to-X, carbon capture and storage, and investments in digitalization including digitalization of the healthcare sector, which are all key initiatives in the RRP.

The Danish Ministry of Finance and the Commission’s Representation in Denmark have arranged and participated in dialogue meetings with hundreds of participants representing a broad variety of stakeholders in Denmark. For instance, on February 26, the Ministry of Finance and the Ministry of Foreign Affairs arranged a seminar in cooperation with The Commission’s Representation in Denmark for around 200 stakeholders.

Stakeholders will also play a central role in the implementation of many aspects of the RRP. Many of the components in the Danish RRP are in the form of funds for which enterprises, households, citizens and organizations can apply. Thereby, the RRP provides a framework various funds that various citizens, organizations, and corporations can apply. This gives stakeholders great opportunities to influence how the RRP is implemented.

For other funds, the specific implementation has not yet been decided. The application of the funds will be discussed in a partnership with civil society, key stakeholders etc. The partnership will provide recommendations on e.g. the aims of the funds, how it will be implemented and the criteria for eligibility. Thus, the consultation process has been rigorous and lasted since before planning the RRP and until the funds are being disbursed.

3.6 Control and audit

In this section, the current rigorous Danish control and audit setup is described in general terms. The description includes how Denmark will follow up and secure that funds from the Recovery and Resilience Facility are spent according to EU regulation regarding anti-fraud and corruption and in particular regulation 2021/241 on establishing the facility. The setup aims at preventing, detecting and correcting potential fraud, corruption and conflicts of interest as well as ensuring to avoid double funding etc., cf. article 22 in EU regulation 2021/241.

The section concerning control and audit consists of three parts. The first part of the section describes the general internal audits. Furthermore, it is described how the organisation of Danish government and administration works in general to prevent fraud and corruption. The second part describes the specific and additional controls and audits that are established in order to accommodate EU requirements on how to document the control with the application and implementation of the Recovery and Resilience Plan. The third part contains detailed descriptions of the control and audit systems in place in each of the implementing ministries.

Regulation on transparency and the duties of civil servants

Danish law has an explicit focus on ensuring transparency and objectivity in the Danish public administration. This is primarily regulated in The Public Access to Information Act⁴ and The Public Administration Act⁵. Furthermore, a codex for employees in government called “Kodeks 7⁶” describes the most important deeds and duties to which government officials are bound to adhere.

The Public Access to Information Act has five overall objectives:

1. To ensure freedom of speech and information
2. To ensure citizens’ involvement in democracy
3. To make sure that the public can oversee the public administration
4. To give the media the possibility to convey information to the public
5. To ensure a high trust in the public administration

The Public Access to Information Act also gives citizens and media access to all documents in the public administration with a few exemptions.

The Public Administration Act governs the functioning of the public administration. The act states e.g. that civil servants has to be impartial when processing cases and that they must always be objective.

Kodeks 7 is a mandatory set of rules for civil servants on behaviour and values when being employed in the public administration. The codex states seven core values with which civil servants must comply:

1. Legality
2. Truth
3. Professionalism
4. Collaboration
5. Responsibility
6. Openness about mistakes
7. Party-political neutrality

⁴ Cf. <https://www.retsinformation.dk/eli/lta/2020/145>

⁵ Cf. <https://www.retsinformation.dk/eli/lta/2007/1365>

⁶ Cf. <https://www.medst.dk/arbejdsmraader/publikationer/kodex-vii-de-syv-centrale-pligter/?query=kodex>

These core values are elaborated in a publication⁷ published by the Ministry of Finance, which also includes cases describing appropriate and inappropriate behaviour for civil servants. Thus, the Kodeks 7 is part of the basic training and education that civil servants receive when being employed in the public administration.

General control setup in Denmark

In Denmark, the responsibility for applying funds belongs to the individual ministry that pays out the funds. Every ministry that receives funding from e.g. the RRF is responsible for ensuring and complying with practices that complies with valid rules and secures a sufficient control and audit. The individual control and audit systems of each ministry is described in detail below. The internal control in governmental institutions includes control of both financial and non-financial processes. Non-financial processes could for instance be control with it-infrastructure, it-operations, administration processes, journaling, milestones, targets etc.

The control and audit systems of the ministries include control with subordinate institutions' application of public funds, including planning of financial processes and procedures, it-security, and the quality of the subordinate institutions' internal control and audit systems. Through the oversight, the management ensures a sound administration of public funds on the entire ministry area. The subordinate institutions themselves coordinate and own their control and audit systems and risk management, but every ministerial department has the responsibility of ensuring that the control and audit systems in subordinate units are sufficient.

Ministries, government corporations and state institutions must compile instructions describing how the institutions ensure a sound organisational placement and completion of the internal control, audit, and risk management.

“Regnskabsbekendtgørelsen”⁸ contains the specific rules on how to organize the internal control and audit systems in public institutions. The rules include control with financial processes to ensure correct financial reporting including establishment of functional separation in payment processes etc.

Thus, in the administration of the Danish public sector, there is a comprehensive and rigorous set of rules and procedures that ministries must comply with in order to ensure that they apply sufficient internal audits and controls.

External audit

Additional to the rules on internal audits in the ministries, Denmark has a set of rules governing the external audits of the ministries. The National Audit Office (Rigsrevisionen), which is part of the Danish parliament, is responsible for conducting external audits on government expenditures and revenues. The National

⁷ Cf. <https://www.medst.dk/arbejdsomraader/publikationer/kodex-vii-de-syv-centrale-pligter/?query=kodex>

⁸ Rules governing audit and financial accounting in governmental institutions in Denmark: <https://www.retsinformation.dk/eli/lta/2018/116>

Audit Office are thus completely independent from the government and they report to the Court of Auditors appointed by the parliament and the parliament itself.

If not otherwise specified, The National Audit Office is responsible for auditing the state accounts and doing financial audits testing and controlling whether the accounts are true and comply with relevant rules. Furthermore, The National Audit Office checks whether the accounts are in line with grants, laws, signed deals, and other common practices and assesses whether economic regards has been considered in the administration.

Furthermore, The National Audit Office can require regions, corporations, and municipalities etc. receiving funds from the government to provide detailed financial accounts. This serves the purpose of The National Audit Office being able to audit them and to check that the financial accounts are audited properly and sufficiently, that the requirements for receiving grants are met, and that the funds are applied according to relevant rules and requirements.

Extended controls concerning the application of the RRF

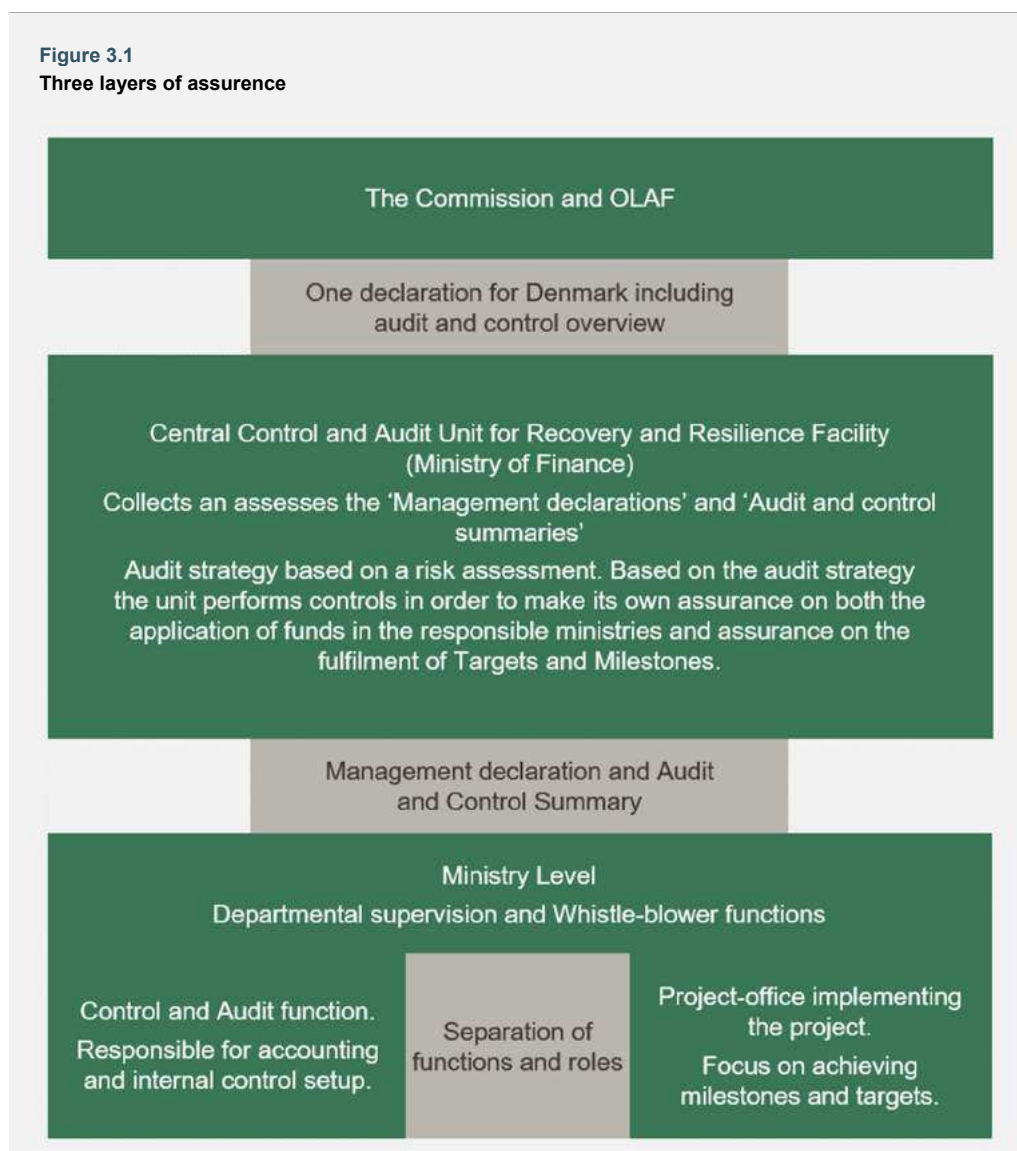
In order to ensure compliance with EU regulation 2021/241 and in particular article 22 on the protection of the financial interests of the Union, Denmark will strengthen and expand its current control setup – both in terms of staffing and control mandate. This extended setup will also ensure *one* central contact point between Denmark and the Commission on the implementation of RRF funds.

The Danish setup will consist of two levels of control and audit: A central level, which is additional to the existing Danish control and audit mechanisms and the existing decentralised level. In addition to the two levels of control and audit, the control and audit system is comprised of The National Audit office, the Danish Ombudsman, The Danish Data Protection Agency, and the whistle-blower⁹ functions in all ministries. The roles and responsibilities of the different layers of assurance are outlined in figure 3.1.

The relevant police authority is the State Prosecutor for Serious Economic and International Crime. The State Prosecutor handles all cases of governmental suspicion of fraud in Denmark. The Ministry of Finance will get reports from all line ministries, and the police will be notified if serious irregularities are observed.

⁹ Cf.

Figure 3.1
Three layers of assurance



The Ministry of Finance is responsible of coordinating and ensuring that the audit and controls are sound and well-functioning in the line ministries with regards to the implementation of the RRF. The Ministry of Finance will also serve the function as contact point for the Commission, EU audit institutions, OLAF etc. The Commission, the European Court of Auditors, OLAF and the EPPO will have access to all relevant data concerning control and audit. The OAS will ensure attention to ensuring high reliability of data provisions by beneficiaries on milestones and target and the data will be stored according to relevant regulation.

Before each payment-request, The Ministry of Finance will require and collect declarations from the management in each ministry that receives funding from the RRF. The declarations will be signed at management level and sent to the Ministry of Finance by members of the management in each of the nine responsible line ministries, *cf. table 3.1*. With the management declarations, the management in the

responsible ministries pledge to comply with the regulation (2021/241) on the establishment of the Recovery and Resilience Facility and in particular article 22 on the protection of the financial interests of the Union.

In the management declarations, the ministries will furthermore pledge to:

- Provide information that is complete, accurate, and reliable.
- Comply with conditions for disbursement of the funds.
- Be able to document that the funds have been spent according to what has been agreed, including being able to provide data on individual recipients of funds.
- Be able to document and verify the achievement of milestones and targets for each individual project.
- Provide a summary of the completed audits, including possible weaknesses and corrective action completed.
- Have established sound and sufficient internal control and audit systems in order to prevent, detect and correct potential fraud and corruption.
- Ensure that there is not received funds from other instances, including other EU-funds, in order to avoid double funding.

The Ministry of Finance will monitor and ensure that the ministries send the management declarations. Through the management declarations and the control and audit systems that are already in place, it is ensured that the funds are applied according to national- and EU-requirements.

After The Ministry of Finance has obtained sufficient assurance on the spending of funds, the ministry will submit a single management declaration to the Commission on behalf of Denmark. The single management declaration from Denmark will be based on the collection of line-ministry-level declarations and on the conclusion of The Ministry of Finance's own controls and supervision of the implementation of the funds.

When assigning funding from the RRF to relevant line ministries, it is a clear condition that the ministry applies funds according to the EU's criteria for application of funds from the RRF. Every ministry has a clear and lawfully binding responsibility to ensure appropriate audit and control systems in order to ensure that the funds are applied according to what has been approved by the Danish government and the EU. Furthermore, every ministry has to design its financial accounts

in a way that makes it possible to segregate the RRF-funding from other expenditure in the ministry. This will be done in the supplementary financial act implementing the RRF, in the official state accounts as well as in the annual budget bill.

As mentioned above, The National Audit Office may most likely also perform risk-based and random audits with the disbursement of RRF-funds. However, The National Audit Office is an independent entity and the central control unit in the Ministry of Finance can thus not dictate how and if the National Audit Office will carry out audits. To the extent that The National Audit Office performs audits related to the disbursements of RRF-funds, the audit summaries will be provided to The Commission along with the biannual management declarations.

Table 3.1 shows the division of responsibilities between ministries.

Table 3.1
Ministries responsible for each component

Component	Responsible ministry
1. Strengthening the Resilience of the Health Care System	Ministry of Health
2. Green transition of Agriculture and the Environment	Ministry of Food, Agriculture and Fishery & Ministry of Environment
3. Energy Efficiency, Green Heating and CCS	Ministry of Climate, Energy and Utilities
4. Green Tax Reform	Ministry of Taxation
5. Sustainable Road Transportation	Ministry of Transport
6. Digitalisation	Ministry of Finance/Agency of Digitisation & Ministry of Industry, Business and Financial Affairs
7. Green Research and Development	Ministry of Higher Education and Science

The central control- and audit unit within the Ministry of Finance

Within the Ministry of Finance, the existing internal audit unit will be assigned the task of coordinating the audit systems and conducting the controls with the line ministries’ application of funds and fulfilment of milestones and targets.

The function is independent and is anchored in the Office of Audit and Supervision (OAS) in the Ministry of Finance, and it reports directly to the permanent secretary in the Ministry of Finance. The office has an individual description of its role and functions, in which its special independent status is secured. An amendment to the description of functions has been made, specifically regarding the new mandate regarding control with the use of RRF-funds. The amendment to the description of function for the OAS regarding the specific RRF-mandate is approved at the government level. The government’s economic committee has approved the extended mandate.

The OAS currently consists of a chief auditor with 13 years of experience from internal audits in the Ministry of Finance. Additionally, the OAS has eight highly experienced employees of which four is specialised in auditing, two in cyber security, one in legal affairs, and one in financial affairs. Each of the employees in the office has more than 15 years of experience. All the employees in the office are continuously trained and upskilled. The office will hire the number of additional employees needed to ensure proper and sufficient control with the RRF funds. The exact number of additional employees will be assessed continuously to ensure a sufficient workforce.

The Office of Audit and Supervision's controls related to the Recovery and Resilience Facility funds

The OAS will perform controls regarding both the ministries' application of funds and the documentation and fulfilment of targets and milestones. The OAS will draft an annual 'audit and control strategy' for the spending of the RRF funds. In the strategy, focus will be on identifying risk prone areas.

In the assessment of the risk, OAS will include the following factors:

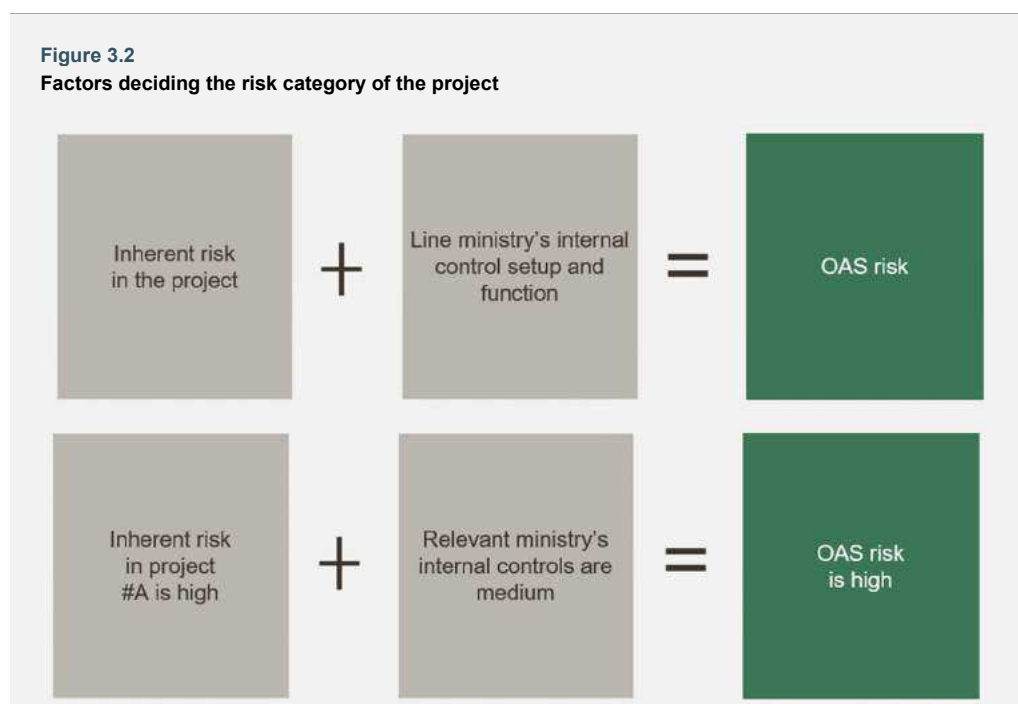
- OAS' assessment of the inherent risk in each project.
- The line ministries' description of the performed controls , including use of systems
- The level and scope of the internal control- and audit within the ministry.

In the assessment of the risks, it will furthermore be included whether The National Audit Office has audited the operations in recent years and any recommendations from The National Audit Office will be taken duly into account.

A risk assessment will be performed for every initiative in the Danish RRP. Hereafter, the OAS will draft a strategy for the control of each initiative.

- In the case that an initiative in the RRP contains a milestone related to the development of e.g. a strategy, the OAS will control that the strategy has been drafted and approved and that the drafting and approval is sufficiently documented.
- In case a target is related to e.g. a strategy having a certain effect or output, the OAS will control that the ministry has obtained sufficient documentation for the effect/output, and that the documentation supports and provides evidence of the indicated outputs and effects.
- In case an initiative consists of e.g. a pool from which applicant can apply for funds, the control from the OAS will be more rigorous. The controls will then consist of ensuring that the ministry has described and implemented appropriate control mechanisms with the disbursement of funds. This also includes e.g. focus on the controls in place to prevent double funding.

Based on a rigorous assessment as described above, risks are categorized into three different risk-categories: high, medium and low. This is shown in figure 3.2.



- If the OAS assesses that the risk for an individual project is high (red), further audits of the systems in place and the underlying action (i.e. checks on final beneficiaries) will be put in place. A control on the documentation for milestones and targets will also be performed.
- If the OAS assesses that the risk is medium (yellow) the OAS will e.g. request documentation on performance of controls. Furthermore, controls on the documentation for milestones and targets will be performed.
- If the OAS assesses that the risk is low (green) the OAS will e.g. request documentation on the milestones and targets.

OAS will report biannually on the controls performed during the work with the management declaration. In the report, the OAS will provide a summary of the OAS' controls with the implementing ministries' reports on control and audit.

The OAS will perform own controls on all project including the ones OAS assesses as low risk projects. More rigorous controls will be performed on projects where the OAS assess the risk as high.

The OAS will perform audits and controls prior to handling the first payment requests. The OAS has started the dialogue with the ministries and will set up a

number of workshops with each ministry to get a detailed understanding on their control environment and internal control setup. This will allow the OAS to make a sufficient risk assessment.

The number of audits will be approximately 10-15 per year, but will be decided specifically dependent on the types of projects being carried out in the specific year.

Systems used and collection of data

The OAS will use a specific Danish government system 'F2' to store documentation from the line-ministries. The system is used in almost all ministries and agencies in the Danish central administration, and it is used for filing and journaling of documents etc. to ensure compliance with various law requirements, including especially the public access to information act. Data will be sent via encrypted email to the OAS.

For the purpose of data analysis and in order to obtain knowledge on risk areas, the OAS will use the ARACHNE tool and will setup up a workshop on how to technically implement ARACHNE.

The specific data that will be collected from the projects is data on final recipients/beneficiaries, contractors and subcontractors. The collection of these data will serve the purpose of obtaining knowledge of risks specifically regarding 'concentration' and 'reputational' risks.

The OAS will ensure that these data is stored in order for the EU-authorities to check when requested.

Specific controls to avoid double funding

In order to provide knowledge of risk and in order to get assurance specifically on the risk of double funding, the OAS will perform three specific controls:

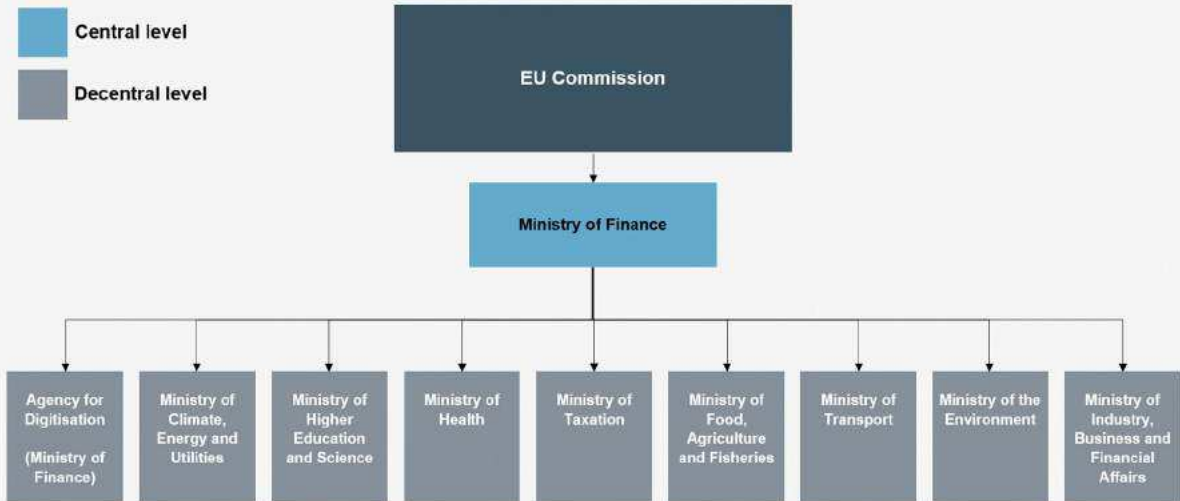
- Check and compare with the responsible for the ministry's budget in the Ministry of Finance to ensure that the project in the relevant ministry only receives funds from one EU-fund.
- Check the annual Budget Bill under the relevant ministry whether they receive other EU-funds, which will indicate a risk of double funding.
- Check the annual report for each relevant ministry or agency, that funds is not received from any other sources, including other sources than EU-funds.

Finally, the OAS will include a new paragraph in the Ministry Management declaration, where the Management declares not to have received funding from other sources for the specific project.

Summary of Ministry of Finance’s responsibilities

- The Ministry of Finance collects the Management declarations from the line ministries.
- The Ministry of Finance collects the summaries of the audits completed in the line ministries (“audit summary reports”) and provides the Commission with a summary of audits.
- The Ministry of Finance will make a risk-based audit strategy – how to get a satisfactory assurance regarding the Recovery and Resilience Facility-projects in the implementing ministries.
- The audit strategy will have a strong focus on internal controls, especially in the projects with payments to citizens or multiple stakeholders.
- The Ministry of Finance’s audit strategy will have a combined focus on system-audits and project-audits, including how the ministries have performed their controls and audits. The strategy will cover a specific focus on how the ministries have documented their milestones and targets.
- The Ministry of Finance can always require further information and documentation of the audits and controls carried out regarding RRP funds.

