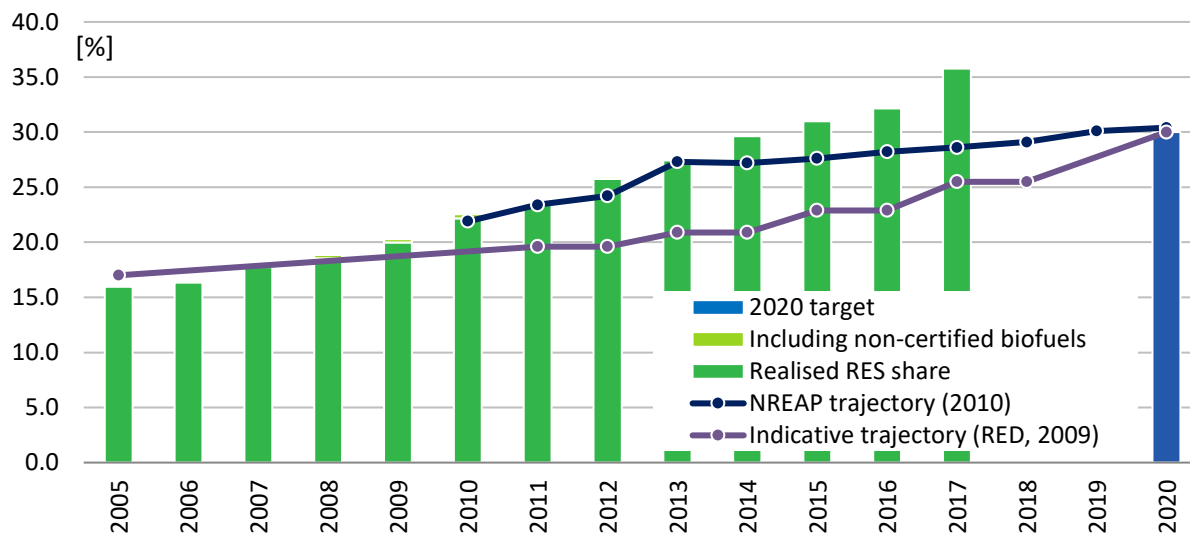


Summary

Electricity from renewable sources is mainly promoted through a feed-in premium and net-metering. The premium for wind and solar PV installations is awarded through tenders. Furthermore, Denmark supports the construction of pilot windmills through a separate state fund. This support is also granted through tenders. Renewable energy sources for heating purposes are exempt from the tax obligations on the production, supply and use of energy sources. The use of biogas for heating purposes is supported through a direct tariff. The main incentive for renewable energy use in transport is a biofuels quota system. Selling of biogas for transport purposes is supported through a direct tariff.



