



Interim Report
on progress in the promotion and use of energy from
renewable sources in Poland in 2011–2012
(pursuant to Article 20b(2) of the Energy Law Act)

Warsaw, 2014

Table of Contents

1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (2011 and 2012) (<i>Article 22(1)(a) of Directive 2009/28/EC</i>)	5
2. Measures taken in the preceding 2 years or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan. (<i>Article 22(1)(a) of Directive 2009/28/EC</i>)	7
2.a Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy. (<i>Article 22(1)(e) of Directive 2009/28/EC</i>)	10
2.b Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements. (<i>Article 22(1)(f) of Directive 2009/28/EC</i>)	11
3. Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan. (<i>Article 22(1)(b) of Directive 2009/28/EC</i>)	12
3.1. Please provide information on how supported electricity is allocated to final customers for the purposes of Article 3(6) of Directive 2003/54/EC. (<i>Article 22(1)(b) of Directive 2009/28/EC</i>)	19
4. Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material? (<i>Article 22(1)(c) of Directive 2009/28/EC</i>)	19
5. Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system. (<i>Article 22(1)(d) of Directive 2009/28/EC</i>)	20
6. Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes. (<i>Article 22(1)(g) of Directive 2009/28/EC</i>)	21
7. Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources.....	25
8. Please describe the development and share of biofuels made from waste, residues, non-food cellulosic material, and ligno-cellulosic material. (<i>Article 22(1)(i) of Directive 2009/28/EC</i>).....	26
9. Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within your country in the preceding 2 years.	27
10. Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources. (<i>Article 22(1)(k) of Directive 2009/28/EC</i>)	27
11. Please report on and estimate 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 estimated potential for joint projects until 2020. (<i>Article 22(1)(l), (m) of Directive 2009/28/EC</i>)	28
11.1. Please provide details of statistical transfers, joint projects and joint support scheme decision rules.	29
12. Please provide information on how the share of biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates. (<i>Article 22(1)(n) of Directive 2009/28/EC</i>).....	29

Introduction

Article 22(1) 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 (OJ L 140 of 5 June 2009), hereinafter referred to as Directive ‘2009/28/EC’, requires Member States to submit a report to the Commission on progress in the promotion and use of energy from renewable sources by 31 December 2011, and every two years thereafter. The obligation in question has been transposed into the Polish legal order through the adoption of Article 20b of the Act of 10 April 1997 – Energy Law (Journal of Laws of 2012, item 1059, as amended).

Member State reports will be used by the European Commission to monitor overall developments in renewable energy policy and Member State compliance with the measures set out in Directive 2009/28/EC and the National Renewable Energy Action Plans. The data included in these reports will also serve to measure the impacts referred to in Article 23 of Directive 2009/28/EC.

In order to ensure that the reports prepared by the Member States are complete and comparable, the Commission has issued this template, which covers all requirements laid down in Article 22 of the Directive. Much of the template draws on the template for the National Renewable Energy Action Plans¹.

The data included in this report refer to the period of two years preceding the reporting year 2013, i.e. 2011–2012. Moreover, the report contains information on legislative measures taken before the completion of this report, which have direct impact on the development of renewable energy.

It follows from the data included that there has been a constant increase in the share of renewable energy in Poland, and as a result, there is no risk as of today that the intermediate targets or the final objective of Directive 2009/28/EC will not be achieved. It is expected that the optimisation of the support schemes for the generators of electricity from RES, proposed deregulatory measures and measures aimed at facilitating administrative procedures, provided for in the new Act on RES, will result in a further development of renewable energy.

The forecasts on sectoral targets and on the estimated demand for energy and fuels from renewable sources notified to the European Commission in the National Renewable Energy Action Plan (NREAP) remain valid. To meet the objectives set, it is estimated that by 2020 an installed capacity of about 6 242 MW will be added in the electricity sector (compared with the data from 2012), while new heating sources will be constructed and installed, enabling the increase of energy from heat by 877 ktoe (compared with the data from 2012).

It should be emphasised that the decisions of the European Commission and the legal solutions adopted at EU level concerning, *inter alia*, sustainable development contribute to a large extent to the further development of renewable energy sources in Poland. In order to stimulate the development of RES, it is essential to ensure a level playing field and compliance with the requirements applicable in the European Union under the Common Agricultural Policy and environmental policy with regard, *inter alia*, to biomass from third countries.

The Polish policy of energy efficiency has been defined in several documents, of which the most important are:

- Poland’s Energy Policy (Polityka Energetyczna Polski) until 2030,
- National Energy Efficiency Action Plans (NEEAP) (2007, 2011).

According to the Central Statistical Office's data (publication entitled ‘Efficiency assessment of energy use in 2001–2011’ [Efektywność wykorzystania energii w latach 2001–2011], Warsaw 2013), Poland has made substantial progress in increasing energy efficiency. In 2001–2011, the energy efficiency index ODEX decreased from 99.5 to 73.4 points.

¹ COMMISSION DECISION of 30 June 2009 establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC of the European Parliament and of the Council; notified under document number C(2009) 5174; Text with EEA relevance; 2009/548/EC.

The average improvement rate was 2.6 % per year. Further measures included in the second National Energy Efficiency Action Plan (2011) are intended to deliver energy savings of 9 % by 2016, as compared with the average final energy consumption in 2001–2005, with an intermediate target of 2 % by 2010. The Second National Action Plan indicates that Poland has managed to achieve energy savings of 5.9 % in relation to the intended objective for 2010. This means that it should not be difficult for Poland to demonstrate achievement of the objectives of Directive 2006/32/EC for final energy savings in 2016.

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

Table 1 contains data on actual share and actual consumption of energy from renewable energy sources in the reporting period 2011–2012. RES share surplus for the cooperation mechanism has been calculated as the difference between the actual total RES share and the minimum RES share indicated in the trajectory calculated in accordance with Annex 1 of Directive 2009/28/EC. The table corresponds to Table 3 of the National Renewable Energy Action Plans (NREAPs).

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

	2011	2012
RES-H&C (%) ²	13.38	13.66
RES-E (%) ³	8.15	10.68
RES-T (%) ⁴	6.51	6.09
Overall RES share (%) ⁵	10.42	11.04
Of which from cooperation mechanism (%) ⁶	0	0
Surplus for cooperation mechanism (%) ⁷	1.66	2.28

Source: Central Statistical Office and the calculations of the Ministry of the Economy made using CSO data and the trajectory for Poland defined in Directive 2009/28/EC

Table 1a shows the values in ktoe corresponding to the renewable energy consumption of each sector and the gross final consumption of energy from renewable sources⁸. The table corresponds to Table 4a of the NREAPs.

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

	2011	2012
(A) Gross final consumption of RES for heating and cooling	4 920.7	5 066.1
(B) Gross final consumption of electricity from RES	1 053.2	1 404.4
(C) Gross final consumption of energy from RES in transport	987.3	877.1
(D) Gross total consumption of energy from RES ¹⁰	6 961.2	7 347.6
(E) Transfer of RES to other Member States	0	0
(F) Transfer of RES from other Member States and third countries	0	0
(G) RES consumption adjusted for target (D)-(E)+(F)	6 961.2	7 347.6

Source: Central Statistical Office

Table 1b shows the values in MW corresponding to the installed capacity of individual electricity technologies. The table also shows the values in GWh corresponding to RES consumption in the electricity sector. The table corresponds to Tables 10a and 10b of the NREAPs. The table contains information on the technical infrastructure for renewable energy sources.

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

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

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

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

⁶ In percentage point of overall RES share.

⁷ In percentage point of overall RES share.

⁸ ktoe (kilotonne of oil equivalent) thousand tonnes of oil equivalent, 1 ktoe = 41 868 GJ

⁹ Facilitates comparison with Table 4a of the NREAPs.

