National Renewable Energy Action Plan to 2020

Montenegro

(pursuant to the template envisaged by the Renewable Energy Directive 2009/28/EC- Decision 2009/548/EC)

TABLE OF CONTENTS

Abbreviations

Abb	Meaning
AD	Joint-stock company
ASE	Advisory services to Energy Efficiency
GDP	Gross domestic product
CCEE	Montenegrin Center for Energy Efficiency
CDM	Clean Development Mechanism
CGES	Montenegrin transmission system operator
COTEE	Montenegrin Electricity Market Operator
CRES	Center for Renewable Energy Sources, Athens, Greece
EE	Energy efficiency
EEPPB	Energy Efficiency program in Public Buildings
EN	European Norms
ENTSO	European network of transmission system operators for electricity
ENSI	Norwegian company Energy Saving International
EPCG	National energy company
EU	European Union
GIS	Geographic information system
GIZ/GTZ	Deutsche Gesellschaft für Internationale Zusammenarbeit/German International development organization
HE	Hydroelectric power plant
HVDC	High voltage direct current
IMELS	Italian Ministry for Environment, Land and Sea
IPA	Instrument for Pre-Accession Assistance
KAP	Aluminium Plant Podgorica
MEEP	Montenergin Energy Efficieny Project
MONSTAT	Bureau for Statistics of Montenegro
NDC	National Dispatching Centre
NA	Non applicable
TSO	Transmission system operator for electricity
RAE	Regulatory Energy Agency
RES	Renewable energy sources
TPP	Termo power plant
UNEP	United Nations Environement Programme

Introduction

Montenegro as one of the signatories of the Energy Community Treaty has obligation to harmonize legislation with EU directives in the energy sector. In the field of the renewable energy sources (RES) the most important is Directive 2009/28/EC on promotion of energy from renewable sources. This directive defines individual national targets with the aim for EU to reach at least 20 percent of the share of energy from renewable resources in the final energy consumption by 2020.

The national target regarding the use of energy from renewable sources, which represents the share of gross final consumption of energy from renewable sources in the total gross final energy consumption, is determined for Montenegro in accordance with the Decision (2012/04/MC-EnC of 18 October 2012) of the 10th Ministerial Council of the Energy Community. The adopted Decison obliges Montenegro to implement the Directive 2009/28/EC on promotion of the use of energy from renewable sources, as well as to reach the national target of 33% by 2020 for the share of energy from renewable sources.

The Directive envisages preparation of the National Renewable Energy Action Plan pursuant to the adopted template (Decision 2009/548/EC).

The National Renewable Energy Action Plan to 2020 defines dynamic of utilization of natural resources, as well as the planned use of technologies required to meet the national target for the share of energy produced from renewable sources in the gross final energy consumption.

1. Summary of the renewable energy policy of the Contracting Party

Montenegrin Energy Policy identifies the goals of the energy development of Montenegro and manner and measures for their achievement.

The three main priorities identified in the document, “Energy Policy of Montenegro until 2030” (adopted in 2011) are identified in Table A.

Table A: Energy Development Strategy Priorities

	Priority	Meaning
1	*Security in the energy supply*	Permanent, secure, high quality and diversified energy supply aimed to comply the supply with the demands of the buyers;
2	*Development of the competitive energy market*	Securing liberalized, non-discriminatory, competitive and open energy market on the basis of transparent conditions; Establishing of competition in market activities (electricity and natural gas production and supply), base of price policy for energy forms solely on market principles, as well as creating conditions for new energy undertakings to emerge (independent energy producers, suppliers, traders);
3	*Sustainable energy development*	Securing development of energy sector based on accelerated, but rational use of own energy resources in compliance with the principles of environment protection, increased energy efficiency (EE) and increased use of renewable energy sources (RES), as well as need for socio-economic development of Montenegro.

Energy Policy of Montenegro until 2030 covers twenty key strategic objectives:

(1) Maintenance, rehabilitation and modernization of existing and construction of new infrastructure for production, transmission and distribution of energy on the principles of fulfilment of international technical standards, energy efficiency, reduction of losses and its negative impact on environment;

(2) Gradual reduction of energy import dependence by (i) reducing the specific consumption of final energy, (ii) increasing the energy production (primary and secondary) by use of own resources and (iii) reducing the energy losses from production to end consumption. From the current net energy importer, Montenegro plans to become the net exporter of electrical energy after 2020;

(3) Reviewing the existing barriers for activation of all long--term energy development options;

(4) Energy efficiency represents a priority in Montenegrin energy policy: (a) Provision of institutional conditions and financial incentives with the purpose to improve EE and reduce energy intensity in all sectors, from production to end consumption of energy; (b)

Montenegro shall reach the indicative target of EE increase, which represents saving in the amount of 9% of the average final energy consumption in the country (without Aluminium Plant Podgorica) until 2018. Interim indicative goal until the end of 2012 amounts to 2%. Remaining average annual saving after 2018 shall be in compliance with the goals set out at the level of Energy Community or EU; (c) Rational use of energy in transport and promotion of EE measures (improved public transportation including the railway transport, promotion of energy efficient and low-emission vehicles, and integration of EE criteria in the transport infrastructure projects);

(5) Utilization of RES represents a priority in the Montenegrin energy policy: (a) Creating a favourable environment for development and utilization of RES and reaching the national target regarding the RES share in the gross final consumption of energy; (b) Continued researches on RES potentials and study work on researching the possibilities to use remaining available RES potentials; (c) Increased share of RES utilization in transport aimed at securing the achievement of RES share in overall consumption of energy in transport, in accordance with the obligations of the state;

(6) Improved heating and/or cooling systems in buildings by: (i) substitution of direct transformation of electricity into heat and (ii) use of new technologies acceptable from the environmental aspect, which implies increased use of RES and use of high-efficient cogeneration;

(7) Realization of strategic 90-days stocks of petroleum products in accordance with the EU energy policy;

(8) Exploration of oil and gas in the Montenegrin undersea and in continental area, as well as of coal in Pljevlja and Berane basin;

(9) Proactive role of the policy of the State of Montenegro in the endeavours to provide access to the systems of natural gas through the international projects (Ionian-Adriatic gas pipeline and others), development of natural gas system (including the construction of regional gas pipelines and plants for utilization of natural gas);

(10) Increased operational efficiency of energy companies by reducing the operational costs, technical and commercial energy losses, with justified return on investments;

(11) Continued restructuring of EPCG AD and CGES AD in accordance with the principles of relevant EU energy legislation and duly issuing of plans for further development;

(12) Sustainable development of energy sector in relation to the environment protection and international cooperation in this field, especially regarding the reduction of gas emission with greenhouse effect;

(13) Pursuant to the verification of Kyoto protocol, being the country outside the annex of developed countries at least until 2012, provision on support to investors and provision of conditions for implementation of projects of so called Clean Development Mechanism (CDM);

(14) Incentives for researches, development, transfer and application of ecologically sustainable new technologies in the energy sector; increased investments in education and scientific-research projects and incentives for the international cooperation in the field of ecologically sustainable new technologies in the energy sector, as well as introduction of lectures on energy in the educational system;

(15) Harmonization of legislative-regulatory framework in accordance with the EU requirements and ensuring support for development and accelerated implementation of

programs and projects on RES usage and implementation of EE measures, substitution of energy-generating products and development of local energy industry (combined generation of electricity and heat);

(16) Creating appropriate legislative, regulatory, institutional and financial framework to encourage private sector involvement and investments in energy;

(17) Securing social protection for endangered (vulnerable) energy consumers, as well as for labour surplus within the process of changes in the energy sector that might have impact to their social position;

(18) Reaching the agreement with neighbouring countries in relation to the optimal utilization of joint hydro-potential and water management, as well as planning and construction of new electric power interconnecting lines for connection between these countries;

(19) Improvement of the regulatory process and professional independence of the Regulatory Energy Agency, aimed at continuous development of predictable and clear regulatory framework and favourable environment for investments into Montenegrin energy sector;

(20) Active international cooperation in the energy sector.

Energy policy is elaborated in more detail and implemented by the Energy Development Strategy. The Energy Development Strategy of Montenegro until 2025 (published in 2007) and its update, until 2030 (hereon the "Strategy"), have been constructed based on the main priorities and key strategic objectives of the Energy Policy of Montenegro until 2030.

The Ministry of Economy is the governmental authority responsible for proposing national energy policy and strategy for long term development, as well as for the preparation of laws and by-laws in the energy sector.

The legislative framework governing the energy sector in Montenegro is based on the acts discussed in Table B.

Table B: Legislative Framework for the Energy Sector

:Act	Description
Law on Energy (Official Gazette of Montenegro no 28/10, 06/13)	This Law specifies energy activities and regulates terms and conditions for carrying out of those activities in order to ensure quality and secure energy supply to final customers; public services and other activities in the energy sector of public interest for Montenegro; procedure for organization and functioning of the electricity and gas market; manner and conditions for use of renewable energy sources and cogeneration; energy efficiency in the sector of energy generation, transmission and distribution, as well as other matters of relevance for the energy sector.
Law on Energy Efficiency (Official Gazette of Montenegro no 29/10)	This Law governs the method for efficient use of energy, measures to improve energy efficiency and other issues important for energy efficiency. This Law doesn't apply to energy efficiency of the facilities for production, transmission and distribution of energy.
Law on Exploration and	This Law governs the conditions, the manner of and the

Production of Hydrocarbons (Official Gazette of Montenegro no 41/10, 62/13)	procedure for the exploration and production of hydrocarbons, as well as other matters important for the exploration and production of oil and gas.

Important international agreements ratified in accordance with the Montenegrin Constitution, representing part of the internal legislative framework in the energy sector are:

- Law on Ratification of the Treaty establishing the Energy Community between the European Community and the Republic of Montenegro (Official Gazette of Montenegro no 66/06),
- Law on Ratification of Kyoto Protocol to the United Nations Framework Convention on Climate Change (Official Gazette of Montenegro no 17/07),

The legislative and regulatory framework established to facilitate the implementation of projects in the field of renewable energy is represented by the Law on Energy and a set of by-laws:

- *Law on Energy* (Official Gazette of Montenegro no 28/10, 06/13). Chapters III and VIII of the Law provide the legal framework for the promotion of renewable energy sources. Chapter III defines the renewable energy sources use and the implementation of high efficiency cogeneration as strategic issues in the development of energy sector of Montenegro and envisages the possibility of introduction of a series of incentive measures. Chapter VIII gives an account of performance of electrical power activities. Among other issues, it regulates matters related to electricity production from renewable energy sources, guarantees of origin, privileged electricity producers, as well research and determination of renewable energy sources potential in Montenegro.

- *Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficiency cogeneration plants* (Official Gazette of Montenegro no 28/11). This Rulebook prescribes types and classification of plants for production of electricity from renewable energy sources and plants for high efficiency cogeneration per groups.

- *Decree on acquiring the status and accomplishing entitlements of the privileged producer of electricity* (Official Gazette of Montenegro no 37/11). The purpose of this Decree is to regulate the method and procedure necessary for acquiring the status and accomplishing entitlements of a privileged producer of electricity.

- *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 no 37/11). This Decree defines the methodology for issuance, transfer and cancelation of guarantees of origin, the data required to request issuance of a guarantee of origin, closer defines the content of guarantees of origin and the method of monitoring deliverance of the electricity through transmission or distribution system.

- *Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration* (Official Gazette of Montenegro no 52/11). This Decree regulates the tariff system for incentive prices for electricity produced in power plants using renewable energy sources and high

efficiency cogeneration power plants. Tariffs depend on type of facilities, their capacities, annual generation and other factors.

- *Rulebook on criteria for issuance of energy permit, content of a request and registry of energy permits* (Official Gazette of Montenegro no 49/10, 38/13). This Rulebook closely defines the criteria for issuance of an energy permit, content of a request and registry for energy permit. Energy permits represent a simplified procedure for authorization of renewable energy projects, as provided by Article 61 of the Law on Energy.
- *Rulebook on more detailed requirements legal entity should meet in order to perform measurement and survey of renewable energy sources potential* (Official Gazette of Montenegro no 28/11). This Rulebook prescribes more detailed criteria in terms of professional staff and equipment the legal entity conducting the measurements needs to fulfil in order to perform measurement and survey potential of renewable energy sources.
- *Decree on incentive fees for promoting electricity production from renewable energy sources and cogeneration* (Official Gazette of Montenegro no 08/14). This Decree governs the method of determining the level of fee required to encourage the production of electricity from renewable energy sources and cogeneration> It also stipulates the method of distribution of funds collected from fees, as well as the detailed method of calculation of the proportional share of electricity that suppliers and qualified buyers (self-suppliers) have to take over from privileged producers.
- Rulebook on the amount of the incentive fee for promoting electricity production from renewable energy sources and cogeneration (Official Gazette of Montenegro no 18/14). This Rulebook determines the amount of the incentive fee for promoting electricity production from renewable energy sources and cogeneration in 2014.

The Law on Energy Efficiency is also a very important legislative act since it applies to the use of renewable energy sources in energy efficiency projects, and along with associated by-laws provides support measures for the use of renewable energy sources in buildings.

Besides the Law on Energy and the Law on Energy Efficiency there are a number of other legislative acts affecting the development of renewable energy sources use, including those related to concessions, water management, forestry, agriculture, environmental protection, construction of facilities, state property, expropriations etc.

Forming the main strategic lines of action, the above legislative framework have set out a clear path for the mechanisms to support uptake and use of renewable energy.

As a support scheme for electicity produced from renewable energy sources, Montenegro has chosen a system of guaranteed purchase of electricity by "feed-in-tariffs" from privileged producers, according to the Law on Energy and adopted by-laws. Besides the guaranteed tariffs, the privileged producers are entitled to priority in delivery of total electricity generated into the transmission or the distribution system, as well as being exempted from payment of costs for imbalances by the respective system operator. As envisaged by the Energy Development Strategy, the conditions for use of renewable energy sources shall be continuously monitored and, if necessary, adjustment of the guaranteed prices and other measures shall be done. Analysis of technical requirements for connection to the network and operation of the power system together with reviewing the financial consequences for electricity customers shall also be periodically undertaken. The Strategy envisages providing support to investments related to renewable energy sources using sustainable financial

criteria, as well as promoting investment in renewable energy sources without guaranteed incentive prices and within a secure power system.

There are a few mechanisms in place at a national level for the promotion of renewable energy sources for heating and cooling. These includean 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), and a number of energy efficiency credits schemes, applicable to technologies such as solar thermal systems and biomass boilers. There are also some support mechanisms at local level, including a program of subsidies in some municipalities for the installation of solar thermal systems in new buildings by reducing utility costs (fees for utility lands). Given the rapid rates of growth expected in the use of renewables for heating, according to the Strategy over the next few years the above-mentioned mechanisms will be accompanied by further promotional schemes aimed at increasing the consumption of heat from the various sources and types of technology available.

The Directive on the promotion of the use of biofuels or other renewable fuels for transport (2003/30/EC), as well as part of the Directive on the promotion of the use of energy from renewable energy sources (2009/28/EC) relating to biofuels and bioliquids, are yet to be transposed into the legal system of Montenegro. Therefore, the planned share of renewable energy sources in transport and means of achieving it are not set by the Government as well. The regulatory framework, as well as the Action Plan for using energy in transport sector are planned to be completed in forthcoming period.

The national target for use of energy from renewable sources, which represents the share of gross final consumption of energy from renewable energy sources in total gross final energy consumption, is determined for Montenegro in accordance with the Decision (2012/04/MC-EnC of 18th October 2012) of the 10th Ministerial Council of the Energy Community, and amounts to 33 % in 2020.

2. *Expected Final Energy Consumption* 2010-2020

Projections of the growth in gross final energy consumption have been determined by the analysis carried out during the preparation of the Energy Strategy Development by 2030.

Several scenarios for forecasting final energy consumption have been developed taking into account the following basic determinants of energy consumption in Montenegro; political context, development of market and competition, growth and structure of economy, security of supply, environmental protection and climate change, energy structure and technologies. Scenarios were developed considering the assumptions that reflect the current obligations of Montenegro to the Energy Community and the latest assessment and visions on the future development of Montenegro.

For the reference scenario of the Action Plan, the scenario was selected with assumptions of having intensive development of energy efficiency and renewable energy, but with increased power consumption by Aluminium plant Podgorica (KAP) and Steel Plant (Niksic). The Plan for the period up to 2020 is to gradually increase production of KAP to the maximum capacity, which corresponds to the power of 220 MW, as well as to increase production of the Steel Plant up to the level which corresponds to the power of 35MW.

Bearing in mind the projects planned to be realized in the future, it is expected to increase the electricity consumption also by future closed distribution systems (Lustica 40 MW, Porto Novi, Porto Montenegro, Buljarica, Highway Bar-Boljare ecc.)

The Strategy is based on the assumption of stable growth in gross domestic product (GDP) between 3.8% and 3.9%.

Scenarios of energy savings are developed as well, by introducing a variety of additional energy efficiency measures in certain sectors of energy consumption, in accordance with Directive 2006/32/EC. Total final energy savings after energy efficiency improvements will be a result of transfer of technologies and market development, as well as active government policies and measures in the future.

Expected gross final energy consumption in Montenegro in heating and cooling, electricity and transport up to 2020 taking into account the effects of energy efficiency and energy savings measures are shown in Table 1.

Table 1: Expected gross final energy consumption of Montenegro in heating and cooling, electricity and transport up to 2020 taking into account the effects of energy efficiency and energy saving measures[1] 2010-2020 (ktoe)

	2009	2010		2011		2012		2013		2014	
	base year	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
(1) heating and cooling[2]	151.6	152.3	152.3	189.1	189.1	217.4	217.4	242.8	242.8	274.5	267.7
(2) electricity[3]	328.9	358.8	358.8	362.7	362.7	338.2	338.2	298	298	340.4	332.5
(3) transport as in Art. 3(4)a [4]	236.9	241.0	241.0	248.4	248.4	234.4	234.4	223.4	223.4	223	211.1
(4) Gross final energy consumption[5]	791.4	790.5	790.5	838.5	838.5	825.3	825.3	800.5	800.5	837.2	811.3
The following calculation is needed only if final energy consumption for aviation is expected to be higher than 6,18%											
Final consumption in aviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reduction for aviation limit[6] Art. 5(6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL consumption after reduction for aviation limit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[1] These estimates on energy efficiency and energy savings shall be consistent with other such estimates that Contracting Parties notify in the Action Plans under the Energy Services Directive and the Energy Performance of Buildings Directive. If different units are used in those Action Plans the conversion factors applied should be indicated.

[2] It is the final energy consumption of all energy commodities except electricity for purposes other than transport, plus the consumption of heat for own use at electricity and heat plants and heat losses in networks (items '2. Own use by plant' and '11. Transmission and distribution losses in page 23 and 24 of the energy Statistics Regulation, OJ L304 of 14.11.2008) .

[3] The gross electricity consumption is national gross electricity production, including autoproduction, plus imports, minus exports.

[4] Transport consumption as defined in Art. 3(4)a) of Directive 2009/28/EC. Renewable electricity in road transport for this figure should be multiplied by a factor of 2,5, as indicated by Article 3(4)c) of Directive 2009/28/EC.

[5] As defined in Article (2)f) of Directive 2009/28/EC. This comprises final energy consumption plus network losses and own use of heat and electricity at electricity and heating plants (NB: this does not include consumption of electricity for pumped hydro storage or for transformation in electrical boilers or heat pumps at district heating plants).

[6] According to Article 5(6) consumption for aviation has to be considered only up to 6,18% of gross final energy consumption.

	2015		2016		2017		2018		2019		2020	
	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
(1)heating -cooling[7]	309.7	302.7	281.2	271.1	280.1	268.2	274.2	260.7	286.1	270.4	333.3	318.4
(2) electricity[8]	350.7	343.5	363.5	354.9	377.7	367.4	396.5	384.1	407.5	392.8	439.5	421
(3) transport as in Art. 3(4)a[9]	198.4	188.1	217.8	199	229.1	206.4	236.1	209.8	308	213.5	239.6	215.7
(4) Gross final energy consumption[10]	900.8	866.2	949.8	907.6	979.8	929.6	1008.8	950.7	1052.6	984.3	1080.1	1002.5
The following calculation is needed only if final energy consumption for aviation is expected to be higher than 6,18% (4,12% for Malta and Cyprus):												
Final consumption in aviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reduction for aviation limit[11] Art. 5(6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL consumption after reduction for aviation limit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[7] See footnote 4.
[8] See footnote 5.
[9] See footnote 6.
[10] See footnote 7.
[11] See footnote 8.

3. Renewable energy targets and trajectories

3.1 National overall target

The national target for use of energy from renewable sources, which represents the share of gross final consumption of energy from renewable sources in total gross final energy consumption, is determined for Montenegro in accordance with the Decision (2012/04/MC-EnC of 18th October 2012) of the 10th Ministerial Council of the Energy Community. The adopted Decison obliges Montenegro to implement the Directive 2009/28/EC on the promotion of the use of energy from renewable sources, as well as the national target for the share of energy from renewable sources in member countries of the Energy Community.

According to the above Decision, for Montenegro the national target for the share of energy from renewable sources by 2020 is 33%.

Considering the predicted gross final energy consumption in 2020 from the reference scenario of this Action Plan is 1002.5 ktoe, the achievement of a national target of 33% corresponds to 330.8 ktoe of energy from renewable sources.

The national target (33%) is determined by the Energy Community by calculating that in 2009. (reference year) the share of energy from renewable energy sources in gross final energy consumption in Montenegro was 26,3%.

Table 2: National overall target for the share of energy from renewable sources in gross final consumption of energy in 2009 and 2020

A. Share of energy from renewable sources in gross final consumption of energy in 2009 (S_{2009}) (%)	**26.3 %**
B. **Target of energy from renewable sources in gross final consumption of energy in 2020** (S2020) (%)	**33 %**
C. Expected total adjusted energy consumption in 2020	1002.5
D. Expected amount of energy from renewable sources corresponding to the 2020 target (B X C)	330.8

3.2 Sectoral targets and trajectories

According to the Directive 2009/28/EC, the National Renewable Energy Action Plan shall set targets for the share of energy from renewable sources in 2020 in the following sectors: electricity, heating and cooling, and transport (Table 3).

Based on the Reference Scenario of using energy from renewable sources, the required three sectoral targets are calculated as follows:

- Electricity: 51.4 %,
- Heating and cooling: 38.2 %,
- Transport: 10.2 %.

Regarding electricity, an increase in production from renewable energy sources is based on the construction of small hydro power plants, wind farms, solar power plants and the use of various forms of biomass. As a result of the Strategy, the national target for the share of electricity from renewable energy sources in gross final electricity consumption is 51.4 %. The share of energy for heating and cooling from renewable energy sources in gross final consumption of energy for heating and cooling is 38.2 %. The share of energy from renewable energy sources consumed in transport in final consumption of energy in transport is 10.2 %.

