Assessment of climate change policies in the context of the European Semester

Country Report: Poland

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The report provides an overview of current emission trends and progress towards targets as well as policy developments that took place over the period from February 2013 to November 2013.

Please feel free to provide any comments or suggestions to the authors through the contacts listed above.

Short summary

Background: Although it refers to sustainable development in its constitution (Art. 5), climate change only plays a minor role for decision-makers in Poland. The National climate strategy is outdated and does not comply with current EU directives. The emission factor for power generation in Poland is more than twice of that of the EU, with coal being the main fuel (90% in 2009). Currently, Poland is renewing its outdated complex of power plants (70% older than 30 years); 24 GW are being planned or built, mainly using coal or gas, while the renewable energy potentials remain underexploited.

Non-ETS emission reduction target: The Polish 2020 target is +14% (compared to 2005 emissions). Between 2005 and 2011 non-ETS greenhouse gas emissions increased already by 9%. According to the latest national projections submitted to the Commission and when existing measures are taken into account, the target is expected to be reached with a margin of 14 percentage points: 0% in 2020 compared to 2005.

Key indicators 2011:

GHG emissions	PL	EU
ESD EU 2020 GHG target (comp. 2005)	+14%	
ESD GHG emissions in 2011 (comp.2005)	+9%	-9%
Total GHG emissions 2012 (comp.2005)	-3%	-12%
GHG emissions/capita (tCO_2eq)	10.4	9.0

→ **16% higher** per capita emissions than EU average

GHG emissions per sector	PL	EU
Energy/power industry sector	48%	33%
Transport	12%	20%
Industry (incl. industrial processes)	15%	20%
Agriculture (incl. forestry & fishery)	11%	12%
Residential & Commercial	11%	12%
Waste & others	3%	3%

→ **Energy/power industry sector** followed by industry

Energy	PL	EU
EU 2020 RES target	+15%	
Primary energy consumption/capita (toe)	2.7	3.4
Energy intensity (kgoe/1000 €)	318	144
Energy to trade balance (% of GDP)	-3.3%	-3.2%

→ **21% lower** per capita consumption, **120% higher** energy intensity, contribution of energy to trade balance above EU average

Taxes	PL	EU
Share of environmental taxes (% of GDP)	2.6%	2.4%
Implicit tax rate on energy (€/toe)	94	184

→ **Lower** share of environmental taxes and **49% lower** implicit tax rate on energy than EU average.

Key policy development in 2013: Poland is currently developing policies in the energy sector, mostly concerning nuclear power and shale gas. A draft amendment of the Nuclear Energy Act was adopted by the Council of Ministers, including requirements related to nuclear safety and radiological protection for radioactive waste. Furthermore, the final draft of a new law on the taxing of hydrocarbons, which will govern taxation of oil and gas extraction in Poland, was published. The regulations are set to enter into force in 2015, but do not foresee taxes actually being levied until 2020. This delay is intended to encourage shale gas extraction in Poland, as companies would not face taxes on the resulting fuel in the short term. A new draft law on renewable energy deployment envisions a new support scheme based on tendering. Addressing energy efficiency, a new draft law plans to introduce the obligation to receive energy performance certificates for buildings. Furthermore, a new nationwide grant programme to support energy efficiency in newly built residential buildings was installed.

Key challenges: The oversupply of certificates in the quota system for renewable energy support - mainly caused by combined heat and power plants co-firing biomass - has led to low prices and thus low revenues for energy producers, which hampers further deployment of renewables. The envisioned change towards a tendering system might disfavour small investors (e.g. local cooperatives) as tendering bears an energy price risk for investors and tends to give an advantage to large operators. Transport emissions have grown considerably over the last decade and may keep going up. Newly registered vehicles are less emission-efficient than the EU average and Poland has the lowest vehicle ownership tax in the EU, with private cars being excepted. Moreover, overall taxation of fuels is very low, creating only a minor incentive to use fuel-efficient cars.

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1 Background on climate and energy policies

In Poland, climate change does not play a significant role for decision-makers - at the EU level, Poland opposes more ambitious GHG reduction targets and the further development of climate change policies.

