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Denmark's response to the Commission's Consultation on a new electricity market design.

Ministeren

The Commission has on July 15 2015 launched a public consultation on a new electricity market design (the "Consultation"). The Consultation is broader than just an updated market model ("version 2.0") taking into account the increased RES infeed.

The Consultation is structured in three topics:

Market:
The Consultation includes both short and long term perspective of the market, RES support schemes, national taxes and charges, the linking of wholesale and retail markets including data handling and the role of DSOs.

Regional Cooperation:
The Consultation assesses the need for further regional cooperation to enable better interconnections and a stronger system operation cooperation through RSCIs (perhaps equipped with decision making power) and with an adapted regulatory framework, including also a possible regulation of the Power Exchanges.

Security of Supply:
The current lack of coordination of capacity mechanisms and methods to determine generation adequacy is criticized and the consultation suggests raising security of supply to a regional or European level.

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No.	Question 1-10 "Making the Market Work"	Danish government response
	Short-term markets	
1	Would prices which reflect actual scarcity (in terms of time and location) be an important ingredient to the future market design? Would this also include the need for prices to reflect scarcity of available transmission capacity?	Denmark supports prices that reflect actual scarcity. At the same time, prices should also reflect externality costs and marginal costs of realising greenhouse gas reduction goals. If prices are allowed to reflect the underlying physics – also in time of scarcity –the market participants will get the correct short and long term price signals to invest in new transmission or production capacity and/or retrofit existing capacity. Similarly, the consumers will be confronted with the true costs of using electricity and thus receiving the right incentives to react to the price signal. Consumer awareness is vital in order to activate the demand side response in balancing the system. It follows from implicit auctioning that the prices of a bidding zone not only reflect the relation between production and consumption, but also the available interconnection capacity. Therefore the available transmission capacity is for most price areas reflected in the current market system – both in normal state and in a scarcity situation. However, in areas with structural bottlenecks the prices do not in all cases reflect the actual scarcity.
2	Which challenges and opportunities could arise from prices which reflect actual scarcity? How can the challenges be addressed? Could these prices make capacity mechanisms redundant?	Challenges: • Suppliers will be exposed to a higher risk when purchasing energy. • Market players on the demand side will have to increase awareness about market prices. Such increased awareness requires resources. • Increase in number of unexpected price spikes can challenge public and political support. • Vulnerable consumers, who may not afford the new technology and/or have high dependency on electricity, could be economically exposed and will need

		separate protection (non-market legislation). • If scarcity is a result of structural bottlenecks, temporary challenges exist for consumer and producers until enough transmission capacity is established. This includes that consumers in areas with low availability of production will be exposed to very high prices, while producers in areas with major expansion of renewable energy will experience a sharp decline in prices. Opportunities: • Most importantly to send the correct price signals to investors for both production, transmission capacity and demand side investments in order to ensure economically optimal investment. • To reduce electricity purchase cost on the demand side if electricity can be purchased in hours of low price. • Promote storage facility development. • Help overcome transaction cost in promoting demand-side response arrangements. B: Addressing the challenges: • Common approach to handling of significant price changes by introducing price zones. • Exploit to which degree flexibility is optimized and if possible increase flexibility. • Develop and use hedging strategies for consumers and producers. • Clearly communicate how allowing volatile prices would reduce total costs and helps integrating RES • Products/services will be developed to minimise the economic risk for consumers – consumers will see a broader range of products and can decide their preferred risk profile (just like insurance). C: The need for capacity mechanisms would be reduced if prices reflect actual scarcity. This would probably not make capacity mechanisms fully redundant, in particular in areas with weak

		connections to neighboring markets. Market designs need to be improved as well. In Denmark it is believed that a market primarily based on energy-only system is the most efficient way to ensure investments signals and that capacity mechanisms should only be activated as measure of last resort. But the market must ensure payments for all services delivered to the market, also balancing, reserve etc. to send the right investment signals.
3	Progress in aligning the fragmented balancing markets remain slow; should the EU try to accelerate the process, if need be through legal measures?	Harmonisation and coupling of balancing markets is essential in a European energy system moving towards increased renewable energy generation. It is a challenge to reach agreements with many countries involved, which each have their own balancing market design and balancing philosophy reflecting different historical circumstances, geography and energy mix. A clearer top-down signal enabling the formulation of a target model for the balancing market design could help the development. The model should be specific enough to ensure real cross-border balancing markets whilst at the same time being able to embrace the national and regional differences in energy mix etc. This is a delicate balance.
4	What can be done to provide for the smooth implementation of the agreed EU wide intraday platform?	The two critical elements that the project needs to focus on are incentivising quick decision making and good mitigation of risks. The following elements could enhance the achievement thereof: • Continue the existing close dialogue with the European Commission • Secure a strong and competent supervision by the National Regulatory Authorithy (NRAs) of the project. This could potentially be enhanced by having two NRA representatives following the project's steering committee discussions as (active) observers. • Continue the Florence Forum as a critical monitoring entity for the project's progress • Regular risk and cost development reporting to EU Commission and NRAs
	Long-term markets to enable investment	

