



# **Energy efficiency in Poland - selected measures**

## **New EU Directive 2012/27/EU on energy efficiency**

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# Energy Policy of Poland until 2030



- Adopted by the Council of Ministers on 10th November 2009
- Includes:
  - a long-term strategy for energy sector,
  - forecasts for fuel and energy demand and
  - program of implementation activities until 2012.

The policy specifies six basic directions for the development of the Polish energy sector.

1. **To improve energy efficiency.**
2. **To enhance security of fuel and energy supplies.**
3. **To diversify the electricity generation structure by introducing nuclear energy.**
4. **To develop the use of renewable energy sources, including bio-fuels.**
5. **To develop competitive fuel and energy markets.**
6. **To reduce the environmental impact of the power industry.**

# Energy efficiency

## The main targets:

- To make efforts to achieve development of Polish economy without increase in primary energy demand
- Decreasing the energy intensity of Polish economy to the EU-15 level (in 2005).

## The main activities:

- **Act on energy efficiency** implements a **system of white certificates** which is guaranteeing financial benefits for the entities achieving the highest energy savings (implementation of Energy Services Directive 2006/32/EC, (ESD)).
- Stimulation of the development of **high efficiency cogeneration**, smart metering, support investments in energy saving and scientific research.
- Financial support and programmes – e.g. **Thermomodernisation Fund, Priority programmes of National Fund for Environmental Protection and Water Management**.



# Energy Efficiency Act



- adopted by the Parliament on 15 April 2011
- in force since 11 August 2011
  
- Defines national energy efficiency target,
- Imposes tasks on public sector,
- Introduces white certificate system as a market based mechanism favouring enhancement of energy efficiency measures.
- Introduces rules for drawing up the energy efficiency audit.

## Energy Efficiency Act (2)



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Energy savings of 9% of the annual average amount of final energy consumption from the period 2001–2005 by 2016 is **53,452 GWh** (**4.5 Mtoe**) in the sectors not covered by the EU-ETS.

<b>Projects in a field of energy efficiency financed by the National Fund for Environmental Protection and Water Management (NGOSiGW)</b>	<b><u>~ 0,7 Mtoe</u></b>	Estimation by NFOSiGW
<b>Thermo-modernisation Fund</b>	<b><u>~ 0,7 Mtoe</u></b>	Estimation by the Polish National Energy Conservation Agency
<b>„Soft” measures i.e. informational campaigns, information of energy bill</b>	<b><u>~ 1 – 1,1 Mtoe</u></b>	Estimation by Ministry of Finance
<b>White certificate system</b>	<b><u>~ 2,2 Mtoe</u></b>	Estimation by Ministry of Economy

# White certificate system



Energy companies selling electricity, heat or gas to the final users on the territory of the Republic of Poland from 1 January 2013 are obliged to gain a certain number of certificates in order to present them to the Energy Regulation Office and have them amortised.

Obligation to:

- Receive and present white certificates to the President of Energy Regulatory Office (ERO), or
- Pay a substitute fee  
PLN 1000 per toe.

white certificates obtained for:

- reduction of energy consumption by end users (at least 80%),
- reduction of energy used by generators for their own purposes (10%),
- reduction of energy transmission and distribution losses (10%).

White Certificates will be traded on the Power Exchange.

MoE is responsible for monitoring the level of compliance with national energy efficiency target.

# Measures to improve energy efficiency

## Energy efficiency improvement measures:

- 1) Heat insulation of systems;
- 2) Buildings thermomodernisation;
- 3) Modernization of:
  - a) home use devices,
  - b) lighting,
  - c) own use equipment,
  - d) facilities and systems of industrial processes,
  - e) local heating networks and local heat sources;
- 4) Energy recovery in industrial processes;
- 5) Reduction of:
  - a) reactive power flows,
  - b) network losses,
  - c) transformers losses.