Table 3: National 2020 target and estimated trajectory of energy from renewable sources in heating and cooling, electricity and transport (%) (*Calculation tables 4a and 4b are expected to guide the preparation of table 3.***)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RES-H&C[12] (%)	40.4	40.7	40.2	39	38.6	36.3	36.2	40.6	42.8	44.5	43.8	38.2
RES-E[13] (%)	44.4	40.7	40.2	43.1	49	43.9	45.3	44.4	50.2	52.9	52.1	51.4
RES-T[14] (%)	0.5	0.7	1.1	1.9	3.7	4.2	5.7	6.4	7.4	8.3	9.3	10.2
Overall RES share[15] (%)	26.3	26.5	26.8	28.5	31	31.1	31.8	30.9	33.8	35.4	34.9	35.9
Of which from cooperation mechanism[16] (%)	0	0	0	0	0	0	0	0	0	0	0	0
Surplus for cooperation mechanism ([16])												

[12] 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. Line (A) from table 4a divided by line (1) of table 1.

[13] 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/ECdivided by total gross final consumption of electricity. Row (B) from Table 4a divided by row (2) of Table 1.

[14] 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). Line (J) from Table 4b divided by row (3) of Table 1.

[15] Share of renewable energy in gross final energy consumption. Row (G) from Table 4a divided by row (4) of Table 1.

[16] In percentage point of overall RES share

As Part B of Annex I of Directive 2009/28/EC			2013 - 2014	2015 – 2016	2017 – 2018		2020
			S_{2009} + 30% (S_{2020} – S_{2009})	S_{2009} + 45% (S_{2020} – S_{2009})	S_{2009} + 65% (S_{2020} – S_{2009})		S_{2020}
RES minimum trajectory (%)			28.3	29.3	30.7		
RES minimum trajectory (ktoe)			232	260.2	288.3		

Table 4a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(A) Expected gross final consumption of RES for heating and cooling	61.2	62	76	84.8	93.6	97.3	109.5	110.2	114.7	115.9	118.4	121.5
(B) Expected gross final consumption of electricity from RES	145.9	145.9	145.9	145.9	145.9	145.9	155.6	157.4	184.3	203	204.8	216.4
(C) Expected final consumption of energy from RES in transport	1.3	1.6	2.8	4.4	8.4	8.9	10.7	12.9	15.2	17.5	19.9	22
(D) Expected total RES consumption[17]	208.4	209.5	224.7	235.1	247.9	252.1	275.8	280.4	314.2	336.4	343.1	359.9
(E) Expected transfer of RES to other Member States	0	0	0	0	0	0	0	0	0	0	0	0
(F) Expected transfer of RES from other Member States and 3rd countries	0	0	0	0	0	0	0	0	0	0	0	0
(G) Expected RES consumption adjusted for target (D) – (E) + (F)	208.4	209.5	224.7	235.1	247.9	252.1	275.8	280.4	314.2	336.4	343.1	359.9

[17] According 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 4b: Calculation table for the renewable energy in transport share (ktoe)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(C) Expected RES consumption in transport [18]	1.3	1.6	2.8	4.4	8.4	8.9	10.7	12.8	15.2	17.5	19.9	22
(H) Expected RES electricity in road transport [19]	0	0	0	0	0	0	0	0	0	0	0	0
(I) Expected consumption of biofuels from wastes, residues, non- food cellulosic and lingo-cellulosic material in transport[20]	0	0	0	0	0	0	0	0	0	0	0	0
(J) Expected RES contribution to transport for the RES-T share : (C)+(2,5-1)x(H)+(2-1)x(I)	1.3	1.6	2.8	4.4	8.4	8.9	10.7	12.8	15.2	17.5	19.9	22

[18] Containing all RES used in transport including electricity, hydrogen and gas from renewable energy sources, and excluding biofuels that do no comply with the sustainability criteria (cf. Article 5(1) last subparagraph). Specify here actual values without using the multiplication factors.

[19] Specify here actual values without using the multiplication factors.

[20] Specify here actual values without using the multiplication factors.

4. Measures for achieving the targets

4.1 Overview of all policies and measures to promote the use of energy from renewable resources

All policies and measures to promote the use of energy from renewable resources are shown in Table 5.

Table 5: 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	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	Planned	2015-
7. 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	2013-
8. “Programmes of support for using RES in householeds and other sectors” Interest-free credit line for installation of solar-thermal systems for households (MONTESOL program) Interest-free credit line for installation of heating systems on modern biomass fuels (pellets, briquettes) for households (ENERGY WOOD program) Project related to installation of photovoltaic solar systems in summer pasture lands (SOLARNI KATUNI program)	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-
9. Program of subsidies in some municipalities for the installation of solar systems in new buildings by reducing utility costs (fees for utility lands)	Financial	Increased use of RES in buildings	Investors	Existing	2009-

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
10. 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	State authorities; Investors; Fuel distributors	Planned	2015-

** 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)?*

4.2 Specific measures to fulfil the requirements under Articles 13, 14, 16 and Articles 17 to 21 of Directive 2009/28/EC

4.2.1 Administrative procedures and spatial planning *(Article 13(1) of Directive 2009/28/EC)*

(a) List of existing national and, if applicable, regional legislation concerning authorisation, certification, licensing procedures and spatial planning applied to plants and associated transmission and distribution network infrastructure:

The legislative framework regulating authorization, certification and licensing procedures in the energy field is as follows:

- Law on Energy (Official Gazette of Montenegro no 28/10, 06/13),
- Law on Ratification of the Treaty establishing the Energy Community between the European Community and the Republic of Montenegro (Official Gazette of Montenegro no 66/06),
- Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficiency cogeneration plants (Official Gazette of Montenegro no 28/11),
- Rulebook on more detailed requirements legal person should meet in order to perform measurement and survey of renewable energy sources potential (Official Gazette of Montenegro no 28/11),
- Decree on acquiring the status and accomplishing entitlements of the privileged producer of electricity (Official Gazette of Montenegro no 37/11),
- 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 no 37/11),
- Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficient cogeneration (Official Gazette of Montenegro no 52/11),
- Rulebook on criteria for issuance of energy permit, content of a request and registry of energy permits (Official Gazette of Montenegro no 49/10, 38/13),
- Decree on incentive fees for promoting electricity production from renewable energy sources and cogeneration (Official Gazette of Montenegro no 08/14),
- Rulebook on the amount of the incentive fee for promoting electricity production from renewable energy sources and cogeneration (Official Gazette of Montenegro no 18/14)
- Market Rules (Official Gazette of Montenegro no 44/12),
- Transmission Grid Code (Official Gazette of Montenegro no 05/12),
- Distribution Grid Code (Official Gazette of Montenegro no 50/12),
- General terms and conditions for electricity supply (Official Gazette of Montenegro no 20/12),
- Rules on the manner and conditions for the issuance, modification or revocation of licenses for performing energy activities (Official Gazette of Montenegro no 66/10).

The legislative framework regulating authorization, certification and licensing procedures in the field of spatial planning and construction covers:

- Law on Spatial Development and Construction of Structures (Official Gazette of Montenegro no 51/08, 34/11, 35/13),
- Rulebook on the detailed content and form of the planning document, the criteria of land use, elements of urban regulation and unique graphic symbols (Official Gazette of Montenegro no 24/10),
- Rulebook on the way of preparation and content of technical documentation (Official Gazette of Republic of Montenegro 22/02),
- Rulebook on manner of performing revision of preliminary and detailed design (Official Gazette of Montenegro no 81/08),
- Rulebook on the contents of the study on preparatory works (Official Gazette of Montenegro no 80/08).
- Rulebook on the method of calculating the surface area and volume of buildings ("Official Gazette of Montenegro", no 47/13),
- Rulebook on forms that are used in the procedures for construction of buildings ("Official Gazette of Montenegro" no 47/13),
- Rulebook on the contents of the energy efficiency elaborate in buildings ("Official Gazette of Montenegro" no 47/13),
- Rulebook on conditions and methods of verification and cancellation of the licenses to foreigners ("Official Gazette of Montenegro" no 68/08, 33/11)
- Rulebook on the conditions and the manner of adjustment of facilities for the access and movement of persons with reduced mobility ("Official Gazette of Montenegro" no 48/13),
- Rulebook on the procedure for issuing and revoking licenses and manner of keeping the register of licenses ("Official Gazette of Montenegro" no 68/08).
- Rulebook on the shape and appearance of the table with information about the issued construction permit ('Official Gazette of Montenegro no 68/08),
- Rulebook on the procedure for exercising supervision ('Official Gazette of Montenegro'' no 06/09)
- Rulebook on keeping and content of the building log, building book, inspection book ('Official Gazette of Montenegro'' no 81/08),
- Rulebook on the method of carrying out the technical inspection, ('Official Gazette of Montenegro'' no 33/09).

The legislative framework regulating authorization, certification and licensing procedures in the field of the environmental protection covers:

- Law on Environment (Official Gazette of Montenegro no 48/08, 40/10, 40/11),
- Law on Strategic Environmental Impact Assessment (Official Gazette of Republic of Montenegro 80/05, and Official Gazette of Montenegro no 73/10, 40/11, 59/11),

- Law on Environmental Impact Assessment (Official Gazette of Republic of Montenegro 80/05, and Official Gazette of Montenegro no 40/10, 73/10, 40/11, 27/13),
- Law on Integrated Environmental Prevention and Control of Environmental Pollution (Official Gazette of Republic of Montenegro 80/05, and Official Gazette of Montenegro no 54/09, 40/11),
- Law on Waste Management (Official Gazette of Montenegro no 64/11),
- Law on Air Protection (Official Gazette of Montenegro no 25/10, 40/11),
- Law on Forests (Official Gazette of Montenegro no 74/10),
- Law on National Parks (Official Gazette of Montenegro no 56/09),
- Law on Nature Protection (Official Gazette of Montenegro no 51/08, 21/09, 40/11),
- Law on Ratification of Kyoto Protocol to the United Nations Framework Convention on Climate Change (Official Gazette of Montenegro no 17/07),
- Decree on projects requiring environmental impact assessment (Official Gazette of Montenegro no 20/07),
- Regulation on the contents of documents to be submitted along with the application for deciding on the need for environmental impact assessment (Official Gazette of Montenegro no 14/07),
- Rulebook on the contents of the documents to be submitted along with the application for setting the scope and the contents of the environmental impact assessment study (Official Gazette of Montenegro no 14/07),
- Rulebook on the contents of the environmental impact assessment study (Official Gazette of Montenegro no 14/07).

The legislative framework regulating authorization, certification and licensing procedures in the field of water management covers:

- Law on Waters (Official Gazette of Montenegro no 27/07, 32/11, 47/11),
- Law on Financing Water Management (Official Gazette of Montenegro no 65/08, 74/10, 40/11),
- Decree on the method of categorization and categories of water structures and their transfer for management and maintenance (Official Gazette of Montenegro no 15/08),
- Regulation on the method of setting the guaranteed minimum flow downstream from the water intake structure (Official Gazette of Montenegro no 22/08),
- Rulebook on the contents of the application and documents for issuance of water-related documents, the method and conditions for obligatory notice under the procedure of establishing water-related conditions and the contents of water-related documents (Official Gazette of Montenegro no 07/08).

The legislative framework regulating authorization, certification and licensing procedures in the field of mining and geological explorations covers:

- Law on Mining (Official Gazette of Montenegro no 65/08, 74/10),
- Law on Geological Explorations (Official Gazette of Republic of Montenegro 28/93, 42/94 and Official Gazette of Montenegro no 26/07, 28/11).

Further legislation of relevance to authorization, certification and licensing procedures includes:

- Law on Agricultural Land (Official Gazette of Republic of Montenegro 15/92, 59/92, and Official Gazette of Montenegro no 32/11),
- Law on Property and Legal Relations (Official Gazette of Montenegro no 19/09),
- Law on Protection of Cultural Heritage (Official Gazette of Montenegro no 49/10),
- Law on State Property (Official Gazette of Montenegro no 21/09),
- Law on Concessions (Official Gazette of Montenegro no 08/09),
- Law on Expropriation (Official Gazette of Republic of Montenegro 55/00, 12/02, 28/06, and Official Gazette of Montenegro no 21/08),
- Law on General Administrative Procedures (Official Gazette of Republic of Montenegro 60/03, and Official Gazette of Montenegro no 32/11),
- Decree on the organization and functioning of public administration (Official Gazette of Montenegro no 05/12, 25/12, 61/12, 20/13).

(b) Responsible Ministry(/ies)/authority(/ies) and their competences in the field:

- **The Ministry of Economy** is the governmental authority in charge of the regulation and implementation of energy policy. Within the Ministry of Economy there are three directorates covering energy issues: Directorate for Energy, Directorate for Energy Efficiency and Directorate for Mining and Geological Explorations. The Department for Renewable Energy Sources under the Directorate for Energy performs tasks covering:
    - Preparation of draft articles and proposals on laws and other relevant regulations; proposals for policies on renewable energy sources;
    - Promotion of the use of new technologies which are related to energy; proposes measures for increased use of renewable energy sources;
    - Awarding authorizations for construction of energy facilities;
    - Implementing public tender procedures for construction of energy facilities;
    - Issuing permits for measuring renewable energy sources potential;
    - Harmonizing national legislation with EU legislation regarding renewable energy sources; and
    - Preparing proposals on projects of the department that are to be financed by the Government of Montenegro and international funds and loans.

  Similarly, the Directorate for Energy Efficiency is responsible for creating and implementing energy efficiency policy including use of renewable energy sources in energy efficiency projects and providing support measures for the use of renewable energy sources in buildings. The Directorate for Mining and Geological Exploration performs tasks relating to development of strategies, programs and projects in the fields of mining, geological surveys and exploration and production of hydrocarbons, which includes geotechnical surveys for new constructions.

- **Ministry of Sustainable Development and Tourism** has competence through several organizational units; Directorate for Spatial Planning, Directorate for Construction, Directorate for Environment and Climate Change and Directorate for

Waste Management and Communal Services. The Directorate for Spatial Planning is responsible for strategic spatial planning, development of national planning documentation, and providing opinion on and approval of the local planning documents. Electricity generation projects must be included in spatial planning documents. The Directorate for Construction is responsible for tasks related to policymaking in the field of construction and undertaking measures for its implementation. Its competence in renewable energy projects is mainly based on issuing construction permits and exploitation permits. This Directorate is also responsible for the issuance of urban-technical requirements (a required document for renewable energy facility installation). The Directorate for Environment and Climate Change is in charge of policy for, and the system of protection and improvement of, the environment and climate change, including regulation on performing environmental impact assessments. The Directorate for Waste Management and Communal Services is responsible for tasks related to proposals and guidance on policies in the areas of waste management and communal services.

- **Ministry of Agriculture and Rural Development** is responsible for the use of water resources and forests. Its mandate includes drafting laws and other regulatory documents. The Ministry has administrative control of two separate bodies that have competences in this area: Directorate for Water and Directorate for Forests. Directorate for Water is responsible for following the implementation of measures on water use, preparing plans for water management and the issuance of water acts. The Directorate for Forests is responsible for forest management planning.

- **Environment Protection Agency** provides technical and related administrative tasks in the field of environmental protection, including issuances of approval for Strategic Environmental Assessment and Environmental Impact Assessment reports.

- **Hydrometeorological and Seismological Service** is the competent agency for research in water resources, solar radiation and the energy potential of the sun and wind and making the climate basis, studies and analysis required for spatial planning, design, construction and operation of energy facilities.

- **Energy Regulatory Agency** monitors operations of the participants in the energy sector and issues licenses; sets tariffs and prices; establishes regulation and rules regarding the energy market; promotes efficiency and competition in the energy sector and the non-discriminatory transit of energy; determines prices and tariffs approving status of a privileged producer; maintains a register of privileged producers; issues guarantees of origin; maintains a register of issued guarantees; and analyses the share of RES and cogeneration in the gross generation and consumption of electricity.

- **Electricity Market Operator** organizes and manages the electricity market; establishes market rules; enters into contracts with privileged producers who are entitled to a price support scheme benefit; collects fees for encouraging electricity generation from renewable energy sources and cogeneration from suppliers; and enters into contracts with all suppliers in order to ensure a minimum contribution of electricity is generated from renewable energy sources and cogeneration.

- **Electricity Transmission System Operator** (TSO) carries out the electricity transmission activity and is responsible for operation, use, reliability, management, maintenance and development of the transmission system, dispatch, matching of generation and demand, and reserve in the system. The TSO issues necessary approvals for connection to the transmission system to a facility and enters into the contract for connection of a facility with a system user.

- **Electricity Distribution System Operator** (DSO) carries out the electricity distribution activity and is responsible for operation, use, reliability, management, maintenance and development of the distribution system in a given area. DSOs issue necessary approvals for connection to the distribution system of a facility and enter into contracts for connection of a facility with a system user.

- **National Council for Sustainable Development** has competences to implement the National Strategy for Sustainable Development and other planning documents. The Council is headed by the president and comprises representatives from various ministries and scientific institutions, the business sector and non-governmental organisations (NGOs).

- **Local government authorities** are obliged to develop local energy plans according to the Energy Law. Local authorities award authorizations for the construction of facilities for the production of heat for district heating and/or cooling or for industrial use and facilities for the distribution of heat for district heating and/or cooling or for industrial use.

(c) Revision foreseen with the view to take appropriate steps as described by Article 13(1) of Directive 2009/28/EC

The Law on Energy of Montenegro was drafted during 2009, i.e. in the time period right after the adoption by the European Parliament of Directive 2009/28/EC. By that time, the EnC acquis on RES, as per Article 20 of the Treaty, included Directives 2001/77 and 2003/30/EC. Nontheless, Montenegro, which was in the process of harmonising its legislatative framework, decided to follow a proactive approach and include certain provisions of the new RES Directive into the Law on Energy. Following the adoption of the Law on Energy, a set of by-laws was enacted during 2010 and 2011. A recently adopted Decree on incentive fees for promoting electricity production from renewable energy sources and cogeneration (Official Gazette of Montenegro no 08/14) and Rulebook on the amount of the incentive fee for promoting electricity production from renewable energy sources and cogeneration (Official Gazette of Montenegro no 18/14) enabled the full functioning of the system of incentives for the production of electricity from renewable energy sources and cogeneration prescribed by the Law on Energy.

The procedure for implementation of RES projects previously started with approvals by the Ministry of Economy in two different ways: through public competition and through the issuance of energy permits as described below. Public tender procedures applied to installations of greater than 1 MW in size and were implemented by the Ministry of Economy in accordance with the Law on Concessions and the Law on State Property. The entire procedure, data, information and analysis related to the awarding of concessions, as well as the obligations to be met by the concessionaire during the performance of concession activities, was precisely defined in Concession Act (in the case of public competitions for awarding concessions for construction of small hydro power plants).

The Law on Energy introduced simplified procedures for authorization of energy facilities that use state resources or land, and have installed capacity up to 1 MW, or watercourses that are of local significance in accordance with the Law on Water and for which the gross energy potential of the watercourse is less than 15 GWh. This simplified procedure applies also to those plants that do not use state resource or land. The authorization procedure is clearly defined in the *Rulebook on criteria for issuance of energy permits, content of a request and registry of energy permits* (Official Gazette of Montenegro no 49/10, 38/13). Energy permits for renewable energy facilities with the purpose of producing electricity are issued by the Ministry of Economy, while energy permits for facilities for the production of heat and/or heat distribution are issued by the local governments.

After approval of the project by the Ministry of Economy, implementation of RES projects continues with the process of obtaining the necessary approvals, conditions and building permits for construction, within the competence of the Ministry of Sustainable Development and Tourism. The Ministry of Sustainable Development and Tourism carried out reforms towards ‘’one-stop-shop’’ system in the period from 2008 to 2011.

The Law on Energy is currently under revision in order to be harmonized with the latest developments in EU legislation (e.g. the 3rd energy package). Full transposition of Directive 2009/28/EC is also planned to be provided in the amended/new law and related by-laws. Rationalization of procedures shall be considered as well. Possibilities for further improvements and simplifications of procedures will be analyzed through, for example,

positive experience of EU countries, deficiencies of existing system recognized by employees of competent institutions and experience of the investors in the previous period.

(d) Summary of the existing and planned measures at regional/local levels (where relevant):

A simplified procedure exists for authorization of energy facilities that use state resources or land, and have an installed capacity up to 1 MW, or watercourses that are of local significance in accordance with the Law on Water and for which the gross energy potential of watercourse is less than 15 GWh. This also applies for to plants that do not use state resource or land was suspended in November 2011, considering the fact that the Energy Development Strategy of Montenegro by 2030 was in preparation at that time and that a large number of requests for energy permits for the construction of facilities for the production of electricity were submitted. In August 2013 amendments to the *Rulebook on criteria for issuance of energy permit, content of a request and registry of energy permits* (Official Gazette of Montenegro no 38/13) were passed. With these amendments some of ambiguities in application of the existing Rulebook are eliminated and certain provisions regarding this authorization procedure are more precisely defined. The procedure for issuance of energy permits is expected to be continued in its current form.

In the forthcoming period preparation of local energy plans is foreseen. The Law on Energy obliges local governments to develop local energy plans that plan their demand and method of energy supply, as well as measures for energy efficiency, use of renewable energy sources and cogeneration for a period of 10 years. These plans should be in accordance with Energy Development Strategy and are expected to facilitate coordination between municipalities and planning of new projects. One of many advantages of their development is also the possibility of finding systematic solutions regarding procedures.

(e) Are there unnecessary obstacles or non-proportionate requirements detected related to authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling from renewable sources, and to the process of transformation of biomass into biofuels or other energy products? If so, what are they?

During preparations for the third public bidding for awarding concessions for construction of small hydro power plants (announced in July 2013), an analysis of existing procedures was made. Experiences of investors in the previous period, as well as regular monitoring of the implementation of concession agreements with the first two public biddings held in 2007 and 2009, led to the conclusion that procedures for obtaining the necessary conditions and building permits for construction were excessively long. Two issues were identified as major obstacles: absence of a basis in the planning documents for the construction of small hydro power plants and the impossibility of connection to the distribution network.

An absence of adequate planning documents at that time and therefore the impossibility of obtaining urban-technical conditions for the preparation of technical documentation of planned small hydro power plants, was eventually overcome by a decision of the Government of Montenegro that obliged the ministry responsible for spatial planning to issue

urban-technical requirements for the construction of small hydropower plants according to the Spatial Plan of Montenegro until 2020, with the approval of the Ministry of Economy and the relevant local government authorities. Meanwhile the development of spatial planning documents of municipalities was accelerated. Furthermore, in 2013 the Law on Spatial Planning and Construction was amended with a provision which leaves the possibility that in the case a planning document for a particular area does not include urban-technical requirements for structures of public interest, amendments to the planning document can be made using a shortened procedure under the conclusions of the Government. This legal decision represented additional security for upcoming projects.

Problems regarding connection to the distribution network emerged due to a lack of solutions or recommendations for connection to the grid provided by the distribution system operator prior to the announcement of public bidding. This indicated the need for prior preparation of an official proposal for the connection of planned power plant to the grid by the authorized operator of the distribution system. This will facilitate the planning of investments by prospective bidders and create certainty that the energy produced will be taken for upcoming projects.

(f) What level of administration (local, regional and national) is responsible for authorising, certifying and licensing renewable energy installations and for spatial planning? (If it depends on the type of installation, please specify.) If more than one level is involved, how is coordination between the different levels managed? How will coordination between different responsible authorities be improved in the future?

