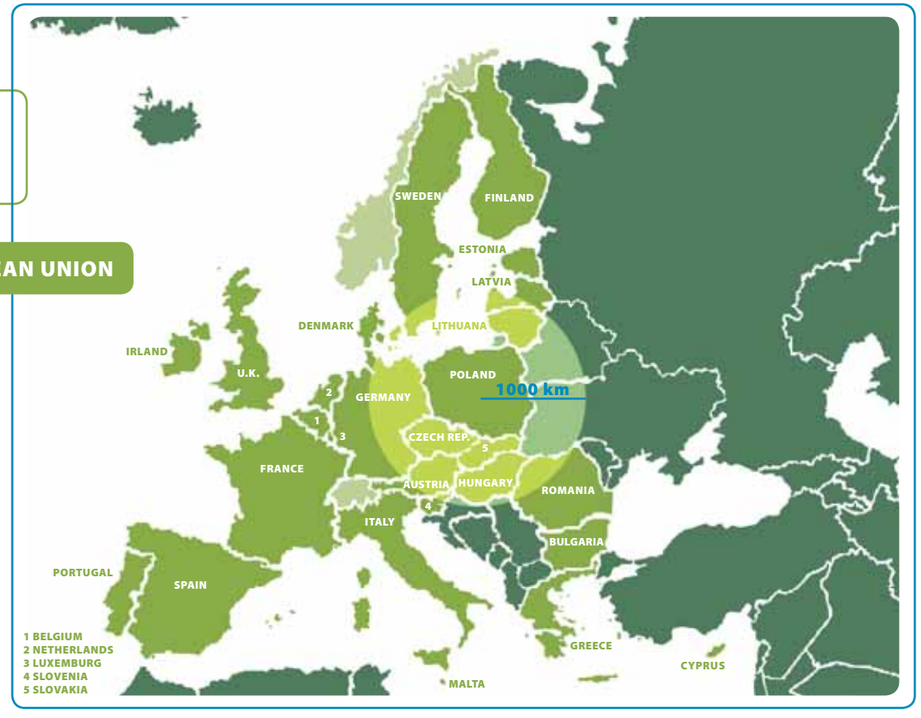
CONTENTS

1 INTRODUCTION – SITUATION OF POLAND

1.1 General information

POLAND (The Republic of Poland) lies in Central Europe on the Baltic Sea. Its neighbours to the northeast are Russia and Lithuania, Belarus and Ukraine to the east, Slovakia and Czech Republic to the south and Germany to the west. Poland has been a Member State of the European Union (EU) since 2004. It is also a member of such organizations as the UN, NATO, OECD, WTO.



Poland in Europe

The area of Poland totals **312 679 km²**, which is the 6th largest territory in the European Union. Poland is a lowland country with a stretch of highlands and mountains in the south and moraine hills and lakes to the north. Forests account for 28% of the country's area. Poland has **23 national parks, 120 landscape parks, 1,423 natural reserves and 9 UNESCO-MAB** world biosphere reserves as well as bird special protection areas and habitat special protection areas covered by the European Natura 2000 network. Poland's population is at **38,1 m** which makes it the 6th most populous country in the European Union. Population density, with **122 people per 1 sq km**, is slightly above the EU average (115 people per 1 sq km). 64.5% of the population is in productive age. The country's largest city is its capital – **Warsaw** – with **1.7 m inhabitants**, and combined with the surrounding towns it forms a metropolitan area of more than 2 m residents. Other large cities include: Kraków, Łódź, Wrocław and Poznań, cities in the Upper Silesian Industrial District and the Tricity complex of Gdańsk, Gdynia and Sopot.

Growth of Poland's gross domestic product (GDP) in fixed prices is at around 4.9% (2008) which was one of the highest in Europe and, in spite of the financial crisis, Poland's economic standing remains good. GDP per capita according to the purchasing power standards (PPS) is at USD 16,091 which is 55% of the European Union's average.

1 INTRODUCTION – SITUATION OF POLAND

1.2 The role of energy sector in the economy

Polish economy is growing fast and over the last several years has attracted major foreign investments. This has been the result of both social and political transition, including the EU accession, as well as internal social and economic stabilization and economic potential.