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

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

	2011		2012	
	MW	GWh	MW	GWh
Hydro¹²:	940	2 352.3	945	2 358.7
non-pumped	564	2 336.8	569	2 347.0
< 1 MW*	82	350.6	88	374.9
1 MW – 10 MW*	186	621.6	185	619.4
> 10 MW*	296	1 364.6	296	1 352.7
<i>mixed – non-pumped¹³</i>	376	–	376	–
Geothermal	0	0	0	0
Solar:	1	0.2	1	1.1
<i>photovoltaic</i>	1	0.2	1	1.1
<i>concentrated solar power</i>	0	0	0	0
Tide, wave, ocean	0	0	0	0
Wind¹⁴:	1 800	2 922.0	2 564	4 510.3
<i>onshore</i>	1 800	2 922.0	2 564	4 510.3
<i>offshore</i>	0	0	0	0
Biomass¹⁵:	277	7 599.5	583	10 094.1
<i>solid biomass**</i>	175	7 148.4	455	9 528.7
<i>biogas</i>	102	451.1	128	565.4
<i>bioliquids</i>	0	0	0	0
TOTAL	3 018	12 874.0	4 093	16 964.2
<i>of which in CHP</i>	–	7 600.9	–	10 094.3

* – due to standardisation calculations, it is currently not possible to provide more detailed data concerning hydro energy

** – installed capacities for solid biomass apply only to units generating electricity with the exclusive use of biomass as fuel. This allows determination of installed capacity for each source. In Poland, in addition to electricity generation by the units dedicated solely to the incineration of biomass, there are large system installations that generate electricity through the process of biomass co-incineration with other fossil fuels, e.g. coal. In this case, in accordance with the Regulation of the Minister for the Economy of 18 October 2012 on the Detailed Scope of Obligations to Obtain Certificates of Origin and Present them for Redemption, Pay the Substitute Fee, Purchase Electricity and Heat Generated from Renewable Energy Sources and the Obligation to Confirm Data on the Amount of Electricity Generated from Renewable Energy Sources (Journal of Laws item 1229 and of 2013, item 1362), the energy produced from renewable energy sources covers the portion of electricity or heat corresponding to the share of chemical energy of biomass or biogas in the chemical energy of the fuel used to generate energy, calculated on the basis of the actual calorific values of these fuels. Since the composition of the mixture of biomass and another fuel varies with each installation and each time interval, it is impossible to calculate and determine the rated power of installed capacity for such units.

Source: Central Statistical Office.

Table 1c shows the values in ktoe corresponding to the renewable energy consumption in heating and cooling, broken down by technology. The table corresponds to Table 11 of the NREAPs.

Table 1c: Total actual contribution (final energy consumption) from each renewable energy technology in Poland to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)^{16,17}

	2011	2012
Geothermal (excluding low temperature geothermal heat in heat pump applications)	12.7	15.8
Solar	10.4	13.0
Biomass¹⁸:	4 860.0	4 998.5

¹¹ Facilitates comparison with Table 10a of the NREAPs.

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

¹³ In accordance with the new Eurostat methodology.

¹⁴ Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

¹⁵ For bioliquids and biofuels, taken into account are only those complying with applicable sustainability criteria (cf. Article 5(1) last subparagraph of Directive 2009/28/EC).

¹⁶ Direct use and district heat as defined in Article 5(4) of Directive 2009/28/EC.

¹⁷ Facilitates comparison with Table 11 of the NREAPs.

¹⁸ For bioliquids take into account only those complying with applicable sustainability criteria (cf. Article 5(1) last subparagraph of Directive 2009/28/EC).

<i>solid biomass</i>	4 787.1	4 913.2
<i>biogas</i>	72.9	85.3
<i>bioliquids</i>	0	0
Renewable energy from heat pumps:	5.7	6.4
– of which aerothermal	0.4	0.5
– of which geothermal	3.6	4.2
– of which hydrothermal	1.6	1.6
Energy from municipal waste	32.0	32.5
TOTAL	4 920.7	5 066.1
<i>Of which DH¹⁹</i>	–	–
<i>Of which biomass in households²⁰</i>	2 746.7	2 790.9

Source: Central Statistical Office

Table 1d shows the values in ktoe corresponding to the renewable energy consumption in transport, broken down by technology. The table corresponds to Table 12 of the NREAPs.

Table 1d: Total actual contribution from each renewable energy technology in Poland to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)^{21,22}

	2011	2012
Bioethanol/bio-ETBE	178.76	153.93
<i>Of which biofuels Article 21(2)²³</i>	0	0
<i>Of which imported²⁴</i>	85.17	31.09
Biodiesel	535.63	635.6
<i>Of which B100</i>	0	0
<i>Of which biofuels Article 21(2)²⁵</i>	280.85	128.58
<i>Of which imported²⁶</i>	0	0
Hydrogen from renewable resources	0	0
Renewable energy	53.73	54.23
<i>Of which road transport</i>	0.32	0.34
<i>Of which non-road transport</i>	53.41	53.89
Others (as biogas, vegetable oils etc.)	0	0
<i>Of which biofuels Article 21(2)²⁷</i>	0	0
B100	219.2	33.37
<i>Of which biofuels Article 21(2)²⁸</i>	0	0
TOTAL	987.32	877.13

Source: Central Statistical Office

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

Table 2 covers only the measures that were not applicable or not foreseen during the preparation of the previous report.

Table 2: Overview of all policies and measures

Name and reference of the measure	Type of measure*	Expected result**	Targeted group and/or activity***	Existing or planned****	Start and end dates of the measure
1. Setting out detailed requirements for meeting the obligation to confirm data on the amount of generated agricultural biogas integrated into gas distribution grid, as determined based on the readings of metering and billing	regulatory	Increased deployment of energy from agricultural biogas through the following means: establishing uniform standards for quality	generators of the agricultural biogas integrated into the gas distribution grid	existing	since 2011

¹⁹ District heating and/or cooling from the total renewable heating and cooling consumption (RES-DH).

²⁰ From the total renewable heating and cooling consumption.

²¹ For biofuels take into account only those compliant with the sustainability criteria (cf. Article 5(1) last subparagraph).

²² Facilitates comparison with Table 12 of the NREAPs.

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

²⁴ From the whole amount of bioethanol/bio-ETBE.

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

²⁶ From the whole amount of biodiesel.

²⁷ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

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

equipment.		parameters of agricultural biogas integrated into gas distribution grid; setting out requirements for measurement, registration and calculation of the amount of generated agricultural biogas; determining the location for measurement of the amount of agricultural biogas in order to meet the obligation of data confirmation referred to in the Energy Law Act; providing guidance on how to convert the amount of generated agricultural biogas into the equivalent amount of electricity generated from renewable energy sources; determining the conditions for connecting the plant for generating agricultural biogas to gas distribution grid.			
2. Facilitating the process of extracting geothermal energy.	regulatory	Increased deployment of geothermal energy.	energy companies	existing	since 2011
3. Amending the Act on maritime territory of the Republic of Poland and maritime administration in order to provide more favourable conditions for investors interested in the implementation of projects involving the construction of offshore wind farms in the Polish maritime areas.	regulatory	Introducing the possibility of implementing the projects of offshore wind farms.	entrepreneurs interested in electricity generation from offshore wind farms	existing	since 2011
4. Increasing the RES share required for energy companies and imposing restrictions on support for electricity generated from full value wood.	regulatory	Increased deployment of electricity from renewable sources and improvement of forest management policy.	generators of electricity from renewable sources and entities using wood in the process of electricity generation from renewable energy sources	existing	since 2012
5. Extending the scope of an electricity grid connection agreement and application to determine the conditions for electricity grid connections.	regulatory	Optimising the use of the connection capacity of the National Electricity System.	producers of electricity from renewable sources and network companies engaged in energy distribution and transmission.	existing	since 2013
6. Facilitating the process of connecting microinstallations to electricity grid.	regulatory	Increasing the number of microinstallations for RES.	generators of micro renewable energy with an installed capacity of up to 40 kW.	existing	since 2013
7. Making it obligatory to purchase electricity generated from microinstallations.	financial	Increasing the number of microinstallations for RES.	generators of micro renewable energy with an installed capacity of up to 40 kW.	existing	since 2013
8. Providing certification schemes for installers of micro and small-scale installations and accreditation schemes for training providers.	regulatory	Implementing the provisions of Directive 2009/28/EC. Improving the quality of installed micro and small-scale installations and the quality of training provided.	entities operating in the field of installing micro and small-scale systems and training providers.	existing	since 2013
9. Establishing procedures to implement joint projects and statistical transfers.	regulatory	Implementing the provisions of Directive 2009/28/EC. Taking measures to enable	energy companies	existing	since 2013

		energy companies to participate in the joint projects related to RES and to carry out statistical transfers of energy from renewable sources.			
10. Introducing the possibility of obtaining guarantees of origin for energy from renewable sources.	regulatory	Implementing the provisions of Directive 2009/28/EC. Providing confirmation of origin for electricity from RES to final customers.	energy companies and energy consumers.	existing	since 2013
11. Putting forward recommendations for using the equipment utilising energy generated from renewable sources in the buildings used by public finance sector units.	regulatory	Increased deployment of renewable energy.	public finance sector units.	existing	since 2013
12. Taking measures to facilitate the process of installation of heat pumps and photovoltaic devices.	regulatory	Increased deployment of renewable energy.	generators of energy from heat pumps and generators of energy from photovoltaic devices with an installed capacity of up to 40 kW.	existing	since 2013
13. Providing financial support schemes in order to implement the measures related to the production of biocomponents, biofuels or other renewable fuels and their use in transport.	regulatory/financial	Increased use of biocomponents, liquid biofuels or other renewable fuels in the transport sector.	<ul style="list-style-type: none"> – Producers of biocomponents, – Producers of liquid fuels and biofuels, – Farmers producing liquid biofuels for their own use, – Providers of public transport services, – Research units and scientific consortia, – Entrepreneurs, – Chambers of commerce, – Public benefit organisations, – Employers organisations, – Associations, – Agricultural advisory units, – Local government units. 	existing	since 2013
14. Optimising the use of a support scheme involving the certificates of origin for existing investments and implementing a new support scheme for new investments, involving determination of the amount of support on an individual basis and with a market-based approach.	regulatory / financial	Increased use of electricity from renewable energy sources, sustainable supply of energy from RES to final customers, reduction of macroeconomic costs of the energy generation, optimising the use of locally available raw materials.	generators of electricity from renewable energy sources, electricity consumers, broad group of people operating in the field of construction, installation and operation of renewable energy equipment.	planned	2014–2015
15. Taking measures to facilitate the activities in the field of electricity generation from small-scale installations.	regulatory	Increased deployment of energy from small-scale installations.	generators of energy from small-scale installations.	planned	2014–2015

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

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

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

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

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

The administrative procedures relating to the use of energy from renewable sources are proportionate and sufficient in view of the development of large-scale energy sector (industrial), as evidenced by new installed capacities.

