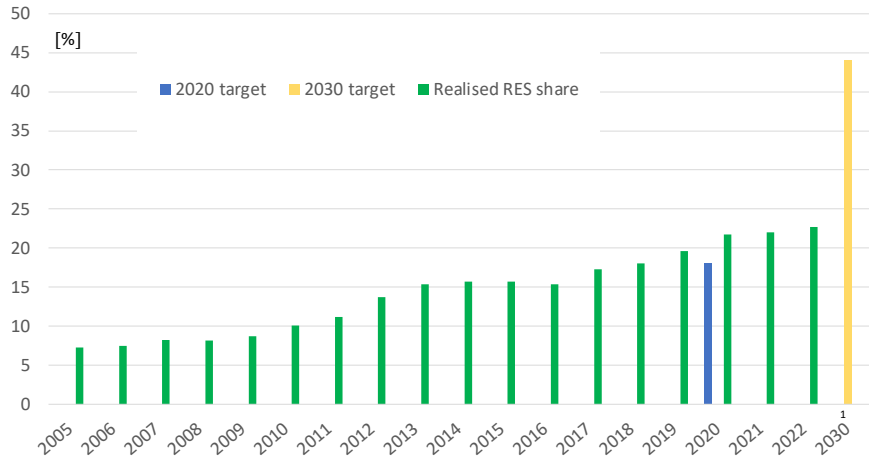
Renewable Energy Policy Factsheet

June 2024

Greece

Renewable energy status

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



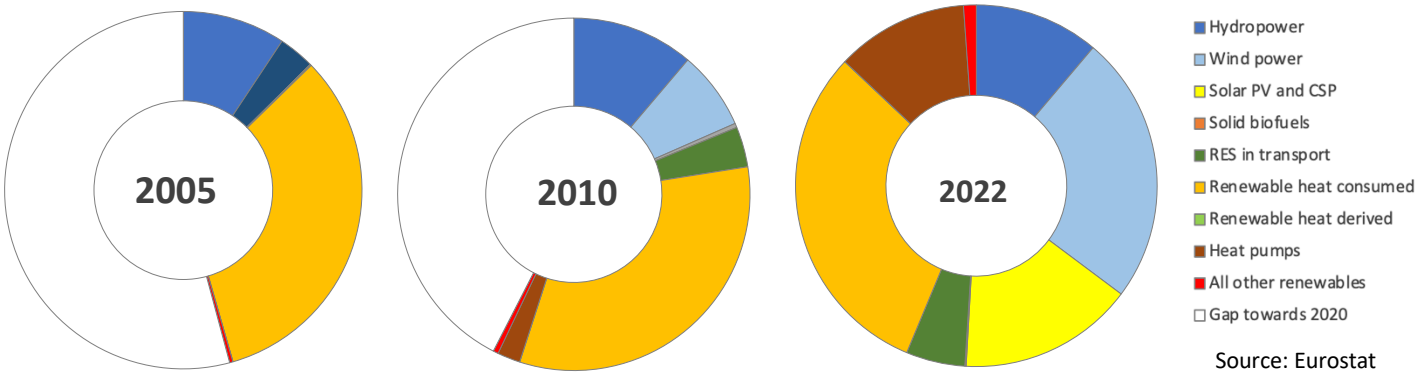
Source: Eurostat

Abbreviations used:

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

Data for 2022

Overall RES share:	22.7%	Avoided fossil fuels:	4.0 [Mtoe]
Overall RES 2020 target:	18.0%	Avoided fuel expenses:	3 389 [MEUR]
Overall RES 2030 target:	40.0%	RES Turnover:	2 640 [MEUR]
Share RES-E in electricity:	42.4%	RES Employment:	30 000 [jobs]
Share RES-T in transport:	4.1%	RES imports[2]:	1 347 [MEUR]
Share RES-H/C in heating:	30.6%	RES exports[2]:	367 [MEUR]