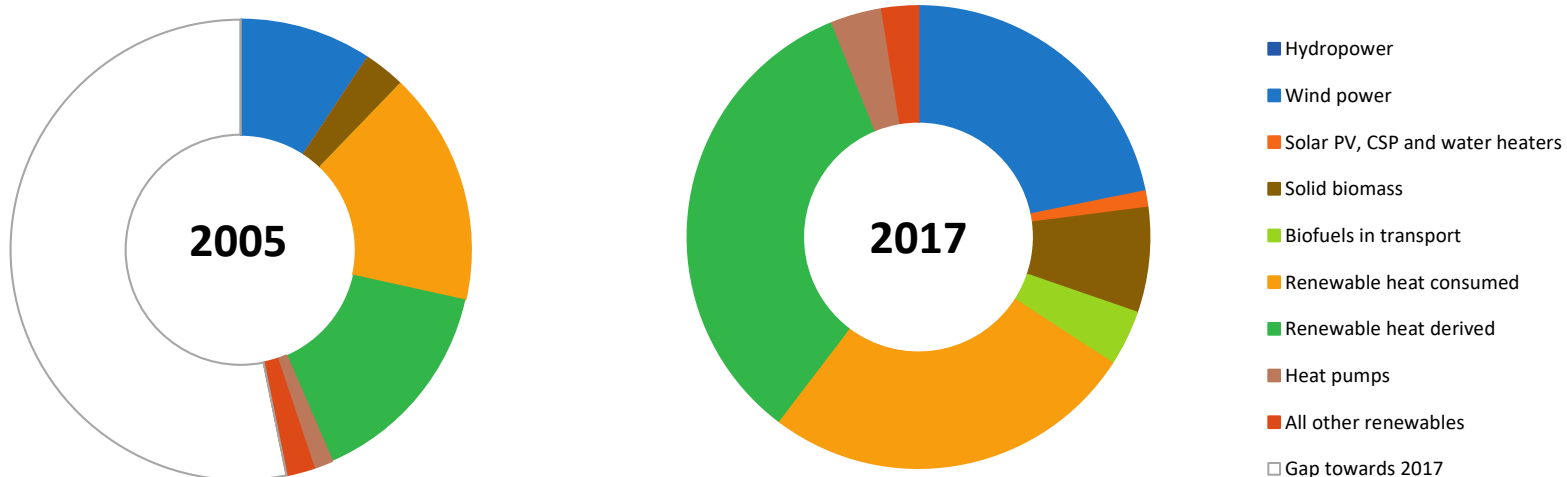
Source: EEA, Eurostat

Abbreviations used:

RES: renewable energy sources
 RES-E: renewable electricity
 RES-H/C: renewable heating/cooling
 RES-T: renewable transport fuels

Data for 2017

Overall RES share:	35.8%	Avoided fossil fuels:	9.4 [Mtoe]
Overall RES 2020 target:	30.0%	Avoided fuel expenses:	5.1 [billion euro]
Share RES-E in electricity:	60.4%	RES Turnover:	9170 [MEUR]
Share RES-T in transport:	6.8%	RES Employment:	50200 [jobs]
Share RES-H/C in heating:	46.5%		



Source: Eurostat, 2019.

	2005		2017		
	Energy		Energy	Employment	Turnover
Hydropower	2.5 ktoe		1.7 ktoe	<100 Jobs	<10 MEUR
Wind power	521.7 ktoe		1226.6 ktoe	34200 Jobs	6310 MEUR
Solar PV, CSP and water heaters	0.2 ktoe		64.6 ktoe	1300 Jobs	220 MEUR
Solid biomass	162.9 ktoe		412.6 ktoe	10500 Jobs	1890 MEUR
Biofuels in transport	0.0 ktoe		218.4 ktoe	700 Jobs	120 MEUR
Renewable heat consumed	914.9 ktoe		1474.3 ktoe		
Renewable heat derived	846.9 ktoe		1887.5 ktoe		
Heat pumps	75.5 ktoe		201.0 ktoe	1500 Jobs	270 MEUR
All other renewables	110.0 ktoe		142.1 ktoe		
Gap towards 2017	2994.4 ktoe				

Source: Eurostat, EurObserv'ER, 2019.

Hydropower jobs & turnover only covers 'small hydropower'. PV=Photovoltaics, CSP=Concentrated Solar Power. Biofuels in transport only covers compliant fuels (employment and turnover additionally cover the non-compliant biofuels). Derived heat includes heat produced in main activity producer plants and heat sold produced in autoproducer plants. Its counterpart is the final heat consumption in the final consumption sectors (such as households).



CURRENT RENEWABLE ENERGY POLICY

In March 2012 an Energy Agreement was reached in Denmark. The Agreement contains a wide range of ambitious initiatives, which aims at bringing Denmark closer to the target of 100% renewable energy in the energy and transport sectors by 2050. The Energy Agreement ensures a substantial expansion of wind power in particular. Denmark entered into a cooperation agreement with Germany in 2016 concerning the mutual opening of tenders for support for solar cells to plants located in the other country. Solar photovoltaic plants in Germany will therefore be able to receive support from Denmark, and solar photovoltaic plants in Denmark will be able to receive support from Germany. Instruments to promote deployment of renewable electricity, renewable heating and cooling, and renewable transport fuels respectively are highlighted in the next paragraphs.

