

**THE PROGRESS REPORT OF ROMANIA  
WITH REGARDS TO PROMOTING AND  
USING ENERGY FROM RENEWABLE  
SOURCES,  
IN COMPLIANCE WITH  
ARTICLE 22 OF DIRECTIVE 2009/28/EC**

***Second report***

*Period: 2011–2012*

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## THE PROGRESS REPORT OF ROMANIA IN COMPLIANCE WITH ARTICLE 22 OF DIRECTIVE 2009/28/EC

In compliance with Article 22 of Directive 2009/28/EC, Member States have to transmit to the Commission the second Report on the progress achieved in promoting the use of energy from renewable sources in 2011 and 2012. The deadline for transmitting the second report is 31 December 2013. The reports of the Member States are important for the global monitoring of the achievements of the policies in the field of renewable energy and of the manner in which said States observe the measures set forth in Directive 2009/28/EC and in their National Action Plans in the field of renewable energy.

The Progress report of Romania was drafted observing the recommendations of the European Commission set out in the document entitled "Template for Member State progress reports under Directive 2009/28/EC".

### 1. Sectoral and overall shares and actual consumption of energy from renewable sources in the last 2 years (2011 and 2012) (Article 22(1)(a) of Directive 2009/28/EC).

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

	2011	2012
RES-H&C (%)	24.31	25.74
RES-EE (%)	31.13	33.57
RES-T (%)	2.05	4.15
Overall RES share (%)	21.20	22.90
<i>Of which from cooperation mechanism (%)</i>	0	0
<i>Surplus for cooperation mechanism (%)</i>	0	0

Source: National Statistics Institute SHARES\*.

\* the data communicated by the National Statistics Institute are based on a methodology defined in Directive 2009/28/EC and are comparable with the data presented in the National Renewable Energy Action Plan (NREAP).

The overall shares of energy from renewable sources in the gross final energy consumption in the two years of reporting, namely 21.20% and 22.90%, significantly exceed the share established for the indicative trajectory of 19.04% for 2011/2012.

The sectoral shares of energy from renewable sources recorded a positive dynamic with regards to fitting in the indicative trajectory set out in NREAP, as seen in the table below.

	Estimate trajectory according to NREAP		Data of the analysed period	
	2011	2012	2011	2012
RES-H&C (%)	17.51	18.15	24.31	25.74
RES-EE (%)	30.83	33.84	31.13	33.57
RES-T (%)	6.37	6.90	2.05	4.15

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

	2011	2012
(A) Gross final consumption of RES for heating and cooling	3 504.16	3 687.73
(B) Gross final consumption of electricity from RES	1 570.74	1 671.58
(C) Gross final consumption of energy from RES in transport	100.85	210.41
(D) Gross total RES consumption	5 175.74	5 569.73
(E) Transfer of RES to other Member States	0	0
(F) Transfer of RES from other Member States and 3rd countries	0	0
(G) RES consumption adjusted for target (D)-(E)+(F)	5 175.74	5 569.73
Gross final energy consumption, adjusted for aviation, according to Article 5(6) (ktoe)	24 413.82	24 305.02
Share of RES in gross final energy consumption (%)	21.20	22.90

Source: National Statistics Institute SHARES

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

	2011		2012	
	MW	GWh	MW	GWh
<b>Hydro*:</b>	<b>6 483</b>	<b>17 201.0</b>	<b>6 548</b>	<b>16 948.7</b>
Non pumped	6 391	11 286.9	6 456	12 190.7
<1MW	84	76.0	90	89.0
1MW–10 MW	305	415.9	333	482.5
>10MW	6 002	10 795.0	6 033	11 619.1
Pumped (CHP)	92	202	92	146.0
Mixed	-	-	-	-
<b>Geothermal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Solar:</b>	<b>1.0</b>	<b>1.4</b>	<b>41.0</b>	<b>8.0</b>
Photovoltaic	1.0	1.4	41.0	8.0
Concentrated solar power	0	0	0	0
Tide, wave, ocean	0	0	0	0
<b>Wind*:</b>	<b>988</b>	<b>1 299.5</b>	<b>1 822.0</b>	<b>2 645.1</b>
Onshore	988	1 299.5	1 822.0	2 645.1
Offshore	0	0	0	0
<b>Biomass:</b>	<b>30</b>	<b>196.7</b>	<b>35.0</b>	<b>211.7</b>
Solid biomass	26	188.1	30.0	192.3
Biogas	4	8.6	5.0	19.4
Bioliquids	0	0	0	0
<b>TOTAL, excluding pumped</b>	<b>7 410.0</b>	<b>18 707.6</b>	<b>8 354.0</b>	<b>19 813.6</b>
Of which in CHP	-	111.9	-	158.6
Gross final electricity consumption (GWh)		60 093		59 027
<b>RES-EE (%)</b>		<b>31.13</b>		<b>33.57</b>

\* 1<sup>st</sup> line: HYDRO-ENERGY and 13<sup>th</sup> line: WIND ENERGY present standardised (normalised) values, in

compliance with Directive 2009/28/EC and with Eurostat Methodology.

Source: National Statistics Institute; SHARES; energy balance and the structure of the energy machine

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

	2011	2012
Geothermal (excluding low temperature geothermal heat in heat pump applications)	22.2	21.6
Solar	0	0.1
Biomass:	3 481.9	3 666.0
<i>Solid biomass</i>	3 469.9	3 657.8
<i>Biogas</i>	12.0	8.2
<i>Bioliquids</i>	0	0
Renewable energy from heat pumps:	0	0
- of which aerothermal		
- of which geothermal		
- of which hydrothermal		
<b>TOTAL</b>	<b>3 504.2</b>	<b>3 687.7</b>
<i>Of which DH</i>	17.8	16.0
<i>Of which biomass in households</i>	3 146.7	3 283.7
Gross final energy consumption for heating and cooling (ktoe)	14 416.1	14 324.1
RES-H&C (%)	24.31	25.74

Source: National Statistics Institute SHARES

**Table 1d: Total actual contribution from each renewable energy technology in Romania to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe).**

	2011	2012
Bioethanol/bio-ETBE	24.60	37.00
<i>Of which Biofuels Article 21.2</i>	0	0
<i>Of which imported</i>	0	23.58
Biodiesel	38.40	141.31
<i>Of which Biofuels Article 21.2</i>	0	0
<i>Of which imported</i>	38.14	86.60
Hydrogen from renewables	0	0
Renewable electricity	39.75	34.51
<i>Of which road transport</i>	3.20	4.05
<i>Of which non-road transport</i>	36.55	30.46
Others (as biogas, vegetable oils, etc.) – please specify	0.02	0.02
<i>Of which Biofuels Article 21.2</i>	0	0
<b>TOTAL</b>	<b>102.76</b>	<b>212.84</b>
Gross final energy consumption in the transport sector (ktoe)	5 022.19	5 134.02
RES-T (%)	2.05	4.15

Source: National Statistics Institute SHARES

Producers'/Importers' report from monitoring the Energy Department.

In the 2011–2012 period of analysis only the biofuels meeting the sustainability criteria are reported.

Comparing the values in the above tables with the corresponding values in NREAP, underpinned by a 0.7% GDP growth in 2012, as compared to the 3.7% forecast in NREAP, we note the following:

- The electricity consumption from RES was 1 671.58 thousand toe, as compared to 1 838 thousand toe in NREAP. The actual value of gross final energy consumption in 2012 was 5 076 thousand toe, as compared to the 5 432 thousand-toe value forecast in NREAP. The lower value of the actual consumption was determined by the influence of the economic crisis. Under the presented conditions, where there is a drop in gross final energy consumption as compared to the forecast value, the share of electricity consumption from RES in gross final electricity consumption was 33.57% in 2012, very close to the 33.84% forecast in the NREAP.
- The energy consumption from RES in transport, observing the sustainability criteria in Directive 2009/28/EC, was 212.84 thousand toe in 2012, as compared to the 345 thousand toe estimated in NREAP, and as compared to the 33.13 thousand toe achieved in 2010. In 2011, the legal framework was amended accordingly, in order to meet the sustainability compliance control requirements, which made it possible that a part of the hydrocarbon consumption be taken into account for the purpose of this report.

Under the conditions of a gross final energy consumption in the transport sector, in the amount of 5 134 thousand toe, as compared to the 5 432 thousand toe estimated in the NREAP, the share of energy consumption from RES in the transport sector, 4.15%, is under the 6.9% share forecast in NREAP.

- The 3 687.73 thousand toe RES energy consumption for heating in 2012 is much higher than the forecast (3 000 thousand toe), 89% of which is biomass consumption in households (fire wood). In 2012, the share of energy consumption from RES for heating and cooling in the total energy consumption for heating and cooling was 25.74%, as compared to the 18.15% forecast in NREAP.
- At a national level, the total energy consumption from RES was 5 569.73 thousand toe, as compared to the 5 147 thousand toe forecast in NREAP. The difference was mainly determined by the solid biomass consumption (fire wood) in the households of the population.
  - Under the conditions of relative economic stagnation, the gross final energy consumption was 24 305.02 thousand toe in 2012, as compared to the 26 956 thousand toe, forecast in NREAP, in the scenario of increased efficiency. The low value of gross final energy consumption further contributed to the increase of the share of energy consumption from RES in gross final consumption.
  - The share of energy consumption from RES in gross final consumption was 22.90% in 2012, as compared to the 19.04% forecast in NREAP.

**2. Measures taken in the preceding 2 years (2011, 2012) 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 the National Renewable Energy Action Plan. (Article 22(1)(a) of Directive 2009/28/EC)**

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

<b>Name and reference of the measure</b>	<b>Type of measure</b>	<b>Expected result</b>	<b>Targeted group and/or activity</b>	<b>Existing or planned</b>	<b>Start and end dates of the measure</b>
1. Increasing the no of Green Certificates granted for each MW produced and delivered, in compliance with Commission Decision C(2011) 4938 with regards to State Aid SA.33134 2011/N – RO (Decision) (Government Emergency Order No 88/2011)	financial	Increasing the installed RES capacities and production	RES electricity producers	Existing (amends and supplements Law No 220/2008)	November 2011 Estimated end date is 2031
2. Improving the mandatory quotas system, combined with the trading of Green Certificates for E-RES (Government Emergency Order No 88/2011)	regulatory	Developing the market mechanisms with regards to promotion through Green Certificates	Electricity suppliers	Existing (amends and supplements Law No 220/2008)	November 2011 Estimated end date is 2031
3. Setting up the adjustment system for overcompensation, as well as other measures with regards to the operation of the State Aid Scheme, according to the Decision (Government Emergency Order No 88/2011)	regulatory	Fitting in the competitive market and observing the Community rules with regards to State Aid	RES electricity producers	Existing (amends and supplements Law No 220/2008)	November 2011, partly 1 January 2014 and 0 January 2015 End date: -
4. Obligation of quarterly procurement of Green Certificates and setting up the Guarantee Fund (Law No 134/2012)	regulatory	Regular frequency of Green Certificate procurement and uniformity of the payment effort of the consumers	Electricity suppliers	Existing (amends and supplements Law No 220/2008)	2013 End date: -
5. Priority dispatch of RES electricity (Law No 134/2012)	regulatory	Transposes the principles of Directive 2009/29/EC	National Energy Dispatch (NED) and RES electricity producers	Existing (amends and supplements Law No 220/2008)	Partly 2013, for the intra-day market End date: -
6. Accreditation of capacities higher than 125 MW (Law No 134/2012)	regulatory	Transposes partially the provisions of the (Commission) Decision	Large RES electricity producers	Existing (amends and supplements Law No 220/2008)	July 2012 End date: -
7. System of Guarantees of origin for energy from RES. Certificates of origin for biomass. (Order No 46/2012 of the Ministry of Agriculture and Rural Development)	regulatory	Fitting in the principles of sustainable development	Producers of biomass used as fuel or raw material for the production of energy from RES	Existing	Start date: 12 March 2012 End date: -
8. Establishing the share of bio-fuels in the diesel and gasoline introduced on the market for sale in the 2011–2012 period (Government Decision No 935/2011)	regulatory	Increasing bio-fuel consumption	Fuel producers	Planned	Start date: 11 November 2011 End date: 2020
9. Introducing the	regulatory	Fitting in the	Fuel producers	Planned	Start date:



sustainability criteria for bio-fuels and the obligation to check such criteria (Government Decision No 935/2011)		principles of sustainable development			11 November 2011 End date: 2020
10. Certifying bio-fuels and bio-liquids with regards to observing the sustainability criteria – voluntary schemes (Order No 136/2012 of the Ministry of Economy and Business Environment)	Regulatory, without having the force of a law	Observing Community legislation	Fuel producers	Planned	Start date: 2012 End date: -
11. Development of electricity transport and distribution networks for ensuring that electricity from RES is taken over (Updating the Electricity Transport Network Plan, drafted by TRANSELECTRICA)	investments	Ensuring the transport and distribution of electricity produced from RES, under conditions of safe functioning of the National Energy System	- TRANSELECTRICA - E-RES producers	planned	Start date: 2014 End date: 2023
12. Updates of the Sectoral Operational Programme for Increasing Economic Competitiveness, Axis 4, DM 4.2 “Making use of renewable energy sources for producing green energy” – increasing the allocated envelope	financial	Increasing the installed capacity of production units of RES energy and of generated energy	E-RES producers: - public authorities - commercial companies	Existing	Start date: 2008 End date: 2013
13. Increasing the number of investments in the field of E-RES with the Programme regarding the increase of energy production from renewable sources	Regulatory, without having the force of a law	Developing electricity/heating-cooling production from RES	E-RES producers		Start date: 2010 End date: -
14. Updating the Programmes regarding the installation of heating systems that use renewable energy, including the replacement of or addition to traditional heating systems (The “Green House” Programme – natural persons; “Green House” Programme – legal persons without economic activity)	financial	Increasing the installed capacity of production units of RES energy and of generated energy	Population (natural persons); administrative territorial units, public institutions and religious entities	existing	Start date: 17 June 2010 End date: -
15. Possibility of purchasing electric cars and/or hybrid cars within the programme for stimulating the renewal of the national car park	financial	Increasing the number of electric and hybrid cars sold	Producers and distributors of electric and hybrid cars; natural and legal persons that purchase electric and hybrid cars	Existing	Start date: 29 September 2011 End date: -

## **2.a Evaluation and improvement of the administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy. (Article 22(1)(e) of Directive 2009/28/EC)**

The evaluation and improvement of the administrative procedures for the development of renewable energy and the alignment of such procedures to the EU standards is a constant concern of the national, regional and local factors of synthesis and decision making, of the organisations involved. The main actions and measures undertaken will be presented in what follows.

a) The improvement of the system of mandatory quotas, combined with the trading of Green Certificates

The system of mandatory quotas, combined with the trading of Green Certificates, set up as a support mechanism for promoting the production of electricity from RES, by Law No 220/2008<sup>1</sup> on establishing the system for promoting energy production from renewable sources, amended and supplemented by Law No 139/2009, was notified to the Commission. The procedure was initiated in November 2009 through prenotification and concluded by obtaining the Commission's authorising Decision C (2011) 4938 on State Aid SA. 33134 (2011/N) – Romania.