In addition, the amendment to the Energy Law Act of 26 July 2013 (Journal of Laws of 2013, item 984), which took effect on 11 September 2013, introduced measures to promote the development of the so-called prosumer energy where electricity generated from RES is used for own needs and any excess energy production is sold to the electricity grid. In accordance with Article 9u of the Act, electricity generation using microinstallation technology by an individual who is not an entrepreneur within the meaning of the Act on Freedom of Economic Activity, as well as the sale of this energy by any such person shall not be treated as an economic activity. A microinstallation has been defined as a renewable source of energy with a total installed electricity capacity of not more than 40 kW, connected to the electricity grid with a rated voltage of less than 110 kV or with a total thermal installed capacity of not more than 120 kW.

On 1 January 2012, the Act of 9 June 2011 – Geological and Mining Law (Journal of Laws No 163, item 981, as amended) came into force, which provides for the following:

- 1) removing the requirement to obtain exploration and prospecting licences for thermal waters (it is sufficient to provide a geological works plan approved by the province marshal) and associated fees such as those for mining use;
- 2) no fees are charged for the geological information used for planning purposes;
- 3) the value of geological information used to extract thermal waters is reduced by 95 % of its initial value, however, this value is reduced by 99 % for the agreements to use geological information concluded until 31 December 2020;
- 4) shortening the licensing procedure (in the case of mining licences) by limiting the scope of requirements relating to the obligation to cooperate with other authorities in the process of granting licences;
- 5) maintaining a zero rated extraction fee for thermal waters;
- 6) transferring responsibility for granting extraction licences for thermal waters to province marshals.

This means that significant progress has been made in the simplification of administrative procedures for development of renewable energy sources in Poland.

At the same time, it should be noted that state authorities have taken measures to simplify the administrative procedures for the entities involved in the projects where the required installed electricity capacity is between 40 kW and 200 kW, and connected to the electricity grid with a rated voltage of less than 110 kW or with a total installed thermal capacity between 120 kW and 600 kW – i.e. small-scale RES installations.

Furthermore, the amendment to the Act on the maritime territory of the Republic of Poland and maritime administration of 26 May 2011 (Journal of Laws of 2011, No 134, item 778) introduced the following measures aimed at providing more favourable conditions for investors interested in the implementation of projects involving the construction of offshore wind farms in the Polish maritime areas:

- validity period of the permission to construct and use artificial islands, structures and equipment in the Polish maritime areas has been extended from 5 to 30 years,
- a new system of instalment payments for the use of the exclusive economic zone (one-time fee has been replaced by a fee paid in 4 instalments),
- settlement procedure setting out clear rules for giving permission to construct and use artificial islands, structures and equipment in the Polish maritime areas, where there are two investors who wish to use the same maritime area.

The administrative procedures are currently in place to ensure safe development of RES sector, taking into account any social, economic and environmental impacts, as well as the operational safety of the National Electricity System. However, simplification and deregulatory measures provided for in the draft Act on RES, planned in relation to administrative procedures, are aimed at promoting the development of RES in Poland in the area of diffuse sources with low capacities (small-scale installations).

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

The information included in the interim report for 2009–2010 on progress in the promotion and use of energy from renewable sources in Poland remains valid.

Furthermore, in accordance with the amendment to the Energy Law Act of 26 July 2013, a grid connection agreement should at least include the following provisions: deadline for grid connection, amount of connection tariff, site of ownership delimitation between the grid owned by an energy company and the installation of an entity wishing to be connected, scope of work necessary to make the connection, requirements for the location of measurement and billing equipment and for its parameters, timetable for grid connection, criteria for providing the energy company with access to the property owned by the entity wishing to be connected with a view to constructing or extending the network required for making the connection, deadline for concluding an agreement under which gaseous fuels or energy are to be supplied, amount of gaseous fuels or energy to be collected, connection power, parties' liability for breach of the agreement, and in particular for failure to meet the deadline for completion of works set out in the agreement, and duration and termination of the agreement.

Where an energy company engaged in the transmission or distribution of electricity refuses to make a grid connection of the renewable energy installation, because of the lack of adequate technical connection terms due to insufficient grid transmission capacities, within the deadline set by an entity applying for grid connection of the renewable energy source, the energy company determines a deadline and implementation procedures for the required grid extension or modernisation, in addition to setting a deadline for grid connection.

If the technical or economic terms relating to connection power, specified in the application for grid connection terms for the renewable energy source, are not satisfied, the energy company engaged in the transmission or distribution of electricity notifies the entity applying for grid connection about the connection power available under such terms. If within 30 days of receipt of the notification the entity: 1) agrees to adopt such a connection capacity, the energy company issues the relevant connection terms; 2) does not agree to adopt the connection capacity, the energy company refuses to issue the connection terms.

Where the energy company refuses to make a grid connection due to the failure to obtain economic terms, the energy company may introduce to a grid connection agreement the provisions requiring the payment of a grid connection tariff, in the amount agreed with the entity applying for grid connection.

Additionally, Article 7(8d)⁴ of the Energy Law Act indicates that where an entity applying for grid connection of microinstallation is connected as a final customer, and an installed capacity of the microinstallation covered by the application does not exceed that specified in the connection terms, the grid connection shall take effect upon notification of microinstallation connection to the energy company which has the grid, after the appropriate security systems and measurement and billing systems have been put in place. Otherwise, distribution grid connection shall be made under a grid connection agreement. It is important to note that no fee is charged for the connection of a microinstallation to the electricity distribution grid (Article 7(8)(3)(b)), and the installation costs of any security

systems and measurement and billing systems shall be borne by the electricity distribution system operator (Article 7(8d)⁴).

Any disputes regarding grid connection are, at the request of a party, resolved by the President of the Energy Regulatory Office.

The above suggests that the connection of new renewable energy sources to the grid must be a balanced and stable process in order to ensure the secure operation of the National Electricity System and to avoid payment of excessive costs by the final customers.

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

Under this provision, there were no significant changes to the support schemes for the use of renewable energy.

In addition, pursuant to Article 9v of the Energy Law Act, electricity produced in a microinstallation connected to a distribution grid located within the area of operation of the seller (ex officio) and offered for sale by a person referred to in Article 9u, must be purchased by the seller. This energy is purchased at a price equal to 80 % of the average selling price for electricity in the previous calendar year, which is determined by the President of the URE (Energy Regulatory Office) in accordance with Article 23(2)(18)(b) of the Energy Law Act.

In Poland, state authorities have taken the appropriate steps to optimise the use of support schemes for renewable energy sources. The proposed measures are aimed at ensuring the cost efficiency of support schemes, while maintaining the current development rate of RES in Poland.