However, Poland is one of a few countries that refer to sustainable development in their constitutions (Art. 5): “The Republic of Poland [...] shall ensure the protection of the natural environment pursuant to the principles of sustainable development”. Low-carbon development is also mentioned in several of Poland’s forward-looking strategic documents. The Medium-Term National Development Strategy to 2020, which features several integrated strategies for different economic areas, includes an Innovation and Economic Efficiency Strategy that sets out conditions for efficiency and innovation (Szewrański 2012). Green growth is mentioned in the Long-Term National Development Strategy 2030, which sets out the most important national actions required in terms of economic development and improvement of living standards up to 2030. It recognizes the need for an improvement of environmental conditions and eliminating the risks of climate change. The main goals include an increase in the development of a green economy based on the efficient use of resources, the development of innovative environmental technologies, the preservation of natural and geological resources for future generations, and adaptation to climate change (Szewrański 2012). Poland’s official energy-specific long-term strategy, “Polish Energy Policy until 2030” (Polityka Energetyczna Polski do 2030 r.), was published by the Polish Ministry of Economy in November 2009. Its main goals are: security of energy supply, climate change mitigation and low energy prices – using all available sources including coal, lignite, natural gas, oil, nuclear power and renewables. This document does not set priorities and specifications of the desired energy mix through 2030. None of these longer-term documents have been changed in 2013.

The national strategy on environmental policy most relevant to the near term was published in 2008 by the Polish Ministry of Environment – the “National Environmental Policy for 2009-2012 with an outlook until 2016”. It names measures for the years 2009-2012 and overall goals for 2016. Thus the country is currently not following a detailed environmental policy plan, as specifics have not been laid out for the years after 2012.

The lack of specific policy strategy is even more evident when it comes to climate change. The last climate policy strategy, “Polish Climate Policy Strategies to reduce greenhouse gas emissions in Poland until 2020”, was published in 2003. It names three timeframes of goals and measures: 2003-2006, 2007-2012, and the long-term timeframe of 2013-2020. Strategies are increasingly vague the more long-term they are, such that the document has little relevance to Poland’s current climate policy situation. The applicability of this document is particularly low since it has not been updated since its publication and its measures were developed before Poland joined the European Union - new EU directives were developed in the meantime, and Polish strategy has not been adjusted accordingly.

Polish energy policy focuses on a secure, affordable, and diversified energy supply, which leads to the exploration of domestic shale gas resources and the construction of the first nuclear power plant. Independence from Russia is an energy policy priority and one of the reasons for the Polish government’s strong support for the coal industry and its high hopes for shale gas resources. Although “Poland’s Energy Policy up to 2030” lists

climate-friendly goals for the energy sector (such as reducing the energy-intensiveness of the economy, construction of highly efficient power plants, promotion of renewables and the reduction of losses during transmission), there is little evidence of those goals being pursued. Renewable energies have played a minor role in recent years, and the planned renewable energy sources law introducing changes in support scheme for renewable energy projects has not yet been decided on. The last draft of that law, from October 2012, was discarded. On 12 November 2013, the Ministry of Economy presented a new draft law that introduces a support scheme for renewable energy based on tenders (MG 2013f).

The major policy developments in Poland since February 2013 include a new draft law on energy performance of buildings and a proposed act on transmission corridors. Moreover, Poland was referred to the Court of Justice for not transposing all parts of the EU Renewable Energy Directive (2009/28/EC) – to address this and to attempt to 'fix' Poland's existing renewable energy incentive system, a new draft of the renewable energy systems (RES) law was introduced in November. Furthermore, the European Commission decided to withdraw a complaint against Poland from the Court of Justice of the European Union concerning the failure to implement the Directive of the European Parliament and of the Council 2009/73/EC concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.

2 GHG projections

Background information

Poland is the 5th-biggest emitter of GHG emissions in the EU. In 2011, the country emitted 399.4 Mt CO_2eq (UNFCCC inventory 2011), with almost half stemming from energy supply. This reflects the outdated physical infrastructure of power plants that are principally fired by coal or lignite. Furthermore, the networks for electricity and heat transmission show high losses. However, emissions in that sector have been reduced by more than 25% since 1990 due to the economic downturn in the 1990s. In contrast, emissions from transport increased by more than 130% since 1990, mainly due to the growing number of private cars. Emissions from industrial processes increased from 1990 to 2011 by over 30%. The agricultural sector showed a decrease in emissions by 30% since 1990 due to reduced livestock population and use of nitrogen fertilizer (UNFCCC inventory 2011, EEA 2012, UNFCCC 2012). From 2011 to 2012, total GHG emissions are expected to decrease in all sectors (EEA 2013c).

Progress on GHG target

There are two sets of targets to evaluate: 1) the Kyoto Protocol targets for the period 2008-12 (which has just ended) and 2) the 2020 targets for emissions not covered by the EU ETS.

Under the Kyoto-Protocol the emission reduction target for Poland for the period 2008-2012 is minus 6% based on 1988 for CO_2, CH_4 and N_2O and on 1995 for F-gases. An evaluation of the latest complete set of greenhouse gas data (for the year 2011; there is only preliminary data for 2012) shows that Poland's emissions have decreased by 29.1% compared the base year (EEA 2013a) indicating the country is on track to meeting its Kyoto target through domestic emissions reductions.

