

Poland Case Study

Climate for Sustainable Growth

Centre for European Policy Studies (CEPS) • Place du Congrès 1, 1000 Brussels, Belgium www.ceps.eu

UNFCCC Workshop

Sharing views and „experiences on economic diversification and transformation” and „just transition of workforce and creation of decent work and quality jobs” in context of sustainable development.

2 October 2016, Doha, State of Qatar

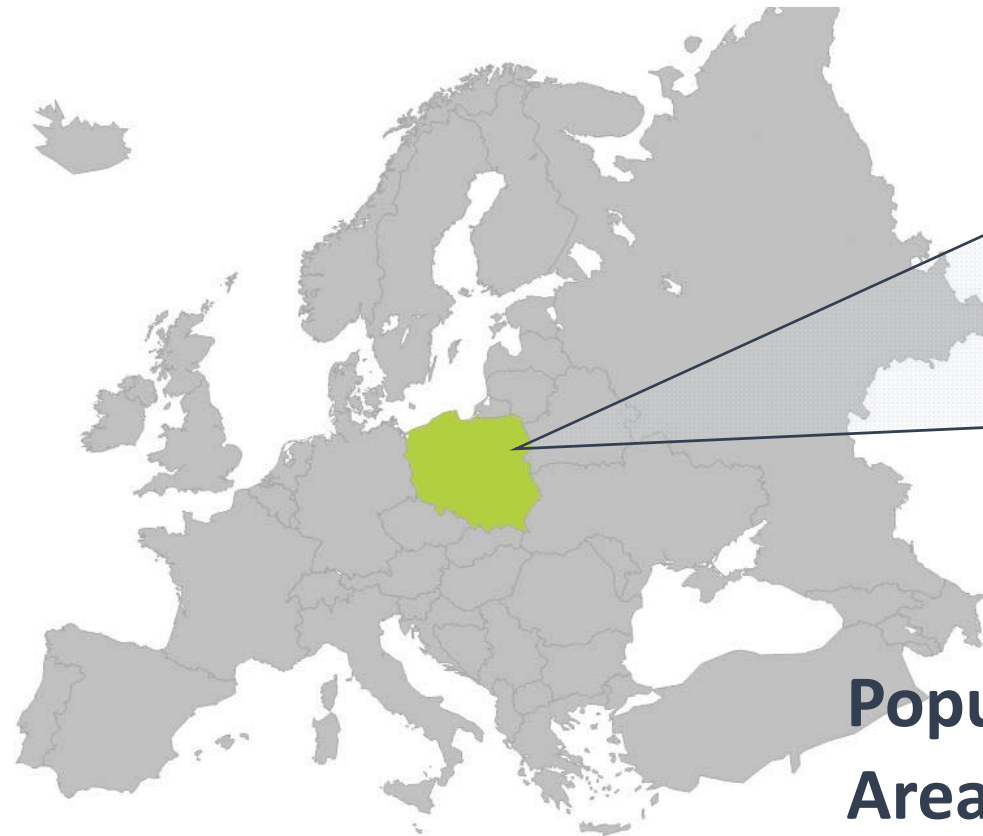
Tomasz Chruszczow

Outline

- 1. Country Characteristics**
- 2. Climate Change Policies in Poland**
- 3. Policy Impacts**
- 4. Mitigation of Impacts**
- 5. Sustainability of the Transition**

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1. Country Characteristics



Population: 38 484 000 (2014)

Area: 312 679 km²

Density: 123 per km²

1. Country Characteristics – basic data

History

- Between 1795 and 1918 – no independent Polish State
- After WWII, since 1944/1945 until 1989, being a part of Soviet block, with a centrally planned economy, with strong mining and heavy industry. State-owned industry, with small (family) businesses (mainly services) remaining in private hands.
- Agriculture has been and remained the sector with a dominant role of family-owned small farms, with relatively small number of state-owned large farms, which do not exist any longer.
- In 1989, after the first (partly) democratic elections, the political, economic and social transformation started
- 1 May 2004 - Poland became a member state of the EU.

1. Country Characteristics – basic data

Natural / geographic system of Poland

- Moderate zone influenced by both marine and continental impacts. The NW part is predominantly influenced by the Baltic Sea, while the eastern and southern parts experience colder winters and hotter summers.
- Total forest cover in 2011 – 29.2%. State forests dominate in the structure of forests, representing 81.3%. The forest cover rate grew by 10% in the period of 1946 to 2011 (from 20.8%). The target forest cover rate in Poland is 33%.
- Baltic Sea coast, mountains and river beds are vulnerable to climate change related weather extremes.

1. Country Characteristics - demography

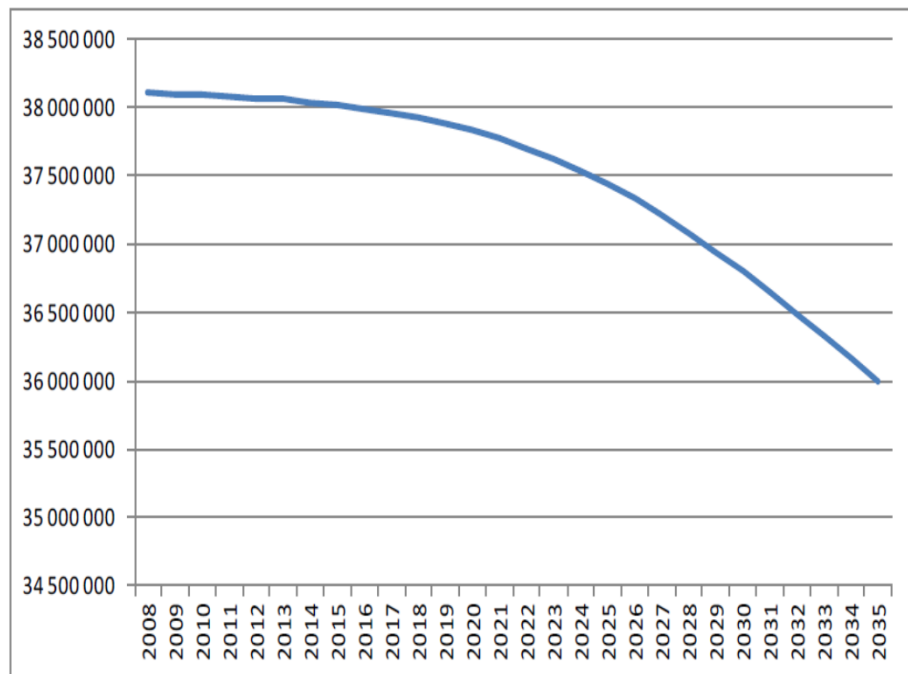


Figure 1 Forecast of the Polish population
Source: Central Statistical Office of Poland, 2012

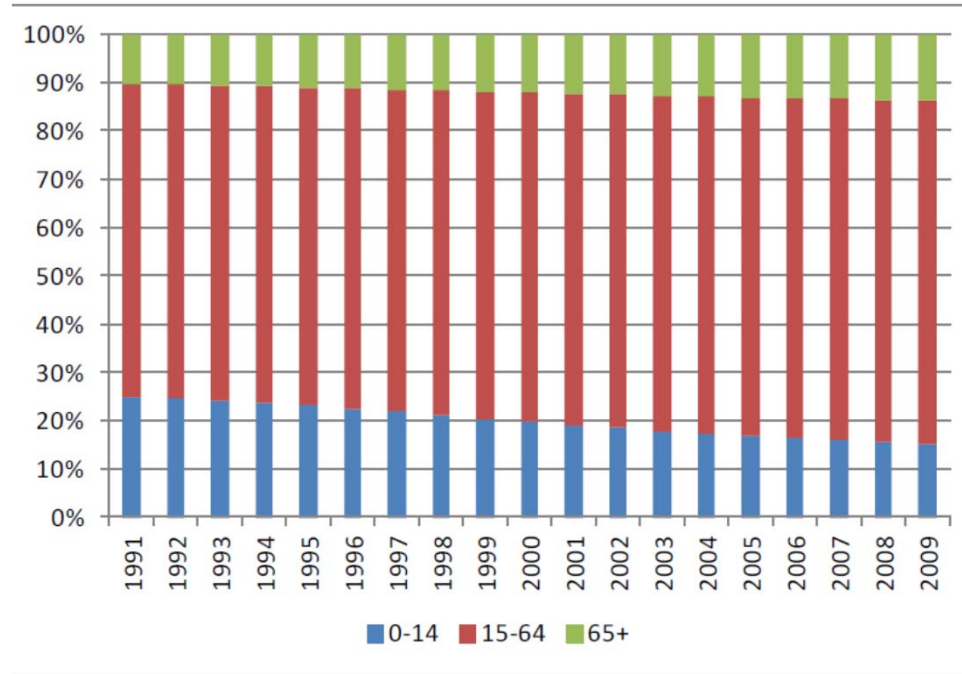


Figure 2 Structure of population according to age
Source: OECD Statistics, 2011

Two major trends: decreasing number and ageing of the population

1. Country Characteristics – basic data

Political system

- Parliamentary with a classical separation of powers legislative, executive and judicial.
- Two houses of **Parliament: Sejm** – lower house and **Senat** – upper house elected in general election for the period of 4 years.
- **President** elected for 5 years in general election. Reelection possible once.
- The three-level self-governments, elected independently for 4 years terms.
 - communes (gmina) – 2 479,
 - counties (powiat) – 314 rural and 65 urban (big cities with legal role of powiat)
 - provinces (voivodship) - 16.
- They enjoy strong executive and legislative power on the local level, in particular in the field of environment, including climate protection.
- Political transition resulted in development of civil society organisations and institutions. They are guaranteed participation in all kind of decision -making processes through consultations and in courts.