Table 3: Support schemes for renewable energy

		Per unit support	Total (PLN million)	Per unit support	Total (PLN million)
		2011		2012	
A. Hydro (electricity in MWh) ⁽¹⁾		2 316 833		2 031 690	
Instrument (provide data as relevant)	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/ Buy out price (PLN/MWh) ⁽³⁾	195.32	452.52	198.90	404.10
	Average certificate price ⁽⁴⁾	266.36	617.11	253.30	514.63
	Tax exemption/refund (PLN) ⁽⁵⁾	20	46.34	20	40.63
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			
	Production incentives	not applicable			
	Feed-in tariff	not applicable			
	Feed-in premiums	not applicable			
Tendering:	not applicable				
B. geothermal (electricity in MWh) ⁽¹⁾		0		0	
Instrument (provide data as relevant)	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽³⁾	195.32	0	198.90	0
	Average certificate price ⁽⁴⁾	266.36	0	253.30	0
	Tax exemption/refund (PLN) ⁽⁵⁾	20	0	20	0
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			
	Production incentives	not applicable			
	Feed-in tariff	not applicable			
	Feed-in premiums	not applicable			
Tendering:	not applicable				
C. solar (electricity in MWh) ⁽¹⁾		178		1 168	
Instrument (provide data as relevant)	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽³⁾	195.32	0.03	198.90	0.23
	Average certificate price ⁽⁴⁾	266.36	0.05	253.30	0.30
	Tax exemption/refund (PLN) ⁽⁵⁾	20	0.00	20	0.02
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			

	Production incentives	not applicable			
	Feed-in tariff	not applicable			
	Feed-in premiums	not applicable			
	Tendering:	not applicable			
D. tide, wave, ocean (electricity in MWh) ⁽¹⁾		0		0	
	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽³⁾	195.32	0.00	198.90	0.00
	Average certificate price ⁽⁴⁾	266.36	0.00	253.30	0.00
	Tax exemption/refund (PLN) ⁽⁵⁾	20	0.00	20	0.00
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			
	Production incentives	not applicable			
	Feed-in tariff	not applicable			
	Feed-in premiums	not applicable			
	Tendering:	not applicable			
E. wind (electricity in MWh) ⁽¹⁾		3 126 526		4 598 875	
	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽³⁾	195.32	610.67	198.90	914.72
	Average certificate price ⁽⁴⁾	266.36	832.78	253.30	1 164.90
	Tax exemption/refund (PLN) ⁽⁵⁾	20	62.53	20	91.98
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			
	Production incentives	not applicable			
	Feed-in tariff	not applicable			
	Feed-in premiums	not applicable			
	Tendering:	not applicable			
F. solid biomass (electricity in MWh) ⁽¹⁾		7 054 734		6 869 533	
	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽³⁾	195.32	1 377.93	198.90	1 366.35
	Average certificate price ⁽⁴⁾	266.36	1 879.10	253.30	1 740.05
	Tax exemption/refund (PLN) ⁽⁵⁾	20	141.09	20	137.39
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			
	Production incentives	not applicable			
	Feed-in tariff	not applicable			
	Feed-in premiums	not applicable			
	Tendering:	not applicable			
G. biomass – biogas (electricity in MWh) ⁽¹⁾		430 537		528 099	
	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽³⁾	195.32	84.09	198.90	105.04
	Average certificate price ⁽⁴⁾	266.36	114.68	253.30	133.77
	Tax exemption/refund (PLN) ⁽⁵⁾	20	8.61	20	10.56
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			
	Production incentives	not applicable			
	Feed-in tariff	not applicable			
	Feed-in premiums	not applicable			
	Tendering:	not applicable			
H. geothermal (heat in ktoe) ⁽⁷⁾		12.7		15.8	
I. solar (heat in ktoe) ⁽⁷⁾		10.4		13.0	
J. solid biomass (heat in ktoe) ⁽⁷⁾		4 787.1		4 913.2	
K. biomass – biogas (heat in ktoe) ⁽⁷⁾		72.9		85.3	
L. heat pumps (heat in ktoe) ⁽⁷⁾		5.7		6.4	
M. energy from waste (heat in ktoe) ⁽⁷⁾		32.0		32.5	
	Obligation/quota (%) ⁽²⁾	100			
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽⁷⁾	not applicable			
	Average certificate price ⁽⁷⁾	not applicable			
	Tax exemption/refund (PLN) ⁽⁷⁾	not applicable			
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾	explanations below the table			
	Production incentives ⁽⁷⁾	not applicable			
	Feed-in tariff ⁽⁷⁾	not applicable			
	Feed-in premiums ⁽⁷⁾	not applicable			
	Tendering: ⁽⁷⁾	not applicable			
N. bioethanol (transport in ktoe)		178.76		153.93	
	Obligation/quota (%)				
	Penalty/Buy out option/Buy out price (PLN/MWh)	explanations below the table – in section <i>Support for biocomponents and</i>			

	Average certificate price	<i>liquid biofuels until 30 April 2011 and Support for biocomponents and liquid biofuels after 30 April 2011</i>	
	Tax exemption/refund (PLN)		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering:		
O. biodiesel (transport in ktoe)		535.63	635.60
	Obligation/quota (%)	<i>explanations below the table – in section Support for biocomponents and liquid biofuels until 30 April 2011 and Support for biocomponents and liquid biofuels after 30 April 2011</i>	
	Penalty/Buy out option/ Buy out price (PLN/MWh)		
	Average certificate price		
	Tax exemption/refund (PLN)		
	Investment subsidies (capital grants or loans) (€/unit)		
	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering:		
P. electricity (transport in ktoe)		53.73	54.23
	Obligation/quota (%) ⁽²⁾	not applicable	
	Penalty/Buy out option/Buy out price (PLN/MWh) ⁽³⁾		
	Average certificate price ⁽⁴⁾		
	Tax exemption/refund (PLN) ⁽⁵⁾		
	Investment subsidies (capital grants or loans) (€/unit) ⁽⁶⁾		
	Production incentives		
	Feed-in tariff		
	Feed-in premiums		
	Tendering:		

- (1) – the data of the President of URE were used relating to the electricity generated in 2012 for which a guarantee of origin was issued.
(2) – in Poland, 100 % of electricity or heat produced from renewable energy sources must be collected
(3) – the price paid to RES installations for electricity generated and introduced into the electricity grid, which was determined based on the average electricity selling price on the competitive market (data provided by the President of URE No 8/2011 and 10/2012)
(4) – the average value of the 2011 and 2012 certificates of origin, determined on the basis of the Polish Power Exchange data.
(5) – in Poland, all electricity produced from renewable sources is exempt from excise duty, which is PLN 20 per 1 MWh
(6) – there is no predefined level of direct support for each technology; specific projects may be eligible for support on an independent and unlimited basis, the majority of the programmes require a call for proposals, additional explanations of the National Fund for Environmental Protection and Water Management can be found below the table
(7) – in Poland, there are no national support schemes for heat from renewable energy sources

Source: Study of the Ministry of the Economy based on the data from the NREAP, Energy Regulatory Office data, Central Statistical Office data and national legislation

In Poland, the measures aimed at promoting the development of renewable energy are implemented under the National Fund for Environmental Protection and Water Management (NFOŚiGW). The support schemes for renewable energy implemented by the NFOŚiGW in 2011–2012 are the following:

2011

- a) ‘Programme for projects in the field of renewable energy sources and high-efficiency cogeneration units part 1’ – for the projects related to RES and high-efficiency cogeneration units – an amount of PLN 43 270 000 was allocated, subject to repayment;
- b) ‘Programme for projects in the field of renewable energy sources and high-efficiency cogeneration units part 2’ – implemented by the provincial environmental protection funds and water management funds – an amount of PLN 10 965 000 was allocated, subject to repayment;
- c) ‘Programme for projects in the field of renewable energy sources and high-efficiency cogeneration units part 3’ – subsidies for partial repayment of bank loans taken for the purchase and installation of solar collectors for individuals and housing cooperatives – an amount of PLN 79 563 000 was allocated in the form of subsidies for the partial repayment of bank loans.

2012

- a) 'Programme for projects in the field of renewable energy sources and high-efficiency cogeneration units part 1' – for the projects related to RES and high-efficiency cogeneration units – an amount of PLN 96 085 000 was allocated, subject to repayment;
- b) 'Programme for projects in the field of renewable energy sources and high-efficiency cogeneration units part 2' – implemented by the provincial environmental protection funds and water management funds – an amount of PLN 5 142 000 was allocated, subject to repayment;
- c) 'Programme for projects in the field of renewable energy sources and high-efficiency cogeneration units part 3' – subsidies for partial repayment of bank loans taken for the purchase and installation of solar collectors for individuals and housing cooperatives – an amount of PLN 141 588 000 was allocated in the form of subsidies for partial repayment of bank loans.

Moreover, in 2010–2012, the NFOŚiGW provided financial support for the priority programme: 'Energy use of geothermal resources', under which 6 geothermal projects were funded, covering the identification of thermal waters located both at the already existing boreholes (1) and at the newly-created boreholes (5). The total amount of funding was about PLN 45 million. Two applications for funding are currently being considered.

It should also be noted that the NFOŚiGW has implemented measures to raise public awareness of renewable energy under the programme 'Environmental Education'. In 2011, the NFOŚiGW operated 20 educational projects in this area. An amount of PLN 3 094 000 was allocated to finance such projects in 2011. In 2012, the NFOŚiGW operated 23 educational projects in this area. An amount of PLN 2 041 000 was allocated to finance such projects in 2012.

Under another support mechanism, the Green Investment Scheme (GIS), the NFOŚiGW implemented in 2011–2012 the following programmes:

- Part 2) – Agricultural biogas plants – in 2012, an amount of PLN 9 424 000 was paid out in the form of subsidies and an amount of PLN 15 999 000 in the form of loan;
- Part 3) – CHP plants and biomass CHP – in 2012, an amount of PLN 4 728 000 was paid out in the form of subsidies and an amount of PLN 9 864 000 in the form of loan;
- Part 4) – Construction, expansion and reconstruction of electricity grids to ensure the connection of wind power generators (RES) – in 2012, a call for proposals and evaluation of proposals were carried out under the programme, an initial list was prepared of the projects positively evaluated during the process of proposal evaluation, and the total requested amount was PLN 147 092 000.