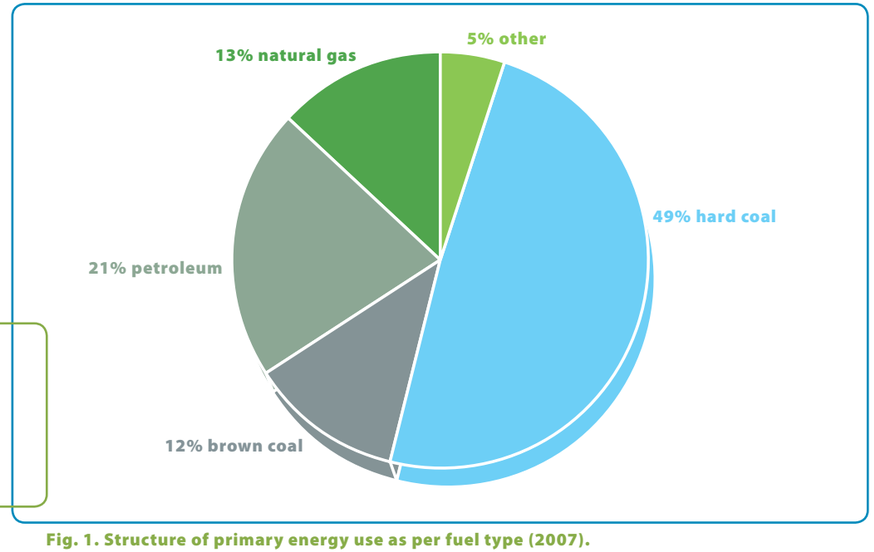


Fig. 1. Structure of primary energy use as per fuel type (2007).

Energy demand is growing both from the dynamically growing economy and from the consumers. Primary energy used in Poland is sourced nearly entirely from fossil fuels including the domestic hard and brown coal and the imported (mostly) crude oil and natural gas.

Coal is used mainly for the purposes of the centralised electric power and heat generation. In the final energy use, oil-derived fuels are of major importance due to the development of road transport.

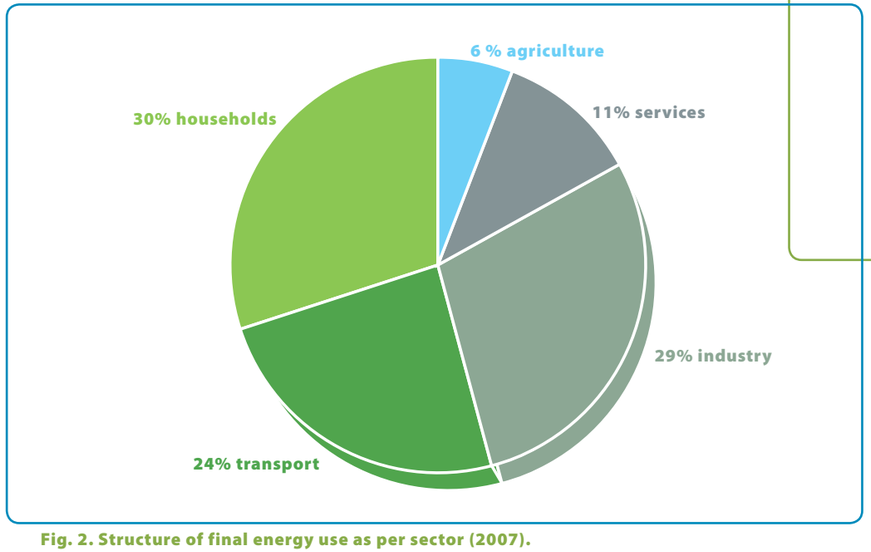


Fig. 2. Structure of final energy use as per sector (2007).

In the domestic use of final energy, the share of transport and services sectors and of households is growing. The final energy use analysis by sectors shows that households and the industry have a similar share (30% and 29%, respectively). The share of transport is at approx. 25% while services account for 11% and agriculture 6% (2007).

Electric power in Poland is generated in more than 90% by power plants combusting fossil fuels mined domestically – hard and brown coal (Table 1). The share of other fuels, such as biomass and biogas, however, is gradually growing; wind power is also used. In 2007, renewable energy sources were used to generate 3.8% of electric power (according to Table 1). Poland's specific characteristics are its relatively high (approx. 20%) share of co-generated electric power and high importance of the centralised heat and power generation sector in supplies for the households. There is still a large potential for improving energy efficiency. It is expected that energy consumption in Poland per GDP unit could drop by half within the next dozen years or so.

Table 1. Structure of fuels and other primary energy carriers used to generate electric power in Poland in 2007.