**Detailed specification published in Official Journal of the Republic of Poland, Polish Monitor (M.P. 2013, pos.15)**

# White certificates – tender procedure



The basic rules of the scheme are:

- Investors prepare investments and take part in a tender.
- The tender is organized by President ERO and its goal is to choose the most efficient project from the ones submitted.
- Those who apply with the lowest value of white certificates in energy savings win the tender. They are obligated to realize the project.
- Investors or authorized third party obtain the white certificates.
- Energy companies buy the certificates and present them to the ERO.

First tender announced on 31 December 2012 - value of available white certificates is 550 000 tons of oil equivalent (toe),

- 440 000 toe - reduction of energy consumption by end users,
- 55 000 toe - reduction of energy used by generators for their own purposes
- 55 000 toe - reduction of energy transmission and distribution losses (electricity, heat and natural gas).
- Entities had 30 days for preparation and sending the offers of projects aiming in improvement of energy efficiency.
- ca. 200 offers submitted
- President of ERO still awaits with the final announcement



## WhC system - schedule

### 2012

- three ordinances of Minister of Economy issued: on scope and types of audits, on tendering procedure and amount of white certificates for redemption and substitute fee and Promulgation of the Minister of Economy with the detailed list of projects to improve energy efficiency
- call for tender announced by President of ERO

### 2013

- imposing the obligation
- results of the first tender for ee undertakings

2014 – settlement of the obligation (certificates or payment the substitute fee for 2013)

2015 – last year of the obligation for energy companies

## Other energy efficiency measures - existing



- Termomodernisation Fund – supports refurbishment projects in buildings.  
**Between 1999 and 2012: 25 000 applications submitted.**
  - PLN 1,42 bln - the total amount of subsidies granted from the state budget
  - PLN 7,4 bln total volume of investments

### National Fund for Environment Protection and Water Management:

#### Ongoing programmes :

- Energy management in public buildings – thermal renovation of public buildings including heat insulation, replacement of windows, external doors, conversion of heating systems, energy management systems in buildings, use of technology of renewable energy sources. Budget 1 565 mln PLN (ca. 382 mln EUR). Programme runs from 01.01.2010 till 31.12.2014. Beneficiaries: local governments, volunteer fire fighter brigades, universities scientific and research institutes, independent public and non-public health care institutions.
- Efficient Use of Energy - designed for the most energy intensive companies. Programme's threshold: internal energy usage at the level of 20 GWh/a. Grants for energy audits preparation (up to 70% of audit's cost) and loans for financing investments resulting from those audits. Scope of projects: efficient power units, efficient engines, pumps, inverters, internal heat grid, RES. Budget: PLN 820 mln PLN (ca. 200 mln EUR). Conditions: repayment period: 10 years. Programme runs from 01.06.2011 till 31.12.2016.

## National Fund for Environment Protection and Water Management:

New programmes from 2013 onwards:

- „**The Owl**” for improvement of street lighting energy efficiency. Beneficiaries: local governments - grants and loans – total budget 356 mln PLN (ca. 84,6 mln EUR), Implementation period: 2013 – 2015
- „**The Gazelle**” for reduction of public transportation fuel consumption. Beneficiaries: municipalities, municipal companies, companies providing local transport services based on agreement with a municipality. Grant based financing up to 100% of project eligible costs; the budget of PLN 80 million, Implementation period: 2013 – 2015.
- „**The Lemur**” – designing and construction of new energy efficient public buildings – grants and loans - budget 300 mln PLN (ca. 73,2 mln EUR ); Programme runs from 2013 till 2020. Beneficiaries: local governments, public service utilities, universities scientific and research institutes, independent public and non-public health care institutions.
- „**The Jackdaw**” - elimination of low emission sources thru support of energy efficiency and development of dispersed renewable energy sources in municipalities – 100% grants – budget 400 mln PLN (100% grants) ca. 97,5 mln EUR. Programme runs from 2013 till 2018.

