

Climate and energy policies in Poland

KEY FINDINGS

- **GHG emissions in Poland decreased strongly by 37% in the period 1990-2002, but after 2002 emissions grew by 3% until 2015. Poland has a growth target of 14% for the 2005-2020 period under the Effort Sharing Decision (ESD), and it is on track to reach this target because the actual emission increase is lower than expected in the ESD target.**
- **Comparative indicators such as emission intensity indicate that Poland performs worse than most other Eastern European countries and average EU-28 Member States in terms of emission reductions and decarbonisation in the energy sector which is due to its strong reliance on coal.**
- **Recent decisions and revised legislation in 2017 in the energy sector will lead to an increased role of coal in energy supply compared to past plans and a much slower expansion of renewable energies than in recent years, in particular for wind power.**
- **Polish plans in the energy sector will not contribute to significant further emission reductions in the future. As Poland is the fifth largest EU emitter, this may slow down overall EU progress in emission reductions.**

1. Introduction

This briefing compiles background information for the ENVI's delegation to Warsaw on 18-20 September 2017 which will look at Polish projects and initiatives contributing to the fight of climate change and to the decarbonisation of the economy and clean energy.

2. Energy policy and recent developments in the energy sector

2.1. Current situation in the energy sector

Energy consumption in Poland is strongly dominated by the **use of coal**. Consuming 77 million tonnes of coal per year, Poland is the 10th largest coal consumer in the world and the 2nd largest in the EU, after Germany. 92% of electricity and 89% of heat in Poland is generated from coal (World Energy Council 2017). Coal has a share of 51% in gross inland consumption, followed by 25% of petroleum products, 14% of gas and 9% of renewable energies.

In 2016, Poland **produced 70.7 million tonnes of hard coal** and imported 8.3 million tonnes, mainly from the Russian Federation (5.2 million tonnes) and Australia (energetyka24.com 2017). Polish exports amounted up to 9.1 million tonnes and mainly

went to Germany, Czech Republic, Austria, North African and Middle East countries (nettg.pl 2017a). The production of lignite was 60.2 million tonnes (Central Statistical Office 2017).

It is estimated that around **80% of Polish coals mines** (mainly concentrated in the south-west region of Silesia) **are unprofitable** (Focus 2017). Employment in the hard coal mining industry has declined by 78% between 1989 and 2015 with around 90,000 employees in the hard coal sector at the end of 2015 (Euracoal 2017). The most recent data show that at the end of 2016 there were 84,600 employees which in the next 6 months further declined to 81,700 which is 0.5% of total employment in Poland (nettg.pl 2017b). Despite government subsidies the coal mining industry in Poland generated a loss of PLN 4.5 billion (=EUR 1.05 billion) in 2015. This is due to the high level of coal production costs, coupled with a steady decrease in the revenues from coal sales and growing debt (European Commission 2016).¹

Poland's power generation stock is ageing – about two-thirds of Poland's installed coal capacity is older than 30 years (Bankwatch network 2016). To meet increasing electricity consumption, investment in new power generation capacities is urgently needed. The decisions on the type of replacement of these generation capacities will strongly shape the future emission trends.

One of the key laws governing the energy market and future power capacities is the draft **Capacity Market Act** published in 2016. The purpose of the Act is to prevent generation capacity deficits by creating economic incentives encouraging the construction, maintenance and modernisation of generating units and energy demand management on the end users' side. The mechanism is expected to help build and modernise coal infrastructure instead of expanding renewable energy provision for Poland. The capacity market operates through centralised auctions in which both generating units and Demand Side Response (DSR) units can participate. ClientEarth (2017) concludes in a legal study that the draft act is not compatible with the EU internal market, as (a) it establishes a new measure enabling the award of subsidies which are harmful for the environment; (b) it fails to provide that the capacity obligation may be fulfilled by operators from other Member States and (c) it may possibly fail to ensure the participation of a sufficient number of generators to establish a competitive price of generation capacity. The costs of the capacity market as presented in the Regulatory Impact Assessment will amount to PLN 4.15 billion (approx. EUR 0.96 billion) in 2021 and will subsequently grow in successive years to PLN 5.1 billion (approx. EUR 1.19 billion) in 2026 to be incurred by all end users. The Capacity Market Act is expected to enter into force already in 2017 aiming to outrun the Commission's proposal for a regulation on the internal market for electricity which limits the participation in national capacity mechanisms to those new power plants that emit less than 550 grams of CO₂/kWh (polityka.pl 2017). The planned most efficient new coal-fired blocks in Poland will emit at least 700 grams CO₂/kWh (energetyka.wnp.pl 2017). This was also the main trigger for the Polish government to launch the "yellow card" procedure – EU's subsidiarity control mechanism – to block the so-called "winter package" plan to cut CO₂ emissions (biznesalert.com 2017).