Energy source	Volume of electric power generation			
	Gwh		%	
Hard coal	93 482,9		58,8	
Brown coal	51 136,3		32,1	
Natural gas	4 528,1		2,8	
Other gas (coke-oven and blast-furnace gas)	1 725,6		1,1	
Liquid fuels (oil)	2 238,1		1,4	
Renewable energy sources, of which:	5 964,6		3,8	
Biomass		2 350,5		1,5
Wind power		535,8		0,3
Large-scale hydro power engineering		1 975,1		1,3
Small-scale hydro power engineering		979,2		0,6
Biogas		124,0		0,1
Total	**159 075,6**		**100**	

2 LEGAL FRAMEWORK RELATED TO CLIMATE CHANGE

2.1 International law

The key legal act concerning climate change is **the United Nations Framework Convention on Climate Change** (UNFCCC) adopted in 1992 at the "Environment and Development" Conference in Rio de Janeiro which entered into force on 21 March 1994. The Convention has been ratified by 192 states.

The Kyoto Protocol was adopted in December 1997 and entered into force on 16 February 2005. It has been ratified by 184 states. The Protocol's objective was the commitment to reduce the anthropogenic greenhouse gases emissions in the years 2008-2012.

Poland, as a party to the Kyoto Protocol, accepted the commitment to reduce greenhouse gas emissions by 6% over the 2008-2012 period against the base year - in Poland's case the year 1988.

On 26 October 1994, Poland ratified UNFCCC and on 13 December 2002 Kyoto Protocol. On 29 April 2008, Poland became a country that met all eligibility requirements needed for international emission trading.

Meeting Kyoto Protocol commitments by Poland

Poland made a commitment to reduce greenhouse gas emissions by 6% in the first Kyoto Protocol commitment period (2008-2012) against the base year (1988) and emissions of three basic gases: carbon dioxide, methane and nitrous oxide, and against 1995 base year for industrial gases from HFCs and PFCs groups and sulphur hexafluoride. The 6% reduction target for the first Kyoto Protocol commitment period (2008-2012) will be met with a surplus as the national GHG emissions have been reduced since the base year i.e. between 1988 and 2007, by 28.9% (without land use change and forestry).

The currently implemented upgrade and restructuring of enterprises will lead to energy efficient, energy-saving and environmentally friendly projects.

2 LEGAL FRAMEWORK RELATED TO CLIMATE CHANGE
2.2 Domestic regulations

The legal act which regulates matters of the EU system for emissions trading in Poland is the **Act on the Greenhouse Gas and Other Substance Air Emission Allowance Trading Scheme of 22 December 2004** (Polish Journal of Laws no. 281, item 2784), implementing the provisions of Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community (EU ETS).

The Act on the system of managing emissions of greenhouse gases and other substances of 17 July 2009 (Polish Journal of Laws no. 130, item 1070) established the conditions for managing the national limit of emissions of greenhouse gases and other substances in a manner ensuring Poland's meeting the international commitments. The new regulations also allow support of actions aimed at air and climate protection.

The Act establishes the National Centre for Emissions Balancing Management (KOBiZE). Its responsibilities are performed by the Institute of Environmental Protection in Warsaw. The Institute also plays the role of the National Administration for the Emissions Trading Scheme (KASHUE). The National Centre runs a national database of GHG and other substances emissions and the national registry of Kyoto units. Its responsibilities also include: developing emission indexes, drawing up reports and forecasts on GHG and other emission volumes, issuing opinions concerning joint implementation projects.

The new law establishes the National System of Emissions Balancing and Forecasting. The system will collect, process and report information on greenhouse gases and other emission volumes and forecast these volumes. The system also covers the trade in Kyoto units.

The act also introduces three mechanisms under the Kyoto Protocol into the Polish legal order – they refer to delivery of joint implementation projects (JI), clean development mechanism projects (CDM) and international emissions trading (IET). The act defines the terms of trading and managing Kyoto units, including signing contracts on the trade of the assigned amount units. Before the Minister of the Environment can enter into such a contract (for purchase or sales), it must be approved by the Council of Ministers.

Poland has a large surplus of assigned amount units (AAUs), therefore the act defines the mechanism of utilising revenues from the sales thereof. They will be spent on supporting innovative activities for the air and climate protection. To this end, the act establishes the National Green Investment Scheme. It should enhance the environmental effect of selling the surplus of assigned amount units. Funds raised this way shall be used to achieve an additional reduction of CO_2 and other GHG emissions.

The new regulations also define how joint implementation projects in Poland should be realized.

