

MINISTRY OF ECONOMY

**SECOND MACEDONIAN PROGRESS REPORT ON THE
PROMOTION AND USE OF ENERGY FROM
RENEWABLE SOURCES**

**under Article 22(1) of Directive 2009/28/EC
on the promotion of the use of energy from renewable sources**

December 2016

INTRODUCTION

Increasing the share of the energy from renewable energy sources (RES) in the total energy consumption is one of the major strategic objectives of the Government of the Republic of Macedonia. This is very important for ensuring stable energy supply and energy security, thus creating conditions for sustainable development of the energy sector in the country within the regional and global sustainable energy development.

The policy for utilization of renewable energy sources is strategically set in the Strategy for utilization of RES in the Republic of Macedonia until 2020 and Action Plan for Renewable Energy Sources until 2025 with the vision until 2030.

The Energy Law determines measures and activities which will provide conditions for transposing and implementing the part of the Directive 2009/28/EC of the European Parliament. In the area of renewable energy sources a number of sub laws document were adopted in the previous period in order to create conditions for promotion of renewable energy sources and greater participation of them in the final energy consumption.

In accordance with the decision of the Ministerial Council of the Energy Community, Republic of Macedonia should transpose the Directive 2009/28 on the promotion of RES. Therefore during previous period the first draft Law on Energy and Draft Law on biofuels was prepared in which provision from the Directive 2009/28 are implemented.

In accordance with the Article 15 from the Decision (2012/ 04/ EnMC) Ministry of Economy prepared the First Macedonian Progress Report on the Promotion and Use of Energy from RES in 2014. This is the second Report and it was developed in accordance with the template recommended by the European Commission, under Article 22(1) of Directive 2009/28/EC.

The energy consumption and production data for 2014 and 2015, are taken from the Energy yearly balances for 2014 and 2015, published by the State Statistical Office on Oct 19, 2016 and Oct, 20 2016, respectively. In the Energy balances, the final data for 2014 and preliminary data for 2015, are presented. Furthermore, the State Statistical Office, was used as a source of data for the installed capacity. Some part of the installed capacity data was covered from the annual reports for 2014 and 2015 from the Energy Regulatory Commission.

1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years(n-1; n-2 e.g. 2015 and 2014) (Article 22 (1) a of Directive 2009/28/EC).

Please fill in the actual shares and actual consumption of renewable energy **for the preceding 2 years** in the suggested tables.

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

	2015 Year n-1	2014 Year n-2
RES-H&C ² (%)	35.8%	35.2%
RES-E ³ (%)	21.9%	19.6%
RES-T ⁴ (%)	0.1%	0.1%
Overall RES share ⁵ (%)	19.9%	19.7%
Of which from cooperation mechanism ⁶ (%)		
Surplus for cooperation mechanism ⁷ (%)		

Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)⁸

	2015 Year n-1	2014 Year n-2
(A) Gross final consumption of RES for heating and cooling	246.24	241.84
(B) Gross final consumption of electricity from RES	151.19	138.37
(C) Gross final consumption of energy from RES in transport	0.32	0.31
(D) Gross total RES consumption ⁹	397.75	380.53
(E) Transfer of RES to other Contracting Parties or Member States		

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

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

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

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

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

⁶ In percentage point of overall RES share.

⁷ In percentage point of overall RES share.

⁸ Facilitates comparison with Table 4a of the NREAPs

⁹ 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.

(F) Transfer of RES <u>from</u> other Contracting Parties and 3rd countries		
(G) RES consumption adjusted for target (D)-(E)+(F)		

Table 1.b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in [Macedonia] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity¹⁰