Figure 3.3
Levels of complementarity and implementation



Responsibilities of the decentral level (line ministries)

Each ministry is responsible for ensuring sufficient audit and control. The ministries will have the flexibility to design these individually, thereby maintaining the decentral Danish approach.

The internal control setup regarding the use of funds and documentation for implementation of milestones and targets is specified in tables 3.2-3.10 for all relevant line ministries.

Table 3.2

Description of control setup in The Ministry of Environment

Monitoring and control arrangement

Internal control setup

The Danish Ministry of Environment and its agencies follow the general guidelines issued by the Ministry of Finance (fm.dk) and Agency for Public Finance (oes.dk):

- Lov om statens regnskabsvæsen (LOV nr. 131 af 28/03/1984 - Law on State Accounting)
- Bekendtgørelse om statens regnskabsvæsen mv.(BEK nr. 70 af 27/01/2011 – Executive Order on the State Accounting)
- Vejledning om Intern Finansiell Kontrol, maj 2020 (Guidelines on Internal Financial Control)

The guidelines describe the required setup of the internal controls in three lines of defence.

Third line of defence is the ministry's monitoring of its agencies.

Second line of defence is the agency's internal controlling function, which monitor and test the internal controls of the Agency. In the Danish Environmental Protection Agency (DEPA) the Internal Financial Control team conducts the second line of defence regarding financial controls. The Internal Financial Control team report to the management of the DEPA.

First line of defence is the general staff and managers that conduct the day-to-day business of the DEPA according to general guidelines and the DEPA's own guidelines.

Instructions relevant to control, audit and risk management.

The concept for the continual internal investigation of the control environment according to the guideline "Vejledning om Intern Finansiell Kontrol, maj 2020" (Guidelines on Internal Financial Control) is still under development in the DEPA, but is expected fully implemented during 2021. See above.

Separation of functions as regards implementation and control

Third line of defence is the ministry's monitoring of its agencies.

Second line of defence is the agency's internal controlling function, which monitor and test the internal controls of the Agency. For the DEPA the Internal Financial Control team fulfils the function.

First line of defence is the general staff and managers that conduct the day-to-day business of the DEPA according to general guidelines and the DEPA's own guidelines.

1. In order to create a purchase, commit to an agreement or a grant agreement, at least two employees of which one must have authorization and allocated budget, is necessary.

2. To create a payment of invoice or a payment request at least two employees are necessary. The payments are handled electronically. The procedure calls for two different employees, as the systems used at the DEPA use segregation of duties.

The first line of defence conducts no. 1 and 2 above. The second line of defence controls the procedures ensures segregation of duties etc. and test the controls effectivity and efficiency.

Risk of fraud and corruption

Management verifications checking absence of irregularities

See above.

The first line of defence conducts no. 1 and 2 stated above.

The second line of defence performs internal investigations in order to determine whether the control environment mitigates the possibility of intentional or unintentional fraud.

Internal investigation usually focuses on segregation of duties, user access within a given system as well as other controlling activities perform by the first line of defence.

	Further, the second line of defence focuses on the control design, including control effectivity and efficiency.
Process for reporting identified irregularities	The DEPA follows the general guidelines regarding irregularities, which is reported to the DEPA's management, the National Audit Office, the local police authorities, the Ministry of Finance. The latter report to OLAF.
Procedures for storing and following up on detected irregularities	The DEPA mitigate any irregularities according to the internal guidelines. Procedures are controlled and updated. All documentation and information are stored electronically.
Prevention of fraud, corruption and conflicts of interests	<p>Whistle-blowers can contact the Ministry of Environment by letter or an e-mail.</p> <p>All staff receive general training in guidelines in prevention of fraud, corruption and conflicts of interests.</p>
Detection of fraud, corruption and conflicts of interests	<p>Internal controls in the ministry are based on risk and materiality. All payment-systems have a built in segregation of duties and this is overall ensured in the internal control focus.</p> <p>If the project is regarded as 'high risk' the internal controls will be setup accordingly.</p> <p>The DEPA's Internal Financial Control team performed in 2020 an internal investigation to determine whether the control environment was adequate. The findings showed that the control environment in general was adequate, but with room for improvements, which is under implementation during 2021.</p> <p>The concept for the continual internal investigation of the control environment according to the guideline "Vejledning om Intern Finansiell Kontrol, maj 2020" is still under development, but is expected to be fully implemented during 2021.</p> <p>Auditors must audit all grants if they are above a certain materiality level.</p> <p>The DEPA is audited by the National Audit Office of Denmark.</p> <p>The National Audit Office of Denmark and National Organisation of Certified Auditors (FSR) issues:</p> <ul style="list-style-type: none"> - Guidelines for Audit - Paradigmes for Audit Statement <p>Where audits do not apply due to materiality levels, the conditions in the Grant Agreement gives the DEPA opportunity to request documentation for the expenditures associated with the Grant Project.</p>
Correction of fraud, corruption and conflicts of interests	<p>If fraud, corruption or conflict of interest is detected, this will be corrected and funds will be recovered (or held back if not yet paid). The ministry's ordinary procedures regarding refunds of payments will be implemented.</p> <p>The DEPA follows the general guidelines regarding irregularities, which is reported to the DEPA's management, the National Audit Office, the local police authorities, the Ministry of Finance. The latter report to OLAF.</p> <p>The DEPA mitigate any irregularities according to the internal guidelines, procedures is controlled and updated. All documentation and information are stored electronically.</p> <p>Any funds will be recovered direct or by prosecution (if possible).</p> <p>In grant administration, most arrears are paid after reporting on the project milestones. Some prefunding can occur. Applicants are required to identify by social security number (CPR) or by business registration number (CVR). The DEPA is in a process of widening the use of digital two-factor identifications for login in the grant application system. The digital two-factor identification is the NemId, which uses the social security number (CPR) or the business registration number (CVR).</p>

Audit & control arrangements at the level of individual components/measures

The Ministry will collect data on the fulfilment of milestones and targets and do relevant controls of documentation. This will include desk reviews and on-the-spot-checks if relevant to the milestone or target.

The Ministry will document data on final recipients and make these available for both the control on fulfilment of milestones and targets and for the Ministry of Finance.

In grant administration, most arrears are paid after reporting on the project milestones (desk reviews). Some prefunding can occur. Applicants are required to identify by social security number (CPR) or by business registration number (CVR). The DEPA is in process widening the use of digital two-factor identifications for login in the grant application system. The digital two-factor identification is the NemId, which uses the social security number (CPR) or the business registration number (CVR).

If physical inspections are needed they will be conducted by the staff of the DEPA according to internal guidelines (on-the-spot checks).

Auditors must audit all grants.

The National Audit Office of Denmark and National Organisation of Certified Auditors (FSR) issues:

- Guidelines for Audit
- Paradigms for Audit Statement

Where audits do not apply due to materiality levels the conditions in the Grant Agreement gives the DEPA opportunity to request documentation for the expenditures associated with the Grant Project.

Avoidance of double funding

Practical arrangements preventing double funding

Grant applicants must provide a declaration regarding funding which is checked by the grant administrators.

In order to create a purchase, commit to an agreement or a grant agreement, at least two employees of which one must have authorization and allocated budget, is necessary.

To create a payment of invoice or a payment request at least two employees are necessary. The payments are handled electronically. The procedure call for two different employees, as the systems used at the DEPA uses segregation of duties.

The Department of Accounting performs monthly or quarterly reconciliations to mitigate any errors or omissions regarding expenditures.

Preventing that different ministries finance the same project twice

Grant applicants must provide a declaration regarding funding which is checked by the grant administrators.

Data, systems and reporting

Arrangements and mechanisms to collect, store and make available data on final recipients

These data will be available for both the Ministry of Finance and relevant EU-institutions.

The responsibility for control of payments depends on the system used on the administration hereof.

The Department of Accounting is responsible for the systems:

- Navision Stat - Accounting System
- TAS - Grant Administration

The Department of Grant Administration is responsible for the systems:

- F2 - Grant Administration
- TILSKOV - Grant Administration

The Agency for Governmental Administration (statens-adm.dk) is responsible for the systems:

- Navision Stat - Accounting System

All payments from F2, TAS and TILSKOV are routed through Navision Stat. The systems all implement segregation of duties. The Agency for Governmental Administration is responsible for the final payment transferal from Navision Stat to the bank, and apply segregation of duties during this part of the process.

In order to create a purchase, commit to an agreement or a grant agreement, at least two employees of which one must have authorization and allocated budget, is necessary.

To create a payment of invoice or a payment request at least two employees are necessary. The payments are handled electronically. The procedure call for two different employees, as the systems used at the DEPA uses segregation of duties.

The Department of Accounting performs monthly or quarterly reconciliations to mitigate any errors or omissions regarding expenditures.

All accounting data are consolidated in the stat accounts.

Systems used by to collect and store data on recipients

The DEPA does not at present administrate EU-funds and thus do not apply any systems specifically for this purpose.

For documentation of the Grant Administration, the DEPA uses several systems.

For Grant Administration the current systems are:

- Captia - Documentation (to Nov. 2019)
- F2 - Documentation (from Nov. 2019)
- F2 - Grant Administration
- TAS - Grant Administration
- TILSKOV - Grant Administration
- Navision Stat - Accounting System

All information is stored electronically.

Types of data on final recipients, contractors and subcontractors that will be stored and collected

All information is stored electronically.

- Application
- Identification of applicants and other participants
- Social security number (CPR) or by business registration number (CVR) – (if available)
- Payment information
- Reporting on milestones and final reporting
- Audit reports or samples
- Accounts and financial statements
- Grant Agreement and conditions
- Other relevant documentation for the grant administration

Access to information for management and audit authorities

Data will be available for both the Ministry of Finance and EU-institutions upon request. The relevant level will be given access to the data.

All accounting data are consolidated in the state accounts.

All information are stored electronically and are available upon request. If the information is required to be stored for a specific period other than five years, the information must be provided prior to the application process.

Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules

Some systems use payment limits – limited to the grant amount.

Payments are controlled recording to the grant amount (Grant Agreement).

In order to create a purchase, commit to an agreement or a grant agreement, at least two employees of which one must have authorization and allocated budget, is necessary.

To create a payment of invoice or a payment request at least two employees are necessary. The payments are handled electronically. The procedure call for two different employees, as the systems used at the DEPA uses segregation of duties.

The Department of Accounting performs monthly or quarterly reconciliations to mitigate any errors or omissions regarding expenditures.

Table 3.3

Description of control setup in The Ministry of Transport

DEP: Department

DRD: Danish Road Directorate

DRTA: Danish Road Traffic Authority

CARA: Danish Civil Aviation and Railway Authority

Monitoring and control arrangement

Internal control setup

DEP: The following text is chapter 3 of the instructions for the Ministry of Transport

3. Accreditation as well as risk management and formalized supervisory and control functions in connection therewith

3.1. Approval of the interim accounts to the department

The companies make a technical approval of the interim financial statements at the end of each month.

After the end of period 3, period 6, period 9, period 11, period 12 and the supplementary periods, the companies must make a substantial approval of the period accounts to the department. This substantial approval takes place by an approval of the period accounts in Statens Koncern System/SKS (The State's Concern System).

It must be stated in section 2.6 Period accounts of the company instructions who approves the period accounts. The accounts must be approved by the person to whom the competence has been delegated. The procedures for periodic accounting clearance must also be described.

3.2. Risk management and formalised supervisory and control procedures for the performance of the department's supervisory and control functions

3.2.1 Organisational matters

The department has the overall supervisory and control responsibility towards the companies. The Center for Finance, HR and Group Management (Koncernstyring) in the department has the overall responsibility for organising the overall and crosscutting accounting supervision and control procedures. These procedures are carried out to the extent necessary in collaboration with the rest of the department.

The accounting area is supervised via quarterly network meetings with the accounting managers of the ministry's large companies.

Accounting matters for the individual companies are also dealt with as needed at the supervisory-based meetings agreed between the ministry/department and the major institutions in the ministerial area. This concerns so-called financial meetings, which take place at caseworker level between the department and the individual company, monthly meetings, which take place at management level and top management meetings, which take place at director level.

The ministerial area-related supervision and control procedures are available to all employees in the department's case management and filing system and are distributed to the agencies to the relevant extent.

The Department's Executive Board continuously monitors that the most important ministerial area - related supervision and control procedures are implemented.

3.2.2 Supervision regarding basic budgets

In accordance with the Ministry of Finance's circular on budgeting and accounting follow-up, companies prepare a basic budget each year prior to the beginning of the financial year in accordance with the guidelines in the circular.

The Ministry must ensure that the total basic budgets, incl. budget corrections, are within the ministerial area's total appropriations on the Budget Bill under the state sub-ceiling for operating expenses.

The companies must load basic budgets in SKS in accordance with the guidelines in the circular and guidance material. The Ministry must ensure that this is done in a timely and correct manner. Basic budgets must be accrued according to the same principles as the accounts. The Ministry must approve and submit the basic budgets to the Ministry of Finance before the beginning of the financial year.

3.2.3 Supervision regarding budget and accounting follow-up

The budget and accounting follow-up is determined by the Ministry of Finance's circular on budgeting and budget and accounting follow-up, other guidelines from the Ministry of Finance supplemented with guidelines from the Ministry of Transport.

In accordance with the provisions of the circular, the companies must carry out a budget and accounting follow-up every month (for certain types of main accounts, however, every quarter), which must be submitted to the company's management. The follow-up must include explanations of deviations and considerations about the significance for the result for the year.

According to the before mentioned circular, the Ministry must for all main accounts, carry out quarterly budget and accounting follow-up (group and expenditure follow-up), which must be submitted to the Permanent Secretary. The follow-up must contain explanations of deviations and a description of any measures in relation to deviations, where this is deemed relevant. The Ministry must carry out an expenditure follow-up in accordance with the Ministry of Finance's guidelines and forward this to the Ministry of Finance.

The companies must load forecasts in SKS in accordance with the guidelines in the circular and associated guidance material. The Ministry must ensure that this is done in a timely and correct manner. Forecasts must be accrued according to the same principles as the accounts.

In addition to the reporting that follows from the circular's requirements, the largest companies prepare a monthly financial report for the Ministry, and at minimum quarterly reports are prepared at project level for relevant building and construction projects. For the largest building and construction projects, the so-called mega-projects, a report is prepared every quarter for the project regarding time, economy and risk. For the entire ministerial area's building and construction portfolio, a semi-annual status is prepared for the Parliament's Finance Committee.

The quarterly reporting from the larger companies and reports regarding mega-projects management are discussed at a monthly meeting prior to the preparation of the ministerial area's overall quarterly reporting. The quarterly reporting from the larger companies, the follow-up of expenses to the Ministry of Finance and semi-annual reports on mega-projects and construction status are further discussed by management at a top management meeting prior to the submission of the expenditure follow-up to the Ministry of Finance and the submission of construction status to the Finance Committee of the Parliament. The Permanent Secretary's approval of the follow up are declared in the minutes of the top management meetings.

The deadlines for this are set for one year at a time.

3.2.4 Supervision of financial Accounting

The Ministry reviews the interim financial statements on the basis of output data from SKS for errors and omissions from an angle of discretion and materiality, and ensures that the financial statements are approved in SKS.

The Ministry approves the ministerial area's total annual accounts, which form the basis for the Agency for Public Finance and Management overall compilation of the central government accounts, to the Agency for Public Finance and Management and the National Audit Office. In the event of significant errors and omissions, a reservation is incorporated in the ministerial area declaration.

The Permanent Secretary also endorses all the companies' annual reports.

(3.2.5 – see under description of Whistle-blower procedures)

3.2.6 Supervision regarding purchase

All purchases in the companies must, when posting, be attributed to the Agency for Public Finance and Management's purchasing categories. It is the responsibility of the individual company to ensure a uniform and correct use of the categories. Excluded from this are construction projects that follow previous practice.

3.2.7 Supervision regarding consulting procurement

A number of services, such as services related to IT and construction and maintenance of infrastructure and buildings, are characterized by the services being necessary or central elements in the solution of the companies' core tasks. For these services, there is thus a choice between whether the service in question is best and most advantageously resolved internally or externally.

For the above type of services, the Ministry supervises the scope and budget compliance at the monthly supervisory meetings between the company and the Department, cf. section 3.2.1. The company should also have a policy that explicitly and consciously takes a position on the intersection between internal and external task solution. In addition, the decision on external task solution should be concretely justified.

For management services, e.g. consultants or lawyers who participate in organizational analyses, strategy and policy development, recruitment or interpretation of their own laws and regulations, etc., the company must in each individual case obtain the department's approval prior to disposition.

Instructions relevant to control, audit and risk management See above.

Separation of functions as regards implementation and control **DRD:** The relevant department of The Danish Road Directorate will do running and final controls of all funded projects to make sure the funded work has been completed by the funded entity. There is also a requirement for all projects above 500.000 DKK funded by The Danish Road Directorate to be audited by an independent accountant. For the internal separation of functions in The Danish Road Directorate, the department handling the funding is controlled regularly by the Finance Department to ensure compliance.

CARA: Once disbursement of funds should be executed, the project manager at the Danish Civil Aviation and Railway Authority will, review all submitted reports and documents. Based on this a specific check list will be completed which will be reviewed by Management. Subsequently, prior to the disbursement, the financial controller in charge of transferring any given amount, will also review all documents received both in relation to the administration of the pool and with respect to the specific request for disbursement.

Risk of fraud and corruption

Management verifications checking absence of irregularities All funds, disbursements and procedures of the Transport Ministry and the underlying bodies are closely monitored on both an annual and ad-hoc project basis by the National Auditor's Office, which on behalf of the Danish Parliament supervises the use of all public funds in Denmark.

DRD: In regard to the control of irregularities, The Danish Road Directorate use spot checks, accountant demands and a whistle-blower system. The Whistle-blower system is handled by the Legal Advisor to the

Government (Kammeradvokaten) and the Director of Secretariat and Human Resources. More on this can be found on the following link: <https://vejdirektoratet.whistleblownetwork.net/app-page:appPage-Name=Whistleblower%20policy>

There are spot checks for processes both within The Danish Road Directorate and on the individual funded projects.

Generally, there are also regular budgetary checks in The Danish Road Directorate, these are called BOF. BOF is completed 3 times per year. For the funded projects, as noted above, The Danish Road Directorate demand, though contractual provisions, that these will be controlled by independent accountants.

Process for reporting identified irregularities

Within the Ministry of Transport, there are several different ways of handling identified irregularities. These include the following:

- Contact to management
- Contact to the National Audit Office (Rigsrevisionen)
- Contact to the Police
- Contact to The Ministry of Transport
- Contact to The Ministry of Finance

DRD: Furthermore, within the Danish Road Directorate there are different processes. For the contact to management, the irregularities will, to begin, be handled internally according to the nature of the report and if deemed necessary, further action will be taken.

For contact to the National Audit Office (Rigsrevisionen), The National Audit Office will handle the possible investigation. If the National Audit Office has any findings these will be described in a management letter to the Ministry of Transport and the ministry will then act upon the findings. For irregularities reported to the police there will be a police investigation into the matters.

For reports to The Ministry of Transport, the ministry will handle the irregularities.

For reports to the Ministry of Finance, the irregularities will be handed over to OLAF.

Each of the above-mentioned entities handles the storage of documentation for irregularities when approached.

Besides this, The Danish Road Directorate has set in place a Whistle-blower function, which is under the administration of the Legal Advisor to the Government (Kammeradvokaten) in collaboration with The Danish Road Directorates directors of respectively secretariat and human resources.

Procedures for storing and following up on detected irregularities

DRD: Internally found irregularities due to potential fraud, conflict of interests or corruption are handled through investigation and potential employment penalty. If it is found that there is a problem, or in the case that the fraud etc. is financially significant The Danish Road Directorate will include the necessary authority, as mentioned in the answer above. All internal investigations and its consequences for both the financial statements and the employee are saved and journalized. This also goes for cases handed over to other authorities.

DEP: All details regarding serious irregularities are stored in the F2 cases system in the Ministry of Transport.

Prevention of fraud, corruption and conflicts of interests

DEP: 3.2.5 *Whistle-blower scheme etc.*

In section 2.7 of the company instructions. Internal control and risk management, companies must describe the procedures for the companies' internal control and risk management associated with financial reporting.

There are per. March 1, 2020 introduced a group-wide whistle-blower scheme in the ministerial area. The Ministry and the companies will themselves be responsible for following up on reports received. There is access to the scheme from the companies' websites, as well as a portal from the department's website, which guides the whistle-blower to the

relevant company. The scheme allows for anonymous inquiries. Conditions regarding, this must be stated in section 2.7 of the company instructions.

In addition to matters concerning accounting and financial crime, the scheme can be used in relation to e.g. unethical and illegal management, serious breaches of environmental considerations and breaches of environmental rules, serious breaches of working environment and safety rules as well as other breaches of laws and serious breaches of internally established rules.

Examples of other procedures for internal control and risk management associated with financial reporting could be supervisory concepts for action, process and documentation, IT automation processes ("robotics"), accessibility for actors, management involvement, responsibility placement, etc.

DRD: The Danish Road Directorate has several initiatives in order to prevent fraud, corruption and conflict of interests. This includes, but is not limited to, a mandatory training session upon start of employment. This training has a built in test that determines whether the employee has passed the training. Along with ongoing communication about controlling and the monitoring of financial controls, inflicts that "Opportunity" from the fraud triangle is less accessible due to the risk of being caught.

As mentioned above, the Danish Road Directorate also have a whistleblower function.

Detection of fraud, corruption and conflicts of interests

Internal controls in the ministry are based on risk and materiality. All payment-systems have a built in segregation of duties and this is overall ensured in the internal control focus, see descriptions above.

If the project is regarded as 'high risk' the internal controls will be setup accordingly.

DRD: Along with the general control setup, the Danish Road Directorate performs randomized verification of costs and its documentation. This ensures, that financial transactions, which normally would not be audited due to its insignificance or the limitation of the audit, will have the chance to be random selected for internal verification.

Correction of fraud, corruption and conflicts of interests

If fraud, corruption or conflict of interest is detected, this will be corrected and funds will be recovered (or held back if not yet paid). The ministry's ordinary procedures regarding refunds of payments will be implemented.

Audit & control arrangements at the level of individual components/measures

The ministry will collect data on the fulfilment of milestones and targets and do relevant controls of documentation. This will include desk reviews and on the spot check if relevant to the milestone.

The ministry will document data on final recipients and make these available for both the control on fulfilment of milestones and targets and for the Ministry of Finance.

CARA: For the financing pool to promote the infrastructure for bicycles, an accounting instruction has not yet been prepared. The reason for this is that the purpose, delimitation of applicants, and the financial management has not been determined. In addition to this, the pool will be implemented in 2024. It is therefore not yet possible to provide a full and complete description of the arrangements in place.

In general, for the pools administered by the Danish Civil Aviation and Railway Authority concerning public transport, it can be said that the agency requires auditor-certified accounts for projects that have a disbursement of above DKK 500,000. This ensures that the disbursed funds have been spent in accordance with their purpose and that no fraud has taken place.

In relation to the disbursement of funds, an internal and specific management guideline will be elaborated. The guideline will amongst others, be used for the elaboration of an agreement with the successful applicants. The agreement will specify the correct use of the entitled funds, including the reporting and accounting requirements.

DRD/DRTA: The Danish Road Traffic Authority (DRTA) is involved in the project "Analysis of double trailer combinations" administered by the Danish Road Directorate. The expenditures for DRTA in the project will primarily consist of travel expenditures. All expenditures will be scrutinised following DRTA's guidelines and accounting instruction with two-step validation. Furthermore, DRTA has quarterly internal financial reviews.

The Danish Road Directorate will collect data on the fulfilment of milestones and targets and do relevant controls of documentation. This will include desk reviews and on the spot check if relevant to the milestone. Furthermore, most funded projects are subject to independent accounting statements.

The Danish Road Directorate will document data on final recipients and make these available for both the control on fulfilment of milestones and targets and for the Ministry of Finance.

Furthermore, all financial transactions will be linked to project specific financial governance.

Avoidance of double funding

Practical arrangements preventing double funding See above.

Preventing that different ministries finance the same project twice **DRD:** The department handling the specific funded projects does a continuous control when the funded project seeks payment. This is controlled and managed within the department's case management system. Furthermore, the accounting department of The Danish Road Directorate does a monthly control regarding posted funding measures versus payments regarding funding within the current period. By this monthly control, The Danish Road Directorate control that no funded projects are being overly funded.