By 2020, Poland may increase emissions not covered by the EU ETS by 14% compared to 2005, according to the Effort Sharing Decision (ESD) ([1]). The latest data (EEA 2013b) suggest that Poland is on track to meeting this target. Provisional data show that non-ETS emissions in 2012 were below of the Annual Emissions Allocation ([2]) for the year 2013. National projections show that Poland is reducing its non-ETS emissions slightly below 2005 levels in scenarios with existing measures and with additional measures (see **Fehler! Verweisquelle konnte nicht gefunden werden.**). However, 2011 emissions were higher than expected in the projections so that further measures might be required (SWD 2013).

Table 1: GHG emission developments, ESD-targets and projections (in Mt CO_2eq)

						ESD target**		2020 Projections***	
	1990	2005	2010	2011	2012*	2013	2020	WEM	WAM
Total	457.0	390.2	401.7	399.4	377.1				
Non-ETS		179.5	201.9	196.4	180.4	198.0	195.0	170	170
(% from 2005)					0%	10%	14%	0%	0%
Energy supply	235.8	178.1	173.5	174.8					
(% share of total)	52%	46%	43%	44%					
Energy use (w/o transport)	98.7	86.9	94.1	86.2					
(% share of total)	22%	22%	23%	22%					
Transport	20.5	35.1	48.1	48.7					
(% share of total)	4%	9%	12%	12%					
Industrial processes	22.0	27.9	26.0	28.7					
(% share of total)	5%	7%	6%	7%					
Agriculture	49.7	33.8	34.6	34.9					
(% share of total)	11%	9%	9%	9%					

Source: UNFCCC inventories; EEA (2013b); Calculations provided by the EEA and own calculations.

** national proxies for 2012 emissions summarised by EEA (2013b)*

*** The ESD target for 2013 and for 2020 refer to different scopes of the ETS: the 2013 target is compared with 2012 data and is therefore consistent with the scope of the ETS from 2008-2012; the 2020 target is compared to 2020 projections and is therefore consistent with the adjusted scope of the ETS from 2013-2020. 2005 non-ETS emissions for the scope of the ETS from 2013-2020 amounted to 171 Mt CO_2eq.*

**** Projections with existing measures (WEM) or with additional measures (WAM).*

Legend for colour coding: green = target is being (over)achieved; orange = not on track to meet the target

Total greenhouse gas emissions (GHG) and shares of GHG do not include emissions and removals from LULUCF (carbon sinks) and emissions from international aviation and international maritime transport.

[1] Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020.

[2] Commission decision of 26 March 2013 on determining Member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council. Online available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:090:0106:0110:EN:PDF

National projections of GHG emissions up to 2020 need to be prepared by the Member States in accordance with the EU Monitoring Mechanism ([3]) every two years, and the latest submission was due in 2013. The projections need to be prepared reflecting a scenario that estimates total GHG emissions reductions in line with policies and measures that have already been implemented (with existing measures, WEM), and an additional scenario that reflects developments with measures and policies that are in the planning phase (with additional measures, WAM) may also be submitted.

In the following two tables, these measures have been summarised with a focus on national measures and those EU instruments expected to reduce emissions the most. Please note that the table includes also measures that address GHG emissions covered under the ETS such as measures reducing emissions from electricity generation (e.g. feed-in tariffs). An update on the status of the policies and measures is included in order to assess the validity of the scenarios.

Table 2: Existing and additional measures as stated in the 2013 GHG projections

Existing Measures (only important national measures)		Status of policy in November 2013
Energy	Amendments to the Energy Law of 1997	Last amendment: 25 November 2013. Most important changes: obligation of trading a certain percentage of natural gas on the gas market; simplification of administrative procedures for installing smaller RES plants; the obligation to support RES is reduced for large industries and an introduction of a regulation concerning conditions for the implementation and control of the transferring carbon dioxide for the purpose of geological storage in order to carry out the demonstration project on capture and storage of carbon dioxide (URE 2013a).
	Nuclear Energy	The leadership of the Polish Ministry of Economy has adopted the Polish Nuclear Power Programme (Program polskiej energetyki jądrowej – PPEJ). The document defines the scope and structure of the organisation of activities necessary to implement nuclear power in Poland. It has been forwarded for interdepartmental discussions. The final stage of the work on PPEJ will be its adoption by the Council of Ministers (MG 2013d). Additionally, the Polish Council of Ministers adopted a draft amendment of the Nuclear Energy Act (Ustawa z dnia 29 listopada 2000 r. Prawo atomowe). The amendments include requirements related to nuclear safety and radiological protection for radioactive waste.
Energy Efficiency	Energy performance certificates (EPCs) for buildings	A proposed draft law on the energy performance of buildings was accepted by the Council of Ministers on 16 April 2013 (Transport 2013). It includes mandatory EPCs.
Other non-ETS sectors	Reduction of F-gases	On 13 August 2013, the Council of Ministers adopted guidelines for a draft law on substances that deplete the ozone layer and on certain fluorinated greenhouse gases. The draft law is planned to be adopted by the Council of Ministers in the second quarter of 2014 (KPRM 2013c).

