



Energy Efficiency trends and policies in Poland

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Monitoring EU and national energy efficiency targets

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SUMMARY

The basis of a sustainable energy policy is increasing the energy efficiency of energy generation, transmission and use. It is the legislation and action of national institutions. EU Directive 2012/27/EU from 25 October 2012 on energy efficiency requires EU member states to implement energy efficiency improving instruments which will facilitate achieving 20% final energy savings by 2020. For Poland this target is set at 96,4 Mtoe.

Poland actively participates in creating common energy policy and energy efficiency legislation, and applies them nationally, while protecting the interests of consumers, taking into account available energy resources and the technological conditions of energy generation and transmission. Poland pursues the indicative target set by Directive 2006/32/EC of the European Parliament and Council. Up to 2013 Poland achieved the majority of the set energy savings.

Poland systematically improves the energy efficiency of its entire economy, as well as in the case of most of its economic sectors. Over the past 10 years primary energy consumption decreased by more than 3% annually, and final energy consumption decreased by more than 2% per year. The fastest rate of energy efficiency improvement was observed in the industrial sector while improvement was slowest in the services sector. Increased economic activity requiring more energy and increasing energy efficiency had the biggest impact on decreasing energy consumption. Poland's rate of improving energy efficiency and its energy consumption was above the EU average.

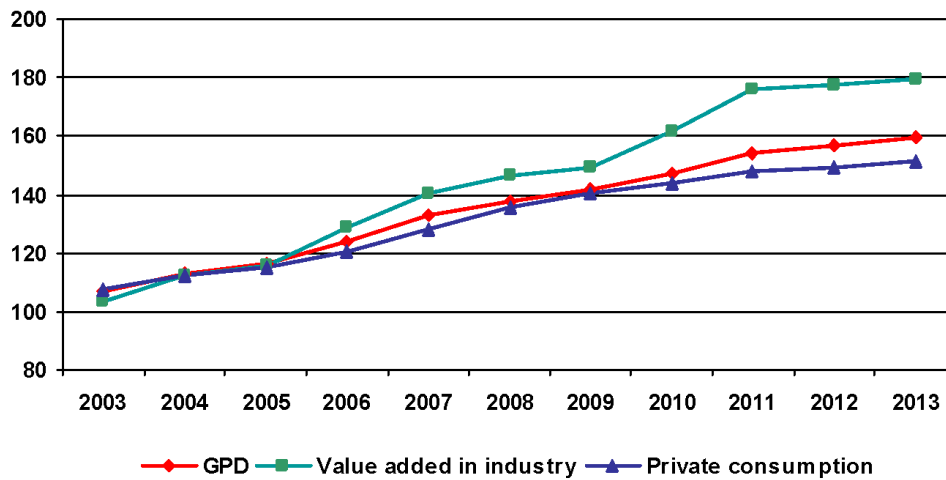
The necessity of meeting the requirements for monitoring the effects of activities aimed at improving energy efficiency, enabling international comparison, requires changes to the way statistical data is collected. This entails expanding the subjective and objective scopes of the research conducted and the availability of public data sources.

1. ECONOMIC AND ENERGY EFFICIENCY CONTEXT

1.1. ECONOMIC CONTEXT

Between 2002 and 2012 Poland's GDP grew continuously, having grown 52% by the end of that period. The fastest rate of increase of added value was achieved in the industrial sector. The growth of individual consumption was slightly lower than the rate of GDP growth.

Figure 2 Dynamics of basic macroeconomic indicators (2000=100)



A GDP growth rate higher than the growth rate of energy consumption has, with the exclusion of 2010, resulted in decreased primary and final GDP energy consumption (Fig. 8-9, Table 1). Between 2004 and 2006 energy consumption decreased by over 2% annually. Between 2007 and 2009 its rate exceeded 5% in terms of primary energy consumption, and closer to 4% in the case of final energy. In 2010-2013 the rate of improvement remained closer to 2003-2006 levels.

Tab 1 Annual rate of changes in GDP energy indicators (%/annually)

Growth rate	2004-2006	2007-2009	2010-2013	2004-2013
Primary consumption of GDP	-2,51	-5,29	-2,18	-3,22
Primary consumption of GDP with climate corrections	-2,29	-5,26	-2,26	-3,18
Final consumption of GDP	-1,85	-3,82	-2,20	-2,58
Final consumption of GDP with climate corrections	-1,48	-3,80	-2,32	-2,52

The primary to final energy consumption index oscillated between close to 60% and up to 65%. It reached its highest in 2012 with 64,4%, and in 2013 decreased to 62,6%. It is chiefly affected by the efficiency of energy transformation (higher efficiency - higher index) and the rate of growth of electrical energy consumption (higher rate - lower index)