All correspondence and documentation regarding funding are journalized and saved in SAP, ECC, and 360.

Data, systems and reporting

Arrangements and mechanisms to collect, store and make available data on final recipients. These data will be available for both the Ministry of Finance and relevant EU-institutions.

Systems used by the ministry to collect and store data on recipients **DRD:** The Danish Road Directorate utilizes SAP ECC and 360
The Ministry of Transport uses F2 to as case and journal system.

Types of data on final recipients, contractors and subcontractors that will be stored and collected N/A

Access to information for management and audit authorities Data will be available for both the Ministry of Finance and EU-institutions upon request. The relevant level will be given access to the data.

Furthermore, the National Audit Office also have the data available

Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules

DRD: For the Danish Road Directorate, there are many things involved with securing no project get more funding than the maximum allowable. All funded projects over the value of the EU public tendering rules, follow these rules. For funded project below this threshold, the national Danish rules apply.

Furthermore, The Danish Road Directorate employ contracts with the project managers of the funded projects. These outline the rules for the funding, including the amount of funding allowed. The contents of these contracts are followed up on by on-the-spot-checks. When the works are completed both desk checks, financial checks, and physical control will take place. When the checks are completed, a final rapport is to be done. If the funded amount is above 500.000 DKK, an independent accountant must audit the final rapport.

All the above steps are to ensure that no beneficiary receive more funding than the allowed under the applicable rules.

Table 3.4

Description of control setup in The Ministry of Higher Education and Science

Monitoring and control arrangement

Internal control setup	Administration of the component 2.7 has been allocated from The Danish Ministry of Higher Education and Science to Innovation Fund Denmark. Innovation Fund Denmark is an independent body under the Danish state administration, and management and national law governs operations of the Fund.
Instructions relevant to control, audit and risk management.	The general instructions describe the control-setup for the Ministry and Agencies. They include clear process of internal financial control. This includes for example functional separation between the financial registration and payment, and control of the basis for payments.
Separation of functions as regards implementation and control	<p>The running administration of Innovation Fund Denmark is under external supervision by The Danish Agency for Higher Education and Science, which is an entity under the of Ministry of Higher Education and Science. Supervision activities encompass economic reporting as well as compliance to budget provisions and national standards for professional public administration.</p> <p>Innovation Fund Denmark's granting activities and control systems is under the general inspection of The National Audit Office for Denmark. The National Audit Office will report, if irregularities or system deficiencies are observed, and the Danish Agency for Higher Education and Science will intervene upon such notice.</p>
<u>Risk of fraud and corruption</u>	
Management verifications checking absence of irregularities	Ordinary controls regarding payments etc. See below.
Process for reporting identified irregularities	<p>Identified irregularities will be reported by the Innovation Fund Denmark staff to The Innovation fund Denmark Board.</p> <p>The Innovation Fund Board will decide upon action and report to the Ministry of Higher Education and Science.</p> <p>The Ministry of Higher Education will report to The Ministry of Finance and The National Audit Office</p> <p>In case of fraud, The Innovation Fund Denmark Board will notify the police.</p>
Procedures for storing and following up on detected irregularities	<p>The Innovation Fund Denmark has a defined procedure for internal reporting and correction of irregularities.</p> <p>Any documentation in regard to irregularities will be filed by The Innovation Fund Denmark.</p>
Prevention of fraud, corruption and conflicts of interests	<p>IFD staff (employees and board of directors) are educated in the rules of conflict of interest.</p> <p>Formally IFD staff reports yearly on financial and other relevant interests. Potential conflict of interest is monitored and updated systematically in all calls and individual applications.</p> <p>IFD has a clear process of internal financial control. This includes functional separation between the financial registration and payment, and control of the basis for payments.</p>

	<p>IFD has also introduced a risk assessment scheme, where potential financial risks are continuously assessed, in order to always have a clear picture of potential financial risks, including the risk of fraud.</p> <p>Furthermore, IFD has implemented a whistle-blower function, where it is possible to report suspicion of fraud.</p>
Detection of fraud, corruption and conflicts of interests	<p>Internal controls at The Innovation Fund Denmark are based on risk and materiality. All payment-systems have a built in segregation of duties and this is overall ensured in the internal control focus.</p> <p>If the project is regarded as 'high risk', the internal controls will be set up accordingly. If irregularities occur, they will be flagged in an internal reporting system and escalated stepwise through the Innovation Fund Denmark organisation.</p>
Correction of fraud, corruption and conflicts of interests	<p>If fraud, corruption or conflict of interest is detected, this will be corrected and funds will be recovered (or held back if not yet paid).</p> <p>The Innovation Fund Denmark's ordinary procedures regarding refunds of payments will be implemented.</p>
Audit & control arrangements at the level of individual components/measures	<p>The Innovation Fund Denmark will collect data on the fulfilment of milestones and targets and do relevant controls of documentation. This will include desk reviews and on-the-spot-checks if relevant to the milestone.</p> <p>All projects that receive funding from IFD must enter into an investment agreement (an elaborate grant letter). In the agreement, project management submit to a formal system of reporting, and commit the project to specific milestones and results. Milestones are required to be quantifiable and supplied with specific criteria of success before IFD can approve the agreement.</p> <p>If milestones and results are not met IFD will be able to stop further payments to the project. If the project is in direct breach of the investment agreement IFD have solid grounds for recovering paid funds.</p> <p>The investment agreement also defines a specific model of follow-up. The model is based on frequent dialogue and formal follow up on the progress and finances of the project. Formally, the project must form a steering group committee that convenes at least twice a year. Investment officer from IFD participates in the steering group meetings where the project leader gives a status on milestones and project budget. On top of that, the project will deliver a written status report and a financial account of the project once a year.</p> <p>The model ensures flexibility and focuses on progress and results, and leaves little room for fraud and spending outside the investment agreement that the project consortia have entered into.</p> <p>All data and information about the project is stored in an internal reporting system that all employees in IFD have access to. The internal reporting system is designed to visibly flag if concerns regarding project plan, budget or progress are raised.</p> <p>The Innovation Fund Denmark will document data on final recipients and make these available for both the control on fulfilment of milestones and targets and for the Ministry of Finance.</p>
<u>Avoidance of double funding</u>	
Practical arrangements preventing double funding	<p>To prevent double funding applicants are specially required by The Innovation Fund Denmark to declare of funding from other sources (public and private) on activities similar to what is proposed in the application.</p>

Each application is evaluated by IFD and external peer reviewers. At the core of the evaluation is investigation of State-of-the-Art level, including overview of existing similar projects in the field. If overlapping projects with the same partners exist, it is a prerequisite for funding that activities are clearly defined and separated.

Preventing that different ministries finance the same project twice See description above.

Data, systems and reporting

Arrangements and mechanisms to collect, store and make available data on final recipients All grants under The Innovation Fund Denmark are managed via the E-grant administration system. All applications must be submitted, and all grants for the approved applications are registered via this integrated system.

These data will be available for both the Ministry of Finance and relevant EU-institutions.

Systems used by Innovation Fund Denmark to collect and store data on recipients The E-grant administration system is used by The Innovation Fund Denmark for collection and storage for data on recipients.

Types of data on final recipients, contractors and subcontractors that will be stored and collected. Data on project participants include CVR-number, account information, address, contact person etc. The project participants uploads this data themselves in the E-grant administration system, where the data are also kept afterwards.

Access to information for management and audit authorities Data will be available for both the Ministry of Finance and EU-institutions when requested. The relevant level will be given access to the data.

Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules Not relevant.

Table 3.5
Description of control setup in The Ministry of Health

Monitoring and control arrangement

<p>Internal control setup</p>	<p>Health professionals approve the project overall and makes a recommendation to the ministry to approve and grant the project a specified amount and specifies the terms, milestones and targets. After approval, a grant is prepared at send to the project.</p> <p>The project requests a partial payment of the grant.</p> <p>The grant office prepares the case for payment of the amount to the recipient, and prepares documentation.</p> <p>Accounting unit creates invoice based on the request and perform a technical control of the invoice and documentation.</p> <p>Accounting unit receives approval of the payment from the grant unit. The grant unit performs a check of the documentation.</p> <p>When preparing and approving a payment the grant offices check involves:</p> <ul style="list-style-type: none"> • Indication that milestones and targets will be fulfilled. • That the grant terms been agreed and accepted by recipient. • Grant and / or invoice recipient is correct, including i.a. bank account. • Correct amount to be paid out. <p>The process and description can be adapted to specific grants as needed. The payment is the approved and accepted by an authorized person. Administration under the Ministry of Finance posts and executes the payment. Administration under the Ministry of Finance prepares monthly financial statements. Accounting unit performs a control of the financial statement. Finally, the financial statement is approved.</p> <p>The Ministry makes an additional control quarterly when reporting the expected annual expenditure to the Ministry of Finance.</p>
<p>Instructions relevant to control, audit and risk management.</p>	<p>General instructions that apply for all governmental institutions.</p>
<p>Separation of functions as regards implementation and control</p>	<p>Health professionals e.g. Danish Health Authority or Danish Medicine Agency work in co-operation with the ministry's specialist office to approve and control on fulfilment of milestones and targets.</p> <p>The grant office is responsible for the overall administration of the grant and payments.</p> <p>The accounting unit is responsible for administrating the financial systems and payments.</p> <p>Administration under the Ministry of Finance (shared service) is responsible for all bank transfers.</p>
<p><u>Risk of fraud and corruption</u></p>	
<p>Management verifications checking absence of irregularities</p>	<p>All grants are checked minimum when making payments. All grants are required to have an external audit on financial statements.</p>
<p>Process for reporting identified irregularities</p>	<p>If fraud is detected the ministry will inform the management office, the National Audit Office, The Ministry of Finance and report the fraud to the police.</p>
<p>Procedures for storing and following up on detected irregularities</p>	<p>All documents are stored in the accounting system and document management system (Work Zone).</p>

Prevention of fraud, corruption and conflicts of interests	The Ministry of Health has a whistle-blower scheme: For instructions and further information see: https://sum.dk/ministeriet/sundhedsministeriets-whistleblowerordning
Detection of fraud, corruption and conflicts of interests	Internal controls in the ministry are based on risk and materiality. All payment-systems have a built in segregation of duties and this is overall ensured in the internal control focus, see description above. If the project is regarded as 'high risk' the internal controls will be setup accordingly.
Correction of fraud, corruption and conflicts of interests	If fraud, corruption or conflict of interest is detected, this will be corrected and the ministry's ordinary procedures regarding refunds of payments will be implemented.
Audit & control arrangements at the level of individual components/measures	The Ministry will collect data on the fulfilment of milestones and targets and do relevant controls of documentation. This will include desk reviews and on the spot checks if relevant to the milestone. The Ministry will document data on final recipients and make these available for both the control on fulfilment of milestones and targets and for the Ministry of Finance.
<u>Avoidance of double funding</u>	
Practical arrangements preventing double funding	Ordinary controls regarding payments. See above. The Ministry of Health will perform the usual checks that ensures that no one receives double funding.
Preventing that different ministries finance the same project twice	See above.
<u>Data, systems and reporting</u>	
Arrangements and mechanisms to collect, store and make available data on final recipients	These data will be available for both the Ministry of Finance and relevant EU-institutions. See below.
Systems used by the ministry to collect and store data on recipients	Navision is used for accounting. Workzone is used for electronic document management system IndFak is used for handling payments and invoices. Local data warehouse (LDV) is used for ongoing checks and follow-up The State Group System (SKS) is used to approve the company and the ministerial area's accounts In systems used for payment and financial systems a 4-eye principle is enforced so that the same person cannot both receive goods and approve an invoice. In addition, neither the goods recipient nor the approver can influence the creditor information or account setup.
Types of data on final recipients, contractors and subcontractors that will be stored and collected	All documents and data is store in the document management system. All contractors and subcontractors are required to be registered e.g. have a CVR number, meaning that they are registered centrally.
Access to information for management and audit authorities	Data will be available for both the Ministry of Finance and EU-institutions when requested. The relevant level will be given access to the data.
Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules	Any excess funds will be repaid to the EU.

Table 3.6

Description of control setup in The Ministry of Industry, Business and Financial Affairs – The Danish Business Authority

Monitoring and control arrangement

Internal control setup

Control measures during the application phase:

- All applications are accepted through a secure application module run by the program operator. All systems used are subject to VPN and two-factor authentication.

- All companies (beneficiaries) are required to use their NemID¹⁰ to apply, so the applicant is always a representative of the company.

Management verification executed by caseworks during the application phase:

- We verify that the company complies to the current requirements of being an SME etc. by crosschecking the individual company on www.virk.dk.
- We verify whether a company has finished (participated in) any previous projects before applying again by checking up on existing company-data in TAS (TilskudsAdministrationSystem).
- All application documents will be reviewed by three separate caseworkers as part of the legality check/verification (two caseworkers from the operator and one from our team). The key requirements a company must live up to are clearly stated at both the website and on the *statement on consent* that the company must sign before applying. Most of the requirements are related to the specific digital project as described by the company in their application, and whether the project is eligible. Approval of a project is based on a professional decision made by the three caseworkers. New caseworkers can follow an available standard guideline on application procedure.
- Any suspicious information in their application will be checked up on and the company may be contacted to specify specific information. If a company does not live up to one or more of the program requirements, we will send a letter of rejection to the company with a justification based on our listed criteria.
- All company documents and company correspondences received and produced will be journalized in F2 and/or TAS for safekeeping and documentation as part of the audit trail.
- Finally, we verify that the grants are allocated to the correct companies etc. by looking them up on cvr.dk.
- If a company's project is approved, they will receive a letter of consent (grant letter) with the associated terms (grant conditions) included. These will be referred to in the control setup during the submission phase.

Financial and milestone control during the final submission phase:

- When the company submits their documentation and invoices, management verifications are performed on the received information/documentation. Information that is verified consists of, among others, whether the expenses in the invoices are eligible (e.g. within the given project period, whether the advisor/consultant used is recorded in the program's advisor database, checking the accounts and whether the reported output and activities of the project are eligible. This is all verified based on registered data in the cvr.dk and in TAS.
- The company must use a fixed accounting model when they submit their documentation.
- While the financial control is done by the finance department, the milestone control is done by a team of caseworkers in another team. They check whether the description of the completed digital project align with the original project that was approved. We can request additional documentation if needed. If the company documentation or the submitted documentation is inadequate (financial or milestone), we have the option to reject the payment claim from the company. This decision must be based on a discrepancy between the received documents/invoices

¹⁰ National digital identification system for both companies and citizens

	<p>and the associated terms and letter of approval that the company signed during their application and at the approval stage.</p> <ul style="list-style-type: none"> • We also make sure to check that the company has not gone bankrupt based on information at virk.dk. • In relation to the reimbursement of the grant, there are implemented several authorization steps and a two-step control regarding approval of the payment of the grant. The financial approval is done in an office separate from the office that is doing the milestone control. <p>Finally, the case is sent to be approved in the accounting office where the payout is also controlled by a number of factors according to the established procedures.</p>
Instructions relevant to control, audit and risk management.	See the above.
Separation of functions as regards implementation and control	<p>The office of "Digital responsible growth" oversees internal control and implementation during the application phase. The office is responsible to make sure that the companies comply with the basic standards and requirements of the program. The office also does casework and checks up on relevant information if something is suspicious regarding information on the applicants through virk.dk.</p> <p>The economic office oversees control with funds and grant allocation, and that all documents during the final submission phase is verified. They also check up on whether there is a conflict of interests between applicants and their advisor/consultant.</p>
<u>Risk of fraud and corruption</u>	
Management verifications checking absence of irregularities	<p>The Implementing office checks up on conflict of interest between applying companies during the application phase.</p> <p>The economic office checks up on conflict of interest between applicant and advisor/consultant during the final phase of approval of the grant.</p> <p>If suspicion of irregularities or suspicion of fraud is detected, the offices will use the databases of TAS, F2 or use virk.dk to disclose whether there is a conflict of interest or not according to our guidelines.</p> <p>If there is, the applicant will be denied the grant.</p>
Process for reporting identified irregularities	The Agency will follow the usual reporting procedures – which include reporting to own management, National Audit Office, The National Police Department for investigation and to the Ministry of Finance, who will report to OLAF.
Procedures for storing and following up on detected irregularities	Irregularities are stored in TAS and F2. The cases will be followed up on by either the implementing or the economic office depending on where/when in the process that the error is detected. All documentation around errors and irregularities are stored and journalized in the above mentioned systems.
Prevention of fraud, corruption and conflicts of interests	Steps are taken in the application phase and the submission phase, as described above.
Detection of fraud, corruption and conflicts of interests	Internal controls in the ministry are based on risk and materiality. All payment-systems have a built in segregation of duties and this is overall ensured in the internal control focus.
Correction of fraud, corruption and conflicts of interests	If fraud, corruption or conflict of interest is detected, corrective measures will be taken and the agency's ordinary procedures regarding refunds of payments will be implemented.
Audit & control arrangements at the level of individual components/measures	All applications are subject to control, where 3 separate caseworkers will verify whether the applicants meet the eligibility criteria.

	<p>The implementing office will later evaluate the effects and performance of the program by the usage of surveys.</p> <p>Other than that desk reviews will be performed as part of the verification in the submission phase.</p> <p>The result of the review and control will be stored accordingly in the systems.</p>
<u>Avoidance of double funding</u>	
Practical arrangements preventing double funding	The applicants must state in their application whether they have previously received public grants and how much. We also ask whether they have participated in SMV:Digital before. We have a database with data on all previous applications so that we can always crosscheck on a specific company. The program used for this is TAS.
Preventing that different ministries finance the same project twice	Se specific control procedures above.
<u>Data, systems and reporting</u>	
Arrangements and mechanisms to collect, store and make available data on final recipients	We use TAS and F2 to journalize and store data on all applicants.
Systems used by the ministry to collect and store data on recipients	We use TAS, virk.dk and cvr.dk.
Types of data on final recipients, contractors and subcontractors that will be stored and collected	We store the applications for funding, the declaration of de minimis, letters of approval/rejection, and all material related to the payment of grants. This means we have access to all data on the companies (beneficiaries) such as CVR number, names, emails and such. This data is stored in TAS and F2.
Access to information for management and audit authorities	Data will be available for both the Ministry of Finance and EU-institutions when requested. The relevant level will be given access to the data.
Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules	The grant is registered in TAS system with the amount given. The system cannot pay out more than is registered. The amount granted is checked against the amount payed, before final payment is approved.

Table 3.7

Description of control setup in The Ministry of Climate, Energy and Utilities

Monitoring and control arrangement

Internal control setup

The Danish Energy Agency (DEA) operates with two types of internal controls (preventive and discovering controls). The purpose of the preventive controls is to reduce the probability of mistakes, intended or unintended events, while the purpose of discovering controls is to discover if mistakes, intended or unintended events, have taken place. The extent of the controls is determined based on probability and consequences, where consequences are not necessarily monetary but can also be qualitative management control. Currently, the probability and consequences are assessed based on the Ministry's overall risk management model, which is developed by the Department.

Instructions relevant to control, audit and risk management.

The Department has the responsibility for updating the ministry instruction in even years or as needed. The ministry instruction outlines the overall management of accounting. The Department may if necessary, pose additional demands towards the institutions.

The DEA follows the Departments instructions, and makes a number of preventive and discovering controls, of which a few are mentioned under the topic of Risk of fraud and corruption.

Separation of functions as regards implementation and control

The DEA ensures functional separation of the different administrative steps by dividing the responsibility for the schemes between the specialist office, Finance and Compliance.

The specialist offices handle the specialist administration of the Agency's subsidy schemes, while the Finance department handles the financial-administrative elements in the administration of subsidy schemes, including transfer of commitments for grants, as well as payment from the Energy Agency's grant administration system (TAS) to the Danish state's accounting system Navision Stat.

Furthermore, there is a functional separation between the accounting treatment of payment and the bank's actual payment. The Energy Agency itself cannot make payments in the bank. It is only The Agency for Governmental Administration (SAM), a shared service agency under the Ministry of Finance, which can access this.

Furthermore, the Finance department has a Compliance team, which, based on current rules and guidelines, sets up frameworks for correct and efficient management of subsidy schemes in the Energy Agency, provides advice and controls regarding the specialist offices' compliance, as well as plans and executes internal control. All legal binding economic transactions require a minimum of four eyes to complete.

A normal payment undertake a minimum of four eye confirmation in the specialist office, two eyes in the finance function and four eyes in SAM (a total of 10 eyes in for the whole payment chain). For some part of the administration in the DEA there are six eyes in the specialist office, hence some payments have 12 eye confirmation in the whole chain.

The separation is supported by systems for the most part and the DEA have implemented internal controls in order to make sure, that the separations of duties and functions are compliant.

Furthermore, the DEA is subject to an external audit of the National Audit Office, which also declares the accuracy of the Danish Energy Agency's

accounts and internal processes with a view to meeting intentional or unintentional errors in the accounts. The National Audit Office's report is sent directly to the Danish parliament.

Risk of fraud and corruption

Management verifications checking absence of irregularities

Examples of preventive controls

- Control and approval of case management concerning transportation agreements and bank account information where payments are made to
- Control of DDI's (digital reporting) before these are sent to booking in accounting system by SAM (two-factor approval in Navision)
- System supported double-approval of invoices and travel settlements in the digital invoice system

Examples of discovering controls

- Control of log concerning account changes in KMD Easy Energy, also including deaths and company terminations
- Control of log concerning account changes in NemKonto.dk, also including deaths and company terminations
- Control of case management concerning reimbursement of PSO or losses on debtors
- Yearly management control of the areas of subsidies and service charges
- Balancing of the accounts in connection with quarterly and annual accounts
- Special controls of specific commitments, disbursements, purchases, etc.

Process for reporting identified irregularities

All identified irregularities are initially reported to the management. Furthermore, The Energy Agency hands over the reports of the internal control to the National Audit Office on an annual management audit level.

In case The Energy Agency discovers that there has been fraud or corruption, it will be reported to the police.

In cases of irregularities of such matters, that they can be considered a risk of fraud or faults, the Energy Agency reports these to the Department, who sees to that the Ministry of finance gets the information in order to send in registration to OLAF.

Procedures for storing and following up on detected irregularities

All accounting errors or recommendations from the Danish National Audit Office are recorded in the department follow-up tool. The DEA is then responsible for handling the remarks and the department have quarterly follow-ups. The compliance team is responsible for making sure that remarks are handled according to priority and risk assessment. All quarterly reports are reported and endorsed by the CEO of the DEA.

All documentation regarding errors or recommendations is saved in the EDRM-system F2.

Prevention of fraud, corruption and conflicts of interests

All payment-systems have a built in segregation of duties, monitoring of privileged users and data logs that prevent internal fraud. Prevention of external fraud is a part of the agency's obligations and they are monitored in the departments risk assessments-tool.

The Danish Ministry of Climate, Energy and Utilities has per November 1, 2020, established whistle-blower regimes throughout the ministry area (the Ministry, the Danish Energy Agency, The Danish Agency for Data Supply and Efficiency, the Danish Geodata Agency, The Danish Meteorological Institute, the Geological Survey of Denmark and Greenland, The Danish Utility Regulator, The Danish Council on Climate Change and Energinet),

The Ministry's team IT and Security and team Legal Affairs administrate the whistle-blower regimes.

Detection of fraud, corruption and conflicts of interests

Internal controls in the ministry are based on risk and materiality. All payment-systems have a built in segregation of duties and this is overall ensured in the internal control focus, see description above.