Taking into account the need to correlate Law No 220/2008, re-issued, with subsequent amendments and supplements, with the provisions of Community law (including with the Decision of the European Commission), the Romanian Government adopted Government Emergency Order No 88/2011<sup>2</sup>.

Later on, Government Emergency Order No 88/2011 was approved by Law No 134/2012<sup>3</sup>, a law that introduces a series of amendments and additions to the provisions of Law No 220/2008.

The current support scheme, as it results from the provisions of Law No 220/2008, re-issued, with subsequent amendments and supplements, including the amendments and supplements from Government Emergency Order No 88/2011 and Law No 134/2012, is presented in Chapter 3.

The promotion system set up by Law No 220/2008 was supplemented by the secondary regulations issued by the National Regulating Agency in the Field of Energy, in order to define the accreditation procedures, the procedures for issuing and trading Green Certificates, access to the grids and the priority treatment in taking over energy, establishing the obligations to procure Green Certificates, etc. The secondary regulations issued by the National Regulating Agency in the Field of Energy are based on the applicable principles and norms that belong to the Community and the national legal framework. From the relevant regulations we mention the following:

- Order No 32/2011 – approving the Rules of Organisation and Operation of the Intra-day electricity market, Date: 30 June 2011. Official Journal 495/12 July 2011
- Order No 42/2011 – Regulation for accrediting producers of electricity from RES for applying the system of promotion through Green Certificates, amended by Order No 37/2012.
- Order No 43/2011 approving the Regulation with regards to issuing Green Certificates
- Order No 44/2011 – approving the Regulation with regards to the organisation and operation of the Green Certificate market (repealed in 2013)
- Order No 45/2011 approving the Methodology for establishing the annual shares of Green Certificate procurement
- Order No 06/2012 approving the methodology of monitoring the system for promoting energy from RES through Green Certificates
- Order No 33/2012 laying down certain rules on the balancing market, applicable to the production of electricity that benefits from promotion systems (repealed in

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<sup>1</sup> Law No 220/2008<sup>1</sup> on establishing the system of promoting energy production from renewable energy sources was published in Official Journal no 743 of 3 November 2008.

<sup>2</sup> Government Emergency Order No 88/2011 amending and supplementing Law No 220/2008 establishing the system of promoting energy production from renewable energy sources was published in Official Journal no 763 of 19 October 2008.

<sup>3</sup> Law No 134 of 18 July 2012 approving Government Emergency Order No 88/2011 amending and supplementing Law No 220/2008 on establishing the system of promoting energy production from renewable energy sources was published in Official Journal no 505 of 23 July 2012.

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## b) Funding the projects for making use of RES

Parallel to the operational assistance provided to the producers of electricity from RES through the support system mentioned at point a) above, funding programmes have been initiated in Romania for the projects making use of RES. These programmes provide investment support to a wide range of potential beneficiaries (natural persons, companies, public institutions, etc) for carrying out local interest projects, for diversifying the sources of power supply, for making use of potential resources that do not justify a commercial interest, etc. Co-financing projects through public intervention is meant to remove the difficulty of carrying out projects that are justified economically and socially, but have a funding deficit, which makes them unattractive for investors.

In order to ensure appropriate participation in these programmes, one of the major concerns is to remove or mitigate certain administrative barriers that are excessive in regulation or procedure. The procedures for accessing these funds are the ones set out by the specific Community or national legislation.

The funding programmes presented in what follows are described in Chapter 3.

Taking into account the important role the use of the European Funds has in all areas of activity (in particular for making use of renewable energy), the Government took steps for accelerating the use of such Funds, including by ensuring the co-financing share from the State budget for such projects.

The legal framework was created for using the non-reimbursable funds in close concordance with the provisions of the prevailing European regulations, for observing the transparency, non-discrimination and proportionality requirements, both regarding the organisation of open calls for project proposals, and in the evaluation and implementation of the projects accepted for funding.

The special programmes are funded from the Environmental Fund, another component that contributes to the promotion of E-RES for specific applications that would not be implemented without investment support. These programmes are the following:

- Programme with regards to the increase of energy from renewable sources (meant for companies)
- Programme with regards to installing heating systems that use renewable energy, including replacing or completing traditional heating systems ("Green House" Programme – natural persons)
- Programme with regards to installing heating systems that use renewable energy, including replacing or completing traditional heating systems – beneficiaries: territorial administrative units, public institutions, and religious entities

### **2.b Measures ensuring the transmission and distribution of electricity produced from renewable energy sources and 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)**

- Energy Law No 13/2007<sup>4</sup> was repealed and replaced by the Law on Electricity and Natural Gas No 123/2012<sup>5</sup>, transposing mainly Directive 2009/72/EC and Directive 2009/73/EC.

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<sup>4</sup> Law No 13/2007, the Law on Electricity, was published in the Official Journal, Part 1, no 51 of 23 January 2007

<sup>5</sup> Law No 123/2012, the Law on Electricity and Natural Gas was published in the Official Journal, Part 1, No 485 of 16 July 2012

The Law establishes the regulatory framework for carrying out the activities in the electricity sector and related to the infrastructure for electricity, including the following basic objectives:

- ensuring sustainable development
- diversifying the pool of primary energy resources
- ensuring non-discriminatory and regulated access for all participants to the electricity market and the public interest networks;
- ensuring the interconnected operation of the National Energy System with the electricity-energy systems of the neighbouring countries and with the electricity-energy systems of the European Network of Transmission System Operators for Electricity – ENTSO-E;
- promoting the use of new and renewable energy sources;
- ensuring safety in the operation of the National Energy System.

The Law sets forth that access to the public interest electricity grid is a mandatory service, under regulated conditions the transmission system operator, as well as the distribution operator has to meet. Upon written request of a new or pre-existing grid user, the Transmission System Operator, or the Distribution Operator, according to the case, is compelled to communicate within 30 days the technical and economic conditions of connecting to the grid, and to cooperate with the applicant for choosing the most beneficial solution for connecting.

The Transmission System Operator is organised and operates according to the “independent system operator” model. The Transmission System Operator is compelled to design the 10-year investment and development plan of the transport network.

The Distribution Operator bears the costs pertaining to the modification of the distribution installations, based on regulations issued by the National Authority for Regulations in the Field of Energy, which also include the sharing of costs. Later on, by Order No 59/2013<sup>6</sup> of the National Authority for Regulations in the Field of Energy, these regulations set forth the sharing of costs, based on objective, transparent and non-discriminatory criteria, in case of the works of grid reinforcement upstream of the connection point, and of the installations between the connection point and the delimitation point.

Chapter V of Law No 123/2012, dedicated to promoting electricity produced from RES, defines guaranteed access to the electricity grid and the priority dispatch for plants under 1 MW, to the extent the safety of the National Energy System is not affected.

Other legal documents complete the provisions of this Law, such as:

- Law No 220/2008 for establishing the system of promoting energy production from renewable energy sources, with subsequent amendments and supplements;
- Government Decision No 90/2008<sup>7</sup> with regards to approving the Regulation with regards to connecting users to the public interest electricity grids, repealed in 2013;

The Regulations of the National Authority for Regulations in the Field of Energy, adopted prior to the years of reporting, have an important role in the development of the electricity infrastructure; these pertain to the approval of the Technical Codes of the electricity transport and distribution networks, to the Performance Standards for the electricity transport and system services and for the distribution service, the Commercial Code of the wholesale electricity market, the Rules with regards to establishing solutions

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<sup>6</sup> Order No 59/2013 of the National Authority for Regulations in the Field of Energy approving the Rules with regard to connecting users to the public interest electricity grid was published in the Official Journal No 517/19 August 2013.

<sup>7</sup> Government Decision No 90/2008<sup>7</sup> approving the Regulation with regards to connecting users to the public interest electricity grids was published in the Official Journal No 109/12 February 2008.

for connecting users to the public interest electricity grids, the technical norms with regards to the technical conditions for connecting wind power plants to the public interest electricity grids, etc.

The methodology of establishing the tariffs for connecting users to the electricity grids was approved by Order No 29/2003 of the National Authority for Regulations in the Field of Energy<sup>8</sup>, as amended by Order No 54/2008 of the National Authority for Regulations in the Field of Energy<sup>9</sup>. According to this methodology, the tariff of connecting to the electricity grids (T) is the sum of two components: the component pertaining to the *connection installation* (the size of this installation is determined depending on the type of the grid, the length of the *connector/derivation* and on the *approved power*), and the component corresponding to taking over the works and applying voltage to the *installation*.

In this context it is specified that through the regulations issued in 2008, but in force during the period of reporting (Government Decision No 90/2008 and Order No 54/2008 of the National Authority for Regulations in the Field of Energy), the obligation of the applicant to bear the costs of grid reinforcement upstream of the connection point is eliminated.

In situations where after the connection installation was built, there are requests from other users to connect to a built installation, paid for by a certain user, said user receives monetary compensation from the users that connect to the installation later on, during the first five years from starting the operation of the connection installation. Such compensation is established by the grid operator, based on a methodology approved by the National Authority for Regulations in the Field of Energy (Order No 28/2003 of the National Authority for Regulations in the Field of Energy<sup>10</sup>).

- According to the competences and responsibilities set forth by Law No 123/2012 with regards to electricity and natural gas and to the Conditions associated to License No 161 for the transportation of electricity and supplying the system service, the National Electricity Transmission Company “Transelectrica” S.A. plans the development of the Electricity Transmission Network, taking into account the current state and the consumption forecast, the production park and the electricity exchange, and every other year drafts a new Development plan for the next ten consecutive years.

The Electricity Transmission Network Development Plan is a public document that can be accessed on the [www.transelectrica.ro](http://www.transelectrica.ro) website, presenting the main aspects regarding the current situation and the foreseen development of the Electricity Transmission Network in the context of the National Energy System, for the next ten years.

In order to establish the needs of the transmission system that are necessary to be introduced in the Electricity Transmission Network Development Plan, the correlation of the promotion system with the national strategic objectives and actual balancing possibilities of the production–consumption balance that would bring the total volume

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<sup>8</sup> Order No 29/2003 of the National Authority for Regulations in the Field of Energy approving the Methodology of establishing the tariffs of connecting users to the medium and low voltage electricity distribution grids was published in Official Journal No 882/11 December 2003.

<sup>9</sup> Order No 54/2008 of the National Authority for Regulations in the Field of Energy amending Order No 29/2003 of the President of the National Authority for Regulations in the Field of Energy approving the Methodology of establishing the tariffs of connecting users to the medium and low voltage electricity distribution grids was published in Official Journal No 433/10 June 2008.

<sup>10</sup> Order No 28/2003 of the National Authority for Regulations in the Field of Energy approving the Methodology for establishing the monetary compensation between the users connected in different stages, through joint installation, to the electricity distribution network was published in Official Journal No 880/10 December 2003.

installed in wind and PVC power plants to the level that allows the efficient and sustainable development were taken into account.

Taking the above into account, the development analyses of the Electricity Transmission Network in a ten-year perspective took into account in the baseline scenario the following hypotheses with regards to the volume of power installed in volatile power plants:

- at the 2018 stage: Wind Power Plant Installed Power = 4 000 MW, PVC Power Plant Installed Power = 293 MW;
- at the 2023 stage: Wind Power Plant Installed Power = 4 500 MW, PVC Power Plant Installed Power = 320 MW.

The above volume is also coherent with the values that resulted as possible to integrate from the point of view of system adequacy, in the context of the flexibility the existing and forecast production park can supply over the following ten years.

Based on the studies carried out, the Ten-Year Development Plan of the Electricity Transmission Grid includes several projects that will allow the operation of the National Energy System under conditions of normed safety and performance, both by reinforcing the power evacuation section in Dobrogea, and by increasing the exchange capacity with other systems. The implementation of investments planned for increasing the interconnection capacity of the National Energy System will take priority.

