



**REPORT**

**ON PROGRESS IN THE PROMOTION AND USE OF ENERGY FROM RENEWABLE SOURCES  
PURSUANT TO ARTICLE 22 OF DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT  
AND OF THE COUNCIL OF 23 APRIL 2009 ON THE PROMOTION OF THE USE OF ENERGY  
FROM RENEWABLE SOURCES AND AMENDING AND SUBSEQUENTLY REPEALING  
DIRECTIVES 2001/77/EC AND 2003/30/EC  
(Text with EEA relevance)(OJ L 140/16, 5.6.2009)**

**REPUBLIC OF CROATIA**

**MINISTRY OF THE PROTECTION OF THE ENVIRONMENT AND ENERGY**

Zagreb, February 2020

## INTRODUCTION

Pursuant to Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance) (OJ L 140/16, 5.6.2009) ('the Directive'), the Republic of Croatia undertook to increase the use of energy from renewable sources so that it would account for at least 20% of gross final consumption at EU level by 2020.

Article 22 of the Directive requires Member States to submit a report to the Commission on progress in the promotion and use of energy from renewable sources by 31 December 2011, and every two years thereafter. The sixth report, to be submitted by 31 December 2021, shall be the last report required.

Member State reports will be important for monitoring overall renewable energy policy developments and Member State compliance with the measures set out in the Directive and the National Renewable Energy Action Plan of each Member State. The data included in these reports will also serve to measure the impacts referred to in Article 23 of the Directive.

The report by the Republic of Croatia on progress in the promotion and use of energy from renewable sources pursuant to Article 22 of the Directive was drawn up in accordance with the template for Member State progress reports under Directive 2009/28/EC, which is available on the website of the European Commission's Directorate-General for Energy.

The purpose of the template is to help ensure that Member State reports are complete, cover all the requirements laid down in Article 22 of the Directive and are comparable with other reports and National Renewable Energy Action Plans. Much of the template draws on the template for the National Renewable Energy Action Plans<sup>1</sup>.

The template has been filled in in accordance with the definitions, calculation rules and terminology laid down in Directive 2009/28/EC and Regulation (EC) No 1099/2008 of the European Parliament and of the Council<sup>2</sup>.

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<sup>1</sup> C(2009)5174.

<sup>2</sup> OJ L 304, 14.11.2008, p. 1.

**1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding period (2015-2018) (Article 22(1)(a) of Directive 2009/28/EC)**

**Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources[1]**

<b>%</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
RES-H&C(2)	38.54	37.58	36.55	36.51
RES-E(3)	45.39	46.64	46.42	48.14
RES-T(4)	3.63	1.25	1.18	3.89
<b>Overall RES share(5)</b>	<b>28.96</b>	<b>28.26</b>	<b>27.28</b>	<b>28.02</b>

[1] Facilitates comparison with Table 3 and Table 4a of the NREAPs.

[2] Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Articles 5(1)(b) and 5(4) of Directive 2009/28/EC) divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of NREAPs applies.

[3] Share of renewable energy in electricity: gross final consumption of electricity from renewable sources for electricity (as defined in Articles 5(1)(a) and 5(3) of Directive 2009/28/EC) divided by total gross final consumption of electricity. The same methodology as in Table 3 of NREAPs applies.

[4] Share of renewable energy in transport: final consumption of energy from renewable sources in transport (cf. Article 5(1)(c) and 5(5) of Directive 2009/28/EC) divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport and 4) electricity in land transport (as reflected in row 3 of Table 1). The same methodology as in Table 3 of NREAPs applies.

[5] Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

**Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)[1]**

	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
(A) Gross final consumption of RES for heating and cooling	1251.2	1219.4	1211.8	1187.6
(B) Gross final consumption of electricity from RES	703.4	727.8	747.8	783.8
(C) Gross final consumption of energy from RES in transport	69.0	24.4	24.8	79.8
<b>(D) Gross total RES consumption(2)</b>	<b>1978.8</b>	<b>1948.2</b>	<b>1960.1</b>	<b>1998.4</b>
(E) Transfer of RES to other Member States	0	0	0	0
(F) Transfer of RES from other Member States and 3rd countries	0	0	0	0
(G) RES consumption adjusted for target (D)-(E)+(F)	1978.8	1948.2	1960.1	1998.4

[1] Facilitates comparison with Table 4a of the NREAPs.

[2] According to Art.5(1) of Directive 2009/28/EC gas, electricity and hydrogen from renewable energy sources are only considered once to avoid double counting.

**Table 1b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in the Republic of Croatia to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity[1]**

	2015		2016		2017		2018	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro (2):	2208	7024.7	2205	6960.5	2204.7	6887.1	2199.5	7784.9
non-pumped	1915	6677.3	1912	6607.1	1911.6	6533.9	1924.1	7700.9
<1MW	2	2.5	2	2.7	4.9	15.5	4.6	12.4
1MW-10MW	34	108.6	35	113.6	33.9	83.7	33.9	104.3
>10MW	1879	6922.1	1875	6850.2	1872.8	5408.5	1885.6	7584
pumped	293		293		293.1		275.4	84
mixed pumped (3)	293		293		293.1		275.4	84
Geothermal	0	0	0	0	0	0	10	2
Solar:	48	57.3	56	65.5	60	78.7	67.7	74.9
photovoltaic	48	57.3	56	65.5	60	78.7	67.7	74.9
concentrated solar power	0	0	0	0	0	0	0	0
Tide, wave, ocean	0	0	0	0	0	0	0	0
Wind:	418	845.7	483	1018.6	576.1	1205.3	586.3	1335.4
onshore	418	845.7	483	1018.6	576.1	1205.3	586.3	1335.4
offshore	0	0	0	0	0	0	0	0
Biomass (4):	53	265.2	63	421.4	86.6	525.6	115.4	668.1
solid biomass	25	89.1	26	194.1	42	215.9	64.8	313.2
biogas	28	176.1	37	237.3	44.6	309.7	50.6	354.9
bioliquids	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>2727</b>	<b>8192.9</b>	<b>2807</b>	<b>8476.1</b>	<b>2927.4</b>	<b>8696.8</b>	<b>2968.9</b>	<b>9865.3</b>
of which in CHP		240.5		405.1				

[1] Facilitates comparison with Table 10a of the NREAPs.

[2] Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

[3] In accordance with new Eurostat methodology.

[4] Biomass complying with applicable sustainability criteria was taken into account, cf. Article 5(1), last subparagraph, of Directive 2009/28/EC.

**Table 1c: Total actual contribution (final energy consumption[1]) from each renewable energy technology in the Republic of Croatia to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)[2]**

	2015	2016	2017	2018
Geothermal (excluding low temperature geothermal heat in heat pump applications)	8.9	9.1	8.2	9.4
Solar	10.4	11.6	12.9	13.9
Biomass (3):	1217	1183.1	1174.8	1149.3
solid biomass	1211.8	1176.3	1167	1137.8
biogas	5.2	6.8	7.8	11.5
bioliquids	0	0	0	0
Renewable energy from heat pumps:	14.9	15.8	15.9	15.1
- of which aerothermal	14.9	15.8	15.9	15.1
- of which geothermal				

- of which hydrothermal				
<b>TOTAL</b>	<b>1251.2</b>	<b>1219.4</b>	<b>1211.8</b>	<b>1187.6</b>
Of which DH(4)	0	0	0	0
Of which biomass in households(5)	1161.1	1127.7	1091.9	1032.5
Renewable municipal waste	0	0	0	0
<b>Gross final consumption of renewable energy sources for heating and cooling</b>	<b>1251.2</b>	<b>1219.4</b>	<b>1211.8</b>	<b>1187.6</b>

[1] Direct use and district heat as defined in Article 5(4) of Directive 2009/28/EC.

[2] Facilitates comparison with Table 11 of the NREAPs.

[3] Biomass complying with applicable sustainability criteria was taken into account, cf. Article 5(1), last subparagraph, of Directive 2009/28/EC.

[4] District heating and / or cooling from total renewable heating and cooling consumption (RES - DH).

[5] From the total renewable heating and cooling consumption.

**Table 1d: Total actual contribution from each renewable energy technology in the Republic of Croatia to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)<sup>[1], [2]</sup>**

	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Bioethanol/bio-ETBE	0	0	0.17	0.40
Of which Biofuels(3) Article 21.2	0	0	0	0
Of which imported(4)	0	0	0.17	0.40
Biodiesel	24.29	0.85	0.33	26.60
Of which Biofuels(5) Article 21.2	0	0	0	0
Of which imported(6)	0	0	0	0
Hydrogen from renewables	0	0	0	0
Renewable electricity	8.86	9.76	10.44	11.32
Of which road transport	0	0	0	0.04
Of which non-road transport	7.74	8.44	8.93	9.54
Others (as biogas, vegetable oils, etc.)	0	0	0	0
Of which Biofuels(7) Article 21.2	0	0	0	0
<b>TOTAL renewable sources in transport</b>	<b>33.12</b>	<b>10.78</b>	<b>10.94</b>	<b>38.33</b>

[1] For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

[2] Facilitates comparison with Table 12 of the NREAPs.

