

Danish report under Directive 2009/28/EC concerning progress in the promotion and use of energy from renewable sources

Article 22 of Directive 2009/28/EC requires Member States to submit a report to the Commission on progress in the promotion and use of energy from renewable sources by 31 December 2011, and every 2 years thereafter. The sixth report, to be submitted by 31 December 2021, shall be the last report required.

This report is the fifth Danish submission and follows the template prepared by the Commission for this purpose. The template comprises a series of questions numbered from 1 to 13, with accompanying tables and guideline text in italics.

Denmark's Renewable Energy¹ Action Plan was submitted to the Commission in June 2010. This action plan was most recently updated through the Energy Policy Agreement of 2012, which sets out specific energy policy initiatives up until 2020.

This progress report contains a description of the situation in 2017 and 2018. The figures have thus been calculated for the 2017 and 2018 calendar years, and the information contained in the report focuses on the period up to and including 2019. This report updates the information in the Renewable Energy Action Plan and its implementation.

All figures have been calculated in the same way as in Denmark's Renewable Energy Action Plan, i.e. in ktoe, MW, GWh, etc., as required by the Commission. In addition, the figures are also presented in TJ.

¹ In Danish: vedvarende energi, VE

1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (n-1; n-2 e.g. 2010 and 2009) (Article 22(1)(a) of Directive 2009/28/EC).

Table 1:

The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources²

	2017	2018
RES-H&C ³ (%)	46.66%	48.57%
RES-E ⁴ (%)	60.26%	62.85%
RES-T ⁵ (%)	6.61%	6.57%
Overall RES share ⁶ (%)	35.45%	36.70%
<i>Of which from cooperation mechanism⁷ (%)</i>	0.00%	-0.02%
<i>Surplus for cooperation mechanism⁸ (%)</i>		

Notes on the figures in Tables 1, 1a, 1d and 4:

The use of biofuels in the transport sector and of bioliquids in the electricity and heating sector must be sustainable within the meaning of the RE Directive in order to be included.

In the case of undertakings that are covered by quotas, if the CO₂ emission factor for bioliquids is to be set to zero, sustainability would have to be documented from 2013 onwards. However, it is believed that the total quantities will be very small.

With regard to biofuels for transport, the sustainability criteria in the RE Directive were implemented in Danish legislation in 2010. The companies bound by the legislation have added a minimum of 5.75% sustainable biofuels in the transport sector since 2012 (based on energy content).

²Facilitates comparison with Table 3 and Table 4a of the NREAPs.

³ Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Article 5(1)(b) and (4) of Directive 2009/28/EC) divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of NREAPs applies.

⁴ Share of renewable energy in electricity: gross final consumption of electricity from renewable sources for electricity (as defined in Article 5(1)(a) and (3) of Directive 2009/28/EC) divided by total gross final consumption of electricity. The same methodology as in Table 3 of NREAPs applies.

⁵ Share of renewable energy in transport: final energy from renewable sources consumed in transport (cf. Article 5(1)(c) and (5) of Directive 2009/28/EC) divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport and 4) electricity in land transport (as reflected in row 3 of Table 1). The same methodology as in Table 3 of NREAPs applies.

⁶ Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

⁷ In percentage point of overall RES share.

⁸ In percentage point of overall RES share.

Table 1a:

Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)⁹

	<i>2017</i>	<i>2018</i>
<i>(A) Gross final consumption of RES for heating and cooling</i>	3,554.9	3,712.8
<i>(B) Gross final consumption of electricity from RES</i>	1,826.9	1,905.0
<i>(C) Gross final consumption of energy from RES in transport</i>	235.6	236.7
<i>(D) Gross total RES consumption¹⁰</i>	5,617.3	5,854.5
<i>(E) Transfer of RES to other Member States</i>	0.0	2.7
<i>(F) Transfer of RES from other Member States and third countries</i>	0.0	0.0
<i>(G) RES consumption adjusted for target (D)-(E)+(F)</i>	5,617.3	5,851.8

⁹ Facilitates comparison with Table 4a of the NREAPs.

¹⁰ According to Article 5(1) of Directive 2009/28/EC gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.

Table 1b:

Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in Denmark to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity¹¹

	<i>2017</i>		<i>2018</i>	
	<i>MW</i>	<i>GWh</i>	<i>MW</i>	<i>GWh</i>
<i>Hydro</i> ¹² :	9.2	20.3	9.2	20.1
<i>non-pumped</i>	9.2	17.9	9.2	14.9
<i>< 1 MW</i>				
<i>1-10 MW</i>				
<i>> 10 MW</i>				
<i>pumped</i>		0.0		0.0
<i>mixed</i> ¹³		0.0		0.0
<i>Geothermal</i>				
<i>Solar</i> :	906.4	751.5	998.0	953.0
<i>photovoltaic</i>	906.4	751.5	998.0	953.0
<i>concentrated solar power</i>	0.0	0.0	0.0	0.0
<i>Tide, wave, ocean</i>	0.0		0.0	
<i>Wind</i> :	5,489.6	14,231.6	6,120.6	15,234.2
<i>onshore</i>	4,225.8	9,600.2	4,419.8	9,268.7
<i>offshore</i>	1,263.8	5,179.8	1,700.8	4,630.1
<i>Biomass</i> ¹⁴ :	1,609.4	5,568.4	1,615.6	5,305.5
<i>solid biomass</i>	1,501.3	4,797.0	1,494.1	4,417.8
<i>biogas</i>	107.6	771.4	121.3	887.7
<i>bioliquids</i>	0.5	0.0	0.2	0.0
<i>TOTAL</i>	8,014.6	20,571.8	8,743.5	21,512.7
<i>of which in CHP</i>		5,483.0		5,184.3

¹¹ Facilitates comparison with Table 10a of the NREAPs.

¹² Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

¹³ In accordance with Eurostat methodology.

¹⁴ Take into account only those complying with applicable sustainability criteria, cf. the last subparagraph of Article 5(1) of Directive 2009/28/EC.