The investments included in the Ten-Year Development Plan of the Electricity Transmission Grid provide the necessary support for the evacuation (in 2020), without major restrictions, of the expected power in Wind Power Plants, meaning approximately 3 000 MW installed in Wind Power Plants in Dobrogea and Moldova, 750 MW in the Banat area and approximately 250 MW in other areas (e.g.: Buzau, the South of Muntenia).

If more power is installed in the areas mentioned, the grid development needs will be higher, the geographical location of the new power plants having a decisive influence in this regard.

- The planning of the development of the Electricity Distribution Grid within the National Energy System is carried out by each Distribution Operator (DO).

Planning is carried out based on a development study of the electricity grid in question for an average period of 5 years and a maximum period of 10 years; the study is carried out on technical and economic grounds. The selected solutions have to allow the development of the installations after that period, too, without essential changes, with the integration of the main elements of the existing grids (the solutions have to be self-structuring). The studies are updated on a yearly basis. Based on the future plan each DO drafts the annual investment programme for the development and modernisation of the Electricity Distribution Grid.

### **3. The support schemes and other measures currently in place that are applied to promote energy from renewable sources. (Article 22(1)(b) of Directive 2009/28/EC)**

During the reporting period the support schemes set forth in NREAP operated for the promotion of energy produced from RES. The main changes to these schemes, their manner of operation and the recorded results are presented in what follows.

**A. The system of mandatory quotas, combined with trading Green Certificates,** set up as a support mechanism for promoting electricity production from RES through Government Decision No 1892/2004 and re-worded by Law No 220/2008 with regards to establishing the system of promoting electricity produced from renewable energy sources,

was authorised by the European Commission in July 2011 through Decision C (2011) 4938 on State Aid SA 33134 (20011/N) for Romania – Green certificates for promoting electricity from renewable sources. Taking into account the need to correlate Law No 220/2008 with the aforementioned Decision, Law No 220/2008 was amended and supplemented by Government Emergency Decision No 88/2011 and by Law No 134/2012 with regards to approving Government Emergency Decision No 88/2011.

The Main modifications of the support scheme for the 2011–2012 period pertain to:

- defining the mechanism for avoiding overcompensation, based on monitoring the costs and revenues of E-RES producers;
- specifying the number of Green Certificates granted for 1 MWh of electricity from RES and the period of applicability, depending on the type of technology;
- defining a mechanism for dealing with a potential cumulation of aids;
- introducing the obligation of certifying biomass, based on criteria of sustainability, and differentiating the number of Green Certificates granted for biomass, depending on the raw materials;
- including sanctions in the law for business operators' violation of their legal obligations;
- provisions with regards to marketing electricity from RES;
- setting up rules of procedure with regards to concluding mutual agreements with Member States or third countries with regards to marketing electricity from RES;
- introducing electricity suppliers' obligation to achieve on a quarterly basis the estimated annual obligations of purchasing Green Certificates, and monitoring the achievement of that obligation;
- setting up the guarantee fund for the functioning of the Green Certificate market; the guarantee fund is set up and operated by the commercial operator of the electricity market;
- temporary accreditation of the beneficiaries of E-RES projects, with an installed power higher than 125 MW, for a period of 24 months, or up to obtaining an individual decision from the Commission.

The current support scheme, as it results from the provisions of Law No 220/2008, re-issued, with subsequent amendments and supplements, is the following:

- The system of promoting electric energy produced from renewable energy sources is applied for the electricity delivered in the electricity grid and/or to the consumers, produced from:
  - hydraulic energy used in plants of up to 10 MW installed power;
  - wind energy;
  - solar energy;
  - geothermal energy;
  - biomass;
  - bioliquids;
  - biogas;
  - waste fermentation gas;
  - fermentation gas of the sludge from waste water treatment plants.
- The promotion system is applied for a period of:
  - 15 years, for electricity produced in new generation units/power plants;
  - 10 years, for electricity produced in generation units of refurbished hydroelectric power plants, with no more than 10 MW installed power;
  - 7 years, for electricity produced in generation units/wind power plants that have been used for producing electricity on the territory of other States, if

they are used in isolated systems or if they were commissioned on the territory of Romania before the date of applying the promotion system set forth by this Law;

- 3 years, for electricity produced in non-refurbished generation units/hydroelectric power plants, with no more than 10 MW installed power.
- The producers of electricity from renewable sources benefit from a number of Green Certificates for the electricity produced and delivered, as follows:
  - a) 3 Green Certificates per 1 MWh produced and delivered, if the hydroelectric power plant is new, or 2 Green Certificates per 1 MWh produced and delivered, if the hydroelectric power plant is refurbished, for electricity from hydroelectric power plants with no more than 10 MW installed power.
  - b) 1 Green Certificate per 2 MWh from hydroelectric power plants with no more than 10 MW installed power that does not meet the conditions set forth at point a).
  - c) 2 Green Certificates until 2017 and one Green Certificate starting with 2018 per 1 MWh produced and delivered by the producers of electricity from wind energy;
  - d) 2 Green Certificates per 1 MWh produced and delivered by the producers of electricity from geothermal, biomass, bioliquids or biogas energy
  - e) 1 Green Certificate per 1 MWh produced and delivered by the producers of electricity from waste fermentation gas and from the fermentation gas of the sludge from waste water treatment plants.
  - f) 6 Green Certificates per 1 MWh produced and delivered by the producers of electricity from solar energy.

For electricity produced in cogeneration power plants/generation units that use biomass, bioliquids, biogas, waste fermentation gas and the fermentation gas of the sludge from waste water treatment plants, and which are qualified by the National Regulating Authority in the Field of Energy as being of high efficiency, one additional Green Certificate is granted per 1 MWh produced and delivered.

By way of exception from the number of Green Certificates granted according to those noted in the previous paragraphs, regardless of the type of the renewable source used, electricity producers benefit from:

- a) one Green Certificate per 1 MWh produced and delivered from power plants during the testing period;
- b) a number of Green Certificates established by the National Regulating Authority in the Field of Energy by reducing the number of Green Certificates set forth for each type of technology, decreasing the reference value of the investment per MW by the value of the aid received per MW, and keeping the value of the internal rates of return taken into account in the calculations provided to the European Commission during the authorisation process of the promotion system, if the power plants benefit additionally from State Aid.
- The promotion system applies to the producers of electricity from renewable energy sources, including for the energy produced in the testing stage, based on the accreditation decision issued by the National Regulating Authority in the Field of Energy, provided that the commissioning or refurbishing of the generation units/power plants is carried out by the end of 2016.
- In the case of electricity produced in multi-fuel power plants that use renewable and conventional sources, only the electricity actually produced from renewable energy sources benefits from the promotion system. The share of electricity actually



produced from renewable energy sources is established based on the energy content pertaining to the renewable sources.

- The promotion system does not apply to:
  - electricity produced from fuel from biomass, industrial and/or municipal waste procured from import, regardless of the installed power of the power plant;
  - electricity produced in pumped storage plants with water previously pumped into the upper basin;
  - electricity produced in power plants that use renewable and conventional sources of energy in the same combustion installation, if the energy contents of the conventional fuel used exceeds 10% of the total energy contents;
  - electricity pertaining to the own technological consumption of the power plant.
- In the case of electricity produced from renewable sources in cogeneration, the producers that request a promotion system are compelled to choose either the support scheme for promoting high-efficiency cogeneration, based on the demand of useful thermal energy (according to the provisions of Government Decision No 1215/2009<sup>11</sup>), or for the promotion scheme set forth by Law No 220/2008.
- The producers of E-RES from biomass, bioliquids and biogas benefit from the promotion system only if they hold the certificates of origin for the biomass used as fuel or raw material.
- The national targets with regards to the share of electricity produced from renewable sources of energy in the gross final electricity consumption in 2010, 2015 and 2020 is 33%, 35% and 38%, respectively.

For meeting these targets, the electricity produced by hydroelectric power plants with more than 10 MW installed power is also taken into account.

- The mandatory annual electricity shares produced from renewable energy sources that benefit from the promotion scheme through Green Certificates over the period between 2010 and 2020 are the following: 2010 – 8.3%; 2011 – 10%; 2012 – 12%; 2013 – 14%; 2014 – 15%; 2015 – 16%; 2016 – 17%; 2017 – 18%; 2018 – 19%; 2019 – 19.5%; 2020 – 20%.
- The National Regulating Authority in the Field of Energy gives accreditation to the producers of electricity from renewable energy sources in order for them to benefit from the promotion system through Green Certificates, under the conditions set forth in the Accreditation Rules of Producers of Electricity from Renewable Energy Sources for the Application of the promotion system through Green Certificates.
- In the first ten days of December, the National Regulating Authority in the Field of Energy publishes on their website the annual mandatory quota of Green Certificates to be procured, estimated for the following year, the estimated number of Green Certificates to be issued, based on the information on the estimated electricity production from renewable sources of energy in the following year, and the estimated final electricity consumption for the following year. The annual mandatory quota to be procured is established by Order of the National Regulating Authority in the Field of Energy by 1 March of the following year, the adjustment of the previous year being carried out by the suppliers by 1 September;
- The amount of electricity for which the obligation to procure Green Certificates is established includes:
  - The electricity purchased by the electricity suppliers, meant both for their final consumption, and for sale to the end consumers
  - The electricity used for the final consumption, other than the own

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<sup>11</sup> Government Decision No 1215/2009 with regards to establishing the necessary criteria and conditions for the implementation of the support scheme for promoting high-efficiency cogeneration based on the demand of useful thermal energy was published in Official Journal No 748/03 November 2009

- technological consumption, of an electricity producer
  - The electricity used by a producer for supplying with electricity the consumers connected through direct lines to the power plant
- The previously mentioned producers and suppliers are compelled to purchase annually a given number of Green Certificates, equivalent to the product of the value of the annual mandatory quota for the year in question and the amount of electricity set forth previously, expressed in MWh, supplied annually to the end consumers. Starting with the date of Law No 134/2012 entering into force (26 July 2012), the Green Certificate procurement obligation of the aforementioned suppliers and producers became a quarterly obligation, based on the procurement share estimated by the National Regulating Authority in the Field of Energy in December of the previous year.
- Starting with July 2012, energy suppliers are compelled to report quarterly the fulfilment of their mandatory Green Certificate procurement share, set forth by the National Regulating Authority in the Field of Energy;
- Both the suppliers, and the producers that fail to meet their annual mandatory quota, are compelled to pay to the Environmental Fund Management the value equivalent of the non-purchased Green Certificates, at a value of EUR 110 for each non-purchased Green Certificate, the amount being calculated in RON.
- The Green Certificates issued by the transmission system operator are valid over a period of 16 months.
- In the electricity bill transmitted to the end consumers, the value of the Green Certificates is billed separately from the tariffs/prices for the electricity, specifying the legal grounds. The price of the Green Certificates used for billing is the weighed mean price of the Green Certificates traded on the centralised Green Certificate markets in the last 3 completed months of trading. The business operators that are compelled to purchase Green Certificates will adjust the value of the Green Certificates pertaining to the previous year depending on the annual share of Green Certificates established by the National Regulating Authority in the Field of Energy, the billed electricity and the weighed mean price of the Green Certificates used by the supplier in the previous year.
- The transmission system operator and the distribution operator are compelled to guarantee the transmission and, respectively, the distribution of the electricity produced from renewable sources, ensuring the reliability and safety of the electricity networks.
- The connection of producers of electricity from renewable sources to the electricity grid is carried out based on the Rules with regards to connecting users to the public interest electricity grids, issued in observance of the prevailing provisions of the law on the matter.
- The transmission and distribution tariffs are non-discriminatory between energy produced from renewable sources of energy and energy produced from conventional sources of energy.
- The producers of electricity from renewable sources of energy and the suppliers will trade Green Certificates on the centralised Green Certificate market, as well as on the bilateral contracts market for Green Certificates.
- E-RES producers sell the electricity produced on the electricity market at market price.
- The E-RES produced in power plants with an installed power of no more than 1 MW/plant or 2 MW/plant, in case of high efficiency cogeneration from biomass, can be sold to suppliers in whose area of license the respective plants are located, at regulated, single prices per type of technology. E-RES sold at a regulated price no longer benefits from Green Certificates.
- Suppliers and producers that sell electricity to the end consumers are compelled to inform such consumers periodically, according to the National Regulating Authority in the Field of Energy Regulations, with regards to the purchase cost of the Green

Certificates corresponding to the kWh electricity sold to said consumers.

- The business operator that develops a power plant project for producing E-RES, with an installed power of more than 125 MW, and meets the requirements for applying the promotion system, drafts and transmits the necessary documentation to the European Commission for the detailed evaluation of the support scheme.

The Law also includes provisions with regards to the obligations of the transmission operator, of the system operators, of the National Regulating Authority in the Field of Energy, of the Business Operator of the Electricity Market, etc., for promoting electricity from RES (access to the grid, taking over the energy produced, issuing and trading Green Certificates, monitoring the operation of the promotion system, etc.).

Also, Law No 134/2012 introduces a chapter that deals with the use of the cooperation mechanisms with the aim of achieving the national target on energy from renewable sources.

Some measures that are set forth by the law but require prior notification to the Commission have not been enforced, namely: granting one additional Green Certificate for the biomass from forestry waste; the guarantee fund; delivering the electricity produced in micro-power plants under 1 MW at regulated prices.

We specify that the mechanism of mandatory quotas, combined with the trading of Green Certificates, was introduced in Romania as early as 2004 (Government Decision No 1892/2004) and in 2010 it was already operational. Actually, the essential amendment introduced by Government Emergency Order No 88/2011 was the increase in the number of Green Certificates depending on the technology and the type of renewable source used.