	2015 Year n-1		2014 Year n-2	
	MW	GWh	MW	GWh
Hydro ¹¹ :	657.3	1,594.8	577.9	1,524.2
non pumped	657.3	1,865.2	577.9	1,206.7
<1MW	95.6		16.2	
1MW–10 MW			53.7	
>10MW	561.7		561.7	
pumped				
mixed ¹²				
Geothermal				
Solar:	16.66	22.60	14.75	14.38
photovoltaic	16.66	22.60	14.75	14.38
concentrated solar power				
Tide, wave, ocean				
Wind:	36.80	120.77	36.80	70.63
onshore	36.80	120.77	36.80	70.63
offshore				
Biomass ¹³ :	4.00	20.22	0.00	0.00
solid biomass				
biogas	4.00	20.22		
bioliquids				
TOTAL	714.8	1,758.4	629.5	1,609.3
of which in CHP				

Table 1c: Total actual contribution (final energy consumption¹⁴) from each renewable energy technology in [Macedonia] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)¹⁵

	2015 Year n-1	2014 Year n-2
Geothermal (excluding low temperature geothermal heat in heat pump applications)	7.4	6.2
Solar		
Biomass ¹⁶ :	238.9	235.6
solid biomass	238.9	235.6
Biogas		
Bioliquids		
Renewable energy from heat pumps:		
- of which aerothermal		
- of which geothermal		
- of which hydrothermal		
TOTAL	246.2	241.8
Of which DH ¹⁷		

¹⁰ Facilitates comparison with Table 10a of the NREAPs.

¹¹ Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

¹² In accordance with new Eurostat methodology.

¹³ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) of Directive 2009/28/EC last subparagraph.

¹⁴ Direct use and district heat as defined in Article 5.4 of Directive 2009/28/EC.

¹⁵ Facilitates comparison with Table 11 of the NREAPs.

¹⁶ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

<i>Of which biomass in households¹⁸</i>	228.0	224.4
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Table 1d: Total actual contribution from each renewable energy technology in [Macedonia] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)^{19, 20}

	2015 Year n-1	2014 Year n-2
Bioethanol/ bio-ETBE		
<i>Of which Biofuels²¹ Article 21.2</i>		
<i>Of which imported²²</i>		
Biodiesel	0.32	0.31
<i>Of which Biofuels²³ Article 21.2</i>		
<i>Of which imported²⁴</i>		
Hydrogen from renewables		
Renewable electricity		
<i>Of which road transport</i>		
<i>Of which non-road transport</i>		
Others (as biogas, vegetable oils, etc.) – please specify		
<i>Of which Biofuels²⁵ Article 21.2</i>		
TOTAL	0.32	0.31

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

¹⁷District heating and / or cooling from total renewable heating and cooling consumption (RES- DH).

¹⁸From the total renewable heating and cooling consumption.

¹⁹For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

²⁰Facilitates comparison with Table 12 of the NREAPs.

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

²²From the whole amount of bioethanol / bio-ETBE.

²³Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

²⁴From the whole amount of biodiesel.

²⁵Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

Table 2: Overview of all policies and measures

<i>Name and reference of the measure</i>	<i>Type of measure*</i>	<i>Expected result**</i>	<i>Targeted group and or activity***</i>	<i>Existing or planned****</i>	<i>Start and end dates of the measure</i>
Grid rules	Regulatory	Procedure for connection of the producer is more transparent, simplified, shortened, and technical criteria are defined with greater precision thus removing possibilities for ambiguity and different interpretation	RES Electricity Producers	Existing	2014
Amendments to the Law on Urban and Spatial Planning	Regulatory (Primary legislation)	One of the most complicated and time-consuming procedures within the RE investment process shortened and facilitated	Investors in certain RE technologies (SHPP), planners, architects, public administration	Existing	2014-2015
Amendments to the Law on Construction	Regulatory (Primary legislation)	Shortening and simplifying the administrative procedures	Investors RE, Public administration	Existing	2014-2016
Support schemes for installation of thermal collector systems in households	Financial	Increased share of RES, increased public awareness, increased environmental protection	Households	Existing	2014- 2016
Amendments to the Law on Construction Land	Regulatory (Primary legislation)	Accelerating the administrative procedures	Investors RE, Public administration	Existing	2015
Law on Agriculture Land	Regulatory (Primary legislation)	Shortening and simplifying the administrative procedure for agriculture land conversion	Investors RE, Public administration	Existing	2015
Law on Forests	Regulatory (Primary legislation)	Simplifying the administrative procedure for forests conversion	Investors RE, Public administration	Existing	2015
Guidelines for	Soft measure	Simple and up	Investors in	Existing	2015

