

**Montenegro Progress Reports under
Renewable Energy Directive 2009/28/EC as adapted by the
Ministerial Council Decision 2012/04/MC-EnC**

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) (hereinafter: the Directive), the Republic of Montenegro assumed the obligation to increase the use of renewables to reach at least a 33% share of energy from renewable sources in gross final consumption at the EU level by 2020. That goal was determined by applying the Directive methodology with the base year being 2009. The goals for 2020 were determined taking into consideration the calculated share of renewable energy sources in 2009, the assumed fixed increase rate of gross final consumption of 5% and relative GDP per capita. The insecurities of those assumptions, as well as the methods of determining the renewable energy sources share in 2009 can lead to differences in achieving the set goals for 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, is the last report required.

Member State reports are 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 Montenegro 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, was prepared according to 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 the reports prepared by Member States 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.

This template has been filled out 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 as well as regulations about the calculation of renewable energy shares in the final energy consumption, energy content in fuels and calculation of total energy consumption in transport, calculations of electricity generated from hydro power plants and wind power plants and calculations of energy from heat pumps ("Official Gazette of Montenegro", number 5/16).

In line with the obligations Montenegro has as a member of Energy Community, the Directive 2009/28/EC has been implemented into the Energy Law ("Official Gazette of Montenegro" number 5/16 and 51/17), in the part concerning electricity and energy used for heating and/or cooling. According to the article 19 in the Energy Law, implementation of the Action Plan should be followed by the Ministry of Energy and a progress report should be submitted to the Montenegro Government and Energy Community. Progress Report must have an analysis of reaching the national goal of individual shares (electricity, heating and cooling, transport), as well as total share of renewable energy sources in the final energy consumption in the period under observation.

1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (n-1; n-2 e.g. 2017 and 2016) (Article 22 (1) a of Directive 2009/28/EC).

Sectoral goals and indicative pathways

The Directive 2009/28/EC defines goals for shares of renewable energy sources in year 2020 in the following sectors: electricity, heating and cooling and transport.

Three sectoral goals were calculated for year 2020 from the base scenario:

Electricity: 51.4%
 Heating and cooling: 38.2%
 Transport: 10.2%

Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources¹

	2017 Year n-1	2016 Year n-2	Sectoral goals in the National Renewable Energy Action Plan
RES-H&C ² ³ (%)	36.1	35.0	38.2
RES-E ⁴ (%)	50.1	46.7	51.4
RES-T ⁵ (%)	0.8	0.8	10.2
Overall RES share ⁶ (%)	32.3	31.8	33.0
Of which from cooperation mechanism ⁷ (%)			
Surplus for cooperation mechanism ⁸ (%)			

Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)⁹

	2017 Year n-1	2016 Year n-2
(A) Gross final consumption of RES for heating and cooling	167.6	155.3
(B) Gross final consumption of electricity from RES	168.5	159.6
(C) Gross final consumption of energy from RES in transport	1.7	1.8

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 When calculating the share of renewable energy sources in heating and cooling, the data for firewood from Statistical Office of Montenegro as well as data about the harvested trees was used. The moisture content is 20%, in line with the Manual for wood biomass fuel.

⁴ 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.

⁵ Share of renewable energy in transport: final energy from renewable sources consumed 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.

⁶ Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

⁷ In percentage point of overall RES share.

⁸ In percentage point of overall RES share.

⁹ Facilitates comparison with Table 4a of the NREAPs

(D) Gross total RES consumption ¹⁰	336.1	314.9
(E) Transfer of RES <u>to</u> other Contracting Parties or Member States		
(F) Transfer of RES <u>from</u> other Contracting Parties and 3rd countries		
(G) RES consumption adjusted for target (D)-(E)+(F)	336.1	314.9

¹⁰According to Art.5(1)of Directive 2009/28/EC gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.