As a consequence of applying the promotion scheme through Green Certificates in the period of reporting, a few conclusions can be drawn:

- The number of E-RES producers holding a licence at the end of 2012 was 147, as compared to the 65 at the end of 2010;
- The total installed capacity in accredited E-RES production units at the end of 2012 was 2 327.76 MW, as compared to 469 MW at the end of 2010;
- The structure of the total installed electric energy capacity, according to the type of RES, at the end of 2012 was the following: 78% wind energy; 18% hydro; 2% PVC; 2% biomass.
- The structure of the E-RES production that benefitted from the promotion system at the end of 2012 was the following: 78.45% wind energy, 16.64% hydroelectric energy, 4.67% energy from biomass and 0.24% solar energy
- The total electricity production from renewable energy sources sustained through the promotion scheme was 1.509 TWh in 2011 and 3.365 TWh in 2012 (as compared to 0.675 TWh in 2010).
- The promotion system of E-RES was applied in compliance with the provisions of Government Decision No 1892/2004, for the January–October 2011 period, for all producers of electricity (1 Green Certificate), and in compliance with the provisions of Law No 220/2008 for the November–December period in 2011 and 2012.
- In 2011, E-RES producers made revenues in the amount of EUR 98.43 million (RON 422.5 million) from the sale of the Green Certificates, which led to an increase of EUR 2.1/MWh (RON 9.03/MWh) in the electricity price for the end consumer;
- In 2012, E-RES producers made revenues in the amount of EUR 303 million (RON 1 354 million) from the sale of the Green Certificates. The Green Certificate contribution to the electricity bill of the end consumer was RON 28.81/MWh (EUR 6.46/MWh);
- The Green Certificate market is separate from the electricity market, and it

operates based on competition mechanisms, i.e., based on the supply and demand of Green Certificates. Green Certificate trading is carried out, in a system of competition, on the market of bilateral contracts and/or the centralised Green Certificate market (monthly), between the E-RES producers and the suppliers of the end consumers of electricity. The Green Certificates issued in 2012 to the producers of electricity from RES were put on offer and traded on two markets: 36.67% on the centralised Green Certificate market and 62.2% based on bilateral contracts. The number of participants on the centralised Green Certificate market for 2012 totalled 298, of which 133 were suppliers;

- In 2012 a total of 106 business operators had the obligation to purchase Green Certificates; out of these only 11 did not meet, partly or totally, their mandatory quota;
- In 2012 a total of 5 547 302 Green Certificates were granted, as compared to the 676 606 Green Certificates granted in 2010;
- For 2011, the limit values for trading Green Certificates were established at the minimum value of RON 118.33/Green Certificate (i.e. EUR 27.567/Green Certificate) and the maximum value of RON 241.04/Green Certificate (i.e. EUR 56.155/Green Certificate), and for 2012 at the minimum value of RON 121.89/Green Certificate (i.e. EUR 28.172/Green Certificate) and the maximum value of RON 248.30/Green Certificate (i.e. EUR 57.389/Green Certificate);
- In 2011 the mean weighted price on the centralised Green Certificate market was at the maximum level. In the second half of 2012, the price of the Green Certificates traded on the centralised market dropped on average by EUR 1/Green Certificate as compared to the maximum level.
- In 2011 the mandatory quota with regards to the weight of supported renewable energy in gross final energy consumption, set forth by Law No 220/2008, was 10%, actually met in 2.5%. In 2012 the mandatory quota was 12% and it was actually met in 5.63%
- In 2012 the market share of the largest E-RES producer that benefitted from the promotion system was 21%; the HHI index was 1 029, below the 1 800 threshold that delimits the markets with a moderate concentration of market power from markets with an excessive concentration of the market.

**B. The Sectoral Operational Programme “Increase of Economic Competitiveness”, Axis 4 “Increase of energy efficiency and the security of supply in the context of climate change”, Major Intervention Area 4.2 “Making use of renewable energy sources for the production of green energy.”**

This programme funds investments for the construction of electricity and thermal energy production capacities by making use of the renewable energy sources of:

- business operators (small, medium-sized and large companies), through a regional State Aid scheme
- local authorities and intra-community development associations, in order to provide a public service (in case of thermal energy) or for own consumption (including for public lighting and the lighting of public institutions), through a co-financing scheme, without applying the State Aid rules.

The programme is co-financed by the European Commission, from the State budget, and from the own funds of the investors.

The maximum value of the non-reimbursable assistance that can be granted for a project, as a percentage of the eligible costs, is the following:

- for small enterprises and micro-enterprises: 70%, except for the projects located in the Bucharest–Ilfov region, where the maximum value is 60%;
- for medium-sized enterprises: 60%, except for the projects located in the Bucharest–Ilfov region, where the maximum value is 50%;
- for large companies: 50%, except for the projects located in the Bucharest–Ilfov region, where the maximum value is 40%.
- For public authorities and intra-community associations: 98% for the projects that do not generate revenues.

The difference up to the total value of the project is covered by the beneficiary. In addition to its own contribution to the eligible costs of the project, the beneficiary also bears the non-eligible costs. Also, the beneficiaries have to ensure the complete funding of the costs of investments carried out for the implementation of the project, up to the reimbursement of the co-financing.

For the projects for producing energy by combustion (cogeneration or separate production of electricity or thermal energy), the energy contents of the primary fuel used annually must be at least 80% from renewable resources.

The cogeneration projects can only be funded if more than 40% of the (electric and thermal) energy produced annually is meant for sale.

Biofuel production activity is only eligible if carried out with the aim to produce energy within the same project.

The total initial estimated budget allocated to the scheme was EUR 200 000 000 (RON equivalent), of which 88% were non-reimbursable European Funds, through the European Regional Development Fund, and the remaining 12% from public co-financing funds, provided from the State budget.

Later on, by Government Decision No 248/2012 amending and supplementing Government Decision No 750/2008 approving the Regional State Aid Scheme with regards to the use of renewable energy sources, the budget of the operation was increased to EUR 463 276 864.

The programme is implemented over the period between 2008 and 2013.

The programme encourages investments in small E-RES generation capacities (distributed generation).

In the case of cumulated support, for the operators that receive investment support and are also accredited for support through the Green Certificate promotion scheme, the National Regulating Authority in the Field of Energy decreases the number of Green Certificates, granted in proportion to the aid already received, keeping the values of the internal rate of return taken into account in the calculations supplied to the European Commission during the authorisation process of the promotion system, for each type of technology.

During the programme implementation period (2008–2013), there were two calls for project proposals for the funding of projects for producing energy from renewable sources. The details regarding the results of the first call in 2008 were presented in the previous progress report of Romania, in compliance with Directive 2009/28/EC, drafted in 2011.

Within the second call for project proposals, in 2010, the amount of EUR 386 000 000 was allocated. Out of the total number of 420 projects submitted, with a total value of RON 14 818 509 433.65 and a value of the requested non-reimbursable funding of RON 8 518 692 794.46, a total of 232 projects were evaluated and accepted. Out of these, currently 68 projects are being implemented (Table B.1.), to which 12 completed projects (Table B.2) are added.

Table B.1. Projects under implementation within the second call for project proposals

**Total approved non-reimbursable  
funding**

Type of resource	No of projects under implementation	Installed power (kW)	Installed power (kW)	RON	EUR (4.5 RON/EUR)
Biomass	12	34 367.99	47 644.00	346 898 159.14	77 088 480
PV	30	45 042.62	0	676 352 396.27	150 300 532
Wind	11	151 300	0	644 223 768.19	143 160 837
Micro-hydro	7	36 554.00	0.00	235 520 711.57	52 337 936
Geothermal	1	0	25 010.00	51 085 264.97	11 352 281
Hybrid	7	1795	460	30 474 915.60	6 772 203
<b>Total</b>	<b>68</b>	<b>269 058.62</b>	<b>73 114.00</b>	<b>1 984 555 215.74</b>	<b>441 012 269</b>

Table B.2. Completed projects within the two calls for project proposals

Type of resource	No of completed projects	Installed power (kW)	Installed power (kW)	Total approved non-reimbursable funding (RON)	
				RON	EUR (4.5 RON/EUR)
Wind	3	44 000.00	0.00	131 546 47.00	29 232 550
Micro-hydro	7	13 197.00	0.00	66 935 270.29	14 874 504
PV	1	257	0	6 185 629.00	1 374 584
Geothermal	1	0	30 000.00	14 022 597.00	3 116 132
<b>Total</b>	<b>12</b>	<b>57 454.00</b>	<b>30 000.00</b>	<b>218 689 973.29</b>	<b>48 597 770</b>

The following non-reimbursable funding was granted during the reporting period:

2011: RON 147 040 237 (EUR 32 675 million)

2012: RON 57 942 100 (EUR 12 876 million)

### C. The programme regarding the increase of energy production from renewable sources

The programme is funded from the Environmental Fund, the management of the programme being ensured by the Environmental Fund Management. The funding Guide was approved by Order No 614/2010 of the Ministry of Environment and Forests.

Projects for making installations for making use of the energy from renewable sources (wind, PV, biomass, hydro and geothermal) can be funded. The by-laws of company requesting the funding must include the activity of producing electricity and/or thermal energy.

Funding is granted in the amount of up to 50% of the total eligible value of the project, for the entire territory of Romania, except for the case when the beneficiary has its registered office/place of operation in the Bucharest–Ilfov Region, where funding is granted in the amount of up to 40% of the total eligible value of the project.

The maximum amount that can be granted is up to RON 30 million for each project.

The Environmental Fund Management organised the first call for project proposals in the 15 June–15 July 2010 period. The initial allocation for this call was RON 440 000 000, but as a result of the interest of the applicants, it was increased to RON 900 000 000.

In 2011, a total amount of RON 110 042 243 was distributed through this fund.

In 2012 the value of funding was RON 56 259 124.

### D. The programme regarding the installation of heating systems that use renewable energies, including the replacement or completion of traditional heating systems (“Green House” Programme – for natural persons)

The programme is financed from the Environmental Fund, the management of the programme management being ensured by the Environmental Fund Management. The guide of funding was approved by Order No 950/2010 of the Minister of Environment and Forests.

This programme ensures for any applicant natural person a financing of:

- up to RON 6 000 for installing solar panels
- up to RON 8 000 for installing heat pumps
- up to RON 6 000 for installing installations that generate thermal energy, based on pellets, briquettes, sawdust, as well as any other vegetal, agricultural and forestry residues and waste

Beneficiaries of this financing can only be applicants who wish to install this equipment in their private houses, apartment buildings (condominiums) being excluded. In 2010, the first call for proposals was organised for natural persons (the initial deadline was 1 June 2010), the total value of the allocated funds being RON 100 million. 16 300 projects were approved for financing, the entire amount being used.

A new call for proposals was launched in 2011, with over 15 000 applications.

In 2011, the total amount spent within this financing was RON 177 618 991.

In 2012, the value of the financing was RON 60 039 203.

#### **E. The programme regarding the installation of heating systems that use renewable energy, including the replacement and completion of the traditional heating system – having as beneficiaries the territorial administrative units, public institutions and religious institutions**

The programme is financed from the Environmental Fund, the management of the programme being ensured by the Environmental Fund Management. The financing guide was approved by Order No 1741/2010 of the Minister of Environment and Forests and it is the document that states the eligibility criteria, as well as those related to the project and expenses, the budget and the timetable of the financing programme.

Administrative-territorial units and public or religious institutions may submit projects for financing from the programme for the real estate in their property or administration.

The programme can include projects regarding the replacement or completion of traditional heating systems with systems that use solar energy, geo-thermal energy, wind energy, hydro energy, biomass, waste fermentation gas, also called storage gas, sludge fermentation gas from water treatment plants and biogas or any other systems that lead to the improvement of the quality of the air, water and soil.

The non-reimbursable financing, ensured by the Authority, is up to 90% of the eligible expenses of the project.

- a) The amount of the financing cannot exceed the value of RON 2 000 000 for public institutions, RON 500 000 for religious institutions and RON 4 000 000 for administrative-territorial units.

A first call for proposals was organised between 15 December 2010 and 31 January 2011. The allocated amount for this call for proposals was RON 100 000 000.

#### **F. The possibility of purchasing vehicles with electric engines and/or hybrids within the programme for stimulating the renewal of the national car fleet**

The programme for the renewal of the national vehicle fleet (informally also called the "Rabla" [Old car] programme) is financed from the Environmental Fund.

This programme gives a scrapping bonus to the owners of vehicles that are more than 10 years old and are brought for to the dedicated centres in order to be scrapped. The scrapping bonus is granted as vouchers that can only be used to buy new vehicles.

Starting with 2011, the Ministry of Environment and Forests, through the Environmental Fund Management, decided to offer the possibility to acquire electrical and hybrid cars through this programme. Thus, the owners – natural persons, public institutions and administrative-territorial units – that intend to purchase electrical and/or hybrid vehicles, were able to register with the programme between 3 October 2011 and 4 November 2011. The amount allocated for the Programme for the renewal of the national vehicle fleet and for the purchase of electrical and/or hybrid cars for 2011 is of RON 5 000 000.

The natural persons, administrative-territorial units and public institutions that hand over for scrapping the used vehicles within the “Programme for the stimulation of the renewal of the national car fleet” benefited for 2011 from up to 4 vouchers, as follows:

- a) 2 vouchers for purchasing a hybrid car, in exchange for handing over for scrapping a used car;
- b) 4 vouchers for purchasing an electric car, in exchange for handing over for scrapping a used car.