Electricity from renewable sources is mainly promoted through a floating premium tariff. The sum of the market price and the bonus shall not exceed a statutory maximum per kWh, which depends on the source of energy used and the date of connection of a given plant. The applicable premium tariffs for onshore and offshore wind parks as well as solar PV are awarded through tenders on a pay-as-bid basis. Moreover, tenders are organised to stimulate innovative wind turbine development projects. In certain cases, plant operators are granted a guaranteed bonus on top of the market price. In such cases the maximum is not defined by law. Prosumers are eligible for net-metering. They are totally or partly exempt from paying Public Service Obligation on this electricity. The Public Service Obligation is a charge levied to support renewable energy. Associations of wind and solar energy plant owners and other local initiatives may apply for guarantees for loans for feasibility studies that are conducted in the run-up to the construction of a wind or PV energy plant.

Renewable energy sources for heating purposes are exempt from tax obligations on the production, supply and use of energy sources, thereby receiving a tax benefit in comparison to other fuels for heating purposes. Moreover, the use of biogas for heating purposes is supported through a direct premium per gigajoule of biogas used.

The main incentive for *renewable energy use in transport* is a biofuels quota scheme. Moreover biofuels are eligible to reduced tax obligations on the production, supply and use of energy sources as compared to fossil transport fuels proportionate to the share of biofuels in blended fuels. Moreover, use of biogas for transport purposes is supported through a direct premium per gigajoule of biogas sold to transport fuel consumers. Registration tax is set for 2018 and 2019 at 20% of the standard rate by 2020. Annual fees for public parking are reduced by at most 5000 DKK. Public electricity charging is free for battery electric vehicles and at a much reduced rate for electric buses. Battery electric vehicles pay a minimum amount of ownership tax. Companies that supply electric vehicle charging on a commercial basis can receive an electricity tax rebate that amounts to approximately 1 DKK per kWh. Public electric vehicles/buses programmes are implemented.

OVERVIEW OF MAIN SUPPORTING POLICIES

Tables 1 and 2 provide an overview of support instruments used to promote the deployment of renewable energy in Denmark.

Table 1: Overview of support schemes to promote renewable energy in Denmark

	NON-FISCAL SUPPORT SCHEMES					FISCAL AND OTHER STATE FUNDED INCENTIVES			
	Feed-in premium	Premium tariff	Quota obligation with certificates system	Tendering	Net-metering/ net-billing	Capital subsidy, grants	Tax regulation mechanism	Direct premium	Loan guarantees to local initiative projects
RES-E									
- Offshore wind	○			○					
- Onshore wind	○				○				○
- Solar	○				○				○
- Hydro	○				○				
- Geothermal									
- Solid biomass	○				○				
- Biogas	○				○				
RES-H/C									
- Solar thermal							○		
- Geothermal							○		
- Biomass							○		
- Biogas							○	○	
- Large ambient heat application									
- Small scale installations, e.g. solar thermal collects, heat pumps, biomass boilers and pellet stoves									
- Others, i.e. aérothermal, hydrothermal									
RES-T									
- Bio gasoline			○				○		
- Biodiesel			○				○		
- Biogas								○	

Sources: RES-Legal Europe (2019), EurObserv'ER

Table 2: Brief description of key policy instruments aimed at promoting RES in Denmark

<i>Instrument</i>	<i>Description</i>
Feed-in premium	Eligible operators of wind and solar PV electricity plants receive a floating premium contingent on the contractual reference price bid into the tender concerned and the average electricity price. Apart from operators of geothermal projects, certain other renewable electricity plant operators can get a fixed premium.
Tenders	Offshore and onshore wind as well as PV energy plant operators have to submit competitive bids into tenders to allocate feed-in premium support money. Moreover, tenders are organized to stimulate innovate wind turbine manufacturing.
Tax benefits	Renewable heat and biofuels are exempt from energy taxes. Blended transport fuels benefit from energy tax deduction proportionate to the share of biofuels in these fuels.
Loan guarantees for local wind and solar PV initiatives	Associations of wind and solar energy plant owners and other local initiatives may apply for guarantees for loans for feasibility studies that are conducted in the run-up to the construction of a wind or PV energy plant.
Net-metering	Electricity prosumers (electricity producers consuming partially or fully their own production) can benefit from a net-metering scheme, which exempts them (partially or fully) from the public service obligation surcharge on their electricity bill.
Biofuels quota scheme	Participants are exempted from fossil energy taxes proportionate with the biofuels share in blended transport fuels.
Direct premium	Granted to eligible biogas based heat producers and suppliers of biogas for transport purposes