1. Country Characteristics – basic data

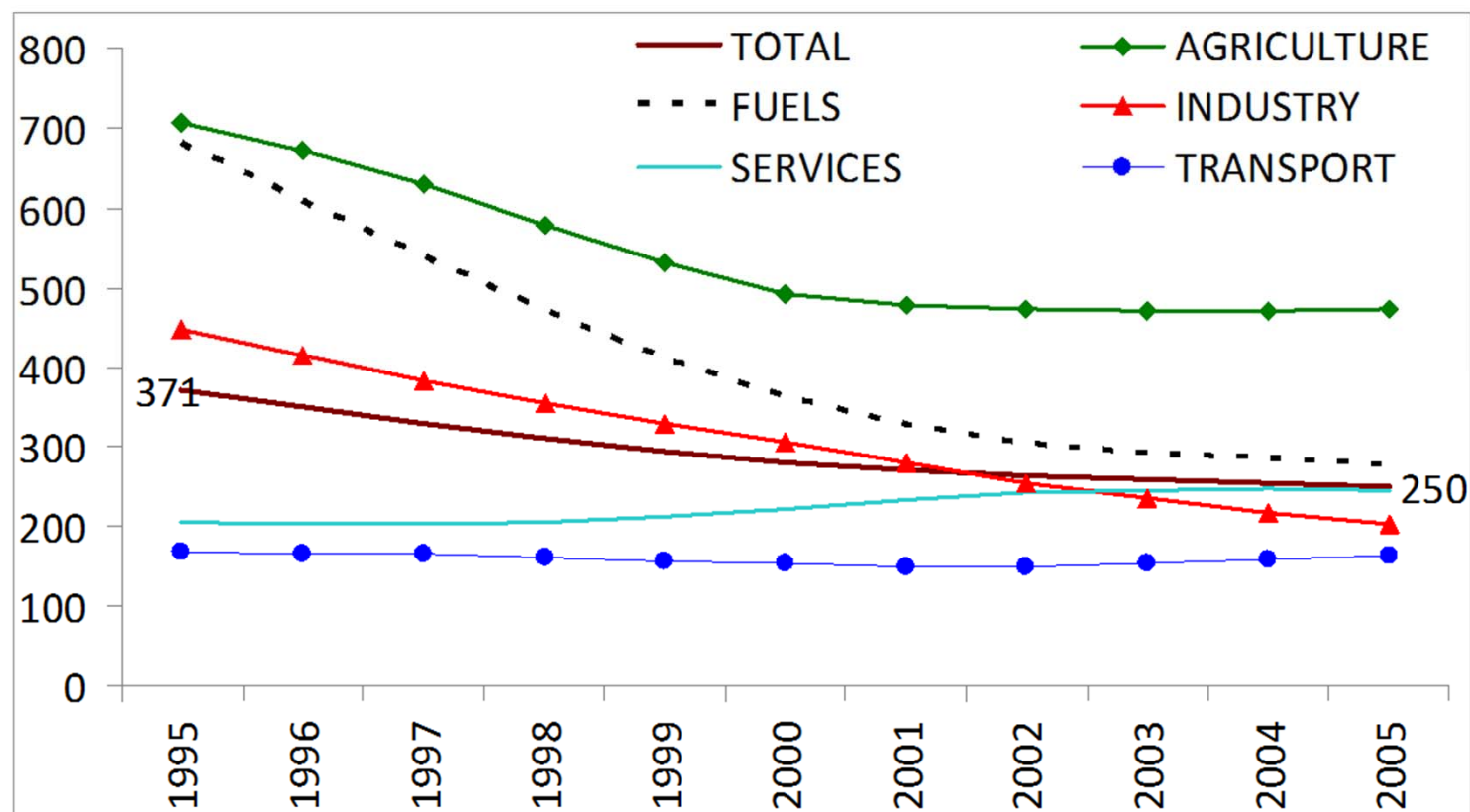
Economic transformation

- Polish economic transformation since 1989 results in restructuring and modernisation of entire economy. It contributes to reducing pressure on environment thanks to implementation of the latest, most efficient technologies. Energy and material intensity of production got reduced, thanks to the introduction of the EU environmental standards (***energy efficiency, industrial emissions, waste management, air quality, water treatment, environmental management, ... etc.***) and helped by the system of environmental funds.
- Industry remains the dominating factor which generates economic growth in Poland, with the highest growth rate in manufacturing sector which determines the growth of industry as a whole.
- Growing role of private sector, which generated in 2011 almost 86% of the value of the total production sold.

1. Country Characteristics – basic data

Early years of transformation - pre-EU period

Energy intensity of Poland as a percentage of the EU15 level



1. Country Characteristics – key sectors

Sectors emitting GHGs

Sectors (IPPC – classification)			
1	Energy		81.4%,
1.A	Fuel Combustion		95.2%
	1.A.1	Energy Industries	53.7%,
	1.A.2	Manufacturing Industries and Construction	9.6%
	1.A.3	Transport	15.0%
	1.A.4	Other Sectors	16.9%
1.B	Fugitive Emissions from Fuels		4.8%,
4.	Agriculture		8.8%,
2.	Industrial Processes		7.2%
6.	Waste		2.4%,
3.	Solvent and Other Product Use		0.2%.

Source: KOBIZE, Environmental Protection Institute - PIB

1. Country Characteristics – key sectors

Taking into account emissions and economic importance, including security of supply, the following sectors have been selected

- Energy generation sector
- Manufacturing industry, with a focus on energy intensive industries
- Transportation
- Agriculture and forestry

1. Country Characteristics – key sectors

Energy sector based on:

- hard coal (mostly from domestic mines);
- lignite – from open cast mines next to Konin, Turoszów and Bełchatów, which are the locations of the biggest power plants;
- crude oil – almost 100% imported from Russia, Middle East and the North Sea;
- natural gas – with domestic extraction covering around 30% of Poland's demand and 70% imported from Russia, Ukraine and ARA;