The natural persons, administrative-territorial units and public institutions that do not scrap used cars, but which purchase hybrid or electric cars, benefit from:

- c) a 10% discount, but no more than EUR 1 800, from the price of the purchased hybrid car;
- d) a 20% discount, but no more than EUR 3 700, from the price of the purchased electric car.

The facilities granted to those that purchase this type of car are meant to stimulate the acquisition of hybrid and electric cars, both by natural persons, and by local and central public administrations, in order to create a non-polluting environment, and one that observes the European standards on pollution.

### **G. Other related programmes.**

In the context of the use of renewable energy sources, Directive 2009/28/EC sets forth the obligation to ensure, at national level, certification systems (or equivalent qualification systems, based on well-defined criteria) for the installers of boilers and small stoves running on biomass and of photovoltaic solar systems and thermal solar systems, and of geothermal systems for small depths and heat pumps. Also, in order to increase the share of energy from renewable sources in the gross final consumption in buildings, Directive 2010/31/EU on the energy performance of buildings (EPBD) promotes the improvement of buildings' energy performance in order to have “zero energy consumption buildings”, where the annual consumption of primary energy should be equal to the energy production from renewable sources (in or adjacent to the building).

In order to apply these requirements regarding the use of renewable energy sources, the national programme **BUILD UP Skills Romania – ROBUST, Pillar 1**, was created within the BUILD UP SKILLS action of the Intelligent Energy – Europe (IEE) Programme, for the evaluation of the current situation and the development of a national strategy to train the labour force needed in order to achieve the energy efficiency objectives and the use of systems based on renewable energy sources in buildings.

Based on the analysis of the current situation of the professions and qualification of the labour force in construction, mainly in the field of buildings and building installations, within the project, several actions were taken in order to complete the Classification of Professions in Romania with professions specific to installations for the use of renewable energy sources in buildings.



In order to make the most of the results obtained in the Build Up Skills – ROBUST project, Pillar 1, a new project is now being implemented, which envisages the development of qualification schemes of workers in the construction insulation industry and of those in the thermal-insulating woodwork sector, and the initiation/testing of the first training course based on these qualification schemes.

With regards to the energy efficiency of buildings, Law No 372/2005 on energy efficiency in buildings, republished, which transposes Directive 2010/31/EU, stipulates, in the case of major rehabilitation of existing buildings, or in the case of new buildings/campuses, the possibility to install alternative systems in order to generate energy from renewable sources, based on their technical, economic and environmental feasibility.

In order to install these systems, the legal framework regarding the authorisation of construction works has been improved, mainly with regards to:

- the obligation to request, through the urban planning certificate, the energy audit report and the study with regards to the possibility to set up/use alternative systems for producing energy, to the extent that this is possible from a technical, functional, economic and environmental point of view;
- the obligation to have a control performed by the relevant department of the local/central public administration issuing the building permit and related documentation.

**Table 3: Support schemes for energy from renewable sources**

Support schemes for RES for 2011		Support per unit	Total (Mil. euro)
A. System of mandatory quotas combined with green certificate trading	Obligation /Quota (%)	Initial quota according to Law 220/2008: 10%	EUR 93.28/MWh generated electricity The support was granted for 1.51 TWh
		Updated quota: 2.5%	
	The certified average price EUR/GC EUR 56.15/GC on the centralised market EUR 56.15/GC bilateral agreements		
	Penalties EUR 112.31/GC not purchased		RON 8.09 mil Around EUR 1.80 mil
B. POS CCE AP 4 DM 2	Non-reimbursable financing for investments in RES capacities	EUR 0.791 mil/ installed MW of electricity	32.68
C. Programme for increasing energy production from renewable sources	Subsidies for investments (grants or loans)		
C. Programme for installing heating systems that use renewable energy, including the replacement or completion of traditional heating systems (The “Green House” Programme – for natural persons)		- RON 6 000 (approx. EUR 1 400/applicant for solar panels and thermal energy generation from biomass - RON 8 000 (approx. EUR 1 860/applicant for heat pumps	24.45
D. Programme for installing heating		- RON 4 000 000 for administrative-	39.47

systems that use renewable energy, including the replacement or completion of traditional heating systems – beneficiaries: administrative-territorial units, public institutions and religious institutions			territorial units with more than 100 000 inhabitants - RON 3 000 000 for administrative-territorial units with 50 000–100 000 inhabitants - RON 2 000 000 for administrative-territorial units with 20 000 – 50 000 inhabitants - RON 1 000 000 for administrative-territorial units with 3 000–20 000 inhabitants - RON 500 000 for administrative-territorial units with less than 3 000 inhabitants	
Total annual estimated support for the electricity sector				155.56
Total annual estimated support for the heating sector				39.47
Total annual estimated support for the transport sector				

**Table 3: Support schemes for energy from renewable energy sources**

Support schemes for RES for 2012			Support per unit	Total (Mil. Euro)
A. System of obligatory quotas combined with green certificate trading	Obligation /Quota (%)	Initial quota according to Law No 220/2008: 12%	EUR 100.48/MWh generated electricity Support was granted for 3.365 TWh	303.00
		Updated quota: 5.63%		
	The certified average price EUR/GC 56.44 EUR/GC on the centralised market 55.90 EUR/GC bilateral agreements			
	Penalties 114.77 EUR/ GC not purchased			RON 19.51 mil Around EUR 4.5 mil
B. POS CCE AP 4 DM 2	Non-reimbursable financing for investments in E-RES capacities		EUR 0.791 mil/ installed MW of electricity	12.87
C. Programme for increasing energy production from renewable sources	Subsidies for investments (grants or loans)			
C. Programme for installing heating systems that use renewable energy, including the replacement or completion of traditional heating systems (The “Green House” Programme – for natural persons)			- RON 6 000 (approx. EUR 1 400/applicant for solar panels and thermal energy generation from biomass - RON 8 000 (approx. EUR 1 860/applicant for heat pumps	12.50
D. Programme for			- RON 4 000,000 for	13.34

installing heating systems that use renewable energy, including the replacement or completion of traditional heating systems - beneficiaries: administrative-territorial units, public institutions and religious institutions		administrative-territorial units with more than 100 000 inhabitants - RON 3 000 000 for administrative-territorial units with 50 000–100 000 inhabitants - RON 2 000 000 for administrative-territorial units with 20 000–50 000 inhabitants - RON 1 000 000 for administrative-territorial units with 3 000–20 000 inhabitants - RON 500 000 for administrative-territorial units with less than 3 000 inhabitants	
Total annual estimated support for the electricity sector		328.37	
Total annual estimated support for the heating sector		13.34	
Total annual estimated support for the transport sector			

### **3.1. Information on the way in which electricity that received support is allocated to the end consumers for the purposes of Articles 3(6) of Directive 2003/54/EC (Article 22(1)(b) of Directive 2009/28/EC).**

The provisions of Article 3(6) of Directive 2003/54/EC (included in Directive 2009/72/EC at Article 3(9)) were transposed into the Romanian legislation by the Energy Labelling Regulation approved by Order No 69/2009<sup>12</sup> of the National Regulating Authority in the Field of Energy. Details regarding the contents of this Regulation were sent in the first progress report for years 2009/2010.

Once a year, the provider sends the electricity label to its consumers and, if necessary, to the suppliers to whom the provider sold electricity during the reference period.

The reference period for labelling is the previous calendar year.

The dates for consumers that use regulated tariffs are fixed at national level, not depending on the portfolio of primary sources of the provider with which the consumer has signed an electricity supply agreement. The electricity label for these consumers is published every year on the website of the National Regulating Authority in the Field of Energy ([www.anre.ro](http://www.anre.ro)) by 15 April and is edited and sent to the consumers also by the providers.

The providers are compelled to use the “provider portfolio” labelling system with their eligible consumers and other suppliers to whom they sell electricity.

The providers are also free to use the “provider portfolio + category” labelling system for business purposes.

<sup>12</sup> Order No 69/2009 of the National Regulating Authority in the Field of Energy on labelling electricity, Review 1, was published in Official Journal No 537/3 August 2009

The mandatory information on the electricity label of a provider is as follows:

1. The contribution of each primary source of energy to the primary energy sources portfolio of the provider, corresponding to the reference period;
2. The impact on the environment of the use of the primary sources mentioned at paragraph (1) regarding:
  - a) specific CO<sub>2</sub> emissions resulting from generating the electricity supplied during the reference period;
  - b) the radioactive waste resulting from generating the electricity supplied during the reference period;
3. Comparison of the previously mentioned values with the national averages of those units.

The model of electricity labels is shown in Figure 1.

<b>ELECTRICITY LABEL</b>			
<b>Supplier:</b>		<b>Supplier X</b>	
<b>Telephone:</b>		<b>0800 - xxxxxxxxxxxx</b>	
<b>Website:</b>		<b>www.supplier-x.com</b>	
<b>Electricity supplied by Supplier X, 2008</b>			
<b>The electricity supplied by Supplier X was produced from the following sources</b>	<b>Primary source of energy</b>	<b>Supplier</b>	<b>Electricity production in Romania 2008</b>
<p>The pie chart illustrates the primary sources of energy used for electricity production by Supplier X in 2008. The largest segment is Coal at 61%, followed by Nuclear at 25%. Other traditional sources account for 1%, Renewables for 8%, and Hydroelectric for 4.5%. Natural Gas and Oil fuel are not represented in the chart, indicating 0% contribution.</p>	<b>Coal</b>	<b>61%</b>	<b>39.46%</b>
	<b>Nuclear</b>	<b>25%</b>	<b>17.30%</b>
	<b>Natural Gas</b>	<b>5%</b>	<b>14.03%</b>
	<b>Oil fuel</b>	<b>0%</b>	<b>0.71%</b>
	<b>Other traditional sources</b>	<b>1%</b>	<b>0.63%</b>
	<b>Renewables:</b>	<b>8%</b>	<b>27.87%</b>
	Hydroelectric	4.5%	27.86%
	Wind	3.2%	0.0%
	Biomass	0.3%	0.0%
	Solar	0.0%	0.0%
	Other renewables	0.0%	0.0%
<b>2% from the energy sold by Supplier X is from import and included in the above detailed list</b>			
<b>Impact on the environment</b>			
- CO <sub>2</sub> emissions (640 g/kWh)		average at country level	
- Radioactive waste (x units/kWh)			
<b>Impact on the environment – Supplier / national average</b>			
<b>According to Order No 69/2009 of the National Regulating Authority in the Field of Energy</b>			

Figure 1

**4. Information on the way the support schemes were structured in order to take into account the applications that use renewable energy and which bring additional advantages, but have higher costs, including biofuels resulting from waste, residues, non-food cellulosic material and ligno-cellulosic material.**

The effort to make use of renewable energy sources in Romania also took into consideration the possibilities to direct the support schemes towards applications that

bring additional advantages, but imply higher costs, being generally considered unattractive by investors. This continuous evaluation and re-evaluation of the opportunities brought by the exploitation of renewable energies in specific applications and the integration of these applications in the support schemes is carried out both from a legislative, and a secondary regulation perspective, but also by specific methodologies meant to promote certain measures.

In what follows we present some of the ways in which the promotion of some specific applications was attempted during the reported period:

- Thus, with regards to the promotion scheme for electricity from renewable energy sources by green certificates, Law No 220/2008, as subsequently completed and amended, included provisions that stimulate:
  - high efficiency cogeneration in biomass plants, by granting an additional green certificate;
  - the installation of wind installations/farms in isolated systems, by including in the support scheme and granting green certificates for electricity generated in the installations used previously on the territory of other states;
  - the installation of distributed generation micro-capacities, by introducing the obligation of providers to purchase, at regulated prices, the energy generated in the licensed territory of power plants under 1 MW or of cogeneration plants under 2MW. With regards to this measure introduced in 2011, we would like to state that the aforementioned regulated price system was previously notified separately to the Commission in order to obtain the authorisation.
- In turn, the tariff methodologies for the public electricity distribution and transmission system take into account the recognition in the transmission tariff, by the regulated assets, of the investments made by Transmission System Operator and Distribution Operator in order to improve the capacity of the grids to take in the electricity generated in the RES plants, where these investments were set forth in the investment plan and approved by the regulator.
- The co-financing by the European Commission and the State budget of the projects in the energy sector under the Sectoral Operational Programmes was also structured so as to promote applications that add value, but with higher costs. Thus, according to the project evaluation criteria for non-reimbursable financing more points are granted to projects that have a higher economic net present value and a low financial return rate, and fewer points are granted to projects that have a financial return rate higher than the average of the sector or of the technology. Thus, it became possible to support applications regarding the exploitation of local geothermal resources or the commune's public lighting from renewable energy sources. Another category of eligible projects that received more points were projects using biomass in high efficiency co-generation plants. Romania has seen low growth in biomass plants, as compared to the estimates of NREAP, and to the available national potential resources.  
Also, the Sectoral Operational Programme "Increase of Economic Competitiveness" – AP4 was structured in such a way that it ensured co-financing for the Transmission System Operator and Distribution Operator projects for the consolidation of the grids in order to take in and transport the electricity generated by the renewable energy plants.
- The programmes financed from the Environmental Fund were structured so as to consider applications that bring additional advantages, such as:
  - financing natural persons for applications (electricity and/or thermal energy from RES) in their individual households, applications that are for local consumption and that do not affect the electricity grids;

- financing thermal plants that use forestry, agricultural and vegetal waste;
  - financing public institutions and administrative-territorial units that complete or replace the traditional heating/lighting systems in their own buildings, using E-RES;
  - subsidies for the purchase of electric or hybrid cars.
- With regards to the promotion of biofuels resulting from waste, residues, non-food cellulosic material and ligno-cellulosic material, Government Decision No 935/2011 was amended by the Government Decision 918/2012, in the sense that the mandatory values for biofuels set forth for gas and diesel sold at gas stations may be reduced by half if biofuels obtained from the above-mentioned waste is used. As a consequence, the first applications to obtain biofuels from food waste appeared in Romania.