# New Directive 2012/27/EU on energy efficiency

# The objective of the new directive 2012/27/EU on energy efficiency is to close the gap towards the European 20% energy saving target



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business  
as  
usual

Status  
today

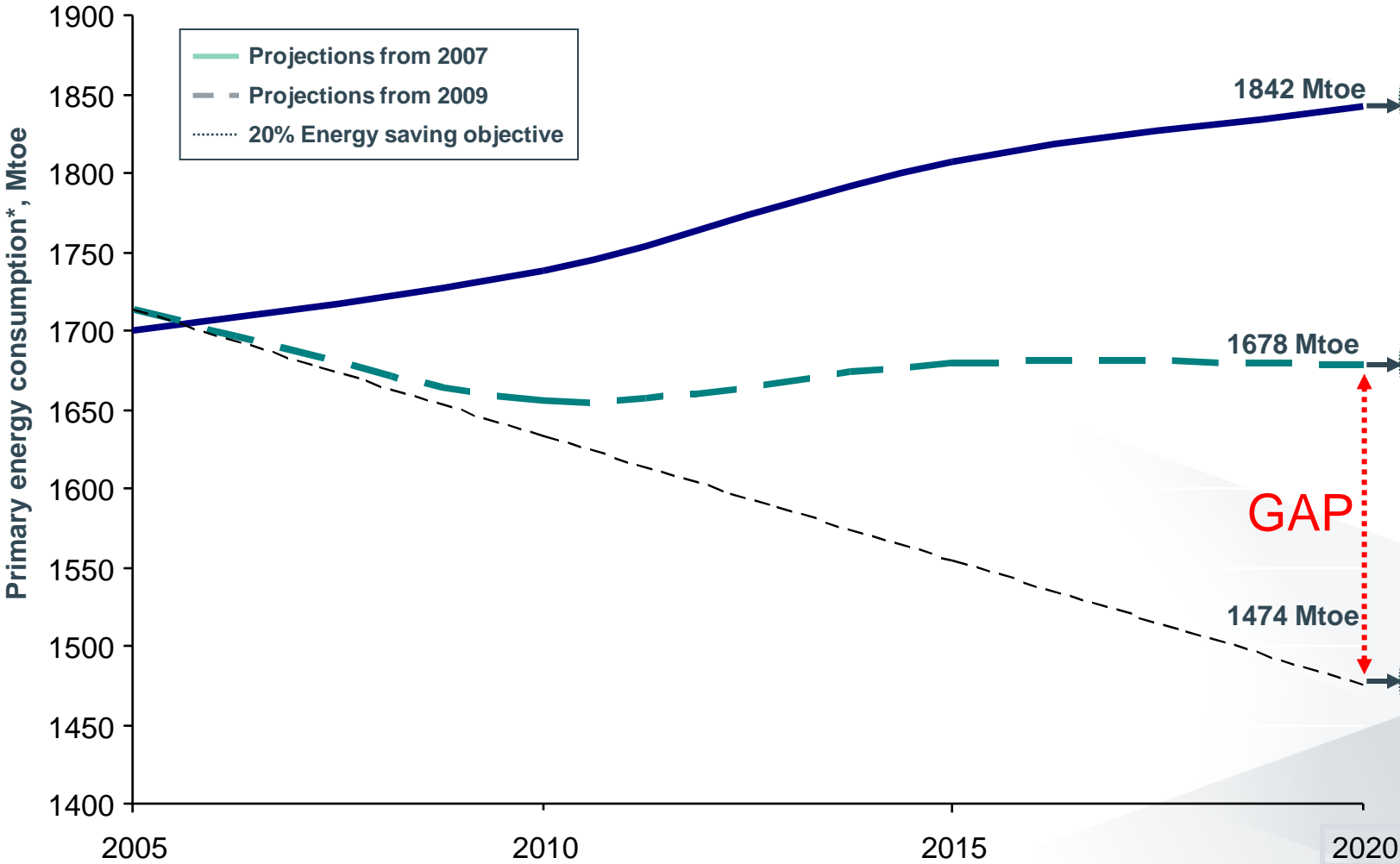
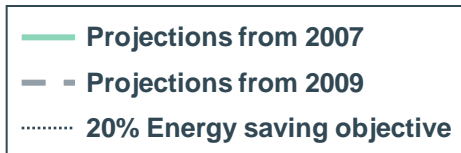
-20%  
objective