[3] Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol.

		This new law would replace the Act of 20 April 2004 on substances that deplete the ozone layer (MOS 2013a.)
	The Act of 14 December 2012 on waste	On 1 July 2013, a new law on waste management entered into force. It ensures citizens a statutory right to home rubbish collection and sets responsibility for waste collection and segregation at the municipal level (MOS 2013b).

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, May 2013.

According to the current state of implementation, measures listed under the WEM scenario are either already implemented or are in the process of implementation. No additional measures were listed. Poland is expected to achieve its reduction target as stated in the national projections.

3 Evaluation of National Reform Programme 2013 (NRP)

In April of each year, Member States are required to prepare their National Reform Programmes (NRPs), which outline the country's progress regarding the targets of the EU 2020 Strategy. The NRPs describe the country's national targets under the Strategy and contain a description of how the country intends to meet these targets. For climate change and energy, three headline targets exist: 1) the reduction of GHG emissions, 2) the increase of renewable energy generation, and 3) an increase in energy efficiency.

Poland's National Reform Programme focuses on policies for energy efficiency. It also mentions issues regarding energy security and renewable energy sources.

In the following table, the main policies and measures as outlined in the NRP of April 2013 ([4]) have been summarised, and their current status (implemented, amended, abolished, or expired) is given, with specifics on latest developments.

Table 3: Main policies and measures as outlined in the NRP, April 2013

Strategy for Energy Security and the Environment (*Strategia Bezpieczeństwo Energetyczne i Środowisko*)	
Status as stated in the NRP	to be adopted in Q2 2013
Status as per Nov 2013	Not adopted yet. New draft strategy from 25 November 2013 (MG 2013i).
Description of policy or measure	For the timeline through 2020, the strategy sets energy security and environmental protection priorities. These are to be achieved through sustainable management of natural resources, ensuring sufficient amount of electricity for the national economy, and protecting the environment.

[4] All NRPs are available at: http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index_en.htm

Draft Act on renewable energy sources (projekt ustawy o odnawialnych źródłach energii)	
Status as stated in the NRP	Prepared. Foreseen date of adoption by the Council of Ministers: Q2 2013
Status as per Nov 2013	The previous draft (of autumn 2012) was abandoned in favour of a new draft presented on 12 November 2013.
Description of policy or measure	The new act is intended to combine all regulations concerning RES. The draft version includes among other things new support schemes for renewable energy, based on tendering.

Promotion of the use of renewable energy sources	
Status as stated in the NRP	Implemented in 2011
Status as per Nov 2013	Ongoing
Description of policy or measure	Electricity from renewable sources is promoted mainly through a quota system. Electricity suppliers are obliged to acquire a certain number of so-called "certificates of origin", which are issued to the producers of electricity from renewable sources. The scheme is governed by the Energy Law and the Order of the Polish Minister of Economy of 14 August 2008 establishing detailed provisions on the obligation to acquire certificates of origin and submit them for collection, the obligation to pay a compensation fee, the obligation to purchase electric energy and heat generated from renewable energy sources, and the obligation to prove that the amount of energy generated and the source of energy used have been accurately reported.

Poland's Nuclear Energy Programme (Program Polskiej Energetyki Jądrowej)	
Status as stated in the NRP	Foreseen adoption of the Programme by the Council of Ministers: Q2 2013; foreseen adoption of the draft Act amending the Act – Nuclear Law implementing Directive 2011/70/EURATOM - by the Council of Ministers: Q2 2013
Status as per Nov 2013	On 11 October 2013, the leadership of the Polish Ministry of Economy has adopted the Polish Nuclear Power Programme. According to the Ministry of Economy, the programme is scheduled to be adopted by the Council of Ministers by the end of 2013 (MG 2013b).
Description of policy or measure	The programme specifies the scope and structure of nuclear power industry actions, including safe and efficient operation of nuclear facilities, their retirement/decommissioning at the end of their lifespans, and the safe storage of spent fuel and radioactive waste.

Support energy efficiency investments via preferential loans & subsidies from national and European funds, also under the Act on supporting thermal modernization and renovation	
Status as stated in the NRP	Implemented in 2011
Status as per Nov 2013	Ongoing
Description of policy or measure	The Ministry of Environment started new support programmes, including a nationwide grant programme to support energy efficiency in buildings through 2018 (MOS 2013c) and an open call for proposals for energy efficiency and household renewable energy projects (MOS 2013d).