As part of the activities aimed at support and promotion of energy from renewable sources, in 2011–2012, the NFOŚiGW issued the following publications in the field of renewable sources.

- 1) Efficient use of energy. Information folder published in 2011 containing one of the latest offers of the NFOŚiGW for the financing of energy efficiency in the context of Polish economy.
- 2) Modern energy policy on distributed generation. Published in 2012, the publication is devoted to energy and environment issues. '... distributed generation' is one of the results of the Forum 'Energy – Impact – Environment' kept by the NFOŚiGW.
- 3) Publication entitled 'Profit from Energy – Environmental Impact' under Axis 9 of the Operational Programme Infrastructure and Environment.
- 4) Intelligent Energy Networks. Information folder published in July 2012 containing the latest offer of the NFOŚiGW for the financing of energy efficiency.

Support for biocomponents and liquid biofuels until 30 April 2011:

Until 30 April 2011, State Aid scheme N 57/08 – Poland 'Operational support for biofuels' was implemented in Poland, with the prior approval of the European Commission of

18 September 2009, including exemption from excise duty on liquid biofuels with biocomponents and biocomponents classified as pure fuel, as well as fuel charge exemption on biocomponents classified as pure fuel.

The support scheme for biocomponents and liquid biofuels provided for lower rates of excise duty on:

- products made by blending motor fuels falling within CN codes 2710 11 45 or 2710 11 49 with biocomponents, containing more than **2 %** of biocomponents, produced in tax warehouses and complying with the quality requirements set out in separate provisions – by PLN **1.565** per litre of biocomponents added to these fuels,
- products made by blending diesel oils falling within CN codes 2710 19 41 with biocomponents, containing more than **2 %** of biocomponents, produced in tax warehouses and complying with quality requirements set out in separate provisions – by PLN **1.048** per litre of biocomponents added to these oils,
- biocomponents as pure fuels, produced in tax warehouses and complying with the quality requirements set out in separate provisions, intended for combustion engines, regardless of their CN codes – in the amount of PLN 10.00 per 1 000 litres. (**1 gr/l**).

Moreover, biocomponents as pure fuel were exempt from fuel charge (fuel charge rate – PLN 239.84 per 1 000 litres).

Support for biocomponents and liquid biofuels after 30 April 2011:

The Act of 26 November 2010 amending certain acts connected with the implementation of the Budget Act (Journal of Laws No 238, item 1578) includes provisions which change the rules for providing support for biocomponents and liquid biofuels in the form of excise duty reliefs. The criteria for the minimum content of biocomponents in liquid biofuels to be met in order for the tax relief to apply were further tightened, and their period of validity shortened.

In accordance with Article 37 of the Act amending certain acts connected with the implementation of the Budget Act, lower excise duty rates could have been applicable in the period from 1 May 2011 to 31 December 2011, provided that the European Commission issued a positive decision on compatibility with the common market of the State aid provided for in Article 37 of the above-mentioned Act. Moreover, these rates could have only applied to liquid biofuels with a biocomponent content of more than 80 % (bioethanol or fatty acid methyl esters), and to the biocomponents classified as pure fuels.

As of 31 December 2011, excise duty reliefs on biocomponents and liquid biofuels no longer apply. Bearing in mind that by this date the European Commission did not issue any positive decision on compatibility of the aid referred to in Article 37 of the Act amending certain acts connected with the implementation of the Budget Act with the common market, no support was provided for the producers of liquid fuels or biofuels. In addition, upon expiry of the validity period of such reliefs, the European Commission was requested to cancel the notification of the above-mentioned mechanism.

The aid scheme project SA.33318, notified to the European Commission, i.e. ‘Operating aid for biofuels in Poland’ (which is an extension of programme N57/2008), also allows for the extension until 31 December 2013 of the fuel charge exemption for biocomponents classified as pure fuels. However, it should be kept in mind that in 2012 a new market support model for biocomponents and liquid biofuels was developed, based on the provisions of the draft Regulation of the Minister for the Economy on detailed rules for providing financial support to implement the measures related to the production of biocomponents, liquid biofuels or other renewable fuels and their use in transport, which does not allow the further provision of tax-related support. However, steps have been taken to implement other more effective long-term schemes which will be targeted directly at specific groups of entities (not only at producers, as was the case with programme N57/2008).

In 2011, an amount of approx. PLN 27.5 million was allocated, out of the budgetary resources available to the Polish National Centre for Research and Development (hereinafter

‘NCBiR’) and the National Science Centre (hereinafter ‘NCN’), for development and research work related to biocomponents and liquid biofuels for the following purposes:

1. 3 EU-funded projects implemented by the NCBiR under the Operational Programme ‘Innovative Economy’ (approx. PLN 3.3 million);
2. 6 projects implemented by the NCBiR within the international programmes – 2 ENIAC, 1 EUREKA, 3 EUREKA 2 (approx. PLN 1.6 million);
3. 10 projects implemented by the NCBiR under national programmes (approx. PLN 21.3 million);
4. 11 projects submitted by the Ministry of Science and Higher Education to the NCN for implementation (approx. PLN 1.2 million);
5. 3 projects funded by the NCN (approx. PLN 0.09 million).

Moreover, under the Operational Programme Development of Eastern Poland (Measure 1.3 Support for innovation), the project: ‘Environmental Laboratory of Renewable Energy’ has received support. The project is aimed at providing the necessary research infrastructure for the Environmental Laboratory of Renewable Energy to allow the comprehensive research into production and processing of biomass for energy purposes. One of the implementation objectives of the aforementioned project is to establish an infrastructure for research into biofuels of the second and third generation, including the biomass extracted from algae. The funds from the European Regional Development Fund amount to approx. PLN 22 million.

In 2012, an amount of approx. PLN 35.65 million was allocated out of the state budget for development and research work related to biocomponents and liquid biofuels for the following purposes:

1. 14 projects under OP IE (Operational Programme ‘Innovative Economy’) implemented by the NCBiR – the funding of approx. PLN 7.58 million;
2. 6 projects implemented by the NCBiR within the international programmes – 3 EUREKA 2 and 3 ERA-Net Bioenergy – the funding of approx. PLN 1.26 million;
3. 18 projects implemented by the NCBiR under national programmes (including the projects within the Programme of Applied Research and Technology Initiative) – the funding of approx. PLN 25.24 million;
4. 8 projects submitted by the Ministry of Science and Higher Education to the NCN for implementation – the funding of approx. PLN 0.53 million;
5. 8 projects financed by the NCN (2 OPUS 1, SONATA 1, SONATA 2, # OPUS 2, PRELUDIUM 2) – the funding of approx. PLN 1 million.

An important support mechanism for renewable energy sources are the European funds, out of which in the 2007–2013 financial perspective an amount of more than PLN 3 430 million was allocated for RES development. The funds were allocated for the support and promotion of renewable energy sources as part of the following:

- Operational Programme Infrastructure and Environment – the allocation of PLN 2 038 million;
- regional operational programmes – the allocation of PLN 1 345 million;
- European territorial cooperation programmes – PLN 46 870 000.

The implementation of renewable energy measures under the Operational Programme Infrastructure and Environment (OP IE) 2007–2013 (as at the end of 2012)

The projects aimed at increasing the deployment of energy from renewable sources, including biofuels, are implemented under Priority Axis 9 Environment-friendly energy infrastructure and energy efficiency, and Priority Axis 10 Energy Security, including diversification of energy sources, under which support is provided to investments in the construction or

upgrading of the power generation units using biomass, biogas, wind and water energy, electricity and heat in combination with renewable energy sources (e.g. biomass CHP). These activities contribute to reduced consumption of primary energy and CO₂ emissions and other greenhouse gas emissions, and to increased use of renewable energy sources.

Under Measure 9.4 OP IE Generation of energy from renewable sources, the investments in the construction of electricity or heat generation units are supported. An amount of PLN 1 570 million was allocated to Measure 9.4. 2 calls for proposals were carried out by the end of 2012. 49 funding agreements were signed for the total amount of EU-funding of PLN 1 222 million, which represents almost 78 % of the allocation available for the measure. The following projects are implemented:

- construction of wind farms (36 projects),
- construction of power plants and CHP plants for biogas (10 projects),
- construction of CHP plants and installations for biomass (3 projects).

Under Measure 9.5 OP IE Production of biofuels from renewable sources, 1 call for proposals was announced for the entire allocation available (PLN 34 991 000). The support scheme covers the projects involving the construction of plants which produce biocomponents and biofuels classified as pure fuel, with the exception of the production of biofuels classified as oil fuel mixtures and the production of pure vegetable oil and bioethanol from agricultural products. Under Measure 9.5, 1 funding agreement was signed for the total amount of EU-financing of PLN 11 473 000. The implemented project involves the production of esters from vegetable oil, including the installation and associated facilities. No further calls for proposals are planned for this measure.