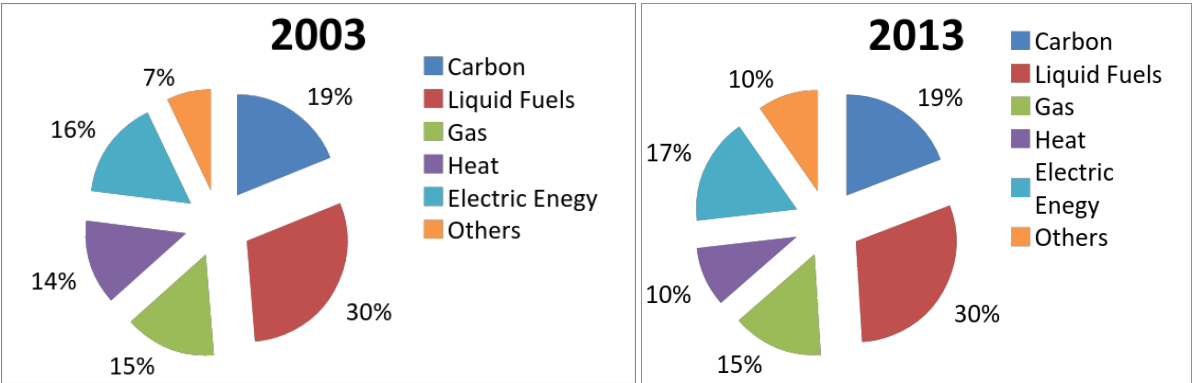
1.2. TOTAL ENERGY CONSUMPTION AND INTENSITIES

Between 2003 and 2013 the total primary energy consumption increased from 91 Mtoe to almost 98 Mtoe (0,7%/annually). Consumption decreased in 2009 and between 2012 and 2013.

During the same period the average rate of final energy consumption increased by 1,4%. In absolute values this means an increase from 54 Mtoe to over 62 Mtoe. As seen above consumption decreased in 2009 and between 2012 and 2013. After considering different weather conditions, so accounting for climatic corrections, between 2003 and 2013 the rate of growth was 1,4%.

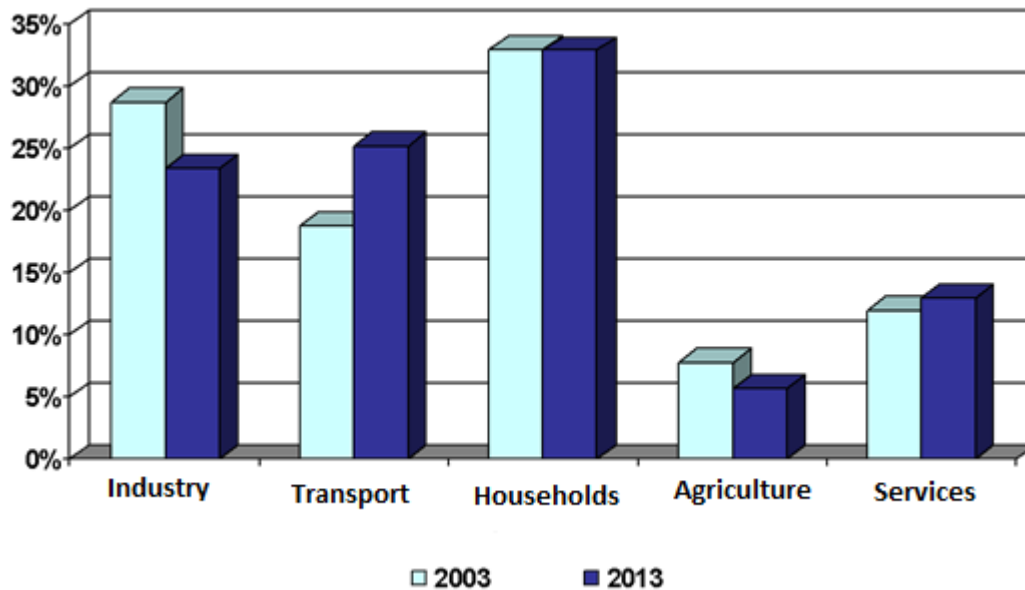
Traditionally the Polish energy industry was focused on using Poland’s own resources, which also affected the types of fuel used in other industries in the primary economic sector. Black and brown coal are the main source of primary energy. For final energy consumption the main source are liquid fuels, which in 2003 and 2013 shared 30% of the market. The share of coal (both black and brown) remained steadily at 19% between 2003 and 2013. Similarly the share of gas did not change at 15%. Other energy sources saw a significant increase reaching a 10% share in final energy consumption. The share of heat was identical to that of other energy sources (10%), and in fact decreased. The share of electrical energy increased by 1% (17%).

Figure 3. Poland’s structure of final energy consumption according to energy sources



Between 2004 and 2013 the share of transport in final energy consumption increased the most - from 19% to 25%. Increased consumption was also noted in the service sector (13% in 2013). The industrial, domestic households and agriculture sectors saw a decrease in their overall share in final energy consumption. However domestic households remained the biggest consumer of final energy with 33%.

Figure 4 Poland's structure of final energy consumption according to sectors



1.3. ENERGY EFFICIENCY POLICY BACKGROUND

The documents defining energy efficiency policy in Poland are:

- Poland's Energy Policy up to 2030 ;
- National Energy Efficiency Action Plan (NEEAP) 3 (1, 2, 3 from 2007, 2012 and 2014 respectively), required by the 2006/32/WE Directive.

The Law on Energy Efficiency (Dz. U. Nr 94, poz. 551) was passed in 2011 with the aim of developing mechanisms stimulating improvements in energy efficiency. Chiefly among other things it introduced a legal requirement of acquiring an appropriate number of white energy efficiency certificates for energy companies trading electric energy, heat or natural gas to end users connected to the network in Poland.

The 2014 NEEAP 3 on energy efficiency reviews the achieved improvements in energy efficiency, introduces targets for 2020 and updates the actions and resources already completed, as well as those planned for the future.

1.3.1. ENERGY EFFICIENCY TARGETS

The main objective of Poland's energy efficiency policy is achieving a 13,6 Mtoe decrease in primary energy consumption, which fulfils article 3 of act 1 of Directive 2012/27/UE. During times of economic growth this involves the improvement of energy efficiency. Analyses conducted for the purpose of the "Polish energy policy up to 2030" indicate that limiting primary energy consumption will be the result of a wide range of already implemented projects, as well as ambitious actions improving energy efficiency, as stated in the country's energy policy.