5	Are long-term contracts between generators and consumers required to provide investment certainty for new generation capacity? What barriers, if any, prevent such long-term hedging products from emerging? Is there any role for the public sector in enabling markets for long term contracts?	Already today, generators and consumers have the possibility to engage into long term contracts. There exist well-functioning financial markets in many European countries where prices can be hedged. However, Denmark finds that mechanisms to reduce the related costs while still limiting risks associated with the default of a counterparty should be assessed. Inspiration could come from markets such as the Nordic electricity market that was deregulated around 20 years ago. The separation of production and sale of electricity from the transmission has led to an exchange-traded electricity market that also makes use of central counterparty clearing in order to manage the financial risks. It should be explored how this positive use of the financial market infrastructure can be withheld and further developed taking into account the specifics of the electricity markets. The current low electricity prices and the low prices in the financial markets show that the market expects that low prices will continue for the foreseeable future. Thus, the market participants do not see a commercial need for investing in new flexible, thermal generation capacity. If targets for generation adequacy are ambitious and only a very low probability of lacking capacity in the power system can be tolerated, these price expectations can contribute to increasing generation adequacy concerns. In this case other mechanisms can be needed temporarily to secure capacity beyond what the power markets including long-term contracts deliver. But the long-term target must be to have correct price signals. Should there be an interest in physical long term bilateral contracts, it is important that these contracts will be engaged between independent parties respecting the unbundling rules. Besides working to remove the legal financial barriers that are likely to disturb the development of long term hedging contracts we see no obvious role for the public sector to play.
6	To what extent do you think that the divergence of taxes and charges levied on	Differences in taxes and charges in energy production will distort competition, unless differences in taxes reflect differences in

	electricity in different Member States creates distortion in terms of directing investments efficiently or hamper the free flow of energy?	externalities from energy use between countries. However, without a strong CO_2-price signal across EU, some member countries are encouraged to implement CO_2-taxes on electricity which distort the market and hence could be an obstacle for an EU wide electricity market. In any case, the setting of taxes and charges must remain a national competence.
	Renewable generation	
7	What needs to be done to allow investment in renewables to be increasingly driven by market signals?	A strengthened ETS in combination with well-functioning electricity markets will result in more correct market signals for deployment of renewables. There could still be a remaining need for national support schemes in order to promote investment in renewables and technology development and to ensure security of supply. The increasing RES penetration results in a growing need for RES to follow the same market rules as conventional production. Support schemes for renewables should aim not to reduce the incentives for operators of RES installations to follow market signals. This also means that the support schemes should include links to market price – including an incentive not to produce in situations with negative prices – in order for the RES production to react to price signals. These requirements have already been included in the guidelines on state aid from the European Commission, and will be implemented in all new state aid for RES.
8	Which obstacles, if any, would you see to fully integrating renewable energy generators into the market, including into the balancing and intraday markets, as well as regarding dispatch based on the merit order?	In Denmark, the same balancing responsibilities apply to all larger generators, also RES generators. Denmark suggests that the same rules should apply to all larger generators, RES or not, in order to be in line with the “polluter pays” principle. Renewable energy generation from intermittent technologies as wind and photovoltaics is characterised by the difficulties in forecasting the production. The generators are also often small in size compared to the traditional generators. If they should be more active in the markets, it would be important to (i) move gate closure time closer to

		the operational hour to increase the security of the delivery, (ii) decrease the minimum bid size in the markets and to (iii) allow RES generators to bid in the balancing markets only in those hours where they are able to deliver balancing services (it should not be mandatory for participants in the balancing markets to bid in every hour).
9	Should there be a more coordinated approach across Member States for renewables support schemes? What are the main barriers to regional support schemes and how could these barriers be removed (e.g. through legislation)?	Denmark is in favor of cooperation on energy policies and further coordination on support schemes for renewables could at some point become relevant. One major barrier has been lack of experience on support schemes covering more than one Member State. Denmark and Germany are preparing a mutual opening of tenders for solar PV which could provide important lessons for future cooperation on support schemes. The experience gathered so far from this project shows that it is a large administrative task to extend support schemes across borders. Among other things, it needs to be considered that support is given to installations outside the jurisdiction of the supporting Member State and that the electricity market setup and other framework legislation is different in the host country than in the supporting Member State.
	Demand response	
10	Where do you see the main obstacles that should be tackled to kick-start demand response (e.g. insufficient flexible prices, (regulatory) barriers for aggregators/customers, lack of access to smart home technologies, no obligation to offer the possibility for end customers to participate in the balancing market through a demand response scheme, etc.)?	These are the main obstacles: Inclusion of a new market actor (3rd party aggregator/service provider) in an existing and consolidated market design is very complicated. Inclusion should consider innovative solutions to reduce both transaction and coordination costs for the service provider. Current electricity prices and insufficient price spikes do not provide incentive to the demand side to invest in solutions making demand response a flexible resource for balancing. Insufficient rollout of smart meters and the lack of hourly end-user settlement based on metered hourly values.