	If the project is regarded as 'high risk' the internal controls will be setup accordingly.
Correction of fraud, corruption and conflicts of interests	If fraud, corruption or conflict of interest is detected, this will be corrected and funds will be recovered and the Energy Agency will follow the standard procedures regarding refunds of payments.
Audit & control arrangements at the level of individual components/measures	<p>The Ministry will collect data on the fulfilment of milestones and targets and do relevant controls of documentation. This will include desk reviews and on the spot check if relevant to the milestone.</p> <p>The Ministry will document data on final recipients and make these available for both the control on fulfilment of milestones and targets and for the Ministry of Finance.</p>
Avoidance of double funding	
Practical arrangements preventing double funding	When calling for an application concerning commitment, the Energy Agency informs that support can be applied for regarding net costs of projects – that is, the costs must be deducted from any discounts, refunds and any support from other parties. At the time of applying, the applicant declares in good faith that the applicant meets the requirements. Furthermore, all grants and payments regarding grants are reported to the tax authorities.
Preventing that different ministries finance the same project twice	See descriptions of controls above.
Data, systems and reporting	
Arrangements and mechanisms to collect, store and make available data on final recipients	<p>The implementation of the framework for the subsidy schemes and the allocation and payment of the individual commitments are filed in TAS, where the individual project can be followed from beginning to end. It is the responsibility of the specialist offices to ensure that the allocated means are used during the fiscal year for the purposes, which the Parliament has decided, cf. the Budget Bill. Any repayment of subsidies may be considered if the subsidy recipient fails to meet the criteria and requirements of the commitment and thus loses the right to the grant.</p> <p>These data will be available for both the Ministry of Finance and relevant EU-institutions.</p>
Systems used by the ministry to collect and store data on recipients	F2, TAS
Types of data on final recipients, contractors and subcontractors that will be stored and collected	<p>The DEA stores all kind of information and the data are available with the grant management system, the accounting system and journaling system. The data is mainly collected from the recipients, minimum:</p> <ul style="list-style-type: none"> • Data on final recipients • Supplier/Contractor (CVR-number and name) • Subcontractor (CVR-number and name).
Access to information for management and audit authorities	Data will be available for both the Ministry of Finance and EU-institutions when requested. The relevant level will be given access to the data.
Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules	In the DEA ensures this mainly by the four / six eyes confirmation of a transaction. We have instruction manuals, which the case worker has to follow.

Table 3.8

Description of control setup in The Ministry of Taxation

Monitoring and control arrangement

Internal control setup	<p>The four legislative initiatives within the remits of the Danish Ministry of Taxation all concern additional tax deductibles targeted companies. The initiatives do not involve disbursement of funds. Consequently, the legislative initiatives are managed within the already established internal control framework of the ministry.</p> <p>The Danish Tax Agency organizes the control of companies, including their tax returns and the claimed deductibles, on the basis of an assessment of materiality and risk. The control work involves carrying out a risk assessment based on available information (internal and external sources), previous experience and the taxpayer's specific circumstances. The risk assessment results in an in-depth audit of selected individual companies.</p> <p>It is a natural part of the Danish Tax Agency's general control work to focus on new rules that change the administrative basis. The purpose is to ensure full taxpayer compliance.</p>
Instructions relevant to control, audit and risk management.	<p>The Danish Tax Agency has a detailed framework of instructions describing how risk-based control of companies are performed.</p> <p>All audits are conducted according to these standard instructions.</p>
Separation of functions as regards implementation and control	<p>The Danish Tax Agency has a system of separation of functions in all parts of the tax auditing and tax collection and return process.</p> <p>The framework and implementation of internal control and separation of functions is subject to auditing from the internal auditing office of the Ministry of Taxation as well as external auditing from the Danish National Audit Office.</p>
<u>Risk of fraud and corruption</u>	
Management verifications checking absence of irregularities	<p>The Danish Tax Agency has a system of separation of functions in all parts of the tax auditing and tax collection and return process.</p> <p>In addition, a system is in place ensuring internal control of tax returns of employees in the Danish Tax Agency.</p>
Process for reporting identified irregularities	<p>The Ministry of Taxation has processes to:</p> <ul style="list-style-type: none"> • Report to own management • Report to National Audit Office (Rigsrevisionen) • Report to Police Authority <p>Report to Ministry of Finance (who will inform OLAF)</p>
Procedures for storing and following up on detected irregularities	<p>In general, all irregularities detected by the Danish Tax Agency are investigated and followed-up according to set-down procedures.</p>
Prevention of fraud, corruption and conflicts of interests	<p>In general, all irregularities detected by the Danish Tax Agency are investigated and followed-up according to set-down procedures.</p> <p>The Ministry of Taxation has a Whistle-blower-function in place.</p>
Detection of fraud, corruption and conflicts of interests	<p>No measures within the Ministry of Taxation's area of responsibility involves disbursement of funds to projects.</p>
Correction of fraud, corruption and conflicts of interests	<p>If fraud, corruption or conflict of interest is detected, this will be corrected and funds will be recovered (or held back if not yet paid).</p> <p>The ministry's ordinary procedures regarding refunds of payments will be implemented.</p>
Audit & control arrangements at the level of individual components/measures	<p>The Danish Tax Agency organises its auditing of tax compliance in a number of control projects selected on the basis of materiality and risk. The four legislative initiatives will be managed within the framework of</p>

the control projects. The Danish Tax Agency sets measurable targets for each control project, including the number of audits conducted, the value of additional assessments raised and the share of companies, whose tax payments are corrected after audits. The audits conducted within each control project are selected on the basis of materiality and risk. Every three months, the targets delivered by each project are reviewed. The Danish Tax Agency uses the following systems for documentation and audits: WorkZone, SkatLigning, 3S / DIAS, TastSelv Erhverv and CSRL.

Avoidance of double funding

Practical arrangements preventing double funding The four legislative initiatives do not involve out payment of funds to projects.

In general, it is included as an element in the Danish Tax Agency's risk assessment whether the companies apply the individual sets of rules correctly, including that the company does not deduct the same expense according to two or more provisions in the tax legislation.

Preventing that different ministries finance the same project twice No disbursements of funds to projects.

Data, systems and reporting

Arrangements and mechanisms to collect, store and make available data on final recipients These data will be available for both the Ministry of Finance and relevant EU-institutions.

The Danish Tax Agency receives tax returns from companies and stores relevant information in its IT systems. The Agency can ask companies to supply additional information if required.

Systems used by the ministry to collect and store data on recipients Various IT systems of the Danish Tax Agency.

Types of data on final recipients, contractors and subcontractors that will be stored and collected Various IT systems of the Danish Tax Agency.

Access to information for management and audit authorities Audit authorities, including EU-institutions, will be able to receive data upon request, as it is stored and kept.

Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules See above.

Table 3.9

Description of control setup in The Ministry of Food, Agriculture and Fisheries

Monitoring and control arrangement

Internal control setup	<p>The Danish Agricultural Agency (DAA) serves as an accredited paying agency in Denmark in addition to national funding under the Ministry of Food, Agriculture and Fisheries. The agency handles payments to beneficiaries of national funds under the ministry and under the Common Agricultural Policy. The European Agricultural Guarantee Fund (EAGF) or the European Agricultural Fund for Rural Development (EAFRD) finance or co-finance these payments.</p> <p>Paying agencies can only be accredited by Member States if they comply with certain minimum criteria and if they have an administrative organization and a system of internal control c.f. regulation no. 907/2014 annex 1.</p> <p>Furthermore, a paying agency shall be certified in accordance with International Standards Organization 27001: Information Security Management Systems (ISMS) – Requirements (ISO) starting on 16 October 2016 (FY 2017). Since 2016 DAA has been certified accordingly</p>
Instructions relevant to control, audit and risk management.	<p>As specified above instructions comply with regulation no. 907/2014 and certified in accordance with International Standards Organization 27001: Information Security Management Systems (ISMS) – Requirements (ISO) starting on 16 October 2016 (FY 2017).</p>
Separation of functions as regards implementation and control	<p>No matter what payment to a beneficiary, there will be an organisation within the paying agency that secures a separation of functions at three levels:</p> <p>I. Authorisation and control of payments to establish that the amount to be paid to a beneficiary is in conformity with Union rules, which shall include, in particular, administrative and on-the-spot controls;</p> <p>II. Execution of payments of the authorised amount to beneficiaries (or their assignees) or, in the case of rural development, the Union co-financing part;</p> <p>III. Accounting to record all payments in the paying agency's separate accounts for EAGF and EAFRD expenditure, in the form of an information system, and the preparation of periodic summaries of expenditure, including the monthly (for EAGF), quarterly (for EAFRD) and annual declarations to the Commission.</p>
<u>Risk of fraud and corruption</u>	
Management verifications checking absence of irregularities	<p>Staff training at all operational levels includes fraud awareness focusing on known risks. Risk analysis and registration is used to identify and mitigate the risk of fraud. The paying agency maintains an antifraud strategy for ongoing improvement of prevention, detection and correction of fraud.</p>
Process for reporting identified irregularities	<p>Fraud and irregularities are reported to OLAF via IMS by the paying agencies</p>
Procedures for storing and following up on detected irregularities	<p>Applications are blocked to prevent payment when the risk of fraud is detected. The presence and nature of the irregularity is assessed and correction procedures are initiated. The outcome of these assessments and procedures are store in an electronic filing system.</p>
Prevention of fraud, corruption and conflicts of interests	<p>Employees and leaders in the Danish Agricultural Agency are prohibited from being accountable or participate in the management or control of cases wherein they are incompetent. All employees and leaders in the Danish Agricultural Agency must therefore upon employment, by change of employment or by changes in his/hers own or spouse's conditions sign</p>

	a declaration of competence. The declaration is discussed on a yearly basis at the employees' development interview (MUS/LUS).
Detection of fraud, corruption and conflicts of interests	Staff at all operational levels are trained in detecting red flags relevant to their field of work.
Correction of fraud, corruption and conflicts of interests	If fraud, corruption or conflict of interest is detected, this will be corrected and funds will be recovered (or held back if not yet paid). Beneficiaries are also reported to the police in case of suspicion of fraud. The ministry's ordinary procedures regarding refunds of payments will be implemented.
Audit & control arrangements at the level of individual components/measures	The Ministry will collect data on the fulfilment of milestones and targets and do relevant controls of documentation. This will include desk reviews and on the spot check if relevant to the milestone. The Ministry will document data on final recipients and make these available for both the control on fulfilment of milestones and targets and for the Ministry of Finance.
<u>Avoidance of double funding</u>	
Practical arrangements preventing double funding	Concerning the administration and control of the NON-IACS under the rural development measures financed by the European Agricultural Fund for Rural Development (EAFRD) the DAA ensures that the same applicant cannot receive double funding for the same project. The control is conducted using an IT-system and takes place when the beneficiary claims the support. For each programme, an it-system/set-up is developed and as a part of the development of the IT-set up the DAA identifies previous support programmes which included projects/investments similar or overlapping to the programme in question. In the instances where the beneficiary has previously received support to the same project the beneficiary will automatically have his claim rejected. In other cases where the applicant has previously received support from other support programmes which could include similar projects/investments the beneficiary is not automatically prevented from submitting his claim for support but will be made aware that support cannot be paid out for projects or investments where funds have been received from other instances <u>EUDP</u> EUDP only supports actual costs, i.e. on the basis of expenses incurred. In addition, applicants must indicate when submitting an application if they are applying for funding elsewhere. It is not possible to get a higher aid percentage in this way. This is followed up annually through auditor statements from ongoing project participants. Finally, the EUDP program has been notified under Article 25 of the GBER,
Preventing that different ministries finance the same project twice	Under some support programmes under the EAFRD the DAA conducts checks of whom have received funds from the structural funds (administered by the Danish Business Agency) in order to check that the same project has not received double funding. For each support programme the ministry or the DAA adopts an executive order by which the conditions and eligibility criteria are defined. It is a standard rule in the executive order that it is not possible for a beneficiary to receive support to a project or investment that has received funds from other instances including EU-funds or other national funds. The only exception being if the other funds can legally be received as part of a co-financing. If a beneficiary has received funding from other instances, he is obliged to submit documentation describing to which part of the project he has received the funds (e.g. bank statements). The documentation must be submitted to the DAA no later than together with the claim for support.

EUDP

The efforts of the two ministries under the Pyrolysis Pool are aimed at the respective areas of responsibility. EUDP will focus on the energy-related, ie "within the fence" of the conversion unit. A joint information meeting will be held prior to the publication, and there will be dialogue meetings between the two units that evaluate the applications.

Data, systems and reporting

Arrangements and mechanisms to collect, store and make available data on final recipients

The Foundation of Organic Farming.

Data and information about final recipients is kept by The Foundation of Organic Farming.

The Danish Agricultural Agency supervises The Foundation of Organic Farming. The Danish Agricultural Agency has determined rules for the administration of the foundation's funds and for how the foundation must reports on the use of the funds to the Danish Agricultural Agency. The Foundation sends in the budgets and annual reports for approval by the Danish Agricultural Agency. The Foundation's budgets and annual reports must each year state which projects the Foundation has supported and with what amount.

Budgets and annual reports from the Foundation of Organic Farming is stored in the electronic system Workzone.

These data will be available for both the Ministry of Finance and relevant EU-institutions.

Brown bio refineries - GUDP

Data and information on applicant and final recipients including all financial transactions are recorded in electronic grant administration and payment systems. Stored data and information can be provided for management, audit or control purposes upon request.

EUDP:

Applicants apply with their CVR number. Company type and size are checked. Compatibility note has been prepared in order to comply with GBER and is incorporated into the set of rules, which is administered in order to comply with the state aid rules.

Systems used by the ministry to collect and store data on recipients

The Foundation of Organic Farming.

The Danish Agricultural Agency receives budgets and annual reports from the Foundation of Organic Farming electronically and the data is stored in the electronic system Workzone.

Brown bio refineries - GUDP

The electronic systems used collect and store data at project and beneficiary level is named BTAS and TUS and at measure level Workzone.

Information and data in BTAS are transferred to TUS daily and validated on a monthly basis.

EUDP:

The electronic systems used collect and store data at project and beneficiary level is named TAS.

Types of data on final recipients, contractors and subcontractors that will be stored and collected

The Foundation of Organic Farming.

Data and information about final recipients is kept by The Foundation of Organic Farming.

The Danish Agricultural Agency will once a year transfer the funds to the Foundation of Organic Farming. Data concerning the transferred funds will appear from the accounting system named BTAS and TUS.

The Danish Agricultural Agency receives the annual report from the Foundation of Organic Farming once a year. The report contains information about the Foundation's CVR-number, address, management, accountant etc. The reports furthermore contains outlined information about the beneficiaries and their projects.

	<p><u>Brown bio refineries - GUDP</u> Unique company identification number (CVR), Address and contact point, bank account information, all financial transactions, etc. Information is collected from application and payment requests.</p> <p><u>EUDP:</u> Project documents: Cooperation agreement, Disbursement request, Final reports and Annual reports</p>
<p>Access to information for management and audit authorities</p>	<p><u>The Foundation of Organic Farming.</u> The Foundation sends in annual reports for approval by the Danish Agricultural Agency. Data can be made available upon request for both management and audit. In addition, overall level information is summarized in periodic management reports.</p> <p><u>Brown bio refineries - GUDP</u> Data can be made available upon request for both management and audit. In addition at a measure level information is summarized in periodic management reports</p> <p><u>EUDP:</u> SANI notification to the EU. Random checks from the EU Commission and from the National Audit Office.</p>
<p>Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules</p>	<p><u>The Foundation of Organic Farming.</u> The Danish Agricultural Agency supervises that the Foundation of Organic Farming only use the means of the foundation within the frame of the law including the EU state aid rules. The aid to the Foundation of Organic Farming is state aid approved cf. <i>state aid case SA.57228 (2020/N) — Danmark Promille- og produktionsafgiftsfonde i landbruget</i></p> <p>In regards to aid that is provided as “de minimis aid” the Foundation must secure that, the aid comply with the de minimis regulation. The Foundation must specifically ensure that the beneficiaries have declared themselves about all the public de minimis aid they have been granted during the period. The Foundation must in this context ensure that the applicant will not exceed the limit of aid within the period, when they are granted the new aid.</p> <p><u>Brown bio refineries - GUDP</u> Data on total maximum allowable for one beneficiary are recorded and stored in BTAS as a commitment upon project approval. All future payments to the beneficiary is made against the commitment and the system has a default check that prevent payment above commitment.</p> <p><u>EUDP:</u> TAS is designed so that it is not possible to exceed the assigned commitment. The budget sheet is arranged so that it is not possible to exceed the allocated commitment.</p>

Table 3.10
Description of control setup in The Ministry of Finance

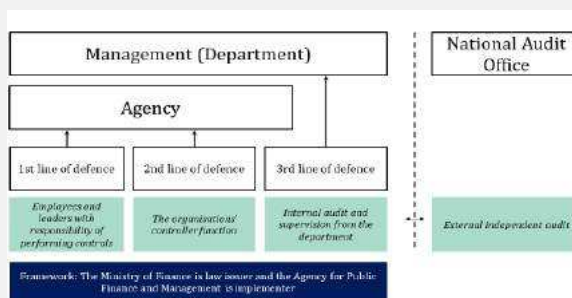
Monitoring and control arrangement

Internal control setup The Ministry of Finance is setup with a department and 5 Agencies.

- The Agency for Digitisation
- The Agency for Public Finance and Management (where the ministry's Group Finance is placed)
- The Agency for Governmental It-services (shared service)
- The Agency for Governmental Administration (shared service)
- The Danish Economic Councils (independent advisory board)

Instructions relevant to control, audit and risk management. The general instructions describe the control-setup for the Ministry and Agencies. They include clear process of internal financial control. This includes for example functional separation between the financial registration and payment, and control of the basis for payments.

The overall setup is illustrated in the figure below with explanation on the 3 different lines of defense in the ministry's internal control model. Each line is further described in the instructions and clearly placed in the organization.



Separation of functions as regards implementation and control There is a clear separation of functions in the Ministry. The administration of the RRF-projects (planning, implementation, achievement of milestones and targets etc.) has been allocated to the Agency for Digitisation.

The Agency for Public Finance and Management 'Group Finance' is responsible for some internal controls regarding financing, budgets etc. and the Agency for Governmental Administration is responsible for the payment of invoices, payrolls etc.

In the Department the Office of Audit and Supervision (OAS) is responsible for overall Supervision on the implementation of internal controls.

The activities and control systems is under the general auditing of The National Audit Office. The National Audit Office will report to the management, if irregularities or system deficiencies are observed. The Ministry of Finance typically have 10-15 audits from NAO each year.

Risk of fraud and corruption

Management verifications checking absence of irregularities Ordinary internal controls regarding payments, segregation of duties 4 eye-principle, system checks etc.

Process for reporting identified irregularities Identified irregularities will be reported by the management in the relevant Agency. If substantial irregularity the OAS will be notified.

The OAS in the Ministry of Finance will report to The National Audit Office.

	<p>If the irregularity concerns the achievement of milestones and targets this will be reported to the management in the Agency for Digitisation.</p> <p>In case of fraud or suspicion of fraud, the Department will notify the police department and report to OLAF via the OLAF reporting website.</p>
Procedures for storing and following up on detected irregularities	<p>Any documentation concerning irregularities will be stored in the F2 system, which is used in all the relevant Agencies.</p> <p>The OAS have a supplement system in use called FIRST (An auditing and supervision-follow-up-system) where all audit findings are stored and followed up by relevant management.</p> <p>The OAS use the system to ensure, that all irregularities are handled and documented and use the system to report to top management on progress on handling detected irregularities. In the system each irregularity is reported as 1 (serious) 2 (inappropriate) or 3 (nice to have/recommendation). The management follows up on all irregularities via FIRST.</p>
Prevention of fraud, corruption and conflicts of interests	<p>Employees are educated in the rules of Danish administration. There is an on boarding-programme for all new employees in the Ministry. All new managers in the ministry also has a workshop with the OAS as a part of their introduction, so they are made aware of the ministry's rigid systems of following up on audit remarks and recommendations.</p> <p>The Group Finance office has a clear process of internal financial controls. This includes functional separation between the financial registration and payment, and control of the basis for payments.</p> <p>Furthermore, the ministry have implemented a whistle-blower function, where it is possible to report suspicion of fraud etc. In each Agency, there is a WB-coordinator and the overall coordination is in the OAS. The Whistle-blower-function is available on www.fm.dk</p>
Detection of fraud, corruption and conflicts of interests	<p>Internal controls are based on risk and materiality and all payment-systems used in the Ministry have a built in segregation of duties and this is overall ensured in the internal control focus.</p> <p>If the project is regarded as 'high risk' the internal controls will be setup accordingly. If irregularities occur, they will be flagged in an internal reporting system on irregularities from audits and supervision, see description above.</p> <p>The OAS conducts audits on the material and high-risk internal controls (40-50 audit reports every year).</p>
Correction of fraud, corruption and conflicts of interests	<p>If fraud, corruption or conflict of interest is detected, this will be corrected and funds will be recovered (or held back if not yet paid).</p>
Audit & control arrangements at the level of individual components/measures	<p>Covered by the general audit and control setup.</p> <p>Controls concerning the fulfilment of milestones and targets will be done from the relevant office in the Agency of Digitisation and the OAS will perform additional checks on the documentation for achievements of milestones. All will be documented in F2 systems.</p> <p>Data on final recipients will be available in the ministry accounting system Navision Stat.</p>
<u>Avoidance of double funding</u>	
Practical arrangements preventing double funding	<p>The Budget department in the Ministry of Finance watch the funding of initiatives and programmes.</p>
Preventing that different ministries finance the same project twice	<p>There is a clear separation between projects under the Agency for Digitisation and other ministries.</p> <p>See general description.</p>

Data, systems and reporting

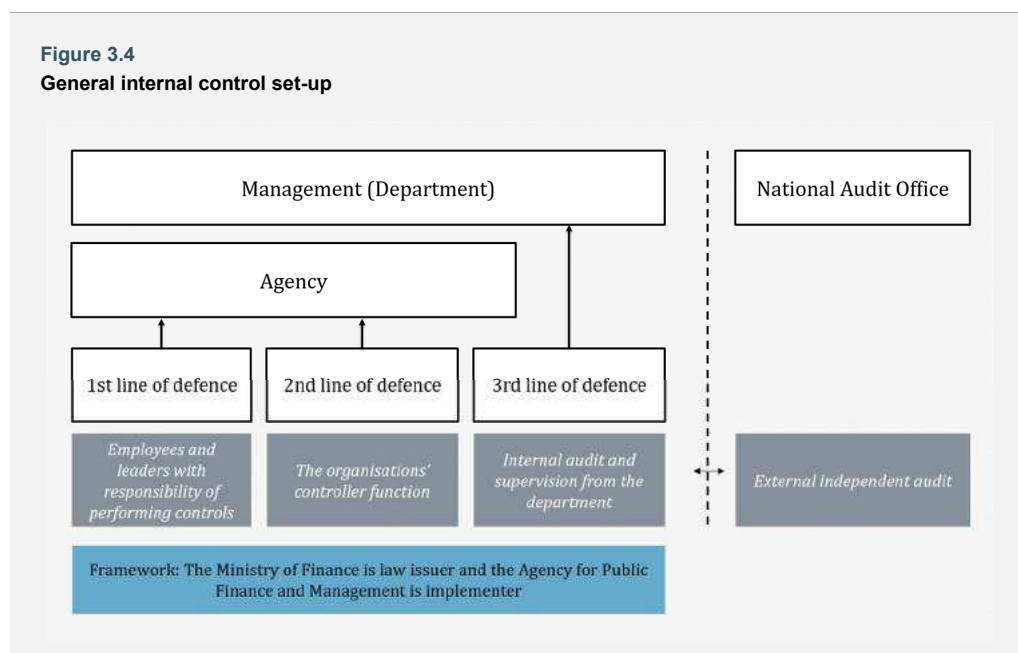
Arrangements and mechanisms to collect, store and make available data on final recipients	All payment data is documented in Navision Stat (NS) or the State payroll system (SLS). Data on final recipient is available in the systems. These data will be available for both the Ministry of Finance and relevant EU-institutions.
Systems used by the ministry to collect and store data on recipients	F2
Types of data on final recipients, contractors and subcontractors that will be stored and collected	Data on project participants include CVR-number, account information, address, contact person or CPR-number etc.
Access to information for management and audit authorities	Data will be available for both the Ministry of Finance and EU-institutions when requested. The relevant level will be given access to the data.
Ensuring in practice that one beneficiary does not get more than what is the maximum allowable under the applicable rules	Not relevant at this point as the projects under this initiative are not yet finally determined.

Summary of decentral level responsibility:

- Deliver ‘Management declaration’ biannually – *the wording of the management declaration will be similar to the management declaration provided by the Commission.*
- Performing controls and audits from a risk-based perspective.
- Deliver an ‘audit summary report’ and send it to the Ministry of Finance along with the ‘management declaration’.
- Ensure the independence between the function responsible for the spending of funds and handling the milestones and targets and of the control-function.
- Ensure that administrative capacity and staffing are sufficient
- Ensure that milestones and targets are met and that this is documented (*central level can require this documentation*).

The typical internal control setup in the ministries is regulated in a guidance from The Danish Agency for Public Finance and Management ‘Guidance on internal financial control’¹¹ where they operate with a ‘3 lines of defence’ model. Each ministry can adapt these guidelines to fit their own organisation.

For example, the Ministry of Finance’s model for internal control and audit is shown in figure 3.4. The model shows the interplay between the department and the Agency for Public Finance and Management.



¹¹ <https://oes.dk/media/37196/vejledning-om-finansiel-intern-kontrol.pdf>

It should be iterated that the model shows the organization of internal controls and audits within the Ministry of Finance and that this may vary between ministries.