Poland's Climate Policy.
The strategy for reduction of greenhouse gas emissions in Poland by 2020

The strategic document on **"Poland's Climate Policy. The strategy for reduction of greenhouse gas emissions in Poland by 2020"** was adopted by the Council of Ministers on 4 November 2003. The strategic objective of the climate policy is Poland's participation in international community's efforts for climate protection by implementing the principles of sustainable development, in particular in improving energy use, extending forest and soil resources of the country, rationalising the use of raw materials and industrial products and rationalising waste disposal in a way ensuring maximum long-term economic, social and political benefits.

Poland's priority trends of actions in energy policy have been presented in the draft **Poland's Energy Policy by 2030** (draft of 4 September 2008) developed by the Ministry of Economy. These are:

- **improve energy efficiency,**
- **increase energy security,**
- **develop the use of renewable energy sources, including biofuels,**
- **develop competitive fuel and energy markets,**
- **reduce the energy industry's environmental impact.**

The planned actions in the area of reducing the energy industry's environmental impact include:

- **introduction of acceptable emission factors allowing achievement of the defined SO_2 and NO_x emission levels,**
- **introduction of standards reducing CO_2 emissions per electric energy unit by 20%,**
- **preferring power co-generation as the technology recommended when building new generation capacities,**
- **introduction of standards for construction of new power plants with supercritical parameters, capable of CO_2 capture,**
- **active participation in delivering the European Commission's initiative to build large-scale demonstration facilities with carbon capture and storage technologies (CCS),**
- **elimination of emissions from self-ignition and fires of dumps by recycling coal from mining waste stored at the dumps,**
- **defining the domestic capacities of underground carbon dioxide storage,**
- **support for actions to develop electric power generation technologies with smaller environmental impact, including pure coal technologies such as coal gasification.**

3 EMISSION INVENTORY

Poland submits detailed inventories on emissions and greenhouse gases absorption to the UNFCCC Secretariat. Inventory results are analysed and submitted as annual reports (National Inventory Report-NIR). Poland's assigned amount (AA) of emissions in the first commitment period (2008-2012) is **2.6bn** tonnes of CO_2 equivalent (after NIR 2009). The surplus for the period of 2008-2012 is estimated at approx. 500m tonnes of CO_2 equivalent.
The national inventory covers all greenhouse gases. Inventories are subject to regular review carried out by a team of international experts appointed by the UNFCCC Secretariat.

Table 2. Emission volumes per greenhouse gas – selected basic data for 2009, after NIR 2009.

2007	Gg		
	CO_2	CH_4	N_2O
Gross domestic emission (excluding the LULUCF sector)	328 275	1 725	99
Net domestic emission (including the LULUCF sector)	285 390	1 839	99
1. Energy	302 928	768	8
A. Fuel combustion	302 729	128	8
B. Volatile emissions from fuels	198	640	
2. Industrial processes	24 427	20	16
3. Use of solvents and other products	609		0,4
4. Agriculture		618	71
5. Land use, land-use change and forestry (LULUCF)	-42 885	114	0,008
6. Waste	312	318	4

In Poland, the dominant greenhouse gas is carbon dioxide. Its share in domestic greenhouse gases emissions is more than 82%. Of other gases, the most important as per CO_2 equivalent are methane – over 9% and nitrous oxide – nearly 8% (Fig. 3).

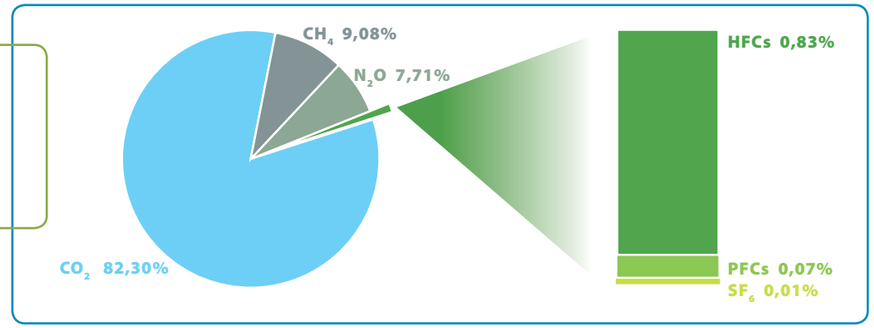


Fig. 3. Percentage shares of individual gases in domestic greenhouse gas emission excluding emissions and absorption from LULUCF in 2007.