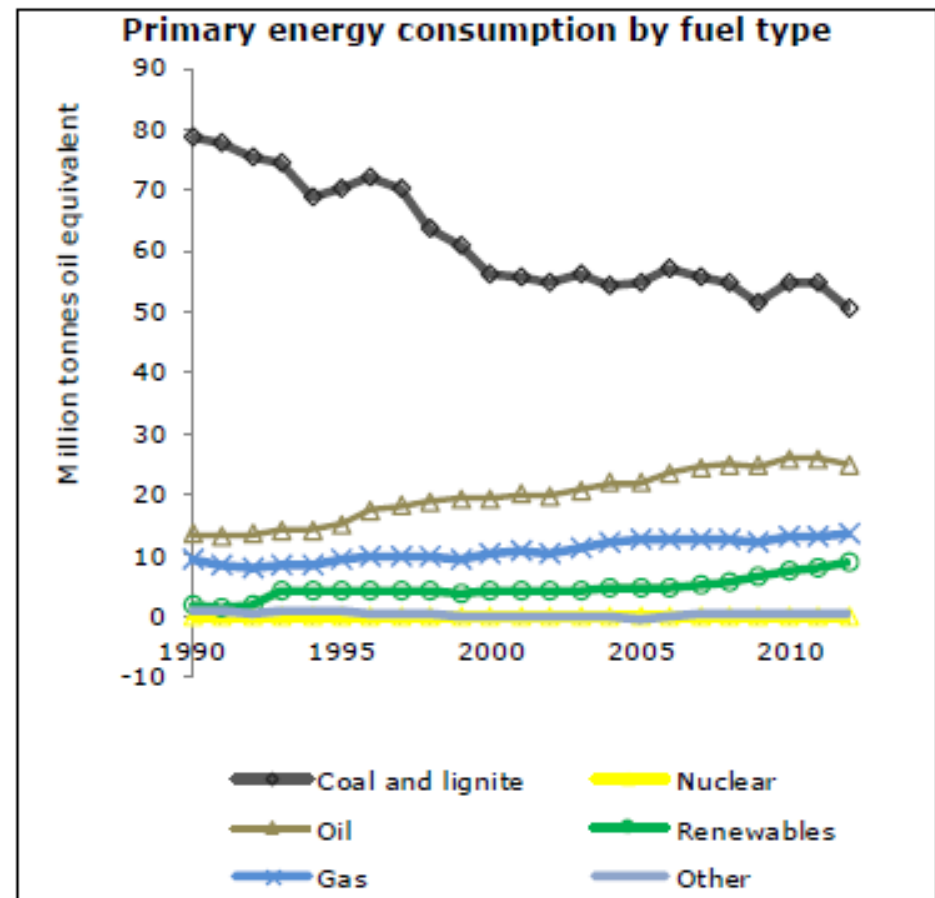
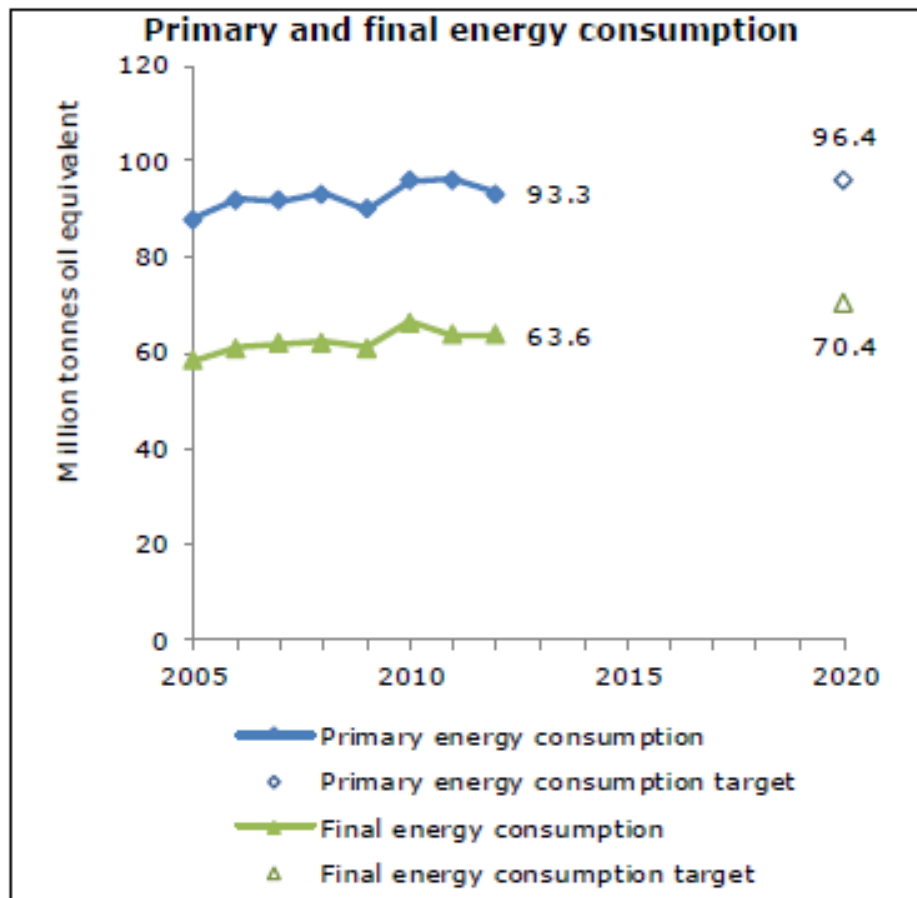
Other energy sources, including RES, i.e. hydro, geothermal, wind, biomass (including agricultural biogas) and solar – are on the grow 11% in 2013

Specification	Years			
	2008	2009	2010	2011
Total primary energy consumption [TJ]	4,203,248	3,980,408	4,387,524	4,507,724
Shares of individual sources [%]				
Hard coal	46.7	44.8	45.8	43.4
Lignite	12.7	12.8	11.0	11.6
Crude oil	21.3	21.7	22.1	22.8
Natural gas	13.4	13.7	13.3	13.1
Other ¹⁾	6.0	7.1	7.7	9.1

¹⁾ Fuel wood, peat, waste fuels, renewable energy generation and heat pumps.

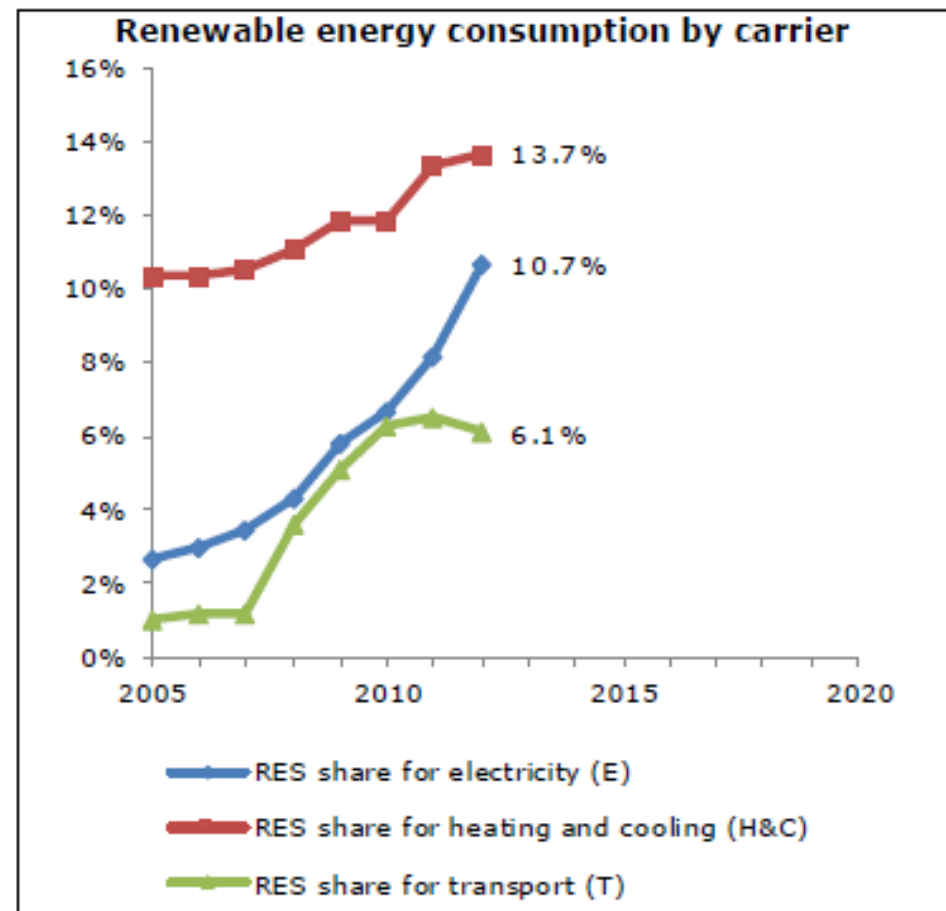
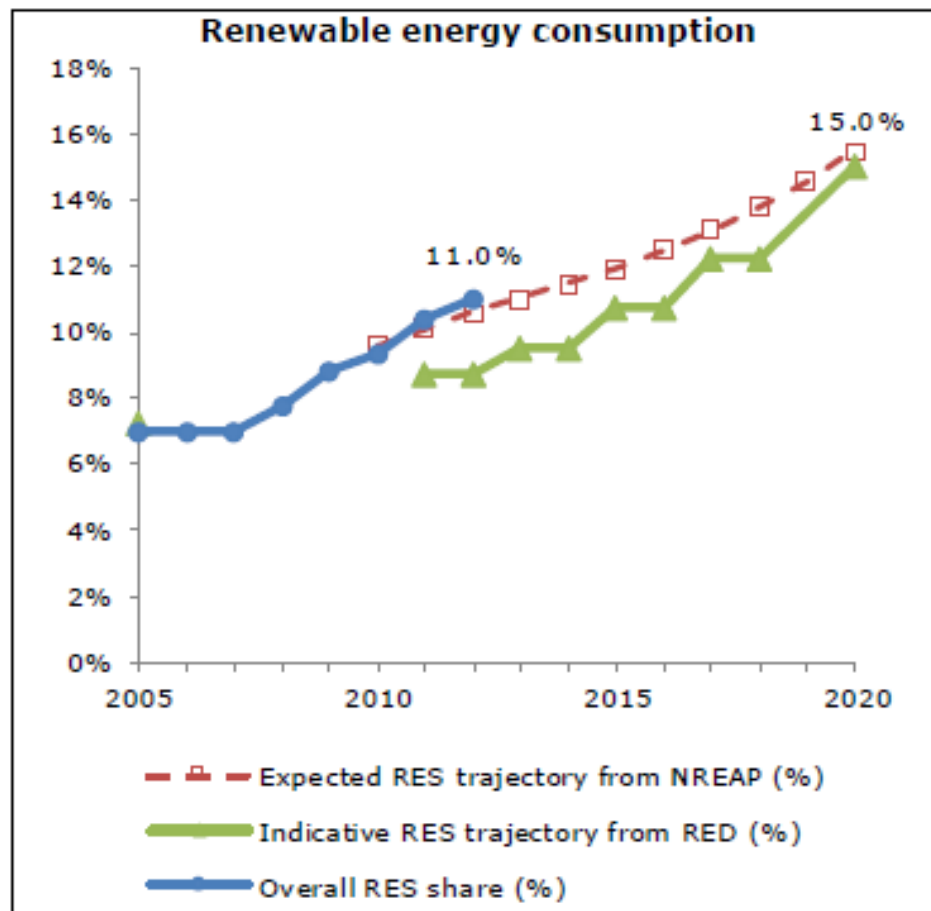
Source: GUS.

