



## Legislation in Europe and in Poland concerning RES and energy efficiency

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***Sustainable Urban Energy Concepts***

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# An energy policy for Europe

## **10 January 2007 European Commission proposed:**

- Cutting EU's GHG emissions by at least 20% by 2020
- A binding target of 20% for the share of renewable energy in overall EU energy consumption by 2020
- A binding target for at least 10% of vehicle fuel in EU to come from renewable fuels by 2020

*which also consist of:*

- 20% increase in energy efficiency

**March 2007 EU Council endorses the targets and agreed to an Energy Policy for Europe**



# The tools to achieve the targets

**In 23<sup>rd</sup> January 2008 European Commission presented ENERGY & CLIMATE CHANGE PACKAGE:**

- **New RES Directive including biofuels**
- Revision – update to the Emissions Trading System (ETS)
- National targets to achieve a 10% GHG emissions reduction in non-ETS sectors (buildings, transport, agriculture, waste and industrial plants)
- A framework to promote CO<sub>2</sub> capture and storage (CCS)



# **Directive 2009/28/EC on the promotion of the use of energy from RES**

## **Sets mandatory targets for 2020:**

- 20% of the EU's overall energy consumption coming from renewables
- national targets for the overall share of renewable energy (adding up to 20%)

**Requires national action plans for RES including measures and policies (template was already published by EC) by 30 June 2010**

## **Standardizes “guarantees of origin”**

- Certifies the renewable origin of electricity or heat and enables the transfer of these to provide flexibility to Member States

## **Removes obstacles to the use of renewable energy**

- Improves administrative procedures, information provision and grid access



# RES Directive / focus on biofuels

**Sets** a binding **10% target for renewable fuels** in road transport fuels for 2020

**Establishes environmental sustainability criteria** for biofuels and other bioliquids

**Promotes** biofuels

- Introduction of 7% biodiesel in diesel (2010) and 10% biodiesel in diesel (2014) – the limit today is 5%
- Member States give bonus to those operators who produce biofuels from wastes, residues, non-food cellulosic material and ligno-cellulosic material



# Biofuels sustainability – Scope

**The sustainability criteria apply to:**

- Biofuels (liquid and gaseous fuels used in transport)
- Other bioliquids (liquid fuels used in heating and electricity)

The criteria start to apply when Member States will bring into force the necessary legislation in order to comply with this Directive.

Expected by **31 March 2010**

The Commission shall report on requirements for a sustainability scheme for energy uses of biomass, **other than biofuels** and other bioliquids, by **31 December 2010** at the latest



# Biofuels sustainability – Criteria

- **Greenhouse gas impact** (Article 15.2)
- **Land use with high biodiversity value** (Article 15.3)
- **Land use with high carbon stock** (Article 15.4)
- **All agricultural raw materials produced in the EU and used to make biofuels and other bioliquids shall be obtained in accordance with the minimum requirements for good agricultural and environmental condition** (Article 15.5)



# Sustainability criteria – Greenhouse gas impact

- **GHG emissions savings from the use of biofuels shall be at least 35%**

-  **Existing installations that produce biofuels exempted until 2013**

**Biofuel producers can choose to calculate the GHG emission savings by**

- Using default values given in the Directive (Annex VII.A,B); or
- Showing actual values (calculated according to the methodology in Annex VII.C)





# **Directive 2006/32/EC of 5 April 2006 on energy end-use efficiency and energy services**

- **The purpose of this directive is to enhance the cost-effective improvement of energy end-use efficiency in the Member states**
- **Energy savings target: 9% by 2016**
- **National energy efficiency action plans to be adopted on a regular basis, starting 2007**
- **Exemplary role of public sector**
- **Providing financial incentives (e.g. for building refurbishment)**