Most of the procedures for authorization, certification and licensing of renewable energy installations are under the competence of state level administration, i.e. Ministry of Economy, Ministry of Sustainable Development and Tourism, Environment Protection Agency, Energy Regulatory Agency, Market Operator and system operators (TSO/DSO).

Local government authorities are responsible for the issuance of energy permits for renewable energy facilities for the production of heat and/or heat distribution.

Procedures for awarding renewable energy projects (tendering process and energy permit) are implemented by the Ministry of Economy. Both procedures are usually completed after the signing of a Concession Agreement or Land Lease Agreement. The concession/land lease agreement is implemented in phases defined in the relevant concession/land lease deed.The competent authority for issuance of urban-technical requirements, construction permits and exploitation permits is the Ministry for Sustainable Development and Tourism.

The institution issuing the opinion on the need for an environmental impact assessment, as well as approval for such an assesment is the Environment Protection Agency.

Licenses for carrying out energy activities are issued, modified and revoked by the Regulatory Energy Agency. The Agency is also in charge for approving the status of a privileged producer and issuance of guarantees of origin.

The TSO/DSO issues conditions and consent for connection to the transmission/distribution system of a facility and enters into the contract for connection of the facility with the system user.

The Market Operator is responsible for concluding Power Purchase Agreements with privileged producers entitled to the price support scheme.

Coordination between different levels of administration requires improvement and enhancement. So far there is no institution with the formal authority to coordinate between different levels, although the Ministry of Economy plays the role of the central body for the implementation of RES projects.

(g) How is it ensured that comprehensive information on the processing of authorisation, certification and licensing applications and on assistance to applicants made available? What information and assistance is available to potential applicants for new renewable energy installations on their applications?

All information on the authorization procedures is available on the website of the Department for Renewable Energy Sources (www.oie-res.me). All laws and by-laws related to authorization procedures can be downloaded from the site which also publishes a register of issued energy permits and a register of issued licenses for conducting measurements of RES potential.

The most common method of authorizing RES projects so far – a tender procedure for awarding concessions - is carried out through an open and competitive bidding process, where bidders are provided equal access to the information and data regarding the project. Information on tender procedures is published on the official website of the Ministry of Economy (www.mek.gov.me) and the Department for Renewable Energy Sources website (www.oie-res.me).

The website of the Ministry of Sustainable Development and Tourism (www.mrt.gov.me) contains all required information on the procedures for issuance of necessary permits together with details of the laws and by-laws regulating this field. All requests for the issuance of urban-technical requirements, construction, use and building permits, as well as the related issued requirements and permits are published on this website.

All necessary information on procedures for the issuance of water-related acts, laws and by-laws regulating this field can be found on the websites of the Ministry of Agriculture and Rural Development (www.minpolj.gov.me) and the Directorate for Water (www.upravazavode.gov.me).

The Environmental Protection Agency on its website (www.epa.org.me) publishes all laws and by-laws related to procedures for obtaining necessary opinions and approvals regarding environmental impact assessments. All issued approvals are also published this site.

The website of the Regulatory Energy Agency (www.regagen.co.me) provides templates required for the submission of applications for a license, as well as laws and by-laws regulating these issues. A register of privileged producers and a register of guarantees of origin are also published on this site.

(h) How is horizontal coordination facilitated between different administrative bodies, responsible for the different parts of the permit? How many procedural steps are needed to receive the final authorisation/licence/ permit? Is there a one-stop shop for coordinating all steps? Are timetables for processing applications communicated in advance? What is the average time for obtaining a decision for the application?

Authorization of RES projects largely depends on the type of procedure (1-step or 2-step tendering procedure, energy permit) and includes submission of documentation, assessment of documentation and issuance of authorization. The time required to assess these activities is a minimum of a few months.

Procedures for obtaining necessary approvals for construction of RES facilities is under the competence of the Ministry of Sustainable Development and Tourism and is governed by the provisions of the Law on Spatial Development and Construction of Structures. The Ministry of Sustainable Development and Tourism carried out reforms towards a ''one-stop-shop'' system for all planning and construction related permitting in the period from 2008 to 2011. Prior to 2008, a construction permit was issued after performing 31 procedures, in 2008 four procedures were repealed, while later in 2010 six more procedures were excluded. From July 2011 there are only two procedures left: issuance of urban-technical requirements and the construction permit, since all necessary documents the competent authority obtains ex officio. The investor is obliged to submit only two items of evidence in order to obtain a construction permit (revised preliminary or main design and proof of liability insurance of the investor and legal entity that drafted and reviewed the preliminary or main design). According to the Law on Spatial Development and Construction of Structures, urban-technical requirements shall be issued within 30 days following the date of submitting the application. The Law provides issuance of construction permits within 30 days, except for structures that require a study on environmental impact assessment. In latter case a permit shall be issued within 60 days following the date of submitting the application. The procedure of obtaining an exploitation permit required to commission the plant consists of three steps, namely the submission of application, a technical inspection and the issuance of the permit. Prior to technical inspection, the investor shall organize a trial run after the completion of the installation with previously obtained approval by the competent inspection authority. An exploitation permit shall be issued within seven days from the day receipt of the report that the structure is suitable for use.

As for the ongoing RES projects, the average time for obtaining a decision for an application is very much dependent on the individual project and the seriousness of each investor. Larger projects must often undergo a spatial planning process which will take time, in part due to the involvement of the local populace and other authorities. Taking all these factors into account, an average estimation for issuance of construction permits.

(i) Do authorisation procedures take into account the specificities of the different renewable energy technologies? If so, please describe how. If they do not, do you envisage taking them into account in the future?

The law makes no generic distinction in the authorisation procedure for the construction and use of production plants regarding specificities of the different renewable energy technologies. There is some difference in terms of implementation of the tender procedure regarding the resource. If the resource is defined as state/local (all water, certain forests) it

can be used a certain period of time by way of concession according to the Law on Concessions. If the resource is not defined as state/local (solar potential, wind, biomass privately owned) and plans to use state-owned land, the land is leased through a public auction in accordance with the Law on State Property.

Due to its large hydropower potential, Montenegrin energy strategy and legislation is largely shaped around this renewable source of energy. Law on Spatial Development and Construction of Structures does not distinguish different renewable energy technologies and accordingly different procedures.

In procedures for the issuance of a construction permit, preparation of an environmental impact assessment may be an indispensable element. The Decree on projects requiring an environmental impact assessment establishes two lists of projects: projects subject to an obligatory environmental impact assessment (List 1), for which preparation of an environmental impact assessment is mandatory, and projects which may require an environmental impact assessment (List 2) for which it is requested if the competent authority decides that it is necessary.

(j) Are there specific procedures, for example simple notification, for small-scale, decentralised installations (such as solar panels on buildings or biomass boilers in buildings)? If so, what are the procedural steps? Are the rules publicly available to citizens? Where are they published? Is the introduction of simplified notification procedures planned in the future? If so, for which types of installation/system? (Is net metering possible?)

As already mentioned, a simplified procedure exists for authorization of energy facilities that use state resources or land, and have an installed capacity up to 1 MW, or watercourses that are of local significance and for which the gross energy potential of watercourse is less than 15 GWh. This procedure also applies to plants that do not use state resource or land. The procedural steps are clearly defined in the *Rulebook on criteria for issuance of energy permits, content of a request and registry of energy permit.*

Besides this simplified procedure, acording to the Law on Energy there are RES projects that do not require authorization by the Ministry of Economy. This applies to producers of electricity from renewable energy sources in facilities of up to 20 kW installed capacity or in high-efficiency cogeneration in facilities of up to 50 kWe installed capacity. These producers have a right to exchange the electricity that is delivered to the system or taken from the distribution system during a year. Technical conditions, connection standards, protection of system stability, energy quality, as well as other issues regarding the exchange are defined by the rules of the distribution system operator.

Furthermore authorization is not required for producers of electricity or thermal energy that both do not use state resources or land, and for which the energy produced is not placed in the power system or the district heating system, but is instead used for their own needs (insular systems).

(k) Where are the fees associated with applications for authorisation/licences/permits for new installations published? Are they related to the administrative costs of granting such permits? Is there any plan to revise these fees?

No fees for issuance of energy permits were applied during the previous administrative approach. The introduction of fees in this authorization procedure is currently being considered.

After introduction of the ‘’one-stop-shop’’ system, payment of fees and charges for documents that the competent authority obtains ex officio are no longer required as part of the administrative procedures regarding obtaining necessary approvals for construction of facilities.

The fees for issuing energy licenses are determined at the end of each calendar year for the following year, by a special decision of the Energy Regulatory Agency, which is published in the" Official Gazette of Montenegro no".

(l) Is official guidance available to local and regional administrative bodies on planning, designing, building and refurbishing industrial and residential areas to install equipments and systems using renewable energy sources in electricity and heating and cooling, including in district heating and cooling? If such official guidance is not available or insufficient, how and when will this need be addressed?

As mentioned before, in the next period preparation of local energy plans is foreseen. The Law on Energy obliges local governments to develop local energy plans in accordance with the Energy Development Strategy. Local energy plans outline outline expected demand and method of energy supply, as well as measures for energy efficiency, use of renewable energy sources and cogeneration for a period of 10 years. These plans should include measures on heating and cooling from renewable energy sources in the planning of city infrastructure, as well as plans for district heating and cooling in industrial or residential areas, where appropriate. The Ministry of Economy developed a standardized template for such local energy plans.

Apart from the local energy plans, the Law on Energy Efficiency prescribes preparation of the Programme of Improving Energy Efficiency of the Local Governments, which shall be undertaken by local self-government units over a period of three years, in accordance with Montenegro‘s Energy Efficiency Strategy and the Energy Efficiency Action Plan. The Ministry of Economy have developed official guidance for local and regional administrative bodies regarding energy efficiency measures including use of RES, and their implementation in industrial and residential areas.

Local energy plans and programmes of improving the energy efficiency of local governments must be consistent.

(m) Are there specific trainings for case handlers of authorisation, certification and licensing procedures of renewable energy installations?

No such specific training is currently available.

4.2.2 *Technical specifications (Article 13(2) of Directive 2009/28/EC)*

(a) To benefit from support schemes do renewable energy technologies need to meet certain quality standards? If so, which installations and what quality standards? Are there national, regional standards that go beyond European standards?

There are no restrictions in support schemes regarding the use of renewable energy technologies in technical terms, such as specific standards or additional specification of equipment beyond the usual market standards. The applied equipment must meet the requirements of the Law on Technical Requirements for Products and Compliance Assessment ("Official Gazette of Montenegro no" 53/11). This law regulates the manner of prescribing technical requirements, the assessment of a product's compliance with technical requirements, obligations on the supplier with respect to the product, the validity of the certificates of conformity and marks of conformity issued abroad, notification of technical regulations and conformity assessment procedures. Technical requirements for individual products or groups of products are determined by the technical regulations specifying those requirements in the text of the technical regulation or indirectly by reference to standards. Certificates of conformity issued by a foreign body for conformity assessment and marks of conformity issued abroad are valid in Montenegro if issued in accordance with ratified international agreements. At the request of the supplier or ex officio, the competent ministry may recognize the validity of foreign documents and marks of conformity which affirm conformity of products with foreign technical regulations, provided that the requirements of the regulations ensure at least the same level of protection of the safety of human life and health, protection of animals and plants, protection of environment, consumer protection and the protection of property, defined by the technical regulations in Montenegro.

The Institute for Standardization of Montenegro (ISME) was established in 2007 as a national authority for standardization. Among other things, the ISME is responsible for: adopting, developing, reviewing, amending and withdrawing Montenegrin standards and related documents; ensuring the compliance of Montenegrin standards and related documents with international and European standards; participation in preparing and reviewing standards and related documents adopted by international and European organizations for standardization in the areas for which the needs and interests of Montenegro exist, and for which the review or adoption of Montenegrin standards and related documents is expected.

According to the Law on Energy, a privileged producer is an energy entity producing energy using renewable energy sources or waste or in its individual generating facility at the same time produces electricity and heat for district heating and/or cooling or for industrial use, in an economically suitable manner complying with environmental protection requirements. In order to be able to acquire the status of a privileged producer, an energy entity must meet the following conditions: the plant is connected to the electricity transmission or distribution system, electricity is produced in a facility belonging to the group of facilities specified in the *Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficient cogeneration plants*, the plant has its own metering place and it is not jeopardizing security of system operation while operating under

the regime of a privileged producer. If the above criteria have been met, the status of a privileged producer may be acquired by plants not older than 3 years or reconstructed plants that produce additional electricity compared with the average annual electricity production for the five-year period immediately prior to the plant reconstruction, and which are classified under Group O.1 (except plants defined under subgroup O.1.4. subsection O.1.4.2), Group O.2 (except plants defined under subgroup O.2.4), wind farms defined under Group O.3, Group K.1 and Group K.2 in the *Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficient cogeneration plants*. The status as a privileged producer for plants that use solid biomass, solid waste, waste gas, as well as biogas, can be acquired by the energy entity using resources from the territory of Montenegro as a measure for the protection of nature and environment.

According to the Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficient cogeneration plants, plants considered as producing electricity from renewable sources of energy are:

- hydropower plants;
- wind power plants;
- power plants using at least 90 % of primary energy at the annual level from solid biomass (solid biomass power plants);
- solar thermal power plants;
- power plants using at least 90% of primary energy at the annual level from solid waste (solid waste power plants);
- power plants using at least 95% of primary energy at the annual level from the waste gas and facilities for waste water treatment facilities (waste gas power plants);
- power plants using at least 95% of primary energy at the annual level from the biogas from waste and residues of the agricultural and food processing industries (biogas power plants).

A plant for cogeneration is defined as being a plant intended for simultaneous production of the electrical power and heat, which uses energy from fossil fuel sources and/or energy from renewable sources as primary energy. According to the abovementioned Rulebook, the cogeneration plants are plants that use:

- combined processes of gas and steam turbine;
- non-condensing steam turbine;
- condensing turbines with steam reduction;
- gas turbines with use of waste heat;
- internal combustion motors;
- micro-turbines;
- Sterling motors;
- burning cells;
- steam machines;
- organic Rankin’s processes;
- other technologies for simultaneous production of electrical/mechanical energy and heat in one process.

Plant defined as high efficiency cogeneration is a cogeneration plant of:

- installation strength less than 1 MWe which saves primary energy;

- installation strength exceeding 1 MWe which saves primary energy of at least 10% compared with the total consumption of the primary energy at the equivalent separate plants for electricity and heat production.

4.2.3 *Buildings (Article 13(3) of Directive 2009/28/EC)*

Please note that when referring to increasing the use of renewable energy sources in buildings, the supply of renewable electricity from the national grid should not be considered. The focus here is on increasing local supply of heat and/ or electricity to individual buildings. The direct supply of heat or cooling through district heating and cooling in buildings could also be taken into account.

(a) Reference to existing national and regional legislation (if any) and summary of local legislation concerning the increase of the share of energy from renewable sources in the building sector:

- Law on Energy Efficiency (Official Gazette of Montenegro no 29/10)

  The Law on Energy Efficiency regulates relations within the area of efficient energy use in final consumption sectors. This Law regulates obligations for adopting programmes and plans for improving energy efficiency at national and local levels, as well as at the level of energy entities and consumers, and for their implementation. The Law governs public authorisations and responsibilities for the introduction and implementation of energy efficiency policy, so as all additional energy efficiency measures and entities responsible for their implantation. Pursuant to this Law, the use of renewable energy sources for the production of electrical or thermal energy is regarded as a measure of energy efficiency if the electricity produced is used partially or completely for satisfying the needs of the built structure in which the installation (plant) is located, and if a specific renewable energy source is not already covered by an alternative support measure or if the electricity produced from a specific renewable energy source is not intended for sale.

  Further development of the legal framework in the field of energy efficiency has been carried out through preparation of the Law on Efficient Use of Energy. This Law has been drafted and expects adoption soon. According to this Law, generation of electricity or thermal energy by using renewable energy sources, providing that electricity or thermal energy are produced for own use, is regarded as a measure of energy efficiency.

- Law on Spatial Development and Construction of Structures (Official Gazette of Montenegro no 51/08, 34/11, 35/13)

  This Law governs the system of spatial development of Montenegro, the manner and requirements for the construction of structures, as well as other matters of importance for the spatial development and construction of structures. Pursuant to this Law, rational use of energy and energy efficiency represent one of basic principles in the construction of structures. Also the concept of use of renewable energy sources and

application of energy efficiency measures is an important principle in the development of planning documents.

- Rulebook on minimal energy efficiency requirements in buildings (Official Gazette of Montenegro no 23/13)

  This rulebook establishes minimal requirements in terms of the energy efficiency of buildings, types of buildings not required to meet minimum energy performance, in accordance with purpose, and the methodology for calculating the energy performance of buildings.

- Rulebook on energy performance certification of buildings (Official Gazette of Montenegro no 23/13)

  This rulebook establishes detailed manner of certification of buildings, manner of determining energy class of a building, layout and content of the table with basic energy performance of public buildings, content of certificate and registry of issued certificates on energy performance of a building and types of buildings that are not certified according to the purpose.

- Rulebook on methodology for performing energy audits of buildings (Official Gazette of Montenegro no 23/13)

  This rulebook establishes the methodology for performing energy audits of buildings.

- Rulebook on regular energy audits of air conditioning systems and heating systems (Official Gazette of Montenegro no 24/13)

  This rulebook establishes the manner and deadlines for performing regular energy audits of air conditioning systems of 12 kW nominal power and higher and gas heating systems, liquid or solid fuels heating systems of 20 kW nominal power and higher.

- Rulebook on training program of energy audits, content of the requests for issuing authorization and registry of authorized persons (Official Gazette of Montenegro no 24/13)

  This rulebook establishes training program for energy audits of buildings and regular energy audits of heating systems and air conditioning systems, content of requirements for issuing authorizations for performing energy audits and detailed content of registry of authorized persons for performing energy audits.

- Rulebook on content of the elaborate on energy efficiency of buildings (Official Gazette of Montenegro no 47/13)

  This rulebook prescribes the content of the elaborate on energy efficiency as an integral part of the technical documentation representing compliance with the minimum requirements of energy efficiency and energy efficiency rating of the object in the design phase.

(b) Responsible Ministry(/ies)/authority(/ies):

- **The Ministry of Economy** is the governmental authority in charge of the regulation and implementation of energy policy. Within the Ministry of Economy, the Directorate

for Energy Efficiency is responsible for creating and implementing energy efficiency policy including use of renewable energy sources in buildings. Besides tasks related to policymaking in the field of energy efficiency and undertaking measures for its implementation, the Directorate for Energy Efficiency performs promotional and educational activities related to energy efficiency and renewable energy, cooperation with state bodies and local government authorities and ensures the inclusion of energy efficiency requirements in sectoral policies, harmonizes national legislation with EU legislation in the field of energy efficiency, as well as conducting other tasks related to energy efficiency.

- **Ministry of Sustainable Development and Tourism** is the governmental authority in charge of spatial development and construction of structures. The Directorate for Construction is responsible for tasks related to policymaking in the field of construction and undertaking measures for its implementation.

(c) Revision of rules, if any, planned by: (date)

Following the adoption of the Law on Energy Efficiency (Official Gazette of Montenegro no 29/10), the legal framework in the field of energy efficiency at the EU level, has been significantly changed. By adopting the new directives and regulations in this area, the EU has adopted new, more stringent requirements that supersede the previous legal and political framework. Montenegro, as a member of Energy Community, has accepted the obligation of transposing the requirements of the new EU directives, further development of the legal framework in the field of energy efficiency and the development of the new law – Law on Efficient Use of Energy was required. A Draft Law on Efficient Use of Energy has been prepared and submitted to the Government for approval.

(d) Summary of the existing and planned measures at regional / local levels:

The Directorate for Energy Efficiency within the Ministry of Economy is the central institution for energy efficiency in Montenegro and as, such, it coordinates or it is involved in the implementation of many projects and activities related to energy efficiency (including use of renewable energy sources in buildings).

In addition to establishing the legislative framework in the field of energy efficiency that encourage renewable energy use, the Ministry of Economy implements several projects to promote the use of renewable energy sources in buildings:

1) MONTESOL – An interest-free credit line for installation of solar-thermal systems for households

The Ministry of Economy of Montenegro, in cooperation with the United Nations Environment Programme (UNEP) and the Italian Ministry for Environment, Land and Sea (IMELS), implement the MONTESOL project, aimed at offering an attractive and sustainable financial mechanism for obtaining a retail loan to install Solar Water Heating (SWH) systems. For the MONTESOL project, funds in the amount of 1 million USD were envisaged for project implementation and management and specifically to subsidize the interest rate of commercial banks. The MONTESOL project was broadened to include also the tourism sector.

2) ENERGY WOOD – An interest-free credit line for installation of heating systems on modern biomass fuels (pellets, briquettes) for households

The Ministry of Economy of Montenegro, in cooperation with the Luxemburg Agency For Development Cooperation (Lux-Dev), implement the ENERGY WOOD project, aimed at offering an attractive and sustainable financial mechanism for obtaining a retail loan to install heating systems (stoves and boilers) using modern biomass fuels (e.g. pellets, briquettes) in households. For the ENERGY WOOD project, funds in the amount of 130.000 EUR were provided through the FODEMO project (Forestry Development in Montenegro), financed by the Government of Great Duchy of Luxemburg.

3) SOLARNI KATUNI - A project related to installation of photovoltaic solar systems in summer pasture lands

The Ministry of Economy and the Ministry of Agriculture and Rural Development in cooperation with local governments implement project "Solarni katuni". The project was launched in order to improve living and working conditions for households residing on summer pasture lands and to create conditions for increasing the number of farmers in summer pasture lands. Problems related to power supply are resolved by installing photovoltaic solar systems which decrease the need for electrification of certain areas and energy obtained in this way is free of charge for the people who reside in summer pasture lands. For the purpose of this project, funds totalling 172,000 € were provided, 80% by the Ministry of Agriculture and Rural Development and the Ministry of Economy and 20% by end users or Municipalities. As of March 2014, 189 photovoltaic systems were installed in summer pasture lands under this project.

Also, in the previous period, the Capital City of Podgorica and Municipality of Budva initiated a program of subsidies for the installation of solar systems in new buildings by reducing utility costs (fees for utility lands) by 150-200 EUR per square meter of installed solar panels. The Capital City of Podgorica recently abolished this subsidy program (in January 2014), while the Municipality of Bar has introduced the subsidies in 2012 (100 EUR per square meter of installed solar panels).

Replacement of the existing heating systems that use non-renewable energy sources (oil, coal and electricity) with biomass heating systems in public institutions is a project where the Ministry of Economy, Ministry of Agriculture and Rural Development, Ministry of Education and Caritas participated with the donation of 800,000 euros. Replacement of the existing heating systems with the biomass heating systems was conducted in four schools and the building of the Forest Directorate in Pljevlja.

(e) Are there minimum levels for the use of renewable energy in building regulation and codes? In which geographical areas and what are these requirements? (Please summarise). In particular what measures have been built into these codes to ensure the share of renewable energy used in the building sector will increase? What are the future plans related to these requirements? Measures?