Poland still consumes a high level of different coal products in domestic heating which causes considerable **air pollution**. However, a draft regulation "On the quality requirements for solid fuels" published in February 2017 which was intended to tackle i.a. the smog issue does not discourage the sale of high-polluting coal products. The regulation currently contains provisions allowing for the sale of coal with 1.3% sulphur content and 12% of ash content to households. Environmental experts requested these thresholds to be lowered to 1% - 0.6% and 8% respectively (Rządowe Centrum Legislacyjne 2017c).

So far only around 10% of the EU **funds for the transformation of the Polish power sector**, mainly from free CO₂ emission allowances (see section 3.1), have been spent on investments related to renewable energy sources (RES) (involving i.a. co-firing of coal and

¹ PLN were converted with an average currency conversion rate of EUR 1 = 4.3 PLN based on the average Euro/national currency exchange rates published by EUROSTAT for the past 12 months.

biomass), while over 70% of investments were related to improving coal-burning infrastructure. The biggest beneficiary in that respect is the state-owned company PGE (Polska Grupa Energetyczna) which operates the largest and the most emitting power plant in Bełchatów, and further invests in new coal power plants (Kenig-Witkowska et al. 2015).

In November 2016, the European Commission has assessed the notified **governmental support** of PLN 7.958 billion (approx. EUR 1.85 billion) to the Polish hard coal mining sector to cover production losses and exceptional costs under the closure plan for the period 2015–2018. The Commission decided not to raise objections on the ground that the measures constitute state aid compatible with the internal market (European Commission 2017b).

2.2. Future plans and projects in the energy sector

For the Polish government **coal will remain a strategic fuel** guaranteeing Polish energy security. It perceives effective management and efficient coal mining as being in Polish national interest. The key arguments for continuation of mining are the domestic availability of coal in Poland and the existing old power plants remain the cheapest energy source. The coal-based power sector is strongly connected to the Polish GDP since the funds invested in mining and the whole coal-based power sector are spent in Poland and received by Polish companies. Furthermore, the mining sector is seen as important for the Polish job market whereas its actual relative contribution to total employment fell to 0.5% (nettg.pl 2017b). Consequently, Poland plans to construct a capacity of 11,300 megawatts of coal power by 2020 (Minister of Energy 2017a) with new coal plants planned in Kozienice, Opole and Jaworzno, with a further two being considered in Ostrołęka and Pulawy (Minister of Environment 2017). The recent announcement of the Minister of Energy Krzysztof Tchórzewski clears however, that the hard-coal fired unit of 1000 MW in Ostrołęka will be the last coal investment in the Polish energy sector (energetyka.wnp.pl 2017b). Three new lignite open-cast mines are planned by the Polish Energy Group: in Złoczew (central Poland), where the concession could already be obtained in 2018, Ościsłowo (central Poland) (wysokiena piecie.pl 2017c), and in Gubin, by the border to Germany (expecting to obtaining concession in 2020 and start mining in 2030) (wyborcza.pl 2017).

The document "Energy Policy of Poland until 2030" adopted in 2009 under the previous, Civic Platform government, foresaw an **increase of final energy consumption** by 29% between 2006 and 2030 (Minister of Energy 2017b). The steepest increase (90%) would come from the services sector. The share of renewable energy in the total primary energy consumption would rise from 5% in 2006 to 12.4% in 2030 (Ministry of Energy 2017).

In July 2017 the Deputy Minister of Energy Grzegorz Tobiszowski announced that the government is preparing a **new energy policy until 2050** with a main focus on 2030. Coal and lignite would still hold a share of around 60% in the energy mix in 2030 and slightly drop to 50% in 2050 (nowa-energia.com 2017). A major role in the policy would also be played by offshore wind farms, development of gas-based power generation, as well as other renewable sources.