Source: Eurostat

	2005	2010	2022		
	Energy in ktoe	Energy in ktoe	Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	322.6	387.8	437	800	80
Wind power	113.3	249.7	941	2 500	290
Solar PV, and CSP	0.1	13.6	614	15 600	1 290
Solid biomass	0.0	0.0	4	600	70
Ren. energy in transport[3]	3.8	127.9	206	2 300	110
Renew. heat consumed	1 136.5	1 124.7	1 203		
Renew. heat derived	0.0	0.0	0		
Heat pumps	0.0	72.8	463	6 000	630
All other renewables	10.4	16.3	45	2 200	170

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

The Greece government raised their RES ambition for 2030 in their revised NECP from 35% to 44% of gross final energy consumption, which is doubling the figure achieved in 2021. Consequently, the RES targets in each sector are increased to different extents, namely 79% (previously 61%) in electricity generation, 46% (previously 43%) in heating and cooling sector and 29% (previously 19%) in transport sector. The transport sector is complemented with 1% of RFNBO and 2.4% of advanced biofuels in fuel used in transport sector and an upper limit of conventional biofuels of 1.7%.

RES-E

The revised NECP emphrasize the importance of decarbonising electricity generation as reflected in the raised RES ambition, which is expected to reduce more than 2/3 of the GHG emissions until 2030. The key supports for RES technologies in power generation are sliding feed-in premiums (FiP), addressing bigger plants except for PV, and feed-in tariffs (FiTs), and promoting small-scale RES plants. Additionally, PV > 500 kW and onshore wind plants > 3 MW can be granted after successful participation in technology-specific tenders (competitive bidding processes). Moreover, autonomous generating RES installations up to 60 kW are eligible for a net metering scheme, addressing especially PV and onshore wind. The scheme has been implemented since 2015 and allows electricity consumers who also generate electricity, e.g., to 'virtually' consume their self-generated electricity at any time through a billing agreement. Under the Development Law 2022, an income tax exemption mechanism or alternatively an investment grant scheme is available for specified renewable power technologies, including bio-energy using high efficient CHP up to 5 MW, small-scale hydropower up to 15 MW and other renewable generation technologies up to 5 MW for self-production and -consumption. Hybrid power plants employing two or more RES technologies (besides wind offshore) on non-interconnected islands ≤ 5MW are also supported. A complementary market mechanism in place is the guarantees of origin (GOs) for each MWh of electricity produced from RES or combined heat and power (CHP) in certain facility for a certain period of time.

To support small PV installations with a size of up to 10.8 kW (with battery storage systems with a storage capacity of up to 10.8 kWh) for households and farmers, a new program "Photovoltaics on the Roof" was introduced in April 2023 with a budget volume of 200 million euros, reaching up to 75% for households and 60% for farmers. By subsidizing the costs, development and installation expenses of battery and photovoltaic system, the program enables households and farmers to be more energy independency of, help them to reduce the energy bills and lower the greenhouse gas emissions.

RES H&C

To encourage renewable energy use for heat production, FiTs for rooftop solar applications are applicable to residences that cover a part of their water heating needs by some other renewable energy source (e.g. solar thermal). The installation systems for RES H&C in domestic and tertiary sectors are supported through tax incentives and investment subsidies. The Development Law provides income tax relief and investment grant not only for high efficient RES cogeneration plants, but also for RES H&C production plants and energy efficient district heating and cooling systems. Moreover, financing programmes are available to

promote the use of RES for heating, cooling and hot water use, as well as to improve energy efficiency in hotels, tourist accommodation. The programme "Recycle - Change Water Heater" subsidizes the replacement costs of old energy-intensive electric water heater with a new solar water heater, which improve both the use of renewables and energy efficiency in heating sector. The programme “Exsoikonomo- Autonomo”, a continuation of the programme “Energy Saving at Home”, aims at ameliorating the energy performance of residential buildings by providing subsidies and interest-free loans for the installation of RES plants and energy-saving measures. Lastly, KENAK is obligations for new buildings to ensure at least 60% of the hot warter demand is covered by solar thermal installations.

The revised NECP also underlines the importance of biomethane through biomethan blending quotas of 10.8% in 2030 and 20.4% in gas distributed.