In 2007, the total domestic greenhouse gas emission was at approx. 400m tonnes of CO_2 equivalent including GHG emissions and absorption in LULUCF. Against the baseline year, the emission volume in 2007 was down by 28.9% (Fig. 4). This emission reduction was mainly the result of the decreasing emission of carbon dioxide - the dominant GHG in Poland, and to a smaller extent – the decreasing emission of methane and nitrous oxide.

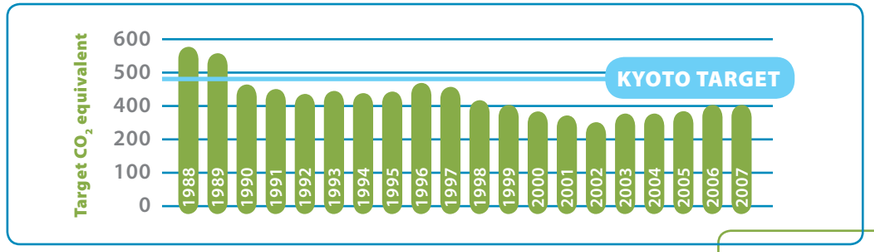


Fig. 4. Greenhouse gas emission trend in Poland between 1988-2007.

4 CLIMATE OBJECTIVES AND COMMITMENTS

(Climate-energy legislative package)

In March 2007, the European Council adopted the objectives on combating climate change, according to which by 2020 the European Union shall:

- **reduce greenhouse gases emissions by 20% (with optional 30% reduction provided that relevant international agreements are made to this end) against 1990 emission levels,**
- **increase the share of renewable energy in final energy consumption by 20%,**
- **increase energy efficiency by 20% against the forecasts for 2020,**
- **increase the share of biofuels in general transport fuel consumption to at least 10%.**

In January 2008, the European Commission presented a package of documents referred to as the climate-energy legislative package, which is aimed at delivery of the objectives adopted by the European Council in 2007. The climate-energy legislative package was adopted in December 2008.
Two key elements of the adopted package, relating to greenhouse gas emissions, are:

- **Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (also known as the EU ETS Directive),**
- **decision of the European Parliament and of the Council 2009/406/EC 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 (also known as the non-ETS decision or Effort Sharing Decision).**

The chart below illustrates the commitments in reduction of greenhouse gas emissions within the EU, while table 3 shows objectives for Poland also related to renewable energy sources.

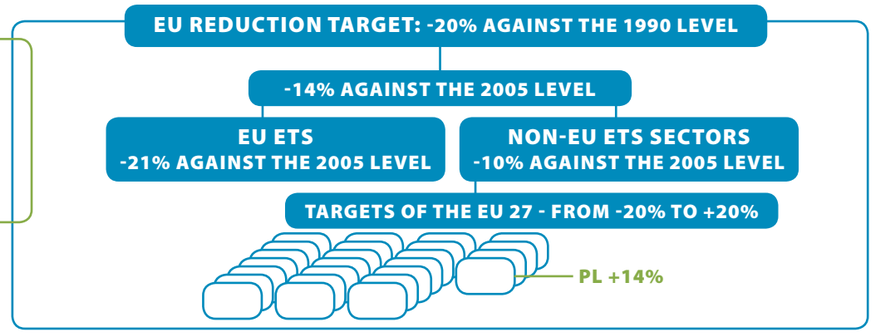


Fig. 5. Method of achieving EU 20% reduction objective stipulated by the climate-energy legislative package.

Table 3. Poland's objectives by 2020 under the Energy Climate Package

Poland's objectives by 2020 under the Energy Climate Package:	
acceptable emission change in non-ETS sector	+14%
emission reduction within ETS	-21%
Share of renewable energy sources in final demand for energy in 2020	15%

Due to the fact that the European Union Emission Trading Scheme (EU ETS) covers currently approx. 40% of emissions of all greenhouse gases, the EU ETS will be the main tool of emission reduction within the Community. It is expected that in the third phase of EU ETS implementation, in the years 2013-2020, GHG emissions should be reduced by 21% against the 2005 emission levels. The remaining 60% of the GHG emissions will be covered by the non-ETS decision. This decision provides for the entire EU the target of 10% GHG emission reduction in sectors not covered by the EU ETS scheme such as transport, agriculture, civil engineering. Within the non-ETS sector, the EU reduction target has been differentiated and some less affluent Member States may even increase their emissions in the period between 2013-2020. Pursuant to provisions of this decision, Poland can increase its emissions in the non-ETS sector by14%.