Constructing **nuclear power capacity** is currently considered as one option for the future development of the Polish energy sector. The government's plan for energy policy until 2030 assumes nuclear energy would appear in the energy mix already in 2020 and reach a 6.5% share of primary energy (Ministry of Energy 2017). The decision on the development of the nuclear power plant (or plants) will be taken by the end of 2017 (pb.pl 2017; wysokienapiecie.pl 2017c). The cost of a nuclear power plant producing 1000 MWh per year, is estimated to be PLN 16 billion (EUR 3.7 billion). The Polish government is exploring possibilities of cooperating with China, South Korea, the US and France for the construction of new nuclear units. Two possible locations have been shortlisted (innpoland.pl 2017).

With regard to **shale gas**, there is currently no information about its possible role in Poland's future energy mix. By the end of July 2017, the Ministry of Environment issued 20 concessions for the exploration of hydrocarbons while the total number of exploratory boreholes counts 72 and has not changed since 2015 (Ministry of Environment 2017).

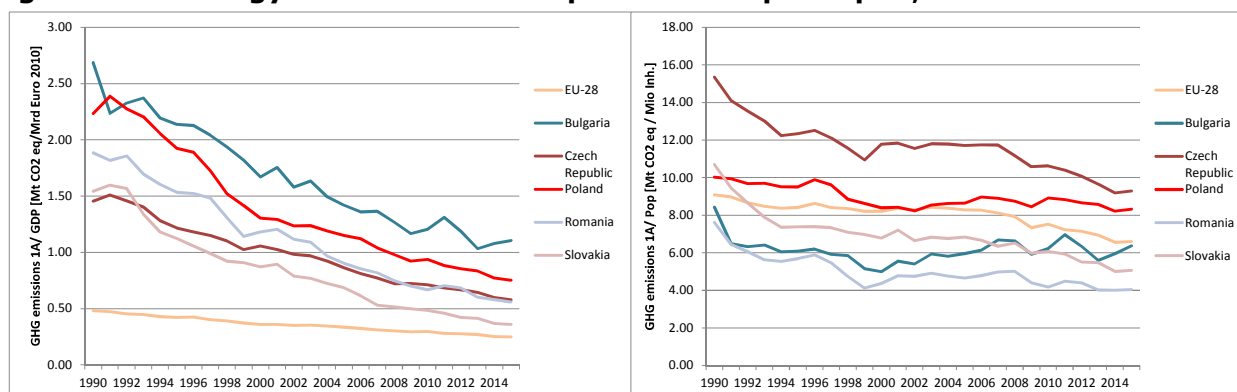
In March 2017 the government adopted the plan for **electromobility** in Poland with the goal of 1 million electric cars on the road by 2025. A legislation process on the act on electromobility and alternative fuels is ongoing (Rządowe Centrum Legislacyjne 2017a).

2.3. Emissions in the energy and power sector

Poland was the fifth largest GHG emitter in the EU in 2015 with 386 Mt CO₂eq emissions (without LULUCF²). 82% of these emissions are caused by the energy sector. Among the GHG emissions from fuel combustion 53% arise from public electricity and heat production, 19% from fuel combustion in the residential, commercial and agriculture sector, 16% from transport and 10% from manufacturing industries (Poland 2017). Poland experienced a sharp decrease in GHG emissions in the early 90s similar to other economies in transition. Total energy emissions decreased by 4.3% in the period 2005-2015, but the trends were quite different in the energy subsectors: GHG emissions from energy industries dropped by 8.2%, manufacturing industries by 17.7%, residential, services and agriculture by 7.9% while transport emissions grew by 32.0%. Combined heat and power generation (CHP) plants are the dominant way of electricity production and are responsible for 93% of emissions from public electricity and heat production while heat plants are responsible for 7%.³

Public electricity and heat production caused 155 Mt CO₂ emissions in 2015. Coal combustion caused more than 97% of these emissions, while gas was responsible for 2.2%. While coal consumption in Public electricity and heat production decreased by 11.2% in the 2005-2015 period, gas consumption increased by 5.8% and biomass use grew almost 6-fold resulting in an overall emission decrease of 8.9%. Emissions from manufacturing industries (28 Mt CO₂e) are dominated by emissions from non-metallic minerals (26.4%), followed by chemicals (22%) and iron and steel production (19%) (Poland 2017). The fuel combustion in the residential sector in those areas not connected to district heating is still strongly dominated by coal (50%) and wood (20%) while gas has a share of 25% and oil of 5%. 73% or 26.3 Mt CO₂e of emissions arise from coal combustion in the residential sector. Even in the commercial sector coal is responsible for 16% of the emissions.