There is an obligation related to the utilization of solar energy when designing systems for domestic hot water prescribed in the *Rulebook on minimal energy efficiency requirements in buildings*. The Rulebook provides an obligation for buildings located in climate zone I

(Podgorica and the coastal area) to use solar collectors equivalent to a minimum of 30% of annual demand for domestic hot water, unless it is not technically possible or economically feasible. The same compulsory percentage refers to indoor swimming pools, while for the design of outdoor pools the use of solar collectors equivalent to 100% of the annual demand for hot water is required.

(f) What is the projected increase of renewable energy use in buildings until 2020? (If possible differentiating between residential – 'single- unit' and 'multiple- unit', commercial. Public and industrial). (To answer this question you may use a table as Table 6 below. Data could be given yearly. Or for selected years. Both heating and cooling electricity consumption from renewable energy sources should be included.)

Table 6: Estimated share of renewable energy in the building sector (%)

	2009	***2010***	***2015***	***2020***
Residential	58.4	71.9	73.2	78.3
Commercial	29.7	42.2	34.8	48.4
Total	46.8	61.5	58.7	55.6

(g) Have obligations for minimum levels of renewable energy in new and newly refurbished buildings been considered in national policy? If so, what are these levels? If not, how will the appropriateness of this policy option be explored by 2015?

There is an obligation related to the utilization of solar energy when designing systems for domestic hot water as provided in the answer to question (e).

(h) Please describe plans for ensuring the exemplary role of public buildings at national, regional and local level by using renewable energy installations or becoming zero energy buildings from 2012 onwards? (Please take into account the requirements under the EPBD).

In 2013, the Ministry of Economy developed an Energy Efficiency Action Plan (EEAP) for the period 2013-2015. The focus of the implementation of national energy efficiency policy in Montenegro has been placed on the public sector. This approach is not only due to EU directive requirements, but also the fact that activities on implementing incentive policy measures, as well as the regulatory measures, are easiest to initially implement in this sector. This approach is additionally justified by the still underdeveloped market of energy efficiency in Montenegro.

In accordance with the provisions of the Law on Energy Efficiency, public sector entities: public administration bodies, organizations, regulatory bodies, agencies, local self-governing units and public companies are required to perform energy management in the premises in which they operate. In addition to activities aimed at improving energy efficiency, energy efficiency measures shall encompass the introduction of energy efficiency measures to

employees and methods of their implementation and establishment and implementation of energy efficiency criteria in relation to procurement of goods and services.

In addition, the Law on Energy Efficiency for different entities prescribes certain obligations related to planning and reporting on energy efficiency.

Local self-governing units are required to prepare a three-year programs and one-year plans for improving energy efficiency that will consist of energy efficiency measures/actions in premises in which they perform functions, as well as to report to the Ministry of Economy on the results achieved on an annually bases. The content of the report on the implementation of the energy efficiency improvement plan for local self-governing units is provided by a specific regulation (*Rulebook on the content of the report on implementation of the Energy Efficiency Improvement Plan by local self-government unit*, Official Gazette of Montenegro no 61/11).

On the other hand, state authorities are obliged to declare on energy efficiency measures that are going to be implemented in the coming year through an annual operational plan for energy efficiency improvements in public administration institutions, which is adopted by the Government.

In the area of reporting, public sector entities also have an obligation to submit data of the annual energy consumption in their buildings and facilities, as well as factors affecting that consumption, to the Ministry. In order to monitor energy consumption and other relevant data in their facilities, entities shall establish an information system fon energy consumption. Detailed content of the information system on energy consumption and the method of reporting to the Ministry is regulated by a specific regulation (*Rulebook on the information system of energy consumption and on the manner of submission of data on annual consumption of energy*, Official Gazette of Montenegro no 06/12).

Important projects regarding improving energy efficiency in public buildings (including measures on use of renewable energy sources) which the Ministry of Economy implements jointly with international and local partners are:

1) MEEP - Montenegrin Energy Efficiency Project

The Government of Montenegro has received a loan from the International Bank for Reconstruction and Development totalling 6.5 million EUR in order to finance the project entitled "Energy Efficiency in Montenegro". It is expected that this project will improve energy efficiency in educational and healthcare institutions, as well as public awareness regarding energy efficiency measures. Fifteen facilities were selected (8 schools, 1 student dorm and 6 hospitals).The project is being implemented since February 2009, and its implementation will last until 30 March 2014.

2) EEPPB - Energy Efficiency Program in Public Buildings

The Directorate for Energy Efficiency (within the Ministry of Economy) in cooperation with the German KfW Bank has launched the "Energy Efficiency Program in Public Buildings" program with funds totalling 13 million EUR. It is planned that this program will last until September 2014. Under this Program, the following activities will be implemented: rehabilitation and modernization of about 30 educational facilities in terms of energy

efficiency (the focus will be placed on improvement in the energy performance of building envelope and heating systems, but rehabilitation may also include the modernization of sanitary facilities, classrooms, required utility rooms and so on); training and awareness raising campaigns for personnel responsible for maintenance; teachers, students, pupils and other users in targeted facilities; and consultancy services for planning, selection, disclosure, supervision and adoption of measures including energy audits and consulting services in order to support the Program Management Unit.

(i) How are the energy efficient renewable energy technologies in buildings promoted? (Such measures may concern biomass boilers, heat pumps and solar thermal equipment fulfilling eco-label requirements or other standards developed at national or Community level (cf. text of Article 13(6)).

Currently, there is one provision in the *Rulebook on minimal energy efficiency requirements in buildings regarding minimal energy efficiency requirements for heating and cooling systems*, which requires that the efficiency of the heat generation unit cannot be less than the values given in the annex to the Rulebook. Also, according to this provision, the efficiency of cooling systems or heat pumps shall not be less than the value corresponding to class C in accordance with the values set forth in the annexes.

4.2.4 *Information provisions (Articles 14(1)and 14(6) of Directive 2009/28/EC)*

Current and future information and awareness raising campaigns and programmes, as well as planned revisions, and expected results have to be described. Contracting Parties should also indicate which responsible authority will monitor and review the effects of the programmes. When regional / local authorities have a substantial role, please also indicate and summarise it.

(a) Reference to existing national and or regional legislation (if any) concerning information requirements according to Article 14 of Directive 2009/28/EC:

- Law on Energy Efficiency (Official Gazette of Montenegro no 29/10)

  According to Article 13 of this Law, the Ministry of Economy is responsible for promoting the implementation of energy efficiency measures and publishing information with the purpose of informing and raising awareness of consumers regarding the significance and effects of energy efficiency, as well as for organising training programmes with the purpose of implementation of energy efficiency measures. Article 14 prescribes responsibility on local self-government units to inform citizens on the possibilities for improving energy efficiency and benefits and effects of the implementation of the energy efficiency measures. Article 41 provides an obligation to establish an information system for energy consumption. Article 16 prescribes obligations on the distribution system operator and energy supplier regarding individual metering and informative billing. According to the Article 37, suppliers or distributors of household appliances are required to place on the market only those appliances which have an energy efficiency label and corresponding information sheet. Article 46 prescribes obligations on the distribution system operator and energy supplier to publish on their websites offers for energy services.

- Law on Energy (Official Gazette of Montenegro no 28/10, 06/13)

The Law on Energy prescribes rights, duties and responsibilities on energy entities while performing energy activities, including obligations to publish certain information on their websites. Articles 84 prescribes an obligation on the transmission system operator to publish on its website the approved methodologies and prices for connection of generation plant to the transmission system, for the use of the transmission system and for ancillary and system services. Article 88 provides an obligation on the distribution system operator to publish on its website approved methodologies and prices for connection to the electricity distribution system, i.e. for use of the distribution system. Articles 86 and 91 prescribe an obligation on the transmission and distribution system operators to publish on their websites established Grid Codes. Article 72 of the Law on Energy obliges suppliers of electricity, at least once a year, to give on their bill or in promotional materials accompanying a bill, information to final customers about the contribution of renewable and other sources of energy per type that were used to meet the electricity demand of final customers, as well as to indicate references for sources of information about the environmental impact of energy sources that were used to meet the customer's electricity demand. Article 48 of the Law provides an obligation on the Energy Regulatory Agency to make an annual analysis of the contribution of renewable energy sources and cogeneration to the gross generation and consumption of electricity, and to publish the results.

(b) Responsible body/(ies) for dissemination of information at national / regional / local levels:

- Ministry of Economy (through two directorates: Directorate for Energy Efficiency and Directorate for Energy/Department for Renewable Energy Sources);
- Ministry of Sustainable Development and Tourism;
- local government authorities;
- info centres (in Podgorica and Bijelo Polje);
- info offices (Niksic, Berane, Cetinje, Bijelo Polje, Zabljak, Plav and Rozaje);
- Engineers Chamber of Montenegro;
- Chamber of Economy of Montenegro;
- non-governmental organizations;
- international donors;
- banks;
- media etc.

(c) Summary of the existing and planned measures at regional / local levels (where relevant):

According to the Law on Energy Efficiency the Ministry of Economy is obliged to perform activities in order to improve public awareness. These activities include informantion campaigns and educational and training programs for different target groups in Montenegro.

A substantial number of awareness raising campaigns and training programs have been implemented through the “Advisory Services to Energy Efficiency’’ (ASE) project which

started in 2008, on the initiative of the German Government through its implementation agency – German Technical Cooperation (GTZ). As a part of the information campaign, Info Centers for energy efficiency were opened in Podgorica (cooperation between the Capital city Podgorica and the GIZ regional project “Strengthening the capacities for energy management in cities”) and Bijelo Polje (cooperation between GIZ and the Directorate for Development of Small and Medium Sized Enterprises). In addition, seven Info offices for energy efficiency in Montenegro began to work in 2010 (Niksic, Berane, Cetinje, Bijelo Polje, Zabljak, Plav and Rozaje). The main idea of this project is promotion of energy efficiency in Montenegrin municipalities through the existing network of business centers at the disposal of the Directorate for Development of Small and Medium Sized Enterprises.

The public awareness campaign included a lot of public and professional events and preparation of different promotional materials, intended for the general public as well as specific target groups (ministries, local governments, donors, professional associations, and others). In addition, promotional material was transmitted through public media (newspapers, TV, radio, internet, etc) in different forms (brochures, promotional videos and TV commercials, advertisements, articles, promotional exhibitions, etc). Information campaigns to the general public and other end-users is planned to continue in the next period.

In the previous period, with the cooperation of German International Cooperation (GIZ), the Norwegian company Energy Saving International (ENSI), Faculty of Mechanical Engineering and Faculty of Architecture of University of Montenegro and the Ministry of Economy conducted a training course for 41 engineers who will acquire authorizations for performing this activity. Training for regular inspections of heating systems and air conditioning systems was organized in October 2013 (with cooperation between GIZ-ORF EE and the Ministry of Economy). GIZ-ORF EE organized in partnership with the NGO Montenegrin Center for Energy Efficiency (CCEE), training on the topic of monitoring and verification of energy systems. Training and certification of auditors and building certifiers and heating/cooling systems inspectors is planned also to be continued in the following period.

The development of a fully functional energy management system requires a series of activities/measures. Two training programs on this topic ("Energy Management" and “Energy Efficiency Information System / Planning, Implementation and Reporting on Energy Efficiency”) were organized within the project "Technical Assistance for the implementation of the Energy Community Treaty in Montenegro" funded by a Delegation of the European Union in Montenegro. Activities on developing energy management will continue in the forthcoming period and, in this regard, work on strengthening the capacities of relevant public sector entities for the implementation of activities under the Law on Energy Efficiency (energy management, planning documents, submitting data, regularly reporting on progress, promotion of energy efficiency, the implementation of energy efficiency measures, etc).

Finalization and adoption of regulations for the labelling of energy products, measures for its implementation, establishment of supervisory authorities and scheme of control (inspection) for the successful implementation of regulations in the market and the monitoring and reporting of the relevant market participants, is planned to be completed in the forthcoming period.

(d) Please indicate how information is made available on supporting measures for using renewable energy sources in electricity, heating and cooling and in transport to all

relevant actors (consumers, builders, installers, architects, suppliers of relevant equipment and vehicles). Who is responsible for the adequacy and the publishing of this information? Are there specific information resources for the different target groups, such as end consumers, builders, property managers, property agents, installers, architects, farmers, suppliers of equipment using renewable energy sources, public administration? Are there information campaigns or permanent information centres in the present, or planned in the future?

Information on supporting measures for using renewable energy sources in electricity, heating and cooling and in transport is available on the website of the Department for Renewable Energy Sources within the Ministry of Economy (www.oie-res.me). In addition to the information on procedures and relevant legislative framework, this site also publishes a register of issued energy permits and a register of issued licenses for conducting measurements of RES potential.

The website of the Directorate for Energy Efficiency within the Ministry of Economy (www.energetska-efikasnost.me) contains all relevant information on projects promoting the use of renewable energy sources in buildings, the relevant legislation and other issues related to energy efficiency. Registers of auditors and building certifiers and heating/cooling system inspectors, as well as the eligible dealers/installers (companies) and approved technical systems under specific programs, are published on this website.

As already mentioned, there are also info centres and offices open in various locations to provide citizens with the necessary information on energy efficiency and renewable energy sources. Contact details for info centres and offices can be found on the website www.energetska-efikasnost.me.

Occasionally, conferences, round table discussions, workshops, presentations etc. on this topic are organized by the Engineers Association of Montenegro, the Chamber of Economy of Montenegro, institutes and faculties, non-governmental organizations, professional associations etc.

(e) Who is responsible for publishing information on the net benefits, costs and energy efficiency of equipment and systems using renewable energy sources for heating, cooling and electricity? (Supplier of the equipment of system, public body or someone else?)

All information on the characteristics of equipment and systems using renewable energy sources are published by the producers and suppliers of such equipment. Specifically, information on technical systems approved under specific programs (promoting the use of renewable energy in buildings, e.g. MONTESOL, ENERGY WOOD), can be found also on the website www.energetska-efikasnost.me.

(f) How is guidance for planners and architects provided to help them to properly consider the optimal combination of renewable energy sources, high efficiency technologies and district heating and cooling when planning, designing, building and renovating industrial or residential areas? Who is responsible for that?

Appropriate guidelines need to be developed for planning renewable energy sources as a part of the obligatory local energy concepts. Guidelines will be aimed at planners and architects to provide them help in planning to incorporate the best combination of renewable energy sources, high-efficiency technology and district heating and cooling in planning, designing, constructing and renewing industrial or residential areas. Currently, planners and

architects gain most of their information and guidance through professional associations and social activities. Also, trade associations contribute to spreading a culture of sustainability and compile guidance documentation for their members.

(g) Please describe the existing and planned information, awareness raising and training programmes for citizens on the benefits and practicalities of developing and using energy from renewable sources. What is the role of regional and local actors in the designing and managing these programmes?

Plans for awareness raising and training programmes for citizens are described under question c).

4.2.5 Certification of installers (Article 14(3) of Directive 2009/28/EC)

(a) Reference to existing national and/or regional legislation (if any) concerning certification or equivalent qualification schemes for installers according to Article 14(3) of the Directive 2009/28/EC:

- Law on Spatial Development and Construction of Structures (Official Gazette of Montenegro no 51/08, 34/11, 35/13)

  According to Article 106 of the Law, the construction of structures, i.e. the execution of specific works during the construction of structures, may be performed by a business organisation, legal entity or an entrepreneur registered with the Central Register of Business Entities to perform construction activities, i.e. to perform specific works. In addition, business organisations, legal entities or entrepreneurs shall have an employee who is the responsible project engineer. The lead project engineer and the responsible project engineer need to meet the conditions prescribed in Article 107.

- Rulebook on the procedure for the issuance and revocation of licenses and the manner of maintaining the register of licenses (Official Gazette of Montenegro no 68/08)

  Article 10 of the Rulebook provides that the license for construction of structures, i.e. execution of specific works during the construction of structures, is issued to the business entity on the basis of the following documents: relevant extract from the Central Register of Business Entities, evidence that the responsible engineer is employed by the company and certified copies of the license for the responsible engineer. Article 9 provides the conditions that the lead project engineer and the responsible project engineer need to meet in order to obtain a license.

(b) Responsible body/(ies) for setting up and authorising certification/ qualification schemes by 2012 for installers of small- scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps.

The Engineers Chamber of Montenegro is responsible for the issuance and revocation of licenses for natural persons and business entities for performing the following activities:

development of planning documents, development of technical documentation and construction of the structures.

Installation of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps systems belong to the mechanical works group and therefore possession of a license for performing mechanical works is required for companies who intend to deal with this type of installation. In order to obtain this license, the company has to be registered with the Central Register of Business Entities to perform mechanical works, and it must have employed a responsible project engineer who also should have an appropriate license.

Regarding installers, there are no requirements for any special certificates or authorisations. However, manufacturers of the aforementioned technologies often require that companies distributing their equipment put systems into operation only using specially trained installers. Therefore, the manufacturers usually organize a training course for installers after which they obtain a certificates from the manufactures specifically for installation of their equipment.

(c) Are such certification schemes/ qualifications already in place? If so, please describe

The Ministry of Economy implements the MONTESOL project – an interest-free credit line for the installation of solar-thermal systems for households. As part of this project a training course for installers of solar thermal systems was organized. Forty one participants successfully completed the training and acquired the title of qualified installers. The training consisted of theoretical and practical elements, where on the basis of a few specific examples and the simulation of the process of designing, installing and maintaining solar systems, participants acquired useful and practical knowledge and skills. The trainees were informed about the types of solar systems, technical specifications and components, the most effective ways and best utilization of solar radiation, and the process of designing and installation of solar systems. The training was mandatory for all companies qualified for installing solar systems within the MONTESOL project and was an additional guarantee of the quality of implementation of the project.

(d) Is information on these schemes publicly available? Are lists of certified or qualified installers published? If so,where? Are other schemes accepted as equivalent to the national/regional scheme?

A table with information about companies and eligible installers, as well as the solar systems approved under the MONTESOL project can be downloaded from the web site of the Directorate for Energy Efficiency of Ministry of Economy: www.energetska-efikasnost.me.

(e) Summary of existing and planned measures at regional/local levels (where relevant).

Accredited programs for the training of installers using renewable energy sources will be organized in the next period, either through implementation of specific programs (like MONTESOL) or through courses organized by various institutions/ professional associations.

4.2.6 Electricity infrastructure development (Article 16(3) Article 16(5) and Article 16 (7) of Directive 2009/28/EC)

(a) Reference to existing national legislation concerning requirements related to the energy grids (Article 16)

- Law on Energy (Official Gazette of Montenegro no 28/10, 06/13),
- Law on Spatial Development and Construction of Structures (Official Gazette of Montenegro no 51/08, 34/11, 35/13),
- Decree on acquiring the status and accomplishing entitlements of the privileged producer of electricity (Official Gazette of Montenegro no 37/11),
- Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration (Official Gazette of Montenegro no 52/11),
- Decree on incentive fees for promoting electricity production from renewable energy sources and cogeneration (Official Gazette of Montenegro no 08/14),
- Rulebook on the amount of the incentive fee for promoting electricity production from renewable energy sources and cogeneration (Official Gazette of Montenegro no 18/14)
- Market Rules (Official Gazette of Montenegro no 44/12),
- Rules for the operation of the electricity transmission system (Official Gazette of Montenegro no 05/12),
- Rules for the operation of the electricity distribution system (Official Gazette of Montenegro no 50/12),
- General terms and conditions for electricity supply (Official Gazette of Montenegro no 20/12),
- Methodology for determining prices and terms and conditions for connection to the electricity distribution system (Official Gazette of Montenegro no 50/12).

(b) How is it ensured that transmission and distribution grids will be developed with a view to integrating the targeted amount of renewable electricity while maintaining the secure operation of the electricity system? How is this requirement included in the transmission and distribution operators' periodical network planning?

The maintenance, rehabilitation and modernization of existing and infrastructure, construction of new infrastructure for production, transmission and distribution of energy on the principles of fulfillment of international technical standards, energy efficiency, reduction of losses and its negative impact on environment, along with the utilization of renewable energy sources represent some of key objectives in Montenegrin energy policy.

Basic principles for the implementation of energy policy are defined in the Law on Energy. This Law defines *inter alia*: energy operations and terms together with the proceedings of quality and safe electrical power supply to the end-customers; public services and other operations in the field of energy in Montenegro; methods of organization and function of the electrical power and natural gas market; methods and terms of use of renewable energy sources and co-generation; efficient energy transmission and distribution in the production industry sector.The Law has set the framework for the development of the power system by placing renewable energy sources in a privileged position.

Pursuant to the Law, the transmission system operator (CGES) is obliged to prepare a ten year development plan for the transmission system in line with the Energy Development Strategy, the Action plan and development plans of neighboring transmission systems, and to update it at least every three years and submit it to the Energy Regulatory Agency (RAE) for its approval. In the same manner, the distribution system operator (EPCG - Functional Unit Distribution) is obliged to prepare a ten year development plan for the distribution system in line with the Energy Development Strategy, the Action Plan, and the development plan of the transmission system, and to update it at least every three years and submit it to the RAE for its approval. In line with the specified provisions of the Law, CGES prepared a transmission system development plan for the period 2011-2020. Concurrently, the Government of Montenegro acceded to preparation of the Energy Development Strategy by 2030, and the preparation of ten-year development plans and their submission to the RAE for approval is conditioned by the solutions that will be contained in the Strategy. The Finalization of the draft strategy and its adoption is currently in progress.

The following goals of the development of transmission system were identified in the preparation of Transmission network development plan of Montenegro 2011-2020 and taken over by the Strategy:

- improve voltage conditions, better and more efficient supply of the transformer area
- reduce losses in transmission (and distribution) network
- relieve the existing network and its elements (transformers, lines, etc.)
- increase power and reserves in transformation with the aim of more reliable operation and a reduction of undelivered electricity at high seasonal peak loads and also in case of failures in the system and load growth in the future
- improve voltage-reactive conditions in the transmission and distribution networks
- fulfillment of technical conditions for connection of new users
- meeting N-1 security of supply criteria
- forming a ring, better networking transmission system elements
- remove congestions and increase transmission capacity.

It is estimated that the greatest potential for development of renewable sources in Montenegro is from small hydro and wind power plants. The plan included integration of these facilities into the power system and reviewed the impact of their connection to the transmission network. Pursuant to the plan, new small hydro power plants with calculated capacities and electricity generation can be integrated into the power system of Montenegro without technical limitations from a perspective of a system management, if all the standards for their connection to the network are met. Water streams were selected on the basis of previous surveys, studies, preliminary designs, self-initiatives of interested investors and overall professional insight on the available resources for research and construction of small hydro power plants. An analysis has previouisly been carried out in order to confirm compliance of water streams with the following references: the spatial plan, water management master plan, or plans for the use of water energy potential for electricity production, technical requirements, norms and standards for the design and construction of small hydro power plants, regulations on environmental protection, as well as the possibility of connection to the power system. The same review was given for wind power plants. Capacities of wind farms in certain locations were estimated based on previous research and measurements, though it is indicated that more detail will be available after the completion of

the system study on the connection of wind power plants to the power system of Montenegro. CGES is responsible for the final decision through a more detailed final study on the connection, while the development plan shows all variants acceptable from the standpoint of system safety.

A number of studies were developed in 2011 regarding the needs of the transmission system operator, these included: a study of energy losses in the transmission network in Montenegro with measures for their reduction, an analysis of the electric power network for connecting new wind power plants, elaboration on the planned connection of wind power plant Krnovo to the transmission system in Montenegro.

