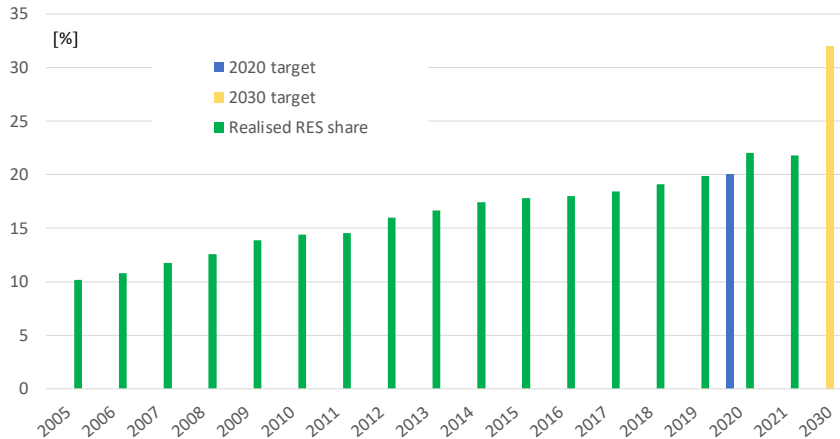


Finland

Renewable energy status

Share of energy from renewable sources in total gross final energy consumption



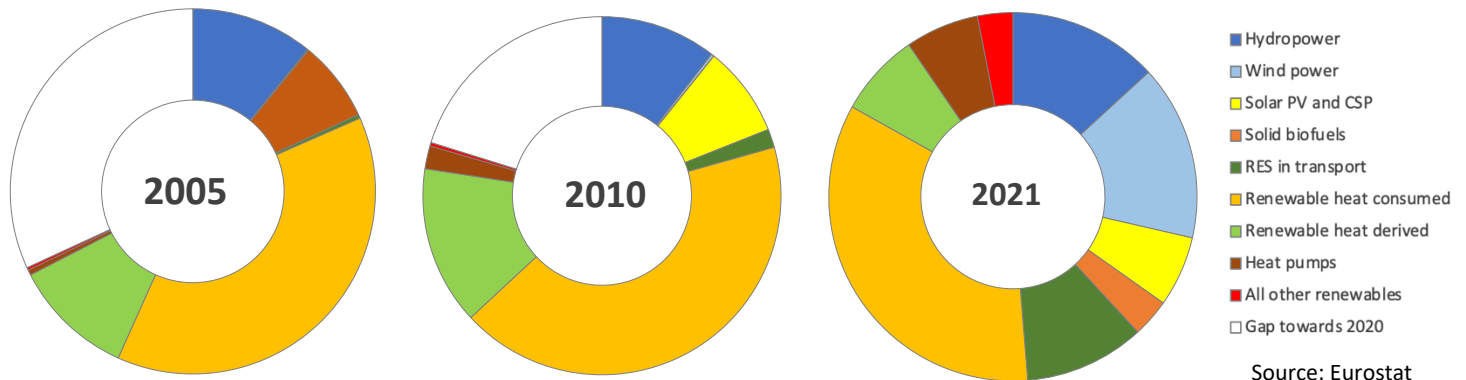
Source: Eurostat

Abbreviations used:

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

Data for 2021

Overall RES share:	43.1%	Avoided fossil fuels:	7.7 [Mtoe]
Overall RES 2020 target:	38.0%	Avoided fuel expenses:	3 364 [MEUR]
Overall RES 2030 target:	51.0%	RES Turnover:	7 470 [MEUR]
Share RES-E in electricity:	39.5%	RES Employment:	35 500 [jobs]
Share RES-T in transport:	20.7%	RES imports ² :	228 [MEUR]
Share RES-H/C in heating:	52.6%	RES exports ² :	13 [MEUR]



Source: Eurostat

	2005		2010		2021		
	Energy in ktoe		Energy in ktoe		Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	1 196.1		1 161.8		1 269.8	500	90
Wind power	13.2		27.8		723.7	4 400	780
Solar PV, and CSP	0.2		0.4		25.6	2 000	410
Solid biomass	792.2		908.8		1 089.2	19 200	4 560
Ren. energy in transport ³	37.2		184.6		828.7	1 000	150
Renew. heat consumed	4 234.7		4 695.4		4 965.4		
Renew. heat derived	1 187.2		1 585.0		2 026.3		
Heat pumps	51.4		229.9		573.3	7 700	1 380
All other renewables	25.7		34.8		-64.0	700	100
Gap towards 2020	3 524.4		2 233.7				

Source: Eurostat, EurObserv'ER

FTE = Full time equivalent, 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 auto-producer plants. Its counterpart is the final heat consumption in the final consumption sectors (such as households).