Figure 1: Energy related emissions per GDP and per capita, 1990-2015⁴



Source: EEA 2017a; Eurostat 2017c; Poland 2017

Poland's emissions intensity in the energy sector strongly declined in the 1990s and further decreased by 35% since 2005. However, Poland still ranks poorly compared to other Central and Eastern European countries out of which only Bulgaria's emissions intensity per GDP is higher. Also compared to the EU-28 average Poland is performing rather poorly in terms of energy emissions per GDP (0.25 Mt CO₂ eq/billion EUR for EU-28 in 2015 compared to 0.75 Mt CO₂ eq/billion EUR for Poland in 2015, see Figure 1).

² LULUCF = land use, land-use change and forestry

³ The trends in this briefing are compared with the year 2005, as this marks the starting point of key EU climate policies such as the EU-ETS.

⁴ GHG emissions from fuel combustion are the basis for both graphs

Since 2005 Poland's energy emissions per capita have declined only slightly by 4% to a level of 8.3 Mt CO₂eq/Mio inhabitants in 2015. This is higher than the EU-28 average of 6.6 Mt CO₂eq/Mio inhabitants and also relatively high compared to per capita emissions of other Central and Eastern European countries. Only Czech Republic has higher per capita emissions in 2015, but started from a much higher level in 1990 (see Figure 1).

Four CHP or heat plants in Poland belong to the top 20 EU polluters (see Table 1).

Table 1: Installations with largest emissions among 20 top EU polluters

Company	Installation	Fuel	Installed capacity [MW]	Emissions 2016 [Mt CO ₂]	Change vs 2015
PGE	Bełchatów	lignite	5420	34.9	-5.7%
ENEA	Kozienice	hard coal	2919	12.0	5.4%
PGE	Turów	lignite	1488	7.8	3.2%
ENGIE	Połaniec	hard coal/ biomass	1657	7.7	22.8%

Source: EEA 2017c

Bełchatów heat plant is the world's largest lignite-fired power plant. At Turów heat plant it is planned to replace three units with a new 450 MW_e lignite unit. Public consultations took place in August 2016 and permits were issued in 2017 (Landesdirektion Sachsen 2017). At Połaniec coal fired power plant site a biomass plant became operational in 2012. The resulting biomass unit is one of the largest biomass power plants in the world. From the eight 225MWe turbines, the biomass unit produces 205MW. The biomass section is 80% fuelled by wood chips and 20% by agricultural waste (power-technology.com, 2017).

3. Progress in Poland with regard to 2020 climate goals and energy targets

Like every EU Member State, Poland is legally bound to limit its GHG emissions until 2020 by EU legislation on the climate and energy targets.

3.1. GHG emission targets under ESD and EU-ETS

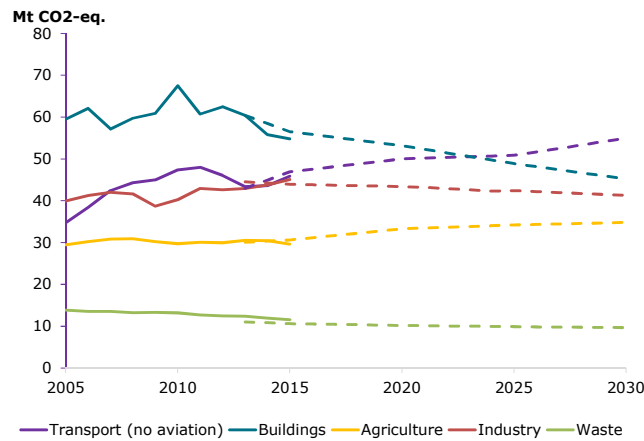
In Poland, emissions covered by the EU-ETS installations (198 Mt CO₂eq in 2016) make up more than half of total GHG emissions, with about 81% of ETS emissions coming from heat and power generation. In the third trading period ETS emissions decreased by 3.7% between 2013 and 2016. Polish projections for ETS emissions assume an emission reduction to 196 Mt CO₂eq in 2020 which is almost achieved in 2016 (198 Mt CO₂eq) and only imply a further reduction by 0.9% in the period 2017-2020.