Table 1.b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in Montenegro to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity¹¹

	2017 Year n-1		2016 Year n-2	
	MW	GWh	MW	GWh
Hydro ¹² :	680.8	1863.0	674.0	1853.9
non pumped				
<1MW	5.7	15.5	5.7	18.2
1MW-10 MW	26.1	52.0	19.3	57.8
>10MW	649.0	1795.5	649.0	1777.9
pumped				
mixed ¹³				
Geothermal				
Solar:	0.9	2.2	0.9	2.2
photovoltaic				
concentrated solar power				
Tide, wave, ocean				
Wind:	74.0	95.0		
onshore				
offshore				
Biomass ¹⁴ :				
solid biomass				
biogas				
bioliquids				
TOTAL	755.7	1960.2	674.9	1856.1
of which in CHP				

Table 1c: Total actual contribution (final energy consumption¹⁵) from each renewable energy technology in Montenegro to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)¹⁶

	2017 Year n-1	2016 Year n-2
Geothermal (excluding low temperature geothermal heat in heat pump applications)	-	-
Solar		
Biomass ¹⁷ :	167.6	155.3
solid biomass	167.6	155.3
biogas	-	-
bioliquids	-	-
Renewable energy from heat pumps: - of which aerothermal - of which geothermal - of which hydrothermal	-	-
TOTAL		
Of which DH ¹⁸	167.6	155.3
Of which biomass in households ¹⁹		

¹¹ Facilitates comparison with Table 10a of the NREAPs.

¹² Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

¹³ In accordance with new Eurostat methodology.

¹⁴ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) of Directive 2009/28/EC last subparagraph.

¹⁵ Direct use and district heat as defined in Article 5.4 of Directive 2009/28/EC.

¹⁶ Facilitates comparison with Table 11 of the NREAPs.

¹⁷ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

¹⁸ District heating and / or cooling from total renewable heating and cooling consumption (RES- DH).

¹⁹ From the total renewable heating and cooling consumption.

Table 1d: Total actual contribution from each renewable energy technology in Montenegro to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)^{20, 21}

	2017 Year n-1	2016 Year n-2
Bioethanol/ bio-ETBE	-	-
<i>Of which Biofuels²² Article 21.2</i>	-	-
<i>Of which imported²³</i>	-	-
Biodiesel	-	-
<i>Of which Biofuels²⁴ Article 21.2</i>	-	-
<i>Of which imported²⁵</i>	-	-
Hydrogen from renewables	-	-
Renewable electricity	-	-
<i>Of which road transport</i>	-	-
<i>Of which non-road transport</i>	1.7	1.8
Others (as biogas, vegetable oils, etc.) – please specify	-	-
<i>Of which Biofuels²⁶ Article 21.2</i>	-	-
TOTAL	1.7	1.8

²⁰ For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

²¹ Facilitates comparison with Table 12 of the NREAPs.

²² Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

²³ From the whole amount of bioethanol / bio-ETBE.

²⁴ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

²⁵ From the whole amount of biodiesel.

²⁶ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

2. Measures taken in the preceding 2 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
1. Feed-in tariffs for electricity produced in power plants using renewable energy sources and power plants for high efficiency cogeneration (plants of privileged producers)	Financial	51.4 % of electricity from RES in gross final electricity consumption in 2020	Investors - Privileged producers	Existing	2010-
2. Priority in delivery of total electricity generated in power plants of privileged producers into the transmission or distribution system	Regulatory				
3. Exemption of charges for imbalances by the system operator for privileged producers	Regulatory				
4. Compulsory minimal share of electricity from renewable energy sources in the total electricity supply that shall be procured by each supplier of electricity	Regulatory		Suppliers of electricity and self-producers	Existing	2010-
5. Guarantees of origin	Regulatory	Evidencing the origin of energy generated from RES	RES and cogeneration producers	Existing	2010-

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
6. Policy and support schemes for promoting use of renewable energy sources in heating and cooling	Regulatory / Financial	Greater use of national RES potential for heating and cooling	Investors	Existing	2015-
7. Implementation of regular energy audits of heating systems and air conditioning systems			Ministry of Economy, owners of buildings /heating and air conditioning system		
8. Obligation for new buildings in certain climate zones to cover a quota of their energy needs for domestic hot water with renewable sources (solar thermal systems)	Regulatory	Increased use of RES in buildings	Investors; HVAC designers	Existing	2009-
9. Improvement of energy performance of buildings in the public sector: Montenegro Energy Efficiency Project (MEEP) - Implementation of energy efficiency measures in six healthcare buildings and nine educational buildings Energy Efficiency Programme in Public Buildings (EPPB) - Improvement of the energy efficiency, comfort and working conditions in the selected educational buildings (kindergartens, primary and secondary schools and student dormitories)			Ministry of Economy; Ministry of Finance; state authorities		
10. Establishment and implementation of EE criteria in public procurement of goods and services, as well as in purchase and rental of buildings	Regulatory	Increase of energy efficacy	Ministry of Economy, Ministry of Finance, authorities responsible for	Existing	2015