As to final energy savings between 2014 and 2020, they are to be achieved using a standard program. Energy savings equal to at least 1,5% of average annual energy sales to end user must be achieved by energy suppliers and energy retailers, beginning from 1 January 2014 up to 31 December 2020.

The table below shows the targets for final energy savings for 2020 as well as those achieved in 2010 and those expected by 2016.

Table 2 Review of final energy saving targets

	Target in terms of savings of final energy		Savings of final energy achieved in 2010 and expected in 2016	
	in absolute values (Mtoe)	as a percentage of average consumption from 2001-2005 (%)	in absolute values (Mtoe)	as a percentage of average consumption from 2001-2005 (%)
2010	1,02	2%	4,24	8,3
2016	4,59	9%	7,09	13,9

Planned savings can also be achieved by implementing horizontal measures as well as actions tailored individually for each of the considered economic sectors - industry, transport, construction. This section of the report deals only with horizontal measures. Other measures will be enumerated in appropriate subsections.

Horizontal measures:

- **Obligatory energy efficiency certificates(white certificates)**

Entities trading in energy, heat or natural gas are required to obtain and produce Energy Efficiency Certificates, or pay a substitute fee to the President of the Energy Regulatory Office. The objective of the program is supporting actions improving the energy efficiency of the economy, increasing the energy saving for end users and personal use appliances, and finally, reducing the losses of electricity, heat and gas in transmission.

The white certificate scheme supports energy saving measures. The certificates are issued by the President of the Energy Regulatory Office. Property rights from white certificates are transferable and are part of the commodity and regulated markets.

- **Intelligent Energy Networks (ISE) - Priority Programme of the National Fund for Environmental Protection and Water Management (NFOŚiGW)**

The aim of the NFOŚiGW programme is financing: educational and promotional actions, implementation of intelligent measurement and information networks, balancing and optimizing energy use, implementation of distributed renewable energy sources, energy storage, intelligent energy efficient lighting, as well as the development of information systems and specification standards.

- **Operational programme Infrastructure and the Environment 2014-2020 (Investment Priority 4.iv.) – Development and implementation of intelligent distribution systems for average and low voltage networks.**

The Ministry of Economy programme is planned to begin in 2015 and end by 31 December 2023. The programme will be managed by the Ministry of Infrastructure. Its aim will be intensifying the development of renewable energy sources and increasing energy efficiency through optimizing and rationalizing the use of electricity consequently meeting the targets of the EU climate and energy policies.

The programme consists of supporting the construction of proof-of-concept intelligent networks. It will also include projects concerning modernization and development of low and average voltage distribution networks connected to a smart grid, which would allow connecting renewable energy sources (RES) and limiting network losses. Financing will go to intelligent measurement devices and monitoring systems as well as intelligent network management systems.

- **Informational and educational campaigns**

This has been a Ministry of Economy programme since 2012. Its aim is promoting public behaviour contributing to energy savings through informational and educational campaigns aimed at end users and domestic households. The campaigns are also meant to increase social awareness on energy efficiency issues, financing, low-energy buildings and other issues concerning energy use and the environment.

Nationwide campaigns which are part of the programme promote using energy efficiency improving measures, including the implementation of innovative technologies by public sector entities.

The informational and educational campaigns include publishing handbooks and guidebooks on the available resources and their use, available on Ministry and affiliate websites.

The main theme is energy use. The Ministry of Economy is tasked with monitoring the campaigns and estimating the resulting energy savings by 2016, as well as preparing and delivering a report to the European Commission.

- **Cogeneration certificates for electricity (Red certificates);**
- **Green certificates scheme;**
- **Requirement to purchase electricity from RES and cogeneration;**
- **NFOŚiGW activities;**
- **Regional operational programmes for 2014-2020.**

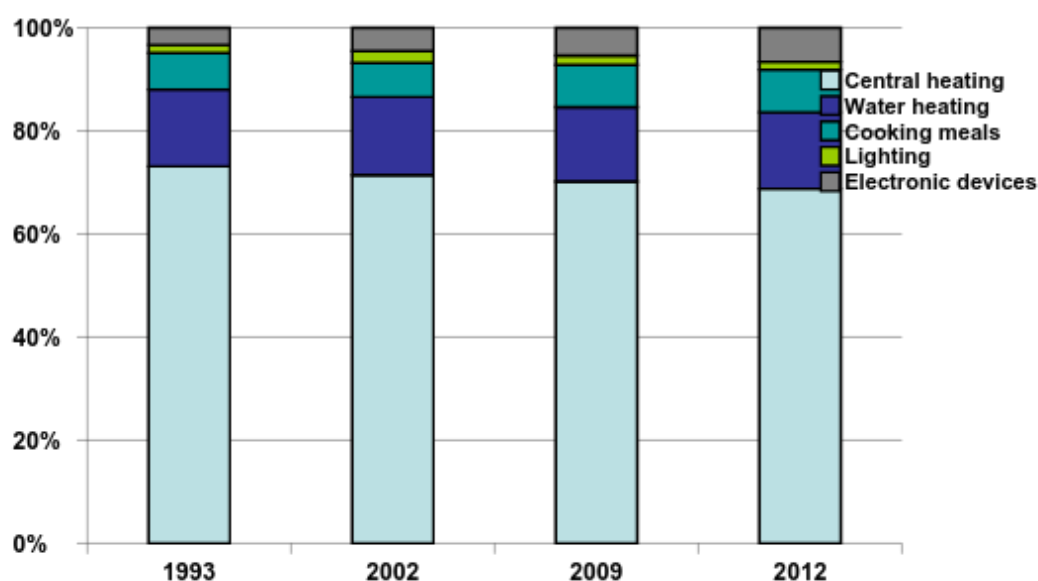
Regional operational programmes are about supporting energy efficiency, intelligent energy management, and the use of RES in public infrastructure, that is public use buildings and housing, using funds from the European Regional Development Fund. Operational areas have been divided between the Infrastructure and Environment Operational Programme and Regional Operational Programmes which facilitate comprehensive modernisation of energy consumption in public use buildings and housing as well as energy audits of those investments.