Table 1c:
Total actual contribution (final energy consumption¹⁵) from each renewable energy technology in Denmark to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)¹⁶

	<i>2017</i>	<i>2018</i>
<i>Geothermal (excluding low temperature geothermal heat in heat pump applications)</i>	1.8	1.3
<i>Solar</i>	56.4	66.0
<i>Biomass¹⁷:</i>	2,910.1	3,028.1
<i>solid biomass</i>	2,653.4	2,692.3
<i>biogas</i>	254.8	333.3
<i>bioliquids</i>	1.9	2.5
<i>Renewable energy from heat pumps:</i>	192.6	217.9
<i>- of which aérothermal</i>	107.3	127.1
<i>- of which geothermal</i>	85.3	90.8
<i>- of which hydrothermal</i>	0.0	0.0
<i>TOTAL</i>	3,161.0	3,313.3
<i>Of which DH¹⁸</i>		
<i>of which biomass in households¹⁹</i>	1,032.0	1,051.3

NB: Biomass in households excludes biomass included in the households' district heating consumption.

¹⁵ Direct use and district heat as defined in Article 5(4) of Directive 2009/28/EC.

¹⁶ Facilitates comparison with Table 11 of the NREAPs.

¹⁷ Take into account only those complying with applicable sustainability criteria, cf. the last subparagraph of Article 5(1) of Directive 2009/28/EC.

¹⁸ District heating and/or cooling from total renewable heating and cooling consumption (RES-DH).

¹⁹ From the total renewable heating and cooling consumption.

Table 1d:

Total actual contribution from each renewable energy technology in Denmark to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)^{20, 21}

	2017	2018
- Bioethanol	43	43
- Biodiesel	172	170
- Hydrotreated vegetable oil		
- Biomethane	3	5
- Fischer-Tropsch diesel		
- Bio-ETBE		
- Bio-MTBE		
- Bio-DME		
- Bio-TAEE		
- Biobutanol		
- Biomethanol		
- Pure vegetable oil		
Total sustainable biofuels	218	218
of which:		
sustainable biofuels produced from feedstock listed in Annex IX Part A	14	9
other sustainable biofuels eligible for the target set out in Article 3(4)(e)		
sustainable biofuels produced from feedstock listed in Annex IX Part B	8	16
sustainable biofuels for which the contribution towards the renewable energy target is limited according to Article 3(4)(d)	196	193
Imported from third countries		
Hydrogen from renewables		
Renewable electricity	18	19
of which:		
consumed in road transport		
consumed in rail transport	18	19
consumed in other transport sectors		
others (please specify)		
others (please specify)		

²⁰ For biofuels and bioliquids take into account only those compliant with the sustainability criteria, cf. the last subparagraph of Article 5(1) of Directive 2009/28/EC.

²¹ Facilitates comparison with Table 12 of the NREAPs.

2. Measures taken in the preceding 2 years and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan (Article 22(1)(a) of Directive 2009/28/EC).

See table in Annex 1

2.a. Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy (Article 22(1)(e) of Directive 2009/28/EC).

One-stop shop for offshore wind turbines

The administrative procedures for licensing offshore wind farms in Denmark have been simplified and are predictable for enterprises wishing to erect offshore wind farms. There is a ‘one-stop shop’ procedure which means that all the main licences for preliminary surveys, establishment and power generation are issued by the Danish Energy Agency [Energistyrelsen]. The Danish Energy Agency coordinates the licences with all other relevant authorities, so, for example, terms relating to shipping which come under the Danish Maritime Authority [Søfartsstyrelsen] are included in the Danish Energy Agency’s licences.

For the offshore wind farms that are put out to tender, a dialogue-based tendering model is utilised, whereby the tenderers can make suggestions regarding the terms of the licences so that the terms can be seen to be as transparent and favourable as possible, without compromising on environmental considerations, including consideration of the marine environment. Furthermore, the licences for preliminary surveys and establishment are prepared in advance by the Danish Energy Agency (known as ‘model licences’) so that the licences can be issued as soon as the winning tenderer’s EIA for the specific project has been approved. This substantially reduces the administrative burden on the enterprises.

For example:

- In the run-up to the tenders for the next offshore wind farm in 2020, a market dialogue will be held in autumn 2019 including bilateral meetings with interested tenderers to learn their viewpoint of the planned terms and procedures and any suggestions for improving them.

2.b. Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements (Article 22(1)(f) of Directive 2009/28/EC).

Denmark has a tradition of ensuring transparent and non-discriminatory connection of renewable energy installations to the electricity transmission grid. Danish legislation implements Article 16 of the RE Directive concerning access to and operation of the grids.

Plans for increased connections with neighbouring countries

The growing amount of renewable energy in the electricity system is characterised by fluctuations. RE has to be incorporated into the electricity system by means of domestic electricity generating plants, new electricity consumption (heat pumps and electric vehicles) and exchange opportunities with other countries. Connections with foreign countries are particularly important as a result of a massive reduction in domestic thermal capacity. The following projects have been approved by the authorities since 2015:

- Upgrading the connection between East Jutland and Germany.

- A connection between West Jutland and Germany.
- A connection to the United Kingdom, known as the ‘Viking Link’.
- A connection of offshore turbines at Kriegers Flak and a connection from there to Germany, which entered into operation in June 2019.

The Cobra connection to the Netherlands, which entered into operation in September 2019.

Smart and flexibly priced electricity consumption

Flexible consumption is expected to become increasingly important in the future. The volume is currently very small, primarily because the economic incentives are not big enough to shift consumption. However, there are both socio-economic and financial gains to be had by consumers by shifting consumption from times when the electricity price is high to times when it is low. The electricity price is typically low when a lot of wind power is generated, and because the extent to which power can be stored is limited, consumption should be adapted more to generation. The Danish Ministry of Climate, Energy and Utilities is therefore working to create a better framework for exploiting this potential. Among other benefits, the roll-out of smart meters and the introduction of flexible billing before the end of 2020 will enable continuous settlement of actual consumption per hour for large and small customers, which can thereby make it economically advantageous for individual users to shift part of their electricity consumption to times with ample green energy, inexpensive electricity and low network loads.

Criteria for downward adjustment

Energinet [a subsidiary of the Danish Ministry of Climate, Energy and Utilities which owns the electricity and gas infrastructure in Denmark] is responsible for operating the interconnected electricity supply system and for maintaining balance and supply security in the grid. One of Energinet’s tasks is to maintain a balance in the grid by making adjustments (upwards or downwards) to electricity generation at power stations that are connected to the grid.

