Renewable electricity finland

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Renewable energy in Finland increased from 34% of the total final energy consumption (TFEC) in 2011 to 48% by the end of 2021, primarily driven by bioenergy (38%), hydroelectric power (6.1%), and wind energy (3.3%). In 2021, renewables covered 53% of heating and cooling, 39% of electricity generation, and 20% of the transport sector. By 2020, this growth positioned Finland as having the third highest share of renewables in TFEC among International Energy Agency (IEA) member countries.[1]

In 2020, Finland"s share of renewables in gross final energy consumption reached 44.6%, surpassing the target of 38%. This excess enabled Finland to sell statistical transfers of renewable energy to EU member states not meeting their 2020 targets. In March 2021, Finland agreed to a transaction with Belgium, selling 1,376.5 GWh of renewable energy for EUR 18.6 million. After this sale, Finland"s renewable energy share in gross final consumption was reported at 43.8%, still above the 2020 goal.[1]

According to the International Energy Agency"s (IEA) 2023 Energy Policy Review, Finland saw a notable increase in its total final energy consumption (TFEC) from renewable sources, growing from 34% to 48% between 2011 and 2021. This increase was driven by a growth in bioenergy from 29% to 38% of TFEC, hydroelectric power from 4.7% to 6.1%, and wind energy from 0.2% to 3.3%. By 2020, Finland"s share of renewables in TFEC ranked third highest among the 31 IEA member countries.[1]

In 2021, renewable energy accounted for 43% overall, 39% in electricity, 53% in heating and cooling, and 20% in transport. For 2030, renewable energy targets have been set at 51% overall, with specific aims of 53% in electricity, 61% in heating and cooling, and 45% in transport.[1]

According to the International Renewable Energy Agency (IRENA), Finland"s renewable energy sector in 2020 was predominantly fueled by bioenergy, which accounted for 81% of the renewable energy supply. Hydro/marine sources contributed 12%, wind power made up 6%, and geothermal sources added 1%, with solar energy contributions not explicitly mentioned.[6]

The Finnish energy policy is based on the National Climate Strategy of 2001, updated in 2005 and 2008. The strategy provides the basis for policy preparation, decision-making and negotiations on national, EU and international levels. In its most recent adaptation, the strategy focuses on setting guidelines up to 2020 and a vision as far as 2050 to steer long-term planning.

The aim is to fulfil the Kyoto Protocol and its obligations by 2013. By that time, adequate post-Kyoto emission reduction measures should be in place, including the set of measures required of EU countries by 2020 by common agreement. To that end, the EU requires its members to report by 2016 about their ability to meet the obligations set for 2020. With regard to renewables, the EU goals aim to a share of 38% of final energy consumption in Finland by 2020, compared to 28.5% in 2005 and a previous national goal of 31% by

2020.

The national long-term vision aims at halting the growth of final energy consumption on one hand, and increasing the share of renewables on the other hand. To attain these objectives, the energy efficiency of consumption must be enhanced, particularly in housing, construction and transport, and new policy measures must be enacted to promote renewables.

The government expects the growing global demand of fossil fuels to drive their prices further up in the long term. Combined with the cost of emission allowances, this will significantly change the price relationship of fossil and renewable energy in favour of the latter. The government envisions significant growth in the use of wood-based energy, waste fuels, heat pumps, biogas and wind energy. A feed-in tariff system will be introduced as a major new policy measure to drive the introduction of renewables.

Finland already has among the highest shares of renewables, yet Finland for a long time did not use feed-in tariffs, fixed premiums, green certificate systems or tendering procedures. Lately some new policies have been adopted. From the European countries, Finland, Malta and Slovenia are the only ones (2006) that use only tax incentives to promote wind energy and other renewable electricity. Finland has no obligations or binding recommendations for the power companies to promote RE.[8]

Energy markets in Finland are based on free enterprise and open competition. The electric power industry in Finland has been open for competition since the new electricity market legislation in 1995. At the same occasion Finland joined the joint Nordic electricity market area where spot prices for electricity are determined at the common electricity exchange Nordpool. Power can be bought and sold freely in Finland, Sweden, Norway and most parts of Denmark.

In the Nordic electricity market, each country is independently responsible for its transmission grid. In Finland the local distribution grids are owned primarily by local energy companies. The national transmission grid is owned by the Fingrid corporation which for its part is owned jointly by the state, energy companies and financial investors. Major changes in the ownership of Fingrid are expected as new EU legislation will forbid energy producers from owning parts of the transmission grid.