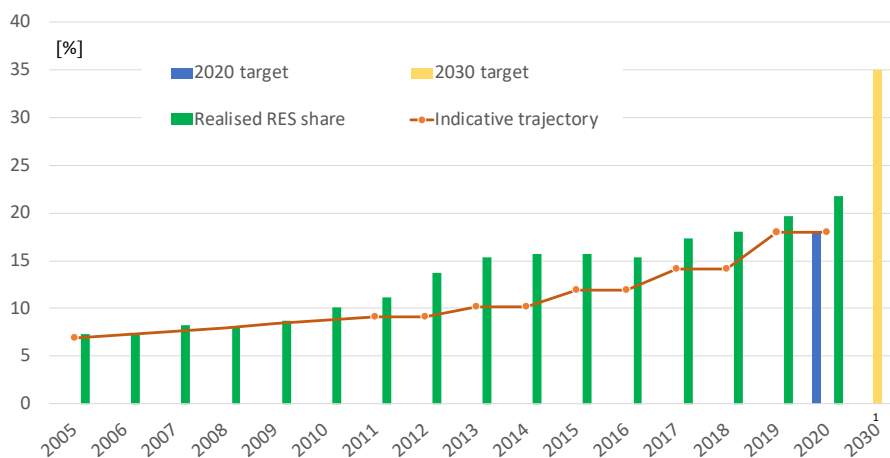


Greece

Renewable energy status

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



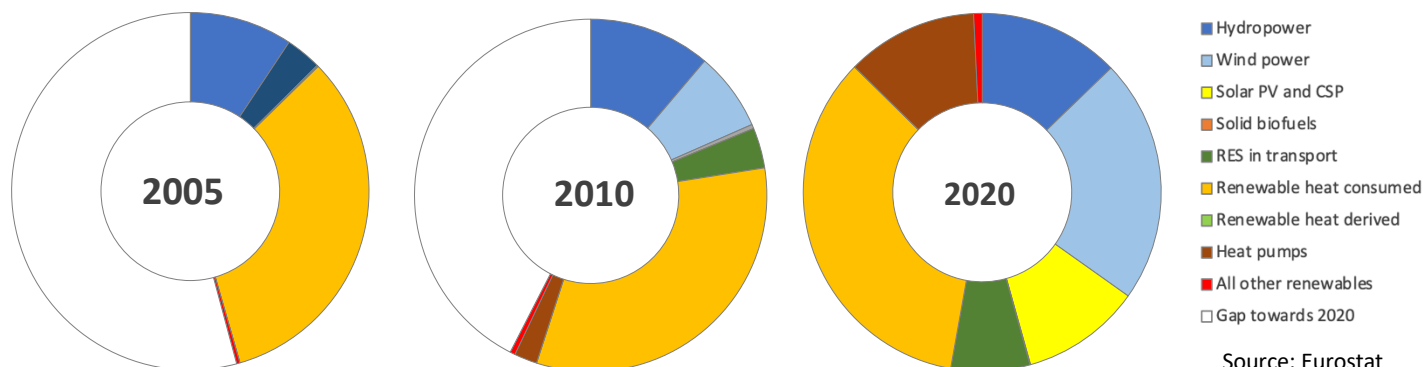
Source: Eurostat

Abbreviations used:

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

Data for 2020

Overall RES share:	21.8%	Avoided fossil fuels:	3.4 [Mtoe]
Overall RES 2020 target:	18.0%	Avoided fuel expenses:	819 [MEUR]
Overall RES 2030 target:	35.0%	RES Turnover:	3 730 [MEUR]
Share RES-E in electricity:	35.9%	RES Employment:	42 300 [jobs]
Share RES-T in transport:	5.3%	RES imports ² :	491 [MEUR]
Share RES-H/C in heating:	31.9%	RES exports ² :	36 [MEUR]



Source: Eurostat

	2005		2010		2020		
	Energy in ktoe		Energy in ktoe		Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	322.6	387.8	4 42.6	800	70		
Wind power	113.3	249.7	763.3	6 300	590		
Solar PV, and CSP	0.1	13.6	374.7	5 500	450		
Solid biomass	0.0	0.0	1.8	400	40		
Ren. energy in transport ³	3.8	127.9	246.7	2 700	140		
Renew. heat consumed	1 136.5	1 124.7	1 195.6				
Renew. heat derived	0.0	0.0	0.0				
Heat pumps	0.0	72.8	411.1	24 100	2 240		
All other renewables	10.4	16.3	26.7	2 500	200		
Gap towards 2020	1 875.8	1 469.7					

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, 2021 edition*

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



CURRENT RENEWABLE ENERGY POLICY

RES-E

The key support for RES technologies in power generation is sliding feed-in premiums (FiP), granted after successful participation in technology-specific tenders (competitive bidding processes). These plants are required to participate in market mechanisms either autonomously or through the RES aggregator. Exceptions are wind energy farms ≤ 3 MW and other renewable power installations ≤ 500 kW, which are supported through feed-in tariffs. Specific photovoltaic park projects, contributing to the replacement of lignite power, in the area of Western Macedonia and Megalopolis will receive investment and tax incentives under the Just Transition Development Plan. Moreover, autonomous generating RES installations up to 500 kW (e.g. households with a solar PV installation) or 1 MW for energy communities and other entities of public benefit are eligible for a net metering scheme. 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 new 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, small-scale hydropower up to 15 MW and other renewable generation technologies for self-production and -consumption. Hybrid renewable power plants on non-interconnected islands ≤ 5 MW 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.

RES H&C

To encourage renewable energy use for heat production, FiTs for rooftop PV 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 new 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.

RES-T

A binding RES target in transport sector and a blending obligation of biofuels are in place. The obligations are specifically blending diesel with bioethanol at a rate of 7% (by volume) and gasoline with bioethanol at a rate of 3.3% (by energy content) for 2020. For biofuel plants that are not subject to supply or blending obligations, investment supports are available under the new investment law for the production of sustainable biofuels other than food-based biofuels and for the conversion of existing food-based biofuel plants into advanced biofuel plants. Incentives are granted to companies purchasing or leasing vehicles with anti-pollution technologies. These incentives could be reduction of lease fees, increase of depreciation rate and income tax deduction. 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 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.

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

<i>Instrument</i>	<i>Description</i>
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.
Feed-in Tariff (FiT)	A fixed price support, feed-in tariff, is granted for smaller and specific RES technologies: wind energy farms ≤ 3 MW and other renewable power installations ≤ 500 kW. Demonstration projects; and renewable energy source power plants in the non-interconnected islands (NIIs) are also applicable for FiT. Contracts guarantee the operating aid for 20 years (25 years for solar thermal projects).
The Development Law: tax and investment incentives	Tax exemption mechanism and investment supports are provided for specified renewable power technologies and heating and cooling installations, including bio-energy using high efficient CHP, small-scale hydropower up to 15 MW, other renewable generation technologies for self-production and –consumption, high efficient RES cogeneration plants, but also for RES H&C production plants and energy efficient district heating and cooling systems.
Biofuel quota	Blending obligations are in force and specify a mandatory blending rate of bioethanol in diesel of 7% (by volume) and in gasoline of 3.3% (by energy content) for 2020.

For further information:

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

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>

Just Transition Development Plan of lignite areas, https://www.sdam.gr/sites/default/files/consultation/Master_Plan_Public_Consultation_ENG.pdf

National Energy and Climate Plans (NECPs), https://ec.europa.eu/energy/sites/ener/files/el_final_necp_main_en.pdf

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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