2. ENERGY EFFICIENCY IN BUILDINGS

2.1. ENERGY EFFICIENCY TRENDS

In 2013 the share of final energy use for domestic households was 33%. Figure 5 and Table 2 show the structure of domestic household energy consumption according to end use, the result of research questionnaires from 1993, 2002, 2009 and 2012 by the Central Statistical Office.

Figure 5 Structure of domestic households energy consumption according to end use



Tab 3 Structure of domestic household energy consumption according to end use (%)

Specification	1993	2002	2009	2012
Overall	100,0	100,0	100,0	100,0
Central heating	73,1	71,3	70,2	68,8
Water heating	14,9	15,0	14,4	14,8
Cooking meals	7,1	7,1	8,2	8,3
Lighting	1,6	2,3	1,8	1,5
Electronic devices	3,3	4,3	5,4	6,6

Between 2003 and 2013, without climate corrections, domestic household energy consumption increased at a rate of 0,4% annually. 2008 saw the lowest consumption, which was partially the consequence of favourable weather conditions that year. Conversely consumption was highest in 2010, also the consequence of weather conditions. In 2013 energy consumption per household equalled 1,47 toe.

Taking climate corrections into account, between 2003 and 2013 energy consumption increased from 1,43 to 1,50 toe/household, indicating an annual increase of 0,5%. Energy consumption was at its lowest in 2003, followed by a three year growth period. Since 2006, taking into account climate corrections, there has been a decreasing tendency in energy consumption.

A similar trend can be observed in energy consumption per m², although its rate of improvement is higher, the result of the progressive increase in average accommodation size. Overall consumption per m² saw an improvement of 0,3% annually, and 0,1% annually when taking climate corrections into account.

Household energy consumption per accommodation increased irregularly up to 2010 and decreased in the following years. In 2013 it was 2053 kWh per accommodation.

2.2. ENERGY EFFICIENCY POLICIES

Energy efficiency measures for buildings and public institutions:

- **Thermo-modernisation and Renovation Fund**

The aim of the programme is co-financing investments implementing thermo-modernisation and renovation measures in detached housing using loans from commercial banks. Measures which are part of the programme are meant to lower the energy required for heating domestic hot water and decrease the loss of primary energy in local heating networks. It also includes connections to centralized heating plants after the elimination of local heating systems which results in lower heating costs. The programme also includes total and partial change to renewable energy or combined heat and power (CHP) sources.

- **Priority Programme: Green Investment Scheme, Part 1 - Managing energy in public use buildings**

The programme could finance measures in public use buildings, as well as group temporary housing and permanent housing. It also includes thermo-modernisation measures of public use buildings, including changing appliances to economically feasible high energy efficiency standards.

- **Operational Programme Infrastructure and the Environment 2014-2020 (Priority investment 4.iii) - Supporting energy efficiency, intelligent energy management and the use of renewable energy sources in public infrastructure, including public buildings and housing**

The programme is meant to improve the condition of the local environment by limiting pollution particularly harmful to people.

It includes funding for deep comprehensive modernisation of multiple-family housing, which increase energy efficiency and RES use. A condition necessary for these projects is preparing energy audits, which will allow the verification of actual energy savings. Buildings with the highest energy saving potential have priority.

- **Priority Programme: Energy efficiency improvement, Part 3 - Co-financing of loans for the construction of energy efficient housing**

The programme's objective is improving energy efficiency and limiting CO₂ emissions by financing, by co-financing enterprises improving efficient energy use in newly built housing.

Co-financing as part of the programme can be awarded for the construction or purchase of a detached house, or the purchase of an accommodation in a new multi-family housing building, provided that it meets the set energy standard of the programme guidelines.

- **Operational Programme PL04 - "Energy saving and promoting renewable energy sources" as part of the EOG financing mechanism between 2009 and 2014 (area 5 -energy efficiency, and area 6 - renewable energy)**

The aim of the programme is reducing greenhouse gas emissions and air pollution, as well as increasing the share of energy from renewable energy sources in overall energy consumption. It concerns thermo-modernisations of public use buildings and other actions required for achieving lower energy consumption levels required for building operation. The programme also involves renovation or replacement of existing energy sources servicing public use buildings with modern, energy efficient and ecological electricity and heating sources with up to 5MW nominal capacity

generated from RES, or heat and energy generated from cogeneration/trigeneration, as well as modernisation or replacement of old heating plants with a combined capacity up to 3MW servicing public use buildings.

- **Priority programme: Green Investment Scheme. Part 5 - Managing energy in buildings of chosen public finance sector entities**

The programme was introduced with the aim of limiting or avoiding CO₂ emissions by co-financing activities improving energy efficiency in buildings of chosen public finance sector entities.

It includes building thermo-modernisation, changing appliances to economically feasible high energy efficiency standards connected directly with the building's thermo-modernisation.