General Fraud and corruption regulations in Denmark

An important element in the Danish anti-fraud and corruption-setup is Whistle Blower-functions. All Danish ministries implemented Whistle Blower functions in November 2020 meaning that employees, contractors and subcontractors have clear ways of communication when making the management aware of potential fraud and corruption.

Each decentral level will specify their controls to prevent fraud and irregularities. Irregularities can be both of a financial kind and of a non-financial kind – for example an irregularity in the documentation of milestones and targets.

The procedure in regards to reporting on suspicious use of funds involves that each ministry is obliged to immediately send reports of any suspicious use of funds or substantial irregularity to the Ministry of Finance. Each line-ministry will report any other irregularities in their ‘Audit and control-report’ to the Ministry of Finance (the OAS).

The OAS will then follow up on the investigation of all substantial irregularities and all fraud issues. The data will be stored in the F2 system in the Ministry of Finance.

If the irregularity concerns fraud-issues the relevant procedure is activated, involving information to the police and to the National Audit Office. The relevant ministry will report to the police authority (the State Prosecutor for Serious Economic and International Crime). The National Audit Office will also be informed.

The Ministry of Finance will report any suspected fraud to OLAF via the reporting website https://ec.europa.eu/anti-fraud/olaf-and-you/report-fraud_da

The Ministry of Finance will – also involving the AFCOS network – ensure that all ministries are aware of OLAF’s mandate to investigate in all areas of the Danish Administration.

OAS in collaboration with the AFCOS coordinator will host an annual workshop with the relevant ministries and their AFCOS members to discuss e.g. internal controls and reporting, focus on the fraud risk etc. In this workshop the OAS will share any relevant information from OLAF on the development of fraud risks etc.

3.7 Communication

In this section, the communication strategy on the RRP is described. This applies for the communication during the preparation of the RRP as well as the implementation.

Almost all the initiatives in the Danish RRP was negotiated during the negotiations on the annual national budget and negotiations on economic recovery and green stimuli. Therefore, the initiatives in the RRP have all been subject to public attention. In relevant agreements on RRP initiatives (e.g. green tax reform, green road transport, green stimuli etc.) references are made to financing from the RRP.

In the communication about the political agreements financed by the Recovery and Resilience Facility, it has been clearly marked that parts of, or the entire financing will come from the Recovery and Resilience Facility. When the plan as a whole is completed, it will be published on the webpage of the Ministry of Finance¹².

A substantial share of the Danish RRP is disbursed via pools that will be open to eligible applicants. During the calls and tenders for these pools, it will be clearly marked that part of, or the entire funding comes from the Recovery and Resilience Facility. This ensures that communication of the spending of Recovery and Resilience funds is clear through the preparation part and the implementation part of the RRP.

¹² www.fm.dk



4. Overall impact

This chapter describes the current macroeconomic and social outlook in Denmark as well as the overall impact of the Danish Recovery and Resilience Plan.

Section 4.1 describes the current macroeconomic and social outlook.

Section 4.2 presents the overall impact of the Danish Recovery and Resilience Plan on key magnitudes such as employment and GDP.

Finally, section 4.3 provides a comparison of the public expenses related to the initiatives in the Danish Recovery and Resilience Plan with the level of comparable public expenses in most recent years.

4.1 Macroeconomic and social outlook

The economic outlook presented below takes as its starting point the most recent economic forecast in *Denmark's Convergence Programme 2021*, April 2021. In addition, this section presents a status for the social outlook in Denmark, which focuses on income inequality and intergenerational social mobility. This includes an overview of youth unemployment in the wake of the pandemic.

4.1.1 Economic outlook

The onset of the COVID-19 pandemic caused a marked drop in Danish output and a rise in unemployment in the first half of 2020. As the infection rate subsided and health-related restrictions were lifted, this was followed by a strong rebound in activity and employment in the third quarter. Growth continued in the fourth quarter, albeit at a slower pace. A second wave of infections late in 2020 necessitated a renewed tightening of health-related restrictions and put a renewed dampener on economic activity. This second wave including the emergence of new variations of virus. A number of restrictions were in effect, including closing of shopping malls and restaurants as well as other measures. Restrictions are being lifted gradually since March as part of the broad agreed upon reopening plan between the Government and other parties.

High-frequency indicators point to a substantial decline in activity in January and February, however not as large as during the partial lock-down in spring 2020. Unemployment rose, although much less severely than in March 2020. Since

March, where some restrictions have been lifted again, high-frequency indicators of e.g. private consumption and unemployment point to renewed economic activity.

The impact on annual growth in 2021 will depend notably on the evolution of the pandemic and how long health-related restrictions will remain necessary to prevent renewed escalation of the virus.

The second wave of the pandemic is expected to have affected growth most severely in the first quarter of 2021. Prospects remain, however, for a continued rebound in activity over the course of the spring and summer, supported by the ongoing and gradually intensifying roll-out of COVID-19 vaccines as well as continued policy support. The easing of restrictions is set to follow the broad agreed upon plan by the Government and other parties.

Risks are mainly related to the development of the pandemic and speed of vaccinations, which will affect private consumption of services – including tourism – and employment in the affected service sectors. Danish exports consists largely of food products and pharmaceuticals that are relatively less affected by the pandemic.

The fundamentals of the Danish economy remain sound, policies are highly stimulative, including via the impact of the European Recovery and Resilience Facility, and the experience of the bounce back after the first wave of the pandemic suggest the potential for solid rebound in growth in the course of this year as well as continued recovery in 2022. Thus, real GDP is expected to grow by more than 2 per cent in 2021 and almost 4 per cent in 2022. Nonetheless, unemployment is expected to remain above pre-COVID-19 levels in both 2021 and 2022.

Table 4.1 lists key figures from *Denmark's Convergence Programme 2021*.

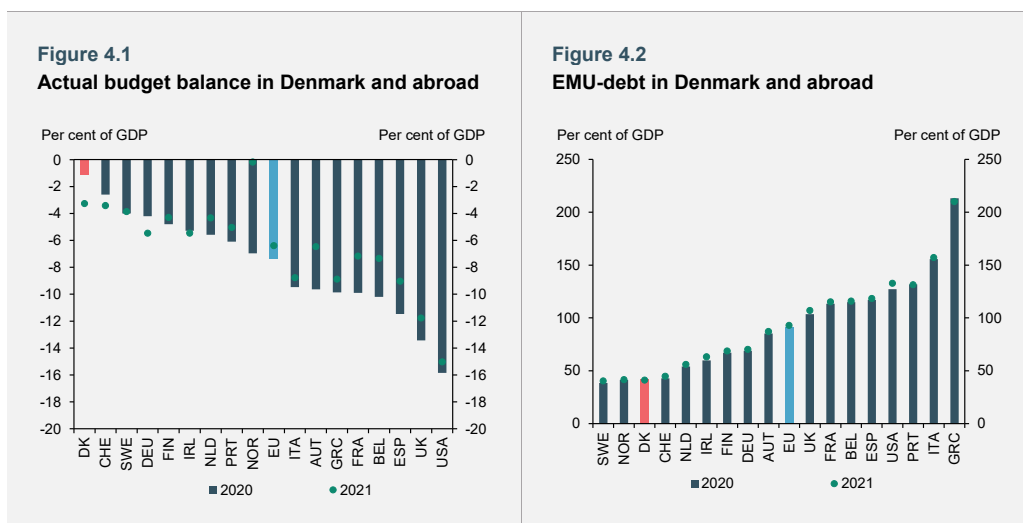
	2019	2020	2021	2022
Real GDP, growth, per cent	2.8	-2.7	2.1	3.8
Inflation, per cent	0.7	0.4	1.1	1.5
Nominal wages, growth, per cent	2.5	2.2	2.4	2.6
Employment, 1,000 persons	3,003	2,981	2,988	3,025
Employment, change, 1,000 persons	37	-22	6	37
Unemployment, 1,000 persons	104	133	124	118
Unemployment, change, 1,000 persons	-4	29	-9	-7
Unemployment, per cent of labour force	3.4	4.3	4.0	3.8
Labour force, 1,000 persons	3,105	3,113	3,109	3,140
Labour force participation rate, per cent	82.9	82.3	81.4	81.3

Source: *Convergence Programme*, April 2021.

4.1.2 Public finances

The sustainability of the Danish public finances as well as the underlying structures and prospects remain solid.

Despite the significant economic setback and the sizeable steps Denmark has taken to ease the negative economic consequences of COVID-19 for e.g. businesses and jobs, the expected budget deficit in 2020-2021 continues to be fairly limited compared to other countries, *cf. figure 4.1*. Additionally, the public gross debt continues to be moderate. Thus, a wide margin to the EU's limit of 60 per cent of GDP is maintained, and Denmark continues to have relatively low EMU-debt seen in an international perspective, *cf. figure 4.2*.



Note: Estimates for Denmark are from *Denmark's Convergence Programme 2021*, while estimates for other countries are based on the economic forecast by the IMF.

Source: *Denmark's Convergence Programme 2021*, April 2021, Statistics Denmark, IMF World Economic Outlook, April 2021, and own calculations.

Based on the planned fiscal policy, the most recent economic forecast, and other new information and estimates, the deficit on the actual budget balance is expected to amount to around 3 per cent of GDP in 2021 and 1 per cent of GDP in 2022, including substantial one-off expenditures in 2021, *cf. table 4.2*. Furthermore, the deficit on the structural budget balance is currently estimated to stay within the limit of the Danish Budget Law of -0.5 per cent of GDP and is set to ease back a little from 2021 to 2022.

Table 4.2 lists key figures relating to fiscal policy from *Denmark's Convergence Programme 2021*, April 2021.

Table 4.2**Key figures relating to fiscal policy from Denmark's Convergence Programme 2021, April 2021**

	2021	2022 ⁴⁾
Structural budget balance, per cent of structural GDP	-0.5	-0.3
Actual budget balance, per cent of GDP	-3.3	-0.9
EMU-debt, per cent of GDP	40.7	41.3
Net debt, per cent of GDP	-7.4	-6.2
Public consumption growth ¹⁾	3.2	0.1
Multi-year fiscal effect, per cent of GDP ²⁾	3.5	2.3
Multi-year employment effect, 1,000 persons ²⁾	83	40
Output gap, per cent ³⁾	-0.8	0.2
Employment gap, per cent ³⁾	-0.4	0.1

- 1) Public consumption is calculated using the input method incl. depreciations. The estimated growth in public consumption is technically assumed to be the same using the input and the output method. The estimate for the growth rate in forecast years is heavily affected by extraordinary expenditures related to COVID-19.
- 2) Calculated measure of the fiscal policy's demand effect (level effect compared to 2019) on GDP and employment, calculated excl. the effect of structural policies on the productive capacity of the economy. The effect is measured incl. contribution from the temporary compensation schemes, pay out of withheld holiday payments, and publicly initiated private investments.
- 3) Calculated measure of how far production and employment are from their structural levels. When the gaps are negative, it indicates more available resources in the economy than under normal cyclical conditions.
- 4) The estimates for 2022 are based on technical assumptions about the fiscal policy in 2022.

Source: *Denmark's Convergence Programme 2021*, Statistics Denmark and own calculations.

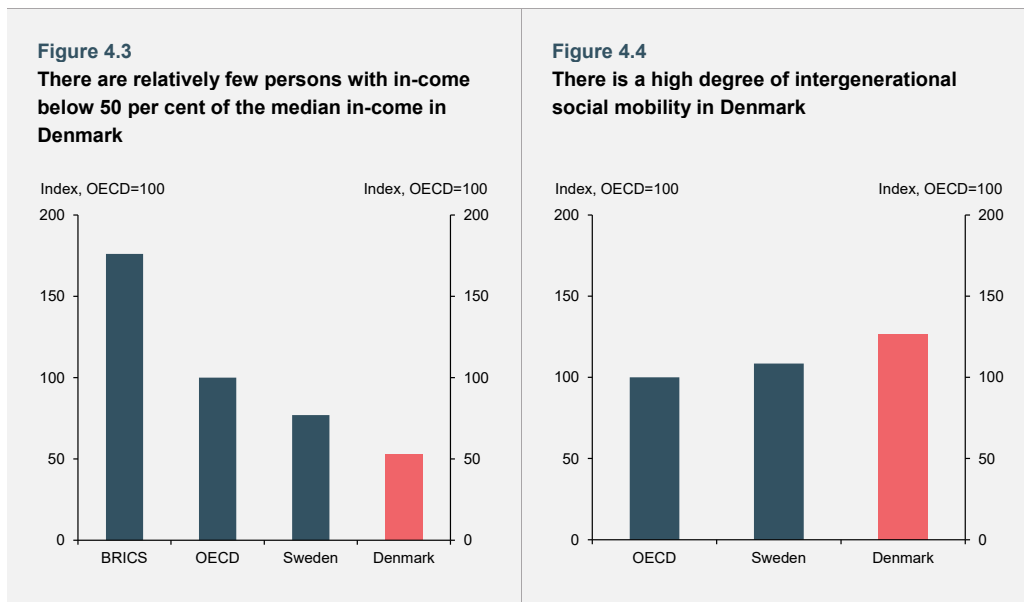
In August 2020, the Danish government presented an updated medium-term projection including revised fiscal guideposts towards 2025. This updated projection sets out an expansionary fiscal policy in the coming years to support economic recovery, including a boost to public investment. Towards 2025, fiscal policy is planned based on an adjusted profile for the structural budget balance, which supports the recovery of the Danish economy. The updated projection includes an unchanged objective of the structural balance in 2025, which contributes to stabilizing the development of public debt and supports the credibility of the public finances.

4.1.3 Social situation

Denmark has a relatively high level of income per capita and a relatively even distribution of incomes compared to most other countries. Various indicators also currently show that Denmark has managed to provide relatively equal opportunities and outcomes when it comes to areas such as social mobility, health and education.

The differences in income has increased over the last decades (as in many other countries). The increase is caused partly by the development in demographic and structural factors (e.g. an increased number of students who have low incomes while studying, increased property incomes related to lower interest rates etc.) and changes in tax and transfer legislation. However, the income differences are still relatively small compared to other OECD countries, and the number of people with incomes below 50 per cent of the median income is low, *cf. figure 4.3*. Sweden

is included in the figure as another example of a country with a relatively even income distribution.



Note.: OECD includes available OECD-countries for the relevant indicator. BRICS includes Brazil, Russia, India, China and South Africa. Fig. 4.3: Share of population which is in the low-income group in 2017 or latest available year. Fig. 4.4 is measured as 1 minus the elasticity between father's and son's income, cf. *Fordeling og incitamenten 2017*, Ministry of the Economy and the Interior.

Source: OECD and own calculations.

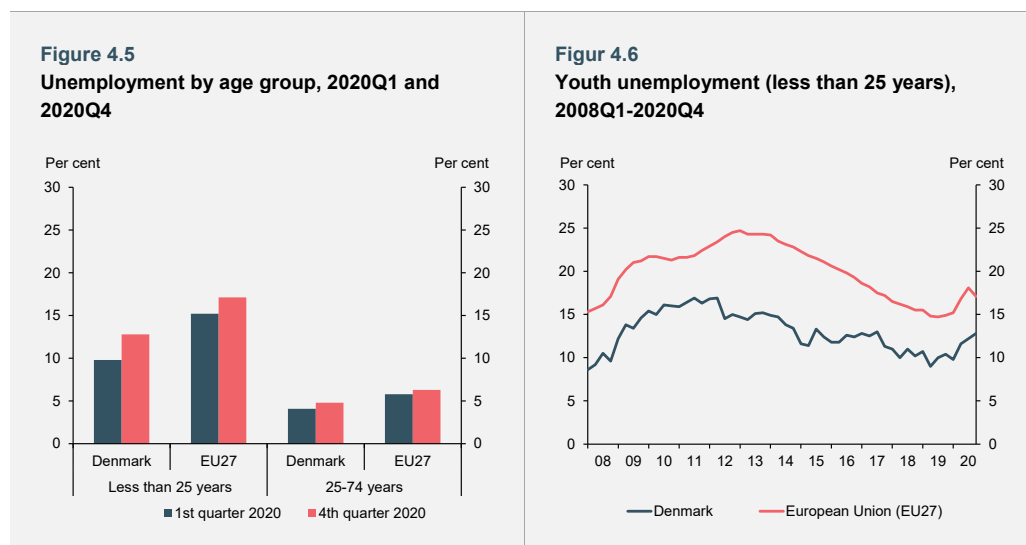
Denmark also has a relatively high degree of income mobility between generations, cf. figure 4.4. A high degree of intergenerational income mobility indicates that there are relatively weak links between the income of a person and the income of the parents of that person. It is also an indication that there is a high degree of possibility to use ones potential in the education system and on the labour market. High income mobility may contribute to reduce income differences and prevent social problems from becoming entrenched between generations.

4.1.4 Youth unemployment

According to the European Union Labour Force Survey (EU-LFS), unemployment among people under the age of 25 years in Denmark was around 13 per cent in the fourth quarter of 2020 compared to around 17 per cent in the EU as a whole, cf. figure 4.5. Youth unemployment has been consistently lower in Denmark compared to the EU in the period 2008Q1-2020Q4, cf. figure 4.6.

In both Denmark and the EU, youth unemployment is higher than the unemployment among people aged 25-74 years. A relatively substantial part of the measured youth unemployment in Denmark consists of students who are looking for a part-time job while studying, in addition to receiving student grants. If the registered gross unemployment is considered instead, unemployment in Denmark among people under the age of 25 is lower than the unemployment rate in other age

groups. The registered gross unemployment includes recipients of unemployment benefits and social benefits deemed ready for work.



Note: The unemployment data is based on the European Union Labour Force Survey (EU-LFS). The time series in figure 4.5 is seasonally adjusted (not calendar adjusted).

Source: Eurostat and own calculations.

Since the beginning of the corona crisis, youth unemployment has risen in both Denmark and the EU according to the Labour Force Survey. The rise in youth unemployment is higher than the corresponding increase in unemployment among people aged 25-74 years.¹ This reflects, among other things, how many young people work in industries particularly hard hit by the corona crisis, e.g. retail, hotels, restaurants etc.

Many young people returned to employment after the partial lockdown in the spring of 2020. However, the second wave of the corona pandemic and the renewed tightening of health-related restrictions gives rise to new uncertainty and the risk of a new rise in youth unemployment. The risk of long-term effects on youth unemployment is mitigated by the prospect of a relatively rapid recovery in light of the upcoming reopening and the current rollout of vaccines. Nevertheless, the risk of more long-term effects may increase the longer the setback lasts.

4.2 Macroeconomic and social impact of the plan

Since the beginning of the COVID-19 crisis, Denmark has pursued a highly expansive fiscal policy to support the economy. The Danish Recovery and Resilience Plan will underpin this approach in the years to come.

¹ Note that this is not the case when considering the registered gross unemployment. Registered gross unemployment in Denmark among people under the age of 25 years is approximately unchanged in 2020Q4 compared to 2020Q1.

The Danish government has so far implemented both comprehensive temporary compensation schemes, temporary supportive liquidity measures, and a number of expansionary fiscal policy measures in order to stimulate the Danish economy.

Most recently, the 2021 budget bill and related agreements include several new measures, which further support the recovery of economic activity. This includes several measures financed under the auspices of the Danish Recovery and Resilience Plan. In total, the already implemented and the planned fiscal policy initiatives for 2020 and 2021, including the Danish Recovery and Resilience Plan, are estimated to increase employment by some 83,000 persons in 2021, while GDP is estimated to be about 3½ per cent higher than would otherwise be the case (i.e. without exceptional support measures and stimulus).

Table 4.3 presents an overview of the initiatives in the Danish Recovery and Resilience Plan, including their budgetary effects in 2021-2025. The contents of the individual components of the Danish Recovery and Resilience Plan, including a more detailed description of the initiatives and the channels through, which their impact is expected to take place, are further expanded upon in *Part 2: Description of reforms and investments*.

Table 4.3
Initiatives in the Danish Recovery and Resilience Plan

	2021	2022	2023	2024	2025	Total
Bn. DKK (2021-prices)						
1.1 Strengthening the Resilience of the Healthcare System	0.2	0.1	0.0	-	-	0.2
1.2 Green transition of Agriculture and Environment	0.4	0.4	0.3	0.3	0.1	1.3
1.3 Energy Efficiency, Green Heating and CCS	0.8	0.6	0.3	0.3	0.1	2.0
1.4 Green Tax Reform (phase 1)	1.0	1.4	0.8	0.5	0.2	3.9
1.5 Sustainable Road Transport	0.6	0.4	0.3	0.2	0.1	1.6
1.6 Digitalisation	0.1	0.1	0.1	0.1	0.1	0.7
1.7 Green Research and Development	0.7	1.1	-	-	-	1.8
Initiatives in total	3.7	4.0	1.8	1.4	0.7	11.6

The initiatives funded in the Recovery and Resilience Plan are estimated to increase aggregate demand by approximately 0.2 per cent of GDP in 2021 and 0.3 per cent of GDP in 2022, *cf. table 4.4*. Consequently, the initiatives are estimated to increase employment by around 0.2 per cent (4,500-6,000 persons) in 2021 as well as in 2022, *cf. table 4.5*.

Table 4.4
Macroeconomic impact of initiatives in Recovery and Resilience Plan, effect on GDP

	2021	2022	2023	2024	2025
Short-term effect on GDP, per cent of GDP					
1.1 Strengthening the Resilience of the Healthcare System	0.01	0.00	0.00	0.00	0.00
1.2 Green transition of Agriculture and Environment	0.00	0.00	0.00	0.00	0.00
1.3 Energy Efficiency, Green Heating and CCS	0.02	0.03	0.02	0.02	0.00
1.4 Green Tax Reform (phase 1)	0.12	0.22	0.00	-0.07	-0.04
1.5 Sustainable Road Transport	0.02	0.02	0.02	0.01	0.00
1.6 Digitalisation	0.00	0.01	0.01	0.01	0.01
1.7 Green Research and Development	0.03	0.03	0.01	0.00	0.00
Initiatives in total	0.21	0.31	0.07	-0.03	-0.02
Effect on structural productivity, per cent of GDP	0.06	0.1	0.12	0.13	0.14
End-of-period effect on GDP					0.12

Note: Effect on GDP is rounded to the nearest 0.01 per cent of GDP.
Source: Own calculations.

The driving forces behind the macroeconomic impact of the initiatives is an increase in aggregate demand for both the public and private sector. Public demand is stimulated through increased funding for public consumption and investment, while private demand is stimulated by targeted subsidies and transfers to the private sector. Furthermore, the targeted tax cuts for investments are estimated to increase the level of private investment.

The economic impact can primarily be attributed to the Green Tax Reform and Green Research and Development, which are the initiatives receiving the largest funding in the Recovery and Resilience Plan.

Note that the Green Tax Reform has a negative short-term effect on GDP in 2024 and 2025. This represents advanced private investment as a consequence of the investment window included in the Green Tax Reform. The investment window increases total private investment over the period from 2021-25 and creates an incentive to advance investment to 2021-22. Consequently, the negative effect in 2024 and 2025 is offset by an additional increase in GDP during the investment window in 2021 and 2022.

Table 4.5
Employment impact of initiatives in Recovery and Resilience Plan

	2021	2022	2023	2024	2025
Effect on employment, 1.000 persons					
1.1 Strengthening the Resilience of the Healthcare System	0.2	0.1	0.0	0.0	0.0
1.2 Green transition of Agriculture and Environment	0.1	0.2	0.2	0.2	0.1
1.3 Energy Efficiency, Green Heating and CCS	0.4	0.5	0.4	0.4	0.2
1.4 Green Tax Reform (phase 1)	2.0	3.9	0.7	-0.7	-0.6
1.5 Sustainable Road Transport	0.4	0.4	0.4	0.3	0.2
1.6 Digitalisation	0.0	0.1	0.2	0.2	0.2
1.7 Green Research and Development	1.1	0.3	0.2	0.2	0.1
Initiatives in total	4.3	5.6	2.1	0.4	0.1

Note: Effect on employment is rounded to the nearest 100 persons.

Source: Own calculations.

The objectives of the initiatives in the Recovery and Resilience Plan are both short- and long-term, with the aim of supporting the Danish economy in the recovery from the pandemic as well as supporting long-term growth and the green transition. As such, several of the initiatives can be expected to have a positive effect on the long-term growth potential of the Danish economy. While these are often difficult to quantify, one example is that public investment in Energy Efficiency, Green Heating, and CCS, and Sustainable Road Transport are assessed to increase long-term productivity and structural GDP by around 3½ bn. DKK per year, corresponding to around 0.1 per cent of GDP, *cf. table 4.4*.