[3] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

[4] From the total amount of bioethanol / bio-ETBE.

[5] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

[6] From the total amount of biodiesel.

[7] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

**2. Measures taken in previous years and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan (Article 22(1)(a) of Directive 2009/28/EC)**

**Table 2: Overview of all policies and measures**

Name and reference of the measure	Type of measure*	Expected result**	Targeted group and/or activity***	Existing or planned****	Start and end dates of the measure
<b>ELECTRICITY</b>					
1. Promotion of use of renewable energy sources in electricity generation	Legal Financial	35% of total direct consumption of electricity to be generated from renewable energy sources by the end of 2020.	Project promoters with plans to develop renewable energy plants Eligible electricity producers	Existing	2007 -
<b>HEATING AND COOLING</b>					
2. Promotion of generation of thermal/cooling energy from renewable energy sources	Financial Legal	Greater use of national heat potential for heating and cooling	Project promoters to develop cogeneration plants and heating plants using renewable energy sources Eligible electricity and heat producers	Planned	2016 -
3. Promotion of use of cogeneration	Legal Financial	By the end of 2020, the minimum share of electricity generated from cogeneration plants by eligible producers, and delivered to the transmission or distribution network to reach 4% of total direct consumption of electricity.	Project promoters plan to develop cogeneration plants Eligible electricity producers	Existing	2007 -
4. Promotion of use of renewable energy sources by natural persons	Financial	Implementation of projects contributing to the achievement of the 20% target for the share of renewable energy sources in direct energy consumption by 2020	Natural persons (households) Legal persons (small and medium-sized enterprises)	Existing	2008 -
<b>BIOFUELS AND OTHER BIOLIQUIDS</b>					
1. Obligation to place biofuels on the Croatian market	Legal	Increase in biofuel consumption Contribution to achieving the target of a 10% share of renewable energy sources in the use of biofuels for transport in 2020.	Diesel fuel and gasoline distributors	Existing	2010 -
2. Obligation to purchase or lease vehicles that can use biofuels in public transport and the public sector	Legal	Increase in biofuel consumption Contribution to achieving the target of a 10% share of renewable energy sources in the use of	Public transport providers and the public sector	Existing	2011 -

		biofuels for transport in 2020.			
3. Promotion of the use of biofuels	Legal	Obligation to place biofuels on the market	Suppliers, users of tax warehouses	Existing	2010 -
4. Financial incentives for the purchase of hybrid and electric vehicles	Financial	Increase in the share of electric and hybrid vehicles. Savings in the consumption of primary energy.	Buyers of hybrid and electric vehicles	Existing	2014 -
<b>INTERSECTORAL MEASURES</b>					
1. Promotion of use of renewable energy sources and energy efficiency by the Croatian Bank for Reconstruction and Development (CBRD)	Financial	Contribution towards achieving the target of 20% of energy from renewable energy sources in final consumption of energy by 2020	Local and regional authorities, utilities, companies, small craft businesses Commercial banks that have signed agreements with the CBRD on implementing the programme.	Existing	2009 -
2. Promotion of the use of renewable energy sources and energy efficiency using funds provided by the Environmental Protection and Energy Efficiency Fund (EPEEF).	Financial	Contribution towards achieving the target of 20% of energy from renewable energy sources in final consumption of energy by 2020.	Local and regional authorities, public institutions, companies, small craft businesses, non-government associations, non-profit organisations, natural persons.	Existing	2004 -
3. Energy efficiency projects with investment repaid as energy savings (ESCO model)	Financial	Increase in the use of heat generated from renewable energy sources in the public and private sectors.	Private and public sector Building sector, public lighting, energy distribution systems.	Existing	2004 -
4. Local activities	Organisation- and society-related	Change of behaviour – raising awareness about renewable energy sources.	Local government, interest groups, general public.	Existing	2004 -

\* Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).

\*\* Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?

\*\*\* Who are the targeted persons: investors, end users, public administration, planners, architects, installers, etc.? or what is the targeted activity / sector: biofuel production, energy use of animal manure, etc.?

\*\*\*\* Does this measure replace or complement measures contained in Table 5 of the NREAP?

**2a Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy. (Article 22(1)(e) of Directive 2009/28/EC).**

The Renewable Energy Sources and High-Efficiency Cogeneration Act (NN No 100/15) was adopted in September 2015 and entered into force on 1 January 2016. The Act was adopted in order to improve and implement Croatia's energy policy in the field of renewable energy sources and high-efficiency cogeneration, through the following means: the sustainable development of projects; reducing adverse effects of the energy sector on the environment and human health; reducing dependency on the import of fossil fuels; ensuring the diversity of energy production and the security of supply; increasing employment and promoting entrepreneurship in the energy sector in Croatia; stimulating the development of new technologies based on the use of renewable energy sources and cogeneration; and the development and sustainability of the national economy as a whole.

The Act governs the following: the planning and promotion of the production and consumption of electricity generated in plants that use renewable energy sources and high-efficiency cogeneration; measures for promoting the production of electricity using renewable energy sources; implementation of the incentive system for electricity generation from renewable energy sources; the construction of installations generating electricity from renewable energy sources on state-owned land; keeping a register of projects, project promoters and eligible producers of electricity from renewable energy sources; international cooperation in the field of renewable energy sources, and other issues of importance for the use of renewable energy sources.

The Act provides project promoters and investors in renewable energy projects with greater security in terms of transparent tenders for projects involving the development of state-owned land. Moreover, by setting the requirement to keep a register of projects, project promoters and eligible producers of electricity from renewable sources, the Act ensures greater transparency surrounding the implementation of projects and the possibility of incentives for the entire interested public, since the register will contain data on the projects and the permits issued and on the available quotas for accessing the system of incentives or premiums. The Act also governs the purchase of up to 500 kW of energy from plants that meet their producers' electricity needs primarily through own production and deliver only excess energy to the electricity grid.

The Decree amending the Renewable Energy Sources and High-Efficiency Cogeneration Act (NN No 123/16) published on 30 December 2016 and the Decree amending the Renewable Energy Sources and High-Efficiency Cogeneration Act (NN No 131/17) published on 28 December 2017 extend the deadline for the supplier's obligation to take over electricity produced from renewable energy sources from the operator of the electricity market.

The Act amending the Renewable Energy Sources and High-Efficiency Cogeneration Act (NN No 111/18), which entered into force on 12 December 2018, regulates the construction of generation plants and the award of eligible electricity producer status to plants that use any of the primary forms of renewable energy sources in Croatia and/or high-efficiency cogeneration.

**2b Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements. (Article 22(1)(f) of Directive 2009/28/EC)**

The measures to ensure the transmission of electricity produced from renewable energy sources are listed in the medium-term development plan for the Croatian transmission network for the period from 2012 to 2020 and the 10-year network development plan for the 2016-2025 period (with additional details for the initial three- and one-year period), which the Croatian Transmission System Operator (HOPS) is required to draw up under the Electricity Market Act (NN Nos 22/13, 95/15 and 102/15). In the plans HOPS gives reasonable estimates for the production, supply, consumption and exchange of electricity with other countries. The 10-year transmission network development plan is drawn up in



line with the non-binding 10-year network development plan of the European Network of Transmission System Operators for Electricity (ENTSO-E TYNDP).

The main elements of these plans in terms of further transmission network development and developing renewable energy sources are as follows:

- the 400 kV network needs to be reinforced by means of new or reconstructed power transmission lines and substations in the event of the construction of a larger number of generating plants in the Lika and Dalmatia region (thermal and hydro-electric power plants and wind farms with capacity of 800 MW or more);
- in the event of the large-scale construction of wind farms in certain areas where the 110 kV network is insufficient to accommodate wind farms (areas around Gračac and Knin), there are plans for zonal connection facilities for them: two new transformer substations TS 400(220)/110 kV, where wind energy would be transmitted to the 400(220) kV network, while noting that for the scenario under consideration involving the construction of a wind farm with total capacity of up to 800 MW, there is no need yet to build the above substations, whereas for the scenario involving the construction of a plant with total capacity of 1,000 MW or more, there is a need for at least one zonal connection, depending on the spatial distribution of the wind farm;
- the remaining 220 kV network will have to be reinforced during the period under review, in line with plans to connect new production facilities;
- a considerable portion of the total investment in the development and rehabilitation of the transmission network involves the 110 kV network, which needs to be reinforced locally, either by constructing new lines or by increasing transmission power when rehabilitating existing lines;
- to incorporate wind farms with capacity of up to 800 MW, further interventions in the transmission network will not be required in terms of building new lines or substations, but the requirements for ensuring ancillary services of secondary and/or fast tertiary control reserves are greatly increased;
- incorporating more wind farms into the Croatian electric energy system (EES) entails a substantial increase in the costs of energy balancing, as well as ancillary services, and will not be possible unless there is an efficient, comprehensive solution to the problem of regulating capacity, frequency and energy balancing throughout the Croatian EES;
- if we consider distributed sources of electricity together with the effects of energy efficiency policy, we can expect a reduction in load (consumption) through the various 110-kV network nodes, and, therefore, a reduction in load of certain high-voltage lines.