1. Country Characteristics – key sectors



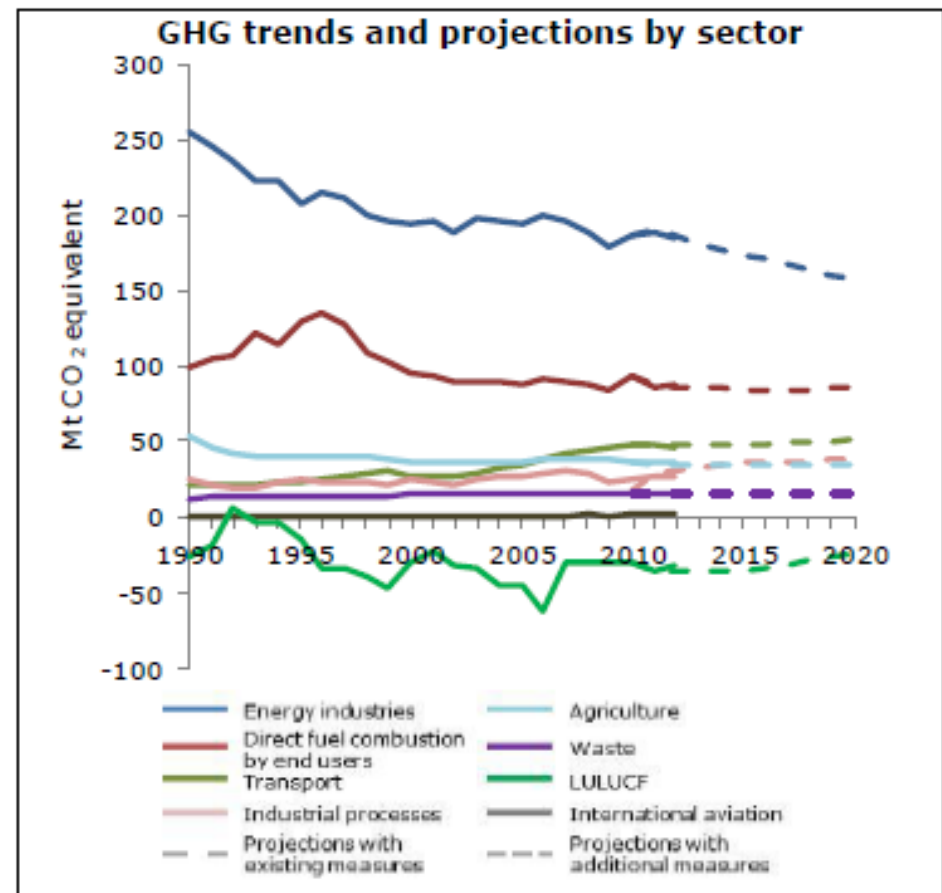
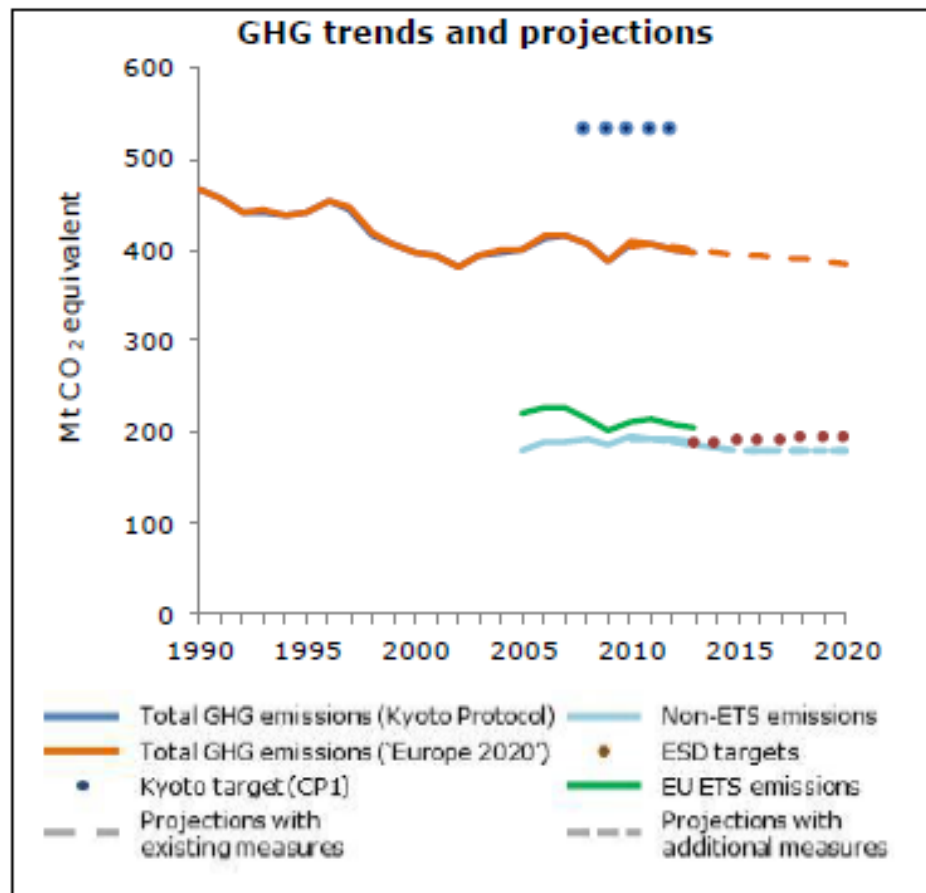
Source: Country profile – Poland (EEA – 2015) – data from 31 July 2014

1. Country Characteristics – key sectors



Source: Country profile – Poland (EEA – 2015) – data from 31 July 2014

1. Country Characteristics – key sectors



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1. Country Characteristics

Environmental Finance

- Since the beginning of Polish transformation, environment has been considered one of the main areas of new policy.
- Sustainable development has been inscribed in the Constitution
- It has also received very strong support from the financing system, based on a **National Fund for Environmental Protection and Water Management** (www.nfosigw.gov.pl), created in 1989.
- In 2011, the outlays on environmental protection (on fixed assets) amounted to 12.1 billion PLN (compared with 7.5 billion PLN in 2007), including **3.1 billion PLN for air and climate protection**. In recent years, the share of expenditures on environment in the total outlays in the economy – wide, remained at the level of about 5%, which represents about 0.8% of the GDP.