The effect on structural GDP is calculated using standard evaluation tools. The result can be attributed to an increase in the public capital stock, by the improvements of infrastructure for green means of transportation, as well as the improvements of the energy efficiency of buildings. These measures improve the existing infrastructure to the benefit of both the private and public sector, as well as support the green transition in the private sector, by making it easier to invest in green transportation. In addition to this, public investment in green research and development and a tax deduction for private research is estimated to increase structural productivity by developing new green technology.

The methods used for the assessment of the macroeconomic impact are described in *box 4.1*.

Box 4.1

Methodology

The impact assessment of the initiatives in the Danish Recovery and Resilience Plan is calculated using the macro econometric model ADAM (Annual Danish Aggregate Model). The ADAM-model is developed by the macroeconomic modelling unit of Statistics Denmark, and gives a simplified mathematical description of the interactions in the Danish economy. The model is empirically based, and most of the behavioural equations are estimated on national accounts data.

The Danish Ministry of Finance estimates a wide range of fiscal multipliers using the ADAM-model, describing the marginal effect on GDP and employment of different expansionary fiscal measures. These standard multipliers are used to calculate the economic impact of the initiatives in the Recovery and Resilience Plan. Some initiatives, such as funds dedicated for phasing out oil burners, have a direct effect on private investment in addition to the effect on public expenditure. For these initiatives, the impact assessment on GDP and employment is based on a calculation made with the ADAM-model, describing the effect of both private and public investment.

A number of initiatives included in the Recovery and Resilience Plan, such as the Green Tax Reform and Sustainable Road Transport, are part of a larger package of initiatives. For these initiatives, the economic impact is calculated as the isolated effect of the parts that are funded in the Recovery and Resilience Plan.

The long-term impact on growth potential from public investment is calculated as the marginal gross return of the public capital stock, since an increase in public investment results in an increase in public capital stock, and consequently increases the productive capacity of the economy. This is in line with the standard procedure for calculation of structural effects used by the Danish Ministry of Finance.

The Danish Recovery and Resilience Plan includes new measures supporting SMEs, e.g. a digitisation fund to strengthen SMEs' digital transition and exports. In addition to the initiatives funded by the Recovery and Resilience Facility, the Danish government has taken decisive measures to address the economic impact of the crisis on Danish businesses, including SMEs. This reflects broad and extraordinary direct support measures such as salary and fixed costs compensation, state guarantees, and deferred tax payments.

In addition, the Danish Recovery and Resilience plan comprises new initiatives strengthening the resilience of the healthcare systems in Denmark. This includes e.g. investments in infrastructure to ensure critical medical supplies to continue broad access to healthcare. The Danish healthcare system is based on a universal model and the principles of free and equal access to healthcare for all citizens. In the light of the pandemic, free testing for COVID-19 has been made broadly available to all Danish residents, as are the COVID-19 vaccines currently being rolled out.

The initiatives in the Danish Recovery and Resilience Plan are aimed *inter alia* at supporting growth and employment, reducing greenhouse gas emissions, furthering digitalisation and underpinning the healthcare system. These objectives benefit all citizens and in some cases more so for the least advantaged. Education and health services are already universally available for all citizens, including the least advantaged, at little or no direct cost. Measures to strengthen employment will be of most value for those with a less firm attachment to the labour market and thus these efforts benefit the least advantaged more. In addition, increased productivity generally benefits all citizens, including those outside the labour market, as higher

wages are automatically reflected in higher transfer incomes for all recipients of social transfers in Denmark.

4.2.1 Sustainability

Several of the initiatives financed by the Recovery and Resilience Facility, including the Green Tax Reform, the Sustainable Road Transport Agreement etc., are part of agreements that extend into the years after 2025, i.e. also after the funding from the Recovery and Resilience Facility is terminated. In the medium- and long-term, such initiatives will be financed within the overall fiscal framework in Denmark. Furthermore, many of the initiatives, for instance the Green Tax Reform, are supported by a broad political coalition, which ensures political support beyond the current electoral period. Thus, the initiatives are assessed to be sustainable beyond 2025.

Additionally, the Green Tax Reform and the Sustainable Road Transport Agreement are estimated to reduce greenhouse gas emissions in 2030 by 0.5 m. tons and 2.1 m. tons, respectively. This contributes to the reduction of greenhouse gas emissions towards Denmark's 70 per cent reduction target in 2030.

4.2.2 Cohesion

Denmark is generally characterized by small regional differences. However, while there was growth in employment across the whole country in the years leading up to the COVID-19 crisis, this growth was not evenly distributed. Employment growth has generally been largest in and around the big cities, *cf. Regional and Rural Policy Report 2020*, Danish Ministry of Industry, Business and Financial Affairs.

The recent economic setback due to the COVID-19 pandemic has hit certain geographical areas harder than other. The direct impact appears to be relatively more pronounced in the larger cities, where many cultural activities, restaurants and hotels tend to be concentrated. However, certain rural areas have also suffered disproportionately, in part due to the COVID-19-related closing of mink farms. Although cities may be more affected in the short term, poorer regions are, however, generally more vulnerable and less resilient in the face of economic crises. The potential longer-term consequences of COVID-19 for cohesion and regional disparities is currently unclear.

The initiatives in the Danish Recovery and Resilience Plan are assessed to broadly support employment across both industries and geography. Furthermore, the Danish Recovery and Resilience Plan includes several measures aimed at strengthening cohesion, e.g. a broadband initiative, which promotes high-speed internet access for citizens, households and companies across the country (i.e. including in some less densely populated areas) as well as support for ecological agriculture. This also applies to investments in Energy Efficiency, Green Heating and CCS regarding renovation and measures to ensure energy efficiency for households, private enterprises, and public sector buildings, which are expected to temporarily increase the number of local jobs and investments and reduce energy bills.

4.3 Comparison of the investment expenditure with the spending baseline

The investment expenditure funded by the Recovery and Resilience Facility is primarily within the functions (COFOG groups) of economic affairs, environmental protection, housing and community amenities and health.

The investment spending funded by the Recovery and Resilience Facility is included below in a spending baseline, which takes is based on all public expenditure within each of the said COFOG groups, except transfers abroad, for the years 2017-2019, cf. table 4.6². Budget plans in Denmark are not made on a level of detail that allows for a projection by COFOG function. Hence, the level of public expenditure in 2020 has been extrapolated mechanically in the period 2021-2026 before the addition of investment spending under the Recovery and Resilience Facility.

Table 4.6
Comparison of investment expenditure to spending baseline

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Spending baseline, m. EUR										
Environmental protection	907	950	925	974	1,160	1,073	1,004	1,006	974	974
Housing and community amenities	570	648	563	576	637	608	583	593	581	576
Health	1,615	1,633	1,710	1,796	1,817	1,805	1,799	1,796	1,796	1,796
Sum of expenditure affected by expenditure financed through RRF grants (a)	3,092	3,231	3,198	3,347	3,614	3,486	3,387	3,395	3,351	3,347
Growth-enhancing expenditure financed through RRF grants (b)	0	0	0	0	267	139	40	48	4	0
Expenditure excluding expenditure financed through RRF grants (a-b)	3,092	3,231	3,198	3,347	3,347	3,347	3,347	3,347	3,347	3,347

Note: The table is further expanded upon in tables T4A and T4B in the excel file.
Source: Statistics Denmark and own calculations.

Public expenditure funded by the Recovery and Resilience Facility is expected to be incurred in the period 2021-2025. Only Recovery and Resilience Facility expenditure defined broadly, as *investments* is included in the comparison with the baseline, and expenditure defined broadly as *reforms* is excluded. Roughly, half of the planned expenditure funded by the Recovery and Resilience Facility is defined as *investments*. All Recovery and Resilience Facility-financed expenditure is expected to be growth-enhancing.

² In Denmark, there is no predefined classification of Growth-enhancing expenditure vs. other expenditure. The table includes all public expenditure excluding transfers abroad in each COFOG category.

Appendix. Sustainable Development Goals

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SDG 1. No Poverty

The government has a clear goal of fighting poverty – both nationally and globally.

A national poverty threshold

There is no extreme poverty in Denmark, where people have to live for less than 1.90 USD a day. This is partly because Denmark has a well-developed social safety net that ensures everyone a livelihood as well as the necessary support and help and access to services. Denmark has thus come a long way in meeting a number of the targets under SDG 1. However, more can and must be done.

There are still children in Denmark who do not have the same opportunities as their peers. Therefore, the intention is to reintroduce a national poverty threshold. With a new poverty threshold, an important step is being taken towards eradicating poverty and especially child poverty. A new national poverty threshold is set to be an active tool in i.a. social policy and can be included in the follow-up to SDG 1.

A responsible and just society

All citizens in Denmark have access to a social security system, and it is a priority for the government to ensure that everyone has the opportunity to take part in the labour market and that there is a fair distribution of growth and prosperity.

The government strives for everyone in Denmark, vulnerable and non-vulnerable, to have the same right to financial resources and services. People with social challenges, mental difficulties or a disability can, for example, receive support and help under the Service Act, and all people have the same free and equal access to the health care system.

The government has implemented a number of initiatives to ensure that everyone who is capable to contribute actively to society has the best conditions to be able to do so. Among other things, through several initiatives aiming at strengthened qualifications and a special pool to help people with disabilities in jobs.

The existing cash benefit system has become unbalanced, which is due to a number of ongoing adjustments and additions – not least the introduction of the cash benefit ceiling. The cash benefit ceiling affects i.a. some families with children hard. That is why the government has established a Benefit Commission to make recommendations on how to create a more balanced cash benefit system. Until the Benefit Commission makes its recommendations, a temporary child allowance

has been adopted for the families most affected financially by the cash benefit ceiling.

Denmark supports partnerships in some of the poorest countries in the world

Through international cooperation and the government's development policy strategy, Denmark strives to be a significant global player. Denmark supports some of the poorest countries in the world by supporting new partnerships between governments, businesses, investors and civil society to create responsible and sustainable growth and development.

Denmark is one of the few countries in the world to meet the international target of providing at least 0.7% of GNI in development assistance (since 1978). Denmark fights poverty in different ways. Overall, there is a particular focus on ensuring that the most marginalised groups also enjoy the same rights and opportunities as others.

The government will increase Denmark's focus on improving living conditions in refugee neighbourhoods, which at the same time benefits some of the most vulnerable people in the world and prevents economic migration. It is a key priority of Danish development cooperation to contribute to poverty reduction. In addition, Denmark also works actively to uplift the most vulnerable groups and those who suffer from discrimination or other forms of unequal treatment.

SDG 2. Zero Hunger

Danish agriculture is characterized by high productivity and profits and despite the fact that regulation and technology in many areas have reduced the environmental impact of agriculture, there is still an urgent need to promote a green transition and sustainable agriculture and to reduce the negative agricultural impacts on the environment, nature and climate, For example through an increased focus on precision agriculture, ecology, bioeconomy, fodder and – food capabilities, space for natural areas, biodiversity and reduction in the usage of pesticides. Hunger and food insecurity are not exactly pressing matters in Denmark but remains essential challenges in developing countries.

Reduced environmental impact

Danish agriculture has succeeded in reducing the environmental impact on a number of areas through regulation and integration of environmental technologies and production methods. For example, over the last 30 years, Denmark has roughly halved the release of nutrients from agriculture and halved the negative impact of pesticides. Agricultural production has become more environmentally efficient, but intensive production does not allow much space for nature and biodiversity. With the political agreements from 2017 and 2019 on the usage of pesticides, a broad majority in the Parliament decided to reduce the impact from pesticides and to initiate several initiatives to support better protection of the environment and a more sustainable food production.

Sustainable food production

In cooperation with the agricultural organizations, the government is implementing several projects on precision agriculture where new cultivation technologies are being tested which have the potential to both improve the economy of the farmers and at the same time enrich the quality of the surrounding nature and environment.

Denmark has in the past few years focused on bioeconomy to increase the utilization of biological resources in a sustainable manner. The industry has contributed to delivering solutions to future challenges by for example improving the capability of fodder and food and by exploiting waste flows from fodder and food production. Furthermore, the government has set new targets for a reduction of use of antibiotics in pig production to prevent antimicrobial resistance which also facilitates a more sustainable food production. Moreover, Denmark has established the International Centre for Antimicrobial Resistance Solutions (ICARS), which will provide relevant knowledge and contribute to preventing antimicrobial resistance in low- and middle-income countries.

It is the government's ambition to implement further sustainability measures in the agricultural sector. Among other things, this implies a significant reduction of nitrogen emissions into the aquatic environment and the contribution of the agriculture sector to the government's ambition to reduce the total greenhouse gases by 70 percent no later than 2030. On top of this, it is the government's ambition to double organic in 2030 regarding both hectares, export, and consumption.

Dietary guidelines and healthier food habits

Obesity is one of the largest societal and health challenges. Since 1987 the occurrence of overweight and obesity has doubled. In January 2021 Denmark launched the official dietary guidelines – good for health and climate, which for the first time offer advice to live both healthy and climate-friendly. By following the dietary guidelines, the risk of lifestyle diseases such as cardiovascular disease, type 2 diabetes and cancer is reduced.

The sustainability of the international food system

Global food production is one of the most crucial sectors when it comes to the global emissions of greenhouse gases and the main driver for the destruction of biological diversity. Denmark works to advance a more sustainable food production in countries with which Denmark cooperates. Moreover, Denmark works to reduce deforestation by the initiation of more sustainable supply chains. Among other things, this is facilitated through the Amsterdam-Partnership that seeks to support initiatives that promote responsible and deforestation-free production of agricultural raw materials such as soy, palm oil and cocoa. Denmark works to encourage a greener European agricultural sector and to ensure that international agreements under the Convention of Biological Diversity and the Climate Convention promote a greener and more sustainable agriculture on a global scale.

The international effort to end hunger

Global hunger is rising and the international community must strengthen its effort substantially if SDG 2 is to be achieved by 2030. Denmark supports the international effort through the United Nation's World Food Programme and joined the Food Aid Convention in 2012. Denmark also supports the prevention of hunger crises and initiatives, which establish structures that can prevent climate shocks that damage agriculture and food production in many developing countries. Furthermore, Denmark supports the development of the food and agricultural sector through bilateral development cooperation and through the Danish civil society organisations. Denmark works to strengthen the partnerships and to capitalise fully on the global political platforms.

In April 2021 the Danish government hosted the fifth annual World Food Summit – Better Food for More People, gathering sustainability leaders wishing to transform food systems to become safer, healthier, and more sustainable in response to the UN Sustainable Development Goals. The National Food Systems Summit Dialogue, which was a part of the summit, acts as an important stepping-stone leading into the UN Food System Summit 2021.

SDG 3. Good Health and Well-Being

Health for all and universal health coverage are fundamental for the Danish welfare model where easy and equal access to health remains a core principle. The Danish health system thus constitutes a framework for a healthy life and wellbeing for all citizens in Denmark in accordance with SDG no. 3.

A well-functioning health system is vital for the continued social development. The Danish government monitors progress and development of healthcare through national targets for the health system. This includes patient satisfaction surveys, monitoring and prevention of hospital readmissions, monitoring of the five year survival of cancer patients etc. In this way, the SDGs are already closely reflected in the ongoing work and general monitoring of the Danish health system as well as in the priorities of the Danish government in the field of health.

Early intervention against premature death, inequality, and promotion of mental health

Even though Denmark generally performs well regarding the fulfilment of SDG no. 3 there is still room for improvement. Since 2000, average life expectancy has increased with more than 4 years. According to the OECD, this is especially due to efforts targeting cardiovascular disease and cancer. The Danish lifespan is however only slightly higher the average lifespan in the EU and half of the Danes above the age of 65 suffer from at least one chronic disease. This is why continuous efforts are made to address SDG no 3 of reducing early deaths due to cardiovascular disease, cancer diabetes and other non-communicable diseases among other through the four national cancer plans that were launched between 2000 and 2016. In addition, the government remains focused on prevention of for instance smoking and the use of drugs and alcohol. In 2020 a broad parliamentary agreement was reached on a national action plan addressing especially children's and adolescents use of tobacco and nicotine products.

At the same time, studies show that inequality in health still remains a challenge in Denmark. Social inequality in health reflects the fact that health and disease is unevenly distributed in society. This means that social status is a determinant for the lives and general well-being of the citizens, the prevalence of both infectious and non-communicable diseases, mental health problems and the overall life span. Put differently, some groups in society fall ill earlier in life, are harder affected by severe illness and die earlier than others.

For this reason, the government will aim to address and prevent inequality in health and thereby address the overall notion of the SDGs of "leaving no one behind".

The government will furthermore prioritise mental health and well-being in the future 10-year plan for psychiatric care. The 10-year plan will ensure a coordinated and long-term approach for the development in the field of psychiatric care in order to ensure that fewer people will experience serious consequences of mental illness.

Denmark's international efforts

Denmark is a frontrunner for universal health coverage and sexual and reproductive health and rights. Denmark works actively to promote SGD 3.7 and 5.6 of ensuring sexual and reproductive health and rights for all and SDG 3.8 of achieving global access to universal health coverage for all. At the same time, Denmark has a lot to offer as a life science nation when it comes to delivery of innovative healthcare services and pharmaceutical products, for instance for the treatment of chronic diseases.

The Danish health authorities participate actively in international cooperation with the overall aim of contributing to capacity building in partner countries and thereby further access to healthcare and universal health coverage

The COVID-19 pandemic has emphasised the need for global health preparedness and response as well as the development of global norms and health standards based on scientific evidence. Denmark will continue to contribute actively to the work of the WHO and the EU in order to strengthen international cooperation in health.

The Danish government will engage actively in the ongoing discussions on a strengthened health crisis management framework in the EU. The government furthermore supports the on-going work on an in-depth evaluation of WHO-led international response to COVID-19 and a strengthening of the WHO.

With the Danish nomination to the Executive Board of the WHO in 2021-2024, Denmark will work to promote key priorities for global health, including antimicrobial resistance, non-communicable diseases, sexual and reproductive health and rights, and mental health.

SDG 4. Quality Education

Free and equal access to quality education is one of the most important tools to break negative social inheritance and secure equal opportunities for all. The government has a focus on improving the quality of education and pre-primary education. As well as focusing on a high-level of well-being throughout pre-primary education, lower and upper secondary school and the whole education system in general.

Education is vital for achieving the Global Goals as a whole. Throughout the Danish education system, pupils and students are achieving the knowledge and skills needed for contributing to a more sustainable development in the future. Furthermore, the Danish educational tradition with elements of critical thinking and competences of teamwork are important skills to reach the goals that are set.

Standardization of staff-ratio in pre-primary education

From 2024, the number of employees are regulated in pre-primary facilities by law. This measure has been taken to ensure the quality and time and for the individual child. In the financial acts from 2020 and 2021 an increasing amount of grants are earmarked the sector from 2020-2023. Furthermore, grants are earmarked more pedagogues and pedagogical assistants in facilities with vulnerable 0-5 year olds. In addition, the earmarked grants are set for upgrading skills to ensure more educated and qualified pedagogical staff from 2023 and forward. The government has also launched an action plan to ensure quality for the education of pedagogical staff.

Education for sustainable development

As a broad concept, sustainability is integrated in many ways in the school system from primary and lower secondary school to upper secondary school. In the paragraph of the purpose with the primary and lower secondary schools, it is stated, that the schools must give the pupils knowledge and skills needed for further education. The pupils must acquire the realization, that natural science and technology are a part of our culture and worldview. The pupils' responsibility towards nature and the environment is to be further developed to gain confidence in their own opportunities for opinions and taking actions when it comes to sustainable development and human interaction with nature – local and global. In addition the education system makes the pupils acquainted with Danish culture and history, give them an understanding of other countries and cultures and contribute to their understanding of human interaction with nature. The basic knowledge for participating in a society with freedom and democracy are provided through the upper secondary school, where students also learn about co-responsibility, rights as well as obligations.

In this way the pupils achieve the knowledge and skills needed for contributing to a democratic society.

High quality education

In the recent reforms of the primary and lower secondary school, and the upper secondary schools and vocational education the focus has been on strengthening the quality, academic results and the well-being for all pupils and students. The aim is that primary and lower secondary schools challenge all pupils in order for them to be as skilled as possible and reduce the implications of social background when it comes to academic results. Quality education is necessary in order to break negative social inheritance. Therefore, quality education delivers equal access to education no matter the background of every pupil and student.

Higher share of young people to complete an education or be employed

It is the government's ambition that all 25 year olds must have completed an education, be enrolled as a student or be in a form of employment in 2030. In 2030, at least 90 pct. of 25 year olds must have completed a youth education. It is a clear Danish aim that the share of young people that are not related to the educational system or the labour market must be reduced with 50 pct. by 2030. This is supplemented with the aim that a higher share of young people must choose a vocational education. More specifically, all young people (25 years old or younger) who are not enrolled or have not completed a youth education are offered guidance with proactive measures from the municipality they live in. The higher education institutions attempt to support students through a range of measures to prevent dropout, specific measures for students with decreased functionality physically or mentally in addition to the fundamental tax-funded educations and the State Educational Grant and Loan Scheme.

SDG 5. Gender Equality

Gender equality is fundamental to democracy, human rights and prosperity. Denmark has achieved a high degree of gender equality compared to international standards, but data show that there is still a long way to go before there is real gender equality in Denmark. The government is therefore continuously working to promote gender equality and thereby achieve the UN's world goal 5, just as there is a focus on promoting and maintaining a cross-cutting focus on gender equality. The government prepares i.a. each year a statement and a perspective and action plan for gender equality with initiatives across ministries.

Policies and legislation to promote gender equality in Denmark

A number of laws and bodies in Denmark support SDG 5. The Gender Equality Act aims to promote equality between women and men, including equal integration, equal influence and equal opportunities in all functions of society based on the equal value of women and men. Prohibition of discrimination based on sex, harassment and direct and indirect discrimination are included in a large number of other laws, e.g. in relation to pregnancy, maternity and equal pay. There is also an independent complaints body for gender equality cases, and the Danish Institute for Human Rights has been appointed as a national equality body with a view to monitoring the government's efforts in this area.

Efforts against physical and psychological violence as well as harmful practices

As part of the government's work to combat violence against women and girls, psychological violence was criminalized in 2019 like physical violence in the Penal Code, and work is ongoing to strengthen the services for victims of various forms of violence. Since 2019, the government has implemented a number of initiatives in this area:

- An action plan to combat physical and psychological violence in close relationships.
- Funds for more rooms in shelters and the right to psychological help for women in shelters.
- Outpatient counseling services for victims of violence and a treatment service for perpetrators of violence have been made permanent.
- A consent-based rape provision and a subsequent awareness raising campaign informing about where to get help.
- An action plan to combat trafficking in human beings.
- Combating negative social control and honor-related conflicts in ethnic minority communities, including forced marriages, child marriages, genital mutilation and re-education journeys.

- A bill on a strengthened effort against negative social control. Including a tightening of the punishment for forcibly detaining someone in a marriage or other marriage-like relationship. In addition, religious marriages of minors are prohibited.

Gender equality in the labour market

In general, women and men have a high labor market participation in Denmark. Day care and infrastructure are well developed and help to promote a high employment rate for men and women. Through the Technology Pact and the agreement on free research, talent development and research in climate change, the government is working to get more women with competencies in technology, science, engineering, IT and digitalisation in the workforce and the research environments. Although Danish women are well-educated, there is still an unequal gender distribution in managements and boards. Since 2012, Denmark has had legislation on target figures and policies to promote an equal gender distribution on the boards of private and state-owned companies. Furthermore, the government is working on how to strengthen rules and legislation in the area. A voluntary code for diversity in recruitment to boards and managements has also been established. In Denmark, women take the vast majority of parental leave, which the government tries to change with the implementation of the EU directive on 2 months of earmarked leave for each parent and through work with organizations in the labor market. The government has also established a maternity compensation scheme for the self-employed and in November 2020 launched 14 initiatives to strengthen the prevention of sexual harassment both in the labor market and in education.

Equal access to technological aids

In 2021, the Danish Parliament passed a law that obliges public authorities to send digital mail about a child to both parents. Digital technologies offer many new opportunities, but it also creates new challenges. Social media is used differently by men and women and affects their lives differently. In the spring of 2020, the government launched a campaign on digital forms of harassment, which i.a. informed young people about what is illegal online. The government expects to present a proposal on social media, as well as proposals for initiatives to strengthen digital education among children and young people.