- **Priority Programme: Energy efficiency improvement. Part 2 - LEMUR - Energy Efficient Public Use Buildings**

The programme aims to avoid CO₂ emissions connected to planning and construction of new energy efficient public use buildings and communal housing.

The programme includes financing for the planning and construction, or exclusively construction of new public use buildings or communal housing.

- **Operational Programme Infrastructure and the Environment (POIŚ) 2007-2013 (Action 9.3) - Thermo-modernisation of public use buildings**

The aim of the programme was decreasing energy consumption in the public sector, as well as preparing plans for a low-carbon economy, which is expected to contribute to meeting air quality standards defined in Directive 2008/50/WE of the European Parliament and Council from 21 May 2008 on air quality and cleaner air for Europe.

Some examples of projects implemented as part of the programme:

- Thermo-modernisation of public use buildings along with the replacement of appliances to energy efficient ones,
- Preparing technical documents for projects, including investment documentation for a systematic thermo-modernisation project for public use arts buildings,
- Preparing and updating low-carbon economy plans in municipalities along with supporting municipalities in obligatory actions.

- **Priority programme: Efficient energy consumption. Part 6 - SOWA - Energy saving street lighting**

The programme aims to limit CO₂ emissions by financing activities improving the energy efficiency of lighting systems. The programme includes financing for lighting modernisation, installing intelligent lighting management systems, and installing systems for remotely reducing power and stabilization.

- **Increasing the market for energy efficiency products;**
- **Exemplary role of public sector;**
- **Technical standards for buildings and spatial planning.**

The technical standards which buildings should meet and their planning is defined by the Law from 12 April 2002 (Law Gazette 75, pos. 690), along with further amendments, developed on the basis of art. 7 act. 1 pos. 2 of the Law on Construction from 7 July 1994.

3. ENERGY EFFICIENCY IN TRANSPORT

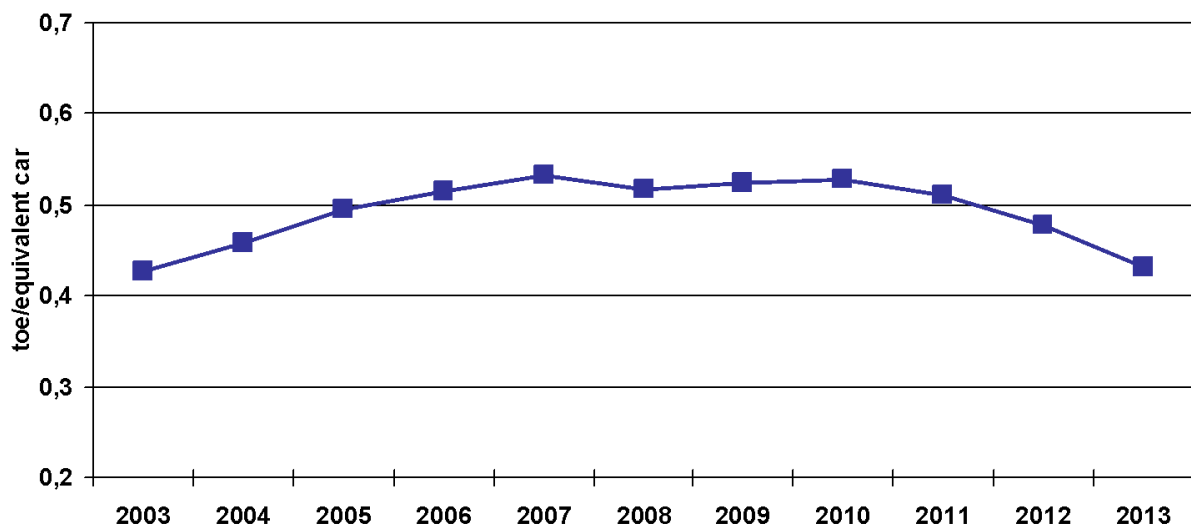
3.1. ENERGY EFFICIENCY TRENDS

The transport sector saw the highest increase in energy consumption. This was primarily due to the increase in activity and structural changes (rise in the share of road transport). Energy savings decreased consumption by almost 3 Mtoe.

Between 2004 and 2013 the average annual rate of fuel consumption increase in road transport was 4,7%, with a clear concurrent (35%, 4,2%/annually) decrease in energy consumption of rail transport. The overall average annual rate of fuel consumption increase in transport (excluding air transport) was 4,3% annually between 2004 and 2013.