Since 2013, allowances under the EU-ETS are allocated through auctioning. Nevertheless, a certain share of allowances is still provided to Member States through free allocation. Freely allocated allowances are mainly given to industrial sectors which are most prone to the risk of carbon leakage. Poland is one of eight Member States that are eligible to allocate additional free allowances to existing power plants until 2019 under Article 10c of the EU-ETS Directive. These free allowances were intended for financing retrofitting or upgrading infrastructure, to install clean technology or diversify the energy mix. In 2016, Poland has received about 51 million allowances through regular free allocation and 27 million allowances under Article 10c. Additionally, the country has accumulated about 130 million surplus allowances from the second ETS trading period (2008-2012) (EEA 2017c). Of the eight eligible countries, Poland will receive the largest amount of free allowances, and according to its National Investment Plan, 82% of the projects planned on the basis of the implied revenue will be used to modernise existing fossil fuel capacity (Carbon Market

Watch 2016). Thus, this particular provision under the EU-ETS further supports Poland’s focus on coal.

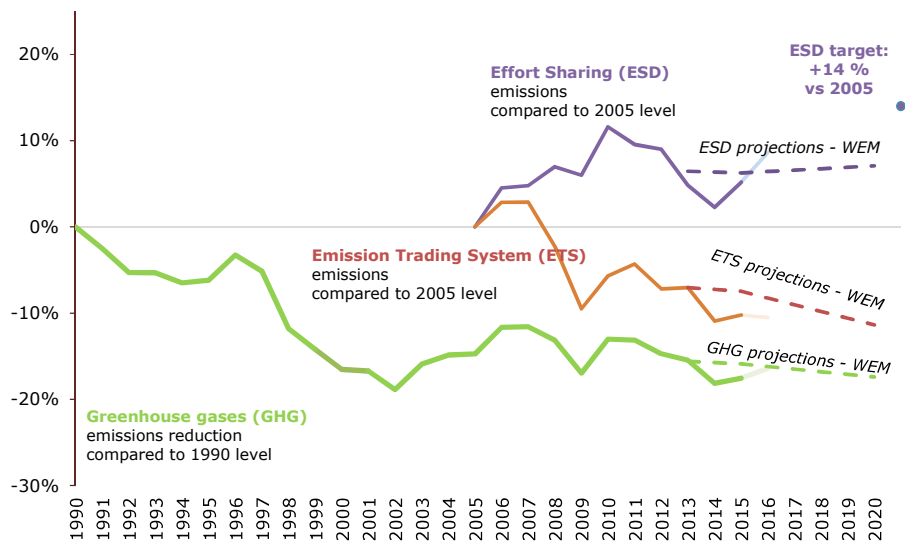
Under the Effort Sharing Decision (ESD), a target is set for Poland that allows the country to increase its emissions in the sectors not covered by the EU-ETS⁵ by 14% until 2020 compared in 2005 (EU 2009). In 2015, Poland was on track to reach this target as its emissions were 4% higher than in 2005 (187 Mt CO₂ eq). Current projections for Poland indicate that its emissions will rise to 190 Mt CO₂ until 2020, being 6% higher than in 2005 (EEA 2017b). Reaching the projected emissions level would imply that Poland will accumulate 90 million surplus annual emission allocations (AEAs) until 2020. Figure 2 shows the trends for the individual sectors covered by the ESD until 2030. Particularly emissions from transport are projected to rise significantly with an increase of 58% compared to 2005. Emissions from buildings show the biggest decrease until 2030 (-25%).

Figure 2: Sectoral trends for ESD emissions 2005 - 2030



Source: own calculations based on EEA 2017b, 2017c; Poland 2017

Figure 3: GHG emissions under the ETS and ESD 2005 - 2020⁶



Source: own calculations based on EEA 2017b, 2017c; Poland 2017

⁵ Transport (road and rail), buildings, services, small industrial installations, agriculture and waste.