1. Country Characteristics

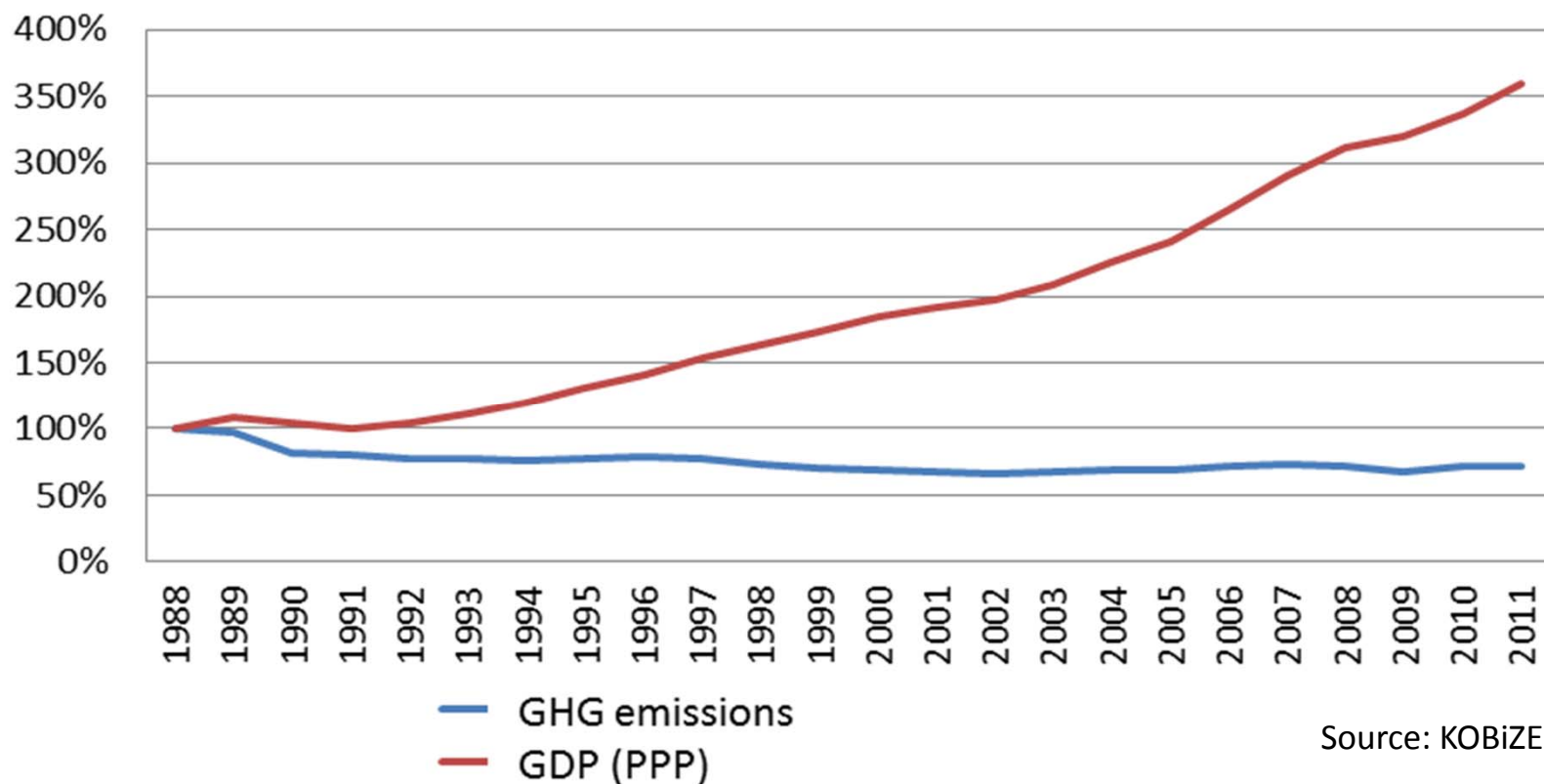


It's coal all over the place!

UNFCCC Workshop on sharing views and „experiences on economic diversification and transformation” and „just transition of workforce and creation of decent work and quality jobs” in context of sustainable development. Doha, 2-4 Oct. 2016

1. Country Characteristics

decoupling of GDP and GHG emissions



It's coal all over the place? – is it really?

1. Country Characteristics

- **Politics**

- Socio-economic transition moved country from single party system into mature democracy.
- Criticism of EU climate policy as a barrier to development before less prosperous Member States.

- **Economy**

- Successfully transformed to become market economy able to comply with EU imposed environmental standards and compete on the single market.
- Transition has been a result of deliberate decision to quickly change the country, but at huge social cost, while achieving impressive environmental improvement, demonstrated by the decoupling of economic growth and GHG emissions

- **Social concerns**

- Those unable to change professions and get new skill as well as elderly people (pensioners) are partly excluded (cannot use modern IT, no access to better jobs etc.)
- Many young (around 20%) have no regular employment

- **Institutional capacity**

- There is generally well developed national human and institutional capacity
- Media and education system are changing their attitude towards climate change and sustainability, but public awareness still to be built or enhanced.
- Big role of social partners (environmental NGOs) in this efforts

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2. Climate change (related) policies

- EU Climate – Energy 3x20 Policy
 - EU ETS
 - Effort Sharing Decision
 - RES – quota on renewable energy
 - CCS – CCS ready coal firing
- Energy policy
 - Energy policy till 2030, now being revised (till 2020)
- Transport policy
 - EU rules for emissions from heavy vehicles as well as LDV
 - Development of public transport, particularly rail transportation
 - Integration of different modalities
- Agriculture and Forestry
 - Reduce the use of fertilizers, promote organic farming
 - Achieve the 30% by 2020 and 33% of territory covered by forests by 2050

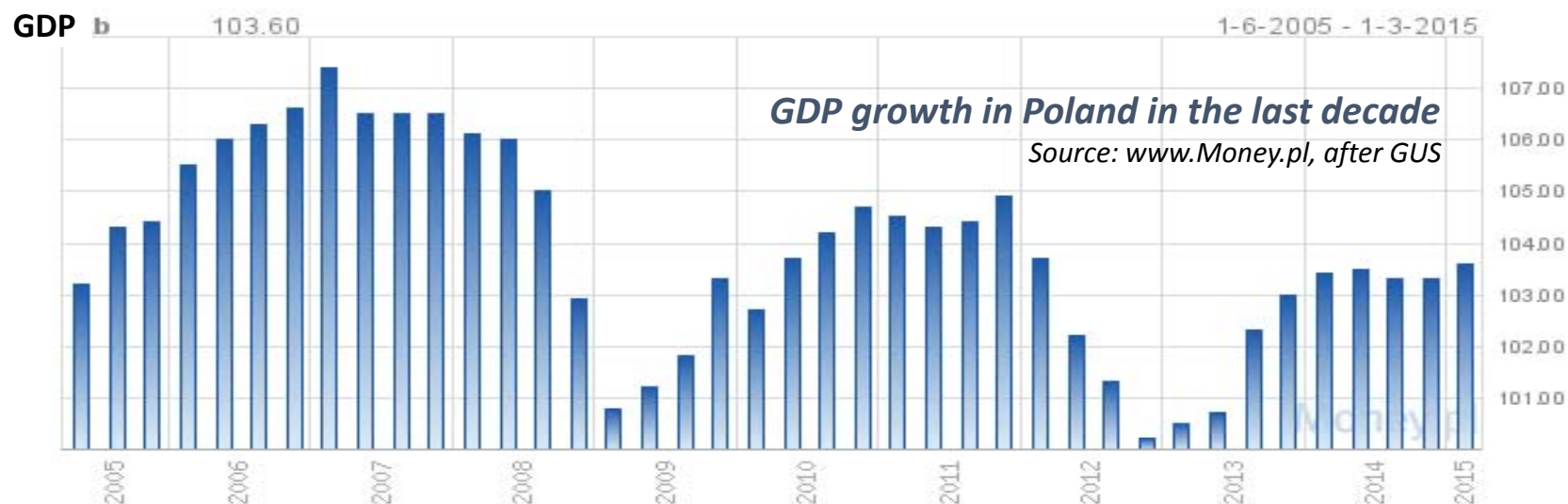
2. Climate change (related) policies

EU ETS and ESD (Effort Sharing Decision)

	2005	2020	
	Base emissions (tons CO ₂)	Reductions	Emission limits (tons CO ₂)
non-ETS	179 856 560	+ 14 %	205 036 480
EU ETS	208 160 250	- 21 %	164 446 590
TOTAL	388 016 810	- 5 %	369 483 070

