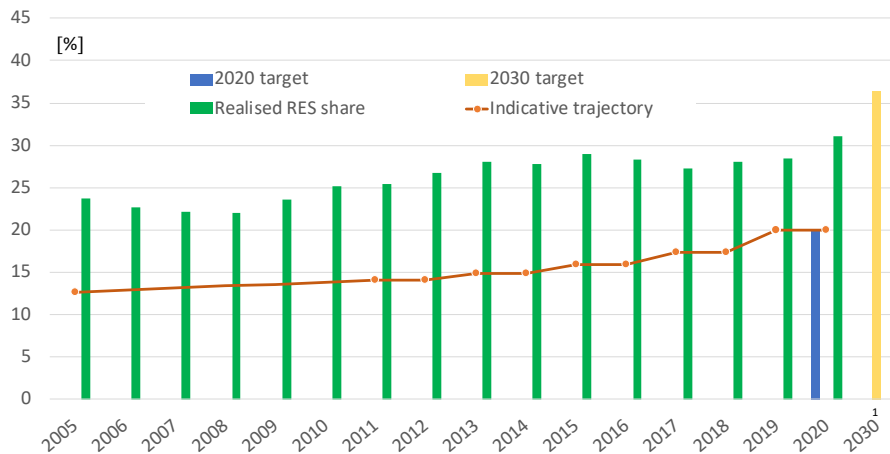


Croatia

Renewable energy status

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



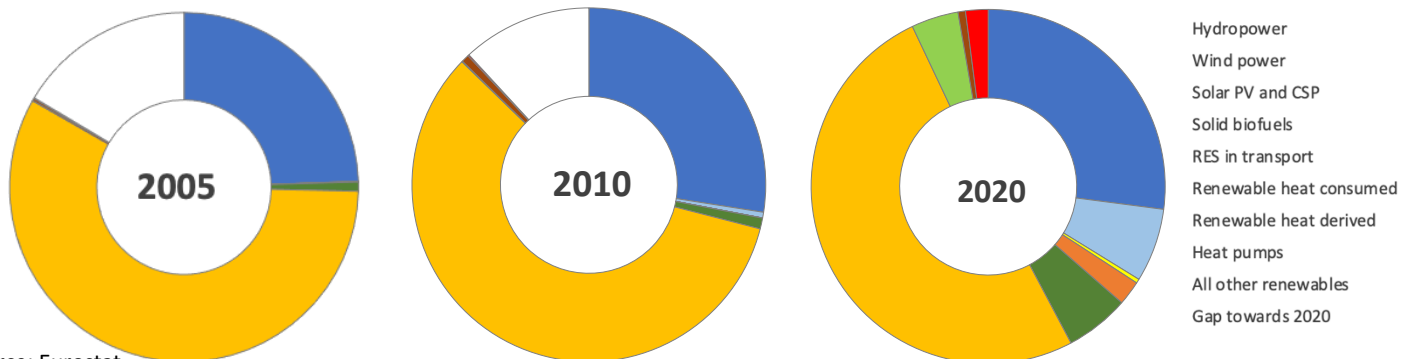
Source: Eurostat

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:	31%	Avoided fossil fuels:	0.7 [Mtoe]
Overall RES 2020 target:	20%	Avoided fuel expenses:	67 [MEUR]
Overall RES 2030 target:	36.4%	RES Turnover:	750 [MEUR]
Share RES-E in electricity:	53.8%	RES Employment:	14 000 [jobs]
Share RES-T in transport:	6.6%	RES imports ² :	159 [MEUR]
Share RES-H/C in heating:	36.9%	RES exports ² :	45 [MEUR]



Source: Eurostat

	in ktoe	Energy in ktoe	Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	526.2	591.3	582.2	700	40
Wind power	1.0	11.2	144.6	2 100	140
Solar PV, and CSP	0.0	0.0	8.2	<100	<10
Solid biomass	0.3	0.3	48.1	8 600	310
Ren. energy in transport ³	18.3	21.3	125.9	1 200	80
Renew. heat consumed	1245.4	1252.9	1 090.8		
Renew. heat derived	0.0	1.5	92.7		
Heat pumps	5.3	15.0	14.6	<100	<10
All other renewables	0.9	2.6	44.1	1 200	160
Gap towards 2020	353.9	255.1			

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

Croatia plans to increase the share of energy consumption based on renewable energy sources within electricity consumption 63.8 % by 2030 (47.0 % in 2020). Renewable energy generation is set to be supported mainly through a tender-based feed-in premium scheme. For eligible installations of less than 500 kW a feed-in tariff is allocated through tenders. Additionally, the Croatian Bank for Development and Reconstruction (HBOR) and the Environmental Protection and Energy Efficiency Fund (FZOEU) provide financial incentives for RES-E projects.