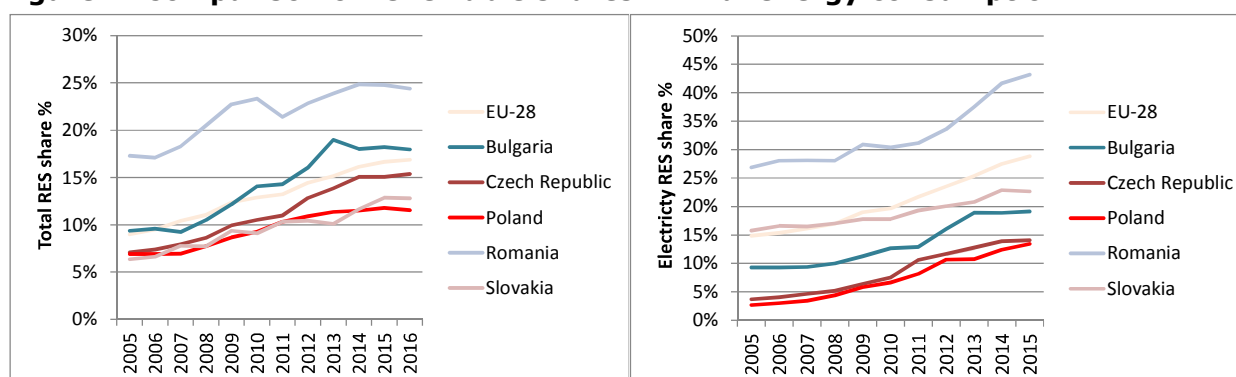
⁶ ETS emissions depicted in Figure 3 include a correction of the reported verified ETS emissions for the current ETS scope which is necessary for a trend analysis due to the fact that the scopes of emissions covered in the three ETS periods are not comparable.

3.2. Renewable energy targets

The Renewable Energy Directive (RED) sets a binding target for Poland to reach a share of renewable energy of 15% in final energy consumption in 2020. In 2015, this share was 12%. According to its National Renewable Action Plan, Poland will reach a share of 15.5% in 2020. Renewable energy had the largest share in the heating and cooling sector (14%), renewables contributed with 13% in the electricity sector and 6% in the transport sector in which all EU Member States are committed to increase the share to 10% by 2020 (EEA forthcoming; Eurostat 2017d).

Compared to other Central and Eastern European countries, Poland's share of renewable energy as well as the renewables growth rates since 2005 are relatively low (see Figure 4). Section 4 further elaborates on the role of RES in the energy mix.

Figure 4: Comparison of renewable shares in final energy consumption



Source: Eurostat 2017a, 2017d

3.3. Energy efficiency targets

In accordance with targets for 2020 laid down in its National Energy Efficiency Action Plan, Poland will increase primary energy consumption (PEC) by 10% until 2020 compared to 2005 levels. Between 2005 and 2015, primary energy consumption has increased by 3% (compared to a decrease in all other EU Member States except Estonia and Finland), thus it is likely that the target will be met (European Commission 2017a; Eurostat 2017b).

With regard to final energy consumption (FEC), Poland has set a domestic target to increase FEC by 23% until 2020. Since 2005, FEC has increased by 7%, while in all but two other EU Member States (Lithuania and Malta), FEC levels have declined.

Table 2: Change in renewable trends compared with other Central and Eastern European countries

Member State	Gross final energy consumption	Gross final energy consumption from renewable sources	Renewable energy share
	Total change 2005–2015 (%)	Total change 2005–2015 (%)	Percentage points change 2005–2015
EU-28	-9%	70%	7.7
Bulgaria	-4%	86%	8.8
Czech Republic	-7%	97%	8.0
Poland	6%	81%	4.9
Romania	-10%	29%	7.5
Slovakia	-13%	76%	6.5

Source: Eurostat 2017a, 2017d

Compared to other Central and Eastern European countries, Poland is the only country in which gross final energy consumption has increased since 2005. Starting from very low levels in 2005, the total change with regard to gross final energy consumption from

renewable sources has been high (81%), but the relative change of renewable energy share lags behind progress made in other Central and Eastern European countries as well as in the whole EU (see Table 2 for details) (Eurostat 2017a).