In 2012 a study on distributed generation, connection and operation in the electric power system of Montenegro was developed. The study includes modeling of the existing low voltage network, analysis of the possibilities for connection of current and planned small hydro power plant projects, as well as the connection of solar and wind power plants with installed capacity of up to 10 MW, into the electric power system. The study also includes recommendations for the connection of distributed resources in Montenegro.

(c) What will be the role of intelligent networks, information technology tools and storage facilities? How will their development be ensured?

Operational management of the power system of Montenegro is performed within the National Dispatching Centre (NDC) which has modern equipment for monitoring of work and control of the system in real time (via SCADA - a system with all the necessary measurements and telecommunication links with all power system facilities). NDC has a database containing hourly data on the production and consumption of direct customers and on delivered energy to distribution system, as well as exchange and transit of energy with the neighbouring countries. All metering points on interconnections, power plants, points of delivery to distribution and direct customers are equipped with devices for remote data transfer.

The Energy Development Strategy foresees that in the forthcoming period thre will be a realization of a number of projects related to the requirements or recommendations of ENTSO-e referring to the procurement of both new hardware and software solutions in the field of information technology and telecommunications.

The Strategy also foresees that in the next few years the distribution network will switch to remote control from a modern control centre. This modern distribution control centre is planned to have the functionalities of SCADA in the first phase, which will be complemented with DMS (Distribution Management System) set of functions, GIS (Geographic Information System) functions and Asset Management functions and with the set of functions for work (Work Permits/Instructions and Crew Management). It also involves building of associated communications systems.

The Strategy also envisages the development of a "smart grid". In addition to a number of system features like functions of DMS (e.g. Automatic Fault Detection and System Restoration), installation of smart meters with AMR (Automatic Meter Reading) and network automation, it is proposed such a smart grid will take into consideration additional functions that will support introduction of RES. The smart grid system itself will enable long-term connection of numerous producers of energy from RES at different locations and production

plants of different capacities and production characteristics without damaging the reliability and stability of overall functioning of the distribution system in the process, as it will take over many of the functions of an operator in order to perform automatic control and system balancing during normal operation as well as during malfunctions.

(d) Is the reinforcement of the interconnection capacity with neighbouring countries planned? If so, which interconnectors, for which capacity and by when?

Construction of a submarine HVDC interconnection between Italy and Montenegro is underway and is planned to be finished until end of 2016. This project is realised by CGES and the company Terna, the Italian transmission system operator.

Full utilization of the cable (capacity of 1000 MW) is expected to be achieved after the necessary reinforcements of both internal links in Montenegro, as well as links from Montenegro to the neighbouring systems (Bosnia and Herzegovina and/or Serbia). Currently in the north of Montenegro towards Bosnia and Herzegovina and Serbia there are no 400 kV connections. Taking into account ambitious plans for the development of the generation capacities in Bosnia and Herzegovina and Serbia and the project for construction subsea cable between Montenegro and Italy, one respective 400 kV connection of these two systems and with the system of Montenegro would be highly beneficial to the export from Bosnia and Herzegovina i.e. from Serbia to Italy which would enable secure and reliable transit of electricity.

(e) How is the acceleration of grid infrastructure authorisation procedures addressed? What is the current state and average time for getting approval? How will it be improved? (Please refer to current status and legislation, bottlenecks detected and plans to streamline procedure with timeframe of implementation and expected results.)

The connection of facilities to the transmission/distribution system is conducted on the basis of the connection consent issued by the operator of the transmission/distribution system. The operator of the transmission/distribution system has to issue the connection consent, if there are no technical constraints in the transmission/distribution system, and also if the equipment and installations of the facility in question meet all terms and conditions according to relevant laws, technical regulations and other provisions. The connection consent for a facility to the transmission/distribution system among other provisions consists of the terms and conditions for the connection including the point of connection and connection costs assessment, the method and technical conditions for connection, as well as the place and manner of metering of delivered energy.

The transmission/distribution system operator ensures the fulfilment of conditions regarding the connection approval and concludes the grid connection agreement for a facility with the system user. The grid connection agreement includes: technical and operational characteristics of the facility; the methods and conditions of system operation; specification of negative rebound effects of the installed devices; rights and obligations regarding electrical power quality and the method of electrical power measuring at the connection points.

Technical requirements for connection to the transmission/distribution system are regulated with the Transmission Grid Code/Distribution Grid Code, established by the electricity transmission/distribution system operator.

During the procedure of connecting power plants to the distribution system of electricity, distribution system operator (DSO) is responsible for:

1) Giving an opinion on the possibilities of connection;

   The distribution system operator is obliged to give an opinion to the applicant on the possibility of connecting the planned facility to the distribution system, within 30 days of the receipt of a request.

2) Issuing requirements for connection;

   The distribution system operator is obliged to issue to the applicant requirements for connection to the distribution system (based on preliminary solution for power plant) within 45 days of the receipt of a request.

3) Issuing a decision on granting consent for the connection;

   The distribution system operator is required to resolve the request for issuance of consent for connection to the distribution system within 90 days of receipt of proper request (based on revised preliminary or main design).

4) Conclusion of grid connection agreement

   After completion of construction of power plant and facilities for connection to the distribution system, the investor is obliged to attend the trial period, technical inspection and to obtain an exploitation permit, in the manner and under the procedure provided by the Law on Spatial Planning and Construction.

   Upon meeting the conditions from the decision on issuing consent for connection to and before the continuous commissioning of the power plant, the investor and DSO conclude the grid connection agreement.

If a proper request is submitted by an investor and all the conditions from the decision on issuing consent for connection, as well as from the grid connection agreement are met, the distribution system operator is obliged to issue a permit for connection to the distribution system, and to connect the power plant to the system in the presence of the investor, within 15 days from the date of application.

Connection of facilities to the distribution network is made after the conclusion of two contracts: a contract on electricity supply that power plants take from the distribution system and the power purchase agreement. The distribution system operator is obliged to connect the facility to the distribution system within 15 days of the conclusion of the supply contract.

During the procedure of connecting power plants to the transmission system of electricity, the transmission system operator (TSO) is responsible for:

1) Giving opinion on the possibility of connecting;

   If there is a change in the planning documents prior to issuing consent for connection to the transmission system, the TSO reserves the right to define a new point of connection to the transmission system and amend an opinion on the adequacy of the connection and a preliminary assessment of the impact of the facility on the operation of the power system, taking into account the previously issued opinion. The final connection conditions which are binding for the TSO are defined within the issued consent for connection.

2) Issuance of consent for connection;

   Data and technical parameters contained in the request for issuance of consent for connection must be consistent with the revised conceptual design.

   In the case of requests for connection that require development of systematic analysis, the TSO in the process of issuing consent for connection prepares the detailed study on the connection whose conclusions are the basis for the issuance of consent. The TSO is obliged to perform the necessary analysis and prepare elaborate on the connection within 120 days from the receipt of request.

3) Issuance of approval for the project documentation;

   The TSO reviews and approves the investment and technical documentation and preliminary or main design, if developed for a construction or part of the construction that has an impact on the operation of the transmission system and is required for obtaining a construction permit, within 30 days from the date of receipt of the request.

4) Issuance of a temporary permit for the connection during probation period;

   Before the start of the probation period, the TSO, upon a user's request, issues a temporary permit for the connection during the probation period. The temporary permit is issued on the basis of a professional assessment of fulfilment of the conditions from consent for the connection.

5) Conclusion of a grid connection agreement

   A grid connection agreement is concluded between the TSO and the users of the transmission system governing the technical, legal and economic conditions for connection to the transmission system, all the details of the future property relations, and future concerns in the operation and maintenance between the parties. The grid connection agreement must be signed before continuous commissioning. The TSO is obliged to submit an agreement proposal within 30 days from the date of application of request for contract conclusion.

The transmission/distribution system operator is obliged to provide the conditions for connecting the users to the transmission/distribution system in accordance with the methodology for setting prices and terms and conditions for connection to the transmission/distribution system. The TSO/DSO determines the methodology for transmission/distribution system connections and submits it to the Energy Regulatory Agency for approval.

(f) How is coordination between grid infrastructure approval and other administrative planning procedures ensured?

The procedure for construction of a facility does not specifically define the relationship and coordination between the electricity system operators and other institutions in charge of issuing permits and approval.

Within the Transmission Grid Code and Distribution Grid Code there are certain references to the construction process. Grid Codes provide information on procedures for issuance of necessary approvals and conclusion of grid connection agreements having regard to the construction procedure provided by the Law on Spatial Planning and Construction.

(g) Are priority connection rights or reserved connection capacities provided for new installations producing electricity from renewable energy sources?

The transmission/distribution system operator is obliged to ensure priority in connection of generation facilities that use renewable energy sources, provided that the connection is in accordance with all the technical requirements (Article 151 of the Law on Energy).

According to the Article 79 the privileged producer is entitled to the purchase price for electricity in accordance with the tariff system and priority in delivery for total electricity generated and connected to the transmission or the distribution system. Further it is stated that in the process of operating the transmission and distribution system and related dispatching, the operator of the electricity transmission and distribution system shall give preference to privileged producers, in accordance with the technical capabilities of system. It is prescribed that if due to security of system operation reasons, operators of transmission and distribution system may not give precedence to a privileged generator, and in that case they shall inform the Energy Regulatory Agency and determine corrective measures for prevention of further denials of access to the system.

(h) Are any renewable installations ready to come online but not connected due to capacity limitations of the grid? If so, what steps are taken to resolve this and by when is it expected to be solved?

The first small hydro power plant put into operation “Jezerstica” has an installed capacity of 844 KW. The capacity of the power plant is limited to 300 kVA in order to avoid compromising the quality and security of supply of existing customers with electricity.

This power plant was built according to the concession agreement from the first public bidding held in 2007 whose major drawback was a lack of solutions or recommendations for connection to the grid provided by the distribution system operator previous to the announcement of public bidding.

(i) Are the rules on cost sharing and bearing of network technical adaptations set up and published by transmission and distribution system operators? If so, where? How is it ensured that these rules are based on objective, transparent and non-discriminatory criteria? Are there special rules for producers located in peripheral regions and regions with low population density?

(Cost bearing rules define which part of the costs is covered by the generator wishing to be connected and which part by the transmission or distribution system operator. Cost sharing rules define how the necessary cost should be distributed between subsequently connected producers that all benefit from the same reinforcements or new lines.)

According to the Law on Energy, transmission and distribution system operators are obliged to establish methodologies for the setting of prices and terms and conditions for connection to transmission and distribution systems for electricity and to submit them to the Energy Regulatory Agency for approval. The methodology for setting prices and terms and conditions for connection to the distribution system has been approved by the Energy Regulatory Agency and is published on websites of the DSO (www.epcg.co.me), theEnergy Regulatory Agency (www.regagen.co.me), the Department of Renewable Energy Sources of

the Ministry of Economy (www.oie-res.me) and the Official Gazzete of Montenegro (www.sluzbenilist.me). The Transmission System Operator has established a methodology for setting of prices and terms and conditions for connection to the transmission system and this methodology has been approved by the Energy Regulatory Agency. It is published on website of TSO (www.cges.com).

Pursuant to existing legislation there is no explicit difference in the costs of the connection to the transmission or distribution system regarding locations (low or high population density regions). In a certain sense this can be related to one provision in the Law on Energy which states that if due to technical constraints it is not possible to connect system user's facilities to the transmission or distribution system and in case the development plan of the system does not envisage construction of the required infrastructure, or in case this infrastructure is planned for a later period, the system user/investor may build at this own expense the connection infrastructure. The constructed infrastructure may then be taken over by the transmission/distribution system operator.

(j) Please describe how the costs of connection and technical adaptation are attributed to producers and/or transmission and/or distribution system operators? How are transmission and distribution system operators able to recover these investment costs? Is any modification of these costs bearing rules planned in the future? What changes do you envisage and what results are expected?

(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 socialised and covered by the grid tariffs.)

The Law on Energy 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 142 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 (Article 146 of the Energy Law). Additionally, Article 149 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. 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 and average interest rate for loans for investments for TSO/DSO. Such costs, including costs of maintenance, development and operation of this infrastructure are included into justified costs from business activity of the TSO/DSO.

(k) Are the rules for sharing the costs between initially and subsequently connected producers? If not, how are the benefits for subsequently connected producers taken into account?

The existing regulation and procedures for connection to the transmission and distribution system do not provide for the attribution of costs between producers. Each power plant with related connection costs is considered individually.

(l) How will it be ensured that transmission and distribution system operators provide new producers wishing to be connected with the necessary information on costs, a precise timetable for processing their requests and an indicative timetable for their grid connection?

Information on the connection of producers to the transmission and distribution systems presented in relevant by-laws, procedures, rules and methodologies are available on the web sites of the following institutions:

- EPCG – Functional Unit Distribution (www.epcg.co.me)
- CGES (www. cges.com)
- Energy Regulatory Agency (www.regagen.co.me)
- Department for Renewable Energy Sources of Ministry of Economy (www.oie-res.me)

4.2.7 *Electricity network operation (Article 16(2) and Article 16(7) and (8) of Directive 2009/28/EC)*

(a) How is the transmission and distribution of electricity from renewable energy sources guaranteed by transmission and distribution system operators? Is priority or guaranteed access ensured?

Article 79 of the Law on Energy states that privileged producers shall be entitled toan 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.

(b) How is it ensured that transmission system operators, when dispatching electricity generating installations give priority to those using renewable energy sources?

According to the Article 79 of the Law on Energy, in the process of operating transmission and distribution system and dispatching, the operator of electricity the transmission or distribution system is obliged to give preference to privileged producers, subject to the technical capabilities of system.

(c)How are grid- and market-related operational measures taken in order to minimise the curtailment of electricity from renewable energy sources? What kinds of measures are planned and when is implementation expected? (Market and grid design that enable the integration of variable resources could cover measures such as trading closer to real time (changing from day-ahead to intra-day forecasting and rescheduling of generators), aggregation of market areas, ensuring sufficient cross border interconnection capacity and trade, improved cooperation of adjacent system operators, the use of improved communication and control tools, demand-side management and active demand-side participation in markets (through two-way communication systems — smart metering), increased distributed production and domestic storage (e.g. electric cars) with active management of distribution networks (smart grids).)

Article 78 of the Law on Energy envisages that a privileged producer may sell its energy on the market under the same conditions and regulations as applicable to any other producer, while its participation on a market shall not be shorter than 12 months.

All privileged producers are, according to the Law on Energy, members of one balancing group that is not charged for imbalances by the respective system operator.

A privileged producer has the obligation to submit to the transmission/distribution system operator and the market operator monthly and yearly production plans related to average metrological conditions and anticipated monthly deviations in production based on metering which determined production potential of renewable energy source.

According to the Transmission Grid Code in case of overloads in the transmission system, producers have the obligation to adjust the production level as instructed by the transmission system operator.

The Energy Development Strategy envisages an analysis of electricity market operations and proposal for modifications, and consequently implementation of legislative-regulatory changes. The model of the existing support scheme for electricity generation from renewable energy sources should be further developed and adapted to the market model in order to meet the national macroeconomic and social objectives within "Energy Community acquis".

Investments in domestic transmission capacities, interconnections with neighboring countries and a submarine cable with Italy shall significantly enhance technical connection of the Montenegrin market with a regional market of the Energy Community, and also with the EU.

(d) Is the energy regulatory authority informed about these measures? Does it have the competence to monitor and enforce implementation of these measures?

Regulation of activities related to the transmission and distribution electricity networks is one of the main tasks of the Energy Regulatory Agency. Instruments which the Agency uses to apply price regulation for use of the transmission and distribution system are a set of methodologies and decisions which regulate the method of determining eligible costs and method for setting prices and tariffs. With each decision, methodology and rule, the Agency shall take into account the impact on the price for use of transmission and distribution systems and thus the price of energy and quality of supply to customers; the utilization and share of RES and implementation of energy efficiency measures, and the functioning of the market.

With the rules governing connection, the Agency influences development and incentives for connection of RES generating plants, where the regulator must ensure that the connection price remains acceptable.

The Energy Regulatory Agency approves the development system plans which are concretized in the annual investment plans and estimates the funds needed to implement these plans. The Agency approves plans which provide investment in systems to enable covering of increased consumption and connection of new customers to the system, connectivity with neighbouring systems with additional capacities that would provide an increase of cross-border energy exchange and thus the functioning of markets, connection of new generating capacities that use new technologies, especially facilities that produce energy from RES and high efficiency cogeneration.

In development decisions Energy Regulatory Agency is expected to encourage the investments needed for reliability of supply and development of ‘’smart grids” to support the optimization of consumption and use of RES.

(e) Are plants generating electricity from renewable energy sources integrated in the electricity market? Could you please describe how? What are their obligations regarding participation in the electricity market?

The Energy Regulatory Agency has passed the Decision, in accordance with its responsibilities under the Law on Energy, on electricity market opening on 1st January 2009 for all electricity customers (eligible customers), except for households, for which the market will be opened after 1st January 2015 (in accordance with Treaty establishing Energy Community).

The electricity market established in Montenegro comprises both a wholesale and a retail sale market. The wholesale electricity market comprises a long-term market (based upon bilateral contracts), a medium-term market (the day-ahead market), a short-term market

(balancing market) and activities following real time (clearing and settlement of deviations). The retail sale market is established by the Agency according to the following principles: enabling competition in electricity supply by issuing licenses for the supply of electricity in the procedure prescribed by law, and providing the necessary commercial arrangements for the public supplier, who will be responsible for the electricity supply of tariff customers (households and small unprotected consumers who do not want to change suppliers).

A privileged producer who has acquired a right to the price support scheme for generation of electricity from renewable energy sources or cogeneration, is provided with a guaranteed price established in the tariff system for generation of electricity from renewable energy sources and cogeneration for a period of 12 years. In addition to the incentive price, priority in delivery of total generated electricity into the transmission/distribution system is ensured, as well as exemption from payment of costs for imbalances by the respective system operator.

According to the Law on Energy all end-customers shall pay a fee that will be used to encourage electricity generation from renewable energy sources and cogeneration, as an addition to the basic price of electricity. The fee to be paid by the end-customer shall be clearly indicated on the electricity bill that the supplier delivers to the end-customer. The funds collected from fees suppliers of electricity shall transfer to the market operator.

Pursuant to the Law on Energy, a privileged producer may opt to sell its energy on the power market under the same conditions and regulations as applicable to any other producer. If selecting this option the prodicer‘s participation on the market shall not be shorter than 12 months. According to the Decree on acquiring the status and accomplishing entitlements of the privileged producer of electricity, a privileged producer who is selling electricity at the market is obligated to initiate sale on the first, and end it on the last day of a given month during which the sale of electricity is taking place. If selecting this option then during the period of the electricity sale at the market, the privileged producer is not entitled to receive the incentive electricity price and is also obligated to pay usual system service charges to the respective operator under the same terms and conditions as prescribed for other producers.. The privileged producer is obligated to notify the system operator, the market operator, the Energy Regulatory Agency and the Ministry about the beginning and end of electricity sale at the market 30 days prior to, i.e. termination of the electricity sale.

(f) What are the rules for charging transmission and distribution tariffs to generators of electricity from renewable energy sources?

By the end of 2013, electricity producers (including RES producers) were exempted from paying charges for use of the transmission and distribution system. Charges for using the transmission and distribution system were paid by final electricity consumers.

The Energy Regulatory Agency introduced a partial load for the energy producers (without making special reference to RES producers) regarding the use of the transmission system, starting from 1st January 2014. The Agency amended the Methodology for determining regulatory revenue and prices for use of the electricity transmission system, and consequently adopted the Decision on establishing fees and charges paid by producers of electricity to transmission system operator to engage transmission capacity for the period 01/01/2014 - 31/07/2015. Energy producers are still exempted of paying charges for using the distribution system.

4.2.8 *Biogas integration into the natural gas network (Article 16(7) and Article 16(9) and (10) of Directive 2009/28/EC)*

(a) How is it ensured that the charging of transmission and distribution tariffs does not discriminate against gas from renewable energy sources?

Due to lack of access points of Montenegro to regional gas pipelines, natural gas has so far not been used. Correspondingly, there is currently no gas network established in Montenegro.

The Law on Energy transposed the Directive 2003/55/EC concerning common rules for the internal market in natural gas and Directive 2004/67/EC concerning measures to safeguard security of natural gas supply in the legislation of Montenegro. With the Decision of the Ministerial Council of the Energy Community of October 2011 legal basis and obligation to implement the so-called third package of legislation for internal energy market was set and with this the Directive 2009/73/EC on common rules for the internal market in natural gas, repealing the Directive 2003/55/EC and Regulation (EC) no. 715/2009 has become an obligation for Montenegro, but with some adjustments and prolonged schedule of implementation - final deadline by 1st January 2015.

(b) Has any assessment been carried out on the need to extend the gas network infrastructure to facilitate the integration of gas from renewable sources? What is the result? If not, will there be such an assessment?

Development of Montenegro's gas infrastructure, which currently does not exist, is one of key priorities of the Energy Strategy. As part of the development, assessments will be conducted on ensuring gas from renewable sources can be seamlessly integrated and is not discriminated against.

(c) Are technical rules on network connection and connection tariffs for biogas published? Where are these rules published?

In the absence of a gas network, there are correspondingly no technical rules for network connection and connection tariffs.

4.2.9 *District heating and cooling infrastructure development (Article 16(11) of Directive 2009/28/EC)*

(a) Please provide an assessment of the need for new district heating and cooling infrastructure using renewable energy sources and contributing to the 2020 target. Based on the assessment, are there plans to promote such infrastructure in the future? What are the expected contributions of large biomass, solar and geothermal facilities in the district heating and cooling systems?

District heating in Montenegro exists on a very limited scale. It is not developed nor adequately explored, despite the fact that climate conditions and the availability of exemplary energy forms for these purposes (e.g. biomass) in the mountainous regions are favourable for this type of solution. There are only two operational boilers of a minor importance in Pljevlja (a municipality in northern region) that produce heat for district heating.

The Energy Strategy provides for development of district heating in Montenegro on the basis of biomass. As already mentioned, district heating in Montenegro is an important topic and

according to the experiences of countries with the similar climate conditions it can be considered cost-effective in the northern part of the country, where there are sufficient quantities of biomass for such plants.

The Municipality of Pljevlja, due to significant environmental problems with the current heating based on coal and a single point heating system (about 5.000 individual fire heating units in the town and 40 in residential blocks), has already started preparatory activities for biomass district heating project with an installed thermal capacity of about 18 MW_{th} based on wood residue. This system will supply about 20% of the population of Pljevlja. The Energy Strategy foresees development of a study on heating of Pljevlja (supply about 70% of the population) and in case of construction of a second block of thermal power plant in Pljevlja, the Strategy supports using cogeneration for this block (additional 70 MW_{th}).

Also, the Strategy envisages development of a study introducing district heating system in local communities in the municipalities of northern Montenegro (Kolasin, Berane, Zabljak, Pluzine), and other cities in Montenegro (Niksic, Bijelo Polje, Cetinje, Podgorica) for use of biomass or waste heat from industrial processes and implementation of these projects if studies shows their justification (thermal capacity of 12 MW_{th} is estimated by the Strategy). The Strategy envisages the use of pellets, briquettes and other products from biomass in public cogenerations and boilers, and also in self-generators who produce energy for their own needs and sell their energy surplus on the market for the production of heat for district heating.