The following measures and instruments are in place for renewable electricity generators:

- Since 1 January 2016 the designated main support scheme for renewable energy is a tender based floating feed-in premium scheme for privileged installations with a capacity as from 500 kW. The support scheme is funded by a surcharge on the consumer electricity price. RES-E plant operators, who have obtained the status of privileged producer and have won a public tender carried out by the Croatian Energy Market Operator (HROTE), will receive a floating feed-in premium during a 12-year period. The premium level will be determined by the (positive) difference between the contractual support reference price, which is annually adjusted in line with the Croatian consumer price index, subtracted by the reference electricity market price. The latter is determined ex post annually by HROTE. In principle, HROTE issues a call for tenders at least once a year, if quotas for the support of certain technologies of renewable energies are available. It took a long time to get secondary legislation adopted about requirements for becoming a privileged producer, technology quota, etc., needed to organize the first annual tender. Meanwhile the first 88 MW RES-E tender has been reportedly launched in August 2020, encompassing 50 MW of solar PV, 15 MW of biogas, 14 MW of biomass and 9 MW of hydropower. (PV Magazine, 2020). Solar projects ranging in scale from 50-500 kW are eligible to participate, with a maximum price of €0.063/kWh for the solar power generated.

The price cap for the other renewables technologies is €0.10/kWh. The procurement round is part of a tender program announced by the Croatian government in May, 2020. The scheme aims to allocate 1,075 MW of solar capacity as part of an overall 2.26 GW of renewables projects, of which 1,075 MW solar PV and includes allocations for other energy sources such as hydropower, wind, biomass, biogas, and geothermal energy.

- Soft loans granted for the implementation of RES-E projects are part of the “environmental protection” loan scheme by the Croatian Bank for Reconstruction and Development (HBOR) in cooperation with commercial banks. In principle, all RES_E technologies are eligible. The costs are borne by state-funded HBOR.
- The Environmental Protection and Energy Efficiency Fund (FZOEU) offers grants and soft loans for the use of renewable energy sources. In principle, all RES_E technologies are eligible. The costs are covered by the state, voluntary national and international donations, and remaining sources of income.

RES H&C

According to its national plan, Croatia intends to reach out a 36.6 % RES share within heat and cooling consumption. However, this threshold was already achieved in 2020 (36.93 %).

There are currently no support schemes for renewable heating and cooling. However, the Energy Strategy adopted in 2009 obliges the Croatian State to encourage the future use of RES and to achieve a higher percentage of primary use of RES in the heating sector (cooling is not mentioned). For the promotion of renewable energy in heating and cooling, the main document is the Programme for usage of the potential for heating and cooling for period between 2016 and 2030 (Program korištenja potencijala za učinkovitost u grijanju i hlađenju za razdoblje 2016 – 2030.).

RES-T

In transport sector, Croatia is targeting a 13.2 % RES share by the end of 2030, knowing that the realized share was 6.59 % in 2020.

The main promotion scheme in the field of renewable transport fuels is a biofuels quota scheme. The quota obligations set an increasing annual %-share of biofuels in marketed transport fuels up to 10.05% the year 2020 as defined in the national goals. Obligated parties, transport fuel distributors, have to present by the end of February an annual report and analyses results of the previous year showing that they did comply with last year's biofuels quota scheme obligations. The costs of the scheme are ultimately borne by the final users of transport fuels. Additionally, biofuels are exempt from excise duty on transport fuels. The costs in terms of excise revenues forgone are borne by the state. Electric vehicles are subject to reduced - or are exempt from – the CO₂-based registration tax.

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

<i>Instrument</i>	<i>Description</i>
Feed-in tariffs	Guaranteed sale of electricity at a pre-set preferential price during the support contract period. New applications open to small-scale projects (< 500 kW) through tenders.
Feed-in premiums	Floating premiums based on difference between guaranteed reference values and the average benchmark electricity price per reference period during the support contract period. New applications open to large-scale projects (\geq 500 kW) through tenders.
Tenders	Applicable to project developers seeking feed-in tariff or premium support benefits.
Investment subsidies	The Environmental Protection and Energy Efficiency Fund (FZOEU) offers grants and soft loans for the use of renewable energy sources.
Soft loans	Granted for the implementation of RES-E projects are part of the “environmental protection” loan scheme by the Croatian Bank for Reconstruction and Development (HBOR) in cooperation with commercial banks. The Environmental Protection and Energy Efficiency Fund (FZOEU) also offers soft loans for the use of renewable energy sources.
Biofuel quota schema	Obliges importers and suppliers of transport fuels to deliver a minimum share of biofuels for each year up to the year 2020 as defined in national legislation.
Tax credits mechanism	Sets the excise duty for biofuels to zero.

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<https://www.iea.org/policies?topic=Renewable%20Energy>

Member State Progress Report, available at the Renewable Energy pages of the European Commission,

<http://ec.europa.eu/energy/en/topics/renewable-energy>

PV Magazine, 2020, Croatia tenders 50 MW of solar. On-line article. August 6

<https://www.pv-magazine.com/2020/08/06/croatia-tenders-50-mw-of-pv/>

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https://www.ren21.net/wpcontent/uploads/2019/05/gsr_2020_full_report_en.pdf

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

<http://globalcompetitionreview.com/insight/the-european-middle-eastern-and-african-antitrustreview-2017/1067815/eu-energy>

(Croatian renewables support compatible with the EU internal market: DG COMP decision SA.38406 on 1 September 2015)

https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-croatia_en.pdf

(European Commission/ DG ENER, Energy Union Factsheet Croatia, November 2017)

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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