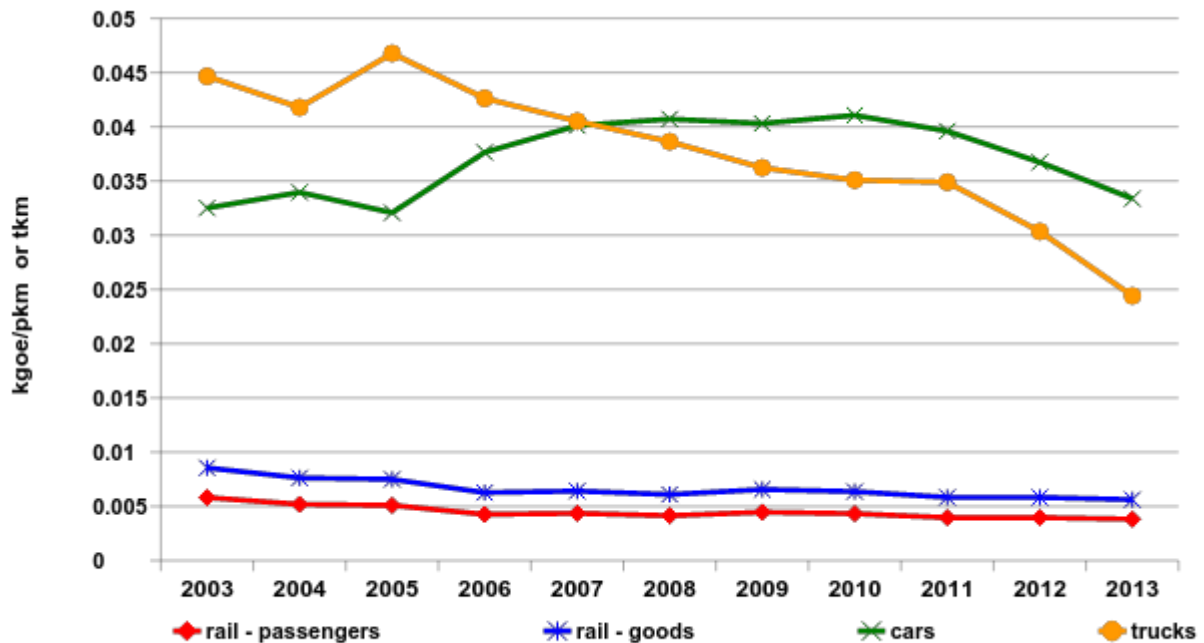
Figure 6 below shows the per unit indicator for fuel use per car equivalent. After an increase in 2007 the indicator fluctuated negligibly above 0,5 toe/car equivalent. After 2011 there was a decrease in fuel consumption per car equivalent, which was 0,432 toe in 2013 was 0,432. The indicator is mainly affected by the country's economic situation, varying fuel prices as well as the increasing efficiency of newer cars.

Figure 6 Fuel consumption per car equivalent



In the given period the fastest rate of efficiency improvement was noted in freight transport by lorries; the rate of improvement was 5,9%/annually. In the case of rail transport the rate of improvement was 4,1%/annually.

Figure 7 Energy intensity in transport



3.2. ENERGY EFFICIENCY POLICIES

Energy efficiency measures in transport:

- **Operational Programme Infrastructure and the Environment 2007-2013 (Activity 7.3) - Public transport in metropolitan areas and (Activity 8.3) - Development of intelligent transport systems**

The aim of the programme was improving the efficiency of the traffic management system through the implementation of Intelligent Transport Systems in road, sea, inland, city, and international transport and logistics as well as the purchase of new vehicles, primarily city buses, and the promotion of eco-driving among vehicle users which was meant to lower energy consumption for transport purposes.

The programme included the adoption, construction, renovation and expansion of rail and trolleybus networks. Another part of the programme was Increasing the use of rail transport by creating areas of limited or regulated transport access, as well as transport modernization and promoting eco-driving among road users.

- **Priority Programme : Green Investment Scheme. Part 7 – GAZELA – Low-carbon public transport**

The aim of the programme is limiting or avoiding CO₂ emission by co-financing measures of lowering energy and fuel use in public transport.

It includes measures concerning the fleet (mostly city buses), infrastructure and management along with modernization or construction of refueling stations for group transport, modernization or

construction of bike paths, modernization or construction of bus passes, modernization and construction of Park and Ride facilities, implementing public transport management systems and city bikes.

- **Operational Programme Infrastructure and the Environment 2014-2020**

The programme's aim is the development and increased use of low-carbon public transport in functional cities. It also includes investments into infrastructure, fleet, and comprehensive telematic measures improving the functionality of public transport. There is also the option of implementing projects merging all the above mentioned initiatives.

- **Cities for Bicycles Project**

This is a comprehensive suite of measures for improving the effectiveness of social input into bike policy at the local and national levels. It relies on solving problems such as limited mobility and poor living conditions in cities such as traffic, noise, smog, air pollution, and area degradation all caused by increasing numbers of cars.

- **Vehicle speed limits;**
- **Obligatory vehicles inspections;**
- **Traffic management and optimizing goods and people transport;**
- **Fuel tax;**
- **Highway tolls;**
- **Means of transport tax;**
- **Promotion of biofuels in transport**