investors in RE		to date information on all legal aspects related to investments in RE for the potential investors.	RE technologies, public administration		
Revision of the National Renewable Energy Action Plan	Regulatory	Increased RES share, improved utilization of RES,	Public administration	Existing	2016
Amendments to the VAT Law	Regulatory (Primary legislation)	Increased share of RES, increased public awareness, increased environmental protection	Households, businesses	Existing	2016
Programme of the city of Skopje for subsidizing households for purchasing pellet stoves	Financial	Increased share of RES, increased public awareness, increased environmental protection	Households, Businesses	Existing	2016
Energy Law changes, harmonization with the Directive (third package RES Directive)	Regulatory (Primary legislation)	Clear rules for energy sector	Energy sector stakeholders	Planned/in process of preparation	2017
Package of secondary legislation harmonized with the RES Directive	Secondary legislation	Clear rules for energy sector	Energy sector stakeholders	Planned/in process of preparation	2017
Law on biofuels	Regulatory (Primary legislation)	Clear rules for biofuels	Energy sector stakeholders connected with biofuels	In process of preparation	2017
National Biofuel Action Plan	Secondary legislation	Setting the annual share of biofuels to be attained in the total fuels for transport quantities	Refineries and distribution companies of oil derivatives	In process of preparation	2017
Credit lines for promotion of the RES and EE	Financial	Increase share of RES	Investors in RES and EE projects	Existing	
Programme for reimbursement of the costs for purchased and installed solar thermal collector systems in households and for	Financial	Increased share of RES, increased public awareness, increased environmental	Households	Existing	2017

reimbursement of the cost of purchased and installed PVC or aluminium windows in households		protection			
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* Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).

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

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

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

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

Macedonia is continuing its efforts to improve the legal framework in order to improve the administrative procedures for development of the renewable energy (RE) projects, thus encouraging investments in renewable energy sources (RES).

Based on most of the studies and analysis conducted in this respect, land titles, procedures for obtaining the construction permits and adoption or amendment of the urban plans have been identified as biggest issues and barriers to development of RE projects.

Therefore amendments to the respective legislation and new law have been adopted aimed at shortening the deadlines, reducing the number of documents that need to be submitted and number of procedures that need to be followed by the investors in RES.

Ministry of Economy prepared brochures - Guidelines for procedures for development and construction of a plant for production of electricity from renewable energy sources from SHPP, wind power plants, photovoltaic power plants, biomass power plants and biogas. These Guidelines are aimed at providing step-by-step instructions to investors in the process of developing and implementing renewable energy projects in the Republic Macedonia, and they are structured in three parts:

- first part - review of the applicable feed-in tariffs (FIT) for all renewable energy projects, including the FIT.
- second part - a step-by-step diagram of the development procedures and documents necessary.
- third part - detailed review of the relevant procedures and requirements for the development, commissioning and functioning of plants.

At the end of the brochure there is a list of the relevant authorities/institutions with their addresses and contact details and a list of all relevant laws and other regulatory acts. The Guidelines have been prepared in Macedonian, Albanian and English, and have been published and posted on the website of the Ministry of Economy²⁶.

²⁶http://archive.economy.gov.mk/ministerstvo/sektori_vo_ministerstvo/sektor_za_energetika/4544.html

On the web site of the Energy Regulatory Commission there is a chart explaining the procedure for obtaining the license and status of a preferential producer.

With the support from the USAID funded project – Clean Energy Investment Project, thematic training sessions were organized for representatives of the local authorities – municipalities to increase their capacities with respect to implementation of the legal and administrative procedures related to RES. The main objective of the workshops was to enable smooth implementation of the latest changes in the legislation and procedures relating to RE investment and eliminate burdens for RES investors, having in mind the important role that the local authorities have when it comes to implementing policies and procedures mainly related to land issues and permits during the process of RES investment.