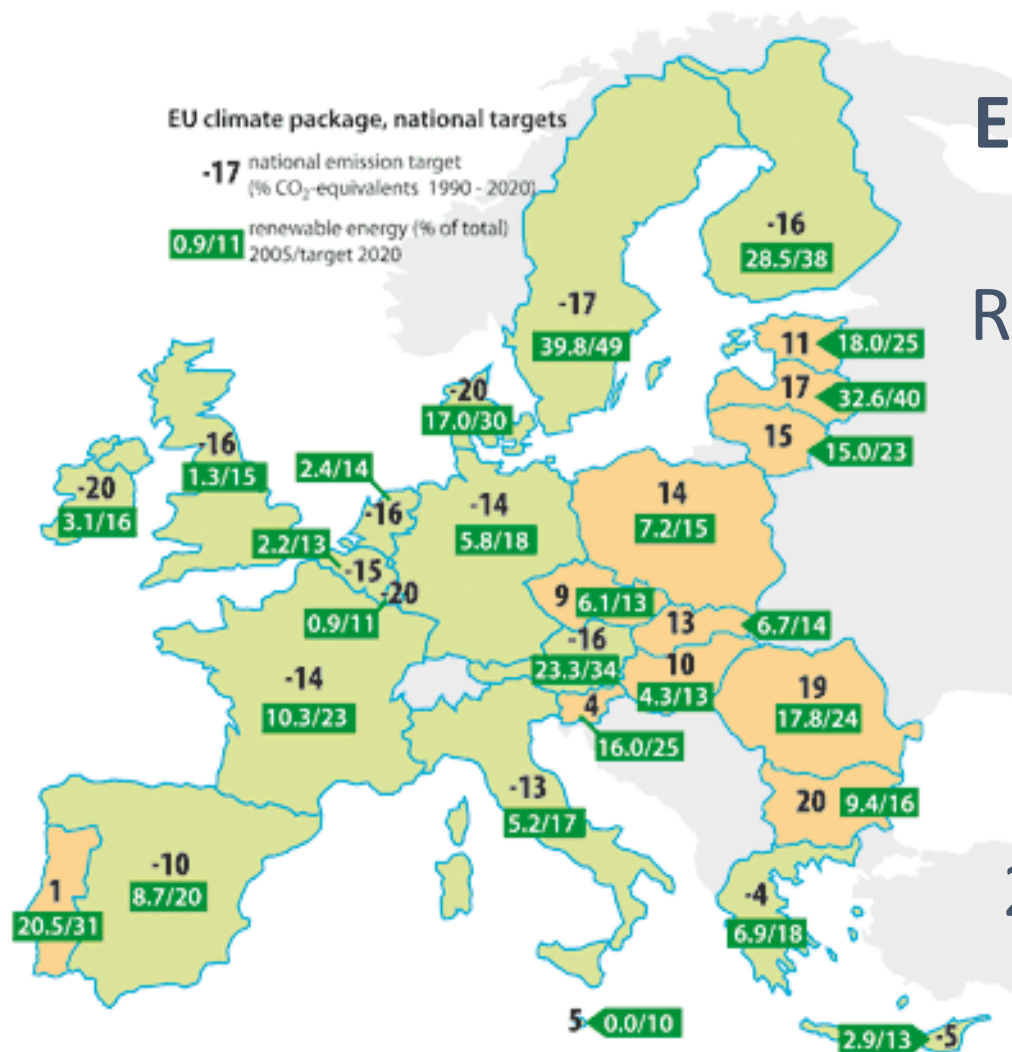
Key data on GHG emissions	2005	2011	2012	2013	EU 2012
Total GHG emissions (UNFCCC, Kyoto Protocol) (Mt CO ₂ -eq.)	398.8	405.7	399.3	396.0	4 544.2
GHG per capita (t CO ₂ -eq./cap.)	10.4	10.5	10.4	10.3	9.0
GHG per GDP (g CO ₂ -eq./PPS in EUR)	907	644	605	587	350
Share of GHG emissions in total EU-28 emissions (%)	7.7 %	8.8 %	8.8 %	8.9 %	100 %
EU ETS verified emissions (Mt CO ₂ -eq.)	203.1	203.0	196.6	205.7	1 848.6
Share of EU ETS emissions in total emissions (%)	51 %	50 %	49 %	52 %	41 %
ETS emissions vs allowances (free, auctioned, sold) (%)	- 14.5 %	- 2.0 %	- 7.7 %	n.a.	- 14.1 %
Share of CERs & ERUs in surrendered allowances (%)	0.0 %	12.2 %	20.3 %	n.a.	26.4 %
Non-ETS (ESD) emissions, adjusted to 2013–2020 scope (Mt CO ₂ -eq.)	179.6	191.5	191.5	190.2	2 566.6

Source: Country profile – Poland (EEA – 2015)