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
			implementation of public procurement		
<p>11. Programmes of support for using RES in households and other sectors:</p> <p>MONTESOL - Interest-free credit line for installation of solar-thermal systems for households</p> <p>SOLARNI KATUNI - Project related to installation of photovoltaic solar systems in summer pasture lands</p> <p>ENERGY WOOD II - Interest-free credit line for installation of heating systems on modern biomass fuels (pellets, briquettes) for households</p> <p>ENERGY EFFICIENT HOME – credit line without interest for the installation of heating systems run on modern forms of biomass (pellets, briquettes), efficient façade woodwork and façade thermal insulation.</p>	Financial	Energy and economic savings; Increased use of RES in buildings; Creation of a market for utilization of solar/bio- mass energy	Investors – households; Eligible dealers and installers; Banks	Existing and planned	2011-
12. Program of subsidies in some municipalities for the installation of solar systems in new buildings by reducing utility costs (fees for utility lands)			Investors		2009-
13. Incentive program related to the use of solar energy in the tourism sector	Financial	Increased use of RES in buildings	Ministry of Economy, Ministry of Sustainable Development and Tourism	Existing	2015-

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
14. Policy and support schemes for promoting use of renewable energy sources in transport (including obligations of placing biofuels on the market)	Regulatory Financial	10,2 % RES in transport in 2020	Ministry of Economy, Ministry of Sustainable Development and Tourism, local self-government units	Planned	2015-
15. Infrastructural measures in the transport sector with the energy savings effects					
16. Study - Action Plan on energy efficiency in transport					
17. Establishment and implementation of EE criteria in public procurement of vehicles and transport services in the wider public sector					
18. Development and application of regulatory framework for energy efficient buildings	Regulatory Financial	A measure that ensures compliance of energy efficient buildings standards	Participants in the construction, owners of the building that are being reconstructed, owners of the buildings that are being sold	Existing	2013

* 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, energetic use of animal manure, etc)?

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

2.a 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).

Montenegro has adopted most important documents (Energy policy of Montenegro until 2030, Energy Development Strategy by 2030, Energy Law, Strategic environmental assessment Law and National Renewable Energy Action plan to 2020). Action plan for implementation of Energy Development Strategy by 2030 has also been adopted. The Action Plan (AP) is complementary with the Strategy since both documents share the same goal: concretisation of the vision of energy development and identifying ways in which this vision will be realized. These are most important documents for developing RES in Montenegro.

The Ministry of Economy (Directorate for Energy) monitors the stages of realisation of National Renewable Energy Action Plan. Article 19 of the new Energy Law provides a detailed overview of the monitoring process, which includes a thorough and constant assessment of all procedures and data associated with energy production and distribution from renewable energy sources.

Montenegro energy policy, which is in line with the EU energy policy, defines three main priorities for Montenegro energy sector until 2030:

- Security of supply;
- Development of competitive energy market;
- Sustainable development.

Using renewable energy sources is also a priority in Montenegro energy policy and it will be achieved by creating a favourable ambience for the development and use of RES and also for the achievement of national goals of RES shares in the final energy consumption; of the using the remaining available RES potential and the increase of RES share in transport with the goal of reaching the set share of RES in the final consumption of energy in transport, in compliance with Montenegro obligations.

In June 2016 the Energy Efficiency Action Plan for 2016-2018 has also been adopted. It has been prepared based on the requirements set in the Law on Efficient Use of Energy and EU Directive 2012/27/EU, adapted for the implementation in the Energy Community Treaty countries. The third EEAP mostly continues the activities from the second EEAP for 2013-2015, which has been accepted by the Montenegro government. However, the third EEAP significantly supplements the second EEAP when it comes to newer and more strict EU demands shown in the updated directives on energy efficiency. By the Energy Community Treaty, Montenegro has an obligation to achieve the indicative goal of energy efficiency, which is the savings of 9% of average final energy consumption in the period of five years, in the ninth year of Directive application. The period for achieving indicative goal from the Directive is from 2010-2018.

