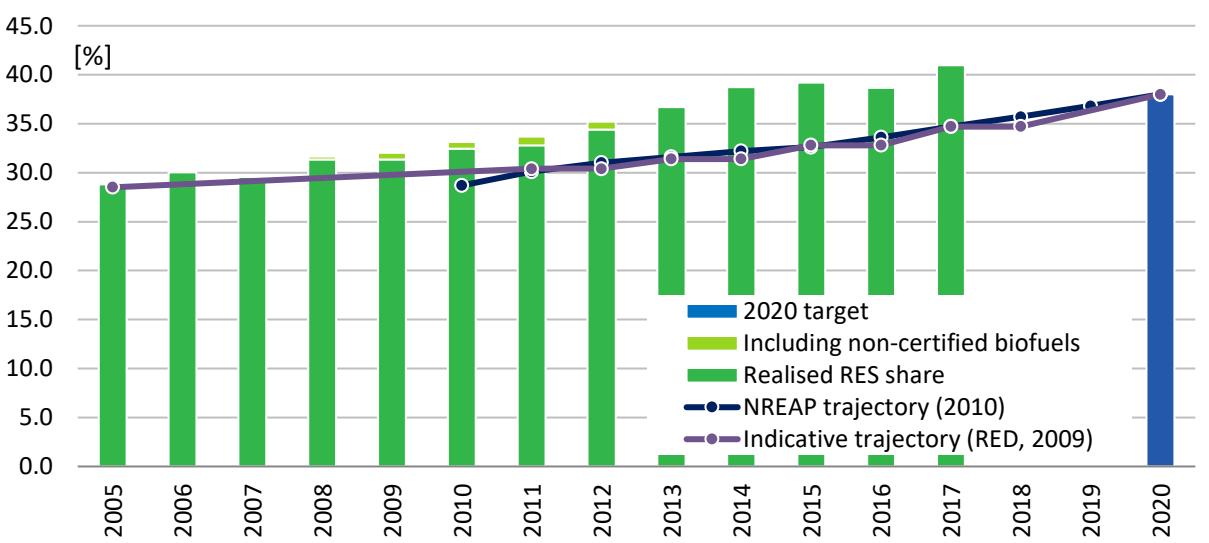
Finland

Renewable Energy Policy Factsheet

September 2019

Summary

By 2014 Finland already surpassed its 2020 target for renewable energy use under the 2009 EU Renewable Energy Directive. At present, the main support scheme is a technology-neutral premium-based tender scheme for producers of electricity from wind, solar, biogas, biomass wood fuels and wave power. The feed-in premium scheme with administratively determined premium levels for renewable electricity from wind, biomass and biogas used to be the main support scheme. As per ultimo 2018 this scheme has been closed for new applicants by developers of new biogas and wood fuel based power projects and it will be phased out altogether in due time. Renewable electricity generation projects are also supported by state subsidies. The main support mechanism for heat produced from RES is a “heat bonus” allocated to CHP plants working on biogas and wood fuel. In transport, the main incentive for renewable energy use is a biofuels quota system.



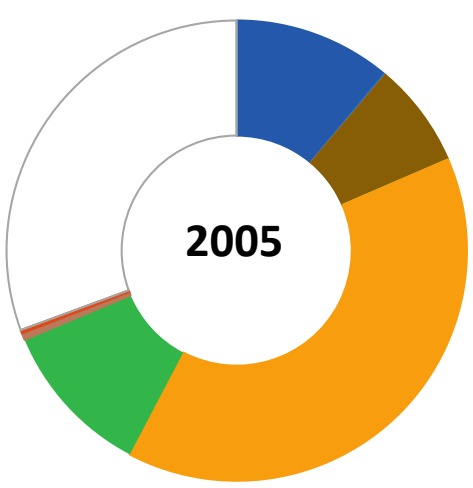
Source: EEA, Eurostat

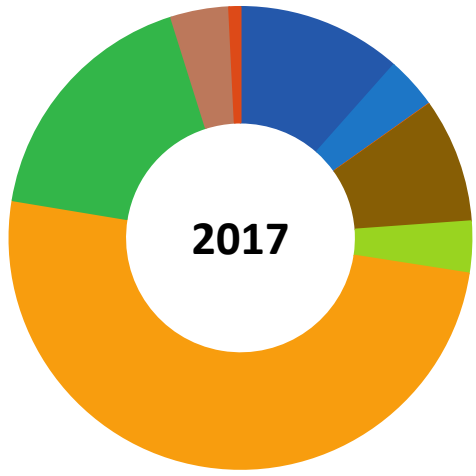
Abbreviations used:

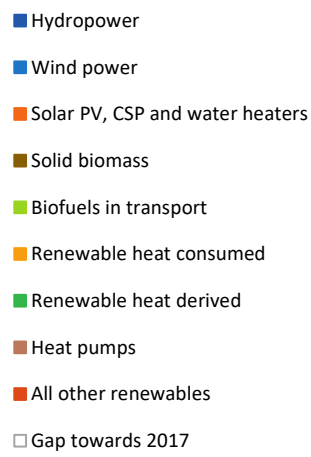
RES: renewable energy sources
RES-E: renewable electricity
RES-H/C: renewable heating/cooling
RES-T: renewable transport fuels

Data for 2017

Overall RES share:	41.0%	Avoided fossil fuels:	15.3 [Mtoe]
Overall RES 2020 target:	38.0%	Avoided fuel expenses:	4.8 [billion euro]
Share RES-E in electricity:	35.2%	RES Turnover:	6860 [MEUR]
Share RES-T in transport:	18.8%	RES Employment:	40300 [jobs]
Share RES-H/C in heating:	54.8%		







Source: Eurostat, 2019.

	2005	2017		
	Energy	Energy	Employment	Turnover
Hydropower	1196.1 ktoe	1248.2 ktoe	1200 Jobs	190 MEUR
Wind power	13.2 ktoe	390.6 ktoe	4100 Jobs	630 MEUR
Solar PV, CSP and water heaters	0.2 ktoe	3.8 ktoe	800 Jobs	130 MEUR
Solid biomass	792.2 ktoe	936.4 ktoe	26800 Jobs	4860 MEUR
Biofuels in transport	0.0 ktoe	390.0 ktoe	1600 Jobs	150 MEUR
Renewable heat consumed	4234.7 ktoe	5421.0 ktoe		
Renewable heat derived	1187.2 ktoe	1896.3 ktoe		
Heat pumps	51.4 ktoe	439.4 ktoe	4700 Jobs	740 MEUR
All other renewables	25.7 ktoe	84.4 ktoe		
Gap towards 2017	3309.5 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 November 2016 the Finnish government published the new Energy and Climate Strategy, outlining actions geared at enabling Finland in attaining the targets specified in the Government Programme and adopted in the EU for 2030, and to contribute to the EU achieving an 80−95% reduction in greenhouse gas emissions by 2050.

According to Finland's national energy and climate strategy to 2030 published on 24 November 2016, investment subsidies for renewable energy are mainly targeted towards commercialising new technology and the effort sharing sector, i.e. sectors that are not covered under the European Union's emissions trading scheme (EU ETS), especially towards institutions producing advanced transport biofuels. In addition, the use of agricultural, societal and industrial waste and side streams in the production of heat and electricity and as transport fuel is promoted.

Electricity from renewable sources is promoted mainly through a technology-neutral tender-based premium scheme for electricity from wind, solar, biogas, biomass wood fuels and wave power. Per year, in total 1.4 TWh of renewable electricity is put up for tendered premium support. A variable premium paid over a 12 year period. The premium level is capped at €53.50 /MWh. It is based ex post on the difference between a maximum pay-as-bid target price of € 83.50 and the average benchmark electricity price over the past three months (or €/ MWh 30 if the average benchmark price is below the latter amount). The funding comes from the state budget. Until end of 2018 Finland used to support electricity from selected renewable energy sources (wind, biomass and biogas) for new applicants through a feed-in premium scheme with administratively determined rates. Only approved installations commissioned before 2019 and small new wind farms (with a capacity below 2.5 MW) remain eligible to this scheme. Furthermore, under two distinct schemes investment grants are available for *inter alia* renewable electricity projects, open to all renewable electricity generation technologies meeting certain requirements.