¹ From Integrated National Energy Climate Plan

² Referring to the International Trade chapter from the publication: EurObserv'ER - *The State of Renewable Energy in Europe, 2022 edition*

³ Employment and turnover are only referring to biofuels in transport.



CURRENT RENEWABLE ENERGY POLICY

RES-E

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 is 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 30 €/MWh 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.

RES H&C

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 for biogas-based and for (solid) biomass-based CHP installations is 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 at farmers.

RES-T

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.

Table 1: Brief description of key policy instruments aimed at promoting RES in Finland

<i>Instrument</i>	<i>Description</i>
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. Website: https://tem.fi/en/feed-in-tariff-for-renewable-energy
Support for Wind Power Construction	The support for wind power construction grants provide support for studies and planning of wind power construction. There is a total of EUR 2 million in grants available, aiming to complete all projects by the end of 2022.
Energy/investment subsidies (state grants)	The Finnish government provides subsidies 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. Website: https://tem.fi/en/energy-support
Energy Aid Scheme	Renewable energy is also promoted through the Energy Aid Scheme (investment subsidy). Aid is primarily targeted at the commercialisation of new technologies and to the non-ETS sector, including plants producing advanced biofuels for transport, and non-ETS electricity and heat production of companies. Aid is paid up to 30% for mature technologies and up to 40% for new technology projects. Since the start of 2019, there has been a separate budget allocated for large demonstration projects. The aid scheme will be in force 2021–2023. Website: https://tem.fi/en/energy-aid
Biofuel obligation	The biofuels quota system obliges vendors to ensure that biofuels make up a certain percentage of their total annual sale of fuels.
Tax exemption (energy content and CO2)	All transport fuels are taxed on their energy content and CO2 emissions. Under the current tax regime, biofuels receive a tax rebate based on their lower energy content. The consideration of CO2 emissions also provides a benefit for biofuels. The basis for CO2 tax on biofuels is the carbon-dioxide emissions during their lifetime in comparison with their fossil equivalents. Unsustainable biofuels are subject to the same CO2 tax as fossil fuels, sustainable biofuels are subject to 50 % of the CO2 tax on the equivalent fossil fuel, and double-counted fuels under the RES Directive are not subject to any CO2 tax.

For further information:

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European Alternative Fuels Observatory,
<https://www.eafo.eu/countries/finland/1732/incentives>

European Commission, 2020. Finland's Integrated Energy and Climate Plan, Publications of the Ministry of Economic Affairs and Employment. Energy, 2019.
https://energy.ec.europa.eu/system/files/2020-01/fi_final_necp_main_en_0.pdf

EEA, 2019. Progress towards renewable energy source targets at member State and EU-28 levels. Copenhagen, 19 December
https://www.eea.europa.eu/data-and-maps/daviz/actual-res-progress-indicative-trajectory-12#tab-chart_6

European Union, 2018. Regulation (EU) 2018/1999 on the Governance of the European Union and Climate Action, OJEU L328/1, Brussels, 21 December
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1999&from=EN>

International Energy Agency (IEA) database on policies and measures,
<https://www.iea.org/policies?topic=Renewable%20Energy>

IEA/IRENA Renewables Policies Database, 2021. Support for Wind Power Construction.
<https://www.iea.org/policies/12768-support-for-wind-power-construction>

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

Ministry of Economic Affairs and Employment in Finland.
<https://tem.fi/en/renewable-energy>

REN21, 2020. Global Status Report 2020.
https://www.ren21.net/wp-content/uploads/2019/05/gsr_2020_full_report_en.pdf

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

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.



Disclaimer

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