In 2014, the Ministry of Transport and Communication (MoTC) drafted new or substantial amendments to the following laws that were enacted and / or entered into force in 2015, which simplify and modernize the administrative procedures for investments in RE:

- Law on Spatial and Urban Planning (enacted by the Parliament on December 31, 2014 and entered into force on March 1, 2015)
- Construction Law (several set of amendments during 2014-2016)
- Law on Construction Land (enacted by the Parliament on January 31, 2015 and entered into force on July 1, 2015)

The Law on Spatial and Urban Planning now clearly stipulates that infrastructure projects (project for infrastructure: urban –design documentation) can be used for locations planned for constructing power plants, which is quite beneficial for the RE investors taking into account that this type of urban plan is simpler and can be approved in a much shorter timeframe than the traditional urban plans. It is now precisely determined in the Construction Law that a construction permit is only needed when the PV panels are installed on construction land, while an investor who wants to install PV panels on buildings will go through a much simplified procedure in front of the municipal authorities. The new Law on Construction Land introduced electronic system for management of the construction land, which is mandatory for use as of 1 August 2016, and it is expected that it will accelerate the administrative procedures to a great extent.

These laws, as well as the Law on Agriculture Land and the Law on Forests for which the Ministry of Agriculture, Forestry and Water Economy is the responsible drafter, were also amended to align with the new Law on General Administrative Procedure. The modifications foresee possibility for electronic means of communication to be used in the administrative procedures, as well as documents supporting the applications to be obtained *ex officio* by the responsible public institutions.

Law on biofuels

Ministry of Economy developed the draft version of the Law on Biofuels. The first draft version of the Law has been delivered to the Secretariat for Legislation, for review and comments. Based on the feedback, the draft Law has been edited, and it is planned to be adopted in the 2017.

According to the law, and in order to stimulate the production and use of biofuels in transport, the Government, based on a proposal of the Ministry of Economy, should adopt a National Action Plan on biofuels for a period of ten years. The draft National Action plan has been prepared with support from the IPA project, and it is planned to be adopted in 2017.

In order to successfully transpose the provisions related to biofuels, a Workshop on sustainability criteria for biofuels under the Directive 2009/28 was organized in Skopje by the Secretariat of Energy Community on October 31, 2014.

In the upcoming period secondary regulations aimed at implementing the Law on Biofuels will be developed and adopted.

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

The Energy Law is the primary legislation that governs the transmission and distribution of electricity, as well as the market and grid codes, meaning those codes are adopted in line with the requirements set in the Energy Law.

Determining the electricity system's absorption capacity for particular types of RES is a complex procedure and implies complex technical and economic analyses. From the pool of renewable energy sources, wind and solar energy are characterized by highest intermittent occurrence and most often their relevant shares are subject to limitations. In general, there are no major problems related to other technologies (characterized by a relatively high intermittence).

Transmission and distribution of electricity generated by preferential RE Producers is guaranteed. The Transmission and Distribution System Operators must transmit all the power from RES delivered to the grid, and the Market Operator must purchase all the energy delivered to the grid by RE Producers that have been granted preferential status at the approved feed-in tariff as stated in Article 153 of the Energy Law.

According to the Energy Law (Article 122), transmission and/or distribution system operators are obliged to allow access to the relevant system in a transparent and objective manner that prevents discrimination of system users. Further, the electricity transmission or distribution system operators must provide priority access to electricity systems for the electricity generated from renewable sources, taking due consideration of technical limits on the electricity system.

Preferential RE Producers operate in parallel with the market in the sense that the Market Operator is required to purchase all power delivered to the grid at the approved feed-in tariff. In this sense, RE Producers are not dispatched, but rather run when the primary energy source (i.e., wind, water, solar radiation, etc.) and production facilities are available.

RE Producers produce energy for use in the market, thus displacing generation using non-renewable resources, but do not actually participate in the market owing to the guarantees relating to access, dispatch and purchase of the energy they deliver to the grid.

According to the Market Rules (Chapter Balance Responsibility), preferential electricity producers have privilege of being released from the balance responsibility (paying penalties for deviations from the generation schedules).