As noted in point 4.2.7(b) of the RE Action Plan, downward adjustment in the case of power stations that use renewable energy sources can only take place subject to certain special conditions. The authorities are also responsible for the criteria for downward adjustment. In the past, competence was shared between the Danish Energy Regulatory Authority [Energitilsynet] and the Danish Energy Agency. This was changed by Act No 466 of 18 May 2011, so that the Danish Energy Regulatory Authority alone undertakes the task (amendments to the Danish Acts on electricity supply, natural gas supply, heating supply, Energinet and the promotion of renewable energy).

Provisions concerning reporting in the event of important measures to limit renewable energy sources and the specification of remedial measures are set out in Order No 891 of 17 August 2011 on transmission system operation and the use of the electricity transmission grid etc.

Organisation and distribution of costs in relation to grid connection and grid reinforcement/expansion

The rules for connecting wind turbines and solar photovoltaics to the grid are given in Order No 1128 of 7 September 2018. The rules were developed in connection with the organisation of the first technology-neutral tender for support for wind turbines and solar photovoltaics (see Section 3.0.1 below) in such a way that the terms for connecting wind turbines and solar photovoltaics to the grid were standardised for those two technologies as much as possible.

Under the Order, pursuant to a request grid enterprises must specify a connection point in the collective electricity grid where electricity from the new plant can be tapped. The plant owner must establish the internal grid up to the point of connection.

The Order also contains provisions requiring grid and transmission enterprises to give wind turbine owners that request a grid connection all necessary information, including a detailed estimate of all expenses that would be entailed in the connection process, a reasonable and accurate schedule for

receipt and processing of the application for grid connection and a reasonable schedule for the grid connection itself.

In the case of power stations that use renewable energy sources other than wind, a similar information provision is laid down in Order No 569 of 2 June 2014 on conditions and procedures for the granting of permission to establish new electricity generation stations and important modifications to existing stations.

New financial regulation of electricity grid enterprises

The financial regulation of electricity grid enterprises was changed with effect from early 2018. The new regulation is an incentive-based financial regulation with the objective of giving grid enterprises an inducement to efficiently operate, maintain, renovate and expand the distribution network. This will ensure an effective electricity distribution sector with reasonable prices for consumers and continued high supply security.

An important element of the new financial regulation is to ensure that grid enterprises have a high degree of flexibility regarding using their funds to increase the efficiency of operations or investments. This is due in part to considerations of greening, whereby implementing a smart grid can mean that the share of operating costs in grid enterprises' expenses can increase. Therefore the greatest possible care has been taken to avoid the regulation causing any distortion of grid enterprise incentives that promote traditional investments in the physical grid. In addition, a regulation that is neutral regarding investment types is desirable because it supports cost-effectiveness.

Another important element of the new financial regulation is ensuring that it has enough flexibility to take into account that the grid enterprises' role in green conversion can result in significant developments in their expenses. This requires on the one hand that the grid enterprises can raise the capital needed for necessary investments by being able to offer market-appropriate, risk-adjusted returns, and on the other hand that the grid enterprises' financial framework is recalibrated on an ongoing basis. Both criteria have been implemented in the new financial regulation. The regulation offers incentives for cost-effectiveness for both investments and operations.

3. Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan (Article 22(1)(b) of Directive 2009/28/EC).

The requested description of support schemes and other measures can be found below under Section 3.0 (3.0.1-3.0.7).

3.0.1 Financial support:

Support is provided for electricity generation based on renewable energy and for the use of biogas for upgrading, processing, transport and heat. Support for upgrading of biogas is laid down in the Danish Natural Gas Supply Act [lov om naturgasforsyning], while the other support schemes are laid down in the Danish Act on the promotion of renewable energy [lov om fremme af vedvarende energi] (the RE Act). The support is provided in the form of premiums for:

- A. wind turbines (Sections 35a to 43 of the RE Act)
- B. biogas etc. (Sections 43a to 43e of the RE Act and Section 35c of the Natural Gas Supply Act)
- C. biomass (Sections 44 and 45a of the RE Act)
- D. photovoltaic cells (Section 47 of the RE Act)

Technology-neutral tenders

In 2018 the first Danish technology-neutral tender involving support for wind turbines and solar photovoltaics was issued, with a combined support budget of approximately DKK 14 billion. The result was that support was allocated for three projects for onshore wind turbines with a total of 165 MW and three solar photovoltaic projects with a total of 101 MW. The average winning premium was for an amount of DKK 0.023 per kWh allocated over 20 years. The level for the support is approximately six times lower than the previously applicable support scheme for wind turbines (see below).

In 2019 another technology-neutral tender was issued with a budget of approximately DKK 14 billion. The tender resulted in an expansion of 135 MW from onshore wind turbines and 136 MW from solar photovoltaics, distributed across seven projects. The majority of all parties in the Danish Parliament at that time agreed, under the Energy Policy Agreement of June 2018, to allocate a total budget of DKK 4.2 billion for technology-neutral tenders in 2020-2024.

3.0.1a: Premiums for wind turbines

Wind turbines with the exception of offshore turbines put out to tender and domestic turbines:

Support was previously allocated to onshore wind turbines and offshore wind turbines under the participation scheme under Section 35a of the RE Act. This support scheme was closed to new plants as of 21 February 2018 and replaced with technology-neutral tenders for support (see above).

Offshore wind turbines put out to tender:

The Danish State completed the tender for establishing the offshore wind farm Horns Rev 3 with 400 MW in 2015 and the tender for the two onshore wind farms Vesterhav Syd and Vesterhav Nord with a total of 350 MW, as well as the offshore wind farm Kriegers Flak with 600 MW, in 2016. The winning price per kWh for the three tenders was DKK 0.77, DKK 0.475 and DKK 0.372, respectively, paid out in the first 50,000 full-load hours, which corresponds to approximately 12 years of generation.

The support model for the next offshore wind farm, Thor, will be a modified CFD with symmetrical payments. Hence, the plant owner will receive payment for the electricity produced if the reference price is lower than the tender price and will pay to the State if the reference price is higher than the tender price. The reference price is calculated as the simple average of the Nord Pool Elspot price during the previous calendar year. In addition, a modification of the CFD's symmetrical payments is incorporated, in which the plant owner does not pay a premium to the State for the quantity of the electricity produced that is charged at a market price lower than the premium given to the State at the time. In this way the producer has an incentive to maintain production during periods when the electricity price is sufficiently low. Ceilings have been implemented for both plant owners' and the State's total payments over the course of the 20 years of the support period. Support is not given for the number of full-load hours, but rather for a period of 20 years from when the first kWh is supplied to the grid. In addition, it has been decided that the winning tenderer must establish and fund both the offshore wind farm and the offshore transformer station and submarine cables.