5 POLAND AS A RELIABLE INVESTMENT LOCATION

The system for funding environmental protection currently operating in Poland was established during the transition started in 1989. The main aim of the then established system was to guarantee funds to be allocated solely for the purposes of environmental protection, which in turn would allow Poland to change its status as of one of the most polluted European countries with environmental protection functioning at a level far from the level of other industrialised countries.
The main elements of the environmental protection system in Poland include:

- **special-purpose funds, such as: the National Environmental Protection and Water Management Fund (NFOŚiGW - with annual budget of over EUR 1bn) and the Regional Environmental Protection and Water Management Funds (WFOŚiGW - with annual budgets of approx. EUR 500m),**
- **EU funds – in 2007-2012 EUR 5 bn will be allocated only for environmental protection,**
- **foundations such as EcoFund,**
- **banks such as Bank Ochrony Środowiska (Environmental Protection Bank).**

The system is complemented by funds from the central budget, local government budgets and foreign aid, by leasing institutions and investment funds. Expenditure in Poland in 1990-2007 totalled:

- **for environmental protection – around EUR 21.5bn**
- **for water management – nearly EUR 6bn.**

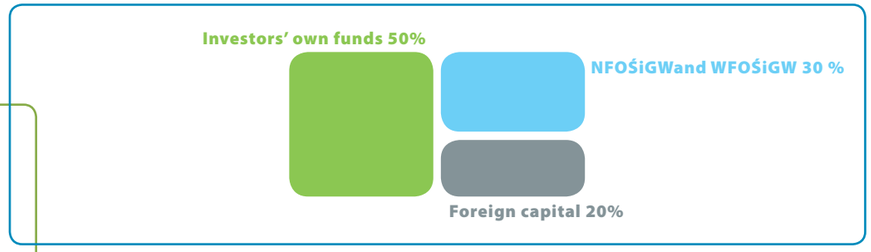


Fig. 6. shows the structure of funding sources in 2007.

- **The National Fund for Environmental Protection and Water Management (NFOŚiGW)** is the leading institution in the environmental protection funding system countrywide. Sources of income of the National Fund include two categories: fees and operating income, and dividends from shares held in companies.
  Throughout the history of its operation, NFOŚiGW has signed more than 14 thousand contracts for projects to improve the condition of the natural environment totalling approx. EUR 5.1bn.
  Expenditures in the recent years were on average approx. EUR 360m per year.

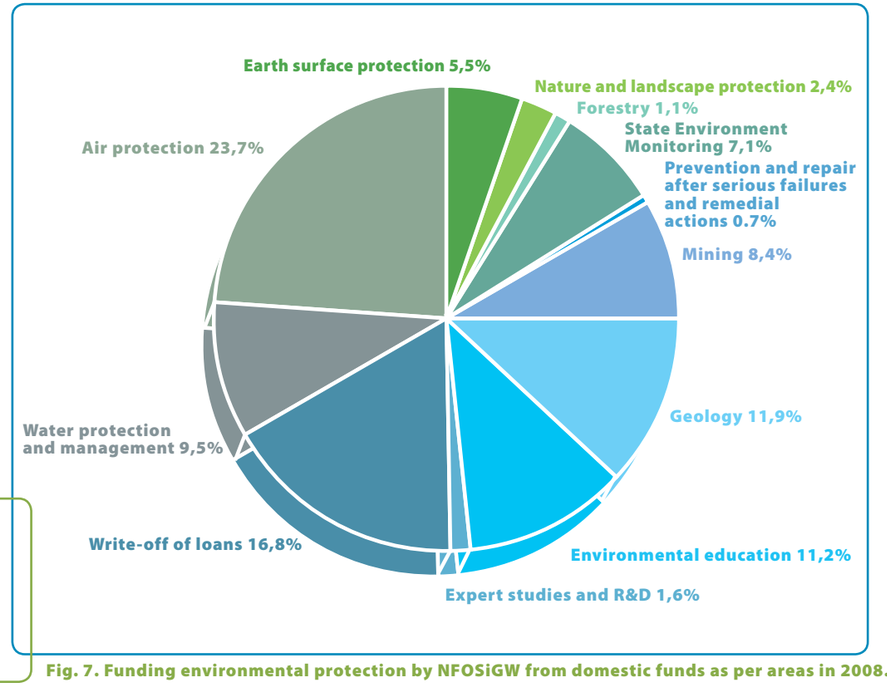
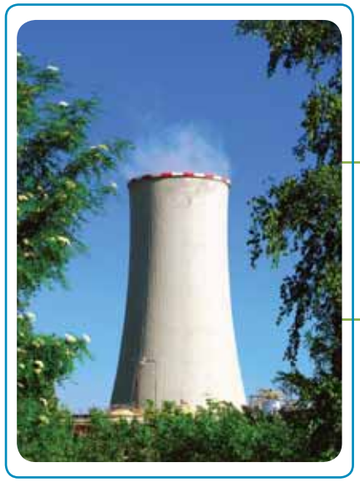