When it comes to creating the conditions for safe renewable energy source (RES) plant connection and operation, it is also necessary to make provision for additional systems to predict RES generation, while also perfecting system operation planning and management systems in order to increase the use and efficiency of the control capacity of the electricity system as a whole. To that end, activities were carried out by HOPS and the Croatian Energy Market Operator (HROTE).

In addition, the Renewable Energy Sources and High-Efficiency Cogeneration Act (NN Nos 100/15, 123/16 and 131/17) provides generation plants in the system for incentivising electricity generation from renewable energy sources and cogeneration with certain balancing mechanism-related obligations (they become part of the 'green energy balance group', while HROTE becomes the leader of the group as the entity responsible for planning and balancing).

The Croatian Distribution System Operator (HEP-ODS) is responsible for the operation and management, maintenance, development and construction of the distribution network throughout Croatia, and for ensuring the long-term capacity of the network to meet reasonable electricity

distribution requirements. Energy generation in power plants connected to the distribution network mostly involves renewable energy or high-efficiency cogeneration plants with capacity of up to 10 MW, or plants with capacity of up to 20 MW in the cases provided for by the distribution system grid codes and the transmission system grid codes.

The measures to ensure the distribution of electricity from renewable sources are listed in the 10-year network development plan (2017-2026) of HEP-ODS (with additional details for the initial three- and one-year period), which was drawn up pursuant to the Electricity Market Act. The development and construction of the distribution network is planned and implemented by HEP-ODS on the basis of the above-mentioned plans, which take account of the findings of network development studies examining and analysing mutual impacts between the network and all distributed sources connected – or scheduled to be connected – to the network. Based on the plans referred to, it is important to note that the distribution system needs technological development and harmonisation with advanced technological platforms in the area of distribution networks (introducing advanced metering devices and advanced networks).

HOPS and HEP-ODS are continually investing in the automation of electric power grids and ICT technology within the scope of their competence. All meter points are equipped with smart metering units. Priorities and targets and the plan for development of an advanced distribution network are currently being defined.

The procedures for issuing energy approvals, which lay down the conditions for connecting to the electricity network by 1 April 2018, were implemented in accordance with the provisions of the *General Conditions for Electricity Supply (NN No 85/15)*, and subsequently in accordance with the *Decree on the issuing of energy approvals and the setting of conditions and deadlines for connecting to the electricity network (NN No 7/18)*. The key changes to the issuing of energy approvals under the *Decree* are shorter deadlines for issuing electricity approvals and the introduction of a simplified procedure for connecting electricity plants to the plants of customers in the household category.

Electricity generated in plants which are connected to the distribution network and using renewable energy sources or high-efficiency cogeneration accounted for 5.7% of total electricity consumption in the distribution network in 2017 and 6.82% in 2018.

Electricity producers (including those producing electricity from RES) do not pay a charge for use of the grid in respect of the energy they deliver to the grid. The tariff items for the transmission and distribution of electricity are payable only by final customers, i.e. a charge is payable for electricity supplied from the power grid.

**3. Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan. (Article 22(1)(b) of Directive 2009/28/EC).**

The main national support programmes (measures) in the form of economic instruments and financial mechanisms to promote the use of renewable energy are the following:

- Until 31 December 2015 incentives were implemented through guaranteed purchase prices (feed-in tariffs) for the generation of electricity from renewable energy sources. Under the Tariff System pertaining to the generation of electricity from renewable energy sources and cogeneration, a producer of electricity using RES is entitled to State aid in the form of an incentive price, provided that the producer has obtained a decision conferring the status of eligible electricity producer and has concluded an electricity purchase agreement with the Croatian Energy Market Operator (HROTE). HROTE pays the incentive price to eligible

producers under the Tariff System. The funds are provided by means of the charges for the promotion of electricity generation from RES payable by all electricity customers in proportion to total consumption.

- Promotion of biofuel production was implemented under the Biofuel Production Incentive Programme for the period from 2011 to 31 December 2014. The production of transport biofuels was promoted by funding eligible producers in proportion to the amount of biofuel produced and placed on the Croatian market via the entities required to place biofuels on the market or via end users, provided that the biofuel sale price, excluding taxes and mandatory charges, did not exceed the highest biofuel sale price and provided that the biofuels met the sustainability requirement stipulated by the Transport Biofuels Act. The size of the share of revenue from excise tax set aside for the production of biofuels was specified by decision of the Croatian Government, according to the total planned expenditure of the biofuel production promotion system. The amount of the charges payable by distributors was adjusted each year based on the amounts of biofuel needed, as well as biofuel prices on the international market, domestic costs of biofuel production and distributors' plans to market mineral fuels (in accordance with the prescribed methodology). HROTE was the authority responsible for implementing the Biofuel Production Incentive Programme while it was in force, until 31 December 2014.
- Promotion of the use of RES and energy efficiency using funds provided by the Environmental Protection and Energy Efficiency Fund (EPEEF). The EPEEF provides funds to finance the preparation, implementation and development of programmes and projects in the field of environmental protection, improvement of energy efficiency, use of renewables and mitigation of climate change. The funds are provided from special-purpose EPEEF revenue collected via charges payable by environmental polluters, including charges for emissions of nitrogen oxides, sulphur dioxide and carbon dioxide, for polluting the environment with waste, for use of the environment, and special environmental charges payable in respect of motor vehicles. RES projects funded by the EPEEF include solar energy, wind energy, biomass energy, energy from small hydro-electric power plants and geothermal energy. The EPEEF awards funds to local and regional authorities, public institutions, companies, small craft businesses, NGOs, not-for-profit organisations and natural persons through loans, interest subsidies, financial aid and donations.
- Promotion of RES use and energy efficiency by the Croatian Bank for Reconstruction and Development (CBRD) To fund projects in the field of environmental protection, the CBRD grants loans through the Loan Programme for environmental projects, energy efficiency and RES. Loan proceeds are intended for investment in land, buildings, equipment and tools. Potential borrowers include local and regional authorities (municipalities, towns and cities, counties and the City of Zagreb), provided that they meet all legal criteria, utility companies, other companies, small craft businesses and other legal persons or commercial banks that have a cooperation agreement with the CBRD on implementation of the programme. The loan method involves extended credit to final beneficiaries through commercial banks and direct lending.

The support system indicators and level of support applicable to various renewable energy technologies (as per the recommendation in the template) have been subdivided into the following Tables under the Tariff System (TS): 3a (2017 under TS 33/07), 3b (2017 under TS 63/12), 3c (2017 under TS 133/13), 3d (2018 under TS 33/07), 3d2 (2018 under TS 63/12), and 3d3 (2018 under TS 133/13) for the support scheme (measures) for promoting the use of energy from renewable sources by means of guaranteed purchase prices (feed-in tariffs); and Tables 3g (2017) and 3h (2018) for the support scheme (measures) for promoting the use of energy from renewable sources through the use of Environmental Protection and Energy Efficiency Fund (EPEEF) funding.

**Table 3a: Support schemes for renewable energy in 2017 through guaranteed purchase prices (feed-in tariffs)**

<b>RES support schemes, 2017</b>		<b>Per unit support</b>	<b>Total (M€)*</b>
Solar power plants up to and including 10 kW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.5522 €/kWh	<b>0.4458</b>
	Feed-in premiums		
Tendering			
Solar power plants exceeding 10 kW up to and including 30 kW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.4873 €/kWh	<b>1.2370</b>
	Feed-in premiums		
Tendering			
Solar power plants exceeding 30 kW up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.3411 €/kWh	<b>2.2098</b>
	Feed-in premiums		
Tendering			
Hydro-electric power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1121 €/kWh	<b>0.0298</b>
	Feed-in premiums		
Tendering			
Wind farms up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1040€/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass from forestry and agriculture up to and including 1 MW			
Incentive purchase price under the	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		

Tariff System (NN No 33/07)	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1949€/kWh	<b>3.0210</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass from the wood-processing industry			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1543 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Geothermal power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2047 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Biogas power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1949 €/kWh	<b>9.9910</b>
Feed-in premiums			
Tendering			
Liquid biofuel power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0585 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Power plants using landfill gas and gas from waste water treatment plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0585 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Power plants using other RES up to and including 1 MW			

Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0974€/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing up to and including 5,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1121 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing from 5,000 MWh up to and including 15,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0893 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing over 15,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0682 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Wind farms exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1056 €/kWh	<b>69.5192</b>
	Feed-in premiums		
	Tendering		
Power plants using solid biomass from forestry and agriculture exceeding 1 MW			
Incentive purchase price under the	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		