Domestic wind turbines:

Previously there were support schemes for domestic wind turbines in which premiums were granted for the production of electricity supplied to the electricity grid. There are no longer any active support schemes for new owners of domestic wind turbines for the production of electricity supplied to the electricity grid. It continues to be possible for owners of domestic wind turbines to receive an exemption from the electricity tax on the production of electricity supplied for the owner's own use.

Increased premium for offshore pilot projects:

In the context of the application from Nissum Bredning Vindmøllelaug I/S, on 8 February 2016 the Danish Energy Agency communicated its commitment to support for a project to establish and test four wind turbines of 7 MW each, for a total of 28 MW, at the Nissum Bredning site. The wind turbines were put into operation on 18 February 2018. These pilot projects can receive a higher premium which is set in such a way that it and the market price together amount to DKK 0.70 per

kWh. It is expected that the grant will be paid out in just under 50,000 full-load hours, which corresponds to approximately 12 years of generation.

3.0.1b Premium for biogas etc.

It is the case for all the support schemes listed below that they are closed to new beneficiaries as of 1 January 2020. All beneficiaries that are covered by the relevant schemes will receive individual commitments for support for 20 years for an individual plant. Thus, support will continue to be given according to the same principles, but no additional plants will be included in the schemes. At the same time, individual ceilings will be implemented regarding the amount of biogas per plant for which support can be obtained. The political parties behind the Energy Policy Agreement of June 2018 were responsible for deciding on the changes.

Electricity generation using biogas and gasification gas produced using biomass

For electricity generated using only biogas and gasification gas produced using biomass, a premium is paid which, added to the market price, amounts to DKK 0.793/kWh. The sum of the premium and the market price is adjusted annually on the basis of 60% of the net price index.

In addition to the above-mentioned subsidies, premiums are paid of DKK 0.26/kWh and DKK 0.10/kWh, respectively. The premium of DKK 0.26/kWh is adjusted downwards annually, starting 1 January 2013, by DKK 0.01/kWh for each DKK/GJ of the amount by which the price of natural gas has exceeded a base price of DKK 53.2/GJ in the preceding year. If the price of natural gas falls below the base price, the support is adjusted upwards accordingly. The premium of DKK 0.10/kWh is being reduced in stages by DKK 0.02/kWh each year between 2016 and 2020, when it will be removed completely.

Electricity generation using biogas and gasification gas produced using biomass and other fuels

For electricity generated using biogas and gasification gas produced using biomass and other fuels, a premium of DKK 0.431/kWh is paid for the portion of the electricity that is generated using biogas and/or gasification gas. The premium is adjusted annually on the basis of 60% of the net price index. Owners of biogas plants may choose to receive the premium of DKK 0.431/kWh instead of the premium which, added to the market price, amounts to DKK 0.793/kWh (see above). The choice must be made from the beginning of the year and is binding for one year.

In addition to the above-mentioned subsidies, premiums of DKK 0.26/kWh and DKK 0.10/kWh are also paid for the portion of the electricity that is generated using biogas and/or gasification gas, respectively. The two premiums are adjusted as described above.

Support for upgraded biogas supplied to the natural gas network and cleaned biogas supplied to the town gas network

A premium of DKK 79 per GJ is paid for upgraded biogas that is supplied to the natural gas network. In addition, premiums are paid of DKK 26 and DKK 10 per GJ of upgraded biogas supplied. The premium of DKK 26/kWh is adjusted downwards annually, starting 1 January 2013, by the amount in DKK/GJ by which the price of natural gas has exceeded a base price of DKK 53.2/GJ in the preceding year. If the price of natural gas falls below the base price, the support is adjusted upwards accordingly. The premium of DKK 10/GJ is being reduced in stages by DKK 2/GJ each year between 2016 and 2020, when it will be removed completely. The support is in the form of a price premium, so the producer itself must sell the upgraded gas. The support is provided for in Section 35c of the Danish Natural Gas Supply Act.

Support for biogas for transport

A basic subsidy of DKK 39 per GJ of biogas sold for use in transport is payable as from 1 July 2016. In addition, two premiums are paid in the amounts of DKK 26/GJ and DKK 10/GJ. The two premiums are adjusted as described above for upgraded biogas.

Support for biogas for processing purposes

A basic subsidy of DKK 39 per GJ of biogas sold for use in processing is payable as from 1 July 2016. In addition, two premiums are paid in the amounts of DKK 26/GJ and DKK 10/GJ. The two premiums are adjusted as described above for upgraded biogas.

Support for biogas for heat production

For biogas used in heat production, two premiums are paid in the amounts of DKK 26/GJ and DKK 10/GJ as from 1 July 2016. The two premiums are adjusted as described above for upgraded biogas.

3.0.1c: Premium for biomass

For electricity generated by burning biomass, a premium of DKK 0.15 per kWh is paid, irrespective of whether the electricity is generated by plants using biomass exclusively or by plants using biomass in combination with other fuels.

The premium is only granted to plants that entered into operation no later than 1 April 2019. Plants that have been converted to the use of biomass are granted the premium for a maximum of 15 years from the time they were converted. Plants built as biomass or multi-fuel plants are granted the premium for a maximum of 20 years from the time they were built.

3.0.1d: Premium for photovoltaic installations

Support was previously allocated to photovoltaic installations under various schemes under Section 47 of the RE Act. These schemes were ended in 2016 and replaced with technology-neutral tenders for support (see above).

Solar pilot tender

A pilot tender for 20 MW of solar photovoltaics was held in December 2016, 2.4 MW of which were open to installations in Germany. Projects with installation locations in Denmark won the entire tender.

The winning projects were connected to the grid in 2018 with a support rate of DKK 0.1289/kWh, which will be granted as a fixed premium above the market price for 20 years.