2.b 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 Energy Law defines all rules for transmission and distribution of electricity generated from renewable energy sources. The Law was passed by the Parliament of Montenegro on December 29th, 2015. It was published in the Official Gazette of Montenegro, number 5/16, on January 20th, 2016. Additional alterations and amendments on the Energy Law were published in the Official Gazette of Montenegro, number 51/17.

According to the Article 107 of the Energy Law, privileged producers have priority in the delivery of the energy produced into the system, unless security of system operation is in

danger. According to the Article 112, in the process of operating transmission system and dispatching, the operator of the transmission system is obliged to give preference to privileged producers, subject to the technical capabilities of system. Article 116 states the same about the distribution system operator.

In the Article 175 of the Energy Law, it is stated that TSO/DSO must give permission for the connection of renewable energy plants, unless there are technical limitations in either transmission or distribution system.

Article 107 of the Energy Law states that privileged producers shall be entitled to the incentive price for electricity and priority in delivery of total electricity generated to the transmission or the distribution system. The only limitation to priority access would be due to security of system operation reasons. In this case operators of transmission and distribution system may not give priority to privileged producer, and they are obliged to inform the Energy Regulatory Agency and determine corrective measures for prevention of further denials of access to the system.

There are several options for distributing grid connection costs. Contracting Parties are likely to choose one or a combination of these. According to the “deep” connection cost charging the developer of the installation generating electricity from renewable energy sources bears several grid infrastructure related costs (grid connection, grid reinforcement, and extension). Another approach is the “shallow” connection cost charging, meaning that the developer bears only the grid connection cost, but not the costs of reinforcement and extension (this is built into the grid tariffs and paid by the customers). A further variant is when all connection costs are socialized and covered by the grid tariffs.)

The Energy Law stipulates that costs for connection to the transmission system or distribution system are paid by the system user.

According to the procedure for connection defined in the Distribution Grid Code, the investor bears the costs of issuing the requirements for connection, the decision on granting consent to the connection, the connection costs, the cost of construction of lines and devices to the point of connection, the cost of necessary interventions in the distribution network necessary for reliable operation and delivery of the electricity produced in the power plants, and the cost of resolving property and legal issues.

According to the Methodology for setting of prices and terms and conditions for connection to the distribution system, the connection of generation facilities to the distribution system is classified as a “non-standardized connection”. Calculation of costs for a “non-standardized connection” is done according to the economic elaborate that has to be prepared separately for each connection.

Costs for connection are determined depending on the type and scope of work that needs to be performed in order to connect the facility to the distribution system, according to the following criteria: approved installed capacity, the voltage level of the network to which the user is connected, the distance from the existing network, the number of phases, the number and types of measuring devices, type and line cross-section, the type of equipment, type of devices and materials that are installed in accordance with the technical regulations, the need for the provision of designs and other documents necessary for the construction of connection and related works. Costs for connection include costs for equipment, devices and materials, building costs, machinery costs and expenses for technical documentation.

Regarding connection to the transmission system, the construction of facilities necessary for connecting users is based on the use of standard equipment and standard solutions and is the responsibility of user. Charges for connection to the transmission system are intended to cover the following costs: costs for preparation of elaborate on the connection to the transmission system, the costs of revision of design documentation, the costs of supervision of TSO during facility construction and the costs of technical inspection by the TSO. Calculation of these costs individually is given in the Methodology for setting of prices and terms and conditions for connection to the transmission system.

According to Article 176 of the Energy Law, in cases when the connection of generating or more complex facilities requires system development studies or preparation of connection

reports, the costs of the system development study shall be borne by the TSO/DSO, and the costs of the connection reports by a system user.

The connection charges shall be paid by the system user. Additionally, Article 181 of the Energy Law envisages the case when the system user may build the connection infrastructure at its own expense with transfer into the property of the TSO/DSO once the full compensation has been paid. In the Article 184 it is stated that if the user cannot be connected to the system because of technical reasons and the connection is not planned by the TSO/DSO, a consent has to be given to the system user for the connection. That connection can then be constructed at the system user's expense and with the agreement that it will be transferred into the property of the TSO/DSO. According to the Article 185, the compensation shall be paid in maximum 20 equal annual instalments with an agreed interest which takes into account a rate of return on the investments.

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).