Tariff System (NN No 33/07)	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1689 €/kWh	<b>6.0881</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass from the wood-processing industry exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1348 €/kWh	<b>0.2534</b>
	Feed-in premiums		
Tendering			
Geothermal power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2047 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Biogas power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1689 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Liquid biofuel power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0585 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Power plants using landfill gas and gas from waste water treatment plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0585 €/kWh	<b>0.0046</b>
	Feed-in premiums		
Tendering			

Power plants using other RES exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0812 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Total annual estimated support in the electricity sector			
	HRK 692,295,441.81	92.7998M€	
Total annual estimated support in the heating sector			
Total annual estimated support in the transport sector			

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology

**Table 3b: Support schemes for renewable energy in 2017 through guaranteed purchase prices (feed-in tariffs)**

RES support schemes, 2017		Per unit support	Total (M€)*
Solar power plants up to and including 10 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.3525 €/kWh	<b>2.7418</b>
	Feed-in premiums		
Tendering			
Solar power plants exceeding 10 kW up to and including 30 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2989 €/kWh	<b>3.7980</b>
	Feed-in premiums		
Tendering			
Solar power plants exceeding 30 kW up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2212 €/kWh	<b>6.8542</b>
	Feed-in premiums		
Tendering			
Hydro-electric power plants up to and including 1 MW – producing up to and including 500 MWh per calendar year			
Incentive purchase price	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		



under the Tariff System (NN No 63/12)	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1609 €/kWh	<b>0.0617</b>
	Feed-in premiums		
Tendering			
Hydro-electric power plants up to and including 1 MW – producing from 500 MWh up to and including 1,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1072 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Hydro-electric power plants up to and including 1 MW – producing over 1,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0804 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Wind farms up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0965 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass, excluding municipal waste, up to and including 300 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1743 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass, excluding municipal waste, exceeding 300 kW up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		

	Feed-in tariff	0.1609 €/kWh	<b>3.1981</b>
	Feed-in premiums		
	Tendering		
Geothermal power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1609 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Biogas power plants up to and including 300 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1903 €/kWh	<b>0.3632</b>
	Feed-in premiums		
	Tendering		
Biogas power plants exceeding 300 kW up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1609 €/kWh	<b>5.1844</b>
	Feed-in premiums		
	Tendering		
Liquid biofuel power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using landfill gas and gas from waste water treatment plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using other RES up to and including 1 MW			
Incentive purchase price under the Tariff System	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		

Tariff System (NN No 63/12)	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing up to and including 5,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1340 €/kWh	<b>1.0067</b>
	Feed-in premiums		
Hydro-electric power plants up to and including 10 MW – producing from 5,000 MWh to and including 15,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0938 €/kWh	<b>0.2117</b>
	Feed-in premiums		
Hydro-electric power plants up to and including 10 MW – producing over 15,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0764 €/kWh	<b>0</b>
	Feed-in premiums		
Wind farms exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0952 €/kWh	<b>47.4842</b>
	Feed-in premiums		
Power plants using solid biomass, excluding municipal waste, up to and including 2 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
Feed-in tariff	0.1609 €/kWh	<b>0</b>	
Feed-in premiums			

	Tendering		
Power plants using solid biomass, excluding municipal waste, from 2 MW up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1542 €/kWh	<b>5.8947</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass, excluding municipal waste, from 5 MW up to and including 10 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.14070 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass, excluding municipal waste, exceeding 10 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1206 €/kWh	<b>7.3636</b>
	Feed-in premiums		
Tendering			
Geothermal power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1609 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Biogas power plants up to and including 2 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1609 €/kWh	<b>5.5426</b>
	Feed-in premiums		
Tendering			
Biogas power plants exceeding 2 MW up to and including 5 MW			
Incentive purchase price under the	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		

Tariff System (NN No 63/12)	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1501€/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Liquid biofuel power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
Power plants using landfill gas and gas from waste water treatment plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
Power plants using other RES exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
Power plants using solar energy exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
Power plants using animal fat up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2212 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Total annual estimated support in the electricity sector		HRK 669,207,396.41	89.4049 M€

Total annual estimated support in the heating sector		
Total annual estimated support in the transport sector	HRK	M€

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology

**Table 3c: Support schemes for renewable energy in 2017 through guaranteed purchase prices (feed-in tariffs)**

<b>RES support schemes, 2017</b>		<b>Per unit support</b>	<b>Total (M€)*</b>
Integrated solar power plants with installed capacity up to and including 10 kW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	<b>0.2560 €/kWh</b>	<b>0.3608</b>
	Feed-in premiums		
Tendering			
Integrated solar power plants from 10 kW up to and including 30 kW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2279 €/kWh	<b>0.6804</b>
	Feed-in premiums		
Tendering			
Integrated solar power plants from 30 kW up to and including 300 kW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2064 €/kWh	<b>0.7573</b>
	Feed-in premiums		
Tendering			
Non-integrated solar power plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0.0671</b>
	Feed-in premiums		
Tendering			
Hydro-electric power plants with installed capacity up to and including 300 kW			
Incentive purchase price under the Tariff	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		

System (NN No 133/13)	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1434 €/kWh	<b>0.2655</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants with installed capacity exceeding 300 kW up to and including 2 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1247 €/kWh	<b>0.4761</b>
	Feed-in premiums		
Tendering			
Hydro-electric power plants with installed capacity exceeding 2 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1180 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Wind farms up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0.1816</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass, excluding biodegradable industrial and municipal waste, with installed capacity up to and including 300 kW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1743 €/kWh	<b>0.4869</b>
	Feed-in premiums		
Tendering			
Power plants using biomass, excluding biodegradable industrial and municipal waste, with installed capacity exceeding 300 kW up to and including 2 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
Feed-in tariff	0.1676 €/kWh	<b>3.4224</b>	

	Feed-in premiums		
	Tendering		
Power plants using biomass, excluding biodegradable industrial and municipal waste, with installed capacity exceeding 2 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1609 €/kWh	<b>1.7030</b>
	Tendering		
Geothermal power plants up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1609 €/kWh	<b>0</b>
	Tendering		
Biogas power plants with installed capacity up to and including 300 kW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1796 €/kWh	<b>0.1701</b>
	Tendering		
Biogas power plants with installed capacity exceeding 300 kW up to and including 2 MW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1689€/kWh	<b>24.4230</b>
	Tendering		
Biogas power plants with installed capacity exceeding 2 MW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
Feed-in tariff	0.1582 €/kWh	<b>2.1162</b>	



	Feed-in premiums		
	Tendering		
Liquid biofuel power plants up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710€/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants with installed capacity exceeding 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Wind farms with installed capacity exceeding 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using biomass, including biodegradable portions of industrial and municipal waste, with installed capacity exceeding 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Biogas power plants with installed capacity exceeding 5 MW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Liquid biofuel power plants with installed capacity exceeding 5 MW			
	Obligation / quota (%)		

Incentive purchase price under the Tariff System (NN No 133/13)	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0710 €/kWh	0
	Feed-in premiums		
	Tendering		
Total annual estimated support in the electricity sector		HRK 261,927,091.07	35.1104M€
Total annual estimated support in the heating sector			
Total annual estimated support in the transport sector		HRK	M€

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology

The effects of support schemes for renewable energy in 2017 through guaranteed purchase prices (feed-in tariffs):

Total active contracts with project promoters/eligible producers and installed plant capacity from 2007 to 31 December 2017	1,395 contracts 1,097.279 MW
Total installed capacity and energy produced by eligible producers included in the incentive scheme in 2017	766.446 MW 2,277,320,588kWh
Total eligible producers and installed capacity of plants put into permanent operation in 2017	21 125.951 MW

**Table 3.d.1: Support schemes for renewable energy in 2018 through guaranteed purchase prices (feed-in tariffs)**

RES support schemes, 2018		Per unit support	Total (M€)*
Solar power plants up to and including 10 kW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.5618 €/kWh	0.4139
	Feed-in premiums		
Tendering			
Solar power plants exceeding 10 kW up to and including 30 kW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.4957 €/kWh	1.1762
	Feed-in premiums		
Tendering			
Solar power plants exceeding 30 kW up to and including 1 MW			
Incentive purchase price under the	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		

Tariff System (NN No 33/07)	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.3470 €/kWh	<b>2.0297</b>
	Feed-in premiums		
Tendering			
Hydro-electric power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1140 €/kWh	<b>0.0465</b>
Feed-in premiums			
Tendering			
Wind farms up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1057 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Power plants using solid biomass from forestry and agriculture up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1983 €/kWh	<b>3.0489</b>
Feed-in premiums			
Tendering			
Power plants using solid biomass from the wood-processing industry			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1570 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Geothermal power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2082 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Biogas power plants up to and including 1 MW			

Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1983 €/kWh	<b>10.6475</b>
	Feed-in premiums		
	Tendering		
Liquid biofuel power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0595 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using landfill gas and gas from waste water treatment plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0595 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using other RES up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0991 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing up to and including 5,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1140 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing from 5,000 MWh up to and including 15,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		

Tariff System (NN No 33/07)	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0909 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing over 15,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0694 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Wind farms exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1074 €/kWh	<b>69.9516</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass from forestry and agriculture exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1718 €/kWh	<b>5.3945</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass from the wood-processing industry exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1372 €/kWh	<b>0.8674</b>
	Feed-in premiums		
Tendering			
Geothermal power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2082 €/kWh	<b>0</b>
Feed-in premiums			

	Tendering		
Biogas power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1718 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Liquid biofuel power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0595 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using landfill gas and gas from waste water treatment plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0595 €/kWh	<b>0.0075</b>
	Feed-in premiums		
	Tendering		
Power plants using other RES exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 33/07)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0826 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Total annual estimated support in the electricity sector		HRK 693,839,057.94	93.5836M€
Total annual estimated support in the heating sector			
Total annual estimated support in the transport sector			

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology

**Table 3.d.2: Support schemes for renewable energy in 2018 through guaranteed purchase prices (feed-in tariffs)**

<b>RES support schemes, 2018</b>		<b>Per unit support</b>	<b>Total (M€)*</b>
Solar power plants up to and including 10 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.3547 €/kWh	<b>2.5649</b>
	Feed-in premiums		
	Tendering		
Solar power plants exceeding 10 kW up to and including 30 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.3008 €/kWh	<b>3.5701</b>
	Feed-in premiums		
	Tendering		
Solar power plants exceeding 30 kW up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2225 €/kWh	<b>6.4227</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 1 MW – producing up to and including 500 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>0.0629</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 1 MW – producing from 500 MWh up to and including 1,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1079 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 1 MW – producing over 1,000 MWh per calendar year			
	Obligation / quota (%)		

Incentive purchase price under the Tariff System (NN No 63/12)	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0809 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Wind farms up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0971 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Power plants using solid biomass, excluding municipal waste, up to and including 300 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1753 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Power plants using solid biomass, excluding municipal waste, exceeding 300 kW up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>3.1029</b>
Feed-in premiums			
Tendering			
Geothermal power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>0</b>
Feed-in premiums			
Tendering			
Biogas power plants up to and including 300 kW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
Feed-in tariff	0.1915 €/kWh	<b>0.3947</b>	



	Feed-in premiums		
	Tendering		
Biogas power plants exceeding 300 kW up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>5.7036</b>
	Feed-in premiums		
	Tendering		
Liquid biofuel power plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using landfill gas and gas from waste water treatment plants up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using other RES up to and including 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing up to and including 5,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1349 €/kWh	<b>0.9726</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing from 5,000 MWh to and including 15,000 MWh per calendar year			
Incentive purchase price under the	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		

Tariff System (NN No 63/12)	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0944 €/kWh	<b>0.2285</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants up to and including 10 MW – producing over 15,000 MWh per calendar year			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0769 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Wind farms exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0958 €/kWh	<b>66.8197</b>
	Feed-in premiums		
	Tendering		
Power plants using solid biomass, excluding municipal waste, up to and including 2 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Power plants using solid biomass, excluding municipal waste, from 2 MW up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1551 €/kWh	<b>6.3454</b>
	Feed-in premiums		
	Tendering		
Power plants using solid biomass, excluding municipal waste, from 5 MW up to and including 10 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1416 €/kWh	<b>0</b>

	Feed-in premiums		
	Tendering		
Power plants using solid biomass, excluding municipal waste, exceeding 10 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1214 €/kWh	<b>10.6895</b>
	Tendering		
Geothermal power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>0</b>
	Tendering		
Biogas power plants up to and including 2 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>5.7760</b>
	Tendering		
Biogas power plants exceeding 2 MW up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1511 €/kWh	<b>0</b>
	Tendering		
Liquid biofuel power plants exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Tendering		
Power plants using landfill gas and gas from waste water treatment plants exceeding 1 MW			
Incentive purchase price under the	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		

Tariff System (NN No 63/12)	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	0
	Feed-in premiums		
	Tendering		
Power plants using other RES exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	0
	Feed-in premiums		
Tendering			
Power plants using solar energy exceeding 1 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	0
	Feed-in premiums		
Tendering			
Power plants using animal fat up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 63/12)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2225 €/kWh	0
	Feed-in premiums		
Tendering			
Total annual estimated support in the electricity sector		HRK 835,224,996.47	112.6534M€
Total annual estimated support in the heating sector			
Total annual estimated support in the transport sector		HRK	M€

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology

**Table 3.d.3: Support schemes for renewable energy in 2018 through guaranteed purchase prices (feed-in tariffs)**

RES support schemes, 2018		Per unit support	Total (M€)*
Integrated solar power plants with installed capacity up to and including 10 kW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.2576 €/kWh	0.3446
Feed-in premiums			

		Tendering		
Integrated solar power plants from 10 kW up to and including 30 kW				
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)			
	Penalty / Buy out option / Buy out price (€/unit)			
	Average certificate price			
	Tax exemption / refund			
	Investment subsidies (capital grants or loans) (€/unit)			
	Production incentives			
	Feed-in tariff		0.2293 €/kWh	<b>0.6359</b>
	Tendering			
Integrated solar power plants from 30 kW up to and including 300 kW				
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)			
	Penalty / Buy out option / Buy out price (€/unit)			
	Average certificate price			
	Tax exemption / refund			
	Investment subsidies (capital grants or loans) (€/unit)			
	Production incentives			
	Feed-in tariff		0.2077 €/kWh	<b>0.6962</b>
	Tendering			
Non-integrated solar power plants				
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)			
	Penalty / Buy out option / Buy out price (€/unit)			
	Average certificate price			
	Tax exemption / refund			
	Investment subsidies (capital grants or loans) (€/unit)			
	Production incentives			
	Feed-in tariff		0.0715 €/kWh	<b>0.1445</b>
	Tendering			
Hydro-electric power plants with installed capacity up to and including 300 kW				
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)			
	Penalty / Buy out option / Buy out price (€/unit)			
	Average certificate price			
	Tax exemption / refund			
	Investment subsidies (capital grants or loans) (€/unit)			
	Production incentives			
	Feed-in tariff		0.1443 €/kWh	<b>0.3665</b>
	Tendering			
Hydro-electric power plants with installed capacity exceeding 300 kW up to and including 2 MW				
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)			
	Penalty / Buy out option / Buy out price (€/unit)			
	Average certificate price			
	Tax exemption / refund			
	Investment subsidies (capital grants or loans) (€/unit)			
	Production incentives			
	Feed-in tariff		0.1254 €/kWh	<b>1.1600</b>
	Tendering			
Hydro-electric power plants with installed capacity exceeding 2 MW				
Incentive purchase price under the Tariff System	Obligation / quota (%)			
	Penalty / Buy out option / Buy out price (€/unit)			
	Average certificate price			
	Tax exemption / refund			

System (NN No 133/13)	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1187 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Wind farms up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0.2262</b>
	Feed-in premiums		
Tendering			
Power plants using solid biomass, excluding biodegradable industrial and municipal waste, with installed capacity up to and including 300 kW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1753 €/kWh	<b>0.4402</b>
	Feed-in premiums		
Tendering			
Power plants using biomass, excluding biodegradable industrial and municipal waste, with installed capacity exceeding 300 kW up to and including 2 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1686 €/kWh	<b>6.3899</b>
	Feed-in premiums		
Tendering			
Power plants using biomass, excluding biodegradable industrial and municipal waste, with installed capacity exceeding 2 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1619 €/kWh	<b>13.3211</b>
	Feed-in premiums		
Tendering			
Geothermal power plants up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
Feed-in tariff	0.1619 €/kWh	<b>0</b>	

	Feed-in premiums		
	Tendering		
Biogas power plants with installed capacity up to and including 300 kW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1807 €/kWh	<b>0.6670</b>
	Feed-in premiums		
	Tendering		
Biogas power plants with installed capacity exceeding 300 kW up to and including 2 MW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1699 €/kWh	<b>29.0616</b>
	Feed-in premiums		
	Tendering		
Biogas power plants with installed capacity exceeding 2 MW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.1592 €/kWh	<b>2.6538</b>
	Feed-in premiums		
	Tendering		
Liquid biofuel power plants up to and including 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
	Tendering		
Hydro-electric power plants with installed capacity exceeding 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		

	Tendering		
Wind farms with installed capacity exceeding 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Power plants using biomass, including biodegradable portions of industrial and municipal waste, with installed capacity exceeding 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Biogas power plants with installed capacity exceeding 5 MW, using agricultural crops and organic residue, waste of plant and animal origin, biodegradable waste, landfill gas and gas from waste water treatment plants			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Liquid biofuel power plants with installed capacity exceeding 5 MW			
Incentive purchase price under the Tariff System (NN No 133/13)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	0.0715 €/kWh	<b>0</b>
	Feed-in premiums		
Tendering			
Total annual estimated support in the electricity sector		HRK 415,986,460.71	56.1074€
Total annual estimated support in the heating sector			
Total annual estimated support in the transport sector		HRK	M€