3.0.2 Four schemes for promoting onshore wind power

There are four schemes in the RE Act to promote the expansion of wind turbines. The Danish Energy Agency is responsible for administering the schemes. As a consequence of the Energy Policy Agreement of 2018, as entered into by all parties in the Danish Parliament at that time, the schemes are subject to inspections, which will result in revisions to several of the schemes.

Devaluation scheme

The constructor of a wind turbine must pay compensation for the devaluation of residential properties caused by the erection of the wind turbine. The extent of the devaluation is determined by an independent valuation authority.

Right of purchase scheme

The constructor of a wind turbine measuring at least 25 m is obliged to offer at least 20% of the shares in the entire turbine project to a group of persons with right of purchase. All citizens over the age of 18 living up to 4.5 km from new wind turbines may buy into local wind turbine projects. Shares not purchased by citizens living within the 4.5 km limit may be offered to citizens elsewhere in the municipality. In the case of offshore wind turbines, the group of citizens with right of purchase is expanded to include citizens in the municipality or municipalities that have coastline within 16 km of the new offshore wind turbines.

Green scheme

The green scheme was closed after the State aid clearance expired on 21 February 2018. Under the green scheme, municipal authorities could apply for grants from the Danish Energy Authority corresponding to DKK 88 000 per MW from wind turbines erected in the municipality. The grants could be used for projects benefiting the landscape and recreational opportunities in the municipality and for cultural and information activities.

Guarantee fund

The guarantee fund was established to support the financing of preliminary investigations etc. by local wind turbine committees prior to the erection of wind turbines. The guarantee fund was expanded to include solar photovoltaic projects in connection with technology-neutral tenders in 2018. Decisions concerning the issuing of guarantees are made by the Danish Energy Agency. Guarantees are given for a maximum of DKK 500 000 per project.

3.0.3 Tax exemption

The use of fossil fuels for heating and cooling is subject to a substantial energy tax. In addition, there are CO₂ taxes which are dependent on the carbon content of the individual fuel. The energy and CO₂ taxes on fossil fuels for heating are around DKK 65 to 75 per GJ in 2019. The rates of energy tax are indexed to the net price index.

At present there is no energy tax on RE fuels. This means that in 2019 there is a tax advantage of around DKK 65 to 75 per GJ for using RE fuels rather than fossil fuels.

3.0.4 Renewable energy for processing

The funding pool for renewable energy for processing was a result of the Energy Policy Agreement of March 2012, and its objective was to promote and support enterprises converting process energy from fossil fuel to renewable energy. The scheme was opened for applications in August 2013, and until its conclusion in 2016 it committed to grants for a total of 550 projects with a combined value of DKK 1 208.6 million. Of the 550 projects, 63 were subsequently annulled.

The commitments were largely given to conversions to biomass and the concomitant energy efficiency improvements. In most cases it is oil that the applicant enterprises plan to replace with renewable energy. The vast majority of applications (83% of the total) are received from agricultural enterprises.

3.0.5 Renewable energy in the transport sector

Electric vehicles were exempt from registration tax and green ownership tax up to the end of 2015. Registration tax is subsequently being phased in gradually until 2020. However, electric cars that cost less than DKK 400 000 are exempted from the registration tax until the end of 2020. The exemption from ownership tax ceased in 2016.

Fuel cell vehicles, including hydrogen vehicles, are exempted from registration tax until 1 January 2019.

Renewable energy for transport is additionally promoted by a requirement for the admixture of 5.75% (energy percent) biofuels in land transport. The admixture requirement applies to fuel suppliers, and in addition the biofuels used must comply with EU sustainability criteria.

In addition, there used to be various support schemes which have since ceased:

- research schemes for electric vehicles, for which support amounted to DKK 5 million per year in 2010-2015;

- support for infrastructure for electricity, hydrogen and gas for heavy transport with a budget totalling DKK 70 million for the period 2012-2015;
- a support scheme for electric buses, which was valid in 2015 and amounted to DKK 4 million;
- support for a number of trials using alternative fuels for transport under the 'Energy-efficient transport solutions' funding pool.

3.0.6 Heat pumps on subscription

Support is given for establishing heat pumps and phasing out fossil fuels in households by means of the 'Heat pumps on subscription' scheme, which is a subsidy pool totalling DKK 25 million. The support scheme is valid from 2016 to the end of 2020 and is set up as a subscription scheme on an experimental basis, one of the goals of which is to throw light on the subscription scheme as a business concept. This means that grants are given to enterprises that establish heat pumps on subscription and consequently own heat pumps and are responsible for their installation, operation and maintenance for a longer period, typically 10-15 years. In return, the consumers in households pay a significantly lower one-off payment compared to the traditional purchase of heat pumps, a fixed monthly subscription fee and a price for the heat used. The State grants the premium to enterprises in an amount of up to DKK 20 000 per heat pump installed. The support is based on a range for an individual enterprise and distributed as follows:

- DKK 20 000 per heat pump is granted for 0-100 heat pumps;
- DKK 15 000 per heat pump is granted for 101-200 heat pumps;
- DKK 10 000 per heat pump is granted for 201-475 heat pumps.

An evaluation of the scheme has shown that enterprises have a clear incentive to ensure that their heat pumps operate efficiently at all times, since the enterprises are responsible for the heat pumps' electricity consumption. This is due to the fact that electricity consumption increases if a heat pump's efficiency is low. Experience likewise indicates that the scheme is convenient for consumers. It is expected that DKK 15.5 million will be spent out of the commitment amounting to DKK 25 million.

3.0.7 Energy savings initiatives

The energy companies' energy savings initiatives, also known as the energy savings scheme, oblige grid and transmission enterprises working with electricity, gas, district heating and oil to achieve energy savings in their final energy consumption each year. The energy savings projects can include improvements, replacements and new installations, such as improved building envelopes or building systems in private households, projects in industries that reduce process energy consumption, or projects for solar thermal installations in district heating plants. The energy savings scheme implements Article 7 of the Energy Efficiency Directive during the period up until the end of 2020. Grid and transmission enterprises must achieve annual savings of 10.1 PJ in final energy consumption during the period 2016-2020. In some cases the efforts have had an indirect effect on conversions from fossil fuels to renewable energy.

3.1. Please provide the information on how supported electricity is allocated to final customers for purposes of Article 3(6) of Directive 2003/54/EC (Article 22(1)(b) of Directive 2009/28/EC).