		Lacking easy access to data: To benefit fully from smart meter data, the data should be easily (but securely) accessible for consumers and their service providers in order to support competitive and innovative markets. Alignment of roles and responsibilities in regional areas: Market roles and their interaction due to responsibilities are different across countries. Furthermore, market facilitation is handled differently although aiming for similar or same purposes. For example the introducing of aggregators can be solved very differently depending on the responsibility they are assigned. Are they (only) replacing/representing the customer or must they be responsible towards other market roles due to their size and potential influence on the markets and system operation? Questions which may be answered very differently and thus pose an uncertainty which create an entry barrier for new/expanding aggregators providing demand respond products to the market. In Denmark, analysis from the “Market Model 2.0” project have shown that in the short term the potential for demand response lies in emergency power packs whereas further potential in aggregating flexible consumption is considered a long term option. Mandatory solutions can thus create an unnecessary cost for the suppliers and thereby the customers.

	Question 11-16 **"Regional Cooperation"**	
	Cooperation between System Operators	
11	While electricity markets are coupled within the EU and linked to its neighbors, system operation is still carried out by national Transmission System Operators (TSOs). Regional Security Coordination Initiatives ("RSCIs") such as CORESO and TSC have a purely advisory role today. Should the RSCIs be gradually strengthened also including decision making responsibilities when necessary? Is the current national responsibility for system security an obstacle to cross-border cooperation? Would a regional responsibility for system security be better suited to the realities of the integrated market?	There are potential gains by involving Regional Security Coordination Initiatives (RSCIs) in operational tasks as power systems become more interconnected and the share of variable RES increases. Any such transfer of operational tasks from TSOs to RSCIs needs to be carefully considered in the light of the current system where the operational responsibility rests with the individual TSOs. The increasing integration of markets and the increasing interconnection requires more cooperation between the TSOs and also makes it necessary to increase information sharing and coordination – as is already the case today in the RSCIs. Regarding system security, the rules are fairly clear and will be even clearer once the System Operation Guideline enter into force. It is not obvious that there would be benefits from introducing a regional system security responsibility, at least not in the short to middle term until we have seen the benefits from the RSCI cooperation and the System Operation Guideline. At this point in time it is important to focus on cooperation rather than organization Rules that encourage and enable cooperation and information sharing will be more effective than introducing a regional system security responsibility.
	Adapting the regulatory framework	
12	Fragmented national regulatory oversight seems to be inefficient for harmonised parts of the electricity system (e.g. market coupling). Would you see benefits in strengthening ACER's role?	Denmark supports a strengthening of ACER's role. The present cooperative approach is time consuming and makes it difficult to reach results that are driven by regional and/or European social welfare gains. Upgraded responsibilities for ACER could contribute to developing an appropriate regulation for retail markets. The challenge of further responsibilities for ACER and centralised regulation on a European level is to find the right

		level of regulation which suits all member states and their individual stage of development.
13	Would you see benefits in strengthening the role of the ENTSOs? How could this best be achieved? What regulatory oversight is needed?	Denmark supports a strengthening of the role of the ENTSOs and thereby further developing the perspective on market, security of supply and operational matters from a national oriented perspective to a more regional and/or European perspective. In particular ENTSO-E could be given a more specific role in developing the framework for regional TSO cooperation (the development of Regional Security Coordination Centers, RSCIs).
14	What should be the future role and governance rules for distribution system operators? How should access to metering data be adapted (data handling and ensuring data privacy etc.) in light of market and technological developments? Are additional provisions on management of and access by the relevant parties (end-customers, distribution system operators, transmission system operators, suppliers, third party service providers and regulators) to the metering data required?	Governance of DSOs should be adapted in accordance with and in acknowledgement of the different roles fulfilled by DSOs. Most DSOs fulfill different roles besides managing a distribution grid. But roles and responsibility assigned to DSOs varies across states and sometimes within states. As such a role-based governance could be beneficial, also recalling that sometimes TSOs fulfill some of the roles that DSO fulfill in other countries and vice versa. Many roles related to DSOs involve data handling (collection, administration, aggregation, distribution etc.) for different types of data (static meter information, contract data, metering data etc.). All of these data are essential for market operation – therefore a swift, standardised and safe access to these data is essential to ensure effective market operation and development. For each role assigned to the DSO it must therefore be ensured that the DSO remains a neutral facilitator and it must be ensured that they provide data access swiftly and on an equal basis for all relevant parties. One measure to achieve better neutrality, functional unbundling, clear roles and secure and equal access to data for relevant parties is through establishment of a datahub solution. Datahubs can be neutrally operated by DSO(s), but also TSOs in order to ensure ownership unbundling and as such complete neutrality around especially data distribution/access etc. while still allowing DSOs to be responsible for data collection, quality etc. in the datahub.