Draft Act on transmission corridors (Projekt ustawy o korytarzach przesyłowych)	
Status as stated in the NRP	Foreseen date of adoption by the Council of Ministers: Q2 2013; Foreseen date of adoption of the final law by the Sejm (the lower house of the Parliament): Q4 2013
Status as per Nov 2013	Under discussion. Not adopted yet. According to the Council of Ministers, the draft is to be adopted by the Parliament by the end of 2013 (KPRM 2013a)
Description of policy or measure	The act regulates the legal status of investments in transmission of electricity, natural gas, liquids, vapour, and information, ordering legal status in this field, simplifying procedures and regulating the legacy.

Devising the Strategic Plan for Adaptation sectors and areas vulnerable to climate change by 2020 (with a 2030 horizon) (*Strategiczny plan adaptacji dla sektorów i obszarów wrażliwych na zmiany klimatu do roku 2020 z perspektywą do roku 2030*)	
Status as stated in the NRP	Foreseen completion of the inter-ministerial consultations: Q1 2013; Foreseen public consultation: Q2 2013; Foreseen adoption by the Council of Ministers: Q2 2013; Foreseen preparation of expert analyses to determine need for legislative amendments related to possible climate change: Q4 2013.
Status as per Nov 2013	On 29 October 2013 the Council of Ministers adopted the plan (MOS 2013h).
Description of policy or measure	The goal of the Strategic Plan for Adaptation is to reduce economic and social costs of climate change.

Implementation of project 'Improving the competitiveness of regions by Corporate Social Responsibility (CSR)'	
Status as stated in the NRP	To be done in 2012/2013
Status as per Nov 2013	The project has been implemented and continues today
Description of policy or measure	The project is financed by Switzerland under a Swiss cooperation programme with the new EU Member States. The main objective of the project is to raise awareness and knowledge of corporate social responsibility among the representatives of small and medium-sized enterprises, Marshal Offices, and Service Centres for Investors and Exporters. The project is also intended to promote socially responsible business in the activities aimed at the development of local entrepreneurship and investment.

4 Policy development

This section covers significant developments made in key policy areas between February 2013 and November 2013. It does not attempt to describe every instrument in the given thematic area.

Horizontal Measures

In November, the European Commission decided to withdraw a complaint against Poland from the Court of Justice of the European Union concerning the failure to implement the

Directive of the European Parliament and of the Council 2009/73/EC concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.

Currently, proceedings are still pending against Poland in the Court of Justice related to the lack of timely transposition of Directive 2009/28/EC of the European Parliament and of the Council on the promotion of energy from renewable sources (MG 2013c).

At the same time, during the international climate change conference, which Poland hosted this year, Prime Minister Donald Tusk replaced the minister of environment, Marcin Korolec, with Maciej Grabowski, economist and former deputy minister of finance. He announced that his priority as Minister of the Environment will be to accelerate work on the regulation of shale gas extraction (Gram w Zielone 2013).

Energy Generation

In October, the leadership of the Polish Ministry of Economy has adopted the Polish Nuclear Power Programme (Program polskiej energetyki jądrowej – PPEJ). The document defines the scope and structure of the organisation of activities necessary to implement nuclear power in Poland. These activities include: the creation of institutional and programmatic basis for the development of nuclear energy; the adoption and entry into force of legislation necessary for the development and operation of nuclear power stations; and the determination of the location for the nuclear power plant. It will now be forwarded for interdepartmental discussions. The final stage of the work on PPEJ will be its adoption by the Council of Ministers (MG 2013d).

Following, the Polish Council of Ministers adopted a draft amendment of the Nuclear Energy Act (Ustawa z dnia 29 listopada 2000 r. Prawo atomowe). The amendments include requirements related to nuclear safety and radiological protection for radioactive waste.

In accordance with the draft amendment, a new radioactive waste storage facility will be established with the highest standards of safety. The draft amendment also envisages the development of a "National plan for management of radioactive waste and spent nuclear fuel". In addition, the new regulations provide that every citizen is guaranteed access to information about the storage of radioactive waste and its impact on human health and the environment (MG 2013e).

Environmental Taxation

The share of Poland’s environmental tax revenues in total tax revenues was at 7.89% in 2011 and thus the 11th highest in the EU. These revenues are only 2.56% of the country’s GDP on average.. Poland has no explicit carbon tax in place. The implicit tax rate on energy is rather low and had a value of approximately 94 € per tonne of oil equivalent (toe) in 2011. Poland’s economy is highly energy intensive. In 2010 it was the 7th most energy intensive economy in the EU. The share of energy tax revenues in total tax revenues is the fourth highest in the EU (Eurostat 2013a).