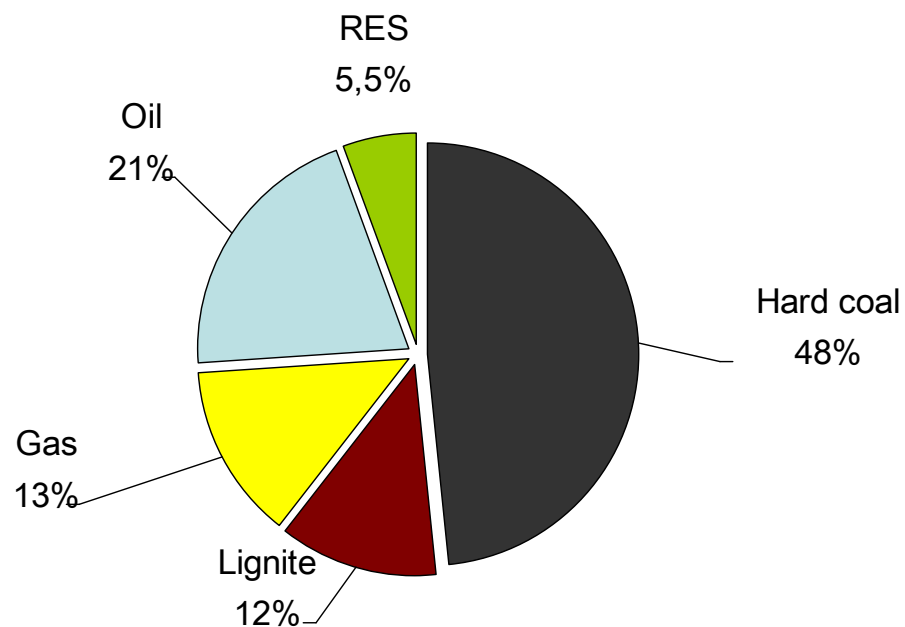


# RES in Poland

Production and legislation

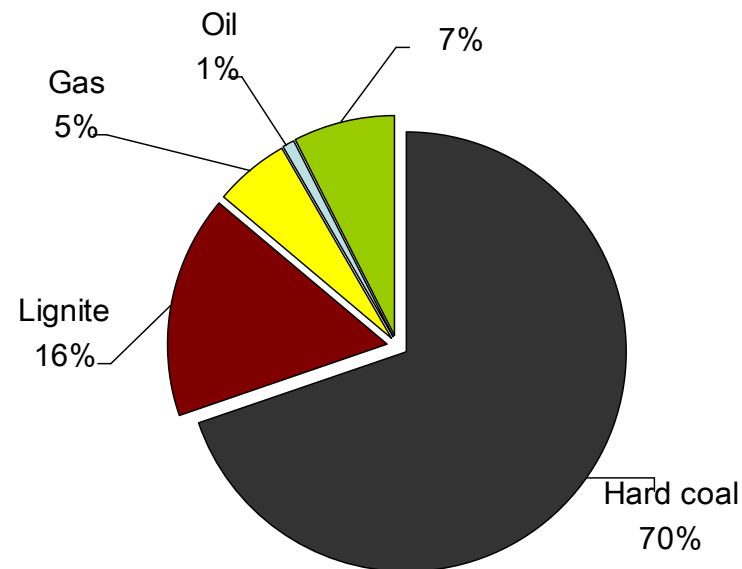
# Energy production and consumption

Primary energy use 4137 PJ



Structure of primary energy use, 2007

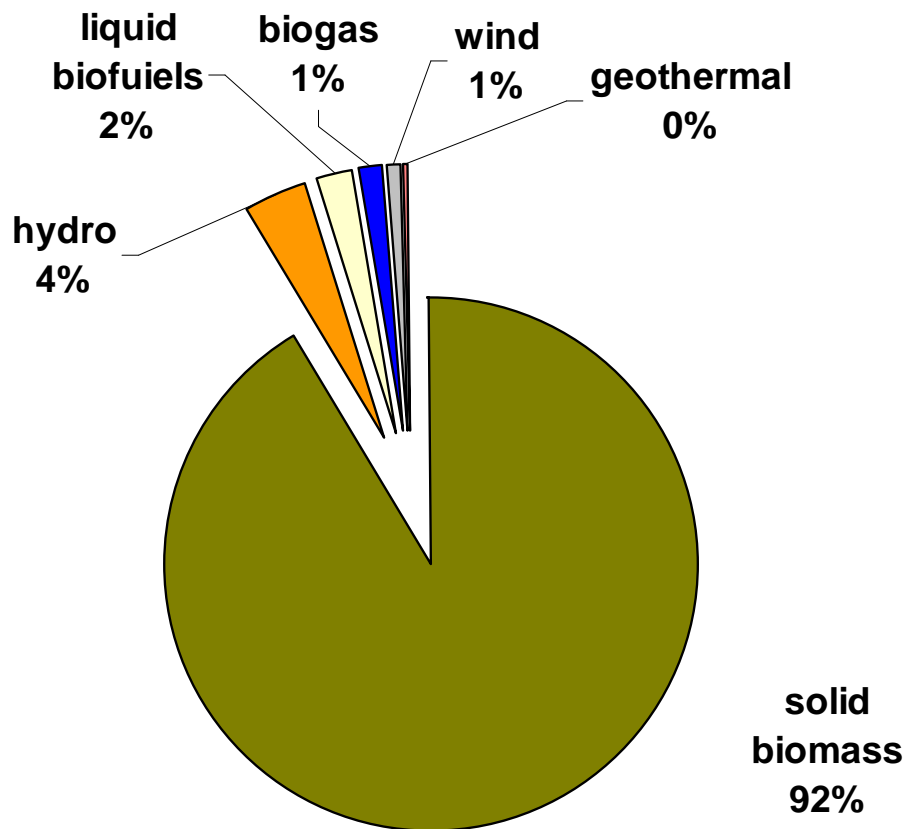
Primary energy prod. 3034 PJ



Structure of primary energy prod., 2007

Source: Central Statistical Office

# Renewable energy production



Renewable energy production 208,7 PJ

Biomass use:

70% for local heating

29% for electricity

1% for district heating

Structure of renewable energy production, 2007

Source: Central Statistical Office

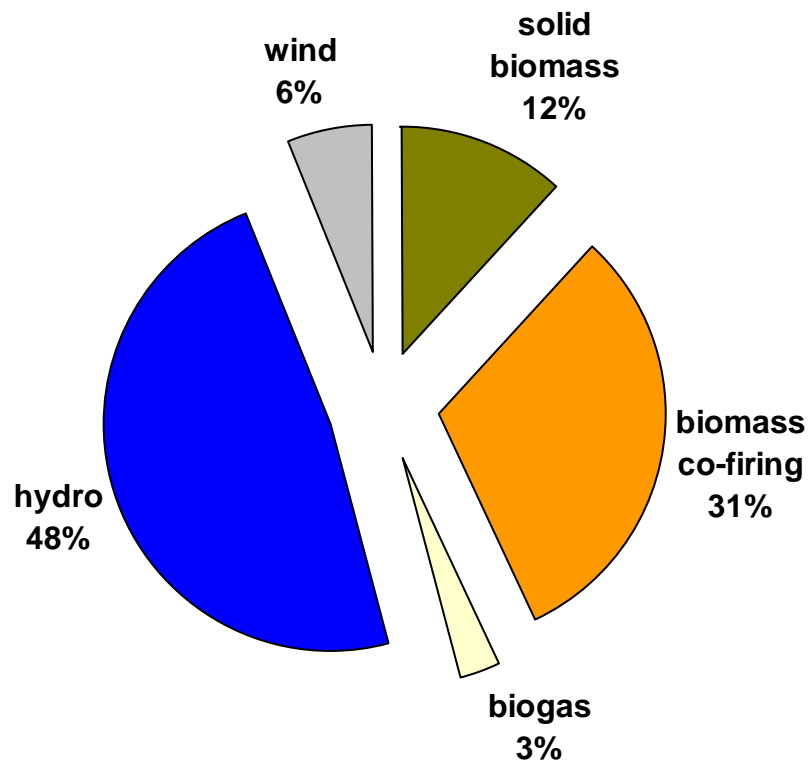
# Renewable electricity – installed capacity [MW]

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Biomass	189,8	238,8	255,4	232,0
Biogas	32,0	36,8	45,7	54,6
Hydro	852,5	934,0	934,8	940,6
Wind	83,3	152,6	287,9	451,1
$\Sigma$	1 157,5	1 362,1	1 523,8	1 678,3