Fig. 7. Funding environmental protection by NFOSiGW from domestic funds as per areas in 2008.

There are also:

- **Regional Funds for Environmental Protection and Water Management (WFOSiGWs)** which by2008 have spent approx. EUR 4bn domestically to subsidise more than 72,000 investment projects and educational and research projects.
- **Ecofund**, established in 1992 to manage the funds from debt-for-environment swap. By 2007, it spent around EUR 400m as subsidies for investment activities in environmental protection, including EUR 184m for climate protection.
- **Bank Ochrony Środowiska (BOŚ)** (Environmental Protection Bank) which provided support for approximately 29,000 environmental investments of nearly EUR 7.2bn, by subsidising them with around EUR 2bn.
- **Funds from the European Union and other foreign funds**, including the Cohesion Fund which cofinances 88 key environmental investments in Poland totalling EUR 2.85bn. It is also the basic source of funding for environmental projects under the Operational Programme Infrastructure and Environment (2007-2013) totalling EUR 4.8bn.

Having in mind the above information on the funding system for the environmental protection sector in Poland, and considering the Act on the system of managing emissions of greenhouse gases and other substances of 17 July 2009 (Polish Journal of Laws no. 130, item 1070) which stipulates financial support for projects and programmes under the Green Investment Scheme from funds sourced by trading the assigned amount units (AAUs) based on the Kyoto Protocol, it should be said that it is an innovative system, the only one of its kind in Europe.



6 JI MECHANISM AND GIS

6.1 JI mechanism

The joint implementation mechanism (JI) – pursuant to Article 6 of the Kyoto Protocol – is aimed at meeting the reduction commitments by the countries listed in Annex I to the UNFCCC by creating the opportunity of accepting reductions achieved as a result of investments in another country listed in Annex I to the UNFCCC. The Investing Country reduces its emission reduction costs (compared to the cost required for domestic investments) and increases its emission allowance. The Host Country (project host) meanwhile gains the environmentally friendly, state-of-the-art technologies. Emission Reduction Units (ERU) are transferred from the host country to the investing country. ERUs can be generated in the period of 2008-2012 and transferred to Annex I countries as a method of meeting their obligations under the Kyoto Protocol in an economically effective way.

Among JI projects delivered in Poland, the largest number are projects in renewable energy and N_2O emission reduction. By the 21st of September 2009 there were fourteen JI projects approved in Poland. The estimated volume of greenhouse gases emissions reductions in 2008-2012 will be around 16m tonnes.

Pursuant to **the Act on the system of managing emissions of greenhouse gases and other substances of 17 July 2009**, the body responsible for approving JI projects is the Minister of the Environment. The Act also transposes the requirement imposed by international regulations under the Kyoto Protocol, to introduce national guidelines on the procedure to approve and deliver joint implementation projects (Decision 9/CMP.1). Delivery of joint implementation projects in Poland requires obtaining a letter of endorsement and then a letter of approval. Both letters are issued as an administrative decision by the Minister of the Environment.

6.2 GIS

Green Investment Scheme - (GIS) is a concept of AAUs trade based on Article 17 of the Kyoto Protocol related to using the funds from such trade for the delivery of environmentally-friendly projects and programmes to combat adverse climate changes and reduce greenhouse gas emissions (aka "**greening**" of the units). Although Kyoto Protocol obligations apply to the years 2008-2012, the projects under GIS can be delivered over a longer term.

Funds from GIS can be allocated both for projects directly reducing GHG emissions (projects with measurable emission reductions – aka "**hard greening**") and projects indirectly enhancing the country's capability to meet all obligations related to climate change, creating a widely understood climate change policies and strategies (projects with non-measurable emission reductions – aka "**soft greening**")

Till now, the Green Investment Scheme has not been formally sanctioned as an international legal instrument but some countries introduced internal regulations allowing the use of its AAU surpluses through this scheme.