3.4. Additional information on Poland's approach to climate policy

With regard to **EU climate policy until 2050**, Poland has been the only Member State who did not agree on the adoption of two EU roadmaps: the Low-Carbon 2050 Roadmap (March 2012) and Energy 2050 Roadmap (June 2012) (politico.eu 2017).

In the context of **global climate negotiations under the UNFCCC**, Poland ratified the Paris Agreement in October 2016 under the assumption that the global, bottom-up approach will allow every country to choose their own pathway to emission reductions. Poland states that such bottom-up approach should also be reflected in the EU climate policy and that continuation of the use of coal with concurrent increase of CO₂ sinks (removals) should be possible (Ministry of the Environment 2017a).

With regard to the **second commitment period of the Kyoto Protocol** running until 2020, the President of Poland Andrzej Duda vetoed the act ratifying the Doha Amendment to the Kyoto Protocol in October 2015, arguing that the legal and economic impact of the ratification has not been sufficiently analysed and explained (prezydent.pl 2017).

In 2018, **COP24** under the UNFCCC will take place in Katowice, Poland, presided over by Minister of Environment Jan Szyszko. COP24 will be the fourth climate summit presided over by Poland and third hosted in Poland.⁷

The pilot project on **forest carbon farms** is strongly supported by the Minister of Environment. The Minister sees enhanced CO₂ sequestration in forests as a way to fulfil the goals included in the Paris Agreement as well as to avoid costly emission reductions from the industrial sectors (Minister of Environment 2017; swiatoze.pl 2017).

4. Role of the renewable energy sector in the energy mix and recent developments

While gross final renewable energy consumption has nearly doubled between 2005 and 2015, its share still remains relatively low at 12% (Eurostat 2017a, 2017d). It is estimated that 42% of renewable energy in Poland comes from co-firing coal and biomass and is thus interdependent with fossil energy use (Olszewski 2014).

Amendments to the **Renewable Energy Law** which entered into force in 2016 introduced an auction scheme. All technologies are allowed to bid in the auction, except of hydro plants larger than 20 MW and biomass plants larger than 50 MW. Auctions are performed separately for technological baskets. Every year the government will announce the total capacity of renewable energy and a maximum price to be auctioned. RES generators who cannot take part in auctions remain in the old green certificate system. However, a large oversupply of certificates of origin on the green certificate market reduces the prices of the certificates. In July 2017, a compensation fee was introduced that installations which are obliged to hold green certificates can pay instead of purchasing certificates. This compensation fee of around PLN 40/MWh (EUR 9.3/MWh) incentivizes companies to avoid purchasing green certificates. The amendment of the Renewable Energy Law was adopted by the Parliament in an expedited procedure, without participation of civil society and signed by president Duda in August 2017 (reo.pl 2017b, money.pl 2017). The above system is complemented by annual regulations of the Minister of Energy on the obligation to surrender and cancel RES certificates. The current draft proposal for 2018 sets a level of 17.5% (against 15.4% in 2017) for all RES technologies except for agricultural biogas for which the level is 0.5% (against 0.6% in 2017). With the current oversupply of certificates,

⁷ COP5 in 1999 in Bonn by Minister Jan Szyszko, COP14 in 2008 in Poznań, COP19 in 2013 in Warsaw.

the proposal is criticized not only by business organisations but also by the Ministry of Development which proposed to increase the level of surrendered certificates (gramzielone.pl 2017; Rządowe Centrum Legislacyjne 2017d). The oversupply of certificates on the market was mainly caused by the expansion of co-firing of hard coal and biomass. Since 2012 production of renewable energy from co-firing has expanded rapidly and was supported by the low cost of establishing this production (wysokienapiecie.pl 2017a).