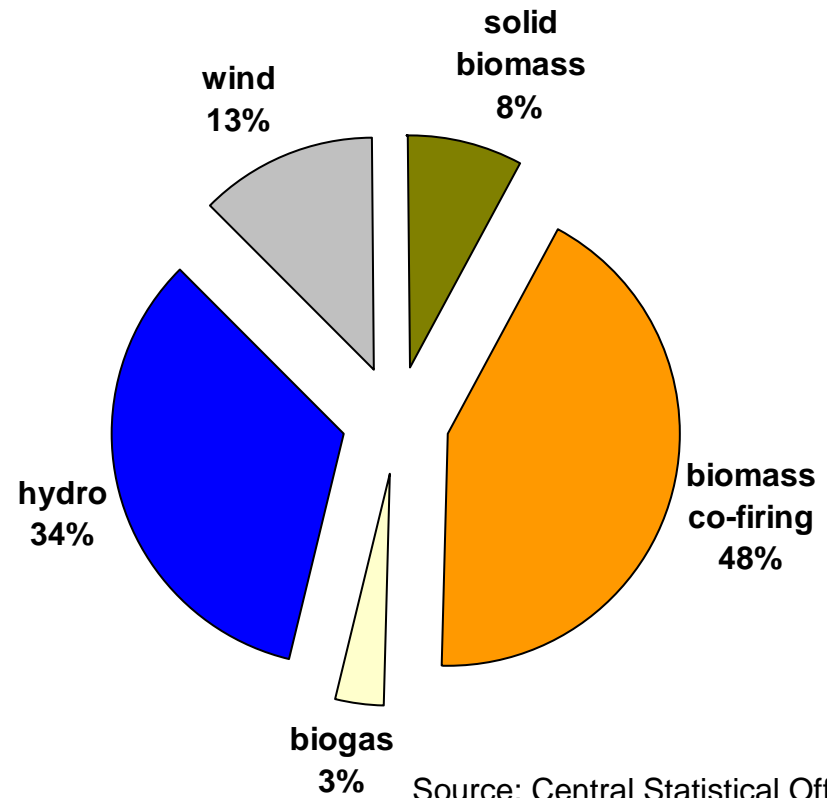
Source: Energy Regulatory Office

# RESe structure

RESe production 4,222 TWh in 2006



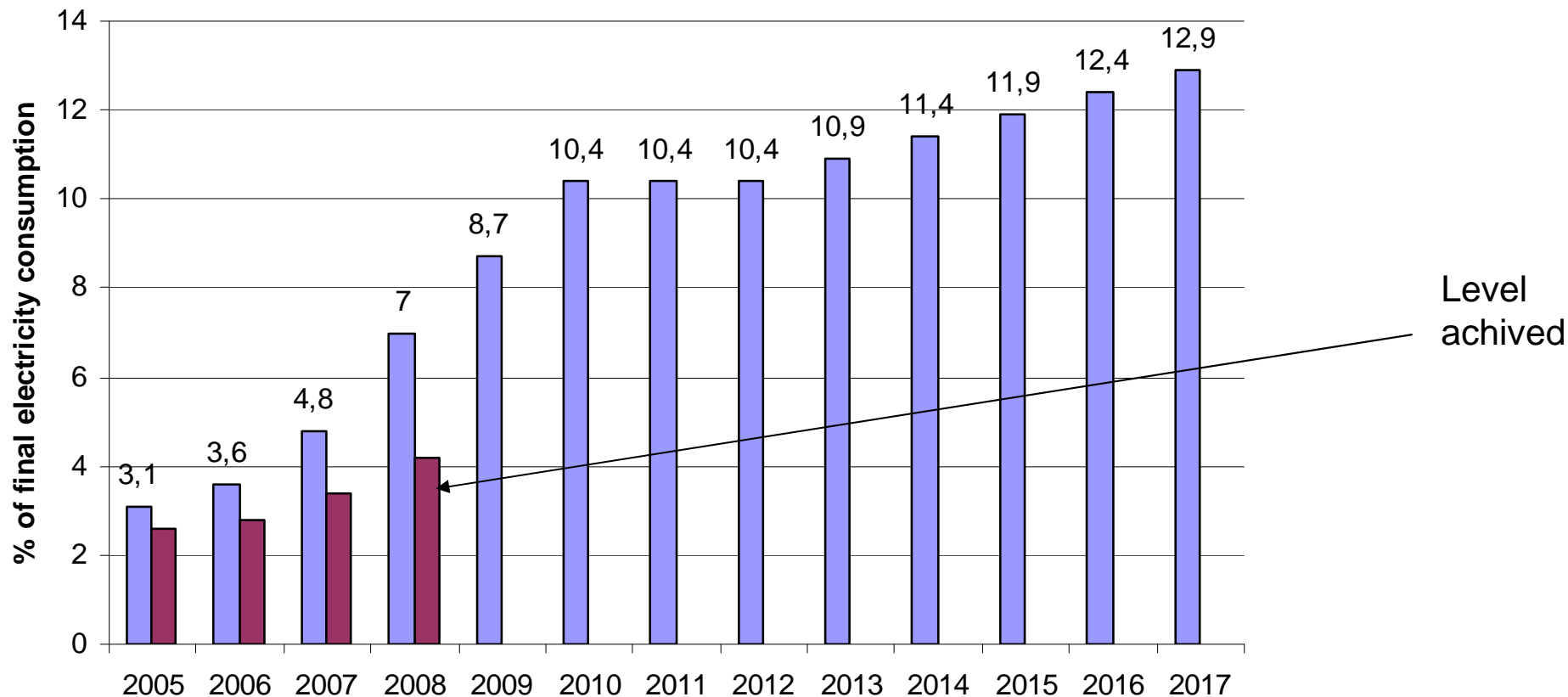
RESe production 6,399 TWh in 2008



Source: Central Statistical Office,  
Energy Regulatory Office

# Renewable electricity targets

Renewable electricity targets



Source: Ministry of Economy