On 13 June 2013, Poland’s Ministry of Finance and Ministry of Environment published final drafts of a new law on taxing hydrocarbons (ustawa o specjalnym podatku węglowodorowymi, zmianie ustawy o podatku od wydobycia niektórych kopalin oraz zmianie niektórych innych ustaw – “law on special hydrocarbon tax, tax law changes the minerals extraction and some other laws”) that will govern taxation of oil and gas extraction in Poland. The regulations are set to enter into force in 2015, but do not

foresee taxes actually being levied until 2020. This delay is intended to encourage shale gas extraction in Poland, as companies would not face taxes on the resulting fuel in the short term.

Energy Efficiency

The energy intensity of Poland's economy is still very high but declined considerably since 2005: by 17% through 2011. However, final energy consumption in Poland actually increased between 2005 and 2011 by 11%. Although Poland managed to reduce its energy consumption by 3% from 2010 to 2011, this was still below the EU average reduction of 4% (Eurostat 2013a).

Poland's industrial sector became an impressive 59% more energy efficient between 1995 and 2010. This development was triggered by the intensive introduction of energy-saving technologies. In the household sector, overall efficiency increased by 34% from 1996 to 2010, mostly due to stricter standards for new buildings, retrofitting old buildings, and fuel switching from solid fuels to oil and gas. The use of more efficient electrical appliances also contributed to this progress (Odyssee 2012). However, the degree of energy efficiency improvement in the household sector slowed down significantly since 2003.

The potential for energy efficiency in Poland is still high, and its realisation could support green growth. Large energy savings could be realised in the building sector, where energy for heating could be reduced by more than 80% (3CSEP 2012). The study in which this number appears highlights the socio-economic benefits of a national building renovation programme that could create up to 250,000 jobs by 2020, generate substantial improvements in air quality, reduce energy poverty, and reduce energy dependency. The study states that "a large scale, deep renovation programme in Poland can create over 250 thousand net additional jobs per year by 2020, as opposed to 40 thousand in the suboptimal scenario" (3CSEP, 2012: 38). More details on employment implications are mentioned in other parts of the study, including sections 7 ("estimation of employment effects", pages 105-117) and 8 ("additional aspects: wider effects of retrofits, co-benefits and financing", pages 119-125) ([5]).

In order to increase energy efficiency, the Polish government has introduced a "white certificates" system. The certificates are granted for investments to reduce energy usage (energy efficiency measures) and the companies selling electricity, natural gas, and heat to final consumers will be obliged to obtain a certain number of white certificates depending on the amount of energy sold.

More stringent rules for energy efficiency in buildings were proposed in a draft law on energy performance of buildings, accepted by the Council of Ministers on 16 April 2013 (Transport 2013). If adopted as law by the Polish parliament, these new rules will constitute the transposition of the Directive on Energy Efficiency in Buildings (Directive 2010/31/EU).

The proposed law would introduce the obligation to receive energy performance certificates for new buildings sold or rented to new owners – such certificates would then be valid for 10 years. The new regulations also oblige the Minister of Transport,

[5] Further reading on energy efficiency strategies in Poland: Institute for Sustainable Development (2009).

Construction and Maritime Economy to develop a national action plan aimed at increasing the number of "nearly-zero-energy" buildings. The energy certification would be mandatory for existing buildings with a certain minimum area that are occupied by a public authority and frequently visited. In such buildings, energy performance certificate is to be placed in a prominent position. Certification would not be mandatory for buildings entered in the register of monuments, those with a usable area of less than 50 m2, and buildings inhabited no longer than four months of the year.

The law foresees an expansion of the list of auditors entitled to conduct energy performance assessments.

Financial support for energy efficiency measures is most notably provided by the National Fund for Environmental Protection and Water Management (NFOSiGW) which grants subsidies and low interest loans for investments in energy efficiency next to renewable energy projects. Concerning energy efficiency in households, the fund is supporting energy efficient houses, granting subsidies for a partial capital repayment of the bank loan to build or buy a house or an apartment. The programme is targeted to individuals building a single-family house or buying a house or apartment from the developer. The overall budget for the years 2013-2018 amounts to PLN 300 million (approx. € 71.72 million). This amount will allow for the implementation of about 12 thousand houses and apartments in multifamily buildings.

Planned achieved energy savings resulting from agreements concluded in the period 2013-2018 amounts to 93.5 thousand MWh/year. Planned achieved limited or avoided CO2 emissions, resulting from agreements concluded in the period 2013 to 2018 amount to 32.3 thousand Mg/year (NFOSiGW 2013).