In other words, they can produce electricity at any time and at any amount, and this electricity will be taken over, paid for, and no system control and balancing charges will apply.

With regard to dispatch, the only requirements placed on RES Producers are if obtaining the status of a preferential producer:

- to sell the electricity generated to the electricity market operator, pursuant to its electricity purchase contract;
- to submit its electricity generation plans to the electricity market operator;
- to operate in compliance with the terms and conditions stipulated in the Decree on electricity feed-in tariffs

Under the Energy Law, it is explicitly stated that network charges are paid by consumers, as follows: The electricity transmission system use charge shall be settled by electricity consumers in the Republic of Macedonia, pursuant to the published tariff.

The electricity transmission system operator shall invoice the system use charge to:

- consumers directly connected to the electricity transmission system which act independently on the electricity market;
- suppliers or traders, for the consumers directly connected to the electricity transmission system, who do not act independently on the electricity market;
- electricity distribution system operators or electricity suppliers, for the consumers connected to the electricity distribution systems.

Energy Regulatory Commission determines the tariffs for both, transmission and distribution networks. Both tariffs, for transmission and distribution are cost reflective. All costs related to usage of both networks in accordance with the tariffs are paid by the final customers. With this model all electricity producers including RES producers, are excluded from the costs associated with the networks.

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

*It is suggested that **table 3** is used to provide more detailed information on the support schemes in place and the support levels applied to various renewable energy technologies. Contracting Parties are encouraged to provide information on the methodology used to determine the level and design of support schemes for renewable energy.*

Support schemes for installation of solar panels

Ministry of Economy continued with implementation of the program to stimulate the use of solar energy in the country, by providing subsidies through reimbursement of part of the cost for purchased and installed solar thermal collector systems in households. During 2014, 2015, and 2016 total of 1822 households were reimbursed by the Ministry of Economy.

In October 2016, Ministry of Economy adopted a Programme for reimbursement of the costs for purchased and installed solar thermal collector systems in households and for reimbursement of the cost of purchased and installed PVC or aluminium windows in households for 2017. Funds for implementation of this programme in amount of 36,000,000,00 MKD or around 590.000 EUR will be allocated from the state budget.

Support schemes for pellets stove

In 2016, in order to support the usage of pellets and pellets stove, the Government adopted a decision reducing the VAT rate for pellets from 18% to 5%. This measure will be in force starting from January, 1 2017

Also, in 2016, the City of Skopje aimed at stimulating the citizens-households to use renewable energy sources for heating of their homes, as well as reducing the adverse impact on the environment, including the air pollution, introduced support scheme for purchasing pellet stoves. The funds for implementation of this activity were secured by the city budget, amounting 5.89 million MKD or around 95.000 EUR. This incentive provides a refund of part of the funds spent on purchasing pellet stove by households up to 70% of the total value of the stove, but not more than 30.000 MKD or around 500 EUR per household.

Support for electricity produced from renewable sources – feed in tariffs

According to the Energy law adopted by the Government, for the purpose of stimulating construction of new power plants using renewable energy sources or high-efficiency cogeneration plants, the said generation facilities can obtain the status of preferential generator, and thereby the right to sell electricity under feed-in tariffs.

Detailed description regarding the given feed-in tariffs during the years 2014 and 2015 are shown in the following table.

Table: Feed in tariff for electricity production in 2014/2015

Generation capacity	Feed in tariff for electricity production in 2014/2015 (€/kWh)	Period of support (years)
Hydro power plants (installed capacity less or equal to 10MW)	for monthly amount of electricity delivered by units: I unit: 12.00 ($\leq 85,000$ kWh) II unit: 8.00 ($> 85,000$ и $\leq 170,000$ kWh) III unit: 6.00 ($> 170,000$ и $\leq 350,000$ kWh) IV unit: 5.00 ($> 350,000$ и $\leq 700,000$ kWh) V unit: 4.50 ($> 700,000$ kWh)	20
Wind power plants (installed capacity less or equal to 50 MW)	8.9	20
Photovoltaic power plants (installed capacity less or equal to 1 MW)	16 (≤ 0.050 MW) 12 (> 0.050 MW)	15
Biomass thermal power plants (installed capacity less or equal to 3 MW and share of fossil fuels in the total energy value of the consumed fuels less or equal to 15%)	15	15
Biogas thermal power plants (share of fossil fuels in the total energy value of the consumed fuels less or equal to 10%)	18	15