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology



The effects of support schemes for renewable energy in 2018 through guaranteed purchase prices (feed-in tariffs):

Total active contracts with project promoters/eligible producers and installed plant capacity from 2007 to 31/12/2018	1,384 contracts 1,069.796 MW
Total installed capacity and energy produced by eligible producers included in the incentive scheme in 2018	828.873 MW 2,482,533,220 kWh
Total eligible producers and installed capacity of plants put into permanent operation in 2018	21 76.327 MW

**Table 3g: Support schemes for renewable energy in 2017 using the Environmental Protection and Energy Efficiency Fund (EPEEF) funding**

RES support schemes, 2017		Per unit support**	Total (M€)*
Hydroelectric power plants			
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)	549,274.54	74,079.42
	Production incentives		
	Feed-in tariff		
Feed-in premiums			
Tendering			
Photovoltaic modules			
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)	10,753,334.94	1,450,278.10
	Production incentives		
	Feed-in tariff		
Feed-in premiums			
Tendering			
Heat pumps			
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)	1,899,741.26	256,213.83
	Production incentives		
	Feed-in tariff		
Feed-in premiums			
Tendering			
Biomass boilers			
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)	4,473,329.42	603,307.88

	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering		
Solar thermal collectors			
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)	6,317,552.38	852,034.08
	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering		
Total annual estimated support in the electricity sector		11,302,609.48	1,524,357.52
Total annual estimated support in the heating sector		12,690,623.06	1,711,555.79
Total annual estimated support in the transport sector			

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology

\*\* The Environmental Protection and Energy Efficiency Fund awards funds, regardless of the type of technology, at a percentage rate, usually between 40% and 80% of eligible investment costs, depending on the type of beneficiary, making it impossible to state the amount of support per unit (e.g. per installed kW), only the amount of support funds disbursed in HRK or EUR (at an average exchange rate of EUR 1 = HRK 7.41).

In 2017 the Environmental Protection and Energy Efficiency Fund disbursed a total of HRK 11,302,609.48 (EUR 1,524,357.52) in the electricity sector, and a total of HRK 12,690,623.06 (EUR 1,711,555.79) in the heating sector.

**Table 3h: Support schemes for renewable energy in 2018 using the Environmental Protection and Energy Efficiency Fund (EPEEF) funding**

RES support schemes, 2018		Per unit support**	Total (M€)*
Heat pumps			
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)	400,000.00	53,947.10
	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering		
Biomass boilers			
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		

	Investment subsidies (capital grants or loans) (€/unit)	7,805,803.06	1,052,751.10
	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering		
	Solar thermal collectors	505,582.00	68,186.71
Instrument (provide data as relevant)	Obligation / quota (%)		
	Penalty / Buy out option / Buy out price (€/unit)		
	Average certificate price		
	Tax exemption / refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering		
Total annual estimated support in the electricity sector		0	0
Total annual estimated support in the heating sector		8,711,385.06	1,174,884.91
Total annual estimated support in the transport sector			

\* The quantity of energy supported by the per unit support gives an indication of the effectiveness of support for each type of technology

\*\* The Environmental Protection and Energy Efficiency Fund awards funds, regardless of the type of technology, at a percentage rate, usually between 40% and 80% of eligible investment costs, depending on the type of beneficiary, making it impossible to state the amount of support per unit (e.g. per installed kW), only the amount of support funds disbursed in HRK or EUR (at an average exchange rate of EUR 1 = HRK 7.41).

In 2018 the Environmental Protection and Energy Efficiency Fund disbursed a total of HRK 0 (EUR 0) in the electricity sector, and a total of HRK 8,711,385.06 (EUR 1,174,884.91) in the heating sector.

### 3.1. Please provide the information on how supported electricity is allocated to final customers for purposes of Article 3(6) of Directive 2003/54/EC. (Article 22(1)(b) of Directive 2009/28/EC).

The system for promoting electricity production from renewable energy sources and cogeneration has been in place since 1 July 2007. From when it was first introduced up until 31 December 2015, the system was implemented on the basis of the Tariff System for the production of electricity from renewable energy sources and cogeneration (NN Nos 33/07, 63/12 and 133/13) (hereinafter ‘Tariff System (NN No 33/07)’, ‘Tariff System (NN No 63/12)’, and ‘Tariff System (NN No 133/13)’).

The Renewable Energy Sources and High-Efficiency Cogeneration Act (NN No 100/15) (RES&HEC Act) entered into force on 1 January 2016, repealing earlier legislation regulating the incentive system. The adoption of the RES&HEC Act did not affect the validity of electricity purchase agreements concluded up until then by project promoters with HROTE. All procedures that had commenced in line with the requirements for concluding purchase agreements when the last Tariff System (NN No 133/13) was in force and had not been completed by the end of 2015 were completed on the basis of that Tariff System in 2016.

The entry into force of the RES&HEC Act also introduced new procedures for HROTE when concluding agreements on the purchase of electricity from RES&HEC, by carrying out public tenders for the award of market premiums and the promotion of feed-in tariffs, on the basis of a decision on the selection of the most advantageous bidder. Since the secondary legislation provided for under the RES&HEC Act (Decree on the quotas for promoting the production of electricity from RES&C, Rules on RES&HEC, and the State Aid Scheme) was not adopted in 2016, HROTE did not conclude any new agreements on the purchase of electricity from RES&C.

In 2016 the incentive system was governed by the following secondary legislation, in addition to the RES&HEC Act:

The Decree on charges for promoting the production of electricity from renewable energy sources and cogeneration (NN Nos 33/07, 133/07, 155/08, 155/09, 8/11, 144/11 and 128/13);

Rules on the use of renewable energy sources and cogeneration (NN Nos 67/07, 88/12);

Rules on the acquisition of eligible electricity producer status (NN Nos 67/07, 35/11, 88/12, 132/13, 81/14, 93/14, 24/15, 99/15, 110/15 and 132/13);

An Act amending the Renewable Energy Sources and High-Efficiency Cogeneration Act (NN No 111/18) was adopted at the end of 2018.

A Decree on the promotion of the production of electricity from renewable energy sources and high-efficiency cogeneration (NN No 116/18; ‘the Decree’) was adopted pursuant to that Act. The Decree details the procedure and conditions for implementing new incentive models that incorporate the award of market premiums or the payment of feed-in tariffs, setting maximum reference values, setting maximum feed-in tariffs, the procedures for concluding agreements, setting incentive quotas, primary energy sources, installed capacity, and so on. The Decree also sets out the procedure for obtaining eligible producer status where either of the two incentive models – award of market premiums or feed-in tariffs – is applied.

The Decree on quotas and the State Aid Scheme are the acts that need to be adopted in order to establish new incentive models.

The incentive purchase price payable by HROTE to an eligible producer for electricity delivered to the electricity system is payable out of the funds collected by HROTE on the following bases:

a) funds collected on the basis of each supplier’s obligation to take over (purchase) a portion of the electricity produced from renewable energy sources and cogeneration, according to the supplier’s share of total supply;

b) funds collected from the sale of electricity produced from renewable energy sources and cogeneration on the electricity market:

The RES&HEC Act required electricity suppliers to take over the total net electricity delivered by eligible electricity producers, according to the supplier’s share, until 31 December 2016, at a regulated purchase price of HRK 0.42/kWh. So while there was no change in the regulated price, suppliers were required to take over 70% of electricity produced from renewable energy sources and cogeneration in 2019 and 40% in 2020.

The remaining energy is sold on the electricity market.

HROTE is concluding an agreement with each individual supplier, detailing all international rights and obligations regarding the takeover, calculation and charging for the corresponding share of electricity produced by generating plants that use renewable energy sources and cogeneration plants.

c) funds collected on the basis of incentive charges:

The charge for renewable energy sources and cogeneration is a special-purpose charge collected by suppliers of electricity to final customers as a fixed charge for all kWh of electricity sold. HROTE is concluding an agreement with each individual supplier, detailing all international rights and obligations regarding the collection of charges for renewable energy sources and cogeneration, and the calculation and payment of the charge.

Suppliers collect the charge from their customers at the amount set in the Decree on charges (NN No 128/13). The Decree on charges (NN No 128/13) sets the amount of the charge for promoting RES&C at HRK 0.035/kWh for all customers, except electricity customers required by the Air Protection Act to obtain a permit for greenhouse gas emissions, for whom the charge is set at HRK 0.005/kWh.

The Decree on charges (NN No 87/17) sets the amount of the charge for promoting RES&HEC at HRK 0.105/kWh for all customers, except electricity customers required by the Air Protection Act to obtain a permit for greenhouse gas emissions, for whom the charge is set at HRK 0.007/kWh.