Under Measure 9.6 Networks facilitating reception of energy from renewable sources, the investments in transmission and distribution of electricity are supported to the extent necessary to deliver energy from renewable sources to the National Electricity System. The projects are fully dedicated to the connection of new generation units of renewable energy. As for the measure concerned, 1 call for proposals was announced for the entire allocation available (PLN 67 032 000) and 3 funding agreements were signed for the total amount of EU-financing of PLN 26 223 million, which represents 39 % of the available allocation. The projects involve the construction of networks to receive electricity from renewable sources.

The support provided under Measure 10.3 ‘Industry development for renewable energy sources’ is aimed at providing modern process lines to manufacture the equipment for production of electricity and thermal energy from renewable sources, as well as from biocomponents and biofuels. The allocation for this measure is PLN 120 932 000. By the end of 2012, 4 funding agreements were signed to provide EU financing of PLN 53 076 000.

In addition, by the end of 2012, the NFOŚiGW signed 6 funding agreements to construct the Waste Thermal Treatment Plant under Priority Axis II of Measure 2.1 for the total amount of EU funding of PLN 1.6 billion.

The implementation of measures related to RES within the Regional Operational Programmes (ROP) in 2007–2013 (as at the end of 2012)

Each regional operational programme sets out the priorities and measures aimed at supporting the projects related to renewable sources.

The main types of investments eligible for funding in this area are the projects involving:

- construction, expansion and upgrading of the installations used for production and transmission of energy from renewable sources (wind, solar, hydro, geothermal, energy from biomass), depending on the natural conditions and growth potential of the region,

- power increase of the units for production of electricity and heat from renewable sources (the so-called cogeneration projects). Of particular importance are the projects with high energy efficiency, which will result in reduced environmental pollution and will significantly contribute to the fulfilment of Polish accession commitments in terms of increased deployment of energy from renewable sources.
- an important group of projects will also be that involving the investments in new technologies (such as photovoltaic cells).

The implementation of these tasks will significantly contribute to improved energy balance of each province, in addition to increasing their energy security.

The beneficiaries of these investments may include local government units (LGUs), their unions, agreements and associations, organisational units of LGUs with legal personality, NGOs, housing cooperatives and residential communities, universities, research institutions, government administration, energy companies and municipal companies with a minimum public entities' share of 50 %.

Overall, by the end of 2012, under the ROP, 243 funding agreements were signed for an amount of EU funding equal to PLN 1 214 million.

The implementation of measures related to RES under the European Territorial Cooperation (ETC) for 2007–2013 (as at the end of 2012)

All ten of the ETC programmes, including those relating to cross-border, transnational and interregional cooperation, have contributed to the establishment of favourable conditions for the support of projects involving the use of renewable energy sources and to increased energy efficiency of RES in 2007–2013.

Support is provided to the projects aimed at improving regional policies on carbon efficiency, reducing energy demand, reusing waste, and the promotion of RES, transfer of knowledge on how to increase investments in RES. Steps have been taken to promote the use of the locally available renewable energy sources through the joint management and development of local action plans for energy purposes. Efforts are also made to achieve energy savings at the stage of building design and renovation, and to use energy from waste, including new renewable technologies, for transport and infrastructure purposes.

The implemented projects of cross-border cooperation involve the extraction of heat from indigenous biomass, and are aimed at promoting the universities' cooperation in the area of 'green energy', including pilot geothermal projects. In addition, information, advisory and educational activities are also carried out in respect of sustainable use of renewable energy sources and pilot investments under the RES.

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

The information on how supported electricity is allocated to final customers has been included in the interim report for 2009–2010 on progress in the promotion and use of energy from renewable sources in Poland. There have been no changes in this respect.

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

The support schemes currently in place in Poland take into account RES technologies that give additional benefits, but may also have higher costs, only to a limited degree.

The Polish support scheme is intended to promote RES technologies with the lowest cost of energy production.

In Poland, measures have been taken to change the support mechanisms for biocomponents and liquid biofuels. The planned measures will include the support for scientific research into the use of new advanced technologies for biofuel production and the support for the construction of biofuel production plants. The provisions of Directive 2009/28/EC provide for double-counting on biofuels to meet the objectives for the share of energy from renewable sources in transport, which is a factor promoting the use of second-generation biofuels.

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

Poland has put in place the appropriate mechanisms to ensure the efficient and secure operation of the system of guarantees of origin.

It should be emphasised that it is generally known that the issue of guarantees of origin, and of other documents proving the issue of such guarantees, is governed by the provisions on the issue of certificates of the Act of 14 June 1960 – Code of Administrative Procedure (Journal of Laws of 2013, item 267).

The guarantees are issued in the form of an electronic document in response to a written request from a generator of electricity from renewable energy sources, and specify:

- 1) designation of the generator of electricity, referred to in paragraph 1;
- 2) location, type and capacity of the installation where the renewable energy was produced;
- 3) amount of energy from renewable energy sources;
- 4) the period of one or more consecutive calendar months of the calendar year in which the electricity from renewable sources was produced, along with the start and end dates of production;
- 5) whether the renewable energy installation specified in the application has benefited from any scheme or instrument aimed at promoting electricity generation from renewable energy sources;
- 6) the date on which the renewable energy installation became operational.

This application is submitted to the electricity distribution system operator or the electricity transmission system operator whose area of operation covers the location where the renewable energy source has been connected, within 7 days after the end date of production of a portion of electricity covered by the application.

The electricity distribution system operator or the electricity transmission system operator is required to verify the data included in the application for issue of guarantee of origin, and, within 14 days of receipt of the application, to submit it to the President of the Energy Regulatory Office, along with the proof of the amount of electricity generated from renewable sources, determined based on the readings of metering and billing equipment.

Guarantees of origin and other documents proving the issue of such guarantees are issued by the President of the Energy Regulatory Office within 30 days of submission of the relevant application by the electricity distribution system operator or the electricity transmission system operator.

Any use of a guarantee of origin takes place within 12 months of production of the corresponding energy unit. A guarantee of origin becomes invalid after the expiry of the above-mentioned period.

A guarantee of origin is of the standard size of 1 MWh. Each guarantee of origin has a unique identification number and includes information on its date of expiry. Guarantees of origin expire on the date of transfer to the final customer.

The President of the Energy Regulatory Office, at a written request, recognises the guarantees of origin issued in other EU Member States, the Swiss Confederation or a Member State of the European Free Trade Association (EFTA) – parties to the Agreement on the European Economic Area.

The President of the Energy Regulatory Office may refuse to recognise a guarantee of origin issued in another Member State only when it has well-founded doubts about its accuracy, reliability or veracity. In this case, the President of the Energy Regulatory Office immediately notifies the Commission of such a refusal and its justification.

The President of the Energy Regulatory Office has also the right to refuse to issue a guarantee of origin if the application for issue of guarantee of origin has been submitted to the electricity distribution system operator or the electricity transmission system operator after the expiry of the 7-day deadline.

Any refusal to issue a guarantee is made in the form of a decision which may be appealed against.

To ensure transparency of the system of guarantees of origin, a register of certificates of origin has been established, kept by the Polish Power Exchange (Towarowa Giełda Energii S.A., PPE). The PPE is required to keep the register of guarantees of origin in a manner which ensures the identification of:

- 1) the generators who received a guarantee of origin;
- 2) the entities holding the guarantees of origin issued in other EU Member States, the Swiss Confederation or a Member State of the European Free Trade Association (EFTA) – a party to the Agreement on the European Economic Area, which have been recognised by President of the Energy Regulatory Office;
- 3) available guarantees of origin and the amount of electricity corresponding to such guarantees.

The generator and the entity having an entry in the register of guarantees of origin are obliged to notify the President of the Energy Regulatory Office and the PPE of the transfer of guarantees of origin to the final customer within 7 days of the transfer. This information must be entered in the register of guarantees of origin. The transfer of guarantees of origin is effective as of the date of making the relevant entry in the register of guarantees of origin.

Expiration of a guarantee of origin due to it having been used or due to the expiry of the validity period results in it being removed from the register of guarantees of origin.

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

Table 4 contains data on supply of biomass for energy purposes in Poland. At this stage, there is no accurate information available due to the lack of detailed data on the nature of supplies (indirect/direct) and their origin (import).

Furthermore, the reporting rules for 2011–2012 relating to the supply of agricultural raw materials used to produce biocomponents do not allow for the precise determination of the amount and type of the raw materials, which would specify:

- domestic raw materials,
- raw materials imported from EU countries,
- raw materials imported from non-EU countries.

Given the above, summaries 1 and 2 include additional information on the amount and type of raw materials used to produce various biocomponents. In order to determine the amount of biocomponents from non-domestic generators, the data collected by the President of the Energy Regulatory Office on the total amount of biocomponents placed on the market have been used.