Denmark as a global advocate for women's and girls' rights

Denmark is at the forefront globally in the fight for gender equality and women's and girls' rights. Despite significant development on gender equality, progress has stalled or even regressed in many parts of the world. COVID-19 has reinforced existing inequalities and has inter alia had serious health and socio-economic consequences for women and girls in developing countries. Particularly in relation to the increase in sexual and gender-based violence, which the UN Secretary-General has called a “shadow pandemic”. Therefore, there is a continued need for a strong Danish international commitment to women's and girls' rights and equal opportunities. Denmark is a strong global advocate for sexual and reproductive health and rights (SRHR) and provides DKK 755 million annually through development aid

to a number of international frontline organisations. Denmark's efforts are based on the recognition that women and girls' right to decide over their own body and sexuality are fundamental human rights.

SDG 6. Clean Water and Sanitation

Denmark has ensured universal and equal access to safe and low-priced drinking water and sanitation. However, Denmark has some challenges in relation to pesticides in drinking water, and Denmark's work with SDG 6 therefore mainly deals with water quality (sub-goal 6.3) and protection of ecosystems (sub-goal 6.6).

Protection of water resources and water-related ecosystems

In relation to sub-goal 6.3 on water quality and sub-goal 6.6 on ecosystems, the Danish Government has a strong focus on taking care of the groundwater and drinking water by reducing pressure from pesticides, protecting and restoring water-related ecosystems and a water sector investing in long-term and sustainable solutions. The Government has chosen to continue its work with groundwater mapping and the municipalities' program of measures for the protection of the groundwater, in order to secure the groundwater in the best possible way against pollution. As the drinking water in Denmark is based on a limited treatment of groundwater, it is thus ensured that there is also clean drinking water for many generations to come.

Denmark has a long tradition of integrated planning of water resources, including through compliance with EU regulations. In the Danish lakes and water courses, there has been an improvement in the environmental condition, and the Danish bathing water is of very high quality. The Government is working to achieve objectives for good chemical and ecological status in the Danish aquatic environment, although there are still challenges, as Danish water areas continue to be affected primarily by diffuse pollution (nutrients, organic matter and pesticides) from agriculture, but also pollution from point sources (nutrients, organic and chemical pollutions) from urban wastewater, industry and aquaculture. However, there has been a significant strengthening of wastewater treatment, and agriculture has significantly reduced nutrient emissions.

With the Agreement on a Pesticide Strategy 2017-2021 from 2017 and the Supplementary Agreement Text to the Agreement on a Pesticide Strategy 2017-2021 from 2019, a broad majority in the Danish Parliament agreed to maintain the pesticide tax and the objective of reducing the pressure from pesticides, including the pressure on groundwater. Based on the pesticide agreement, the Government has asked the municipalities to assess the risk of the protected areas near water wells against the risk of pollution from leaching pesticides and nitrate. The two pesticide agreements from 2017 and 2019 both help to regulate and increase consideration in the use of pesticides in order to take care of the groundwater and drinking water as well as protect consumers and support the fulfillment of sub-goals 6.3

and 6.6. In general, the condition in the Danish aquatic environment has improved significantly in recent decades.

Water-related ecosystems

Denmark has extensive experience in the protection and restoration of water-related ecosystems and works to protect and restore water-related ecosystems based on the implementation of EU water legislation, including the Water Framework Directive. Denmark prepares river basin management plans, which set general objectives, such as good condition in water courses, lakes, coastal waters and groundwater. This supports sub-goal 6.6 on the protection of ecosystems. Pricing of water contributes to increased awareness among citizens and companies about considerate consumption, which supports sub-goal 6.4 on water consumption.

Access to drinking water, sanitation and water supply

In support of sub-goal 6.1 on universal and equal access to drinking water, the revised Drinking Water Directive from 2020 includes requirements for member states to ensure that there is access to drinking water for all, including vulnerable groups. As part of the implementation of the Drinking Water Directive, an assessment will be carried out prior to the implementation deadline in 2023, which will indicate whether there is sufficient access to drinking water for everyone in Denmark. If the assessment shows that improvements should be made, Denmark is obliged to implement an action plan to improve this.

In relation to sub-goal 6.2 on access to sanitation, Denmark has regulations on access to proper sanitary conditions in public and private buildings, including conditions for people with disabilities. Denmark is continuously working on sewer renovation, especially in relation to handling heavy rain. Denmark does not have specific challenges in relation to sanitation, as the necessary infrastructure is in place, but there is a continuing need to expand and maintain the overall value of the sewer system. The leakage level in the Danish drinking water distribution system is among the lowest in the world with an average loss in supplies of less than 6 per cent. Efforts in this area contribute to the achievement of sub-goal 6.4.

Water resources and water supply in developing countries

Denmark is a global front-runner when it comes to efficiency in water supply and exploitation of wastewater through the export of intelligent, sustainable and efficient water solutions to the whole world. Denmark aims for a climate- and energy-neutral water sector, and have made a national Paris Model, which urges water utility companies to make goals for among others their CO₂ emission. In addition, Denmark supports developing countries towards securing water resources and water supply, including through support and cooperation with a number of global and regional organizations, among them the world's largest network organization for water, the Global Water Partnership. This helps to support sub-goal 6.5 on water resource management.

SDG 7. Affordable and Clean Energy

Danish climate and energy politics are ambitious and contributes to the goal of ensuring everyone's right to reliable, sustainable, and modern energy at an affordable price. As a pioneer within innovative climate solutions in the energy system, energy efficiency, and renewable energy, Denmark has a responsibility to contribute with solutions at a national and international level.

High energy supply security, increasing renewable energy, and energy efficiency
In accordance with SDG sub target 7.1, the Danish regulation supports access to stable energy supplies at an affordable price for all households. Denmark is advanced in its integration of renewable energy into the energy mix while maintaining a high level of energy security. Since the 1970s, Denmark has actively promoted energy efficiency through a combination of tariffs and subsidies, product requirements, and information for citizens and businesses alike. Among other things, this effort has contributed to a stable gross energy consumption since the middle of the 1970s despite the Danish GDP having grown twofold in the same period.

The 2018 Energy Agreement, the 2020 Climate Agreement, and the 2021 annual national budget included initiatives to ensure more efficient use of energy moving towards 2030. Among other things, funds have been allocated for subsidies to improve the energy efficiency of buildings and businesses. Denmark is internationally acclaimed for the development of energy efficient solutions and for expanding and integrating renewable energy into the Danish energy mix in accordance with sub target 7.3. These experiences are shared internationally through participation in international organizations and bilateral collaborations. Denmark has taken global leadership over efforts to promote SDG7, aimed to support an increase in global ambitions by taking a leadership position in the high-level dialogues regarding SDG7 at the 2021 UN General Assembly.

Energy and climate agreements: increasing Denmark's share of renewably sourced electricity

Several current initiatives support SDG sub target 7.2 of increasing the share of renewable energy. With the Energy Agreement of 2018 it was agreed to put out government tenders for three offshore wind farms. The first two wind farms are expected to be completed by 2027 and have a combined capacity of 2.2 GW. The third park will be integrated into the future energy islands. The electric system and market are crucial in supporting the green transition amid increasing consumption and production of electricity. Consequently, Denmark is working on developing its electricity market model to ensure the market's ability to support the green

transition through incentives for flexibility from producers and consumers alike. Simultaneously, Denmark is exploring opportunities to establish a secure framework for grid companies' future expansion and maintenance of the electric grid. Denmark's focus on the electric system and market is paramount to the continuous cost-effective integration of affordable renewable energy and a high level of energy security. The Climate Agreement of 2020 for Energy and Industry started a new era in Danish offshore wind expansion by establishing the world's first offshore wind hubs – the so-called energy islands. These two hubs will, once completed, have a combined capacity of 5 GW. Excess power from these offshore hubs will be able to be exported to Denmark's neighboring countries, thus contributing to the global achievement of SDG sub target 7.2. Denmark will also continue to build on its solar power and onshore wind farming, which will be supported throughout 2021 by technology-neutral government tender processes. In 2018 and 2019, these tenders yielded historically low subsidy prices thereby optimizing the return on government subsidies. This development indicates that this technology will soon be ready to be implemented without the help from government subsidies. The Danish electricity consumption is expected to be more or less covered by the production of renewable energy from around 2027.

Sustainable energy research, development, testing, and demonstrations

Historically, Denmark has held a central position in the production of windmills. This has benefitted both the climate and the Danish labor market while also to a great extent facilitating SDG sub target 7.a. Development, testing, and demonstrations of turbine prototypes are supported by government funding. Tests supported by this funding can be conducted within or without the two national test centers, Høvsøre and Østerild. With the Climate Agreement of 2020 it was agreed to continue government support for testing of wind turbines through 2021. Danish efforts in development and testing has contributed to the development of industry-leading technological solutions. Energy technology accounts for just over 13.5 percent of Danish goods export (2019). These innovations are complemented by Denmark's solid research base in universities and companies that cooperate internationally through the International Energy Agency, the EU, and bilateral research collaborations etc.

Upscaling of renewable energy and international cooperation

At the international level, Denmark contributes to the achievement of SDG targets 7.a and 7.b by supporting the development of renewable energy and improving energy efficiency through bilateral institutional cooperation with 16 countries that together represent 60% of global CO₂-emissions. The Danish Government has recently established a green strategic partnership with India and is working towards creating similar partnerships with other countries while operationalizing existing ones with new green action plans. Denmark has also been a vocal advocate on the international scene for a green recovery after the COVID-19 crisis.

The Government and the Danish pension funds have together mobilised 350 billion DKK for green investments by 2030. This effort will be further expanded internationally in the coming months before COP26 in the framework of the Climate Investment Coalition. The goal is to engage institutional investors from across the world through outreach activities and sharing of best practices and encourage them to adopt a greener approach to investing and strengthen green finance.

SDG 8. Decent work and Economic Growth

The purpose of the Danish government's policy on business and industry is to promote inclusive, sustainable and persistent growth. The government pursue a high level of employment with an accommodating working community, a fair division of growth and wealth and a strong and supportive framework for the Danish labour market model. This continuous work will contribute to the fulfillment of Sustainable Development Goal 8.

Digitization of Denmark

A more digitized production in Danish companies will improve the basis for both persistent and sustainable growth and contribute to further innovation and increased economic productivity through technological development. The government have compiled a new Danish digitalization strategy that promote that Denmark utilize the technological potential. The Government have appointed a digitalization partnership for the Danish digital future comprising of business leaders and experts from the industry, academia, civil society and unions that will discuss and provide recommendations on how Denmark shall utilize the future possibilities of digitalization (sub-goal 8.2).

Stable Framework Conditions for a Sustainable and Responsible Business

Today Denmark have a pronounced position on the world market for life science, green technology, transport and food products because Danish companies have been able to develop great ideas for global business. The Government work to secure favorable and stable framework conditions for Danish businesses so they can develop the solutions of the future. Favorable framework conditions will improve the growth in productivity and the innovative capacity of Danish companies. The Government actively encourage Danish companies to pursue societal responsibility and the Sustainable Development Goals (sub-goal 8.4).

Export: Restart after the Covid-19 Crisis

A considerable part of Danish business rely on the ability to export their goods and services abroad and export is central for the Danish economy and business and important for the achievement of sustainable economic growth. The government entered in June 2020 a broad political agreement on export initiatives among other things. With the agreement, half a billion DKK was earmarked a package of export initiatives and 15 million DKK to strengthening the export and job creation task force.

In addition, the government have appointed seven regional growth teams – covering the whole country – that will come with recommendations on how best to invest in local industry strengths and potentials so they can evolve into local business landmarks and improve growth and employment in the region. The regional growth teams will also come with recommendations on how to restart the growth specifically in their region.

The Danish Labour Market Model

A high degree of organization in strong labour unions and employers' organizations is at the core of the Danish labour market model where payment and working conditions are determined through common agreements between unions and employers' organizations. Neither the government nor parliament intervene in the labour market process. The Government works to improve the framework for the model without influencing the unions and employers' organizations negotiations.

Sustainable Tourism

The government has in December 2019 initiated the process of compiling a new national strategy for sustainable growth in the Danish tourism industry (sub-goal 8.9).

Denmarks International Efforts

Denmark strongly supports job creation and sustainable growth in developing countries through development cooperation. This is done by directly supporting activities in a number of priority countries and through Denmark's engagement in international institutions. Denmark also supports the establishment of new partnerships for the promotion of sustainable growth between Danish companies, NGOs and local companies in developing countries, where economically sustainable projects are developed to promote jobs and strengthen income generation. Denmark has also established partnerships with development actors, which focus on corporate social responsibility.

In addition, Denmark seeks to promote sustainable economic growth through trade policy, including through EU trade agreements. Finally, the focus on attracting green foreign investments in all of Denmark is being strengthened.

SDG 9. Industry, Innovation and infrastructure

The Government have a clear target of reducing greenhouse gas emissions with 70 % in 2030. In order to reach the target the Government have established a close co-operation with the business community in the form of climate partnerships. The Government supports the application of green technologies and green fuels by converting parts of the industry's energy consumption. The Government further pursue infrastructure that support sustainable development by focusing on climate friendly materials and recycling, stipulate requirements for sustainable infrastructure in public tenders and by working towards regulation that can support CO₂e-friendly solutions.

Climate Partnerships

Thirteen climate partnerships have been established in the sectors of trade and industry, which include production companies, energy-intensive industry, the energy and utilities sector and land transport among others. The work in the climate partnerships is monitored by the Green Business Forum, which will strengthen the dialogue on the green transition between the Government, the business community and the labour movement. (Sub-goal 9.2)

Electrification Strategy

In extension of the Climate agreement of 2020, the government will present an electrification strategy primo 2021. The strategy will set the course for increased electrification of the Danish society and industry (sub-goal 9.2).

Technology Pact

Through the technology pact, the Government supports projects that motivate the Danes for focusing and educating themselves in effective infrastructure and inclusive and sustainable industrialization with focus on all age groups from pre-school to post-graduate education (sub-goal 9.4 and 9.5).

Green Start-up Culture

A strong start-up culture is part of a dynamic and innovative business community that can create new solutions and products as well as new Danish jobs. This is especially true in the green sector. In order to promote this, the government have established Denmark's Green Future Fund that among other things will help green start-ups and companies with risk capital for development and diffusion of green solutions. (Sub-goal 9.3)

A Sustainable Infrastructure

The Government focus on reducing the road system's negative impact on the surrounding environment through pursuing improved traffic safety, environment, biodiversity and noise. Focus is on climate friendly materials and recycling for instance through development of climate friendly asphalt and green concrete and through requirements for contracts in public tender. Equally the government focus on the development and extension of biking infrastructure with the purpose of promoting biking as a sustainable and health promoting transportation. (Sub-goal 9.1 and 9.2)

A Sustainable Industry

The Government support increasing electrification across all sectors of society including several industrial processes. Equally, the Government support the extension of the production of biogas and other green gasses through the planned public tender, which increase the share of sustainable energy in the gas consumption. Latest the Government have supported this development with the decision on establishing a gas pipe to Lolland-Falster in order for the sugar mills to utilize the increasing supply of green gas.

The government will with reference to the 2018 Energy Agreement present a gas strategy that will address the gas systems role in the green transition among other things. Further, with the 2018 Energy Agreement, the 2020 Climate Agreement, and the 2020 green tax reform the Danish Government has allocated funds to a business reserve for green transition and energy efficiency in the industry. In extension of the 2020 Climate Agreement the Government will present an electrification strategy in 2021. The strategy will include scenarios for the role of electrification in relation to the 70% target and will state a series of indicators of the increased electrification of the Danish society including industry (sub-goal 9.2). Further, the Danish Government will present a CCS-strategy, which can support the reduction of CO₂ emissions from business processes that are difficult or impossible to avoid without CO₂ capture.

Denmarks International Efforts

Denmark works internationally for the improvement of developing countries possibilities for developing and financing sustainable infrastructure projects through the Global Infrastructure Facility among other things. In addition, Denmark supports concrete projects through the Investment Fund for Developing Countries (IFU), which through expert assistance and cheap debt finance support the preparation and execution of sustainable and climate friendly infrastructure projects in the world's poorest countries.

Finally, Denmark support the spread of green and sustainable solutions with a number of high-income countries. The effort have focus on the export of green and sustainable solutions through business alliances and partnerships with authorities. In addition to this Denmark work on securing the jobs of the future by focusing on the attraction of foreign investment that contribute with innovation, new knowledge and new technologies to Denmark including to the green transition.

SDG 10. Reduced Inequalities

The government focuses on fighting inequality in Denmark and the rest of the world.

Strengthen efforts for children and young people

The policy area on vulnerable children and young people aims at strengthening the personal resources of vulnerable children, young people and their families.

The children need to get the right help and support early in their lives, in order to provide the children and young people with the same opportunities for personal development, health and an independent adulthood as their contemporaries. It is the government's intention to improve the living conditions for vulnerable children and young people. All children have the right to a safe childhood with school, friends, leisure and adults who can take care of them. In January 2021, the government presented the initiative 'Children First'.

The initiative contains i.a. a proposal for a completely new Child's Act to ensure that the child's voice is heard and that the child's wishes and needs has the highest priority.

Strengthen efforts for the inclusion of persons with disabilities

Denmark has a strong welfare system that supports the possibilities for persons with disabilities to participate in society on equal terms with other citizens. For example through concrete and individual assessments of the need for compensation as well as universal tax financed social benefits.

Currently, the government is working on a range of initiatives to strengthen the inclusion of persons with disabilities in society and to reduce discrimination. This work contributes to target 10.2 on empowering and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status and target. Plus target 10.3 on ensuring equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard.

In 2018, the Danish Parliament passed the Act on Prohibition against Discrimination on Grounds of Disability, which prohibits discrimination outside the labour market due to a disability. According to this act, the Danish Board of Equal Treatment can consider complaints of discrimination due to a disability and the Board may award compensation and invalidate dismissals. On 1 January 2021, an amendment to this act came into force, underlining the right to reasonable accommodation in public and private schools and day cares and providing the Board of Equal

Treatment the competence to consider complaints and award compensation for lack of reasonable accommodation. The purpose of this amendment is to avoid discrimination of children and young people with disabilities in schools and day cares and to ensure that they have the same possibilities for participation as other children and young people. This way, they can attain better possibilities for inclusion and equal treatment in society.

Furthermore, The Danish Disability Counsel is planning to continue an anti-discrimination campaign in 2021 aimed at removing prejudices on children with disabilities among children without disabilities and fostering inclusion of children with disabilities.

In December 2020, the Parliament passed an act obligating municipalities in Denmark to start the preparation of the transition into adult life for young people with disabilities when they turn 16. The transition into adult life is especially difficult for young people with disabilities because it often entails important changes and decisions for example regarding education, housing and help and support according to the legislation. The act came into force 1 January 2021

Facilitation of safe, orderly and regular migration and mobility of persons

The Danish Government's aim is for all migration to take place in a safe, orderly and regular manner, which is why Denmark actively work towards combatting irregular migration. The Danish efforts in this regard are an inherent part of the Government's endeavor to create a fair and humane asylum system, and the day-to-day work in the EU, where Denmark focuses on actions along the migratory routes in order to establish new and strengthening already existing partnerships with third countries on migration. In sum, all these efforts to contribute to the achievement of objective 10.7 on the facilitation of safe, orderly and regular migration and mobility of persons.

As part of the Government's work to establish a more fair and humane asylum system, the Government also supports controlled resettlement of refugees through the UN, thus making resettlement the primary path for obtaining protection in Denmark.

One of the fundamental conditions for orderly migration is effective cooperation on return and readmission, which is also a key priority for the Danish Government. Since 2017, Denmark has annually been allocating funds from the development budget (ODA) to projects that promote both development purposes and facilitates cooperation on return and readmission in countries of origin. In 2021, the Danish Government has allocated 110 Million DKK of the state budget to facilitate return and readmission, and 190 million DKK is additionally allocated to promote the work of creating a fair and humane asylum system, i.e. through broad capacity building efforts in the area of migration handling.

Development policy focus on global inequality

Globally, things are moving in the wrong direction with inequality rising both within and between countries. This includes economic inequality in terms of income and wealth disparities, political inequality in terms of discrimination and lack of social participation, climate inequality where vulnerable countries and populations are affected the most, and social inequality in terms of for example gender equality. Denmark addresses these international trends through development co-operation – both through a crosscutting effort, but also in individual countries. This is done through Denmark's strong focus on gender equality, efforts on democracy, human rights and good governance, and through an increased focus on addressing the consequences of climate change. Thus, Denmark focuses on both the underlying structures of inequality, but also on ensuring that concrete efforts benefit the poorest and those most in need.

SDG 11. Sustainable Cities and Communities

Denmark is well on track to attain SDG 11. The government's ambition is for Denmark to be a cohesive country where you can live, work and educate yourself in all parts of the country. Cities must offer an opportunity for people to meet across economic and social differences, because this supports the cohesion that the welfare state presupposes. Therefore, the government will take a stand against the centralization in Denmark and ensure mixed cities.

Mixed cities

Mixed cities and a cohesive Denmark are the starting point and objective for a large part of the initiatives that the government is presenting these years. There is a focus on reducing the environmental impact in cities, ensuring access for citizens to green spaces and preserving cultural heritage. The new initiatives are a continuation of many years of effort, which means Danish cities are generally safe. In addition, virtually all citizens have access to housing of a good standard and access to basic services such as water, sanitation and electricity. A solid basis has thus been established for Denmark to live up to SDG 11 on inclusive, safe, robust and sustainable cities and local communities.

In order to make cities more mixed, national focus has been on the social housing areas with more than 1,000 residents, which are characterized by significant social, employment and integration challenges. A number of initiatives have been adopted to dissolve and prevent parallel societies and make the residential areas an integral part of the surrounding city. This is evident in the parallel society agreement from 2018, which involves physical transformation, social efforts, renovations, infrastructure changes, efforts for a more varied mix of residents and other initiatives that can contribute to a mixed composition of housing and residents (target 11.3).

Housing prices in Denmark

As an instrument for ensuring mixed cities and lower housing prices, municipalities can demand 25 percent social housing in new housing areas, which means that housing is being built that can be paid for by citizens with average and low incomes. In Copenhagen, new urban development areas have been established and further area expansions are planned using surplus soil from construction work in the Port of Copenhagen. The city grows bigger which creates new opportunities for housing. There is thus an ongoing adjustment of the supply of housing in the cities, which supports the provision of affordable housing (target 11.1).

Sustainable transport and traffic safety

The infrastructure and transport systems in Denmark are well-functioning, and Denmark is systematically working with safety – both in relation to accident statistics and in relation to efforts that specifically improve traffic safety. The transport companies in Denmark focus on creating attractive ticket products for the travelers that are both affordable and adapted to the passengers' travel patterns. Furthermore, Denmark has improved the accessibility of the railway system and ensured alternative travel options for people with severe mobility impairments who do not have the opportunity to use public transport in Denmark on their own (target 11.2).

Protection and preservation of the world's natural and cultural heritage

In Denmark, both the state and the municipalities make a significant contribution to protect and preserve the world's natural and cultural heritage. On an international level, this happens through participation in UNESCO conventions, European conventions and directives and other international cooperation. In the field of culture, on a national level the protection manifest itself in the Museums Act and the Building Conservation Act, and the municipalities with world heritage sites make a significant contribution by including the protection of the areas in municipal planning (target 11.4).

Green transition

With its agreement on a climate plan for a green waste sector and circular economy from June 2020, the government has initiated a green transformation of the waste sector, among other things by focusing on increased sorting and recycling of waste as well as less import and incineration of waste. In recent years, several measures have also been taken to reduce air pollution, especially in cities, including an update of the environmental zone rules, a scrapping scheme for old diesel cars and stoves, stricter control of lorries' NOx exhaust to avoid cheating, sulfur monitoring of ships and the promotion of environmentally friendly cruise tourism (target 11.6).

Green public spaces

In addition to limiting the environmental impact, the Nature Conservation Act ensures that the public has the right to visit beaches and dunes, uncultivated areas, forests and along roads and paths in the open country. Both the state and the municipalities are also continuously working to establish roads and paths to nature areas as well as living areas. The Danish Nature Agency establishes many disability facilities on state land and describes the disability friendliness in all hiking leaflets (target 11.7).

SDG 12. Responsible Consumption and Production

The annual consumption of natural resources per capita in Denmark is 22 tons, which is significantly higher than the EU average of 14 tons. Further, Denmark produces the highest amount of municipal waste, 800 kg per capita, in the EU. In this context, SDG 12 on achieving sustainable consumption and production patterns represents a particular challenge for Denmark. In response, the government has charted an ambitious course in the transition to a more circular economy. The government also actively supports an ambitious transition to a circular economy in the EU.