The Law on Energy provides the legal basis for conducting activities in the field of heat, which implies heat for district heating and/or cooling, and industrial use. According to the Law on Energy the producer of heat is required to give preference to technologies entirely or partly based on renewable energy sources or high-efficiency cogeneration.

Promoting the use of renewable energy sources for production of heat and high efficiency cogeneration is required by the Law on Energy. According to the Law specific tasks and responsibilities in this field are given to local government authorities. The Law also specifies the need to establish a Heat Distributor who operates the heat distribution system and supplies tariff customers with heat under conditions stipulated by the Law or by regulations passed by the relevant authority in the local government. A Heat Distributor is required to distribute heat to all heat customers according to the law and regulations, prepare a development plan, ensure connection for new installations that use renewable energy sources or high-efficiency cogeneration and adopt the distribution system Code with the approval of the relevant authority in the local government. The Distribution system Code regulates technical conditions for connection of users to the system, technical conditions for connection with producers, technical conditions for secure operation of the distribution system and for ensuring reliable and continuous heat supply to customers, emergency procedures, functional requirements and metering devices accuracy level as well as a heat metering method. The Heat Distributor is required to publish the general conditions and tariff for heat supply.

4.2.10 *Biofuels and bioliquids – sustainability criteria and verification of compliance (Articles 17 to 21 of Directive 2009/28/EC)*

The following part of the national action plan should explain Member States' future strategy regarding fulfilment of the sustainability criteria for biofuels and bioliquids and verification of compliance with the scheme.

(a) How will the sustainability criteria for biofuels and bioliquids be implemented at national level? (Is there legislation planned for implementation? What will be the institutional setup?)

The Directive on the promotion of the use of biofuels or other renewable fuels for transport (2003/30/EC), as well as part of the Directive on the promotion of the use of energy from renewable energy sources (2009/28/EC) relating to biofuels and bioliquids, have not been transposed into the legal system of Montenegro yet.

Compliance with obligations from energy ''acquis'' regarding the use of renewable energy sources in transport sector is expected to be provided through IPA 2011 project ''Developing sustainable energy use''. Among many results to be achieved through this project are the following issues: studies analysing and defining potential for the use of renewable energy sources and energy efficiency measures in the transport sector, finalised legislation and regulatory framework for sustainable energy use in transport, an Action plan defining measures and projects to be realised in order to help the development of renewable energy sources and energy efficiency measures in the transport sector, improved monitoring of production of biofuels and use of energy in the transport sector in accordance with EU energy policy and implementation of top priority measures. This project is at the moment in the stage of repetition of the tender procedure for the selection of key expert.

Also the Law on Energy is currently under revision in order to be harmonized with the latest developments in EU legislation (e.g. the 3rd energy package). Full transposition of the Directive 2009/28/EC (including parts on the sustainability criteria for biofuels and bioliquids) is also planned to be provided in the amended/new law. With regard to currently available information on biofuels and bioliquids, the Law will contain essential elements of a regulatory framework for introducing renewable energy sources in transport sector, as well as provide the legal basis for the adoption of separate acts that would transpose Articles 17 to 20 of the Directive. These separate acts are expected to be completed through aforementioned IPA project.

(b) How will it be ensured that biofuels and bioliquids that are counted towards the national renewable target,towards national renewable energy obligations and/or are eligible for financial support comply with the sustainability criteria set down in Article 17(2) to (5) of Directive 2009/28/EC? (Will there be a national institution/body responsible for monitoring/verifying compliance with the criteria?)

The sustainability criteria for biofuels and bioliquids, the procedure for verification of the compliance with the sustainability criteria for biofuels and bioliquids, as well as the calculation methodology of the impact of biofuels and bioliquids on greenhouse gas emissions, are planned to be established in secondary legislation through realization of IPA project.

(c) If a national authority/body will monitor the fulfilment of the criteria, does such a national authority/body already exist? If so, please specify. If not, when is it envisaged to be established?

Adoption of secondary legislation through the aforementioned IPA project shall set out the establishment of an authorized body for monitoring of the quality of biofuels and bioliquids and fulfilment of sustainability criteria.

(d) Please provide information on the existence of national law on land zoning and national land register for verifying compliance with Article 17(3) to (5) of Directive 2009/28/EC. How economic operators can access to this information? (Please provide information on the existence of rules and distinction between different land statuses, like biodiversity area, protected area etc; and on the competent national authority who will monitor this land register and changes in land status.)

The Ministry of Sustainable Development and Tourism is the competent authority for the definition of land statuses. Details on land zoning are primarily specified in the Law on Spatial Development and Construction of Structures (Official Gazette of Montenegro no 51/08, 34/11, 35/13), in the Rulebook on detailed contents and format of planning documents, and also on criteria for land use, elements of urban regulation, and the standardized graphical symbols (Official Gazette of Montenegro no 24/10).

Other laws related to land statuses are: Law on Agricultural Land (Official Gazette of Republic of Montenegro 15/92, 59/92, and Official Gazette of Montenegro no 32/11), Law on Forests (Official Gazette of Montenegro no 74/10), Law on National Parks (Official Gazette of Montenegro no 56/09), Law on Nature Protection (Official Gazette of Montenegro no 51/08, 21/09, 40/11), Law on Waters (Official Gazette of Montenegro no 27/07, 32/11, 47/11).

Cadastral classification and land categorization is the responsibility of the Real Estate Directorate of Montenegro. The Law on State Survey and Real Estate Cadastre (Official Gazette of Republic of Montenegro 29/07, Official Gazette of Montenegro no 73/10, 32/11, 40/11) provides provision on the establishment of the National Spatial Data Infrastructure (NSDI) that contains metadata, services and sets of geodata from the geodetic-cadastral information system, as well as data on environmental protection, spatial planning documents, transportation and telecommunication networks, mineral resources and energy sources, water regimes, protected immovable cultural weal; areas of importance for development of tourism and tourist settlements; geology, geophysics, agriculture and pedology; demography and health; and industrial and production facilities.

The Ministry of Agriculture and Rural Development is planning to start with the development of agricultural land cadastre in 2014, as well as to create the conditions for the introduction of the IACS system (Integrated Administration and Control System).

(e) As far as protected areas are concerned, please provide information under which national, European or international protection regime they are classified.

According to the Law on Nature Protection, protected natural resources can be of international, national and/or local importance. The classification of protected areas of international and national importance is performed by the ministry responsible for environmental protection, while the classification of protected areas of local importance is done by the local government authorities. Pursuant to the Law on Nature Protection, there are six categories of protected areas: strict and special nature reserves, national parks, regional parks and nature parks, monuments of nature, protected habitats and areas of outstanding features.

In addition to the national protection, there are some areas are under the protection of UNESCO, Ramsar, and some of them were declared Emerald habitats of the Berne Convention, areas of international importance for birds (IBA) and habitats of importance for the survival of plants (IPA). Some of the international agreements (conventions, protocols) in the field of nature protection that Montenegro ratified or took over by succession from the previous joint states, are: The Convention on Biological Diversity, The Cartagena Protocol on Biosafety, The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), The Convention on Wetlands of International Importance (The Ramsar Convention), The Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO), The European Landscape Convention, Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean.

In accordance with national law, 124,929 ha or 9.04% of state territory is protected, and in accordance with protection arising from obligations of the relevant international agreements this rises to a total of 237,899 ha or 17.22%, in in area protected on both counts.

(f) What is the procedure for changing the status of land? Who monitors and reports at national level on land status changes? How often are the land zoning register updated (monthly, annually, bi-annually, etc.)?

Land use is defined by planning documents. According to the Law on Spatial Development and Construction of Structures, planning documents consist of state planning documents (Spatial Plan of Montenegro, Special Purpose Spatial Plan, Detailed Spatial Plan, Location Study at State Level) and local planning documents (spatial urban plan of the local government, detailed urban development plan, urban development design, location study at local level). In development of a planning document all bodies, business organisations, institutions and other legal entities responsible for affairs of: forecasts of development, water management, electric power industry, transport, telecommunications, radio broadcasting, healthcare, defence of country, culture, residential and public utility, geodetic, geologic, geophysics, seismic and hydro-meteorological affairs, statistics affairs, agriculture, forestry, tourism, nature protection, protection of cultural and natural heritage, environmental protection, sports, education, finance, real estate register etc, are obliged to submit available data, their own proposals and opinions which are necessary for the development of the planning document.

According to the Law on Agricultural Land, such land is considered to consist of fields, gardens, orchards, vineyards, meadows, pastures, swamps, ponds and marshes, as well as other land for which its natural and economic conditions can serve the public interest if used, or can be used for agricultural production. The Law stipulates that the agricultural land can be used for non-agricultural purposes, either temporarily or permanently. A permanent change in the type of use of agricultural land can only be made if the urban plan or the spatial plan with detailed elaboration, envisages such a change of use.

Pursuant to the Law on Forests, a change in the use of forests or forested land into land for construction or any other purpose can be done only in accordance with the spatial planning document, or forest development plan in accordance with the law. A change in the type of use can be made for the construction of facilities for protection against natural disasters and national defence, in the process of consolidation and regrouping of agricultural land and forests in accordance with the law, and where required by the public interest established by the law or under the law.

(g) How is compliance with good agro-environmental practices and other cross-compliance requirements (required by Article 17(6) of Directive 2009/28/EC) ensured and verified at national level?

These issues will be established through the planning activities of the Ministry of Agriculture and Rural Development for 2014. The Ministry plans to prepare a number of strategies that aim to establish clear guidelines for the development of certain sectors and fields of agriculture, and serve as a basis for providing funds to encourage the further development (Strategy of Agriculture and Rural Development for period 2014-2020, among others). The new laws and amendments to the existing ones are planned to be undertaken with a view to legislative alignment with the acquis in the field of agricultural policy and rural development. The implementation will be ensured through the adoption of by-laws.

(h) Do you intend to help develop voluntary 'certification' scheme(s) for biofuel and bioliquid sustainability as described in the second subparagraph of Article 18(4) of Directive 2009/28/EC? If so, how?

Currently there are no plans for the introduction of voluntary certification scheme. This issue will be also considered through realization of IPA project.

4.3 Support schemes to promote the use of energy from renewable resources in electricity applied by the Contracting Party or a group of Contracting Parties

Please describe existing schemes with legal reference, details of the scheme, duration (indicating start and end dates), past impact and explain whether any reform or future schemes are planned and by when. What are the expected results?

The primary support scheme to promote the use of renewable energy sources in electicity applied by Montenegro is a system of guaranteed purchase of electricity by "feed-in-tariffs" from privileged producers, according to the Law on Energy and adopted by-laws. Besides the guaranteed tariffs, such privileged producers are entitled to priority in delivery of total electricity generated into the transmission or the distribution system, as well as being exempt from payment of costs for imbalances by the respective system operator.

Regulation

(a) What is the legal basis for this obligation/indicative objective?

As per Article 17 of the Energy Law, a national target for the share of energy produced from renewable energy sources expressed as a percentage of gross final energy consumption shall be set for a period of ten years and adopted by the Government. Meanwhile, in accordance with the Decision (2012/04/MC-EnC of 18th October 2012) of the 10th Ministerial Council of the Energy Community, target of 33 % share of energy from renewable sources in gross final energy consumption by 2020 was determined for Montenegro.

Furthermore, the Law settles the roles, relations, operations and obligations of all participants in the energy market, introduces a support scheme for renewable energy sources,

guarantees of origin, and priority access to electricity produced from renewable energy sources. .

(b) Are there any technology-specific indicative objectives?

The envisaged target is not technology specific but applies to all renewable energy sources.

(c) What are the concrete obligations/indicative objectives per year (per technology)?

Obligations have not been set on the level of annual target.

(d) Who has to fulfil the obligation?

The entity bound to fulfil the obligation is the state.

(e) What is the consequence of non-fulfilment?

There are currently no consequences of non-fulfilment.

(f) Is there any mechanism to supervise fulfilment?

The Ministry of Economy will report to the Government on progress made in achieving the targets every two years (Article 18 of the Energy Law). The review of progress will include (amongst others) an assessment of measures that have been taken to achieve the target and future anticipated measures that will be taken, assessment of support schemes in place to reach the targets and assessment of regulatory provisions.

(g) Is there any mechanism to modify obligations / indicative objectives?

There is no special mechanism for modifying the targets of the program.

Financial support

(a) What is the name and a short description of the scheme?

Renewable energy generation in Montenegro is supported through fixed feed-in tariffs for certain producers ("privileged producers"), according to the Article 20 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).

A status of privileged producer can be obtained in accordance with the Article 78 of the Law on Energy and the *Decree on acquiring the status and accomplishing entitlements of the privileged producer of electricity*. Facilities using renewable energy sources and cogeneration facilities for which the status of a privileged producer is obtained are defined in the *Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficiency cogeneration plants*. The status of a privileged producer is established by the Decision issued by Energy Regulatory Agency and set for a period of 12 years. 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 high 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 on 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 for a period of 12 years. 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. The market operator ensures remuneration by charging each electricity supplier for the amount of electricity accepted from privileged producers in line with the feed-in tariff levels. The Ministry of Economy annually determines the fee for encouraging electricity generation from renewable energy sources and cogeneration according to the *Decree on incentive fees for promoting electricity production from renewable energy sources and cogeneration.*

(b) Is it a voluntary or obligatory scheme?

The scheme is obligatory for all final electricity customers. According to Article 21 of the Law on Energy, final customers pay a compensation that will be used to encourage electricity generation from renewable energy sources and cogeneration, as an addition to the base price of electricity.

The scheme is not obligatory for all producers generating electricity from renewable energy sources and cogeneration, but only for those that acquired or will acquire the status of privileged producer.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The scheme is managed by the Ministry of Economy, while the following entities maintain important roles in the implementation of the scheme: market operator, Energy Regulatory Agency, electricity suppliers, transmission and distribution system operators.

The Energy Regulatory Agency is responsible for granting the status of privileged producer and creating and updating the register of privileged producers. The market operator enters into a contract with privileged producers who have the right to receive an incentive price depending on the type of RES technology and amount of generated electricity. The transfer of funds from consumers to privileged producers is done on a monthly basis via the market operator. Transmission and distribution system operators are obliged to gather data on delivered electricity by each privileged producer and taken-over by each electricity supplier. The market operator ensures remuneration by charging each electricity supplier for the amount of electricity transmitted from privileged producers in accordance with the feed-in tariffs. .

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national indicative objective?

According to the envisaged feed-in tariff regime every final electricity customer is obliged to pay a fee that will be used to encourage electricity generation from renewable energy sources and cogeneration. This fee is in addition to the regular price of electricity. The amount of compensation per kWh is determined annually by the Ministry of Economy based

on current feed-in tariffs and annual plans for electricity generation from RES and cogeneration facilities and forecasted final electricity consumption in Montenegro during the next year. The fee, dedicated to encourage generation of electricity from renewable energy sources and cogeneration, shall be collected from electricity suppliers by the Market Operator.

(e) How is long-term security and reliability addressed by the scheme?

After acquiring status of privileged producer (Energy Regulatory Agency issues a decision for a period of 12 years), the privileged producer enters into contract with the market operator for the purchase of feed-in tariff electricity produced from renewable sources. This contract remains in force for 12 years from the date of the aforementioned decision of the Agency.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists?

The Decree on tariff systems for determining incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration was adopted in the second half of 2011, and is currently in force. Prior to its adoption, two acts have been in force: Instructions on determining the methodology used for calculation of the purchase price of electricity from small hydropower plants (Official Gazette of Montenegro no 46/07) and the Rulebook on the methodology for the calculation of the purchase price of electricity from wind power (Official Gazette of Montenegro no 27/10).

Also, in accordance with the current Decree on tariff system, the incentive prices for electricity produced in a plant using renewable energy sources and a plant for high efficiency cogeneration during the period of time covered by a contract for the purchase of electricity (between the market operator and the privileged producer) are adjusted annually in accordance with the inflation indexes reported during the previous year.

In its assessment on the progress made for RES targets every two years, the Ministry of Economy reviews the effectiveness of the support scheme and can suggest changes to the feed-in tariff mechanism. .

(g) Does support differ according to technology?

In accordance with the Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficient cogeneration, different feed-in tariffs apply to different RES and cogeneration technologies. Also, there are different tariffs within the same technology depending on the installed capacity (high-efficiency cogeneration) or annual electricity production (small hydro power plants). Further, there are tariffs specified for some plants in relation to other factors (small hydro power plants built on the existing infrastructure – pipeline and/or dam and reconstruction of existing power plants).

(h) What are the expected impacts in terms of energy production?

In 2020 the share of electricity generated in plants of privileged producers is expected to be 6.3% of gross final energy consumption, 16.3% of gross final electricity consumption, and 25.3% of gross final electricity consumption from renewable energy sources.

(i) Is support conditional on meeting energy efficiency criteria?

The Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficiency cogeneration plants prescribes a minimal

percentage of primary energy use for plants using biomass, biogas, landfill gas and solid waste, to be considered as facilities using renewable sources. Also there are requirements for plants for high efficiency cogeneration regarding primary energy savings.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

The feed-in tariff support scheme has been applicable in its current form since November 2011, i.e. with the adoption of relevant secondary acts, and in particular the Decree on the tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration. Full implementation and functioning of this support scheme is enabled by adoption of the *Decree on incentive fees for promoting electricity production from renewable energy sources and cogeneration* in February 2014. Before the *Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration* entered into force, the feed-in tariff support scheme existed as well (since 2007), in a slightly different form.

(k) Is this a planned scheme? When would it be operational?

The scheme is already in use. Since the *Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration* entered into force (2011), the scheme has been used in the current form. Before the adoption of mentioned Decree, the same concept had been used from 2007, but to a lesser extent and in accordance with the Instructions on determining the methodology used for calculation of the purchase price of electricity from small hydropower plants (instructions had been put out of force with the adoption of the abovementioned Decree)..

(l) What start and end dates (duration) are set for the whole scheme?

As outlined above, the scheme started in 2007 and was reinforced in 2011 in its full form. The end of the feed-in tariff is not yet defined.

(m) Are there maximum or minimum sizes of system which are eligible?

The *Decree on acquiring the status and accomplishing entitlements of the privileged producer of electricity* prescribes that the status of a privileged producer (and accordingly right to recieve the feed-in tariff) can be obtained only for certain groups of facilities classified in the Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficiency cogeneration plants. Thus, in accordance with the Decree, only for wind power plants there is no prescribed maximum size. Small hydro power plants, plants using biomass, biogas, solid waste or landfill gas and cogeneration plants are limited to a maximum capacity of 10 MW (MWe) in order to get support, while solar power plant are restricted to a maximum capacity of 1 MW limited only to roof tops or building structures.

(n) Is it possible for the same project to be supported by more than one support measure?

For now, there is no possibility for the same project to be supported by more than one support measure.

(o) Are there regional / local schemes?

No regional or local support schemes exist.

Specific questions for feed-in fixed tariffs

(a) What are the conditions to get the fixed tariff?

According to the *Decree on the tariff system for determining the incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration*, the producer shall be entitled to incentive prices for electricity produced if the following requirements are fulfilled:

- the plant uses renewable energy contributing to the fulfilment of the national target for renewable energy in line with the program of development and use of renewable energy, or
- the plant is for high efficiency cogeneration and has the capacity in compliance with the program of development and use of high-efficiency cogeneration, and
- if the producer has obtained the status of a privileged producer for the given power plant in accordance with Decree on acquiring the status and accomplishing entitlements of a privileged producer of electricity.

The status of a privileged producer may be obtained by the energy entity if it meets the following conditions (Article 78 of the Law on Energy):

- the plant is connected to the electricity transmission or distribution system,
- the plant generates electricity in a facility belonging to the group of facilities specified in the *Rulebook on types and classification of power plants for electricity generation from renewable energy sources and high efficiency cogeneration plants*, while complying with natural and spatial constraints, criteria and measures for environmental protection,
- the plant has its own metering device placed independent from metering places for electricity generation on the basis of other technological processes, and
- the plant, while operating in the regime of a privileged generator, is not jeopardizing the security of operation of the system.

Furthermore, if conditions prescribed under Article 78 are met, the energy entity may acquire the status of a privileged producer for plants that are:

- not older than 3 years or that were reconstructed and produce additional electricity compared with the average annual electricity production for the period over last five years prior to the plant reconstruction;
- classified under Group O.1[21]., except plants defined under sub-group O.1.4. subsection O.1.4.2. (independent solar plants).; Group O.2.[22], except plants defined under sub-group O.2.4. (solar plants); wind farms defined under Group O.3. (installed capacity exceeding 10 MW connected to the transmission system); Group K.1. and Group K.2. (high efficiency cogeneration plants with an installed capacity up to 1 MWe, and from 1 to 10 MWe of installed capacity connected to the distribution or transmission system) in compliance with the *Rulebook on types and classification of*

[21] plants with the installed capacity not exceeding 1 MW connected to the distribution system

power plants for electricity generation from renewable energy sources and high efficiency cogeneration plant.

The status of a privileged producer for plants using solid biomass, solid waste, waste gas, as well as biogas, can be acquired by an energy entity using resources from the territory of Montenegro as a measure for protection of nature and the environment.

(b) Is there a cap on the total volume of electricity produced per year or of installed capacity that is entitled to the tariff?

There is no precisely defined cap on the total volume of electricity produced per year or installed capacity that is entitled to receive feed-in tariff support. But the Law on Energy makes the provision that the Government may limit support schemes or withhold support schemes for construction of new capacities in the event it is deemed to have a negative impact on the economy or on the price of electricity (Article 73). Also, there are constraints provided regarding the secure operation of the power system.

(c) Is it a technology specific scheme? What are the tariff levels for each?

The tariffs system takes into account the specificity of the technology. Tariff levels are shown in the table below (from the Decree on tariff system for determining incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration).

Type of plant		c€/kWh
Small HPP	up to 3.0 GWh generation	**10.44**
	from 3.0 GWh up to 15 GWh generation	**7.44**
	over 15 GWh generation	**5.04**
Photovoltaic	on buildings and engineering constructions	**15.00**
Wind Power Plants		**9.61**
Biomass	from forestry and agriculture	**13.71**
	from wood processing industry	**12.31**
Solid landfill waste		**9.00**
Gas from landfills		**8.00**
Biogas		**15.00**
High efficiency Cogeneration	installed capacity up to 1 MWe	**10.00**
	installed capacity from 1 MWe up to 5 MWe	according to formula: **10.00 – 0.5 x (P-1)**
	installed capacity from 5 MWe up to 10 MWe	**8.00**

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[22] plants with the installed capacity from 1 MW to 10 MW connected to distribution or transmission system:

(d) Are there other criteria differentiating tariffs?

There are different tariffs within the same technology depending on the installed capacity (high-efficiency cogeneration) or annual electricity production (small hydro power plants). For biomass a distinction is made between facilities using sources from wood processing activities and agriculture and forestry activities.

Beside tariffs shown in the table above, there are also tariffs specified for small hydro power plants built on the existing infrastructure – pipeline and/or dam, and they shall be calculated at the rate of 80% of small hydro power plants tariffs indicated in the table.