In accordance with the Energy Law Act, energy companies engaged in the production of agricultural biogas or production of electricity from agricultural biogas are required to submit, within 45 days of the end of the quarter, quarterly reports to the President of the Agricultural Market Agency, which include information on:

- the amount and type of raw materials used to produce agricultural biogas or electricity from agricultural biogas,
- the amount of agricultural biogas generated, with an indication of the amount of agricultural biogas introduced into the gas distribution grid, used to generate electricity through a separate or cogeneration system, or in another way,
- the amount of heat and electricity produced from agricultural biogas using a separate or cogeneration system.

Relevant information on this topic has been included in summary 3

Table 4a shows data in ha²⁹ relating to current domestic agricultural land use for the production of crops dedicated to energy production. The records relating to current domestic agricultural land use for the production of crops dedicated to energy production were kept by the Agency for Restructuring and Modernisation of Agriculture. As of 1 January 2010 the provisions of Council Regulation (EC) No 1782/2003 of 29 September 2003 relating to support for energy crops ceased to apply, having been repealed by Council Regulation (EC) No 73/2009 of 19 January 2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers, amending Regulations (EC) No 1290/2005, (EC) No 247/2006, (EC) No 378/2007 and repealing Regulation (EC) No 1782/2003 (OJ L 30 of 31 January 2009). Therefore, as of today there are no detailed statistics available on cultivation of crops for energy purposes and on their area for the period after 31 December 2009.

This item of the Report has been supplemented with summary 4 containing data on the purchase and sale of wood by the State Forests National Forest Holding.

²⁹ ha – hectare = 10 000m²

Table 4: Biomass supply for energy use

	Plant species / type of biomass	Amount of domestic raw material (*)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (*)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU (*)		Primary energy in amount of imported raw material from non EU (ktoe)	
		Year 2011	Year 2012	Year 2011	Year 2012	Year 2011	Year 2012	Year 2011	Year 2012	Year 2011	Year 2012	Year 2011	Year 2012
Biomass supply for heating and electricity:													
Direct supply of wood biomass from forests and other wooded land for energy generation (fellings etc.) **	–	12 043 188	12 569 125	4 602	4 803	–	–	–	–	–	–	–	–
Indirect supply of wood biomass (residues and co-products from wood industry etc.)**													
Energy crops (grasses etc.) and short rotation trees (please specify)	–	318 868	444 940	96	103	–	–	–	–	–	–	–	–
Agricultural by-products / processed residues and fishery by-products **	–	1 292 737	1 855 792	442	670	–	–	–	–	–	–	–	–
Biomass from waste (municipal, industrial etc.) **	–	4 074 073	4 747 849	1 210	1 411	–	–	–	–	–	–	–	–
Others – organic fractions of solid municipal waste	–	79 763	81 095	32	32	–	–	–	–	–	–	–	–
Biomass supply for transport:													
Common arable crops and biomass for biofuels (please specify main types)****	Data relating to the use of energy materials for transport purposes have been included in summary 1 and summary 2.												
Energy crops (grasses etc.) and short rotation trees for biofuels (please specify main types)	–	–	–	–	–	–	–	–	–	–	–	–	–
Others (please specify)	–	–	–	–	–	–	–	–	–	–	–	–	–

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

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

Source: Central Statistical Office and Agricultural Market Agency

Summary 1. Amount of generated bioethanol taking into account basic raw materials used for its production [thousand tonnes]

For bioethanol production, the following were used:	Raw materials used*		Amount of bioethanol from domestic producers**	
	2011	2012	2011	2012
Raw materials, of which:	359.99	389.60	131.90	167.80
– cereals	347.69	388.08		
– molasses	12.30	9.65		
– potatoes	0	0.87		
Semi-finished products, of which:	28.92	63.27		
– ethyl alcohol	18.62	49.62		
– residual fractions from alcohol rectification	10.00	10.63		
– fusel oils	0.30	0.00		
– bran	0.00	3.02		

Source: Prepared using * data from the Agricultural Market Agency and ** Reports of the President of URE

Summary 2. Amount of generated methyl ester taking into account basic raw materials used for its production [thousand tonnes]

For methyl ester production, the following were used:	Raw materials used*		Amount of methyl ester from domestic producers**	
	2011	2012	2011	2012
Raw materials, of which:	0.21	2.14	363.77	591.96
– rapeseed	0.21	2.14		
Semi-finished products, of which:	364.73	602.47		
– rapeseed oil	355.62	582.21		
– vegetable fats	3.83	16.27		
– animal fats	2.46	0.00		
– free fatty acids	2.80	3.77		
– esters of higher fatty acids	0.02	0.22		
Chemicals, of which:	24.51	35.23		
– methanol	24.33	30.33		
– other	0.18	4.90		

Source: Prepared using * data from the Agricultural Market Agency and ** Reports of the President of URE

Summary 3. List of raw materials used for production of agricultural biogas in 2011–2012

Type of raw material used to produce agricultural biogas	Amount of raw materials used to produce agricultural biogas (thousand tonnes)		Amount of energy generated	
	2011	2012	2011	2012
1. Agricultural crops for energy purposes, of which:	123.68	246.26	A total of 36.65 million m ³ of agricultural biogas was produced, which was then converted into 73.43 GWh of electricity.	A total of 73.15 million m ³ of agricultural biogas was produced, which was then converted into 141.80 GWh of electricity.
a. cereals, including maize	116.46	242.63		
b. other crops – (grasses)	7.22	3.63		
2. Agricultural by-products / processed residues and processed agri-food by-products, of which:	345.74	670.86	In addition, as a result of the incineration of agricultural biogas using cogeneration	In addition, as a result of the incineration of agricultural biogas using cogeneration
a. slurry and manure	277.60	372.68		

b. distilling dregs, beet pulp	37.39	183.69	technology, a total of 82.63 GWh of heat was generated, which is primarily used to meet the technology needs of agricultural biogas plants or the projects directly associated with them, including the heating of livestock buildings.	technology, a total of 160.13 GWh of heat was generated, which is primarily used to meet the technology needs of agricultural biogas plants or the projects directly associated with them, including the heating of livestock buildings.
c. vegetable and fruit residues	18.24	92.79		
d. other residues and waste (slaughterhouse waste, whey, refinery oil sludges, protein sludges, fatty waste, stale food etc.)	12.51	21.55		
e. straw	0.00	0.15		
Total	469.42	917.12		

Source: AMA data

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.) *	—	—
2. Land used for short rotation trees (willows, poplars).	7 619	10 344
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus)*	—	—

* – no detailed data available

Source: ARMA (Agency for Restructuring and Modernisation of Agriculture)

Summary 4. Wood sales by the State Forests National Forest Holding

Direct supply of wood biomass from forests and other wooded land for energy generation (fellings)	Amount of raw material	
	2011	2012
	970*	1 038.7*

* – data illustrating wood sales per product range in thousand m³ – S2AC (wood for energy purposes, industrial), S2AP (wood used for general purposes) and energy wood (chips and bales).

Source: Ministry of the Environment

7. Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources.

Analyses of raw material prices in Poland show that there is a close link between the domestic and world market prices of agricultural raw materials. Due to the fact that only a small share of agricultural raw materials produced in Poland is used for energy purposes, these energy dedicated materials have had only little impact on market prices.

An analysis of utilised agricultural area on agricultural holdings in 2012 indicates that the acreage decreased by 392 100 ha (2.5 %) to 15 050 300 ha, compared with 2011. In 2012, the sown area of agricultural holdings was 10 431 600 ha, which was a reduction of 144 400 ha, i.e. 1.4 %, compared with the sown area in 2011.

The data presented in summary 5 and summary 6 indicate that during the period covered by the report the average price of agricultural products (cereals and rapeseed) increased, the utilised agricultural area decreased and the forest area increased. The price increase observed for agricultural raw materials in the reporting period was due to the price increase on the world market and not to the increased use of agricultural biomass for energy purposes in Poland.

The data included in summary 7 show that land use structure is stable and subject only to minor changes.

