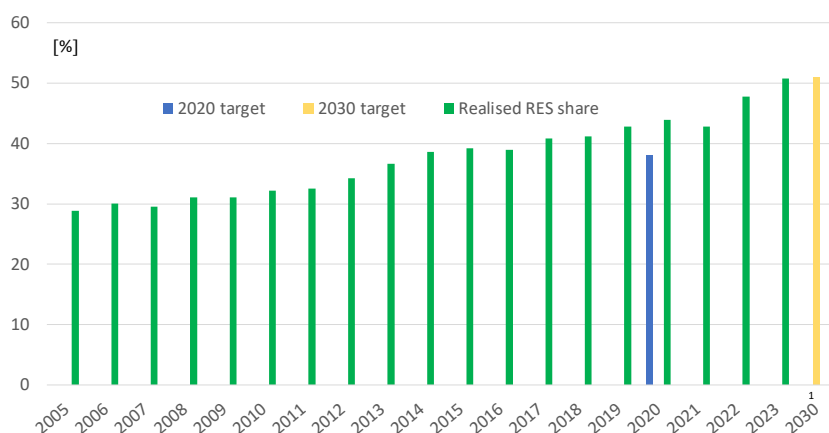


Finland

Renewable energy status

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



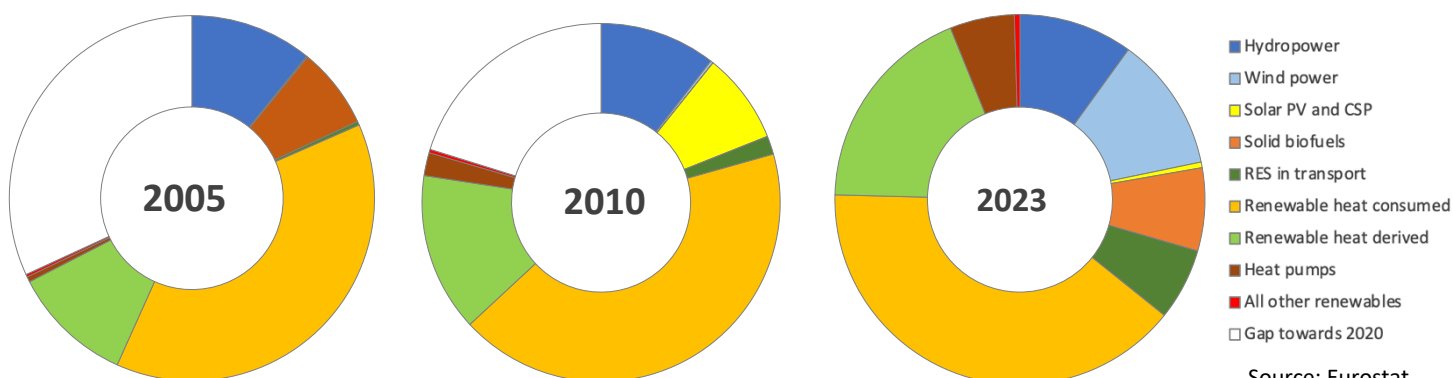
Source: Eurostat

Abbreviations used:

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

Data for 2023

Overall RES share:	50,8%	Avoided fossil fuels:	6,8 [Mtoe]
Overall RES 2020 target:	38,0%	Avoided fuel expenses:	4 397 [MEUR]
Overall RES 2030 target:	52,4%	RES Turnover:	8 040 [MEUR]
Share RES-E in electricity:	20,7%	RES Employment:	38 400 [jobs]
Share RES-T in transport:	61,3%	RES imports ² :	273 [MEUR]
Share RES-H/C in heating:	50,8%	RES exports ² :	5 [MEUR]



Source: Eurostat

	2005	2010	2023		
	Energy in ktoe	Energy in ktoe	Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	1 196.1	1 161.8	1 247,0	400	70
Wind power	13.2	27.8	1 474,0	8 400	1 510
Solar PV, and CSP	0.2	0.4	61,6	6 300	1 230
Solid biomass	792.2	908.8	906,6	13 200	3 480
Ren. energy in transport ³	37.2	184.6	785,4	1 000	130
Renew. heat consumed	4 234.7	4 695.4	4 961,0		
Renew. heat derived	1 187.2	1 585.0	2 310,6		
Heat pumps	51.4	229.9	705,4	8 000	1 440
All other renewables	25.7	34.8	60,7	1 100	180