During the reporting period 2011/2012, the budgetary difficulties regarding a support scheme also persist, with regards to support schemes for investments in costly technologies, especially when the infrastructure needed to use waste at a large scale, including the production of biofuels resulting from waste, residues, non-food cellulosic material and ligno-cellulosic material, is missing.

#### **5. Information on the operation of the guarantee of origin system for electricity, heating and cooling from RES and the measures taken in order to ensure reliability and protection against fraud. (Article 22(1)(d) of Directive 2009/28/EC**

In November 2011, Order No 42/2011<sup>13</sup> of the National Regulation Authority in the Field of Energy on the approval of the Regulation for the Accreditation of E-RES producers for the promotion of the green certificates system was approved.

The Accreditation Regulation defines the accreditation requirements for power plants producing electricity from renewable energy sources for production technologies using wind, hydro, solar, biomass and biogas sources.

For accreditation, the RES power plants have to ensure the measuring of the energy from RES, proving that they ensure the separate measurement by electrical generation units and RES types, and, in the case of multi-fuel power plants and co-generation power plants, the quantity and the inferior caloric power of the fuels used must be measured. Besides the documents and the declarations that have to be submitted in order to comply with the accreditation requirements, the National Regulation Authority in the Field of Energy monitors and has the right to control the accredited installations, being entitled to modify, suspend or cancel the accreditation. During the monitoring process performed by the National Regulation Authority in the Field of Energy, the quantities of electricity generated from RES and delivered to the grids are notified, these quantities being also recorded monthly by producer, by the Transmission System Operator, and published on [www.transelectrica.ro](http://www.transelectrica.ro), the market for green certificates.

The system for the accreditation of RES producers and the monitoring of the production and compliance with the accreditation requirements gives the certification of origin for the production of energy from RES for a significant quantity of electricity obtained from renewable sources.

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<sup>13</sup> Order No 42/2011 of the National Regulation Authority in the Field of Energy approving the Regulation for the Accreditation of E-RES producers for the implementation of the green certificate promotion system, was published in Official Journal No 770 of 1 November 2011

Strictly referring to the issuance of the guarantees of origin in Romania, Government Decision No 1429/2004 on the certification system of the origin of energy from RES was replaced starting with 2012 by Government Decision No 1232/2011<sup>14</sup> for the approval of the Regulation for the issuance and monitoring of the guarantees of origin for electricity from renewable sources. This regulation transposes Article 15 of Directive 2009/28/EC into the national legislation.

According to this regulation, the National Regulation Authority in the Field of Energy is the body that issues to producers of energy from RES, upon their written request, the guarantees of origin.

The guarantee of origin is an electronic document with the only purpose of providing to the end consumer proof that a share or a quantity of the energy comes from renewable sources, according to Article 3(9) of Directive 2009/72/EC. The energy unit for which the guarantee is granted is 1MWh. The period for which the guarantee is requested can be of one month, a quarter or a semester.

A guarantee of origin – GO – must contain at least the following information:

- date of issue, issuing body and the country of said body, a unique identification number;
- the source of the electricity, indicating the initial and final date of its production;
- the identity, location, type and capacity of the installation, the date the installation was commissioned;
- if and to what extent the generating unit benefited from investment support or any other form of support while operational.

The registration of guarantees of origin is done by the National Regulation Authority in the Field of Energy in the Single Registry of Guarantees of Origin, in electronic format. For each energy unit only one guarantee of origin can be issued, valid for a period of one year from the production date.

The issuance, use, transfer and cancellation of the guarantees of origin are recorded in the Single Registry of Guarantees of Origin.

The transfer of guarantees takes place separately or together with the physical transfer of electricity. The guarantee of origin can also be transferred to the participants to the energy market from other EU Member States. The transfers of guarantees of origin do not influence the statistical transfers, joint projects or support schemes regarding the final gross consumption of energy from RES.

The National Regulation Authority in the Field of Energy recognises the guarantees of origin issued by the authorities of other EU Member States or, in case of rejection, a specific procedure must follow to inform and justify the decision in front of the European Commission.

In order to ensure the accuracy and security of the information in the guarantees of origin, the Regulation on the supervision of guarantees of origin was approved by Order No 23/2004<sup>15</sup> of the president of the National Regulation Authority in the Field of Energy; the regulation sets forth the following, for each stage of the process of issuing guarantees of origin for energy from RES:

- the parties involved and their responsibilities in each activity of the process of

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<sup>14</sup> Government Decision No 1232/2011 approving the Regulation for the issuance and monitoring of guarantees of origin for electricity from renewable sources was published in Official Journal No 4 of 4 January 2012

<sup>15</sup> Order No 23/2004 of the National Regulation Authority in the Field of Energy approving the Supervisory Procedure for the issuance of guarantees of origin for electricity generated from renewable sources was published in Official Journal No 928/12.10.2004 and on the website of the National Regulation Authority in the Field of Energy [www.anre.ro](http://www.anre.ro). Order No 23/2004 was repealed by Order No 20/2013.

- issuing guarantees of origin;
- the operations in the Single Registry for Guarantees of Origin for the monitoring of said guarantees.

During 2011 and 2012 no guarantees of origin were granted.

Law 220/2008, re-issued, includes a separate chapter (chapter 9), entitled “Guarantees of Origin for electricity, heating and cooling produced from renewable energy sources”.

Government Emergency Order No 88/2011 amending and supplementing Law No 220/2008 sets forth that until meeting all national targets of E-RES production, the energy that benefits from the promotion system presented in Chapter 3 is sold accompanied by the respective Guarantee of Origin.

Government Emergency Order No 88/2011 also contains provisions with regards to the certificates of origin for biomass used as fuel or raw material. According to this, the producers of E-RES benefit from the E-RES promotion system only if they hold certificates of origin for the biomass used as fuel or raw material. These certificates of origin are issued by:

- the Ministry of Environment and Forests for biomass from forestry and related industries, as well as for biomass from industrial and municipal waste;
- the Ministry of Agriculture and Rural Development for biomass from agriculture and related industries.

The certificates of origin set forth previously are issued based on Order No 46/2012 of the Ministry of Agriculture and Rural Development with regards to the approval of the Procedure of issuing the certificate of origin for biomass from agriculture and related industries, used as fuel or raw material for the production of electricity, with subsequent amendments and supplements.

*The procedure* sets forth the legal framework for the enforcement of the provisions of Article 3(9), (10)(b) and (11) of Law No 220/2008 with regards to establishing the promotion system for the production of energy, re-issued, with subsequent amendments and supplements.

The procedure defines the *biomass* from agriculture and related industries, used as fuel or raw material for the production of electricity, the *producers of energy crops and the waste generators* – beneficiaries of the certificates of origin, as well as the *conditions* they have to observe in the production and sale of the biomass to the producers of electricity from renewable energy sources, beneficiaries of the promotion system set up by Law No 220/2008.

*The Certificates of origin* are issued by the Ministry of Agriculture and Rural Development, through the County and Bucharest Directorates for Agriculture and Rural Development (CDA), on whose administrative-territorial area the crop producers and waste generators operate, based on the request and the attached documentation submitted by said producers and energy generators.

The producers of energy crops and waste generators request, through a written claim, one certificate of origin for the total amount of biomass, and one certificate of origin for each amount of biomass sold to the producers of electricity from renewable sources of energy, according to the sales agreements.

If the documentation conforms to the provisions of the procedure, the CDA issues the certificate of origin within 10 weekdays from the date of recording the claim.



The deadline for issuing the certificates of origin changes in case CDA requests additional information, the procedure of issuing the certificates being suspended until the request has been completed, when the certificates of origin are issued within 5 weekdays from the date of receiving the additional information.

The procedure establishes the situations of rejecting the claim and cancelling the certificates of origin, the deadlines and the authorities to which such information is communicated. In case of cancellation, the producers of energy crops or waste generators will no longer benefit from certificates of origin for a period of 3 years from the date of issuing the cancellation decisions.

The record of the issued certificates of origin is kept at each CDA, as well as in a centralised manner, at national level, by the Ministry of Agriculture and Rural Development.

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

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

	Amount of domestic raw material (thousand ton)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (ton)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU States (ton)		Primary energy in amount of imported raw material from non EU States (ktoe)	
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
<b>Biomass supply for heating and electricity:</b>												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings, etc.)	14 177	14 968	3 459	3 654	0	0	0	0	0	0	0	0
Indirect supply of wood biomass (residues and co-products from wood industry, etc.)												
Energy crops (grasses, etc.) and short rotation trees (please specify) - <i>energy willow</i> - <i>myscanthus</i>	5.7	7.9	2.6	3.2	0	0	0	0	0	0	0	0
Agricultural by-products / processed residues and fishery by-products	0	0	0	0	0	0	0	0	0	0	0	0
Biomass from waste (municipal, industrial, etc.)	0	0	0	0	0	0	0	0	0	0	0	0
Others (please specify)	0	0	0	0	0	0	0	0	0	0	0	0
<b>Biomass supply for transport:</b>												
Common arable	464*	485*	147	347	0	0	0	0	0	0	0	0

crops for biofuels (please specify main types) - maize - sunflower + rape	Of which: 174 290	Of which: 212 273										
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)	0	0	0	0	0	0	0	0	0	0	0	0
Others (please specify)	0	0	0	0	0	0	0	0	0	0	0	0

\*The total production (thousand ton) of raw materials is reported, for biofuels and contained primary energy, regardless of whether the produced biofuels meet the sustainability criteria or not.

Source: National Statistics Institute; the energy balance and the structure of the energy machine, for wood biomass

Ministry of Agriculture and Rural Development monitoring of agricultural crops.

In 2011 domestic wood biomass production (including fire wood, wood biomass) (14 245 thousand tons, i.e. 3 476 thousand toe) was higher than domestic consumption (14 177 thousand tons, i.e. 3 459 thousand toe). Import and export amounts were recorded, and variation of stock, with surplus at export and stock increase at the end of the year. Under these conditions it was deemed that domestic consumption was fully covered from domestic production.

In 2012 domestic wood biomass production (including fire wood, wood biomass) (15 539 thousand tons, i.e. 3 795 thousand toe) was higher than domestic consumption (14 968 thousand tons, i.e. 3 654 thousand toe). Import and export amounts were recorded, and variation of stock, with surplus at export and stock increase at the end of the year. Under these conditions it was deemed that domestic consumption was fully covered from domestic production.

The energy crops were used for briquettes and pellets. These crops are reported for the first time in 2011, 2012. Approximately 75% of the reported amount was crops of energy willow.

Arable crops for biofuels (bioethanol and biodiesel) are also reported for the first time. Maize and sunflower are used to this end. The raw materials meant for the production of biofuels (thousand ton) and the amount of energy obtained (ktoe) are not identified according to destination, i.e., obtaining the biofuels that meet or do not meet the sustainability criteria.

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

Land use	Surface (ha)	
	2011	2012
1. Land used for common arable crops (wheat, sugar beet, etc.) and oilseeds (rapeseed, sunflower, etc.) (Please specify main types)		
maize	2 589.7	2 731.0
wheat	1 947	1 997.6
potatoes	242.6	223.5
sunflower	995	1 067.7
rape	392.7	105.3
2. Land used for short rotation trees (willows, poplars). (Please specify main types)	n.a.	n.a.
- energy willow	0.215	0.320
3. Land used for other energy crops such as grasses,		

sorghum (*Phalaris arundinacea*, *Panicum virgatum*,  
*Myscanthus*), sorghum. (Please specify main types)  
 - *Myscanthus*

0.100 0.100

Source: Ministry of Agriculture and Rural Development Monitoring for agricultural crops.

Dynamically, as compared to the reporting of previous years, the destination of the land used for common arable crops is relatively unchanged, and implicitly, so is the use of land for energy crops.

## 7. Information on the changes in commodity prices and land use in Romania in 2011 and 2012, associated with increased use of biomass and other forms of energy from renewable sources (*Article 22(1)(h) of Directive 2009/28/EC*).

After 1990, the inflation rate was continuously high in Romania, according to the following table:

**Table A**

	U.M.	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Inflation rate</b>	%	22.50	15.30	11.90	9.00	6,56	4.84	7.85	5.59	6.09	5.79	3.33

From the very beginning the fact is noted that after 2003 (the year when definite measures were initiated to promote RES), inflation started a process of decreasing. The 2010 growth was caused first of all by the increase of the VAT (from 19% to 24%).

In what follows, information with regards to the evolution of the prices in 2008, 2009, 2010, 2011 and 2012 is presented, as published by the National Statistics Institute.