The declaration of electricity to consumers (final customers) is governed by Order No 1322 of 16 November 2010 on the declaration of electricity to consumers (the Electricity Labelling Order), as amended by Order No 403 of 28 April 2011 amending the Order on the labelling of electricity to consumers.

The Electricity Labelling Order states that the electricity trading company must use either a general declaration or an individual declaration. The general declaration is drawn up by Energinet on the basis of the average fuel consumption and environmental impact. The individual declaration must be supported by guarantees of origin for RE electricity or high-efficiency cogenerated heat that are cancelled by the electricity trading company. Energinet is in charge of issuing and cancelling guarantees of origin.

4. Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material (Article 22(1)(c) of Directive 2009/28/EC).

No support is granted for biofuels other than research and development support from the Energy Technology Development and Demonstration Programme [Energiteknologiske Udviklings- og Demonstrationsprogram, EUDP]. However, biofuels are exempt from CO₂ tax. Biofuels based on waste, waste products, non-food cellulosic material and ligno-cellulosic material count double with respect to the Danish blending requirement described in section 8.

Support for the use of biogas can partly be justified through its environmental advantages in terms of improved aquatic environment, reduced greenhouse gas emissions from agriculture, reduced odour nuisance, increased fertiliser value of degasified slurry from livestock manure, etc.

5. Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system (Article 22(1)(d) of Directive 2009/28/EC).

Denmark only operates with guarantees of origin for electricity (not heating or cooling) from renewable energy sources (see Order No 1323 of 30 November 2010 on guarantees of origin for electricity from renewable energy sources and Order No 1322 of 30 November 2010 on the declaration of electricity to consumers).

In Denmark, guarantees of origin can only be issued by Energinet. It is therefore Energinet that registers and monitors guarantees of origin that have been issued and their transfer or cancellation.

To eliminate the risk of VAT fraud, Energinet sends a request to the Danish Customs and Tax Administration (SKAT) when accounts are to be created by new market players. SKAT then investigates whether the player is known to the European tax cooperation for offences such as carousel fraud.

Energinet must ensure that registrations are correct, reliable and protected against fraud. Guarantees of origin are issued electronically in Denmark, in accordance with the European Energy Certificate System (EECS), the voluntary common European standard. The standard prescribes how guarantees of origin are to be issued, traded and used. Furthermore, all users of the EECS are contractually obliged to refrain from repeatedly using guarantees of origin. Energinet is a member of the Association of Issuing Bodies (AIB), which drew up the standard. Energinet was audited in 2015 to ensure that its processes comply with the requirements of the standard.

In addition, Energinet uses the CMO.grexel system to administer guarantees of origin. This system is also used by a number of other European countries. Information in the CMO.grexel system can be checked, just like Energinet uses a national register of master data to check information.

Biomass supply for transport:												
Common arable crops for biofuels (please specify main types)												
Energy crops (grasses etc.) and short-rotation trees for biofuels (please specify main types)												
Others (please specify)												

NB. Assumed calorific value for fuel wood with 15% moisture content = 15.8 – Wood pellet report, 2018: approximately 63% imported from EU countries. 2017 = 2018 Imports distributed across EU countries and third countries for wood chips and fuel wood: the distribution for fuel wood is applied.

EU/non-EU and biodegradable share of imported waste are assumptions.

* Amount of raw material if possible in **m³ for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste.**

** The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC.

In the 2012 Energy Policy Agreement, it was agreed that the Government would prepare a study of bioenergy in Denmark. The study was presented in May 2014 and it indicated, among other things, that there could be increasing challenges in ensuring the environmental sustainability of imported wood for energy purposes, in particular in the period after 2020. As a follow-up to the study, and owing to a lack of requirements at EU level, the former Minister for Climate, Energy and Building called upon the Danish energy industry to present sustainability criteria for solid biomass in a voluntary agreement.

In December 2014, the Danish Energy Association [Dansk Energi] and the Danish District Heating Association [Dansk Fjernvarme] published the ‘Brancheaftale om sikring af bæredygtig biomasse’ [Industry agreement to ensure sustainable biomass]. The agreement contains requirements and criteria that the energy companies will comply with when they use wood biomass for generating electricity or heating. The agreement specifies, among other things, that biomass must satisfy the following criteria:

1. Legality – The biomass resources must be harvested in a legal way under applicable local and national forest legislation.
2. Protection of ecosystems – Exploitation of wood resources must not adversely affect the functions of forests in relation to conserving biodiversity.
3. Maintaining productivity – Forestry and harvesting of biomass must not adversely affect the productivity of the forest, i.e. there are requirements to replant areas with trees.
4. Health – Forests must be managed in such a way that they are healthy and function well; this includes implementing protective measures against fire, disease, illegal logging, etc.
5. Biodiversity – Endangered animals and plants must be protected, and areas designated as valuable habitats must be conserved.
6. Social rights – The forest usage rights of indigenous peoples must be respected and complaint mechanisms etc. must be established. Workers must have the right to organise, and child labour is not permitted. The health and safety of employees must be protected.
7. The CO₂ displacement chain (cultivation, transport, power station efficiency, etc.) must be reduced by at least 70% compared to the fossil fuel reference for energy production in the EU.

For plants with an input capacity of more than 20 MW, the energy companies must annually present documentation reports explaining how they are complying with the sustainability requirements of the industry-level agreement. The requirements are being phased in during the period from 2016 to 2019, so they gradually cover an increasingly larger share of biomass consumption. The documentation reports from 2017 show that 70% of the reported amounts of wood biomass used for energy generation fulfil the industry-level agreement’s requirements for sustainability certification. The documentation reports also show that the average amount of greenhouse gas reduction is between 75% and 95% as

compared to the fossil reference, which bears witness to a reduction rate that is generally higher than the European Commission's guiding recommendations on a minimum 70% reduction of greenhouse gases from the supply chain (see SWD(2014) 259). The definitive figures for 2018 are not yet available.

Table 4a: Current domestic agricultural land use for production of crops dedicated to energy production (ha)

Land use	Surface (ha)	
	2017	2018
1. Land used for common arable crops (wheat, sugar beet, etc.) and oilseeds (rapeseed, sunflower, etc.) (Please specify main types) <i>Rapeseed, beet and maize</i>	140,000	120,000
2. Land used for short-rotation trees (willows, poplars) (Please specify main types) <i>Poplars, willows, coppice and alder</i>	8,780	8,651
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum (Please specify main types) <i>Miscanthus, reed canary grass.</i>	78	86

NB: Land used for common arable crops is self-assessed on the basis of the biogas census and Statistics Denmark (yield per ha.)