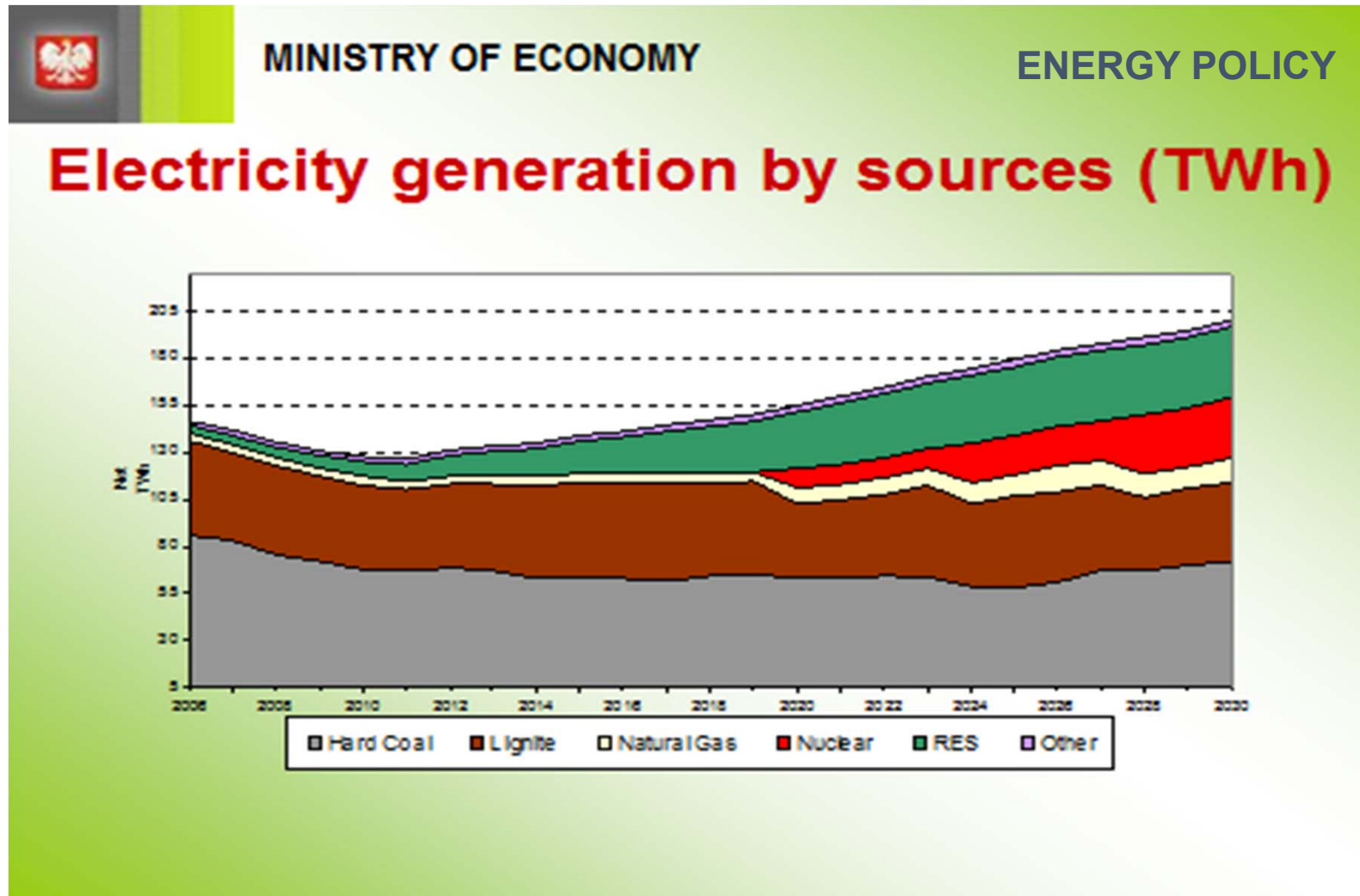
EU Effort Sharing Decision

Renewable Energy Sources

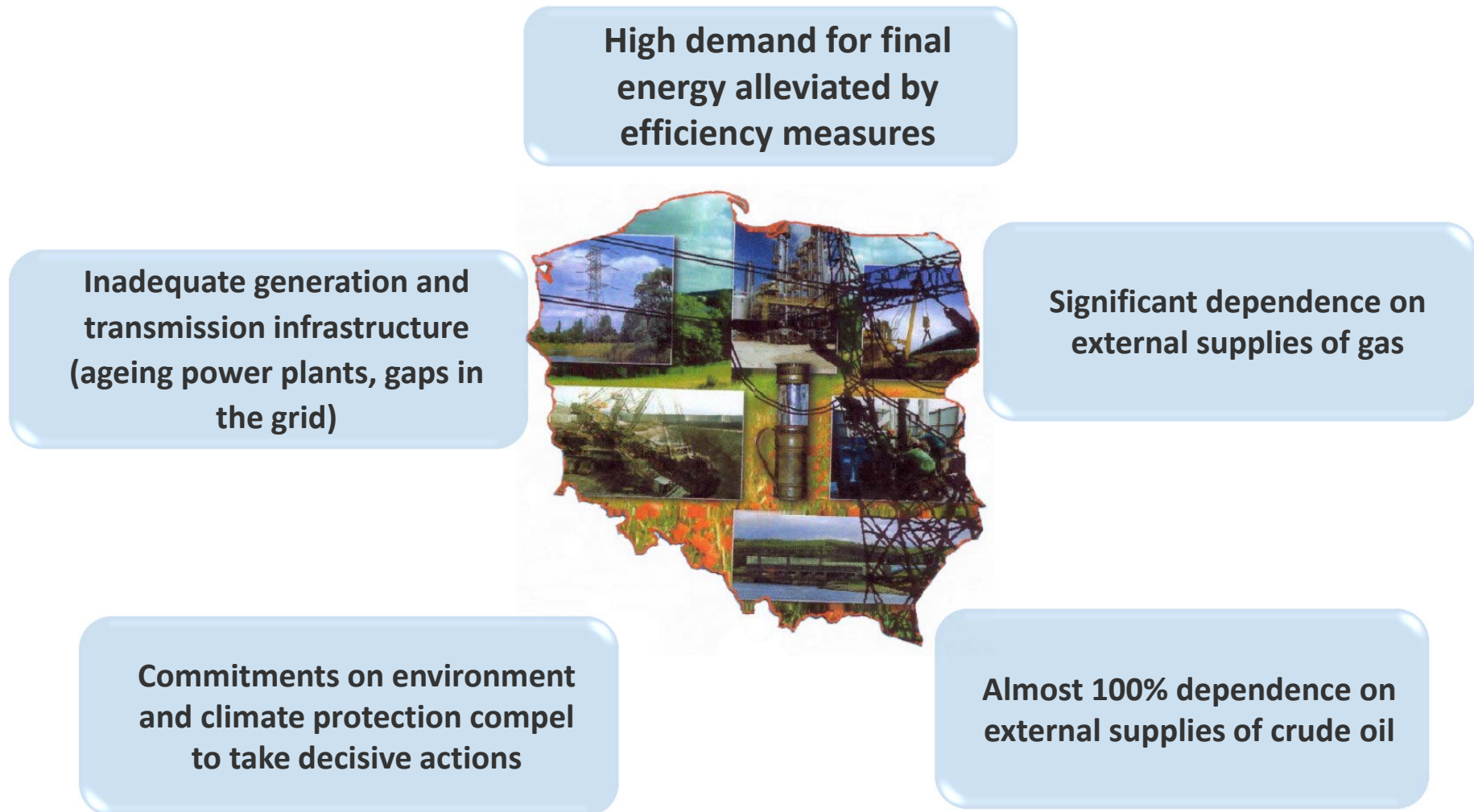


2020 target for PL is 15%

2. Climate change (related) policies

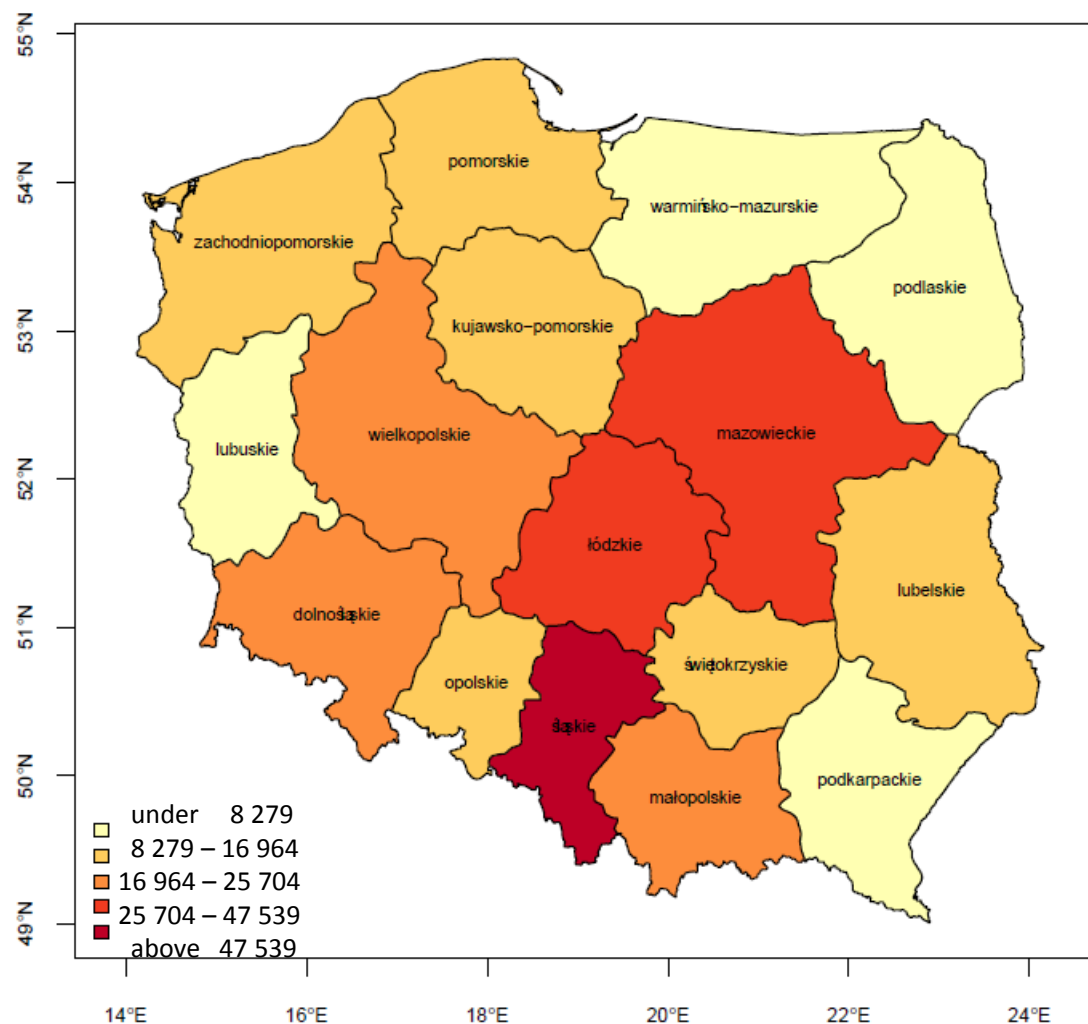


2. Climate change (related) policies - challenges



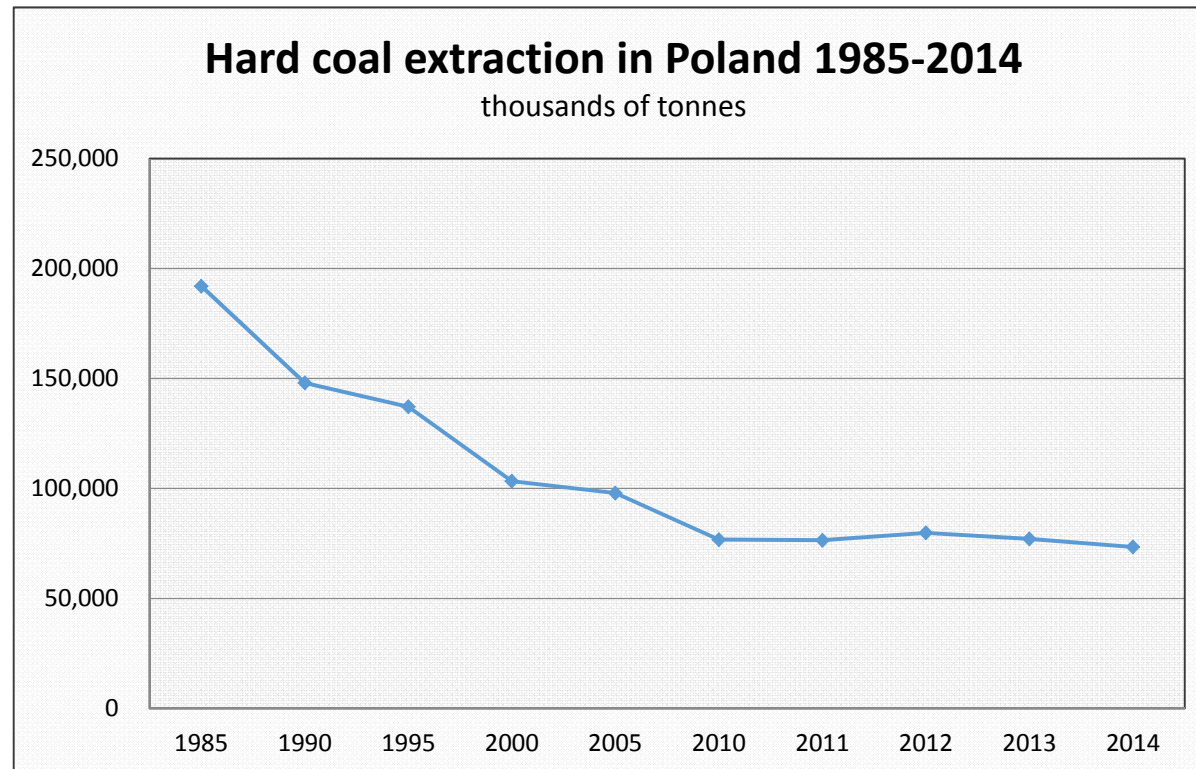
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3. Impacts – GHG emissions in the regions