1842 Mtoe

1678 Mtoe

1474 Mtoe

GAP

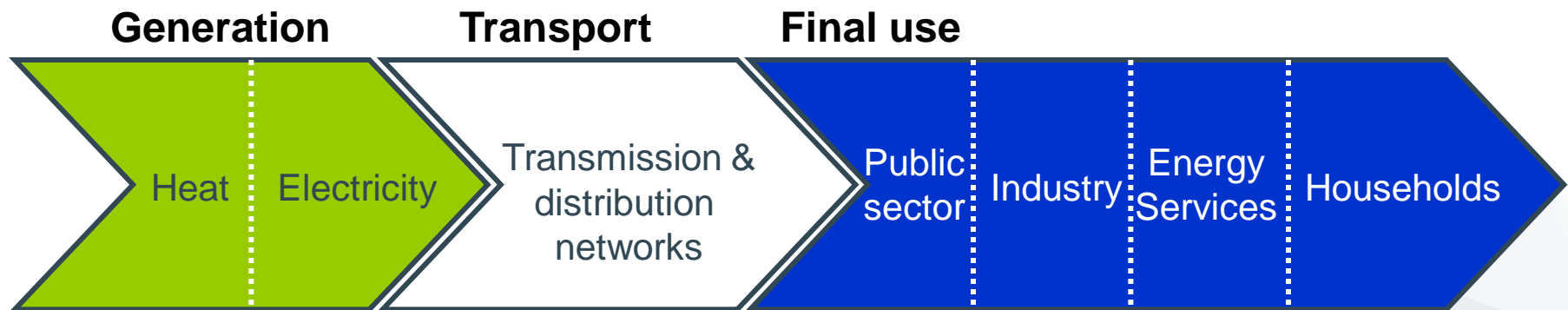


\* Gross inland consumption minus non-energy uses

...and by setting targets, sectoral measures along the energy supply chain and horizontal measures, as well as through monitoring

**1. INDICATIVE NATIONAL ENERGY EFFICIENCY TARGETS**  
(chapter 1, art. 3)

**2. SECTORS: ENERGY SUPPLY & DEMAND**  
(chapter 3 (art. 14-15))



**3. HORIZONTAL MEASURES**  
(chapter 4)

**4. MONITORING**  
(chapter 5, art.24)

# Going into more detail: the new directive implements the two step approach communicated by the commission by building on voluntary energy efficiency targets

## STEP 1: 2013

MS set a national energy efficiency target for 2020 (Art. 3)

expressed as absolute level of primary energy consumption

taking into account:

## STEP 2: June 2014

COM assess progress achieved towards 20% objective

Taking into account the sum of the national targets

If 20% unlikely to be achieved:  
Proposals for further measures

- Overarching EU 20% target
- measures provided for in this Directive
- measures adopted to reach the national energy saving targets in the ESD
- other measures

# Timetable

December  
2012

- Entering into force of Energy Efficiency Directive

30 April 2013

- Annual Report on Energy Consumption in 2011

30 April 2014

- Submission of the National Energy Efficiency Action Plans (according to the new directive) to the European Commission

5 June  
2014

- Implementation of the new Directive in the MS

30 June 2014

- Assessment of progress towards 20% saving objective by the EC



Thank you for your attention

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## additional slides

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# Measures in the public sector targeting buildings, municipal energy efficiency planning and purchasing

## Buildings (Art. 5)

- **As of 2014:** Annual renovation of 3% of the total floor area owned by public bodies to reach at least the national minimum energy performance requirements *and*
- Inventory of owned buildings incl. annual update (information on floor area, energy performance)

## EE Plans & EMS (Art. 4)

- Recommendation for municipalities to adopt energy efficiency plans and put in place energy management systems

## Purchasing (Art.6)

- Purchase of products, services and buildings with highest energy efficiency standards