4. ENERGY EFFICIENCY IN INDUSTRY

4.1. ENERGY EFFICIENCY TRENDS

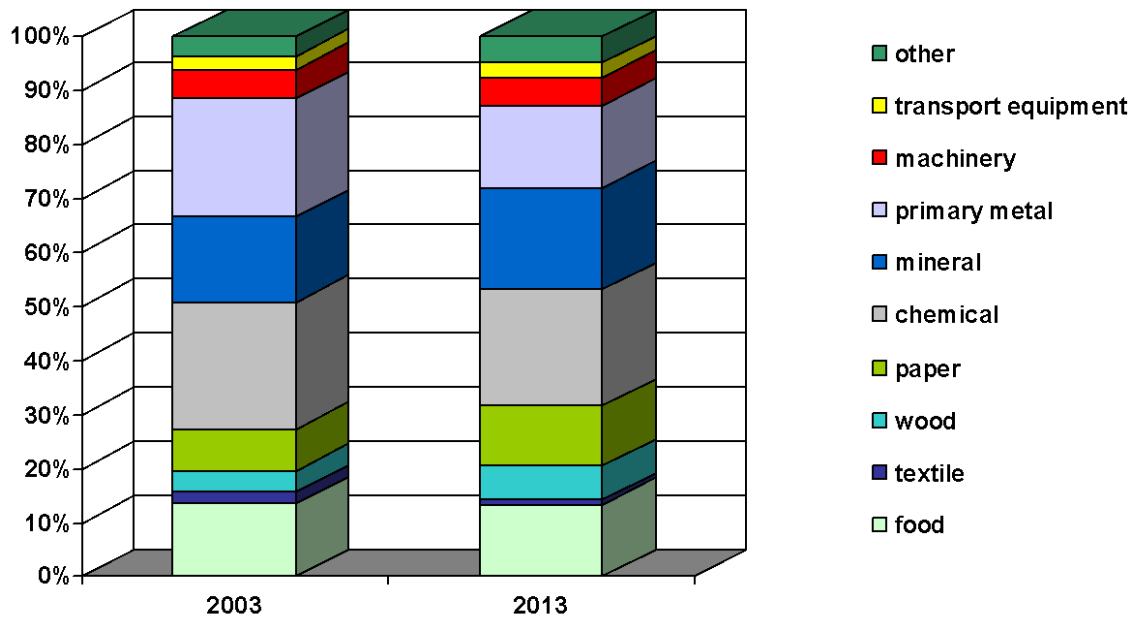
The final energy consumption in industry between 2003 and 2013 fluctuated irregularly. Consumption was at its highest in 2007, and was followed by a decrease to below 14 Mtoe levels in 2010. From that point onward it increased irregularly. (Note: since 2010 a different algorithm is used for calculations concerning heat, which resulted in a 0,8 Mtoe decrease in industrial energy consumption in comparison to the old methodology). Fuel use according to fuel type shows a decrease in coal and liquid fuels use, and an increase in natural gas, electricity and other energy carriers. Heat use decreased.

Figure 8 shows the change in the share of different industry branches in the total industrial energy consumption. About 55% of the energy was used by energy-intensive industries: chemical, mineral and steel industries.

In comparison to 2003, the highest decrease of over 6% was noted in the steel industry. The chemical, food, machinery and textile industries also noted a decrease in energy consumption.

The wood, paper, mineral, transport and other industries noted an increase in energy consumption. In the case of wood, paper and mineral industries this growth was significant. In the case of the other industries the change was small.

Figure 8 Structure of industrial manufacturing's share in final energy use



The highest rate of improvement was noted by the machinery, textile, steel and transport industries. Improvement was slowest in the wood, paper and other industries.

Figure 9 Energy consumption indicators for high energy intensive industries

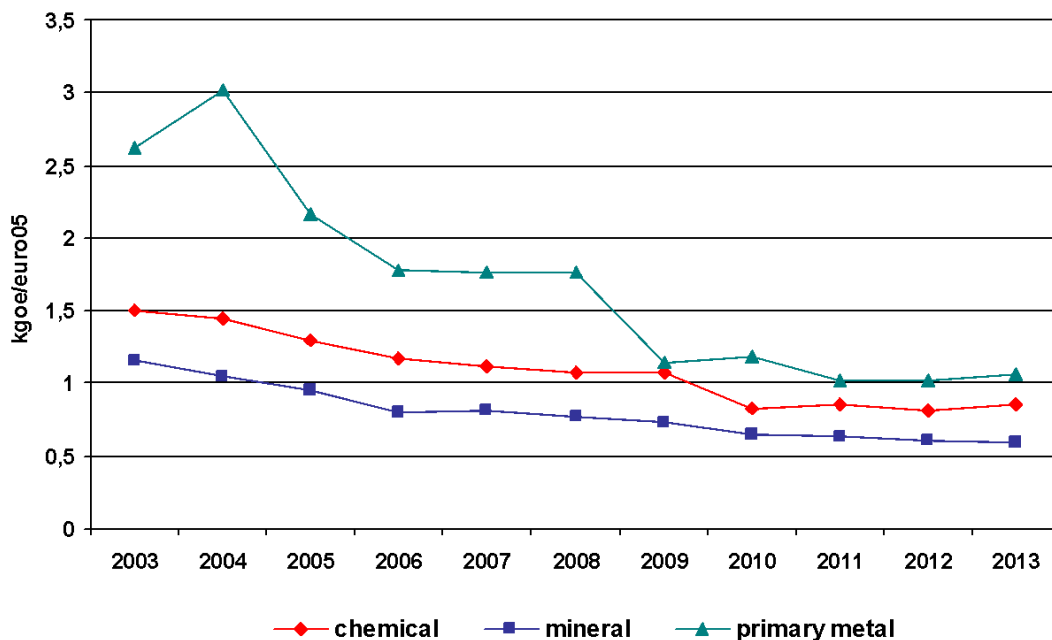
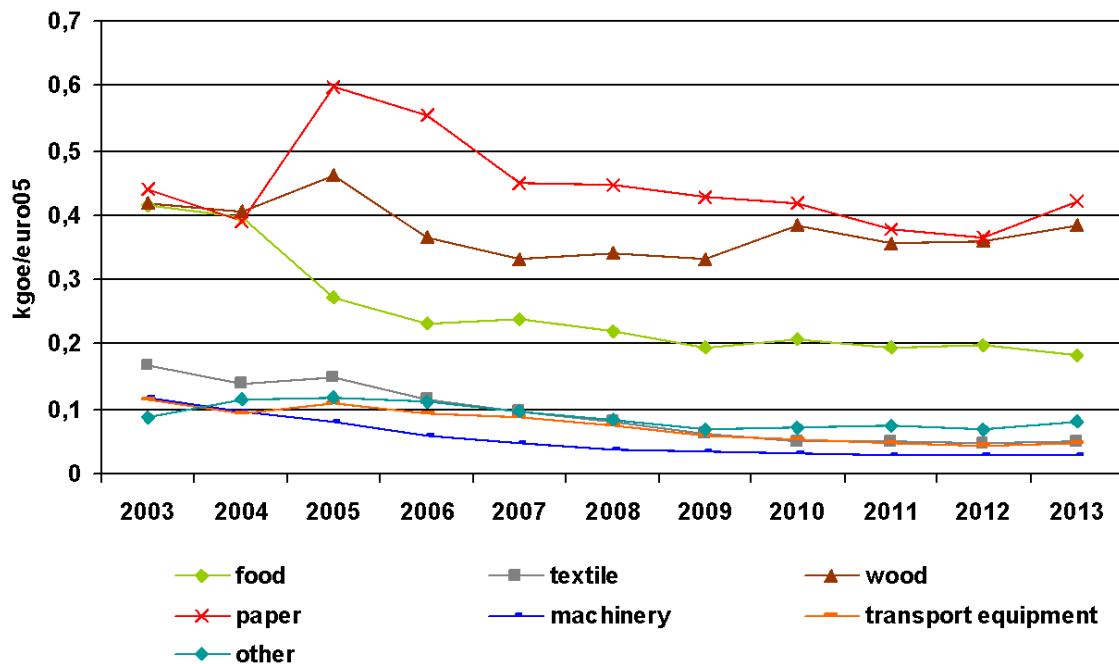