For further information:

EEA, 2017. [1] EEA, 2017, <http://www.eea.europa.eu/data-and-maps/daviz/actual-res-progress-indicative-trajectory-2>

EurObserv'ER 16th annual overview barometer, <https://www.eurobserv-er.org/category/all-annual-overview-barometers>

International Energy Agency (IEA) database on policies and measures ,
<https://www.iea.org/policiesandmeasures/pams/denmark/name-24649-en.php>

Global Status Report by REN21, <http://www.ren21.net/gsr-2017>

Member State Progress Report, available at the Renewable Energy pages of the European Commission, <https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports>

RES Legal database: <http://www.res-legal.eu/search-by-country/denmark>

https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-denmark_en.pdf
(European Commission/ DG ENER, Energy Union Factsheet Denmark, November 2017)

European Alternative Fuels Observatory, <http://www.eafo.eu/content/denmark> ;
<http://www.eafo.eu/eu>

What is meant by ...?

Auctions for granting renewable energy support	An auction is a process of granting production or investment support to renewable energy projects based on the lowest bids by eligible project developers.
Feed-in tariff (FiT)	A support scheme which provides for a technology-specific remuneration per unit of renewable energy payable to eligible renewable energy producers. A proper, periodic review of FiT rates is often undertaken with the aim to prevent both too high FiTs so as to minimise regulatory rents, i.e. supra-normal returns and too low FiTs to preclude below-target market uptake because of FiT levels that are perceived by market participants to be less attractive. In addition, feed-in tariffs often include "tariff depression", a mechanism according to which the price (or tariff) ratchets down over time.
Feed-in premium (FiP)	A scheme which provides for a support level per unit of renewable energy to eligible renewable energy producers, typically for a period of 10-20 years, at a pre-set fixed or floating rate. The premium is typically adjusted periodically to exactly offset change in the average energy wholesale market price, based on a pre-specified benchmark market price. A floating FiP may move freely or may only be allowed to move within a pre-set interval.
Grants	Grants are non-repayable funds disbursed by one party (grant makers), often a government department, corporation, foundation or trust, to a recipient, often (but not always) a non-profit entity, educational institution, business or an individual. (Source: Wikipedia.org)
Green public procurement	In Green public procurement contracting authorities take environmental issues into account when tendering for goods or services. The goal is to reduce the impact of the procurement on human health and the environment. (Source: Wikipedia.org)
Renewable quota scheme (RQS)	A RQS mandates certain market actors (typically retail suppliers or large energy end-users) to respect a pre-set minimum share or amount of their total energy procurements from renewable sources of energy. Typically a tradable green certificate (TGC) scheme is operated to enable the obligated parties to prove their compliance with the prevailing renewable quota target by means of TGCs.
Sliding feed-in-tariff	A FiT scheme which pre-sets technology-specific declining feed-in tariffs for certain prospective vintages in line with the technology-specific learning curve, as projected by the National Regulatory Agency (NRA). Often a depression rate is used indicating the %/annum decrease in the rate level.
Soft loans	Loans at concessional (below market-based) terms, for example at sub-market-conform interest rates, made available in several Member States to stimulate certain renewable energy technologies.
Tax credits	These are amounts a tax paying entity is allowed to deduct when declaring payable taxes, for example company tax or income tax, to the tax authorities, for example the producer tax credits (PTCs) used in the United States to stimulate among others wind energy deployment.



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Disclaimer

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