# Measures targeting utilities' involvement in energy efficiency services & more efficient energy use in businesses

## Utilities (Art. 7)

- **1,5% energy savings p.a. through a national energy efficiency obligation scheme** (DSO or retail energy sales) to trigger the uptake of energy efficiency services

## Large (> SME) enterprises (Art. 8)

- **Mandatory energy audits** by independent experts incl. update every 4 years (by 5.12.2015)

## SME (Art. 8)

- Encourage SMEs (& households) to undergo energy audits
- Promote availability to all final customers of affordable energy audits by independent qualified/ accredited experts.
- Best Practices exchange on effectiveness of energy management systems for SME business

# Individual meters, informative billing & access to consumer data (article 8)



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## Individual meters for all final customers

- For **electricity, natural gas, DH&C & district-supplied domestic hot water**, reflecting **actual energy consumption & information on actual time of use**
- **Minimum functionalities of smart meters** to be set in line with energy efficiency objectives and **final customer benefits**
- Upon request, meter to account for electricity produced on the final customer's premises and exported to the grid

## Free & informative billing

- **Ensure accuracy & frequency of billing based on actual consumption**, for all the sectors covered by this Directive, incl. energy distributors, DSO & retail energy sales companies
- Appropriate information with the bill providing customers with comprehensive account of current energy costs, also allowing detailed self-checks on historical consumption.

## Access to metering & billing data

- Upon request, availability of metering data/ billing/ historical consumption to a third party (e.g. ESCO)

# Increasing efficiency in energy supply



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## Efficient heating & cooling (Art. 14)

- National heating and cooling plan
- Development of efficient DH&C infrastructure
- Thermal electricity generation installations (> 20 MW) to be equipped with high-efficiency cogeneration units (for a new licence and permit update)
- Industrial installations (>20 MW) to make use of waste heat & to be connected to DH&C networks
- Guarantee of origins for electricity from high-efficiency CHP
- Limit support to high-efficiency cogeneration and waste heat effectively leading to primary energy savings

## Energy transformation (Art. 15)

- Annual inventory of installations (for combustion of fuels, refining of mineral oil and gas)

## Transmission & distribution (Art. 15)

- Energy efficiency criteria in energy network regulation
- National plans on energy efficiency potentials of energy networks, identifying measures & investments for efficiency improvements
- Removal of incentives in network tariffs increasing volume of transported energy
- Priority access/dispatch/transport of electricity from high efficiency cogeneration units

# Finally a range of horizontal provisions reinforcing sectoral measures



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## **Certification/ qualification scheme (Art.16)**

- To achieve high level of technical competence for providers of energy services, energy audits & EEIM
- To be publicly available
- Cooperate among MS & with COM on comparisons between and recognition of the schemes.

## **Promotion of energy services market (Art.17)**

- Public list of energy service providers incl. energy services they offer (regular check & update)
- Model contracts, e.g. for EPC in the public sector
- Information on available energy service contracts & clauses to be included in such contracts to guarantee energy savings and final customers' rights
- Encouraging development of voluntary quality labels
- Information on financial instruments, incentives, grants & loans to support energy service projects

## **Removal of barriers to EE (Art.19)**

- Split of incentives between the owner and the tenant of a building or among owners
- Legal and regulatory provisions, and administrative practices, regarding public purchasing and annual budgeting and accounting

# ...monitoring is necessary

## Annual reporting (Annex 14 (1))

- Yearly estimates on key energy & macroeconomic indicators such as energy consumption (primary/final) overall & by sectors and GDP, GVA by sector, etc. to compile energy intensity indicators
- Update on major legislative/ non-legislative measures implemented nationally contributing to the 20% objective
- Total building floor area owned by public bodies that was renovated
- Energy savings achieved through the national energy efficiency obligation scheme

## Supplementary reporting (Annex 14 (2))

- Overview of all existing targets & strategies
- Listing of significant measures/ actions adopted or planned to implement this Directive
- Results of fulfilment of ESD target

## Specific information (Annex 14 (3))

- List of public bodies having developed an EEP
- National coefficient for energy efficiency obligation
- Number of energy audits
- Assessment of implementation of heating & cooling plan