**Table B**

	2008	2009	2010	2011	2012
Inflation rate	7.85	5.59	6.09	5.79	3.33
Price increase of food products	9.22	3.25	2.33	6.02	1.89
bakery products	10.56	2.60	2.15	7.46	1.70
vegetables and canned vegetables	10.72	1.71	6.80	11.13	-8.25
fruit and canned fruit	11.95	-3.23	0.40	9.62	3.57
Oil for consumption	51.02	-13.76	-1.44	18.80	4.26
Meat and meat products	4.44	5.95	2.32	2.26	3.08
Milk and dairy products	11.00	5.83	1.49	4.56	2.74
Sugar, confectionery and honey	3.07	6.28	2.45	10.97	2.81
Eggs	8.00	13.66	-1.39	1.24	28.73
Alcoholic beverages	2.70	2.91	2.92	2.66	1.51
Increase in the price of non-food commodities	6.36	6.22	9.78	6.15	3.77
Fuel	11.75	4.02	13.04	12.82	6.67
Electricity	3.28	2.45	6.39	5.91	4.58
Natural gas	17.63	1.40	-1.69	2.06	1.54
Thermal energy	6.47	10.42	4.78	15.77	15.27
Furniture	2.41	1.95	1.39	1.49	1.06

Increase in the price of services	8.57	8.97	4.78	4.45	5.07
Urban transportation	9.47	7.73	5.83	5.74	2.55
Inter-city transportation	9.50	4.36	2.91	4.54	4.11

Source: National Statistics Institute – *The Statistical Yearbook of Romania for 2008, 2009, 2010, 2011 and 2012*

The variation of prices for agricultural products in December 2008, 2009, 2010, 2011 and 2012, as compared to December of the previous year, is shown in Table C.

**Table C** – The increase of the prices of agricultural products [%]

	2008	2009	2010	2011	2012
Price increase of agricultural products	-4.1	1.8	27.1	-5.0	25.39
Price increase of agricultural plant products	-19.6	0.4	40.7	-10.8	33.35
Sunflower	-29.8	3.8	96.1	-8.8	31.61
Wheat	-41.3	-3.23	74.2	-8.5	48.72
Potatoes		-3.0	62.0	-43.6	57.98
Maize	-29.0	-9.3	31.6	7.9	37.41
Price increase of the agricultural products of animal origin	20.0	4.3	4.0	8.3	10.33

Source: National Statistics Institute – *Price Bulletins No 12/2008, 12/2009, 12/2010, 12/2011, 12/2012*

The evolution of the prices of agricultural products in Romania has to be studied in the general context of the evolution of agriculture in the country. During the period of centralised economy, the entirety of agriculture was cooperativised. In 1990, the old agricultural establishments (cooperatives) were dismantled and the land was restored to the property of the former owners. This resulted in a very large number of small agricultural establishments. The old irrigation systems were destroyed, and the use of agricultural machines decreased. The evolution of final energy consumption in agriculture proves this. This consumption dropped from:

- 1 457 thousand toe in 1992 to
- 395 thousand toe in 2000 and
- 203 thousand toe in 2005.

According to the data published by the Romanian National Statistics Institute in the Statistical Yearbook of Romania, the agricultural surface at the end of 2012 was 14 615 thousand ha, of which the irrigated agricultural surface was 165 thousand ha (1.1%).

A relatively high number of farmers (often at an older age, and without financial means) practiced subsistence agriculture, with results depending on the weather.

According to the final results of the General Agricultural Census in 2010, the number of agricultural establishments in Romania was 3 859 thousand, of which:

- 3 828 thousand establishments without legal personality (individual agricultural establishments, licensed natural persons, individual enterprises, family enterprises), 14.3% less than in 2002; the average surface of an agricultural establishment without legal personality was 1.95 ha;
- 30 698 establishments with legal personality, 35.4% more than in 2002; the average surface of an agricultural establishment with legal

personality was 190.78 ha.

The same census showed that at national level the unused agricultural surface was 896 thousand ha, and the agricultural surface at rest was 953 thousand ha.

With regards to the use of the cultivated land, the evolution recorded in the period between 2006 and 2012 is presented in the below table.

<b>Table D</b>	<b>[thousand ha]</b>						
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Total cultivated surface, of which:	7 884	7 777	7 798	7 884	7 807	8 082	8 058
Cereals for grains, of which:	5 114	5 129	5 211	5 282	5 041	5 225	5 440
Wheat	2 013	1 975	2 110	2 149	2 162	1 947	1 998
Maize	2 520	2 525	2 441	2 339	2 098	2 590	2 730
Root vegetables, of which:	344	320	298	297	282	270	266
Potatoes	278	268	255	255	241	243	224
Industrial plants, of which:	1 331	1 354	1 251	1 269	1 431	1 490	1 272
Oilseeds, of which:	1 298	1 340	1 239	1 254	1 410	1 473	1 261
Sunflower	991	836	814	766	791	995	1 067
Rape	110	365	365	420	537	393	105

Source: National Statistics Institute – The Statistical Yearbook of Romania

It is noted that between 2006 and 2012 the surface cultivated with rapeseed and meant in the end for the production of biodiesel grew by 2010, up to 537 thousand ha, after which it decreased in the last two years to: 393 thousand ha in 2011, and 105 thousand ha in 2012.

The total cultivated surface in the same period of time grew from 7 884 thousand ha to 8 058 thousand ha.

It is considered that Romanian agriculture offers important possibilities for extensive and intensive development, and it is difficult to talk about limitations of the food products introduced by growing energy crops.

## **8. Biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material. (Article 22(1)(i) of Directive 2009/28/EC).**

**Table 5: Production and consumption of Article 21(2) biofuels (Ktoe)**

<b>Article 21(2) biofuels</b>	<b>2011</b>	<b>2012</b>
Production – Fuel type X (Please specify)	0	0
Consumption – Fuel type X (Please specify)	0	0
Total production Art.21.2.biofuels	0	0
Total consumption Art.21.2. biofuels	0	0
% share of 21.2. biofuels from total RES-T	0	0

- In Romania difficulties persist with regards to achieving the necessary infrastructure for a large-scale use of waste, and with regards to funding support schemes that facilitate the introduction of costly technologies, as well as the biofuels mentioned in Article 21(2).
- Some provisions introduced in 2012 with regards to reducing the mandatory quotas

set forth for biofuels in the gas and diesel oil sold at gas stations, in case of the biofuels from waste, residues, cellulosic material of non-food origin and ligno-cellulosic material, amongst other factors, led to the occurrence of the first applications for obtaining biofuels from food waste in Romania in 2013.

**9. The estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within the country in the preceding 2 years. (2011, 2012) (Article 22 (1)(j) of Directive 2009/28/EC).**

In the initial stage (the 2005–2010 period) there were no explicit provisions in the domestic law with regards to the production of biofuels and bioliquids under conditions of sustainability, and with regards to the evaluation of the impact of such production on biodiversity, water resources, water quality and soil quality, etc. These provisions were introduced by Government Decision 935/2011<sup>16</sup>.

The main provisions of Government Decision 935/2011 are the following:

- Fuel suppliers put on the market only gas and diesel oil that contains biofuels, as follows:
  - a) from the date of the Decision entering into force (11 November 2011),
    - diesel oil containing at least 5% volume biofuel;
    - gas containing minimum 4% and maximum 5% volume of biofuel;
  - b) from 1 January 2013:
    - diesel oil containing at least 6% volume biofuel;
    - gas containing minimum 6% volume biofuel;
  - c) from 1 January 2015:
    - diesel oil containing at least 7% volume biofuel;
    - gas containing at least 8% volume biofuel;
  - d) from 1 January 2017, gas containing at least 9% volume biofuel;
  - e) from 1 January 2019, gas containing at least 10% volume biofuel.

The Ministry of Economy, Commerce and Business Environment is the authority in charge of monitoring the observance of said provisions.

- Only biofuels and bioliquids that are produced from raw materials that meet the sustainability criteria are allowed to be introduced on the market, regardless of whether the raw material comes from an agricultural area of the European Union, or from outside of it. These criteria are the following:
  - The reduction in greenhouse gas emissions due to the use of biofuels and bioliquids, as compared to the greenhouse gas emissions due to the use of fossil fuels, is:
    - a) minimum 35%, starting with 1 January 2012;
    - b) minimum 50%, starting with 1 January 2017;
    - c) minimum 60%. starting with 1 January 2018,  
in case of the biofuels produced in installations in which production started on 1 January 2017 or after this date.

In the case of the biofuels and bioliquids produced in operating installations, these provisions are applied only from 1 April 2013. In an Annex to the Government Decision the methodology of calculation is presented for the reduction of the greenhouse gas emissions resulting from the use of biofuels and bioliquids.

- Biofuels and bioliquids cannot be produced from raw materials produced on land

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<sup>16</sup> Government Decision 935/2011 with regards to promoting the use of biofuels and bioliquids was published in Official Journal No 716/11 October 2011.

rich in biodiversity, that is, land that, starting with 1 January 2008, held one of the following statuses, regardless of whether these situations are still valid, or not:

- a) primary forests and other woodland of native species, where there are no visible signs of human activity, and the environmental processes are not affected significantly;
  - b) areas designated by law or by the environmental authority for the protection of the environment or for the protection of ecosystems or rare or endangered species, acknowledged in international agreements or included in the lists drafted by the inter-governmental organisations or by the International Union for the Conservation of Nature and Natural Resources, except where evidence is provided that the production of the raw material did not affect the scope of environmental protection;
  - c) pastures rich in biodiversity, such as the natural pastures rich in biodiversity that would continue to be pastures in the absence of human intervention, and that keep the structure of the natural species, the environmental features and processes, or pastures rich in biodiversity that are not natural, and that would cease to exist as pastures in the absence of human intervention, and that contain a large diversity of species and are not degraded, if no evidence is provided that harvesting the raw materials is necessary for maintaining the pasture status.
- Biofuels and bioliquids cannot be produced from raw materials that come from land with high carbon stock, that is, land that used to hold one of the following statuses, starting with 1 January 2008, and that no longer hold said status, as follows:
    - a) wetlands, that is, areas permanently or over a significant period of the year covered or saturated with water;
    - b) high-density forests, that is, land areas larger than one hectare, covered with trees taller than 5 metres, and with a canopy larger than 30% or trees that can reach these thresholds in situ;
    - c) land larger than one hectare, covered with trees higher than 5 meters and a canopy between 10% and 30% or trees that can reach these thresholds in situ.

These provisions do not apply if, on the date the raw material was obtained, the land had the same status as before 1 January 2008.

- Biofuels and bioliquids cannot be produced from raw materials that come from lands which, on 1 January 2008, were peat bogs, except for the case in which there is proof that the planting and harvesting of that raw material does not involve the drainage of the soil that had not been drained previously.
- Government Decision 935/2011 transposes into the domestic legislation:
  - the provisions of Article 1, Article 3(4) and Article 4 of Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport;
  - the provisions of Article 2(m), (n) and (o), Articles 17, 18, 19, 21 and Article 26(3) of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

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

**Table 6: Estimated GHG emission savings from the use of renewable energy (t CO<sub>2</sub>eq)**

Environmental aspects	2011	2012
<b>Total estimated net GHG emission saving from using renewable energy</b>	<b>31 131</b>	<b>30 349</b>
- Estimated net GHG saving from the use of renewable electricity	17 279	15 852
- Estimated net GHG saving from the use of renewable energy in heating and cooling	13 196	13 896
- Estimated net GHG saving from the use of renewable energy in transport	656	601

For the calculation of the net estimated reduction of greenhouse gas emissions, as a result of the use of electricity from renewable sources, the data provided by the National Institute of Statistics through the Energy Balance Sheets and sent by Romania to the EUROSTAT/IEA/UNECE international institutions in 2013 were used. For electricity from hydro and wind, the real quantities generated in 2011 and 2012 were used, and not the normalised quantities.

The estimation of the CO<sub>2</sub> equivalent emission savings for the production of electricity, and of the heat for heating/cooling, was done by using solid fuel (brown coal).

The efficiency used to determine the energy consumption is the average of the values reported in the Energy Balance Sheet, for electricity and heating production, for the appropriate type of fuel, respectively brown coal: in the generation and self-generation of electricity (main activity and co-generation) – 30%; in generating heat (main activity and in co-generation) – 65%; in self-generation of heat (main activity and in co-generation) – 40%; in generating heat for heating/cooling in industry and in other sectors, the estimate of the CO<sub>2</sub> emission savings was calculated based on the energy consumption.

The estimation of CO<sub>2</sub> equivalent emission savings for the energy obtained from using biomass in transportation was calculated by using diesel fuel.

The emission factors that were used are specific to Romania, taken from INEGES, sent in January 2014 to the European Environmental Agency and to the European Commission, for 2012, respectively, 87.7 CO<sub>2</sub> for brown coal [t/TJ] and 73.56 CO<sub>2</sub> [t/TJ] for diesel fuel.

**11. Report on the preceding 2 years (2011, 2012) and estimate for the following years up to 2020 with regards to the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as the 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 Member States and/or third countries in Romania (ktoe).**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production of electricity from renewable energy sources	130	112	-21	-45	120	90	145	100	120	70	50	0
Actual/estimated excess or deficit	1 226	1 365	980	1 088	830	860	800	800	770	570	260	0



production of energy for heating and cooling from renewable energy sources												
Actual/estimated excess or deficit production of energy for transport from renewable energy sources	-203	-171	-165	-101	-145	-95	-35	-10	-5	0	0	0
Total	1 153	1 306	794	942	805	855	910	890	885	640	310	0

Source: data processed according to Tables A and B of this chapter.

The excess/deficit of energy generated from RES for 2009–2012 was determined by using real data from statistics reports.

The data regarding gross final energy consumption, the energy production from RES, compared to the indicative trajectory for reaching the target, adjusted according to the real final consumption, is presented in Table A below.