There is a cap on total installed capacity of each technology that will receive feed-in tariffs. Currently the limits are:

- No limit for small hydro
- Wind
 - 50MW for wind -until 2015,

- 65 MW for wind, until 2016,
- 100 MW, until 2020 and
- 150 until 2025

- 10 MW for biomass
- 7MW for biogas.
- 18 MW for solar PV, (4 MW cap on installations up to 50 kW, and a 14 MW cap on installations between 50 kW and 1 MW).

Contracts for purchase of electricity from RES Producers in 2016:

- 64 SHPP- 60.887 MW
- 102 Photovoltaic power plants –16.7 MW
- 3 Biogas Power Plants- 6 MW
- 1 Wind Park-36,8 MW

Table 3: Support schemes for renewable energy

RES support schemes year 2014		No. of power plants	Installed capacity (MW)	Total (M€)* without VAT	Per unit support (MWh)
Installation of solar panels					(€/unit)
Instrument	Investment subsidies (capital grants)			0.10	up to 30% not more than 300 (€/unit)
Hydro power plants					Euro/MWh
Instrument	Production incentives				
	Feed-in tariff	33	26.75	5.80	84.41
Photovoltaic power plants					Euro/MWh
Instrument	Production incentives				
	Feed-in tariff	89	12.85	3.38	254.97
Total annual estimated support in the electricity sector				9.18	
Total annual estimated support in the heating sector				0.10	
Total annual estimated support in the transport sector					

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

RES support schemes year 2015		No. of power plants	Installed capacity (MW)	Total (M€)* without VAT	Per unit support (MWh)
Installation of solar panels					(€/unit)
Instrument	Investment subsidies (capital grants or loans)			0.10	up to 30% not more than 300 (€/unit)
Hydro power plants					Euro/MWh
Instrument	Production incentives				
	Feed-in tariff	58	57.95	9.06	83.39
Solar power plants					Euro/MWh
Instrument	Production incentives				
	Feed-in tariff	101	16.66	4.54	208.22
Wind power plants					Euro/MWh
Instrument	Production incentives				
	Feed-in tariff	1	36.8	10.30	89.15
Biogas power plants					Euro/MWh
Instrument	Production incentives				
	Feed-in tariff	2	4	3.19	180.38
Total annual estimated support in the electricity sector				27.08	
Total annual estimated support in the heating sector				0.10	
Total annual estimated support in the transport sector					

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

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

Electricity bills which are paid by final customers except the general charges for the electricity system also includes the costs of incentive renewable energy sources. The energy and the costs for energy from RES is allocated to the final customers through their suppliers.

Market operator allocates the forecast of RES energy production to the suppliers, on day ahead base in accordance with their market share. In addition suppliers deliver this energy together with their energy to final customers. In the final invoices the costs for renewable energy are separately presented. The collected amount for that purpose, is paid to MEPSO. After that MEPSO pays the to the RES producers. Practically that means that the energy produced from RES and the costs thereto, are directly transferred to the final customers, and at the same time the final customers pay to the RES producers.

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

Not applicable.

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

The functioning of the system was explained in the First Progress Report on promotion and use of RES, and there are no changes made, since then. Although the system is in place, up to now, no application for guarantee of origin was submitted to the Energy Agency.