During 2016 and 2017 a Decree on the tariff system for determining the incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration from 2011 was implemented, with the changes set in 2014 and 2015 ("Official Gazette of Montenegro", number 52/11, 28/14, 79/15).

As a support scheme for electricity produced from renewable energy sources, Montenegro has chosen a system of guaranteed purchase of electricity by "feed-in-tariffs", in line with the Energy Law and its bylaws. The operators of plants that generate electricity from renewable energy sources can obtain the status of a "Privileged Producer/Generator", and thereupon acquire the right to a price support for the generated electricity under the legal requirements (Privileged Producer Decree, "Official Gazette of Montenegro", number 59/16). Privileged producers have a priority of delivery into the transmission or distribution system and are also exempt from paying the system balancing services.

Once the status of privileged generator is acquired through the decision adopted by the Energy Regulatory Agency, the energy producer concludes a contract with the Market Operator on the guaranteed purchase of electricity from RES at the incentive price. The contract also sets out details such as the estimated yearly production, the amount of the incentive price and the balance responsibility.

The Energy Market Operator (COTEE), who is legally obliged to buy the electric energy from privileged producers, pays the incentive for a period of 12 years after having concluded a formal agreement (Art. 105 of Energy Law). The exact amount is determined in the Decree and mainly depends on the type of RES technology. The first such contract was concluded with Hidroenergija Montenegro d.o.o. Berane with effect from May 1st 2014. During 2016 and 2017 11 privileged producers produced electricity from small hydro power plants. The first contract with a wind power producer was signed in 2017.

The feed-in tariffs in paid to the privileged producer monthly, based on the contract on the guaranteed purchase of electricity from RES. The TSO and DSO convey the data on the power transmission from privileged generators to the Market Operator in so that he can carry out the transfer of the funds from the final consumers to the privileged generators once a month. Prior to the payment the privileged producer needs to submit to the market operator guarantees of origin for the total electricity production, for which the incentive prices have been obtained (Art. 9 Tariff System Decree).

Table 3: Support schemes for renewable energy for 2016 and 2017 through feed-in tariffs

RES support schemes year, 2016		Per unit support (ct€/kWh)	Total (M€)*
Hydro-electric power plants with net power output of power plant $P_{pe} < 1\text{MWe}^{**}$			
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	10.44	1.12
Feed-in premiums			
Tendering			
Hydro-electric power plants with net power output of power plant $1 \leq P_{pe} < 3\text{ MW}$			
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	$10.44-0.7 \cdot P_{pe}$	0.19
Feed-in premiums			
Tendering			
Hydro-electric power plants with net power output of power plant $3 \leq P_{pe} < 5\text{ MW}$			
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	$8.87-0.24 \cdot P_{pe}$	0,04
Feed-in premiums			
Tendering			
Hydro-electric power plants with net power output of power plant $5 \leq P_{pe} < 8\text{ MW}$			
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	$8.35-0.18 \cdot P_{pe}$	0.79
Feed-in premiums			
Tendering			
Hydro-electric power plants with net power output of power plant $8 \leq P_{pe} < 10\text{ MW}$			
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	6.80	0
	Feed-in premiums		
	Tendering		
Biomass - Power plants using biomass from forestry and agriculture			
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	13.71	0
	Feed-in premiums		
	Tendering		
Biomass - Power plants using biomass from wood-processing industry			
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	12.31	0
	Feed-in premiums		
	Tendering		
Biogas - Power plants using waste gas and gas from wastewater purification plants >1MW			
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	8.00	0
	Feed-in premiums		
	Tendering		
Biogas - Power plants using biogas <1MW			
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	15.00	0
	Feed-in premiums		
	Tendering		
Solar energy			
Instrument	Obligation/quota (%)		
	Penalty/Buy out option/ Buy out price (€/unit)		

(provide data as relevant)	Average certificate price		
	Tax exemption/refund		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff	12.00	0
	Feed-in premiums		
	Tendering		
Wind energy			
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	9.60	0
Feed-in premiums			
Tendering			
Total annual estimated support in the electricity sector		-	2.15
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 the support for each type of technology

** If the small hydropower plant has been built on an existing pipeline or dam, incentive price is reduced to 80% of the above mentioned value (Art. 5 § 3 Tariff System Decree).