The work of the green energy balance group began following the adoption of the Act amending the Renewable Energy Sources and High-Efficiency Cogeneration Act (NN No 111/18), and the proceeds of the charge – except for the payment of incentive prices and the settlement of costs incurred by HROTE in the incentive system – began to be used to pay part of the balancing costs and the costs for managing the green energy balance group. As already mentioned, since no secondary legislation has been adopted, the incentive system defined in the RES&HEC Act has not been established, and so the proceeds from the charge have not been used to pay the market premium or the feed-in tariff laid down in the RES&HEC Act.

**4. Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material? (Article 22(1)(c) of Directive 2009/28/EC)**

For now, there is no special support for biofuels meeting the criteria referred to in Article 22(1) of the Directive.

It should be noted that special EPEEF financial support is in place for the collection of edible waste oils, but there are no special incentives to stimulate potential use of this raw material in the production of biofuels.

**5. Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system. (Article 22(1)(d) of Directive 2009/28/EC)**

The Energy Act (NN Nos 120/12 and 14/14) provides the regulatory framework for implementing the system of guarantees of origin. It defines the system of guarantees of origin used to prove the share of energy produced from specific energy sources and delivered to final customers. The Electricity Market Act (NN No 22/13) designates HROTE as the authority responsible for issuing guarantees of origin for electricity and for setting up and keeping a register of guarantees of origin for electricity ('the Register'). The Decree establishing a system of guarantees of origin for electricity (NN Nos 84/13 and 20/14) and the Rules on the use of the register of guarantees of origin for electricity set out in more detail the rules governing the system of guarantees of origin.

As the body responsible for issuing guarantees of origin, HROTE is a member of the Association of Issuing Bodies (AIB), the European umbrella organisation responsible for monitoring and organising the work of bodies that issue guarantees of origin in other countries (domains).

To ensure the reliability of the system and the Register (electronic database), HROTE has opted for a reliable electronic database with all the necessary built-in mechanisms to safeguard all transactions related to the guarantees of origin. The Register is also linked to all the other reliable registers of the EU Member States via HUB (the central database), for which separate agreements were signed between the relevant domains and AIB to allow usage of the HUB. This means both outgoing and incoming transactions are fully functional within the system (import, export).

2017 Register of guarantees of origin

Account Holder Name	Account	Issued	Imported	Exported	Cancelled
HEP-Proizvodnja d.o.o.	Producer	1732301	0	176952	0
ADRIA WIND POWER d.o.o.	Producer	5929	0	0	0
CRODUX PLIN d.o.o	Supplier	0	0	0	0
GEN-I Zagreb d.o.o.	Supplier	0	4157	0	4157
HEP-Opskrba d.o.o.	Supplier	0	0	0	935340
Hrvatski Telekom d.d.	Supplier	0	11200	0	7173
Proenergy d.o.o.	Supplier	0	20000	0	0
RWE ENERGIJA d.o.o.	Supplier	0	15000	0	15000
<b>Total GO</b>		<b>1738230</b>	<b>50357</b>	<b>176952</b>	<b>961670</b>

\*Supplier 2017: RWE Energija d.o.o., HEP-Opskrba d.o.o., Proenergy d.o.o., GEN-I Zagreb d.o.o., Hrvatski Telekom d.d., CRODUX PLIN d.o.o

\*Producer 2017: HEP-Proizvodnja d.o.o.-HE Lešće, HE Varaždin, HE Orlovac, HE Dubrava; ADRIA WIND POWER d.o.o. – Small wind farm ‘Ravna 1’

2018 Register of guarantees of origin

Account Holder Name	Account	Issued	Imported	Exported	Cancelled
ADRIA WIND POWER d.o.o.	Producer	5303	0	5327	0
HEP-Proizvodnja d.o.o.	Producer	2617559	0	549774	0
VJETROELEKTRANA TRTAR-KRTOLIN d.o.o.	Producer	989	0	0	0
CRODUX PLIN d.o.o	Supplier	0	2237	0	2294
GEN-I Zagreb d.o.o.	Supplier	0	10498	0	10498
HEP-Opskrba d.o.o.	Supplier	0	0	0	1120854
Hrvatski Telekom d.d.	Supplier	0	161	0	161
i-energija d.o.o.	Supplier	0	0	0	0
Proenergy d.o.o.	Supplier	0	0	0	20000
RWE ENERGIJA d.o.o.	Supplier	0	19000	0	7232
<b>Total GO</b>		<b>2623851</b>	<b>31896</b>	<b>555101</b>	<b>1161039</b>

\*Supplier 2018: RWE Energija d.o.o., HEP-Opskrba d.o.o., Proenergy d.o.o., GEN-I Zagreb d.o.o., Hrvatski Telekom d.d., CRODUX PLIN d.o.o., i-energija d.o.o.

\*Producer 2018: HEP-Proizvodnja d.o.o.-HE Lešće, HE Varaždin, HE Orlovac, HE Dubrava; ADRIA WIND POWER d.o.o. – Small wind farm ‘Ravna 1’; VJETROELEKTRANATRATAR-KRTOLIN d.o.o. – Wind farm ‘Trtar-Krtolin’

**6. Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes (Article 22(1)(g) of Directive 2009/28/EC).**

The data available are presented in Table 4.

**Table 4: Biomass supply for energy use**

		Amount of domestic raw material	Amount of imported raw material from EU	Amount of imported raw material from non-EU	Amount of exported products	Amount of products consumed in Croatia
<b>2017</b>						
<b>Solid biomass supply for heating and electricity:</b>						
Direct supply of wood biomass from forests and other wooded land for energy generation (fellings)	thousand	5619.2	6.7	57.3	748.1	4935.1
	ktoe	1207.9	1.4	12.3	160.8	1060.9
Indirect supply of wood biomass (residues and co-products from wood industry)	TJ	12772.7	426.1	524.1	7220.1	6354.5
	ktoe	305.1	10.2	12.5	172.4	151.8
Energy crops (grasses etc.) and short rotation trees						
Agricultural by-products / processed residues and fishery by-products						
Biomass from waste (municipal, industrial, etc.)	TJ	595.4				595.4
	ktoe	14.2				14.2
Others (please specify)						
<b>Biogas supply for heating and electricity</b>						
Landfill gas	thousand	13689.8				13689.8
	TJ	232.7				232.7
Shale gas	thousand	7160.0				7160.0
	TJ	145.6				145.6
Other types of biogas	thousand	137656.0				137656.0
	TJ	2293.2				2293.2
<b>Biofuel supply for transport:</b>						
Biodiesel	thousand	0.368				0.363
	TJ	14.0				13.8
Bioethanol	thousand		0.266			0.266
	TJ		7.1			7.1
Others (please specify)						
<b>2016</b>						
<b>Solid biomass supply for heating and electricity:</b>						
Direct supply of wood biomass from forests and other wooded land for energy generation (fellings)	thousand	5856	0.7	49.1	752.9	5152.9
	ktoe	1258.8	0.2	10.6	161.8	1107.7
Indirect supply of wood biomass (residues and co-products from wood industry)	TJ	10744.9	293.6	457.3	6276.5	5391.4
	ktoe	256.6	7.0	10.9	149.9	128.8
Energy crops (grasses etc.) and short rotation trees						
Agricultural by-products / processed residues and fishery by-products						
Biomass from waste (municipal, industrial, etc.)	TJ	284.8				284.8
	ktoe	6.8				6.8
Others (please specify)						
<b>Biogas supply for heating and electricity</b>						
Landfill gas	thousand	12956.0				12956.0
	TJ	220.3				220.3
Shale gas	thousand	7180.0				7180.0
	TJ	146.0				146.0
Other types of biogas	thousand	95383.0				95383.0
	TJ	1586.0				1586.0
<b>Biofuel supply for transport:</b>						
Biodiesel	thousand	1.1			0.6	1.0
	TJ	41.8			21.0	35.7
Bioethanol	thousand		0.3			0.3
	TJ		6.7			6.7
Others (please specify)						