RES-T

The priority of the revised NECP for transport sector is to reduce emissions by electrifying transport, especially cars and taxis. Therefore, the State is supporting electrification of transport with specific incentives for private cars, corporate fleets, including light trucks (vans), taxis, and public transport. Specifically, the programme "Kinoumai Ilektrikia” promotes e-mobility through the provision of subsidies and supports the installation of charging stations for personal vehicles. The "I Move electricity" programme subsidizes the purchase or long-term lease of electric vehicles (incl. two-wheelers, tricycles or bicycles) and the installation of smart chargers for individuals or companies. Similarly, within the framework of the National Recovery and Resilience Plan, subsidy program for passenger vehicles for public use (*E.D.X.*) "Green Taxi" provides subsidy for the purchase or long-term leasing of an all-electric E.D.X. TAXI vehicle (BEV) since 2023. Moreover, the Climate Law states that in Athens and Thessaloniki all new taxis and a third of new rental cars should be hybrids or electric vehicles (EV) from 2025. Under this background, the Greece’s National Recovery and Resilience Plan was approved in the same year and its key measures on supporting green transition includes the deployment of more than 8,000 electric charging points and 220 green urban transport busses in Athens and Thessaloniki, an important investment programme in railways and a thorough reform of the sector. Besides e-mobility, Biofuels producers are eligible for subsidies and tax relief under the Development Law.

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

Instrument	*Description*
Sliding Feed-in Premium (FiP)	Since 2017, sliding feed-in premium above the electricity market price is granted through a technology-specific competitive bidding process for large scale RES installation. Contracts guarantee the operating aid for 20 years. The framework of the competitive bidding processes is expected to be extended, supported and modified as appropriated in the coming years. Eligible technologies are wind onshore, solar CSP, geothermal energy, biogas and hydro-power and biomass. Every plant operator with a plant above 400kW is eligible for support, apart from PV.
Feed-in Tariff (FiT)	A fixed price support, feed-in tariff, is granted for smaller and specific RES technologies: small-scale RES $\leq$ 400 kW on interconnected island, onshore wind $\leq$ 3 MW and PV and all RES on non-interconnected islands $\leq$ 500 kW. Demonstration projects; and renewable energy source power plants in the non-interconnected islanlds (NIIs) are also applicable for FiT. Contracts guarantee the operating aid for 20 years (25 years for solar thermal projects).
Net-metering scheme	Since 2014, a net metering system for autonomous producers was introduced in Greece for the first time. The current net metering process is described in Min. Decision 15084/382. Furthermore, "virtual net metering" was also introduced. "Virtual net-metering" is available for city/regional councils, schools, universities, farmers, farming associations and Energy Communities. Under this scheme, the eligible institutions will be allowed to operate RES plants, if installations are located in the same Administrative Region. The net-metering process is similar within mainland grid, on interconnected and non-interconnected islands. Different restrictions apply with regard to the maximum capacity of each plant, as well as the maximum cumulative capacity on each non-interconnected island.
The Development Law: tax and investment incentives	Tax exemption mechanism and subsidy supports are provided for specified renewable power technologies and heating and cooling installations, including bio-energy using high efficient CHP up to 5 MW, small-scale hydropower up to 15 MW, other renewable generation technologies up to 5 MW for self-production and –consumption, high efficient RES hybrid power plants, but also for RES H&C production plants and energy efficient district heating and cooling systems. Biofuels producers are also eligible for the support. The support is offered as subsidies, leasing subsidies, subsidies for the creation of new jobs, an income tax relief and/or stabilization of income tax coefficient.
Photovoltaics on the Roof	Since April 2023, the program is open to application and will remain "open" until the available resources per category are exhausted. The maximum installed power of the photovoltaic station to be subsidized is set at 10.8 kW. Accordingly, regarding the battery, the maximum subsidy is set at 10.8 kWh. The battery should be able to supply the power of the RES station for at least one hour. The total budget of the program, amounting to 200 million euros, from the resources of the Recovery and Resilience Fund, is divided into four categories, based on individual income. The aim of the program is to fully cover the cost of the battery and the development and installation costs of the photovoltaic system. For the first two categories, the battery subsidy is 100%, while for the third and fourth categories it is 90%. Households will be obliged to install a photovoltaic station with a battery, while farmers are given the option of installing a photovoltaic station with or without a battery.
Exsoikonomo-Autonomo programme	The Programme "Exsoikonomo- Autonomo" is the continuation of the successful Programme "Energy Saving at Home", initiated in 2013. The Programme is carried out in rounds. The new Programme "Exsoikonomo- Autonomo", initiated in December 2020, aims at ameliorating the energy performance of residential buildings. This is achieved through the provision of subsidies and interest-free loans for the installation of RES plants and energy-saving measures. In general, the amount of subsidy is contingent upon the personal or family income of the applicant, while the rest of the total expenditure can be given in form of an interest-free loan, which is financed by the Hellenic Development Bank (HDB). Eligible technologies are aerothermal heat pumps, biomass (pellet) plants, geothermal heat pumps, solar water heaters and solar heating.
Recycle - Change Water Heater	The programme subsidizes households for the replacement of energy-consuming Electric Heaters with new modern technology Solar Heaters. The subsidies cover the purchase of a new Solar Water Heater of modern technology, the cost of carrying out the necessary additional work to replace the old Electric Water Heater with the new Solar Water Heater (e.g. transportation costs, installation of the New Solar Water Heater or removal of the old Water Heater, consumables & accessories, etc.).