RES support schemes year, 2017		Per unit support (ct€/kWh)	Total (M€)*
Hydro-electric power plants with net power output of power plant $P_{pe} < 1MWe^{**}$			
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	10.44	0.83
Feed-in premiums			
Tendering			
Hydro-electric power plants with net power output of power plant $1 \leq P_{pe} < 3 MW$			
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	$10.44 - 0.7 * P_{pe}$	0.42
Feed-in premiums			
Tendering			

Hydro-electric power plants with net power output of power plant $3 \leq P_{pe} < 5$ MW			
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	$8.87-0.24 \cdot P_{pe}$	0,50
	Feed-in premiums		
Tendering			
Hydro-electric power plants with net power output of power plant $5 \leq P_{pe} < 8$ MW			
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	$8.35-0.18 \cdot P_{pe}$	0.52
	Feed-in premiums		
Tendering			
Hydro-electric power plants with net power output of power plant $8 \leq P_{pe} < 10$ MW			
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	6.80	0
	Feed-in premiums		
Tendering			
Biomass - Power plants using biomass from forestry and agriculture			
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	13.71	0
	Feed-in premiums		
Tendering			
Biomass - Power plants using biomass from wood-processing industry			
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	12.31	0
	Feed-in premiums		
	Tendering		
Biogas - Power plants using waste gas and gas from wastewater purification plants >1MW			
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	8.00	0
	Feed-in premiums		
	Tendering		
Biogas - Power plants using biogas<1MW			
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	15.00	0
	Feed-in premiums		
	Tendering		
Solar energy			
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	12.00	0
	Feed-in premiums		
	Tendering		
Wind energy			
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	9.60	2.20
	Feed-in premiums		
	Tendering		
Total annual estimated support in the electricity sector		-	4.47
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 the support for each type of technology

** If the small hydropower plant has been built on an existing pipeline or dam, incentive price is reduced to 80% of the above mentioned value (Art. 5 § 3 Tariff System Decree).

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 new Energy Law grants support for the use of renewable energy sources and high-efficiency cogeneration based on auctions. Renewable energy generation in Montenegro is supported for certain producers ("privileged producers"), according to the Article 23 of the Law on Energy.

Every producer, who acquires the status of a privileged producer, is guaranteed purchase of the all energy produced at a fixed price during the entire period of acquired status (12 years, Article 105).

A status of privileged producer can be obtained in accordance with the Article 104 of the Energy Law and the Decree on acquiring the status and accomplishing entitlements of the privileged producer of electricity. All privileged producers are entitled to a purchase price for electricity according to the Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and highly efficient cogeneration, priority in delivery of total electricity generated into the transmission or distribution system, as well as the exemption from balancing costs.

Tariffs depend on the type of facilities, their capacities, annual generation and other factors. The tariff system determines the incentive rates for electricity produced from renewable energy plants and cogeneration on the basis of the eligible costs of construction or reconstruction, operation and maintenance cost and return of invested funds. The support scheme is funded by a fee that is charged for each kWh purchased by the final consumers. The transfer of funds from consumers to privileged producers is done on a monthly basis via the market operator. The market operator enters into a contract with the privileged producers for the purchase of *feed-in* tariff electricity. Also, the market operator enters into contracts with electricity suppliers and qualified buyers (self-suppliers) on the take-over of a proportionate share of electricity produced in plants of privileged producers. Transmission and distribution system operators are then obliged to gather data on the delivered electricity by each privileged producer and taken-over by each electricity supplier. During 2016 and 2017 the market operator ensured remuneration by charging each electricity supplier and self-supplier for the amount of electricity accepted from privileged producers in line with the *feed-in* tariff levels. The Ministry of Economy determined the fee for the electricity generation from renewable energy sources and cogeneration subsidy according to the Decree on the tariff system for determining the incentive fees for promoting electricity production from renewable energy sources and cogeneration ("Official Gazette of Montenegro", number 8/14). Montenegro government has also adopted two Decrees on changes and supplements of the decree on the on fees for the promotion of electricity generation from renewable sources and high efficiency cogeneration ("Official Gazette of Montenegro", number 33/16, 3/17), which describe the methodology for determining the fee for promotion of electricity generation from RES and high efficiency cogeneration in more detail.

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).

At the moment, no such measures are in place.

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 system of guarantee of origin is regulated by the Energy Law and the Decree on manner of issuance, transfer and cancellation of guarantees of origin for energy produced from renewable energy sources and high efficiency cogeneration ("Official Gazette of Montenegro", number 37/11).