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, 2024 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. Finland used to support electricity from selected renewable energy sources (wind, biomass and biogas) for new applicants through a feed-in premium scheme based on the difference between the target and market price. This has been phased out in 2018-2020 and replaced by the tender-based premium scheme. Only already approved installations commissioned before 2019 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. In Finland, the use of the grids for the transmission of electricity from renewable sources is regulated by the general legislation on energy (Electricity Market Act - Sähkömarkkinalaki - 588/2013). There are no special provisions for electricity from renewable sources.

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. 50 €/MWh is available for biogas CHP plants and 20 €/MWh for wood fuel CHP plants. 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, namely the energy aid scheme and investment support for farmers scheme, 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 for constructing renewable heating facilities for agricultural production. In Finland, state grants support research and development in renewable energies, while investment subsidies aid RES-H&C infrastructure development.

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 dioxide emissions. 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 are borne by the state budget.

Table 1: 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) can receive a feed-in premium on top the wholesale electricity price for a maximum of twelve years. 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 Aid	The Finnish government provides subsidies for investment and research projects aimed at renewable energy generation and new energy technologies. Investment aid is available for all technologies (solar, wind, geothermal, biogas, hydropower, biomass). The scheme is closed for new projects, but funding continues for projects already supported under the scheme. Investment aid can cover up to 40% of project costs. Website: https://tem.fi/en/energy-support
Energy Aid Scheme	Renewable energy and energy efficiency studies and investment projects are also promoted through the Energy Aid Scheme. The scheme focusses on new technologies. A budget of 14,1 million euros has been reserved for 2024, 10 million of which will be allocated to energy efficiency projects. For energy efficiency studies 40-50% of the costs are eligible for aid and 15-25% for investment projects. For renewable energy projects using new technologies a maximum of 30% of the costs are eligible to aid. A minimum of 25% of the projects financing must come from non-governmental funding. 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. The share of biofuels for road transport will increase from 18% in 2021 to 30% in 2029.
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.
Benefits for EVs	EVs are subjected to lower registration tax and annual ownership vehicle tax compared to fossil fuel powered vehicles due to low EV CO2 emissions. Website: https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/finland/incentives-legislations
Renewable Industry Taxation	Changes in taxation for renewable industry were announced in 2021. This includes industrial electricity tax being lowered, energy tax rebates being abolished by 2025, increase in taxation on heating fuels, and a tax reform for supporting low-emission transport for employment related transport.
Green transition investment projects	In 2022, the Ministry of the Environment is offering an aid targeted to municipalities and provincial associations in Finland for planning, permit procedures, and investigations related to investment projects that promote the green transition. The grant supports renewable energy, low carbon hydrogen, carbon capture and utilisation, electrification and decarbonisation of industrial processes, and recycling of key materials projects. The grant can cover up to 70% of the town planning, permitting, and reporting costs, and part of the funding comes from the European Union's NextGenerationEU recovery instrument. The scheme was extended in March 2023. Website: https://ym.fi/-/kunnille-ja-maakunnille-tarjolla-2-6-miljoonaa-euroa-avustusta-vihrean-siirryman-investointihankkeiden-kaavoitukseen-lupamenettelyyn-ja-selvityksiin

For further information:

European Alternative Fuels Observatory, 2023

<https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/finland/incentives-legislations>

International Energy Agency (IEA) database on policies and measures,

<https://www.iea.org/policies?topic=Renewable%20Energy&q=finland&country%5B0%5D=Finland>

IEA/IRENA Renewables Policies Database, 2021. Support for Wind Power Construction.

<https://www.iea.org/policies/12768-support-for-wind-power-construction>

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

[European Commission, Clean energy for EU islands – Policies in Finland](#)

https://clean-energy-islands.ec.europa.eu/legal/country/4939/category_legal/223

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.



Disclaimer

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