Less waste and better utilization of natural resources

The government of Denmark's vision for the circular economy includes an ambition to reduce waste, and Denmark supports the European Commission's expected proposals for quantitative waste reduction targets. In addition, the government is working to ensure that the EU adopts a coherent legal framework for products that make sustainable consumption and production easy, transparent and credible for consumers and producers, while reducing environmental and climate impact. The Government's proposed Action plan for circular economy focuses, among other things, on sustainable design, recycling, life-extension and green public procurement. The plan ensures Denmark's fulfillment of SDG target 12.1 of adopting a national action plan for sustainable consumption and production.

The government is working to support a more circular economy through various initiatives including implementing the Ecodesign Directive and promoting the Nordic Swan Ecolabel and the EU Ecolabel. Ecolabels widen the understanding of sustainable production and consumption from a life cycle perspective, which supports SDG targets 12.2 on more efficient use of natural resources and 12.8 on ensuring that people have the relevant information and knowledge about sustainable lifestyles. Denmark is also working to achieve SDG target 12.4 on environmentally sound handling of chemicals and waste products through a targeted effort for safe handling of chemicals and waste.

Denmark is a frontrunner on SDG target 12.7 on sustainable public procurement. In October 2020, the government launched a strategy for green public procurement, which includes requiring eco-labeled and total economic procurement as well as a national food policy. The strategy also entail work on developing further guidelines, requirements and tools for green procurement.

More and better recycling

Denmark is among the countries in the world that sends the least amount of waste to landfill. Instead a relatively large share of waste is incinerated. In June 2020, the government entered into a political agreement on a Climate plan for a green waste sector and circular economy to increase recycling. The agreement includes measures for increased and more streamlined waste sorting, strengthened and risk-based waste supervision, and a reduction in the capacity of Danish incineration plants, so that Denmark reduces the import waste containing plastic for incineration. The agreement supports SDGs 12.1, 12.2 and 12.5 through more recycling of waste.

Less food waste

To achieve SDG target 12.3 on food waste and food loss, Denmark focuses on reducing food waste through public-private partnerships, legislative changes, focus on business opportunities for the donation of food, designation of a national official food waste day, and deepening consumers' understanding of "best before" dates. In 2019, the government set up a think tank on Prevention of Food Loss and Food Waste, ONE \ THIRD. The think tank runs Denmark's voluntary agreement on reducing food waste, where the Danish food industry pledged to measure and reduce their food waste and food loss by 50 percent by 2030.

Sustainable construction

In March 2021, the government entered into a political agreement on a strategy for sustainable construction, which focuses on, amongst other areas, increased quality, durability and health in construction, less resource consumption to promote strong sustainable buildings with a long life span and construction processes with less material waste and defective work. The strategy contributes to achieving SDG targets 12.2, 12.4 and 12.5 on sustainable resource consumption, environmentally sound management of chemicals and wastes throughout their life cycle and substantially less waste generation, respectively.

Plastic in a circular economy

In order to achieve the government's vision of moving 80 percent of Danish plastic waste away from incineration in 2030, a reduction of unnecessary consumption of plastic and more recycling of plastic waste is required. This includes bans on certain disposable plastic products, specific sectoral requirements for higher collection of plastic waste and the extended producer responsibility for packaging, which through contributions must create an incentive for circular design and consumption of plastic packaging, which makes up a large part of the total plastic waste. Denmark has also been at the forefront of the effort to reduce the use of plastics and plastic pollution through a central role in the European Plastics Pact, which focuses on increasing the recycling of plastics and reducing the use of unnecessary plastics. Overall, these measures help to achieve SDG targets 12.2 and 12.5.

SDG 13. Climate Action

Denmark works ambitiously both nationally and internationally to fight the climate crisis and its consequences. Denmark has adopted a Climate Act to secure a reduction in greenhouse gas emissions in 2030 by 70% compared to the level of emissions in 1990, and achieve a climate-neutral society by 2050 at the latest. Due especially to the many climate initiatives undertaken since the change of government, so far a 55 % reduction of greenhouse gas emissions in 2030 relative to 1990 is expected. In Denmark, since the change of government, decisions have been made, which together secure an expected reduction of [7.2] million tonnes of CO₂ in 2030. In 2020, the Government launched the first long-term Danish strategy for a global climate effort, “A green and sustainable world”. Internationally, Denmark contributes through the UN and the Paris Agreement, government co-operation, climate diplomacy, export promotion efforts and green development assistance.

The Climate Act

Denmark has adopted legislation in order to secure a significant reduction in the greenhouse gas emissions towards 2030 and beyond. The Climate Act sets a legally binding target of reducing greenhouse gas emissions by 70% compared to 1990, and a long-term target of climate neutrality by no later than 2050 in regard of the 1.5 degrees °C ambition of the Paris Agreement. Furthermore, the Climate Act mandates the setting of a national climate target every five years, with a 10-year perspective towards 2050. The broad political support of the parties of the Danish Parliament makes the law legally binding for the future. The at any time incumbent Minister of Climate and the Government will be obligated to meet the Climate Act targets.

Along with the Climate Act, an annual Climate Programme is introduced, which will provide a status on the fulfillments of the national climate targets, present the Government’s climate initiatives and provide an assessment of whether it appears probable that the national climate targets will be reached. This amongst other things contributes to the fulfillment of sub target 13.2. The Climate Act requires the Government to present a climate action plan with a ten-year perspective, at least once every five years and, as a minimum, in connection with setting the climate targets. The Climate Act will also contribute to Denmark achieving other climate commitments such as the EU commitment on a 39% reduction of greenhouse gas emissions in 2030 relative to 2005 in the non-ETS sectors.

Climate policy agreements and climate partnerships

Denmark emitted 46,7 million tonnes of CO₂e in 2019, which is a 40% reduction of total greenhouse gas emissions compared to 1990. Since there has been made a number of policy agreements and the Government has established 13 Climate partnerships with the Danish business community to ensure that the business community will contribute to reducing greenhouse gasses and to strengthen their green competitiveness. The newest projection of greenhouse gas emissions from April 2021 shows an accumulated reduction of 8,2 million tonnes CO₂e in 2030 since the last projection from June 2020, a reduction largely caused by the many climate initiatives undertaken in the energy, industry, waste and transportation sectors.

The climate agenda has achieved great attention among the Danish population. The Government has therefore launched a number of initiatives in order to promote public knowledge on how to counteract climate change, which contributes to sub target 13.3. The Government has initiated the first Danish citizens' council on climate, strengthened the Youth Climate Council, and launched a number of initiatives to promote information and awareness about the climate footprint of food consumption.

Climate change adaption

Due to its geography, Denmark is facing multiple challenges, especially floods, because of climate changes. This is addressed through a range of actions in municipalities, at national- and at EU-level, including initiatives using advanced geographic elevation models and a cross-cutting portal for adaptation to climate change presenting knowledge, tools and data for climate change adaption initiatives. Furthermore, the Danish Government has taken initiative to new regulation supporting the wastewater companies' climate change adaption actions. These actions are contributing to fulfilling sub target 13.1. Finally, the development of a new national climate adaption plan was initiated in 2020.

Global climate action and green development aid

The government is aware that the Danish greenhouse gas emissions constitutes only 0.1 pct. of the global emissions. Therefore, the goal for the Danish climate action is to have a global impact. Denmark has a strong position and solid solutions in regards to the development and integration of sustainable energy and energy efficient solutions. These solutions are brought into play through e.g. bilateral institutional cooperation, where Denmark supports the transition from fossil fuels to green energy as well as the distribution of energy efficiency and electrification in 16 countries. Through the United Nations Framework Convention on Climate Change (UNFCCC), Denmark is advocating for strengthening intergovernmental cooperation and the establishment of a credible framework around the global efforts, as well as mobilizing climate finance and increase global ambitions on climate.

Through bilateral cooperation, Denmark supports developing countries in regards to the green transition and adaptation to climate change. Denmark provides climate-related aid through bilateral and multilateral assistance to partner-countries, international institutions and climate funds, to support climate action developing countries. Denmark's climate related development aid for 2019 constituted 2.1 billion DKK. The funding is expected to increase in the years to come. Furthermore, Denmark contributes to the mobilization of public and private finance for climate action in developing countries through the Investment Fund for Developing Countries (IFU) and co-ownership of a number of multilateral development banks. In addition, Denmark has doubled the contribution to the Green Climate Fund to a total amount of 800 billion DKK during 2020-2022 in support of projects regarding mitigation and adaptations in developing countries in accordance with sub target 13.a and 13.b.

SDG 14. Life Below Water

The government is committed to achieve good environmental status in the marine environment and at the same time enable sustainable use of the Danish marine waters. It is done, among other things, through Denmark's commitments to implementing EU legislation, including marine strategies, water management plans, Natura 2000 plans and Denmark's first maritime spatial plan. Furthermore, Denmark contributes to SDG 14 through its commitment to regional and international work related to the marine environment and sustainable management of the seas as well as the EU's common fisheries policy.

Marine strategies and measures in Danish waters

Ongoing efforts are made to achieve good environmental status in the Danish waters, including the implementation of EU regulations such as the Water Framework Directive, Marine Strategy Framework Directive and the nature directives, as well as commitments under international agreements such as HELCOM, OSPAR, MARPOL and the UN Convention on the Law of the Sea (UNCLOS). Denmark's first maritime spatial plan intends to ensure sustainable development and growth in the maritime sector, using an ecosystem-based approach by promoting the coexistence of various relevant activities and uses.

Denmark develops marine strategies and water plans with the aim of achieving or maintaining good environmental status in the marine environment. The work of the two regional sea conventions HELCOM and OSPAR also contributes to achieving this objective. The marine strategy and water plans contribute to the achievement of the sub-goals 14.1 on the reduction of marine pollution, 14.2 on the protection of ecosystems, 14.4 on sustainable fisheries and 14.5 on the protection of coastal and marine areas.

In connection with the marine strategy, a number of targets and measures are set in order to achieve good environmental status. Among other things, targets and measures have been set for emissions of nitrogen and phosphorus as well as marine litter. Initiatives that seek to reduce the emissions of nutrients are implemented by means of the water plans (14.1).

In relation to sub-goal 14.5 on the conservation of sea areas and coasts, approximately 19 percent of Danish coastal and marine areas are designated as protected areas. In addition, the Ministry of Environment has proposed the designation of new marine protected areas which will increase the protection to 29.6 per cent.

Focus on the sea and climate

Sub-goal 14.3 concerns minimizing the impact of ocean acidification. Denmark is committed to ensure healthy marine ecosystems that are resilient to ocean acidification. This is done, among other things, by ensuring that the impacts from human activities are at sustainable levels - also in the time of a future climate. Furthermore, efforts are made to achieve good conditions for eelgrass and macroalgae communities, both of which store carbon and thus help to limit acidification in Danish waters. Efforts such as the restoration of rock reefs contribute to the spread of macroalgae communities. Denmark also participates in the Nordic Council of Ministers' work on ocean and climate.

Fishery

Denmark works within the framework of the EU Common Fisheries Policy for more sustainable fisheries, better resource utilization and ecosystem-based fisheries management. It is in Denmark's interest that more stocks are utilized within the levels that provide maximum sustainable yield.

A landing obligation (ban on discards) has been introduced as a general principle in fisheries. This leads to the elimination of a large waste of resources in the form of especially many juvenile fish that were previously discarded. Nationally, Denmark has initiated a project with electronic monitoring on a number of fishing boats in the Kattegat to protect the vulnerable cod stock, and to support the compliance with the landing obligation. Additionally, efforts are made to revise the EU fisheries control system to ensure better compliance with and control of the EU Common Fisheries Policy.

At the national level, Denmark supports coastal fishermen through a special voluntary scheme, which makes low-impact coastal fishing more attractive. Furthermore, in 2021, a new public labeling scheme has been established for fish caught with low-impact fishing gear and which come from sustainable stocks. These measures contribute to sub-goal 14.4 on sustainable fishing, sub-goal 14.b on supporting small-scale fishermen and 14.6 on fisheries support schemes.

Green shipping

Denmark is working both in international fora and in the context of strategic sector collaborations to strengthen efforts for green shipping, including making ships more energy efficient, so that fewer harmful particles are emitted. The efforts also include the work of implementing and developing the Ballast Water Convention in the IMO, which is intended to prevent the introduction of non-native species from ships' ballast water, which contributes to sub-goal 14.1.

International commitment

Denmark is committed to create new international agreements on marine plastic litter, marine protected areas beyond national jurisdiction and new, global nature targets, including a target on 30 percent marine protected areas globally, contributing to sub-goal 14.1, 14.2, and 14.5.

The focus on Ocean Governance is internationally, and Denmark is an active player in this area. At the regional level, Denmark is working to implement the EU's strategy for Ocean Governance. This strategy builds on the framework set out in the UN Convention on the Law of the Sea (UNCLOS) as well as the implementation of the development goals in all EU policies.

SDG 15. Life on Land

Denmark is continuously working for protection, restoration and sustainable use of ecosystems and forests, as well as promoting biodiversity. This is done through national legislation, EU directives and a number of international UN conventions on climate, biodiversity and desertification. The Danish Government wants to increase the amount of wild nature, set aside forest and continuous nature areas, where nature can develop on more natural terms than today. The Danish Government therefore supports the European Commission's biodiversity strategy, which among other things will lead to more protected areas in the EU and an ambitious EU position in the international negotiations on a new global biodiversity agreement.

Denmark's Nature

Approximately 60 pct. of Denmark's area is agricultural land. The area of open habitats has decreased significantly in the last century, but is now relatively stable at around 10 pct. of the territory of Denmark. The forest area has been steadily increasing for several hundred years. Today, forests cover almost 15 pct. of the country's area, and the Danish Forest Act aims, among other things, to promote sustainable forestry and to increase the forest area and thus the fulfillment of sub-goal 15.1 on conservation, restoration and sustainable use of ecosystems and 15.2 on sustainable management of forests and afforestation, etc. Denmark's national forest program from 2018 maps challenges and opportunities in the forest area and sets goals and direction for a sustainable development of Denmark's forests, including goals for the forest area and biological diversity, which also contributes to the fulfillment of sub-goals 15.1 and 15.2.

Framework for Nature Management

As a small country with a dense population and intensive land use, Denmark is constantly working to optimize the utilization of resources and land in a sustainable and environmentally friendly way. A challenge for Denmark is that large parts of the Danish nature areas under the EU Habitats Directive are in an unfavorable condition. This applies to many forests, meadows and coastal nature types. An important framework for Danish nature policy is the Nature Conservation Act, but also the EU's nature directives and the EU regulation on the control of invasive alien species. The 1979 Birds Directive and the 1992 Habitats Directive aim to promote biodiversity in the Member States by defining a common framework for the protection of all wild birds and of species and habitats relevant to the EU. This is mainly achieved through legislation on hunting and through designation and management of special areas of conservation. These EU directives and regulations help to support Denmark in meeting sub-goals 15.1 on ecosystems, 15.5 on biodiversity and habitats and 15.8 on invasive species.

The EU Water Framework Directive and its Danish implementation provide direction and set the level of ambition for efforts to protect aquatic ecosystems, which contributes to sub-goal 15.1. As a follow-up to the EU regulation on invasive alien species, Denmark has prepared a national action plan, and campaigns are continuously launched to combat various invasive species, which supports the fulfillment of sub-goal 15.8 on invasive species.

International Cooperation and Conventions

The Danish Government wants the production of agricultural products to be responsible and deforestation-free, and is working to ensure that Danish companies make ambitious demands on their agricultural products. Denmark is active in the fight against international deforestation, including through the Amsterdam Partnership, which seeks to support initiatives that can promote responsible and deforestation-free production of agricultural raw materials such as soy, palm oil and cocoa, which contributes to sub-goal 15.2 on deforestation.

On a global scale, Denmark is active in the UN Convention on Biological Diversity and has ratified the international agreement on access to and exploitation of genetic resources – an agreement that protects biodiversity by ensuring a fair distribution of benefits. This helps to meet sub-goal 15.6 on access to genetic resources. In addition, Denmark also participates in international cooperation on combating trade in endangered animals and plants under the CITES Convention, protection of migratory species under the Bonn Convention (CMS) and protection of wetlands under the RAMSAR Convention. These efforts help to meet sub-goal 15.1 on ecosystems, 15.5 on biodiversity, and 15.7 and 15.c, both of which deal with poaching and protected species. Denmark's primary contribution to sub-goal 15.9 on implementing the UN's Strategic Plan for Biodiversity is through the EU's Biodiversity Strategy.

Strengthened efforts in the field of nature

The Danish Government wants to strengthen the efforts concerning nature. There is a need for an increased amount of wild nature, set aside forest and continuous nature areas, where nature can develop on more natural terms than today. In June 2020, the government entered into an agreement with the Danish Social-Liberal Party, the Socialist People's Party, the Unity List and the Alternative on designating more set aside forest and on the establishment of Denmark's first two nature national parks. In addition, the Government entered into an agreement in December 2020 with the above mentioned parties on a nature and biodiversity package to promote nature and biodiversity in Denmark, including through designation of up towards 75.000 hectares of set aside forest, establishment of an estimated 13 new nature national parks making a total of 15 nature national parks and preparation of a strategy on the management of endangered species. The agreement broadly helps to support SDG 15.

SDG 16. Peace, Justice and Strong Institutions

Increased security in the public space

It is a key priority for the Danish Government to provide security for the Danish population and thus contribute towards the fulfillment of Global Goal no. 16 concerning the promotion of peaceful societies. This will happen i.a. through initiatives in the Government's security policy package from October 2019, initiatives to combat insecurity-creating behavior, and initiatives in the agreement between the Government and a number of the Danish Parliament's political parties on the economy of the police and the prosecution service for the years 2021-2023.

Combating violent extremism

The Danish Government has a strong focus on combating extremism, radicalization and terror, which contribute towards the fulfillment of target 16.a on combating terrorism and crime. The Government has i.a. initiated work on an action plan against anti-Semitism with a holistic approach to the problem. Moreover, the Government has increased penalties for terrorism and terror-like activities, and has created the possibility to impose location bans and contact bans on convicted foreign fighters.

The rule of law and ensuring access to legal assistance

The Danish Government is working for a reduction in the processing time of criminal cases, which contributes towards the fulfillment of target 16.3 on promoting the rule of law and ensuring equal access to justice. Furthermore, the Government has set up a pre-legislative committee to review the existing rules on legal aid in civil cases in order to ensure that everyone has access to legal assistance and to the courts.

Freedom of expression

Based on the conclusions of the Commission of Freedom of Expression in report no. 1573/2020 about the framework and conditions for freedom of expression in Denmark, the Government will introduce a bill increasing the penalty for threats aimed at preventing others from expressing themselves and participating in the public democratic debate. This initiative contributes towards the fulfillment of target 16.10 on ensuring public access to information and protecting fundamental freedoms.

Combating organized crime and corruption

The Danish Government wants to ensure protection against financial and organized crime, which contributes towards the fulfillment of i.a. target 16.4 on combating organized crime and illicit financial and arms flows. A more specialized and effective approach must be developed so that the authorities are ahead of the development of crime and the methods of the organized criminals.

Furthermore, the Government focuses on measures to combat human trafficking. As part of the agreement on the economy of the police and the prosecution service 2021-2023, a new national investigation-unit is being established where the most specialized competences of the police and the prosecution service will be gathered with the aim of strengthening the effort against the most complex financial and organized crime.

International peace and state building

Through integrated efforts, Denmark supports conflict prevention and peace and state building in fragile and conflict-affected countries. The Peace- and Stabilization Fund is a central Danish instrument for tackling challenges such as violations against local populations, irregular migration flows and breeding grounds for extremism. The efforts thus primarily contribute to Global Goal 16, including target 16.1 on reducing all forms of violence and related death rates everywhere, as well as target 16.a on preventing violence and combatting terrorism by strengthening relevant national institutions. In addition, the Fund's engagements contribute to Global Goal 1, 2, 3, 5, 6, 8, 14, and 17.

International cooperation

As a continuous contributor to UN peacekeeping operations, particularly in Africa and the Middle East, Denmark is actively supporting the UN reform agenda. As a part of the Danish candidacy for the UN Security Council 2025-26, the Danish Government will strive to maintain momentum in the reform work.

Denmark must once again be a pioneering country in the promoting of the women, peace and security agenda. The Danish Government has increased efforts to ensure the active and meaningful participation of women in all aspects of the work with peace and security. Denmark must support sustainable development based on human rights. Denmark will continue to focus on the link between the Global Goals and human rights and will work to ensure that the Global Goals are implemented in line with the human rights-based approach (HRBA).

SDG 17. Partnerships for the Goals

The strengthening of the global partnerships is an essential element in achieving a more sustainable world in 2030, and Denmark is ambitiously working for goal 17.

Denmark's development cooperation

Denmark's development aid is 0.7 percent of the Danish GNI, which makes Denmark part of a small leading circle of countries that comply with the UN's 0.7 percent aim. Denmark has fulfilled the target in more than 40 years (sub-target 17.2). It is a crucial part of the governments approach and development policy that Denmark plays and continues to play a key role in international development cooperation as a credible and respectable partner that lives up to our international responsibility. Denmark is a pioneering country that inspires other and larger countries and economies to follow our lead.

Partnerships, ambitious alliances, mobilization of investments and strategic sector cooperation

Denmark has a strong tradition for public-private cooperation with diverse actors on both national and international level. Denmark has shown that partnerships can contribute to solutions, that promote sustainable and climate resilient societies. This is needed to achieve the sustainable development goals and the Paris Agreement (sub-target 17.17 on partnerships). Over the past 5-10 years, Denmark has worked to promote the mobilisation of private capital for investments in the sustainable development goals (SDGs) through public-private investment partnerships. This has primarily been done in cooperation with the Investment Fund for Developing Countries (IFU) and Danish pension companies. In 2018, the SDG Fund was launched with a total capital base of DKK 4.8 billion DKK. 60 percent has been mobilised by a number of pension companies and private investors, while the state provided 40 percent, of which DKK 100 million is from the development aid budget and DKK 800 million come from a state's guarantee. In total, the SDG Fund is expected to mobilize DKK 30 billion for sustainable investment in the development countries.

In 2020, the government established Denmark's Green Future Fund. The aim of the Future Fund is to contribute to A green transition – in Denmark and the rest of the world. The Future Fund will mobilize private green finance to supplement private actors and help build the required bridges between green projects and private sources of finance. What is required are partnerships that are able to develop and disseminate green technology. With the Future Fund, the IFU was reinforced with 1 billion DKK to ensure more private investment in green solution in the development countries.

Through the strategic sector cooperation – cooperation between Danish authorities and authorities in developing and middle-income countries – the Danish contribution to the UN’s sustainable development goals and the Paris agreement is strengthened. It has a special focus on green transition and sustainable development. The purpose of the cooperation is to improve framework conditions, regulation, enforcement, policies etc. in sectors where Denmark has particular strengths in the terms of expertise and technology in the public and private sectors. The strategic sector cooperation is implemented in 18 countries with the participation of 13 Danish authorities.

Free trade through EU and WTO

Denmark’s trade policy is conducted through the EU, where Denmark has supported the agreements and arrangements that make the EU the most open market for development countries, especially sub-Saharan African countries. The EU’s negotiation directives for the economic partnership agreements with developing countries have been updated to reflect international agreements relevant to trade and development, including the SDGs and the Paris Agreement. Denmark has succeeded in influencing the directive in order to ensure, among other things, that trade and sustainability must be promoted in relation to climate, environment, labour rights and gender equality. Through its Aid-for-Trade program 2018-2020 (170 million DKK), Denmark has provided support to the Aid-for-Trade organizations in Geneva to promote integration of small and medium-sized companies in global and regional value chains and the implementation of the WTO’s Trade Facilitation Agreement (TFA).

Denmark’s initiatives looking ahead

Denmark will continue to support international partnerships and alliances between government, companies, cities, financial institutions and the civil society. By combining knowledge, innovation and technology across sectors, we can find new solutions to global challenges. There is international recognition of the fact that the private sector plays a crucial role in achieving the SDGs and the Paris Agreement. At the same time, the business sector is showing a growing interest in social responsibility and sustainability, both environmental and social.

Denmark will support companies in transitioning their global product and supply chains to limit their impact on the climate, while still creating the best terms for poor small farmers and factory workers in production countries. In cooperation with Danish and international partners, the government will take action against value chains, where Danish and European imports cause very large CO₂ emissions in production countries as a result of extensive deforestation. The government will also promote climate partnerships with the business sector internationally, as a model for how public and private actors can find joint solutions. Finally, the government is launching climate development partnerships focusing on for example SDG 6 and SDG 7 in order to bring the business sector’s skills into play when it comes to achieving the SDGS in the development countries.

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