Guarantee of origin is not issued to an energy entity producing the heat for remote heating and/or cooling in plants with installed capacity lower than 1 MW.

Guarantee of origin is issued at producer's request, after examination of technical documentation and direct visit to the plant's operation.

Guarantee of origin is issued by the Energy Regulatory Agency.

Transmission System Operator (TSO) or Distribution System Operator (DSO) to which the plant, for which the guarantee of origin is issued, is connected, shall submit to the Agency data on quantities of produced electricity, measured in the point of delivery to transmission or distribution system.

Guarantee of origin is issued per MWh of produced energy. Guarantee of origin is valid 12 months from the day of its issue. Guarantees of origin are transferable. If an electricity supplier transfers the guarantee of origin to a third party, the quantity of electricity for which guarantee of origin is transferred, shall be deducted from the total quantity of electricity from renewable energy sources recognized to the supplier for the fulfillment of compulsory minimum share.

Guarantee of origin of energy produced from renewable energy sources specifically contains:

- 1) data on energy source from which electricity or heat for heating and/or cooling was produced, including dates of beginning and end of production period for which the guarantee of origin is issued;
- 2) name, location, type and installed power of the plant in which the energy is produced;
- 3) scope of investment support for the plant, scope of incentives for energy produced in the plant and data on incentive type;
- 4) date when the plant was put in operation;
- 5) date of issue of guarantee of origin, validity period of guarantee of origin, its unique identification number and the country where it was issued.

Guarantee of origin for electricity produced from co-generation specifically includes:

- 1) name, location, type and installed power of the plant in which the energy is produced;
- 2) scope of investment support for the plant, scope of incentives for energy produced in the plant and data on incentive type;
- 3) date when the plant was put in operation;
- 4) date of issue of guarantee of origin, validity period of guarantee of origin, its unique identification number and the country where it was issued;
- 5) lower calorific value of fuel used for production of electricity for which guarantee of origin is issued;
- 6) purpose of use of the heat, produced in co-generation plant where electricity for which guarantee of origin is issued, is produced;
- 7) savings in primary energy in the process of production of electricity for which the guarantee of origin is issued;
- 8) data on quantity of electricity produced in accordance with criteria and rules for high efficiency.
- 9) the amount of heat produced with electricity.

Decree on manner of issuance, transfer and cancellation of guarantees of origin for energy produced from renewable energy sources and high efficiency cogeneration defines the methodology of issuance, transfer and cancellation of guarantees of origin, the data needed for a request for issuance of guarantee of origin, closer defines the content of guarantee of origin and the method of submission of data on quantity of delivered electricity through transmission or distribution system.

Guarantee of origin is issued exclusively in electronic form to producers at their request. Energy Law defines that Energy Regulatory Agency is responsible for the issuing of the guarantee according to the Decree on manner of issuance, transfer and cancellation of guarantees of origin. All actions with guarantees of origin issued to producers of electricity and high-efficiency cogeneration, especially eligible producers, are clearly defined in the by-laws so as to prevent abuse, such as a double issue, etc. Montenegrin electricity market operator (COTEE) in this regard, has an important role to distribute all guarantees of origin transferred by privileged producers, on suppliers of end customers for the purpose of disclosure of origin of the supplied electricity. Register of guarantees of origin is regulated by bylaws published on the website of Energy Regulatory Agency.

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).

Table 4 shows the available data.

Table 4: Biomass supply for energy use

	Amount of domestic raw material (*)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (*)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU(*)		Primary energy in amount of imported raw material from non EU (ktoe)	
	2017 Year n-1	2016 Year n-2	2017 Year n-1	2016 Year n-2	2017 Year n-1	2016 Year n-2	2017 Year n-1	2016 Year n-2	2017 Year n-1	2016 Year n-2	2017 Year n-1	2016 Year n-2
Biomass supply for heating and electricity:												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings etc.)**	672,035 m ³	706,004 m ³	167.6	155.3	1.634.0 t	2.160.0 t	0.8	0.9				
Indirect supply of wood biomass (residues and co-products from wood industry etc.)**	45,121 m ³	47,323 m ³	8.0	8.4	63.0 m ³	73.0 m ³	0.01	0.01				
Energy crops (grasses, etc.) and short rotation trees (please specify)												
Agricultural by-products / processed residues and fishery by-products **												
Biomass from waste												