The tariff for reconstructed power plants is 7,00 cEUR/kWh and it refers to additional amount of electricity generated annually in relation to the average annual production for the last five years of production before the reconstruction of the plant. If the annual electricity production exceeds twice the annual energy production of the plant after initial building, the tariffs are calculated at the rate of power plants tariffs indicated in the table.

(e) For how long is the fixed tariff guaranteed?

Fixed tariffs are guaranteed for a period of 12 years after commissioning.

(f) Is there any tariff adjustment foreseen in the scheme?

Revision of the methodology and recalculation of the feed-in tariff is currently underway.

4.4 Support schemes to promote the use of energy from renewable resources in heating and cooling applied by the Contracting Party or a group of Contracting Parties

Regulation

(a) What is the legal basis for this obligation/indicative objective?

Within the current legislative framework, there are no clear goals and/or obligatory elements defined and put forward in the form of legal acts.

The Energy Law prescribes that a national target for the share of energy produced from renewable energy sources expressed as a percentage of gross final energy consumption shall be set for the period of ten years, indicating separately the targets with regard to a contribution of renewable energy sources to the gross final consumption of electricity, energy for heating and/or cooling purposes and energy for transport. The Law on Energy does not provide any specific support scheme for renewable energy for heating and/or cooling.

The Law on Energy Efficiency provides stimulation measures for using the renewable energy sources for the production of electrical or heat energy intended for energy efficiency projects if the produced electricity is used partially or completely for satisfying the needs of the built structure in which the installation (plant) is located, and if the specific renewable energy source is not already covered by a stimulating measure or if the electricity produced from a specific renewable energy source is not intended for sale (Articles 39 and 40).

(b) Are there any technology-specific indicative objectives?

Technology-specific objectives for increasing the share of renewable energy sources in supplying heating and cooling have not been set.

(c) What are the concrete obligations/indicative objectives per year (per technology)?

Obligations have not been set on the level of an annual target.

(d) Who has to fulfil the obligation?

The entity bound to fulfil the obligation is the state.

(e) What is the consequence of non-fulfilment?

There are currently no consequences of non-fulfilment.

(f) Is there any mechanism to supervise fulfilment?

The Ministry of Economy will report to the Government on progress made in achieving the targets every two years (Article 18 of the Energy Law). The review of progress will include (amongst others) an assessment of measures that have been taken to achieve the target with regard to individual contribution (electricity, heating and cooling, transport) and future anticipated measures that will be taken, an assessment of support schemes in place to reach the targets and assessment of regulatory provisions.

(g) Is there any mechanism to modify obligations / indicative objectives?

There is no special mechanism for modifying the targets of the program.

Financial support

4.4.1 Interest-free credit line for installation of solar-thermal systems for households

(a) What is the name and a short description of the scheme?

MONTESOL project

The Ministry of Economy of Montenegro, in cooperation with United Nations Environment Programme (UNEP) and Italian Ministry for Environment, Land and Sea (IMELS), implements the MONTESOL project, aimed at offering an attractive and sustainable financial mechanism for obtaining a retail loan to install solar water heating systems. For the MONTESOL project, funds totalling 1 million USD were envisaged for project implementation and management and specifically to subsidize the interest rate of commercial banks.

The Ministry of Economy transfers funds in advance to banks, partners in the project (NLB Montenegrobanka and Hypo Alpe Adria bank). Funds are designated for an interest rate subsidy up to 0%. The bank transfers the approved amount of the loan on the account of the dealer/installer based on submitted invoice/bill. Selected eligible dealers/installers of solar systems install and maintain solar systems for customers. Customers repay to the bank the interest free loan in equal monthly instalments.

The main objectives of the MONTESOL project are significant economic and energy saving, loans for installation of solar systems with a 0% interest rate, ensuring financial institutions' participation by reducing the risk in entering into a new market segment, creation of a market

for utilization of solar energy and contribution to an overall reduction in emissions of harmful gasses.

(b) Is it a voluntary or obligatory scheme?

The scheme is voluntary.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The Ministry of Economy of Montenegro implements and monitors this project, in cooperation with United Nations Environment Programme (UNEP) and Italian Ministry for Environment, Land and Sea (IMELS),

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national indicative objective?

For the MONTESOL project, funds totalling 1 million USD were envisaged and the project will last until the funds are exhausted.

(e) How is long-term security and reliability addressed by the scheme?

Eligible dealers/installers shall provide a 7 (seven) year warranty period (except for guarantees of 5 (five) years on the tank and 10 (ten) years on the collector) for any complete or partial failure (except in improper working conditions). Dealers/installers are responsible for maintenance services of the installed system during the warranty and after warranty period. Independent technical inspection will check the quality of the installed solar systems.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists?

The MONTESOL project started in 2011 and it was exclusively intended for households. For the first two years of the project only 35% of the funds were used. It is envisaged that the project will soon be extended to the tourism sector.

(g) Does support differ according to technology?

This project relates only to solar thermal systems.

(h) What are the expected impacts in terms of energy production?

According to a feasibility study on the financial support mechanism for the development of solar water heating installations in Montenegro which was conducted during 2009-2010, the total annual savings in electricity consumption for a typical household are estimated at around 2000 kWh. The savings are even greater when the demand for hot water is increased. It is estimated that hotels and restaurants can achieve savings of over 70% of their electricity consumption.

(i) Is support conditional on meeting energy efficiency criteria?

Authorization was granted to specific models and types of solar systems, and only those systems for which the authorization was given are offered to potential customers within the framework of the MONTESOL project. Solar system components had to fully comply with the technical requirements. The solar system eligible for this project had to achieve a minimum annual productivity of 500 kWh/m^2.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

The project has been implemented since 2011.

Within the current legislative framework there are no clear goals and/or obligatory elements defined and put forward in the form of legal acts.

(k) Is this a planned scheme? When would it be operational?

The project is during the implementation phase.

(l) What start and end dates (duration) are set for the whole scheme?

The project started in 2011 and will be finished after withdrawal of all funds allocated for the projects.

(m) Are there maximum or minimum sizes of system which are eligible?

In technical specification of the public call to dealers/installers to apply for participation in the project MONTESOL, it was prescribed that solar system eligible for the project had to achieve a minimum annual productivity of 500 kWh/m².

There is also limitation regarding possible individual loan for the solar system that can be obtained and it amounts 5,000 EUR, with a repayment period of 7 years.

(n) Is it possible for the same project to be supported by more than one support measure? Which measure can be cumulated?

There are no restrictions regarding other support measures. Implementation of a solar thermal system can be combined with energy efficiency measures (e.g. measures on the building envelope, installing modern biomass boilers, etc).

(o) Are there regional/ local schemes? If so, please detail using the same criteria.

The Capital City of Podgorica and Municipality of Budva initiated a program of subsidies for the installation of solar systems in new buildings by reducing utility costs (fees for utility lands) by 150-200 EUR per square meter of installed solar panels. Capital City of Podgorica recently abolished this subsidy program (in January 2014), while the Municipality of Bar has introduced subsidies in 2012 (100 EUR per square meter of installed solar panels).

4.4.2 Interest-free credit line for installation of heating systems on modern biomass fuels (pellets, briquettes) for households

(a) What is the name and a short description of the scheme?

ENERGY WOOD project

The Ministry of Economy of Montenegro, in cooperation with the Luxemburg Agency For Development Cooperation (Lux-Dev), implements project ENERGY WOOD, aimed at offering an attractive and sustainable financial mechanism for obtaining a retail loan to install heating systems (stoves and boilers) on modern biomass fuels (pellet, briquette) in households. For the ENERGY WOOD project. Funding totalling 130.000 EUR were provided through the FODEMO project (Forestry Development in Montenegro), financed by the Government of Great Duchy of Luxemburg.

The Ministry of Economy transfers funds in advance to banks, partners in the project (Hypo Alpe Adria bank and NLB Montenegrobank). Funds are designated for an interest rate subsidy up to 0%. The bank transfers the approved amount of the loan on account of the dealer/installer based on a submitted invoice/bill. Selected eligible dealers/installers of heating systems install and maintain heating systems for customers. Customers repay to the bank the interest free loan in equal monthly instalments.

The main objectives of the ENERGY WOOD project are the provision of soft loans to citizens for the installation of heating systems on modern biomass fuels (the interest rate is 0%), achievement of economic and energy savings through the introduction of high-efficiency technologies, a contribution to reducing greenhouse gas emissions through the use of energy sources that have a less harmful impact on the environment, creating markets for greater use of heating systems based on modern biomass fuels, and incentivising the participation of financial institutions via reduced risk when entering a new segment of the market.

(b) Is it a voluntary or obligatory scheme?

The scheme is voluntary.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The Ministry of Economy of Montenegro implements and monitors this project, in cooperation with the Luxemburg Agency for Development Cooperation (Lux-Dev),

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national indicative objective?

Funds totalling 130,000 EUR were envisaged for the purposes of the ENERGY WOOD project. Before July 2014, around 200 systems were installed under this project.

(e) How is long-term security and reliability addressed by the scheme?

The eligible dealers/installers shall provide a 1 (one) year warranty period for any complete or partial failure (except in improper working conditions), Dealers/installers are responsible for maintenance services of the installed system during the warranty and after warranty period.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists?

The ENERGY WOOD project started in October 2013 and due to strong demand, the possibility of providing funds to extend the project is being considered.

(g) Does support differ according to technology?

This project relates only to modern biomass (pellets, briquettes) heating systems.

(h) What are the expected impacts in terms of energy production?

It is difficult to assess energy savings because heating system performance can vary with respect to: use of different energy sources (briquettes, pellets, combined), system capacities, heating areas, manner of use the system, etc. Eligibile distributers/installers are requested to submit data on each installed heating system along with data on old (previously used) system, the heated area before and after installation, as well the energy consumption. First results of energy savings achieved under this project are expected soon. Monitoring of

results of this project will be done and parametars will be collected for estimation of project‘s effects.

(i) Is support conditional on meeting energy efficiency criteria?

Authorization was granted to specific models and types of heating systems, and only those systems for which authorization was given are offered to potential customers within the framework of the ENERGY WOOD project. Heating systems had to fully comply with the technical requirements and in particular the energy efficiency requirements. These included the efficiency of boilers/stoves using briquettes and combined boilers not being less than 70 %, and for those boilers/stoves using pellets not less than 80 %.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

The project has been implemented since 2013.

Within the current legislative framework there are no clear goals and/or obligatory elements defined and put forward in the form of legal acts.

(k) Is this a planned scheme? When would it be operational?

The project is in the implementation phase.

(l) What start and end dates (duration) are set for the whole scheme?

The project started in October 2013 and was planned to be finished after withdrawal of all funds allocated.

(m) Are there maximum or minimum sizes of system which are eligible?

In the technical specification of the public call to dealers/installers to apply for participation in the ENERGY WOOD project, the maximum capacity of eligible heating systems was limited to 50 kW.

There is a limitation regarding possible individual loans for the heating system that can be obtained totalling 3,500 EUR. In the case that the cost of the heating system exceeds the specified amount, the difference is paid by the customer.

(n) Is it possible for the same project to be supported by more than one support measure? Which measure can be cumulated?

There are no restrictions regarding other support measures. Implementation of a modern biomass heating system can be combined with energy efficiency measures (e.g. measures on building envelope, installing solar thermal systems, etc).

(o) Are there regional/ local schemes? If so, please detail using the same criteria.

There are no regional and local schemes for supporting installation of biomass heating systems.

Additional points

(a) How are the support schemes for electricity from renewable energy sources adapted to encourage the use of CHP from renewable energy sources?

The use of CHP from renewable energy sources has a defined feed-in tariff for electricity generation established and governed under the same legislative and financial support framework described in Section 4.3 above.

(b) What support schemes are in place to encourage the use of district heating and cooling using renewable energy sources?

There are no support schemes in place to encourage the use of district heating and cooling using renewable energy sources.

(c) What support schemes are in place to encourage the use of small-scale heating and cooling from renewable energy sources?

There are no support schemes in legislation aimed solely at encouraging the use of small-scale heating and cooling from renewable energy sources. So far promotion of use of renewable energy sources for heating and cooling has been done through abovementioned programs of instant-free credit lines for installation of solar thermal systems and heating systems on modern biomass for households. Also, there are in place some local schemes like subsidies for the installation of solar systems in new buildings by reducing fees for utility lands.

(d) What support schemes are in place to encourage the use of heating and cooling from renewable energy sources in industrial applications?

There are no support schemes aimed solely at the use of encouraging the use of heating and cooling from renewable energy sources in industrial applications. However, such facilities may be eligible to access some of the incentive programs initiated by the Ministry of Economy in cooperation with other partners.

4.5 Support schemes to promote the use of energy from renewable resources in transport applied by the Contracting Party or a group of Contracting Parties

Regulation

Montenegro has not established legislation or regulation fixing obligations for the use of energy from renewable resources in transport. In accordance with the Decision 2012/04/MC-EnC, Montenegro is obliged to bring into force laws, regulations and administrative provisions necessary to comply with Directive 2009/28/EC. Accordingly, the share of energy from renewable energy sources in transport in 2020 shall be set to at least 10 % of the final consumption of all energy in transport. Fixing targets and obligations for the use of renewably energy sources in transport will be provided through a revision of the Law on Energy that is currently in progress, as well as through implementation of the IPA 2011 project ‘’Developing sustainable energy use’’.

Financial support

No support schemes have been established to encourage the use of renewable energy for transport. This will be done through the implementation of the aforementioned IPA project.

Considering the above, the questions concerning financial support are not relevant and therefore not answered.

Additional issues

(a) What are the concrete obligations / indicative objectives per year (per fuel or technology)?

No concrete obligations have yet been established.

(b) Is there differentiation of the support according to fuel types or technologies? Is there any specific support to biofuels which meet the criteria of Article 21(2) of the Directive?

As support measures have yet to be developed, there is no differentiation by fuel type or technology, including to biofuels which meet the criteria of Article 21(2) of the Directive.

4.6 Specific measures for the promotion of the use of energy from biomass

4.6.1 *Biomass supply: both domestic and trade*

A Biomass from Forestry

Direct supply of woody biomass from forestry

For the biomass data below the reference year 2011 was selected. For firewood a gross inland consumption of 295.890 m³ was calculated and is equivalent to 754GWh.

The following types of wood fuel are represented in consumption of woody energy: firewood, woody residues (bark, sawdust), wood briquettes, wood pellets, charcoal, residues from pruning grapevine, waste wood from construction industry.

Indirect supply of woody biomass for energy generation

Indirect supply of woody biomass is provided in 2011 was 45,506 m³ or 94 GWh.

B Biomass from Agriculture

Agricultural crops and fishery products directly provided for energy generation

There is no common methodology to estimate the potential of energy corps. Within the study ‘’Biomass Energy Europe for Macedonia’’ it was estimated that 0.83 % of the arable forestry land can be used for energy crops. If the same factor is taken for Montenegro it will result to a technical potential of 492 GWh.

In the study on bioenergy in Europe it is stated that 3-10 % of arable land can be technically used for growing energy crops. Arable land in Montenegro totals 516,070 ha. Considering the infrastructure and geography, it is proposed to calculate with 3 % at maximum. The usable land for energy crops is 15,482 ha. With a medium conversion value of 155 GJ/ha, energy crops can provide 667 GWh.

As there is no deep investigation about the potential of energy crops in Montenegro, it is suggested to estimate the medium value of the above figures for the moment. This will be 579.5 GWh theoretical potential per year.

Agricultural by-products/processed residues and fisheries by-products for energy generation

The CRES biomass study (2010) estimates in the section "filed crop" an availability of 30 %. Potential of field crops is 20 GWh/year.

Arboricultural residues are calculated in the report for vineyards, citrus, apples, pears and plums with 90 % availability and for olives with 50 % availability. It has to be considered that a certain fraction of residues in agricultural application has to be left as fertilizer, especially in vineyards and fruit production. Otherwise the quantity and quality of the products will be decline from year to year. Concerning to the experience in developed counties in other EU nations, it is estimated for arboriculture residues that 50 % have to be left for fertilizer and 20 % from the rest can be used for energy purposes.. According to these figures the potential of arboriculture residues would be 19.64 GWh/year (19.3 GWh/year from residues from vineyards and fruit production and 0.34 GWh/year from residues from olive oil processing).

The estimation of technical potential of crop residues amounts about 40 GWh/year.

In different districts, only cattle over 3,000 heads, farm pigs over 500 pigs and chicken farms over 11,000 chickens are considered. For the purpose of collecting livestock residues for energy production purposes the animals must be largely situated in one location. Transport of animal residues exceeding a distance of 10 km is not economical and should be avoided. The technical potential calculated on the basis of the availability of 10% of the total animal fund results in total of 17 GWh/year of potential.

C Biomass from Waste

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. The technical potential for MSW is 58.5 GWh. At the moment there are no available data about the potential of the use of gas from landfills.

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 cleaned in a clarification plant. The technical potential is estimated at around 27 GWh/year.

Table 7: Biomass supply in 2011

Sector of origin		Amount of domestic resource [23]	Imported		Exported	Net amount	Primary energy production (ktoe)
			EU	Non-EU	EU/non-EU		
A) Biomass from forestry[24]:	*Of which:*						
	1. direct supply of wood biomass from forests and other wooded land for energy generation	295.89 m^3 (only firewood)					64.8
	Optional - if information is available you can further detail the amount of feedstock belonging to this category:: a) fellings b) residues from fellings (tops, branches, bark, stumps) c) landscape management residues (woody biomass from parks, gardens, tree rows, bushes) d) other (please define)						
	2. indirect supply of wood biomass for energy generation	45,506 m^3					8.1
	Optional - if information is available you can further detail: a) residues from sawmilling, woodworking, furniture industry (bark, sawdust) b) by products of the pulp and paper industry (black liquor, tall oil) c) processed wood-fuel d) post consumer recycled wood (recycled wood for energy generation, household waste wood) e) other (please define): - pellets - briquettes - charcoal - waste wood from construction industry						

[23] Amount of the resource in m^3 (if possible, otherwise in appropriate alternative units) for category A and its subcategories and in tonnes for categories B and C and their subcategories.

[24] Biomass from forestry should also include biomass from forest-based industries. Under the category of biomass from forestry processed solid fuels, such as chips, pellets and briquettes should be included in the corresponding subcategories of origin.

B) Biomass from agriculture and fisheries:	*Of which:*						
	1. agricultural crops and fishery products directly provided for energy generation						0.0
	Optional - if information is available you can further detail: a) arable crops (cereals, oilseeds, sugar beet, silage maize) b) plantations c) short rotation trees c) other energy crops (grasses) d) algae e) other (please define)						
	2. Agricultural by-products / processed residues and fishery by-products for energy generation	251 m^3					0.04
	Optional - if information is available you can further detail: a) straw b) manure c) animal fat d) meat and bone meal e) cake by–products (incl. oil seed and olive oil cake for energy) f) fruit biomass (including shell, kernel) g) fishery by product g) clippings form vines, olives, fruit trees h) other (please define)	251 m^3					0.04
C) Biomass from waste:	*Of which:*						
	1. Biodegradable fraction of municipal solid waste including biowaste (biodegradable garden and park waste, food and kitchen waste						0.0

	from households, restaurants, caterers and retail premises, and comparable waste from food processing plants) **and landfill gas**						
	2. Biodegradable fraction of industrial waste (including paper, cardboard, pallets)						0.0
	3. Sewage sludge						0.0

Please explain the conversion factor/calculation methodology used above for the conversion of the amount of available resources to primary energy.

For direct biomass supply was calculated the energy value of wood fuel: firewood – 2,549 kWh/m^3, and for indirect biomass supply – 2,059 kWh/m^3.

Please specify on what basis the biodegradable fraction of municipal solid waste and of industrial waste was calculated.

According to the Draft National Waste Management Plan for the period 2014-2020, the composition of municipal solid waste in Montenegro is: organic material 33.54%, paper/paperboard 12.48%, textiles 3.09% , glass 7.81%, metals 1.39%, plastics 9.69% and others 10.21%. The Draft national waste management plan for the period 2014-2020, specifies that Montenegro produced 492 kg/capita/year of waste and that quantity of biodegradable waste on annual level is 145,621t. The same plan envisages the study for production of energy from waste in Montenegro, which should suggest the most economical, environmental, transportation, energy and other requirements for construction of a plant for production of energy from waste.

In addition to the Draft national waste management plan for the period 2014-2020 (adoption is planned for the third quarter), the following documents were also used:

National Waste Management Policy (2004)

Strategic Master Plan for Waste Management in Montenegro (2005)

The National Waste Management Plan for the period 2008-2012. (2008),

Proposal waste management strategy (adoption is planned for the third quarter).

Table 7a: Estimated biomass domestic supply in 2015 and 2020

Sector of origin		2015		2020	
		Expected amount of domestic resource	**Primary energy production (ktoe)**	**Expected amount of domestic resource**	**Primary energy production (ktoe)**
A) Biomass from forestry:	**1. direct supply of wood biomass from forests and other wooded land for energy generation**	426,941 m^3	93,5	443,836 m^3	97,2
	2. indirect supply of wood biomass for energy generation (industry)	46,067 m^3	8,2	60,842 m^3	10,8
B) Biomass from agriculture and fisheries:	**1. agricultural crops and fishery products directly provided for energy generation**				
	2. Agricultural by-products / processed residues and fishery by-products for energy				

	generation				
C) Biomass from waste:	**1. Biodegradable fraction of municipal solid waste including biowaste** (biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants) **and landfill gas**		1.9		8.7
	2. Biodegradable fraction of industrial waste (including paper, cardboard, pallets)		0.0		0.0
	3. Sewage sludge		0.0		0

What is the estimated role of imported biomass up to 2020? Please specify the quantities expected (ktoe) and indicate possible import countries.

It is expected that the role of imported biomass will be on a very low level in 2020. If biomass will be imported than it will happen along the border to Serbia.

In addition to the information provided above, could you please describe the current situation of agricultural land used for dedicated energy production as follows:

Currently there is no usage of agricultural land for the application to use products or residues for energy production.

Table 8: Current agricultural land use for production of crops dedicated to energy in 2006

Agricultural land use for production of dedicated energy crops	Surface (ha)
1) Land used for short rotation trees (willows, poplars)	0.0
2) Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum	0.0

4.6.2 *Measures to increase biomass availability, taking into account other biomass users (agriculture and forest-based sectors)*

Mobilisation of new biomass sources

(a) Please specify how much land is degraded.

About 11,513 ha land is degraded (infertile land). (MONSTAT, Agricultural Census 2010)

(b) Please specify how much unused arable land there is.

Montenegro has about 33,212 ha unused arable land (MONSTAT, Agricultural Census 2010).

(c) Are any measures planned to encourage unused arable land, degraded land, etc. to be used for energy purposes?

Currently there is no intention to use arable land for energy purposes.

(d) Is energy use of certain already available primary material (such as animal manure) planned?

There is one energy authorization issued by the Ministry of Economy for construction of biogas power plant with a capacity of 526 kW using poultry waste for electricity production.

(e) Is there any specific policy promoting the production and use of biogas? What type of uses are promoted (local, district heating, biogas grid, natural gas grid integration)?