Apart from that ongoing funding, the Polish Ministry of Environment recently started smaller subsidy programmes aimed at supporting energy efficiency in buildings, including:

- A new nationwide grant programme to support energy efficiency in buildings through 2018, with a total budget of zł 300 million (approx. €27 million), which aims to incentivize construction of residential buildings with low energy consumption. (MOS 2013c);
- An open call for proposals for projects that improve energy efficiency and renewable energy use in buildings, with a budget of about €67 million (MOS 2013d)

Renewable Energy

Poland's electricity sector is still largely based on carbon-intensive fossil fuels. In addition to exploring shale gas and an investment in nuclear power, some consideration is being given to renewable energy sources. The share of renewable energy in total energy consumption has increased steadily in the recent past to reach 10.4% in 2011. This represents good progress toward Poland's 15% goal for 2020. Meanwhile, the share of renewable generation in electricity consumption is not particularly high but has been growing rapidly. The percentage of renewable sources grew from 2.8% in 2005 to 8.2% in 2011 (Eurostat 2013b).

Regarding faster deployment of renewable energies, the previously introduced quota system is not delivering enough support. The main reason is an oversupply of certificates, which lowers their price and thus revenues for renewable energy producers. The

oversupply is caused by combined heat and power (CHP) plants co-firing biomass together with coal, such that they get credit for the biomass as a renewable energy source (PIGEO 2013).

The new draft of the RES Law presented by the Ministry of Economy in November 2013 envisions a support scheme based on tendering. Excluded from tendering scheme shall be hydropower plants with capacity over 1 MW some types of co-firing installations and micro-installations. The operators of existing renewable energy facilities (except of plants using biomass with capacity over 50 MW and plants co-firing biomass together with other fuels) would be able to choose if they want to receive support in form of the green certificates (as currently) or through the new tendering scheme (MG 2013f).

This draft law constitutes an effort to transpose the 2009 EU Renewable Energy Directive (2009/28/EC) into national law. Along with Cyprus, Poland has been referred to the Court of Justice for failing to do so. The official deadline of transposing the Renewable Energy Directive into national law was December 2010. The Commission proposed a daily penalty of over €133.000 for Poland based on the gravity of the infringement, but the final amount will be set by the Court in case of affirmative judgment and must be paid from the date of judgment until the Directive is actually transposed into Polish law.

An increased interest in investing in renewable energy projects and the additional stimulation of industries producing equipment for the renewable energy sector as planned could lead to economic development and job creation in the renewable energy markets. About 30,000 and 45,000 people (in 2020 and 2030, respectively) could be employed in the wind energy sector, while energy production from biomass could lead to about 60,000 new jobs by 2020 and 90,000 by 2030 (EREC 2009). According to a report published by Greenpeace "Working for CLIMATE" (Greenpeace 2011), as many as 350,000 new jobs could be created in Poland in the renewable energy sector by 2020. For this to happen, it would be necessary to create a stable and effective support system for the development of renewable energy sources.

In October 2013, the report “energy [r]evolution. A Sustainable Poland Energy Outlook” was published. It was prepared by a Warsaw-based Institute for Renewable Energy, DLR (Germany's aeronautics and space research centre), the European Renewable Energy Council, the Global Wind Energy Council and Greenpeace. According to this study, Poland could halve its demand for coal by 2030 with a shift to renewable energies. The ex-Polish Environment Minister Maciej Nowicki states that it is a "feasible, realistic scenario".

According to this study, Poland could create 100,000 jobs with a shift to wind, hydro, biomass, geothermal and solar power by 2030. The scenario would require an investment of $264 billion (approx. €191 billion), which is double the $132 billion (approx. €95 billion) cost of business as usual (Reuters 2013).

Energy Networks

Poland has a problem with insufficient cross-border electricity transmission capacity, and there is a conflict between Germany and Poland due to the transmission of renewable electricity from Northern Germany via Poland to Southern Germany. In order to increase transmission in Poland, the Polish government prepared an act on transmission corridors regulating linear investments in transmission of electricity, natural gas, liquids, vapour, and information. The act aims to further simplify procedures and help settle existing

conflicts related to transmission. According to the Council of Ministers, the draft is to be adopted by the Parliament by the end of 2013 (KPRM 2013).

An initiative is underway introducing market coupling through the connection of the Polish power market with the Czech, Slovak, Hungarian and Romanian ones. The objective is to coordinate market coupling in this area with the connection Poland already has with Sweden (URE 2013b).

Transport

Emissions from transport increased steadily between 1990 and 2011. Also their proportion among Poland's total emissions increased to 12%. This negative development indicates that these emissions need to be addressed in the future (Table 1).