(municipal, industrial etc.) **													
Others (please specify)													
Biomass supply for transport:													
Common arable crops for biofuels (please specify main types)													
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)													
Others (please specify)													

* Amount of raw material if possible in **m3 for biomass from forestry** and in **tonnes for biomass from agriculture and fishery and biomass from waste**

** The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

Table 4a. Current domestic agricultural land use for production of crops dedicated to energy production (ha)

Land use	Surface (ha)	
	2017 Year n-1	2016 Year n-2
1. Land used for common arable crops (wheat, sugar beet etc.) and oil seeds (rapeseed, sunflower etc.) (Please specify main types)		
2. Land used for short rotation trees (willows, poplars). (Please specify main types)		
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)		

There is no data about the plants growing for energy production.

7. Please provide information on any changes in commodity prices and land use within your Contracting Party 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).

There is almost no influence on prices because of bigger use of biomass or other types of RES.

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).

Table 5: Production and consumption of Art.21(2) biofuels (Ktoe)

Article 21(2) biofuels²⁷	2017 <i>Year n-1</i>	2016 <i>Year n-2</i>
Production – Fuel type X (Please specify)		
Consumption – Fuel type X (Please specify)		
Total production Art.21.2.biofuels		
Total consumption Art.21.2. biofuels		
% share of 21.2. fuels from total RES-T		

There was no using biofuels made from waste, residues, non-food cellulosic material and lingo cellulosic material in 2016 and 2017.

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**).

There is no plan for production of biofuels

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 reducing emissions of greenhouse gases is determined according to the projections of electricity generation from renewable energy sources, renewable energy use in transport and the use of renewable energy for heating and cooling by 2020.

In order to determine the contribution of renewable energy sources in the reduction of emissions of greenhouse gases, an assessment has been made, so-called avoided CO₂ emissions due to the use of renewable energy instead of fossil fuels. The avoided emissions are determined in a manner that the amount of electricity from renewable energy sources, the amount of renewable energy for heating and cooling and renewable energy in the transport, set forth in the National Action Plan, is replaced by fossil fuels and their respective CO₂ emissions.

Considering the individual sectors, in the production of electricity from renewable energy sources, a comparison has been made with fossil fuel power plants. CO₂ emissions from the TPP Pljevlja 1 are estimated in the calculation. Reduced CO₂ emissions from the heating and cooling sector assumes the use of fuel oil instead of renewable energy.

Table 6: Estimated GHG emission savings from the use of renewable energy (t CO₂eq)

Environmental aspects	2017 <i>Year n-1</i>	2016 <i>Year n-2</i>
Total estimated net GHG emission saving from using renewable energy²⁸	1,286,133.2	1,478,550.6
- Estimated net GHG saving from the use of renewable electricity	400,323.6	657,897.8
- Estimated net GHG saving from the use of renewable energy in heating and cooling	885,809.6	820,652.72
- Estimated net GHG saving from the use of renewable energy in transport		

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/imported from other Contracting Parties, Member States and/or third countries, as well as estimated potential for joint projects until 2020. (Article 22 (1) l, m) of Directive 2009/28/EC).

²⁷ Biofuels made from wastes, residues, non-food cellulosic material, and lignocellulosic material.

²⁸ The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Contracting Parties, Member States and/or third countries in Montenegro (ktoe)^{29, 30}

	2016 Year n-2	2017 Year n-1	2019	2019	2020
Actual/estimated excess or deficit production (Please distinguish per type of renewable energy and per origin/destination of import/export)					

There is no planned transfer to/from other Contracting Parties, Member States and/or third countries.

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

There is no planned use of statistical transfers or participation in joint projects and joint support scheme decision rules.

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).

Biodegradable fraction of municipal solid waste including biowaste and landfill gas - the estimation of the theoretical potential of municipal solid waste (MSW) in the CRES report is 710 TJ for whole Montenegro.

Biodegradable fraction of industrial waste - the usage of sewage methane for energy purposes should also be considered, at least for the bigger cities where the sewage water is treated in a wastewater treatment plant.

²⁹ Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up 2020. In each report Contracting Party may correct the data of the previous reports.

³⁰ When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. -x ktoe).