Besides the feed-in tariff for electricity produced from biogas there is no policy promoting the usage of biogas.

(f) What measures are planned to improve forest management techniques in order to maximise the extraction of biomass from the forest in a sustainable way?[25]: How will forest management be improved in order to increase future growth? What measures are planned to maximise the extraction of existing biomass that can already be put into practice?

According to the Biomass Action Plan for Montenegro that has been prepared under the Forestry Development of Montenegro (FODEMO) project, one of main objectives indicated is raising of importance of forestry in the energy sector through the optimization of production of woody biomass from forests in Montenegro. In order to use as much biomass resources as possible from the forest, it is necessary to allow accessibility by enabling forest roads, to raise the equipment level of forest owners and the contractors for logging, extraction, transport and preparation of biomass in various forms. It is important to connect producers of biomass in the forests to the forest owners associations and production chains, which would

[25] Recommendations can be found in the report issued by the Standing Forestry Committee ad hoc Working Group II in July 2008 on Mobilisation and efficient use of wood and wood residues for energy generation. The report can be downloaded at: http://ec.europa.eu/agriculture/fore/publi/sfc_wgii_final_report_072008_en.pdf

raise the economic effect of producers and reduce costs of the consumers, as well as have a great effect on the development of the rural environment. It is also important to raise the level of consultation for the efficient production and use of biomass.

Education of producers and users of biomass, as well as companies involved in the sale and installation of heating systems is of great importance since most systems on biomass are outdated and inefficient and there exists large potential for increasing the use of biomass in households and in the public sector.

In Montenegro, the biomass market is not optimally organized. The market organization may be improved through associations and networking of manufacturers of biomass, that might cover the needs of big consumers such as district heating systems on biomass for cities or major public facilities. A higher offer of various forms of biomass in the market will generate the demand for the biomass, which is much cheaper than fossil fuels.

Establishing the district heating systems on wood biomass, especially in public buildings, is stated also as one of main objectives. This can be achieved through a state system of green public procurement. Moreover, there are towns and villages, which are surrounded by forests, which still use fossil fuels for the direct heating of buildings. This particularly applies for public facilities. Heating with fossil fuels, especially with coal in some areas, causes poor air quality, especially during the heating season. An established district heating system on biomass will result in a long-term reduction in emissions, as well as reduce the cost of heating the building.

It is important to develop new policies that will increase the use of biomass in Montenegro in an economically viable way. This will be created especially through investments in district heating systems on biomass, support to manufacturers and their associations, and funds for implementation of energy efficiency measures and the transition to new heating systems in public buildings and households.

Impact on other sectors:

(a) How will the impact of energy use of biomass on other sectors based on agriculture and forestry be monitored? What are these impacts? (If possible, please provide information also on quantitative effects.) Is the monitoring of these impacts planned in the future?

Currently there is no official monitoring of the use of biomass for energy purposes. At the same time, along with defining the methodology of monitoring the wood biomass, the methodology for monitoring the use of biomass from agriculture should also be defined.

(b) What kind of development is expected in other sectors based on agriculture and forest that could have an impact on the energy use? (E.g. could improved efficiency/ productivity increase or decrease the amount of by-products available for energy use?)

In the case a decision is made for intensive forest management, there would be more wood mass available in wood industry sector, and it would consequently increase the percentage of wood residues that could be used to produce energy.

4.7 Planned use of statistical transfers between Member States and planned participation in joint projects with other Member States and third countries

Under this subchapter the expected use of cooperation mechanisms between Member States and Member States and third countries has to be decided. This information should draw on that provided in the forecast document referred to in Article 4(3) of the Directive 2009/28/EC.

Montenegro plans to achieve its objectives related to renewable energy sources by using domestic resources (except for the import of biodiesel). There is no planned use of statistical transfers or participation in joint projects, and for this reason, the issues in this section are not relevant.

5. Assessments

5.1 Total contribution expected of each renewable energy technology to meet the 2020 indicative objectives for the shares of energy from renewable resources in electricity, heating and cooling and transport

Electricity Sector

Electricity from renewable energy sources up to 2020 will be produced mainly from hydro power plants (large and small) and wind farms. In addition, photovoltaic plants and technologies that convert biomass into electricity, will be represented but with much smaller share.

In the next two to three years, realization of a larger number of projects is expected, mainly small hydro power plants and two wind power plants (WPP Mozura and WPP Krnovo).

In 2020 in the production of electricity from renewable energy sources, the following share of renewable energy sources is foreseen: 81.5% large and small hydro power plants, 13.8% wind power plants, 4% power plants on biomass and 0.7% solar power plants.

Regarding hydro power plants, by 2020 a total of 90 MW new generating capacity should be put into operation. Wind farms are becoming an increasingly important source of renewable electricity with an increasing share of production. The Government of Montenegro has also recognized the importance of wind as a renewable source and, according to the Energy Development Strategy, by 2020 about 150 MW of wind power plants is planned to be put into operation. About 29 MW of new biomass plant (solid biomass and biogas) capacity and 10 MW of solar capacity is forecast to be built. For these new facilities there are no technical obstacles in terms of connecting to the grid. Part of the new facilities using renewable energy sources refers to plants for which incentives are provided, and the other part may search for funding from international financial institutions or the EU funds.

The number of assumed full load operating hours used for calculation of GWh in the Tables 10a and 10b is: wind farms – 2300 hours, solar power plants – 1650 hours, large hydro power plants – 2300 hours, small hydro power plants – 3200 hours.

Heating and cooling sector

The total amount of renewable energy for heating and cooling (Table 11) in 2020 will be 121.5 ktoe.

Solid biomass, with a share of 89% in 2020, will play a major role in the total energy from renewable sources in energy production for heating and cooling. Solid biomass includes woody biomass and biomass from agriculture. Almost all (82%) of the total consumption of biomass for heating and cooling is expected to be spend in the general consumption (households, services, agriculture, construction).

Transport sector

The total amount of renewable energy in transport (Table 12) in 2020 will be about 22 ktoe.

Renewable energy consumed for transport in 2020 will consist mainly of biofuels energy (8%), while the remaining (2.2%) of share will be from electricity, which will not be used in road transport by 2020.

It is anticipated that all biofuels will refer to biodiesel.

Table 10.a: Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in Montenegro to meet the 2020 indicative objectives the shares of energy from renewable resources in electricity 2009-2014

	2009		2010		2011		2012		2013		2014	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:	635.7	1684.6	635.7	1684.6	635.7	1684.6	635.7	1684.6	635.7	1684.6	636.7	1686.6
<1MW	0	0	0	0	0	0	0	0	0	0	0	0
1MW–10 MW	8,7	18,6	8,7	18,6	8,7	18,6	8,7	18,6	8,7	18,6	9,7	20,6
>10MW	627	1666	627	1666	627	1666	627	1666	627	1666	627	1666
Of which pumping	0	0	0	0	0	0	0	0	0	0	0	0
Geothermal	0	0	0	0	0	0	0	0	0	0	0	0
Solar:	0	0	0	0	0	0	0	0	0	0	1,5	2,5
photovoltaic	0	0	0	0	0	0	0	0	0	0	1,5	2,5
concentrated solar power	0	0	0	0	0	0	0	0	0	0	0	0
Tide, wave, ocean	0	0	0	0	0	0	0	0	0	0	0	0
Wind:	0	0	0	0	0	0	0	0	0	0	46	105.8
onshore	0	0	0	0	0	0	0	0	0	0	46	105.8
offshore	0	0	0	0	0	0	0	0	0	0	0	0
Biomass:	0	0	0	0	0	0	0	0	0.4	1.1	6.4	19.5
solid	0	0	0	0	0	0	0	0	0	0	6	18.4
biogas	0	0	0	0	0	0	0	0	0.4	0.4	0.4	1.1
bioliquids[26]	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	635.7	1684.6	635.7	1684.6	635.7	1684.6	635.7	1684.6	635.7	1684.6	636.7	1686.6
of which in CHP	0	0	0	0	0	0	0	0	0	0	0.0	0.0

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

Table 10.b: Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in Montenegro to meet the 2020 indicative objectives and the indicative interim trajectory for the shares of energy from renewable resources in electricity 2015-2020

	2015		2016		2017		2018		2019		2020	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:	660.5	1781	744	1789	752.8	1813	821.3	1999	826	2012	826	2050
<1MW	4.5	14	4.5	14	6.8	20.3	11.2	35.1	11.2	35.1	11.2	35.1
1MW-10 MW	29	88	32	96	38.5	113.7	81.6	238.9	86.3	251.9	86.3	251.9
>10MW	627	1679	707.5	1679	707.5	1679	728.5	1725	728.5	1725	728.5	1763
Of which pumping	0	0	0	0	0	0	0	0	0	0	0	0
Geothermal	0	0	0	0	0	0	0	0	0	0	0	0
Solar:	3.2	5.3	6	9.9	7	11.6	8	13.2	9	14.9	10	16.5
Photovoltaic	3.2	5.3	6	9.9	7	11.6	8	13.2	9	14.9	10	16.5
Concentrated solar power	0	0	0	0	0	0	0	0	0	0	0	0
Tide, wave, ocean	0	0	0	0	0	0	0	0	0	0	0	0
Wind:	0	0	0	0	118	271.4	125.5	288.6	125.5	288.6	151.2	347.8
Onshore	0	0	0	0	118	271.4	125.5	288.6	125.5	288.6	151.2	347.8
Offshore	0	0	0	0	0	0	0	0	0	0	0	0
Biomass	7	22.5	9.4	31.3	14.1	46.6	17.7	58.5	19.1	63.5	29.3	101
solid	4.8	15.5	7.2	23.7	10.2	33.8	12.6	42.2	12.8	43.7	22.4	81.2
biogas	2.2	7	2.2	7.6	3.9	12.8	5.1	16.3	6.3	19.8	6.9	19.8
bioliquids[27]	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	670.7	1808.8	759.4	1830.2	891.9	2142.6	972.5	2359.3	979.6	2379	1016.5	2515.3
of which in CHP	0.1	0.6	0.2	0.84	0.2	1.08	0.3	1.32	0.4	1.68	10.5	40.2

[27] See footnote 24.

Table 11 Estimation of total contribution (final energy consumption[28] expected 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 2009- 2020

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Geothermal (excluding low temperature geothermal heat in heat pump application)	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0.7	0.7	1.0	1.2	1.4	1.7	2.1	2.4	2.9	3.3
Biomass	59.7	59.8	72.9	81.3	88.9	91	101.7	101.4	104.7	104.8	105.9	108
Solid	59.7	59.8	72.9	81.3	88.9	91	101.7	101.4	104.7	104.8	105.9	108
Biogas	0	0	0	0	0	0	0	0	0	0	0	0
bioliquids[29]	0	0	0	0	0	0	0	0	0	0	0	0
Renewable energy from heat pumps:	1.5	2.2	2.4	2.8	3.7	5.1	6.4	7.1	7.9	8.7	9.6	10.2
-of which aerothermal	1.2	1.8	1.9	2.1	2.6	3.8	4.3	4.8	5.4	6.1	6.7	7.2
-of which geothermal	0.3	0.4	0.5	0.7	1.1	1.3	2.1	2.3	2.5	2.6	2.9	3
-of which hydrothermal	0	0	0	0	0	0	0	0	0	0	0	0
Total	61.2	62	76	84.8	93.6	97.3	109.5	110.2	114.7	115.9	118.4	121.5
Of which DH[30]	0	0	0	0	0	4.1	5.5	7.2	9.2	10.8	12	12.6
Of which biomass in households[31]	58.9	58.7	71.8	78.2	85.3	87.4	92.6	91.8	91.3	90.4	89.7	88.3

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

[29] Take into account only those complying with the sustainability criteria (cf. Article 5(1) last subparagraph of Directive 2009/28/ec).

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

[31] From the total renewable heating and cooling consumption

Table 12: Estimation of total contribution expected 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 2009- 2020

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol/ bio-ETBE	0	0	0	0	0	0	0	0	0	0	0	0
Of which bioflues[32] Article 21(2)	0	0	0	0	0	0	0	0	0	0	0	0
Of which imported[33]	0	0	0	0	0	0	0	0	0	0	0	0
Biodiesel	0	0	0	1.4	5.0	5.2	6.8	8.7	10.9	13.1	15.3	17.2
Of which Biofuels Article([1]) 21(2)	0	0	0	0	0	0	0	0	0	0	0	0
Of which imported[34]	0	0	0	1.4	5.0	5.2	6.8	8.7	10.9	13.1	15.3	17.2
Hydrogen from renewables	0	0	0	0	0	0	0	0	0	0	0	0
Renewable electricity	1.3	1.6	2.8	3.0	3.4	3.7	3.9	4.1	4.3	4.4	4.6	4.8
Of which road transport	0	0	0	0	0	0	0	0	0	0	0	0
Of which non- road transport	1.3	1.6	2.8	3.0	3.4	3.7	3.9	4.1	4.3	4.4	4.6	4.8
Others (as biogas, vegetable oils etc) – please specify	0	0	0	0	0	0	0	0	0	0	0	0
Of which Biofuels ([1]) Article 21(2)	0	0	0	0	0	0	0	0	0	0	0	0
Total	1.3	1.6	2.8	4.4	8.4	8.9	10.7	12.8	15.2	17.5	19.9	22

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

[33] From the whole amount of bioethanol/ bio- ETBE

[34] From the whole amount of biodiesel

5.2 Total contribution expected from energy efficiency and energy saving measures to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport.

The method for efficient use of energy, measures to improve energy efficiency and other issues important for energy efficiency are governed by the Law on Energy Efficiency. According to the Law on Energy Efficiency, energy efficiency policy and the activities on improving energy efficiency are defined in the Energy Efficiency Strategy that is implemented through 3-year Energy Efficiency Action Plans.

One of the priority requirements of Directive 2006/32/EC on energy end-use efficiency and energy services is the obligation related to the definition of an indicative energy savings target. An indicative target is a planned saving of final energy consumption in Montenegro, which is expressed in absolute terms in GWh or in an equivalent unit and in percentages relative to the average final energy consumption. In order to meet this obligation the Government of Montenegro adopted a Decision on indicative energy savings target on April 2011 (Official Gazette of Montenegro no 48/11). An indicative target is set at 58.9 ktoe or 9% of final primary energy consumption in Montenegro. This indicative target is established for the nine-year period 2010-2018 and is calculated on the basis of data for final energy consumption from the five-year 2002-2006, according to the Methodology developed by the Ministry of Economy and following recommendations made by Directive 2006/32/EC (Official Gazette of Montenegro no 18/11).

Households

According to the scenario provided in the Energy Development Strategy, households will represent 23% of final energy consumption (or 12.6 PJ) in 2018. The policy of energy efficiency in the household sector is based on a package of instruments covering various aspects of household energy consumption. The package of instruments aims to increase public awareness of energy use and potential energy savings, provide incentives to encourage citizens to implement energy efficiency measures in their homes and to regulate the energy performance of buildings during construction and reconstruction.

Energy saving measures in households include: info campaigns, additional education and training, energy labeling of household appliances and adoption of energy standards, individual metering of energy, a program of financial support to natural entities for the investment in solar thermal systems and modern biomass systems, and the implementation of energy efficiency measures and energy renovation plan for residential buildings.The means to implement these measures consist of awareness campaigns, provision of incentives including soft loans, technical assistance and advice.

Expected energy savings in 2018 in the household sector are 1.1 PJ.

Services

The service sector includes commercial and public services. The share of the service sector in the total energy consumption in 2018 is about 11% (or 6 PJ).

The package of energy efficiency measures in the service sector includes: development of energy management in the public sector; establishment and implementation of energy efficiency criteria in public procurement of goods and services, as well as the purchase and lease of buildings; improving the energy performance of buildings in the public sector; implementation of measures to improve energy efficiency in public utilities of local governments and other public companies (demand side); establishment of energy management in commercial services; program of encouraging the use of solar energy in the tourism sector; development of mechanisms for improving the energy performance of commercial non-residential buildings etc.

Expected energy savings in 2018 in the service sector are 0.78 PJ.

Industry

Industry will represent about 36% of total final energy consumption in 2018 (or 19.9 PJ).

Industry sector records a decrease of 50 % in energy consumption in the period from 2009 to 2011 due to reduced production in alluminum plant and steel plant. Establishment of energy management in industry represents an important measure and the first step toward systematic and gradual work on improving energy efficiency at all levels in this sector.

Expected energy savings in 2018 in the industrial sector are forecasted to be 0.48 PJ.

Transport

The transport sector is forecasted to represent about 30% of total final energy consumption (16.4 PJ) in 2018.

A package of energy efficiency measures to reduce energy consumption in transport includes: a scheme for the introduction of energy efficiency and environmental criteria in transport infrastructure investments; establishment and implementation of energy efficiency criteria in public procurement of vehicles and transport services in the wider public sector; infrastructure measures in the transport sector with the effects of energy savings; information campaigns on energy efficiency behavior in traffic; public campaigns for raising general awareness to purchase energy efficient vehicles, vehicles based on alternative fuels, efficient vehicle maintenance, energy conscious driving, switching from private cars to walking and bicycles for short distances and to public transport for medium to long distance transportation, etc.

Expected energy savings in 2018 in the transport sector are 1.1 PJ.

The total expected contribution from energy efficiency and energy saving measures to meet the binding 2020 targets and trajectories for the share of energy from renewable energy sources in the production of electricity, heating and cooling, and transport are shown in the Table 1, Chapter 2.

5.3 Assessment of the impacts

The estimated costs of measures encouraging the use of renewable sources in electricity production by technology is shown in Table 13.

Table 13: Estimated costs of measures encouraging the use of renewable sources in electricity production (EUR):

Technology	2014	2015	2016	2017	2018	2019	2020
Wind farms	0	0	0	29,341,486	31,825,026	32,461,526	39,902,707
Biomass plants	0	2,300,222	3,587,457	5,218,614	6,645,859	7,019,728	13,304,392
Biogas plants	0	1,136,554	1,258,652	2,162,232	2,808,536	3,479,828	3,549,425
Solar PP	0	860,534	1,639,560	1,959,523	2,274,398	2,618,659	2,957,854
Hydro PP	208,800	7,229,236	8,059,764	11,913,222	24,626,213	26,251,966	26,777,005
TOTAL	208,800	11,526,545	14,545,433	50,595,076	68,180,031	71,831,707	86,491,383

Costs presented in Table 13 relate to the estimated total incentives to be paid by 2020, according to the projected development of projects and movement of incentive prices to be paid for already contracted and future projects up to 2020, by applying an envisaged increase in the consumer price index of 2% per year, every year. The projected installed capacity of renewable energy technologies by the year 2020 is presented in Tables 10a and 10b.

The average (incentive) purchase price of electricity produced from renewable sources, for each year is shown in Table 14.

Table 14: The average purchase price of electricity from renewable sources by year

Year	Average purchase price (EUR/MWh)
2014	104.40
2015	105.22
2016	108.91
2017	109.14
2018	107,49
2019	109,83
2020	114,97

It is important to note that the total cost, as shown in Table 13, only applies to the period up to 2020. Since the contracts with privileged producers on the purchase of complete production at guaranteed prices are signed for a period of 12 years, this means that after 2020 financing the incentive price should be continued.

Contribution to reducing emissions of greenhouse gases

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 in 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 CO_2 emissions due to the use of renewable energy instead of fossil fuels. The avoided emissions is 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 this Action Plan, is replaced by fossil fuels and their respective CO_2 emissions.

Considering the individual sectors, in the production of electricity from renewable energy sources, a comparison has been made with fossil fuel power plants. CO_2 emissions from the TPP Pljevlja 1 are estimated in the calculation at 3217 kt, of which the replacement of large hydro power plants with fossil fuels adds 2255 kt CO_2. Avoided CO_2 emission from transport is determined by the difference of emissions from diesel fuel and biodiesel in the amount of 51.7 kt. Reduced CO_2 emissions from the heating and cooling sector assumes the use of fuel oil instead of renewable energy and amounts 377 kt.

The expected reduction of greenhouse gas emissions, with the aforementioned assumptions, amounts to 364.6 kt in 2020, which is about 91,4% of the total emissions of greenhouse gases in Montenegro.

Expected job creation

The ability to create new jobs as a result of a greater use of renewable energy is not specifically analyzed for Montenegro, but practically all renewable energy projects that will be in the incentive system are invested and built by the private sector. However, it is not expected that there will be significant progress in the use of domestically manufactured technologies and related creation of jobs. There is no domestic production of wind turbines and they will be imported. Only a small part of the investment in wind power will enter the financial flow of Montenegro. Biomass, biogas and landfill gas projects generally contribute to a much greater extent in job creation and mobilization of the forestry and agriculture sector, wood processing industry and waste management, as well as in direct function of development of the heating systems, thus contributing to the cohesion policy at the local level. Wider use of this potential by 2020 is expected to open a number of direct and indirect job positions. Use of hydro potential with regard to the tradition of the domestic industry also provides a sustainable development of the sector. Regarding the use of solar energy, heat pumps, micro-cogeneration plants, particularly in terms of increasing energy efficiency in buildings, it is considered to be the most propulsive sector that will through the use of smart grid, locating production to point of consumption through targeted installations and investments in public and private sector, contribute to the creation of more jobs in manufacturing of equipment, installation and its maintenance.

5.4 Preparation of the National Renewable Energy Action Plan and the follow- up of its implementation

(a) How were regional and/ or local authorities and/or cities involved in the preparation of this Action Plan? Were other stakeholders involved?

This National Renewable Energy Action Plan is based on the Energy Development Strategy of Montenegro as specified in Article 17 of the Law on Energy. The strategy was developed following extensive consultation with local self-government units, other public groups, the private sector and members of the public.

(b) Are there plans to develop regional/ local renewable energy strategies? If so, could you please explain? In case relevant competences are delegated to regional/ local levels, what mechanism will ensure national target compliance?

Article 11 of the Law on Energy specifies that local government authorities shall plan measures for the use of renewable energy in a local energy plan in accordance with the Energy Development Strategy and programs for development and use of renewable energy sources. These shall be adopted for a period of 10 years. Local authorities are required to submit an annual report on the implementation of energy plans to the Ministry of Economy, so as to ensure their compliance with national objectives.

(c) Please explain the public consultation carried out for the preparation of the Action Plan.

As already mentioned, this Action Plan is based on the Energy Development Strategy of Montenegro, which was developed following an extensive consultation with local self-government units, other public groups, the private sector and members of the public.

(d) Please indicate your national contact point/ the national authority or body responsible for the follow up of the Renewable Energy Action Plan?

The national contact points responsible for follow up of the Renewable Energy Action Plan will be the Energy Regulatory Agency and the Ministry of Economy.

(e) Do you have a monitoring system, including indicators for individual measures and instruments, to follow up the implementation of the Renewable Energy Action Plan? If so, could you please give more details on it?

The Ministry of Economy (Directorate for Energy/Department for Renewable Energy Sources) is ultimately responsible for monitoring the implementation of the Renewable Energy Action Plan. Article 18 of the Law on Energy 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. Furthermore, the Energy Regulatory Agency is tasked with conducting an independent annual analysis of the contribution of renewable energy sources to the gross generation and consumption of electricity and publishing its results. This analysis will be a valuable tool in our quest to ensure that this Action Plan is swiftly implemented.