RES-H building obligations (KENAK)	For all new buildings, it is obligatory that hot water demand is partly covered by solar thermal installations (min. percentage: 60% per annum). This requirement is waived where the hot water demand is covered by other energy supply systems based on RES (art. 6 par. 3 Law No. 4122 and KENAK art. 8 par. 3.1.3). In addition, all new buildings should be almost zero energy buildings from 2021 onwards (art.9 Law No. 4122/2013). Apart from that, a "Long-term renovation strategy" is foreseen. The strategy aims at recording the country's building stock. Based on that, appropriate policies and measures will be designed so as to upgrade the energy efficiency of all buildings in Greece (art.2a Law No. 4122/2013).
I Move Electricity	The programme subsidizes the purchase or long-term lease of an electric vehicle and the purchase of an electric two-wheeler, tricycle or bicycle, and the installation of a smart home charger in your principal place of residence or for scrapping your old vehicle.
Green Taxi	The programme subsidizes the purchase or long-term lease of an electric vehicle and the purchase of an all-electric E.D.X. TAXI vehicle (BEV) and the installation of smart charger.

For further information:

Clean energy for EU island, https://clean-energy-islands.ec.europa.eu/countries/greece

Development Law – Greece Strong Growth, https://noisis.gr/program/new-development-law-2/?lang=en

Net-Metering / Net-Billing (Net-metering and virtual net-metering), https://clean-energy-islands.ec.europa.eu/countries/greece/legal/res-electricity/net-metering-net-billing-net-metering-and-virtual-net

Fourth biennial report under the United Nations Framework convention on climate change, https://unfccc.int/sites/default/files/resource/BR4_Greece.pdf

Greece's Climate Law, https://www.bloomberg.com/news/articles/2021-11-04/greece-brings-in-climate-law-banning-fossil-fuel-cars-from-2030#xj4y7vzkg

Greece's Recovery and Resilience Plan, https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/greeces-recovery-and-resilience-plan_en#green-transition

International Energy Agency (IEA) Policies database, https://www.iea.org/policies

National Energy and Climate Plan - Prelimary draft revised version (Octorber 2023), https://commission.europa.eu/document/download/83ffdc95-2d22-4c67-8d4c-a3e59f752921_en?filename=GREECE%20-%20DRAFT%20UPDATED%20NECP%202021-2030%20EN.pdf

Greece's Ministry of Environment and Energy (March 23, 2023) Kostas Skrekas: With the "Photovoltaics on the Roof" program we are putting energy democracy into practice, https://ypen.gov.gr/kostas-skrekas-me-to-programma-fotovoltaika-sti-stegi-kanoume-praxi-tin-energeiaki-dimokratia/

Recycle - Change Water Heater programme, https://allazothermosifona.gov.gr/

RES-H building obligations (KENAK), https://clean-energy-islands.ec.europa.eu/countries/greece/legal/res-heating-and-cooling/res-h-building-obligations-kenak

I move mobility - Second Cycle, https://kinoumeilektrika2.gov.gr/

Green Taxi, https://prasinataxi.gov.gr/

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.

Funded by the European Commission