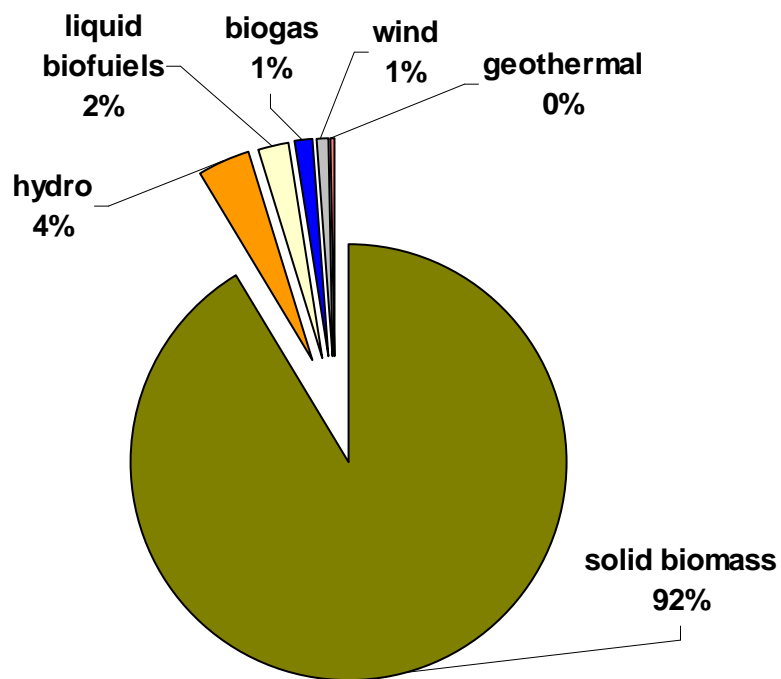
# Transportation biofuels

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
FAME consumption [thous. tons]	17, 1	44,9	37,3	479,9
Bioethanol consumption [thous.tons]	42,8	84,3	70,8	185,6
Share in fuel consumption [%] by energy content	0,47	0,92	0,68	<b>3,66</b>
Obligatory targets [%]	0,50	1,50	2,30	3,45