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

*It is suggested that **tables 4 and 4a** are used to provide more detailed information on the biomass supply.*

Table 4: Biomass supply for energy use

	Amount of domestic raw material (*)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (*)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU(*)		Primary energy in amount of imported raw material from non EU (ktoe)	
	2015 Year n-1	2014 Year n-2	2015 Year n-1	2014 Year n-2	2015 Year n-1	2014 Year n-2	2015 Year n-1	2014 Year n-2	2015 Year n-1	2014 Year n-2	2015 Year n-1	2014 Year n-2
<i>Biomass supply for heating and electricity:</i>												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings etc.)** (in m ³)	1,358,226	1,406,191	216.19	223.94	49,755	5,608	8.01	0.90				
Indirect supply of wood biomass (residues and co-products from wood industry etc.)** (in t)	6,391	882	2.60	0.36	29,841	24,207	12.11	9.83				
Energy crops (grasses, etc.) and short rotation trees (please specify)												
Agricultural by-products / processed residues and fishery by-products **												
Biomass from waste (municipal, industrial etc.) **												
Others (please specify)												
<i>Biomass supply for transport:</i>												
Common arable crops for biofuels (please specify main types)												
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)												
Others (please specify)												

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

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

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

Land use	Surface (ha)	
	2015 Year n-1	2014 Year n-2
1. Land used for common arable crops (wheat, sugar beet etc.) and oil seeds (rapeseed, sunflower etc.) (Please specify main types)	-	-
2. Land used for short rotation trees (willows, poplars). (Please specify main types)	-	-
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)	-	-

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

When assessing commodity price impacts, it is suggested to consider at least the following commodities: common food and feed crops, energy wood, pellets.

During the reference period, there were no changes in the prices of commodity. However the price on the pellets are expected to change in 2017 as a result of the changes in the VAT for this type of commodity – reducing the VAT from 18% to 5%.

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

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

Article 21(2) biofuels ²⁷	2015 Year n-1	2014 Year n-2
Production – Fuel type X (Please specify)	-	-
Consumption – Fuel type X (Please specify)	-	-
Total production Art.21.2.biofuels	-	-
Total consumption Art.21.2. biofuels	-	-
% share of 21.2. fuels from total RES-T	-	-

There were no producers of biofuels from waste, residues, food cellulosic material or ligno-cellulosic material in Macedonia in 2014 and 2015.

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

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

Because in Macedonia in 2014 and 2015 there was no production of biofuels and bio liquids, there is no assessment of impacts.

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

For the calculation of net greenhouse gas emission savings from the use of renewable energy, the following methodology is suggested:

- *For biofuels: In accordance with Article 22(2) of Directive 2009/28/EC.*
- *For electricity and heat it is suggested to use the EU wide fossil fuel comparators for electricity and heat as set out in the report on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling²⁸, if no later estimates are available.*

If a Contracting Party chooses not to use the suggested methodology for estimating the net greenhouse gas emission savings, please describe what other methodology has been used to estimate these savings.

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

Environmental aspects	2015 Year n-1	2014 Year n-2
Total estimated net GHG emission saving from using renewable energy²⁹	5,450,740	4,158,711
- Estimated net GHG saving from the use of renewable electricity	3,347,292	2,119,452
- Estimated net GHG saving from the use of renewable energy in heating and cooling	2,102,948	2,038,767
- Estimated net GHG saving from the use of renewable energy in transport	500	491

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

Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Contracting Parties, Member States and/or third countries in [Macedonia] (ktoe)^{30, 31}

²⁸ Report available on: http://ec.europa.eu/energy/renewables/transparency_platform/doc/2010_report/com_2010_0011_3_report.pdf.

²⁹ The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

³⁰ Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report Contracting Party may correct the data of the previous reports.

	2014 Year n-2	2015 Year n-1	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production (Please distinguish per type of renewable energy and per origin/destination of import/export)	0	0	-	-	-	-	-

11.1. Please provide details of statistical transfers, joint projects and joint support scheme decision rules. If a Contracting Party decided to implement Article 8 and/or 9 of the Ministerial Council Decision it should report on the measures taken to arrange for an independent external audit, in accordance with Article 13 of Ministerial Council Decision.

There are no this type of activities implemented by the Republic of Macedonia.

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

There were no production of *biodegradable waste used for producing energy* in Macedonia in 2014 and 2015.

³¹ When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. -x ktoe).