

NOTE

20. April 2015

Center for Climate and Energy Economics

Update PSO levy

The EU Commission has questioned the Danish PSO system. The Commission claims that the PSO system discriminates against foreign Renewable Energy Suppliers (RES) producers and thus violates the EU Treaty. This is because the PSO levy is applied to all electricity consumed in Denmark, regardless of whether the electricity is produced in Denmark or abroad, however only domestic RES electricity producers can receive the PSO subsidies.

It is of outmost importance to the Danish Government to find a durable solution to this issue. A temporary solution for 2015-2016 has been approved by the Commission, and long-term solutions are currently being analyzed.

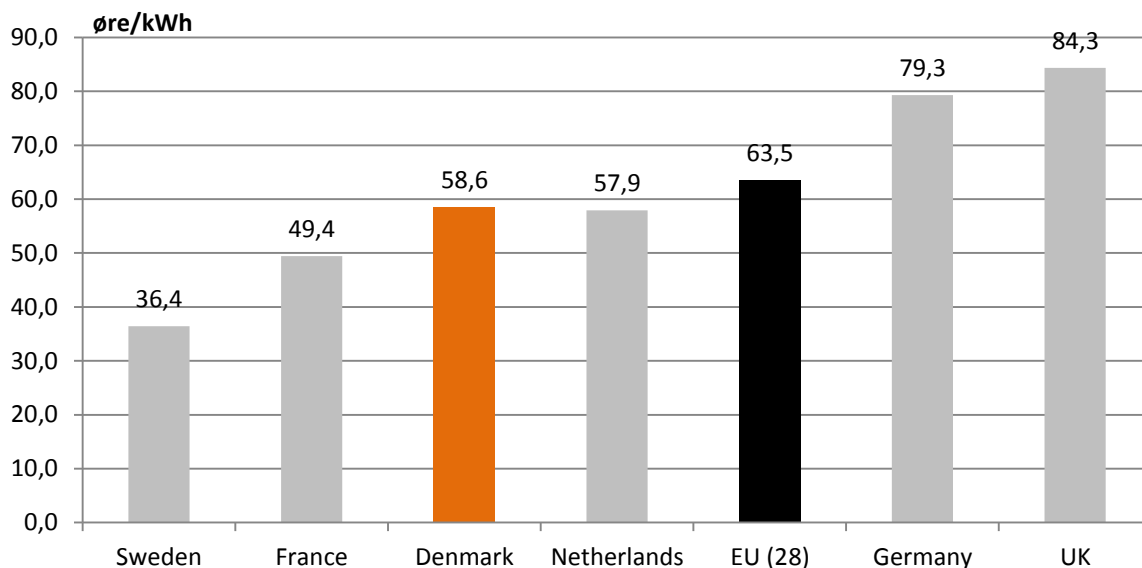
The Danish Government will make a proposal on a long-term solution to be approved by the Commission as well as a majority in the Danish Parliament, with the aim of having a long-term solution in operation from 2017 and onwards. Politically, the Danish energy policy is traditionally based on broad political agreement.

Danish prices on electricity compared with other EU countries

In recent years the Danish prices on electricity paid by industrial users have been below the average prices of the EU. In the first semester of 2014, the Danish prices of electricity for a large company (70-150 GWh) are below the prices in both Germany and the UK and at the same level as prices in the Netherlands. The Danish prices are higher than the French and the Swedish prices, as shown in figure 1 below.

Comparable official statistics are not available for consumption bands larger than 150 GWh, as very few countries provide this information, and much of it is confidential.

Figure 1: Electricity prices for 2014(I) incl. PSO and taxes, 70-150 GWh companies



Note: The price for Denmark includes a correction of +3.0 øre/kWh for this consumptions band found in a recent survey of the Danish prices on electricity performed for the 1st semester of 2014.

Source: Eurostat, calculations by the Danish Energy Agency.

As of 2014, the tax on electricity for process energy has been reduced to the minimum level allowed by EU legislation, which is currently 0.4 øre/kWh. The reduction of the PSO levy and other similar initiatives have lowered the average electricity prices with effect from January 1st this year (2015).

Growth Packages 2013 and 2014

The Growth Packages introduced in 2013 and 2014 have reduced taxes and levies on energy for companies. The tax on electricity consumption for process energy use has been reduced to the minimum allowed by EU-legislation. This does not, however, apply to electricity consumption used for space heating. For this purpose the tax rate is 38 øre/kWh in 2015.

The PSO levy will also be reduced by (cumulated) 13.2 billion DKK towards 2020. This consists of several reductive elements concerning both a general and a targeted reduction for companies. The general reduction applies to all companies, and amounts to 3 øre/kWh in 2015 and 2016, subsequently increased to 5 øre/kWh for 2017-2020.

The reduction targeted at energy-intensive companies amounts to 185 million DKK annually, equivalent to approximately 7 øre/kWh, from 2015 through to 2020. To qualify for this further reduction, a company must be eligible according to the state aid guidelines (Annex 3) and must commit to a binding agreement of improving the energy efficiency of their production.

Additionally, the latest Growth Package contains initiatives to postpone some of the planned wind-power projects as well as annulling the PSO levy on gas. Both of these initiatives will contribute to a further reduction in the overall costs related to the PSO for companies.

How much can a company expect to pay in PSO in 2020?

The level of the PSO levy for companies is currently 21.1 øre/kWh in the first quarter of 2015. This includes the reduction of 3 øre/kWh adopted under the Growth Package 2014. As mentioned, this reduction increases by 2 øre/kWh to 5 øre/kWh from 2017.