		Data privacy should follow existing general regulation, but a central EU-regulation should more specifically define a minimum level of privacy, e.g. consumers should control access to their own data, access to data should be easy and equal to market players etc. Focus from the EU should be on harmonising the roles of the market players which implies a definition of what kind of data each role should have access to. This would increase market transparency for market participants in terms of what data to deliver and what data to get access to. To increase effectiveness in the end-user related markets, easy access to end-user data should be ensured through standardised solutions for end-users, suppliers, aggregators and other service providers (third parties). Access should both be possible through the smart meter for close to real time data and through a data provider (e.g. a datahub) for other data (ex post).
15	Shall there be a European approach to distribution tariffs? If yes, what aspects should be covered; for example tariff structure and/or tariff components (fixed, capacity vs. energy, timely or locational differentiation) and treatment of self-generation?	From a retail market perspective it would increase market transparency if a standard framework is introduced. In Denmark, a framework will be introduced through the Datahub in 2016. Some DSOs expect to differentiate their prices, e.g. with lower grid-tariffs during night hours, weekends, holidays etc. allowing the end-users to respond to price changes in grid tariffs in combination with price changes on whole sale markets. Differentiated tariffs are one of the key demand respond schemes. The suggested framework allows the possibility for this, however still allowing for subscriptions on capacity and other services. In practice it will be difficult to implement a full European approach to distribution tariffs; however a common framework should be a first step to harmonisation.
	European dimension to security of supply	
16	As power exchanges are an integral part of market coupling – should governance rules for power exchanges be considered?	As the day-ahead and intraday market coupling extends and becomes operational, it has become increasingly difficult to see the benefits of having competing power exchanges operate the same algorithms. The function that the power exchanges

		perform appears to become closer to a natural monopoly function. As a consequence thereof it should be considered to establish an appropriate level of governance rules and regulation for the power exchange function.

	Question 17-21 "European dimension to Security of Supply"	
17	Is there a need for harmonized methodology to assess power system adequacy?	Denmark is in principle in favour of a harmonised methodology. More information about regional generation adequacies can potentially decrease the overall need for flexible capacity. In Denmark, a probabilistic calculation model is used to ensure that the intermittent nature of wind based and sun-based production and transmission lines can be included in the calculation.
18	What would be the appropriate geographic scope of a harmonised adequacy methodology and assessment (e.g. EU-wide, regional or national as well as neighboring countries)?	Most importantly, the methodology should be independent of geographic scope. A regional geographic scope related to the present market area would provide sufficient insight.
19	Would an alignment of the currently different system adequacy standards across the EU be useful to build an efficient single market?	A member state should have the right to decide for higher system adequacy standards than other member states. This should, however, not give that member state a right to reduce capacity on interconnectors as this would be against the principles of the single electricity market.
20	Would there be a benefit in a common European framework for cross-border participation in capacity mechanisms? If yes, what should be the elements of such a framework? Would there be benefit in providing reference models for capacity mechanisms? If so, what should they look like?	Capacity mechanisms should not distort European power markets. Therefore Denmark finds that introduction of capacity mechanisms should only be used as a last resort when facing challenges of the energy marked. Efficient European power markets ensure that electricity flows from low-price areas to high-price areas and thereby ensure optimal utilisation of resources at a European level. Efficient power markets can decrease the overall need for flexible capacity in the European power system, but it is important that the market provide payments for all services delivered to the system Denmark supports common rules for cross-border participation. Given the ambition to have an efficient internal energy market it could be beneficial to have a reference model for capacity mechanisms. The model should ensure a minimum

		of distortion to the energy market.
21	Should the decision to introduce capacity mechanisms be based on a harmonised methodology to assess power system adequacy?	A harmonised methodology to assess power system adequacy would create a sound basis for such a decision. However, even with a harmonised methodology there would most likely still be different national levels of system adequacy and different risk assessments. Therefore the result of the assessment will probably not create the basis for an objective decision from a European perspective.