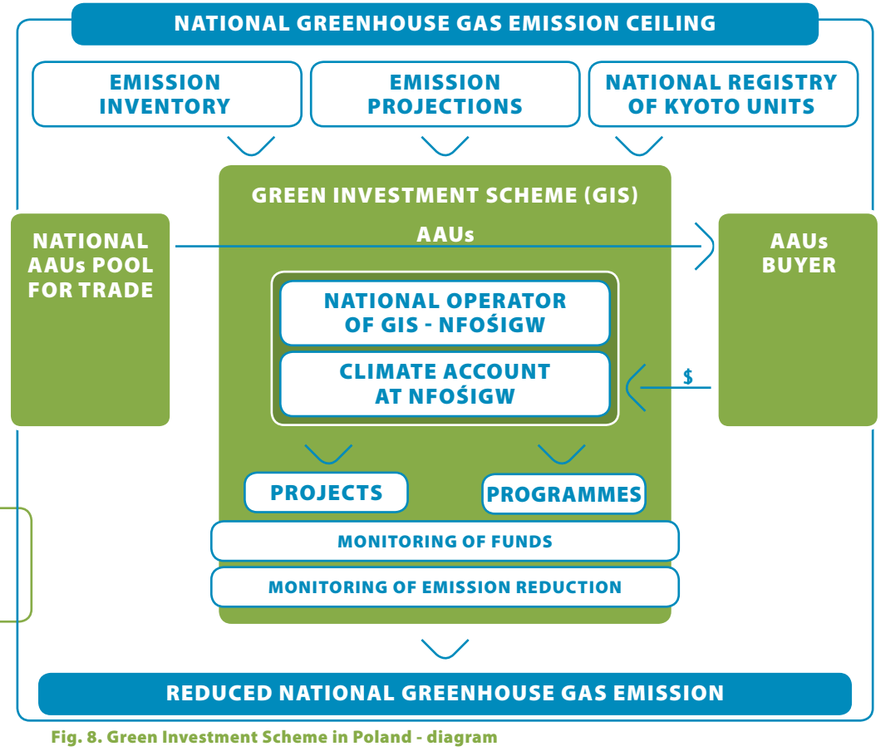


Fig. 8. Green Investment Scheme in Poland - diagram

In Poland, the Act on the system of managing emissions of greenhouse gases and other substances of 17 July 2009 established the National Green Investment Scheme under which revenues obtained from trading the assigned amount units in the years 2009-2012 shall be allocated for funding domestic measures such as:

- **programmes or projects related to environmental protection, in particular to reduction or avoidance of domestic greenhouse gases emissions, absorption or sequestration of carbon dioxide,**
- **actions to adapt to the climate change,**
- **other actions related to air protection.**

The above programmes or projects will be delivered in the following areas:

1) **improvement of energy efficiency in various economy sectors,**
2) **improvement of coal use efficiency including that of pure coal technologies,**
3) **replacement of the fuel currently used with a low-emission one,**
4) **avoidance or reduction of greenhouse gas emissions in the transportation sector,**
5) **use of renewable energy sources,**
6) **avoidance or reduction of methane emissions by recycling and use in mining industry, waste and waste-water disposal and in farming, as well as by use in power generation,**
7) **actions related to greenhouse gas sequestration,**
8) **other activities to reduce or avoid national emission of greenhouse gases or absorb carbon dioxide (CO_2) and adapt to climate changes,**
9) **conducting research and development on the use of renewable energy sources and advanced and innovative environmentally-friendly technologies,**
10) **educational activities, including training events in support of the national commitments under the Kyoto Protocol.**

The national Green Investment Scheme is managed by the National Operator of the Green Investment Scheme whose responsibilities have been given to the National Fund for Environmental Protection and Water Management (NFOŚiGW). The key responsibility of the National Operator is to hold admission of request for financial support, evaluate these requests, supervise implementation and delivery, and control final environmental effects of the implemented projects, as well as to monitor the funds spent. Funds from trading the assigned amount units are collected in a separate Climate account at the National Fund for Environmental Protection and Water Management. These funds may be deposited into separate sub-accounts within the Climate Account if this is stipulated in the contract of trade of the assigned amount units.

Contact point for GIS is the Ministry of the Environment:

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APPENDIX 1

CONTACT DETAILS TO INSTITUTIONS RESPONSIBLE FOR CLIMATE PROTECTION IN POLAND

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