Particularly, **wind energy** has experienced growth in recent years with an almost 70-fold increase between 2005 and 2016. In Poland, the installed capacity in wind farms amounts to 5.8 GW at the end of 2016 with a share of 69% in total RES capacity, putting Poland in 7th place in the European Union in terms of wind capacity. According to the Energy Regulatory Office (ERO), new wind farms with a total capacity of 1.2 GW were built in Poland in 2016 – a 26.7% increase compared to the previous year (The Polish Wind Energy Association 2016). Yet, a **new Wind Farm Act** signed in 2016 specifically aimed at restricting wind power development. The Act prohibits building turbines within 1.5 – 2 km of other buildings or forests, which rules out 99% of land. In addition, the bill quadruples the tax rate on existing turbines which makes them unprofitable (Financial Times 2017). Developers need to apply for a license to operate a wind turbine every two years. Repair works or modernisation of a turbine requires prior permission from two instances. Additionally, the government did not issue any auction for wind farms with a capacity above 1 MW in 2016. In 2017, an auction for 150 MW of capacity was announced, which is only a small part of the projects waiting for the auctions and ready to be built. Additionally, the low price of green certificates as a result of a large oversupply (see above) is not sufficient to pay back the loans used to build a large share of Polish wind farms. In 2016, when the prices of certificates were higher, already 70% of the wind farms generated losses amounting to PLN 3 billion (EUR 0.7 billion) (wysokienapiecie.pl 2017b).

Poland co-fires **biomass** with coal and the Polish government supported co-firing between 2005 and 2012 with EUR 1.7 billion (Olszewski 2014). In recent renewable legislation, subsidies for co-firing are maintained. The second amendment to the Renewable Energy Law of 2015 therefore allows the coal industry to capitalise on co-firing. (Focus 2017). Within the RES auction system the biggest technology basket (PLN 9 billion = EUR 2.1 billion) will be dedicated to the “stable sources” such as biomass co-firing installations belonging to the Polish energy consortiums. The simulations for the auctions in this basket proved that most of the support will go to biomass co-firing installations. It is also possible that co-firing will enter other energy baskets (IEO 2017).

According to a recent report from IEO (2017b), total **solar photovoltaic (PV)** installations reached 199 MW in 2016 which is only 2.3% of total renewable capacity. Of this capacity, around 99 MW is represented by installations built under the green certificate scheme, while the remaining 100 MW consists of PV systems installed under net metering. The amendment of the legislation has created an auction mechanism for PV installations with a power of more than 40 kW and a net-metering scheme for PV systems up to 40 kW.

Geothermal energy is considered as a way to help Poland cope with both CO₂ restrictions as well as with air pollution by the Ministry of Environment, and it is stressed as one of the priorities in the resources policy of the state. The total amount of financial resources directed towards development of geothermal energy will be a round PLN 1 billion (EUR 0.233 billion) (Polish Press Agency 2017).

5. Conclusions and recommendations for the ENVI delegation

As two-thirds of Poland’s installed coal capacity is older than 30 year, the Polish energy policy is at a very critical point because decisions about the construction of new power and heat generation capacities will lock in investments as well as related GHG emissions for the next 20-40 years.

The Polish energy policy is currently under revision and recent decisions such as the draft Capacity Market Act or the amendments to the Renewable Energy Law are likely to even stronger support the reliance on coal in the energy sector. Also they will likely limit the growth of renewable energies, in particular wind, after this growth gained some speed in recent years. These developments do not support the EU's objectives as outlined in the low-carbon economy roadmap suggesting that the EU should cut its emissions to 80% below 1990 levels until 2050 through domestic reductions. The scenario underlying this cut in emissions assumes an almost total elimination of CO₂ emissions from the power sector until 2050. A share of 50% of coal in the power sector in Poland in 2050 - as currently foreseen in the government plans - counteracts these long-term EU objectives.

The envisaged energy policy does not seem to acknowledge cost-effectiveness in the way that the cheapest future generation options are promoted, in particular if plans for significant amounts of new coal capacities as well as new nuclear plants will be implemented. This may cause problems for the Polish competitiveness due to potential high future electricity prices.

Some of the developments described in this briefing are based on very recent information reported in the media, but related government proposals have not yet been published. Therefore it would be useful to gather further insights during the visit in the stage of evolution of the planned new legislation and plans related to the construction of new coal-fired power plants or new nuclear units during the visit.

As explained above, some studies assume that planned legislation in the energy sector is not in line with EU legislation (e.g. the draft Capacity Market Act). This would also be another relevant area for further discussion during the visit.

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