Source: KOBiZE

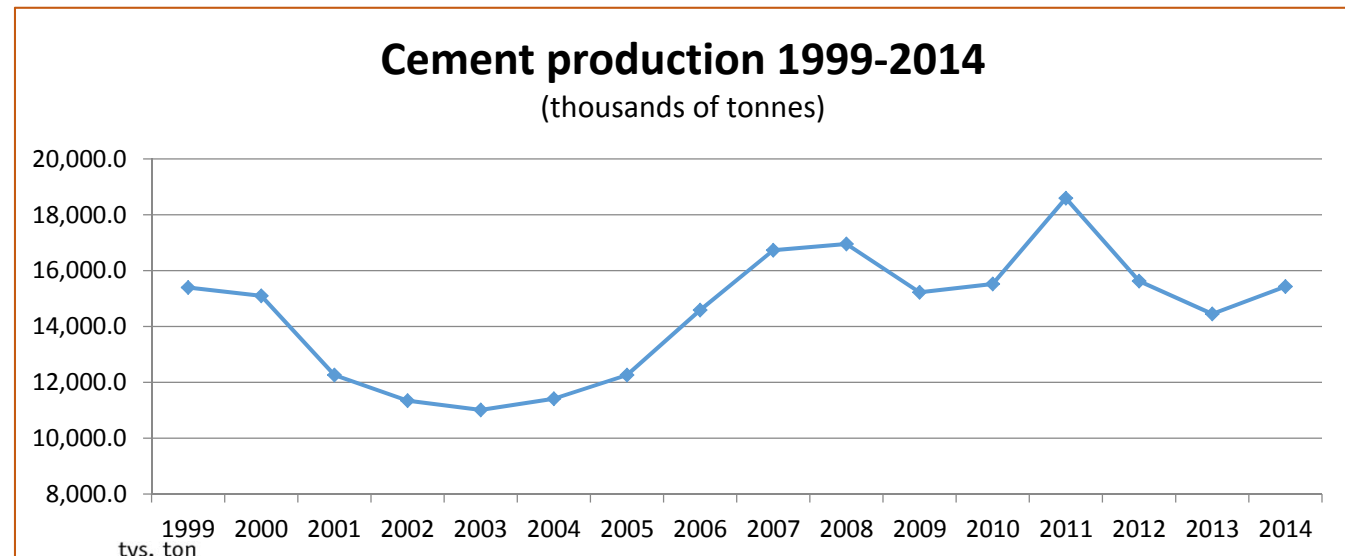
3. Impacts



Source: GUS

Social and economic impacts due to closing down mines, which used to be most important employers in the regions / town, thus leaving thousands of families without secure source of income.

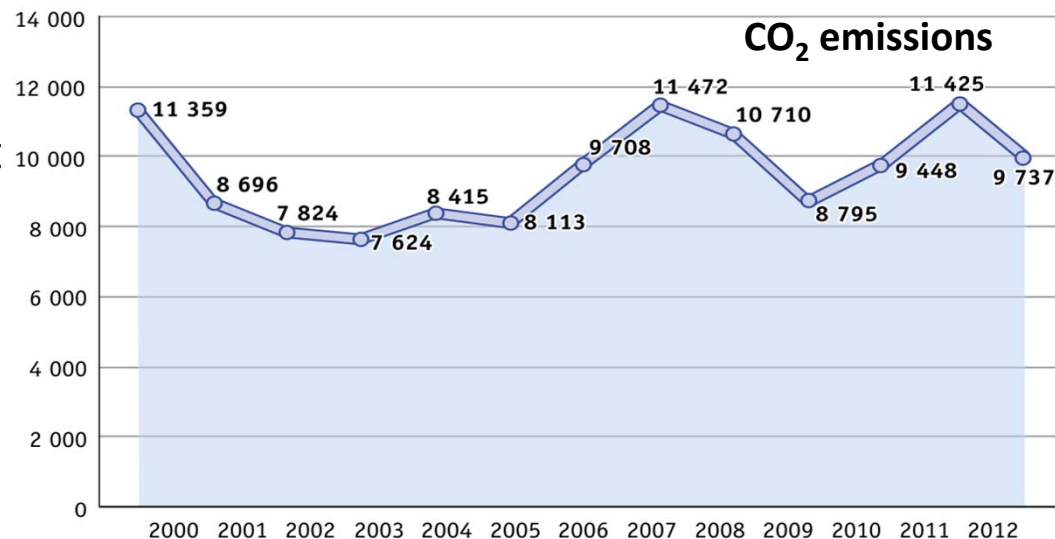
3. Impacts



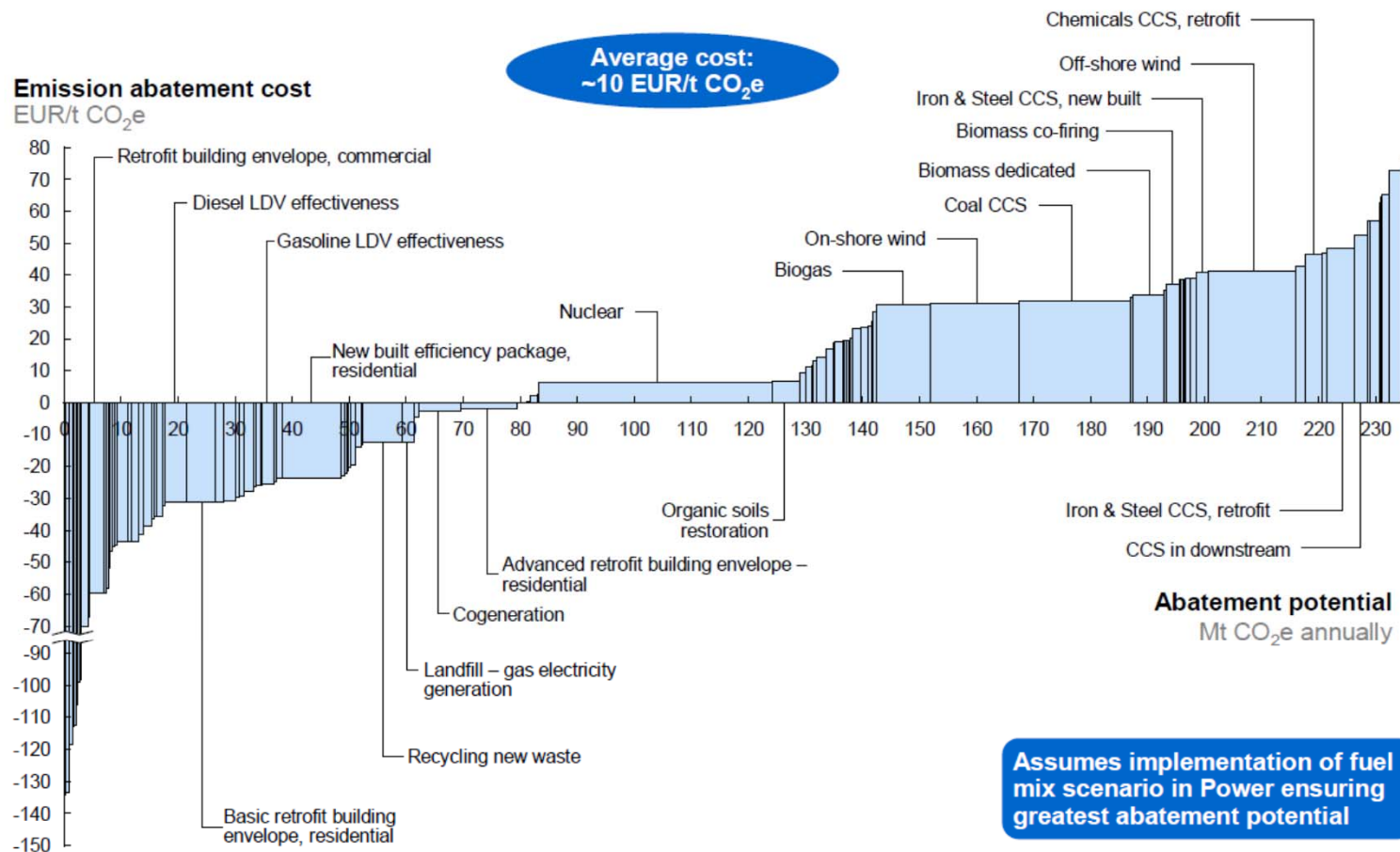
Economic impacts:

Need to invest in efficient technology, but big demand for combustible waste (old tyres, plastics) created.

Source: www.polskicement.pl



GHG abatement cost curve for Poland 2030¹



¹ Only the most significant abatement opportunities are named

SOURCE: Poland GHG Abatement Cost Curve

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4. Mitigation of impacts

Economic

- Free allocations of emission allowances under EU ETS, to address energy poverty as well as loss of competitiveness on global markets
- Non-commercial loans from environmental funds with interest paid back to beneficiaries, provided it is invested in improvement of environmental performance.
- Access to subsidies supporting environmental investments, including EU funds
- Thermo-modernization funds made available for both public and private buildings
- Special economic zones with tax exemptions to boost job creation in the regions, which lost most of their economic potential

4. Mitigation of impacts

Social

- Special programmes to support those laid off (early retirement, professional training, etc.)
- Job creation through public works, incl. improvement of infrastructure's efficiency.
- Access to subsidies supporting environmental investments, including EU funds.
- Thermo-modernization funds made available for both public and private buildings.
- Cities offering free public transport to elderly people.
- Regional programmes

5. Sustainability of the transition

Is the transition taking place in a sustainable way ?

- Some observations/questions:
 - What should be the priorities for developing/developed countries? (adaptation / mitigation)
 - What level of ambition is required?
 - Need to measure or monitor impacts in a comprehensive way
 - How to identify suitable mitigation policies (for negative impacts)?
 - What are the implications for donor organizations?
 - How to take into account regional differences within country?



Thank you!