For *renewable heat production* in bio-based CHP plants (using biogas or wood fuel) meeting certain requirements, such as passing the applicable minimum efficiency threshold, a so-called "heat bonus" is granted. This heat price subsidy amounts to € 50 / MWh for biogas-based and € 20 / MWh for (solid) biomass-based CHP installations, paid from the state budget. Furthermore, under two distinct schemes investment grants are available for renewable heat projects, open to all renewable heat generation technologies meeting certain requirements. One of these schemes is targeted on farmers.

Renewable transport fuels are promoted via a biofuels quota scheme. This mechanism obliges companies selling petrol or diesel fuels to ensure that biofuels compose a defined percentage of the company's total annual sales of fuel on an energy content basis. In addition, each component of transport fuels are taxed distinctly, based on energy content and carbon content. For (presumptively zero carbon) biofuel components the excise duty is less, which boils down to an additional incentive for biofuels. The costs of this tax relief for biofuels is borne by the state budget.

Electric vehicles are promoted by a package of measures, including:

- €2000 subsidy on the purchase of a battery electric vehicle (BEV) costing not more than €50000
- The owner of a BEV pays the minimum rate (5%) of the standard CO_2 gr/car-km emission rate based registration tax.

OVERVIEW OF MAIN SUPPORTING POLICIES

The main RES support measures applied in Finland are epitomized in Tables 1 and 2 below. See the previous section for more details.

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

	NON-FISCAL SUPPORT SCHEMES					FISCAL AND OTHER STATE FUNDED INCENTIVES	
	Feed-in premium	Heat bonus for CHP	Renewable quota scheme without certificates	Tendering	Net-metering/ net-billing	Investment subsidies	Tax regulation mechanism
RES-E							
- Offshore wind				x		x	
- Onshore wind	x			x		x	
- Solar				x		x	
- Hydro				x		x	
- Geothermal				x		x	
- Solid biomass	x			x		x	
- Biogas	x			x		x	
RES-H/C							
- Solar thermal						o	
- Geothermal						o	
- Biomass		x				o	
- Biogas		x				o	
- Large ambient heat application						o	
- Small scale installations, e.g. solar thermal collects, heat pumps, biomass boilers and pellet stoves						o	
- Others, i.e. aerothermal, hydrothermal						o	
RES-T							
- Bio gasoline			o				o
- Biodiesel			o				o
- Biogas							

Sources: RES Legal, EurObserv'ER

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

Instrument	*Description*
Feed-in tariff/premium	Producers of electricity from renewable energy sources (wind, wood chip, biogas) receive a feed-in premium on top the wholesale electricity price.
Energy/investment subsidies (state grants)	The Finnish government provides subsides for investment and research projects aimed at renewable energy generation. State grants are also provide for construction, expansion and renovation of heating facilities for agricultural production, where grant allocation is contingent on use of renewable energy sources.
Biofuel obligation	The main support scheme for promoting biofuels is a quota system, which obliges vendors to ensure that biofuels make up a certain percentage of their total annual sale of fuels.
Tax exemption (energy content and CO_2)	All transport fuels are taxed on their energy content and CO_2 emissions. Under the current tax regime, biofuels receive a tax rebate based on their lower energy content. The consideration of CO_2 emissions also provides a benefit for biofuels. The basis for CO_2 tax on biofuels is the carbon-dioxide emissions during their lifetime in comparison with their fossil equivalents. Unsustainable biofuels are subject to the same CO_2 tax as fossil fuels, sustainable biofuels are subject to 50 % of the CO_2 tax on the equivalent fossil fuel, and double-counted fuels under the RES Directive are not subject to any CO_2 tax.
Feed-in tariff/premium	Producers of electricity from renewable energy sources (wind, wood chip, biogas) receive a feed-in premium on top the wholesale electricity price.
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For further information:

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

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

EEA charts on progress of renewable energy sources for EU and per Member State, https://www.eea.europa.eu/data-and-maps/indicators/renewable-gross-final-energy-consumption-4/assessment-1

International Energy Agency (IEA) database on policies and measures , https://www.iea.org/policiesandmeasures/renewableenergy/?country=Finland

RES Legal database: http://www.res-legal.eu/search-by-country/finland

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

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

European Alternative Fuels Observatory, http://www.eafo.eu/content/finland ; 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 degression", 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 degression 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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