Sources: Row 1 Beet and maize: Report under the Order on sustainable production of biogas (Danish Energy Agency). Rapeseed: Statistics Denmark [Danmarks Statistik] (Tables hst6 and afg07), Energi fra biomasse – Ressourcer og teknologier vurderet i et regionalt perspektiv [Energy from biomass – Resources and technologies assessed from a regional perspective] by Jørgensen U., Sørensen P., Adamsen A.P. and Kristensen I.T. (2008), p. 47, in which it is estimated that 70-80% of rapeseed production is for biodiesel with simultaneous production of rapeseed cake and glycerine.

Rows 2 and 3 source: The Danish Agricultural Agency [Landbrugstyrelsen]

7. Please provide information on any changes in commodity prices and land use within Denmark in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources. Please provide where available references to relevant documentation on these impacts in your country (Article 22(1)(h) of Directive 2009/28/EC).

From 2016 to 2018 Denmark increased its use of renewable energy from 218 PJ (5,207 ktoe) to 246 PJ (5,876 ktoe), an increase of 13%. The majority of this increase, specifically 17 PJ (406 ktoe), is the result of an increased use of solid biomass, while the remainder of the increase is primarily due to an increased use of wind energy, solar energy, heat pumps and biogas.

The increased use of solid biomass corresponds to an almost equally large increase in imports of solid biomass, while the use of domestically produced solid biomass was largely unchanged from 2016 to 2018. Thus, there is no measurable effect on raw material prices and land use in Denmark.

8. Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material (Article 22(1)(i) of Directive 2009/28/EC).

Table 5:
Development in biofuels (ktoe)

Feedstock as listed in Annex IX Part A of Directive 2009/28/EC	2017	2018
(a) Algae if cultivated on land in ponds or photobioreactors		
(b) Biomass fraction of mixed municipal waste, but not separated household waste subject to recycling targets under point (a) of Article 11(2) of Directive 2008/98/EC		
(c) Bio-waste as defined in Article 3(4) of Directive 2008/98/EC from private households subject to separate collection as defined in Article 3(11) of that Directive.		
(d) Biomass fraction of industrial waste not fit for use in the food or feed chain, including material from retail and wholesale and the agro-food and fish and aquaculture industry, and excluding feedstocks listed in part B of this Annex	12	4
(e) Straw		
(f) Animal manure and sewage sludge	2	4
(g) Palm oil mill effluent and empty palm fruit bunches		
(h) Tall oil pitch		
(i) Crude glycerine		
(j) Cane bagasse		
(k) Grape marcs and wine lees		
(l) Nut shells		
(m) Husks		
(n) Cobs cleaned of kernels of corn		
(o) Biomass fraction of wastes and residues from forestry and forest-based industries, i.e. bark, branches, pre-commercial thinnings, leaves, needles, tree tops, saw dust, cutter shavings, black liquor, brown liquor, fibre sludge, lignin and tall oil		
(p) Other non-food cellulosic material as defined in point (s) of the second paragraph of Article 2		
(q) Other ligno-cellulosic material as defined in point (r) of the second paragraph of Article 2 except saw logs and veneer logs		
Feedstock as listed in Annex IX Part B of Directive 2009/28/EC	2017	2018
(a) Used cooking oil		
(b) Animal fats classified as categories 1 and 2 in accordance with Regulation (EC) No 1069/2009 of the European Parliament and of the Council	8	16

9. Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within Denmark **in the preceding 2 years**. Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within Denmark (Article 22(1)(j) of Directive 2009/28/EEC).

Production has been so limited that, in the opinion of the Danish Energy Agency, there has not been a significant impact.

10. Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (Article 22(1)(k) of Directive 2009/28/EC).

Table 6:
Estimated GHG emission savings from the use of renewable energy (t CO₂eq)

Environmental aspects	2017	2018
<i>Total estimated net GHG emission saving from using renewable energy²²</i>	<i>21,300</i>	<i>22,400</i>
Estimated net saving from the use of renewable energy for electricity	12,000	12,700
Estimated net saving from the use of renewable energy for heating and cooling	8,600	9,000
Estimated net saving from the use of renewable energy for transport	700	700

²² The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

11. Please report on **(for the preceding 2 years)** and estimate **(for the following years up to 2020)** the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020 (Article 22(1)(l) and (m) of Directive 2009/28/EC).

Table 7:

Actual and estimated excess and/or deficit (-) production of renewable energy in Denmark compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries (ktoe)

ktoe/year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimated excess in NREAP	-	694	834	1,123	1,106	833	928	552	619	-	63
Estimated deficit in NREAP	-	0	0	0	0	0	0	0	0	-	0
Total gross consumption of energy (H)	-	-	-	-	-	-	-	15,689	15,785	-	-
Proportion of gross consumption of energy from renewable energy sources ([Table 1a D])/[H]%)	-	-	-	-	-	-	-	35.8	37.1	-	-
Indicative trajectory for renewable energy sources relative to the 2020 target (%) ²⁹	-	19.6	19.6	20.9	20.9	22.9	22.9	25.4	25.5	30.1	30
Actual excess production relative to indicative trajectory	-	-	-	-	-	-	-	1,624	1,839	-	-

11.1. Please provide details of statistical transfers, joint projects and joint support scheme decision rules.

As stated in the RE Action Plan of June 2010, the Danish Government expects to be able to fulfil its commitments for expansion of renewable energy up to 2020 through national measures. On this basis, it will probably not be necessary to use the RE Directive's cooperation mechanisms for statistical transfers between countries in order to ensure Danish compliance with the objectives.

However, the Danish Government was invited by the Commission to make the expected excess of renewable energy available to other countries in the period up to 2020, during which time the share of renewable energy is expected to be above the indicative trajectory every year.

In August 2019 the Danish Energy Agency projected Denmark's energy consumption up to 2030²³. According to this projection, the share of RE in 2020 is expected to be around 41%, so Denmark will exceed its binding 2020 RE target of 30% by around 11 percentage points.