**TABLE A: GROSS FINAL ENERGY CONSUMPTION, E-RES CONSUMPTION ADJUSTED ACCORDING TO THE INDICATIVE TARGETS ON THE INDICATIVE TRAJECTORY, THE SECTORAL INDICATIVE TRAJECTORY AND SECTORAL PRODUCTION FROM E-RES IN ORDER TO DETERMINE THE ACTUAL EXCESS OR DEFICIT PRODUCTION (-) OF E-RES IN THE 2009–2012 PERIOD. (KTOE)**

	2009	2010	2011	2012
Actual gross final energy consumption (ktoe)	23 746*	24 161*	24 414*	24 305*
Actual gross final RES energy consumption, according to the indicative trajectory:	17.44%	17.80%	17.95%	19.04%
1). % of the target	4 141	4 300	4 382	4 628
2). (ktoe)				
Electricity production from renewable sources of energy:				
1). Indicative trajectory (ktoe)	1 310	1 379	1 592	1 717
2). Actual production (ktoe)	1 440*	1 491*	1 571*	1 672*
Production of energy from RES for heating/cooling				
1). Indicative	2 554	2 602	2 524	2 600

<b>trajectory (ktoe)</b>				
<b>2). Actual production (ktoe)</b>	3 780*	3 967*	3 504*	3 688*
<b>Gross final energy from RES in transport:</b>				
<b>1). Indicative trajectory (ktoe)</b>	277	319	266	311
<b>2). Actual production (ktoe)</b>	74*	148*	101*	210*

\* National Statistics Institute Data, SHARES.

Compared to the previous report and to the estimates included in the NREAP regarding the excess/deficit of energy from renewable energy sources in Romania, as a result of the new analysis elements identified in the reported period, the estimates for 2013–2020 were revised by taking into consideration the following elements:

- The final gross energy consumption recorded between 2010 and 2013 is lower than the consumption estimated in the NREAP, the scenario for increased efficiency, by -6.59% in 2010, by -7.66% in 2011 and by -9.84% in 2012.
- The capacities installed in co-generation plants producing electricity from RES have increased very fast. Compared to approximately 100 MW installed at the end of 2009, in 2010 around 370 MW were installed, in 2011 around 750 MW, in 2012 around 1 100 MW and in 2013 around 1 800 MW, the installed capacities exceeding the provisions in the NREAP starting with 2013.
- The production of biofuels that fulfil the sustainability criteria, which was practically not considered in the first report, started in 2011 and doubled in 2012.

Taking into account the above, the estimates of the Energy Department regarding the possibility to obtain some excess/deficit of the production of energy from renewable sources compared to the level of intermediary indicative targets, between 2013 and 2020, are based on the following assumptions:

- Final gross energy consumption (ktoe) is estimated to annually increase by 2%, starting from the actual level recorded in 2012. The estimated trajectory of final consumption (28 477 ktoe in 2020) is higher than the 2010 forecast of the National Council for Forecast, which takes into account the long term effects of the economic crisis (27 240 ktoe in 2020), but is lower than the consumption estimated in the NRAEP, the increased efficiency scenario (30 278 ktoe in 2020).
- The production of energy from renewable sources (ktoe) was recalculated based on its share in the final gross energy consumption based on the indicative intermediary trajectory. The intermediary targets regarding the share of energy from RES in the final energy consumption are 19.66% for 2013–2014, 20.59% for 2015–2016, 21.83% for 2017–2018 and 24% for 2020.
- The indicative targets for sectors were recalculated based on the new final consumption, keeping the annual shares per sector provided in NRAEP.
- The estimates for the production of electricity from RES for 2013–2020 took into consideration the normalised value of the production in hydropower plants of more than 10 MW and the programme for investments in this sector; the capacities installed and

to be installed by the end of 2013 for hydro under 10 MW, wind, solar and biomass; the capacity factors accomplished for each technology in 2012, according to the Monitoring Report of NAER; the stimulating effect of the support schemes and of the non-reimbursable co-financing programmes for investments.

- Energy consumption from RES in heating/cooling processes continues to be much higher than the value forecast in the NRAEP (in 2009–2012 the surplus was between 908 and 1 365 ktoe). The difference was determined first of all by the increase of solid biomass consumption (firewood) in households. It is difficult to say if this increase was determined by a real increase of solid biomass consumption or is based on a better discipline with regards to the quantities of wood waste acquired by the population. However, the improved methodologies of the National Institute for Statistics to collect and process primary information regarding solid biomass consumption certainly contributed to the reporting of this consumption increase. The estimates for 2013–2020 took into consideration the effective consumption reported for 2009–2012, by bringing the estimated consumption to the target level recalculated for 2020.
- The estimate for biofuel consumption for the transport sector took into account the potential and the trends in 2011, 2012 regarding the production of sustainable biofuels, but also the limitation of biofuel consumption to the intermediary quotas and to the final quota of 10% from the annual fuel consumption provided for 2020.

The data obtained regarding the estimated production of energy from RES, compared to the indicative trajectory to reach the target of 24% of the final gross energy consumption is presented in Table B below.

**TABLE B: ESTIMATED GROSS FINAL ENERGY CONSUMPTION, ESTIMATED E-RES CONSUMPTION ALONG THE INDICATIVE TRAJECTORY, THE SECTORAL INDICATIVE TRAJECTORY AND THE ESTIMATED SECTORAL PRODUCTION FROM E-RES IN ORDER TO DETERMINE THE ACTUAL EXCESS OR DEFICIT PRODUCTION (-) OF E-RES IN COMPARISON TO THE INDICATIVE TRAJECTORY THAT COULD BE TRANSFERRED FROM/TO OTHER MEMBER STATES AND/OR THIRD COUNTRIES (KTOE)**

	2013	2014	2015	2016	2017	2018	2019	2020
<b>Estimated gross final energy consumption (ktoe)</b>	24 791	25 286	25 792	26 308	26 835	27 371	27 918	28 477
<b>Gross final RES energy consumption, according to the indicative trajectory (ktoe)</b>	4 784	4 971	5 166	5 417	5 660	5 975	6 365	6 834
<b>Gross final RES electricity consumption:</b>								
<b>1). Indicative trajectory (ktoe)</b>	1 785	1 975	2 089	2 223	2 286	2 370	2 428	2 506
<b>2). Estimate production (ktoe)</b>	1 909	2 064	2 236	2 322	2 408	2 442	2 485	2 506
<b>Gross final RES</b>								

<b>energy consumption for heating/cooling</b>								
<b>1). Indicative trajectory (ktoe)</b>	3 500	3 500	3 500	3 600	3 700	3 700	3 700	3 800
<b>2). Estimate production (ktoe)</b>	2 662	2 632	2 686	2 777	2 932	3 131	3 434	3 796
<b>Gross final energy from RES in transport:</b>								
<b>1). Indicative trajectory (ktoe)</b>	337	364	391	417	442	474	503	532
<b>2). Estimate production (ktoe)</b>	190	270	355	403	435	474	503	532

Processing the estimates for 2013–2020 showed that, per total, in each year of the analysed period, the estimated production of energy from RES is higher than the final gross consumption of energy from RES, which ensures that the intermediary and final targets with regards to the share of energy from RES in final energy consumption are reached.

The electricity surplus from RES on the indicative trajectory may be the object of some statistic transfers.

The energy surplus from RES in the heating/cooling sector is reflected in the annual trade surplus and in the increase of the final stocks.

The energy deficit from RES in the transportation sector is reflected in the annual trade deficit for sustainable biofuels.

### **11.1. Statistical transfers, joint projects and joint support scheme decision rules.**

Romania considers it can reach the global objective of 24% share of energy from RES in final gross consumption in 2020, without using transfer from other Member States.

For the electricity generated from RES, a surplus is estimated for years 2013–2018, which could be the object of statistical transfers. At the moment, Romania did not establish any contacts and has no procedures that can materialise into statistical transfers.

According to Article 10(3) of Law No 220/2008, until the national targets are met, these targets being provided for in Article 4(2) on the share of electricity from RES, which benefit from the promotion system in the final gross consumption of electricity, the green certificate scheme will apply only to cover the final gross consumption of electricity from Romania.

The national targets regarding the share of electricity from RES in the final gross consumption of electricity provided for in Article 4(2) are 33% in 2010, 35% in 2015 and 38% in 2020. The promotion scheme does not include the energy generated in hydropower plants with installed powers of over 10 MW, but the electricity generated in hydropower plants with installed powers of over 10 MW will be considered in order to meet the national targets.

At the moment, the structural funds, as well as the national programmes represent significant possibilities for financial support to investments for the use of RES. It is

estimated that the investments that are to be made this way will be enough to fall within the indicative trajectory of the production of energy from RES.

During the reporting years, the volume of private investments in installations for the generation of energy from RES has increased considerably, these exceeding the share of 15% of the total installed capacities of energy from RES. There are not yet any national procedures for joint projects.

Romania was involved in implementing "Joint Implementation" investment projects, by collaborating with various states, in order to make the technological transfer in order to decrease greenhouse gas emissions, to increase the energy efficiency of the objectives that are subject to such investments and to improve the quality of the environment. Amongst the projects promoted within the Joint Implementation mechanism, which received letters of support/approval, there is also the project "Using biomass in generating energy in Neamt County".<sup>17</sup>

The opportunity for joint projects on own territory will be examined based on the evolution of the effective exploitation of the national potential. In drafting the procedures in this sense, the specific experience existing at that time at EU level will be used, to the maximum possible extent. Romania will also be able to use its own experience gathered from Joint Implementation projects, according to the Kyoto protocol.

## **12. Information on the manner in which the share for biodegradable waste in waste used for producing energy has been estimated, and the steps taken to improve and verify such estimates. (Article 22(1)(n) of Directive 2009/28/EC).**

For the purpose of this Report, we state that in 2011 and 2012 there was no reporting of energy obtained based on biodegradable fractions from waste.

Government Decision 1470/2004<sup>18</sup> approved The National Strategy for Waste Management and the National Plan for Waste Management. The time period referred to in these documents is year 2013.

The National Plan for Waste Management contains detailed information on the quantities of municipal waste and wastes that can be considered as such, as well as industrial and agricultural waste and their structure.

Subsequently, Joint Order No 1364/2006<sup>19</sup> of the Ministry of Environment and Water Management and No 1499/2006<sup>20</sup> of the Ministry for European Integration approved the Regional Plans for Waste Management. These plans contain the detailed situation existing in the territory, for each of the eight development regions of the country.

Regarding the quantities of biodegradable waste generated in Romania, the Environmental Status Report<sup>21</sup> for 2012 mentions that from the total quantity of municipal waste, the largest share is represented by household waste and wastes that can be considered as such (around 72%), approximately 45% of those representing biodegradable waste. The latest data published in the same report present a quantity of biodegradable waste of 3 million tons for 2011<sup>22</sup>.

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<sup>17</sup> Project status – letter of approval.

<sup>18</sup> Government Decision 1470/2004 approving the National Strategy for Waste management and of the National Plan for Waste Management was published in the Official gazette 954/18.10.2004.

<sup>19</sup> Order 1364/2006 of the Ministry of Environment and Water Management approving the regional plans for waste management

<sup>20</sup> Order No 1499/2006 of the Ministry for European Integration approving the regional plans for waste management

<sup>21</sup> [http://www.anpm.ro/upload/116008\\_RSM-2012.pdf](http://www.anpm.ro/upload/116008_RSM-2012.pdf)

<sup>22</sup> A reduction of 37% of the quantity of biodegradable waste was noticed, gravimetrically expressed compared to the quantity of biodegradable municipal waste generated in 1995. This reduction is due, on one hand, to the implementation

## ACRONYMS

ANRE	The National Authority for Energy Regulation
ATR	Technical Approval for Connection
CEE	Wind Power Plant
CHP	Hydropower Plant with Pumping
CNP	National Council for Forecast
CNE	Nuclear Power Plant
GC	Green Certificate
DEN	National Energy Dispatch
ESR	RES (renewable energy sources)
ESR I&R	RES for heating and cooling
ESR EE	energy from renewable sources for electricity
ESR T	energy from renewable sources for transportation
E-SRE	electricity from renewable sources
ETBE	ethyl tert-butyl ether
GO	guarantee of origin
GD	Government Decision
HHI	Herfindahl-Hirschman Index
INEGES	National inventory for Greenhouse Gas Emissions
INS	National Institute of Statistics
LEA	Airborne Electric Line
MECMA	Ministry of Economy, Trade and Business Environment
MADR	Ministry of Agriculture and Rural Development
DO	Distribution Operator
OG	Government Order
OUG	Government Emergency Order
OPCOM	trade operator of the electricity market (including the green certificates market)
TSO	Transmission System Operator (=TRANSELECTRICA)
GDP	Gross Domestic Product
PNAER (NRAEP)	National Renewable Energy Action Plan
POS CEE	Sectoral Operational Programme for Increase of Economic Competitiveness
RED	Electricity Distribution Grid
RET	Electricity Transmission Grid
EU	European Union
SEN	National Energy System
SHARES	Short Assessment of Renewable Energy Sources
SRE	RES
TRANSELECTRICA	National Electricity Transmission Company TRANSELECTRICA SA (=TSO)

of the provisions of Article 9(p) of Emergency Government Order No 196/2005 on the Environmental Fund, as subsequently completed and amended, according to which, starting with 1 July 2010, the administrative-territorial units in charge of municipal waste management must reduce by 15% the quantity of municipal and similar waste, collected and sent for storage. In case this annual objective is not met, the administrative-territorial units will pay a contribution of RON 100/ton to the Environmental Fund, the payment being made for the difference between the quantity corresponding to the annual objective of reducing such waste and the quantity of the actual objective achieved by specific activities of selective collection and use.

On the other hand, the continuous reduction of the quantity of biodegradable waste generated in 2011, compared to 2010, is due to the extension of the selective collection of paper, cardboard and biodegradable waste from green areas, parks and other areas.

	VAT	Value Added Tax
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