Summary 5. Average prices of raw materials / products

Commodities [PLN/tonne]	2011	2012
wheat	819.90	893.40
barley	753.80	819.10
rapeseed	1 839.10	1 981.10
corn	677.20	728.50

Source: Central Statistical Office 2013 – ‘Source materials – Buying-in and prices of agricultural products in 2012’

Summary 6. Basic land use structure in Poland

Land [thousand ha]	2011	2012
Forests	9 304.8	9 329.1
cultivated land (agricultural land area – arable land)	13 921.5	13 890.6
uncultivated land (agricultural land area not kept in good agricultural condition)	480.0	478.8

Source: Central Statistical Office – ‘Rocznik statystyczny rolnictwa 2011 r.’ [Statistical Yearbook of Agriculture for 2011] and ‘Rocznik statystyczny rolnictwa 2012 r.’ [Statistical Yearbook of Agriculture for 2012]

Summary 7. Land use in agricultural holdings as per type of arable land

Description	Geodesic area - all agricultural land	Agricultural land area									
		total	in good agricultural condition								other
			total	sown land	fallow land	permanent crops		home gardening	permanent meadows	permanent pastures	
						total	of which orchards				
thousand ha											
2011	18 869.9	15 442.4	14 780.2	10 576.0	468.4	390.4	362.1	54.5	2 588.7	702.3	662.2
2012	18 825.0	15 050.3	14 529.4	10 431.6	439.9	398.0	368.4	53.5	2 521.3	685.1	520.9

Source: Central Statistical Office – ‘Rolnictwo w 2011 r.’ [Agriculture in 2011] and ‘Rolnictwo w 2012 r.’ [Agriculture in 2012]

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

Table 5 contains information on production and consumption of the so-called second generation biofuels, referred to in Article 21(2) of Directive 2009/28/EC. In accordance with the information received from the President of the Energy Regulatory Office, the above-mentioned biofuels were neither produced nor consumed in Poland in 2011–2012.

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

Article 21(2) biofuels ³⁰	2011	2012
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. fuels from total RES-T	0	0

Source: Study of the Ministry of the Economy based on the Reports by the President of URE and the information provided by the Ministry of Agriculture and Rural Development

9. Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within your country in the preceding 2 years.

The analysis of the impact of the cultivation of raw materials for biofuel production on the crop structure, biodiversity, water resources and water and soil quality was carried out in February 2012 by the Institute of Soil Science and Plant Cultivation – PIB (State Research Institute) in Puławy. The results of this analysis showed that biofuel production in Poland has had no negative impact on biodiversity. The analysed period was from 2002 to 2009.

Due to the fact that the cultivation area of basic crops used for energy purposes, in particular those used for biofuel production, i.e. mainly rapeseed, did not change significantly in the period between 2009-2010 and 2011-2012, there were no reasonable grounds to carry out the analysis once again.

In addition, the Common Agricultural Policy (CAP) rules currently applicable to all Member States as regards the standards of good agricultural and environmental conditions, cross-compliance and various actions for the environment, ensure both the preservation of biodiversity and the sourcing of agricultural raw materials for biofuels in Poland, in accordance with the criteria laid down in Directive 2009/28/EC. The rules for ensuring the compliance of biofuel production with all environmental requirements are described in the interim report for 2009–2010 on progress in the promotion and use of energy from renewable sources in Poland.

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

In order to estimate the net greenhouse gas emission savings as a result of the construction of new RES installations (electricity, heating and cooling sectors), the same methodology was used as the one described in the interim report for 2009–2010 on progress in the promotion and use of energy from renewable sources in Poland.

Table 6 contains data (in tonnes of CO₂) corresponding to the carbon dioxide emission savings from the increased deployment of renewable energy sources in Poland.

³⁰ Biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material.

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

Environmental aspects	2009	2010
Total estimated net GHG emission saving from using renewable energy³¹	30 118 593	33 172 974
– Estimated net GHG saving from the use of renewable electricity	8 730 885	11 642 285
– Estimated net GHG saving from the use of renewable energy in heating and cooling	17 923 728	18 453 350
– Estimated net GHG saving from the use of renewable energy in transport	3 463 980	3 077 339

Source: Study of the Ministry of the Economy based on Table 1a and adopted assumptions.

11. Please report on and estimate 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 estimated potential for joint projects until 2020. (Article 22(1)(l), (m) of Directive 2009/28/EC)

According to the information provided to the European Commission in Table 4a of the NREAP, Poland has no intention to transfer energy from renewable sources to other Member States or from other Member States or third countries.

Table 7 contains data in ktoe corresponding to the excess or deficit production of energy from renewable sources, compared to the indicative trajectory for Poland, as set out in Directive 2009/28/EC and the estimates included in the NREAP. The figures in column ‘2010’, ‘2011’ and ‘2012’ constitute the difference between Table 1a (‘2010’, ‘2011’ and ‘2012’ columns) of this Report and the figures in Table 4a (‘2010’, ‘2011’ and ‘2012’ columns) of the NREAP. No reference was made to 2009, both in Directive 2009/28/EC and the NREAP.

The excess production for 2013–2020 was estimated based on the data included in the NREAP, however, with no breakdown by sectors. The above-indicated excess production is defined as the difference between the anticipated RES consumption (Table 4a of the NREAP, row G), averaged for two-year periods, and the minimum RES trajectory [ktoe] (Table 3 of the NREAP) calculated in accordance with Annex I Part B to Directive 2009/28/EC. Due to the fact that Directive 2009/28/EC does not specify the indicative trajectory for 2019, the excess for that year has not been estimated.

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 Poland (ktoe)^{32,33}

Actual/estimated excess or deficit production (Please distinguish per type of renewable energy and per origin/destination of import/export)	2009 *	2010 **	2011 **	2012 **	2013 ***	2014 ***	2015 ***	2016 ***	2017 ***	2018 ***	2019 *	2020 ***
heating and cooling	–	656	847.7	1 086	–	–	–	–	–	–		–
electricity	–	–19	–35.7	128.6	–	–	–	–	–	–		–
transport	–	–94	–83.7	–284.9	–	–	–	–	–	–		–
TOTAL	–	543	729.3	928.7	1 182		1 074		968			587

³¹ The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

³² Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report Member State may correct the data of the previous reports.

³³ When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. –x ktoe).

* – no reference period available

** – calculations based on the difference between the figures in Table 1a ('2010', '2011' and '2012' columns) of this report and the figures in Table 4a ('2010', '2011' and '2012' columns) of the *National Renewable Energy Action Plan*. Positive numbers indicate a surplus which can possibly be used for cooperation mechanism. Negative numbers indicate energy deficiency against the intended trajectory.

*** – calculations based on the difference between the figures in Table 4a of the NREAP (row G), averaged for two-year periods, and the figures in Table 3 of the NREAP (row: minimum RES trajectory [ktoe]); currently, there are no estimates broken down by renewable energy sector.

Source: Study of the Ministry of the Economy based on the data of the Central Statistical Office and the National Renewable Energy Action Plan

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

The decision rules on statistical transfers have been set out in Section 6a of the Energy Law Act of 10 April 1997 (Journal of Laws of 2012, item 1059, as amended), laying down 'International cooperation rules for joint investment projects and international cooperation in relation to renewable sources'.

In accordance with the applicable Polish law, a statistical transfer may only be made under an international agreement or a civil-law agreement, subject to the prior consent of the Council of Ministers.

If an energy company wishes to implement a joint energy project within the territory of Poland or the Polish exclusive economic zone, it is required to obtain, by means of a decision, the consent of the minister competent for the economy. This decision is issued on the basis of objective and transparent criteria, and having regard to the national energy policy, after consulting the minister competent for the State Treasury.

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

The information on the share of biodegradable waste in waste used for producing energy contained in the interim report for 2009–2010 on progress in the promotion and use of energy from renewable sources in Poland remains valid.

Furthermore, in accordance with the Regulation of the Minister for Environment of 2 June 2010 on detailed technical specifications for classification of a portion of energy recovered from thermal conversion of municipal waste (Journal of Laws No 117, item 788), a portion of energy recovered from thermal conversion of municipal waste may only be classified as renewable energy provided that tests are carried out to determine the share of a chemical energy of biodegradable fractions in the chemical energy of the entire mass of mixed municipal waste intended for thermal conversion, according to the research methodology which would provide evidence of the actual share of chemical energy of biodegradable fractions in the total amount of energy from thermal conversion of mixed municipal waste, as set out in an annex to the Regulation. These tests are carried out once every three years and provide verification of the share of energy from renewable sources.

It should be borne in mind that in accordance with Article 159 of the Act on Waste of 14 December 2012 (Journal of Laws of 2013, item 21, as amended), a portion of energy recovered from thermal conversion of waste containing biodegradable fractions may be recognised as energy from renewable energy sources if the technical requirements are met relating to the classification of a portion of energy recovered from thermal conversion of waste as energy from a renewable energy source, as set out in the implementing rules. The Act also provides for the authority to issue the regulation that is wider in scope and also covers waste thermal treatment in the course of waste co-incineration, and it also allows for

the classification as RES energy of a portion of energy recovered from thermal treatment of not only mixed municipal waste, but also other types of waste containing biodegradable fractions.

New amendments to the municipal waste management system (introduced by the Act of 1 July 2011 amending the Act on maintaining cleanliness and tidiness in municipalities and certain other acts, Journal of Laws No 152, item 897, as amended) have been made with regard to the responsibilities of property owners in the area of municipal waste management being taken over by the municipality. As a result, Polish municipalities are required to establish a system of selective waste collection within their territories, which may also cover a system of selective collection of bio-waste to be used for energy purposes.