# RES target for 2020: 15%

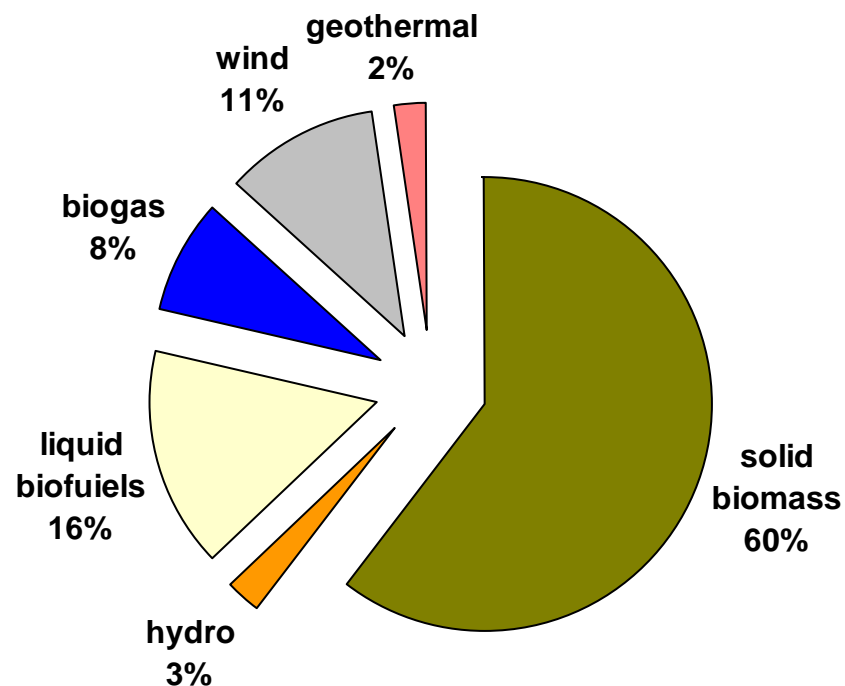
Structure of res production in 2007



208,7 PJ in 2007



Structure of res production in 2020 – projection from *Energy Policy up to 2030*



442,8 PJ in 2020

# Policy documents

Energy Policy up to 2030 → whole energy sector

Ministry of Economy ordinance from 14.08.2008

→ renewable electricity and heat

Long-term programme for promotion of biofuels for 2008-2014

→ transportation biofuels

Programme „Innovative energy. Energy Agriculture”

→ biogas in agriculture



# Support measures

## Electricity :

- Quota obligation and green certificates
- Purchase obligation for electricity generated from RES

## Heat:

- Purchase obligation for heat from RES

## Transportation biofuels:

- National indicative targets - imposed on producers and importers of fuels
- Designated fleets
- Possibility of producing liquid biofuels by farmers for own use
- Excise tax relief for biofuels



# Energy policy up to 2030 targets for renewable energy

- 15% of RES in final energy consumption in 2020 and 20% in 2030  
15% is in line with the RES Directive
- 10% of renewable energy in transportation fuels in 2020,  
implementation of 2nd generation biofuels
- Sustainable biomass production from agriculture and forestry (not in  
conflict with food production and protection of forest resources from  
intensive exploitation for energy)



# Energy policy up to 2030: supporting renewable energy

- Maintenance of RE certificates of origin (green certificates)
- Maintenance the tax relief for energy generated from RES
- Implementation of support for RE heating and cooling
- Implementation of programme for agricultural biogas production
  - on average one biogas plant in each municipality till 2020
- Establishment support for off-shore wind turbines
- Financial support for new RE plants and electricity network development – EU funds (Cohesion Fund) and environmental protection fund
- Stimulating the development of Polish industry of renewable energy equipment - EU funds (Cohesion Fund)



# Funding for renewable energy

- Operational Programme „Infrastructure and Environment” for 2007-2013

Activity 9.4: Biomass, biogas, wind, solar, hydro, geothermal energy.	1,762 million €
Activity 9.5: Transportation biofuels.	235 million €
Activity 9.6: Electricity network development for RE.	55 million €
Activity 10.3: Industry for renewable energy production.	91 million €

- Operational Programme „Innovative Economy”

Innovation in renewable energy technology



# Energy efficiency: current status

- Large improvement over last 10 years → energy consumption of the GDP decreased by 30%
- Thermo-modernization of buildings, street lights, optimization of production processes
- Still, the energy efficiency in Poland is 3 times lower than in most developed EU countries
- Primary energy consumption per capita is 40% lower than in EU-15
- Large potential for energy efficiency increase



# Act on energy efficiency

- **Act on energy efficiency** – draft prepared by Ministry of Economy
- **Obligatory targets:** 9% of final energy savings in 2016 in reference to 2007
- New target established each year for the next 6 years
- Leading role of public sector
- White certificates – obligation for companies selling energy to final consumers (electricity, natural gas, heat)
- A catalogue of pro-energy saving investment in Poland
- Still huge potential for energy savings in buildings (40% of final energy used in building sector), thermo-modernization
  
- All directives on energy labeling of products and equipment already implemented in Poland



# Challenges

- Development of sustainable biomass production on agriculture land not in competition with food
- Scaling up lignocellulose plantations
- Supporting green heat and cooling
- Wider implementation of waste to energy projects
- Strategy from 1st to 2nd generation biofuels
- Adjustment of vehicles to new kinds of fuels, further development of biofuels standardisation
- Energy saving investments: energy production – consumption chain
- Promotion of new environmental-friendly lifestyle of the society



Thank you for your attention!