		Amount of domestic raw material	Amount of imported raw material from EU	Amount of imported raw material from non-EU	Amount of exported products	Amount of products consumed in Croatia
<b>2018</b>						
<b>Solid biomass supply for heating and electricity:</b>						
Direct supply of wood biomass from forests and other wooded land for energy generation (fellings)	thousand	5165.8	21.2	46.4	595.8	4637.6
	ktoe	1110.4	4.6	10.0	128.1	996.9
Indirect supply of wood biomass (residues and co-products from wood industry)	TJ	14845.4	530.7	653.8	6234.2	9745.6
	ktoe	354.6	12.7	15.6	148.9	232.8
Energy crops (grasses etc.) and short rotation trees						
Agricultural by-products / processed residues and fishery by-products						
Biomass from waste (municipal, industrial, etc.)	TJ	277.1				277.1
	ktoe	6.6				6.6
Others (please specify)						
<b>Biogas supply for heating and electricity</b>						
Landfill gas	thousand	12372.9				12372.9
	TJ	210.3				210.3
Shale gas	thousand	6595.0				6595.0
	TJ	134.1				134.1
Other types of biogas	thousand	154507.1				154507.1
	TJ	2736.7				2736.7
<b>Biofuel supply for transport:</b>						
Biodiesel	thousand	0.368				0.363
	TJ	14.0				13.8
Bioethanol	thousand		0.266			0.266
	TJ		7.1			7.1
Others (please specify)						
<b>2017</b>						
<b>Solid biomass supply for heating and electricity:</b>						
Direct supply of wood biomass from forests and other wooded land for energy generation (fellings)	thousand	5619.2	6.7	57.3	748.1	4935.1
	ktoe	1207.9	1.4	12.3	160.8	1060.9
Indirect supply of wood biomass (residues and co-products from wood industry)	TJ	12772.7	426.1	524.1	7220.1	6354.5
	ktoe	305.1	10.2	12.5	172.4	151.8
Energy crops (grasses etc.) and short rotation trees						
Agricultural by-products / processed residues and fishery by-products						
Biomass from waste (municipal, industrial, etc.)	TJ	595.4				595.4
	ktoe	14.2				14.2
Others (please specify)						
<b>Biogas supply for heating and electricity</b>						
Landfill gas	thousand	13689.8				13689.8
	TJ	232.7				232.7
Shale gas	thousand	7160.0				7160.0
	TJ	145.6				145.6
Other types of biogas	thousand	137656.0				137656.0
	TJ	2293.2				2293.2
<b>Biofuel supply for transport:</b>						
Biodiesel	thousand	0.415	32.615	0.025		30.182
	TJ	15.8	1203.5	0.9		1114.2
Bioethanol	thousand		0,655			0,633
	TJ		17.5			16.9
Others (please specify)						



Total solid biofuel production in Croatia in 2018:

<b>Solid biofuels</b>	<b>Production</b>
Wood pellets	301,254 t
Wood briquettes*	58,340 t
Charcoal	9,844 t
Wood chips	441,940 t
Firewood	5,165,800 m3

\*estimate

In 2018, pellets were produced at 24 plants in Croatia. Total pellet production capacity was 387,141 tonnes per year, of which around 78% was utilised. Of the total quantity of pellets produced in 2018, roughly 64% was placed on foreign markets, with the remainder utilised on the domestic market.

Briquette production capacity totalled some 80,221 tonnes per year, but production usually takes place periodically, depending on the raw material available (wood-processing industry waste). Of the total briquette output in 2018, some 58% was sold on foreign markets.

Wood charcoal production figures are based on data obtained by contacting producers. Croatia has just one large-scale producer of wood charcoal, which produces almost 95% of annual output at its plants, with the remainder produced by one smaller-scale producer.

No agricultural land in Croatia is used for growing energy crops.

**7. Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources? Please provide, where available, references to relevant documentation on these impacts in your country. (Article 22(1)(h) of Directive 2009/28/EC).**

No data available, as no agricultural land in Croatia is used for growing energy crops.

**8. Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and lingo cellulosic material. (Article 22(1)(i) of Directive 2009/28/EC).**

The biofuel target for transport set by the National Action Plan (NAP) was 5.89% for 2017 and 6.92% for 2018. As a result of the economic and financial crisis, the target set for the final consumption of biofuels in transport was not achieved.

In general terms, it was estimated that it would be necessary to build new production capacity to reach the required share of domestically produced biofuel targets. In the case of first-generation biofuels, this would require monitoring increased production of raw materials and investing in new technologies to exploit existing potential (biogas) and research and development of technologies for producing second-generation biogas. Production capacity was not fully utilised, and at the end of 2014 all biofuel

production in Croatia was suspended. After that, even those required to place biofuels on the market sharply reduced their import/export of biofuels due to uncompetitive biofuel prices on the EU market. The National Action Plan stipulates the total contribution that is expected from each particular technology for obtaining renewable energy with a view to meeting binding goals by 2020 and indicative trajectories for the share of energy from RES in overall electricity production, heating, cooling and transport. Renewable energy spent on transport in 2020 will primarily consist of biofuel energy (8.85%), with the remaining portion up to 10% coming from electricity (1.15%), which will be used in all types of transport.

Total biofuel production capacity in Croatia stood at around 41,000 tonnes of biodiesel per year at the end of 2018.

In 2018, 415 tonnes (or 14.7 TJ) of biodiesel were produced in Croatia, most of which was placed on the domestic market.

**9. Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within your country in the preceding 2 years.** Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within your country. (*Article 22(1)(j) of Directive 2009/28/EC*).

Up to 2016 no system had as yet been established in Croatia for assessing the impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality. However, activities were undertaken to prepare the ground for the obligation to comply with sustainability requirements in the production and use of biofuels as a prerequisite for counting biofuel energy towards meeting the national biofuel market placement targets and the obligation to place biofuels on the market. The production of raw agricultural materials used for biofuel production in Croatia until 2014 complied with the sustainability criteria, as demonstrated by examining the records of the Paying Agency for Agriculture, Fisheries and Rural Development. Since 2015 there has been no biofuel production in Croatia.

**10. Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (*Article 22(1)(k) of Directive 2009/28/EC*).**

The contribution to the reduction in greenhouse gas emissions is determined in respect of the generation of electricity from RES, the use of RES in transport and the use of RES for heating and cooling in the 2017-2018 period.

To determine the contribution of RES to reducing greenhouse gas emissions, the amount of emission savings thanks to the use of renewables instead of fossil fuels was estimated. Specifically, the emission savings were determined by substituting fossil fuels and the specific greenhouse gas emissions associated with them for the quantity of electricity generated from RES, RES energy used for heating and cooling, and RES energy used in transport.

In sectoral terms, in the production of electricity from RES we assumed for our calculation that 50% of alternative electricity production is accounted for by natural gas, the other 50% by coal, and for the sake of comparability a single factor was used for all years reviewed. The greenhouse gas emission savings from transport were determined with reference to petrol rather than bioethanol and diesel fuel rather than biodiesel. The calculation of greenhouse gas emissions from the heating and cooling sectors was based on the use of heating oil instead of RES.

**Table 5: Estimated GHG emission savings from the use of renewable energy (t CO<sub>2</sub>eq)**

<b>Environmental aspects</b>	<b>2017</b>	<b>2018</b>
<b>Total estimated net GHG emission saving from using renewable energy<sup>3</sup></b>	<b>9,779,933</b>	<b>10,062,392</b>
- Estimated net GHG saving from the use of renewable electricity	5,851,351	6,130,066
- Estimated net GHG saving from the use of renewable energy in heating and cooling	3,927,068	3,848,630
- Estimated net GHG saving from the use of renewable energy in transport	1,514	83,697

The net greenhouse gas saving thanks to the use of renewable electricity involves substituting large hydro-electric power plants (>10 MW) with fossil fuels amounts to (t CO<sub>2</sub>eq):

<b>Environmental aspects</b>	<b>2017</b>	<b>2018</b>
- Estimated net GHG saving from the use of renewable electricity from large hydro-electric power plants (> 10MW)	4,634,384	4,741,263

Estimated GHG saving from the use of RES, compared to 2005 (t CO<sub>2</sub>e):

<b>Environmental aspects</b>	<b>2017</b>	<b>2018</b>
<b>Total estimated net GHG emission saving from using renewable energy</b>	<b>1,540,651</b>	<b>1,823,110</b>
- Estimated net GHG saving from the use of renewable electricity	1,664,795	1,943,509
- Estimated net GHG saving from the use of renewable energy in heating and cooling	-125,658	-204,096
- Estimated net GHG saving from the use of renewable energy in transport	1,514	83,697

**11. Please report on (for the preceding 2 years) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/exported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020. (Article 22(1)(l) and (m) of Directive 2009/28/EC).**

Croatia is planning to achieve the overall target using domestic sources in the period up to 2020. There is therefore no estimated surplus and/or deficit in the production of renewable energy compared with the indicative trajectory that could be transferred to/from other Member States and/or from third countries. Therefore, the questions in this section are not applicable.

<sup>3</sup> The contribution of gas, electricity and hydrogen from renewable energy sources should be reported, depending on final use (electricity, heating and cooling, or transport), and only be counted once towards the total estimated net GHG savings.

**11.1. Please provide details of statistical transfers, joint projects and joint support scheme decision rules.**

Croatia is planning to achieve the overall target using domestic sources in the period up to 2020. Therefore, the questions in this section are not applicable.

**12. Please provide information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates. (Article 22(1)(n) of Directive 2009/28/EC)**

The basis on which the share of municipal waste and industrial waste is estimated is as follows: biodegradable municipal waste accounts for 28.6%, net calorific value of 0.358 toe/t, while biodegradable industrial waste accounts for 40%, net calorific value of 0.358 toe/t.