Based on the latest projection of the PSO levy from the Danish Energy Agency, the PSO levy for companies in 2020 is predicted to be approximately 13 øre/kWh (2015-prices). This number includes the PSO reductions adopted under the Growth Package 2014. The prediction is based on the latest projections from March 2015. However, it is important to note that these are predictions and subject to a high degree of uncertainty depending on the projection's timespan.

PSO reduction for large energy consuming companies (+100 GWh)

Currently, energy-intensive companies can receive a reduction in the PSO levy on parts of their energy consumption. Energy-intensive companies eligible for this reduction are defined as companies with energy consumption above 100 GWh per place of consumption. These companies receive a reduction in the PSO levy on all consumption above 100 GWh. Hence, the PSO levy on the first 100 GWh is at present 21.1 øre/kWh; all energy consumption above that incurs a reduced PSO levy of 5.2 øre/kWh.

However, due to a conflict with existing EU legislation this reduction will be removed by the end of 2015. Given the EU legislation, it will not be possible to introduce subsidy schemes where the subsidies are differentiated according to the size of energy consumption.

Is the company in question eligible for the gains of the PSO reductions targeted at energy-intensive companies implemented in the Growth Package 2014?

In order to be eligible to receive the targeted PSO reduction, a company is required to be recognised as belonging to an industry/branch on the so-called Annex 3 list of the Energy and Environmental State Aid Guidelines. Furthermore, companies on the Annex 5 list may also be eligible under certain circumstances. However, the company in question is mostly clearly associated with the IT industry/sector, which is not one of eligible industries on either list (Annex 3 or Annex 5).

Thus, for the company in question to become eligible, not only would political agreement in Denmark be needed, but also approval by the EU. According to the guidelines Member State can include an undertaking in its national scheme granting reductions from costs resulting from renewable support if the undertaking has an electro-intensity of at least 20 % and belongs to a sector with a trade intensity of at least 4 % at EU level (not at national level) and approved by EU.

The targeted PSO-reduction is based on a state-financed scheme of DKK 185 million annually and an expected consumption of 2.6 TWh. If more companies are included that consumes say 2.5 TWh annually, and if the rules are changed so that the companies are eligible, the consequence would be that the level of support would be approximately halved (from expected 7 øre/kWh to approximately 3.5 øre/kWh), as the expected consumption eligible for reduced levies would be doubled. Hence, the company in question will be eligible for the general reduction (the 3 øre/kWh in 2015-16 increasing to 5 øre/kWh from 2017), but with the current rules and regulation not for the targeted PSO reduction., even if it does not belong to a sector listed in Annex 3.

How large is the reduction in PSO in the case of self-production of renewable energy?

Electricity generated by RES and supplied to the public grid is eligible for PSO support. The level of support differs, depending on the specific RES technology and on the purpose of the RES plant. If a RES

plant is connected to the public grid and delivers electricity into the public grid, public support (PSO) is provided. For an onshore wind turbine, current rules imply that a fixed PSO premium of 25 øre/kWh (nominal prices) is provided for electricity delivered to the grid typically for the first 7-8 years of the lifetime of the wind turbine, after which no support is provided.

The electricity produced at a RES plant may be used for own consumption or delivered to the public grid. The share of production consumed on site, i.e. “inside” the electricity meter is regarded as own production, e.g. production from a wind turbine located on the premises of an industrial production facility. The RES electricity produced and used on the premises, metered on an hourly basis, will not receive the fixed premium support. The share of the electricity produced and delivered to the public grid, i.e. “outside” the meter and on an hourly basis, will according to current rules receive PSO support.

The business case of an industrial RES plant does not only rely solely on the PSO support, but also on the tariff regime. Tariffs on electricity purchased and consumed from the public grid include the PSO tariff and other tariffs (transmission and system tariffs, etc.). The tariffs fluctuate, but may be expected to amount to approximately 25 øre/kWh on average for the period 2015-2020 (in 2014 prices).

Tariffs on the consumption of electricity that is produced internally are significantly lower, currently amounting to 1.1 øre/kWh. Enterprises will thus experience a reduction of the tariffs on electricity consumed of approximately 24 øre/kWh, if they produce electricity themselves. The benefit of the reduced tariffs is obtained for the lifetime of the renewable energy producer, e.g. a wind turbine.

The benefits of reduced tariffs by self-production may be expected to exceed the value of the direct support to RES electricity delivered to the public grid. The value in øre/kWh is approximately the same, but the RES support for supplying the grid is only provided for 7-8 years, whereas the tariff reduction may be obtained for the whole life-time of the turbine. Furthermore, the value of the RES support is gradually reduced by inflation.

Existing and planned interconnections with neighbouring countries

Strong interconnections are key elements for enabling a high and increasing share of wind energy in the power system, to ensure the functioning of the electricity markets, and to ensure a high level security of the electricity supply at all times to the consumers. Denmark is closely connected to her neighbouring countries, and the Danish transmission system serves to a large extent as a transit for electricity between the Scandinavian countries and Germany. The need for the transport of electricity within Scandinavia, and between Scandinavia and Europe, is increasing, and additional interconnections have been decided or are being planned/considered.

By 2019, three new interconnections are to be implemented: A new 700 MW interconnection with the Netherlands has been decided. A new 400 MW interconnection to Germany via the planned offshore windpark Kriegers Flak is planned, as is an upgrading from 220 to 400 kV of the existing interconnection between Jutland and Germany. This interconnection will increase the present capacity from 1500 MW import/2000 MW export to 2500 MW both ways. The existing and planned interconnections are presented below.