Figure 10 Energy consumption indicators for low energy intensive industries



The rate of improvement of the manufacturing industry's energy consumption was high, on average between 2004 and 2009 it was 9,9% annually. The effect of structural changes was favourable, however low as it contributed a 0,7% decrease in energy consumption annually. This changed between 2010 and 2013 - energy consumption decreased at a rate of 3,4% annually, while structural changes decreased the energy consumption of the manufacturing industry by 2,3% annually. Overall the energy consumption decreased by 5,6% annually.

4.2. ENERGY EFFICIENCY POLICIES

Energy efficiency measures in industry for small and medium enterprises (SMEs):

- **Support for entrepreneurs concerning low-carbon and resource-efficient economy. Part 1 - Energy/electricity audits in enterprise**

The aim of the programme is activating investment measures leading to increasing the energy efficiency of the economy, including support mechanisms for activities resulting in significant energy savings and a decrease in energy consumption by end users.

It also consists of co-financing energy audits of technological processes, electricity, heat and cooling audits of buildings, and energy audits of external heating networks and buildings.

- **Support for entrepreneurs concerning low-carbon and resource-efficient economy. Part 2 - Increasing energy efficiency**

The aim of the programme is increasing companies' energy efficiency, through investments including support mechanisms for activities leading to efficient energy use or achieving significant energy savings. The co-financed investments must be the result of energy audit recommendations, and the energy effect cannot be lower than 7%.

This includes implementing energy management system and systems managing electricity networks in enterprise buildings, electricity and heat use rationalization technologies, and modernisations of industrial processes to increase energy efficiency.

- **Access to financial instruments for SMEs (PolSEFF)**

This was an outreach programme for SMEs interested in investing into new technologies and appliances decreasing energy consumption or generating energy from RES.

- **Priority programme: Improving energy efficiency. Part 4 - Energy saving investments in SME**

The programme aims to limit energy consumption through investments into energy efficiency and RES implementation in the SME sector, which will consequently limit CO₂ emissions.

- **Operational programme Infrastructure and the Environment (Activity 9,1) - High efficiency energy generation**

The aim of the programme was increasing the efficiency of generating electricity and heat. It supported investments into the renovation and construction of combined heat and power (CHP) generation units meeting high efficiency cogeneration standards, as well as promoting high efficiency CHP to meet heat demand which is one of the EU priorities due to its high efficiency of primary energy consumption, limited network losses and limited emission of harmful substances.

As part of the programme, CHP units meeting the standards of high efficiency cogeneration were renovated or constructed, while existing heating plants were replaced with high efficiency cogeneration units as defined in Directive 2004/8/WE.

- **Operational Programme Infrastructure and the Environment 2007-2013 (Activity 9.2)- Efficient energy distribution**

The programme's aim was decreasing energy losses in electricity and heat distribution networks.

It consisted of comprehensive construction and renovation projects for high, medium and low voltage electricity distribution networks with the objective of limiting network losses. It also supported investments into the construction and renovation of heat distribution networks with the highest potential for decreasing energy losses. Only investments which showed at least 30% decreases of energy consumption in electricity network losses were qualified for co-financing.

- **Operational Programme Infrastructure and the Environment 2014-2020 (Investment priority 4.ii.) - Promoting energy efficiency and RES in enterprise**

The goal of the programme is increasing the energy efficiency of enterprises.

It provides support for RES efficient energy use investments in enterprises. It will be oriented towards large enterprises and involve implementing measures of optimizing energy management and increasing energy efficiency, including RES use. It is also expected to include financial support for investment projects implemented as a result of energy audits in companies.

- **Training activities of the Polish-Japanese Centre for Energy Efficiency - The Polish National Energy Conservation Agency**

The educational programmes offered by the Polish-Japanese Centre for Energy Efficiency - The Polish National Energy Conservation Agency is based on the extensive experience of the Japanese economy and the achievements and modern energy management methods used in Polish industrial plants. It is

aimed at engineers, technical and financial staff, as well as consultants and designers working for companies and everyone interested in the issues concerning efficient energy management and use.

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