Denmark entered into a cooperation agreement with Germany in July 2016 concerning the mutual opening of tenders for support for energy from photovoltaic installations located in the other country (two cross-border tenders)²⁴. Projects with planned installation locations in Denmark subsequently won both tenders. It is therefore expected that photovoltaic installations in Denmark will receive support from Germany. As a consequence of the cooperation agreement, it is subsequently expected that, under Article 6 of the RE Directive, the energy from the plants concerned will be transferred statistically from Denmark (the country in which the energy is produced) to Germany (the country providing the support).

12. Please provide information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates (Article 22(1)(n) of Directive 2009/28/EC).

In the energy and CO₂ emission statistics, waste is divided into two categories: biodegradable and non-biodegradable. In accordance with international conventions, and including the definition in Article 2 of the RE Directive, the biodegradable component is counted as renewable energy. In Danish energy statistics it is expected that 55.0% of waste consumed is biodegradable. This proportion is determined on the basis of a study carried out in 2012.

From 1 January 2013 Denmark has decided to include 21 of the largest waste incineration plants in the CO₂ quota system. Incineration plants with CO₂ emissions above 50,000 tonnes per year must measure their CO₂ emissions, while other plants apply standard national factors.

There are 10 waste incineration plants that emit more than 50,000 tonnes of fossil CO₂ per year. These plants determine their annual emission of fossil CO₂ by measuring the CO₂ content of the flue gas. Two different methods are used for these measurements. These are a ¹⁴C method and a mass balance method (Bioma), which is based on a number of balances set up for the plant.

13. Please provide the amounts of biofuels and bioliquids in energy units (ktoe) corresponding to each category of feedstock group listed in part A of Annex VIII taken into account by

²³ Basisfremskrivning 2019 [2019 Basic projections], Danish Energy Agency, August 2019.

²⁴ Agreement between the Government of the Federal Republic of Germany and the Government of the Kingdom of Denmark on the establishment of a framework for the partial opening of national support schemes to support the generation of energy from solar photovoltaic projects and for the cross-border administration of such projects in the context of a single pilot run in 2016, United Nations Treaty Collection, Registration No I-54273.

that Member State for the purpose of complying with the targets set out in Article 3(1) and (2), and in the first subparagraph of Article 3(4).

Feedstock group	2017	2018
Cereals and other starch-rich crops	25	27
Sugars	18	16
Oil crops	151	151

Annex 1

**Table 2:
Overview of all policies and measures**

<i>Name and reference of the measure</i>	<i>Type of measure*</i>	<i>Expected result**</i>	<i>Targeted group and/or activity***</i>	<i>Existing or planned****</i>	<i>Start and end dates of the measure</i>
Tendering of offshore wind farms	Financial measure	Establishment of 1,350 MW of offshore wind turbines. 400 MW at Horns Rev, 600 MW at Kriegers Flak and 350 MW of onshore wind farms. Establishment of a minimum of 2,400 MW by 2030, distributed across three wind farms	RE electricity generation, investors.	400 MW established. 600 MW under construction. 350 MW planned. Planned	Contract for Horns Rev 3 was entered into in 2015 and contract for Kriegers Flak and the onshore wind farms was entered into in 2016. Park 1 operational 2027, the others by 2030
Technology-neutral tenders (onshore wind turbines, solar photovoltaics and offshore wind turbines under the participation scheme [åben-dør-ordning] – and hydro-electricity and wave power as from 2020)	Financial measure	Expected expansion by approx. 200 MW onshore wind equivalents annually 2018-2024	Wind turbines, solar photovoltaics and hydro and wave power as from 2020	Existing	Annual tenders 2018-2024
Flexible billing for electricity consumption	Regulatory measure	Promoting smart electricity consumption	Electricity consumers, grid enterprises and electricity trading companies	Existing/planned	2017-2020
Organisation and distribution of costs in relation to grid connection and grid reinforcement/expansion	Regulatory measure	Standardising conditions for grid connection for wind turbines and solar photovoltaics.	Owners of wind turbines and solar photovoltaics	Existing	2018 →
New financial regulation of electricity grid enterprises	Regulatory measure	Ensuring effective electricity distribution sector with reasonable prices for consumers and high supply security.	Electricity grid enterprises	Existing	2018 →
Increased premium for offshore pilot projects:	Financial measure	Support for 28 MW of offshore wind energy at the Nisum Bredning site. Expected result: 50,000 full-load hours.	Nisum Bredning Vindmøllelaug I/S	Existing	Commitment in 2016. Entered into operation in 2018.
International electricity exchange capacity, establishing Viking Link and West Coast connection	Regulatory measure	Promoting interconnection of electricity markets	Energinet DK (TCO)	Planned	Viking Link and West Coast connection put into operation in late 2022

Energy-saving efforts	Regulatory measure	The total savings objective for the efforts are 10.1 PJ per year during the period 2016-2020.	Grid and transmission enterprises	Existing	2016→2020
Premium for biogas	Financial measure	Expected result: Increased biogas production.	Plants using biogas for electricity generation, upgrading, transport, processing and heat.	Planned	2020 → Support schemes are closed to new beneficiaries as of 1 January 2020. Individual commitments are given for support for 20 years for an individual plant.
Premiums for electricity generation based on biomass	Financial measure	Only granted to plants that entered into operation no later than 1 April 2019. Expected result: Electricity production based on biomass instead of coal.	Biomass-powered CHP plants	Existing	2019 →
Registration tax exemption for electric cars (< DKK 400 000) and fuel cell vehicles	Financial measure	Promoting renewable energy in transport	Car buyers	Existing	The tax exemption for electric cars expires at the end of 2020. The exemption for fuel cell vehicles expired 1 January 2019.
Blending requirement for biofuels for the transport sector is rescinded	Regulatory measure	Promoting renewable energy in transport	Fuel suppliers	Planned	2020
Heat pumps on subscription	Financial measure	Expenditure of DKK 15.5 million out of DKK 25 million	Heat pump subscriptions for households. The support is a demonstration of a business concept and is provided to enterprises with a view to reducing consumers' initial investment.	Existing	2016-2020

* Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).

** Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?

*** Who are the targeted persons: investors, end users, public administration, planners, architects, installers, etc.? Or what activity/sector: biofuel production, energetic use of animal manure, etc.?

**** Does the measure replace or supplement the measures in Table 5 of NREAPs?