Average emissions for newly registered cars are high in Poland with a level of 141.9 CO_2/km. The level is the 7th highest in the EU and has decreased at a lower rate than the EU average between 2005 and 2012 (Eurostat 2013a). The registration tax is based on the car value and engine capacity and near the EU average. No ownership tax applies to private cars. A local tax is only charged on commercial vehicles depending on weight and number of axles. Poland thus has the lowest vehicle ownership tax in the EU. Distance-based road tolls are levied in Poland on some sections of the motorways. Toll rates are average compared to other EU MS applying tolls (ACEA 2012, CE Delft 2012).

Tax rates for petrol and diesel are below the EU average, with diesel being taxed around €60/1000 litres less than petrol. Fuel taxes are differentiated in a way which promotes alternative fuels, but overall taxation of fuels is very low, creating only a minor incentive to use fuel-efficient cars. The main measures related to the reduction of GHG emissions in transport include support for biofuels and lower-carbon fuels, such as natural gas. This includes tax relief for LPG and biocomponents and promotional prices of gaseous fuels as well as the obligation to increase the share of biocomponents in transport fuels.

In November 2013, the Council of Ministers adopted a draft law amending the Law on the bio-components and liquid biofuels (Ustawa z dnia 25 sierpnia 2006 r. o biokomponentach i biopaliwach ciekłych) and Energy Law (Prawo energetyczne). The document implements EU legislation promoting renewable energy in transport (Directive 2009/28/EC) into Polish law. Among others, the new rules require manufacturers operating in the market of bio-components and liquid biofuels to obtain a certificate that will guarantee that the manufactured products to meet the criteria of sustainable development and preserve the balance of biomass requirements (MG 2013g).

The same day, the Council of Ministers also adopted a draft bill amending the Law on the system for monitoring and controlling the quality of fuels (Ustawa z dnia 25 sierpnia 2006 r. o systemie monitorowania i kontrolowania jakości paliw). The draft regulates the monitoring and reduction of greenhouse gas emissions from fuel and electricity in transport. The draft amendment introduces National Reduction Goals (Narodowe Cele Redukcyjne – NCR), which envisage a 6% reduction of GHG emissions by 2020. Entities obliged to implement these National Reduction Goals (any entity producing, importing or acquiring liquid fuels, liquid biofuels, liquefied petroleum gas (LPG), compressed natural gas (CNG), liquefied natural gas (LNG), which sells, disposes or uses them for their own needs and energy companies trading electricity used in vehicles) will annually submit a detailed report on the greenhouse gas intensity of fuel and electricity life cycle to the President of the Energy Regulatory Office (URE). In case these entities fail to meet their

reduction obligation, the URE can impose fines. Furthermore, the draft amendment also regulates the market introduction of petrol containing up to 10% of bioethanol (E10) through petrol stations. Changes to the Act were necessary in order to implement the provisions of Directive 2009/30/EC (MG 2013h).

Agriculture

Agriculture is still an important sector in Poland. GHG emissions have been stable since 1995, and national GHG projections assume a stable emissions level until 2020. Existing measures include a limitation on natural fertilizer use and the ordinance regulating agri-environmental measures which was amended on 12 March 2012. It is a financial support mechanism that pays for compensation of lost income, additional incurred costs, and transaction costs. Agri-environment payments are granted to farmers who voluntarily commit to environmental objectives including ecosystem preservation, promotion of sustainable management systems, water conservation and protection of endangered local breeds of livestock and local crop varieties. No relevant changes in the regulation were identified in the past six months.

5 Policy progress on past CSRs

As part of the European Semester, Country Specific Recommendations (CSRs) for each MS are provided by the EU Commission in June of each year for consideration and endorsement by the European Council). The recommendations are designed to address the major challenges facing each country in relation to the targets outlined in the EU 2020 Strategy. In the following table, those CSRs that are relevant for climate change and energy that were adopted in 2013 are listed, and their progress towards their implementation is assessed.

Existing Country Specific Recommendations	Progress
Renew and extend energy generation capacity.	There are 47 power plants planned or already being built. The overall capacity of these plants is between 22,700 and 24,000 MW. Most of these plants will use coal or gas as a fuel (CIRE 2013).
Improve efficiency in the whole energy chain	The latest developments include the law on energy performance of buildings which is expected to be adopted by the end of 2013 and enter into force by the middle of 2014 (see Chapter 4).
Speed up and extend the development of the electricity grid, including cross-border interconnections, and eliminate obstacles in electricity cross border exchange.	The draft law on transmission corridors, ordering legal status in the field of energy transmission, is expected to be adopted by the Parliament by the end of 2013 (KPRM 2013a). An initiative is underway to couple the Polish power market with the Czech, Slovak, Hungarian and Romanian ones. The objective is to coordinate market coupling in this area with the connection Poland already has with Sweden (URE 2013b). A new obstacle to cross-boarder exchange is the intention of Poland's grid operator to install phase shifters to block German wind energy transmission endangering the Polish network.

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