



Ministry of Economy
The Republic of Poland

Status of renewable electricity in Poland

Paweł Małyska
Energy Department

Warsaw, 29 February, 2008



Electricity from RES

- Target for 2010 – 7.5%
- Fulfilment for 2006 – 2.8%
- Target for 2020 – ?



Installed capacity of RES

RES	2005 [MW]	2006 [MW]
Biomass	190	239
Biogas	33	35
Wind	124	173
Hydro	922	931
Co-firing		In power-blocks with capacity at about 1700
Total	1 269	1 378

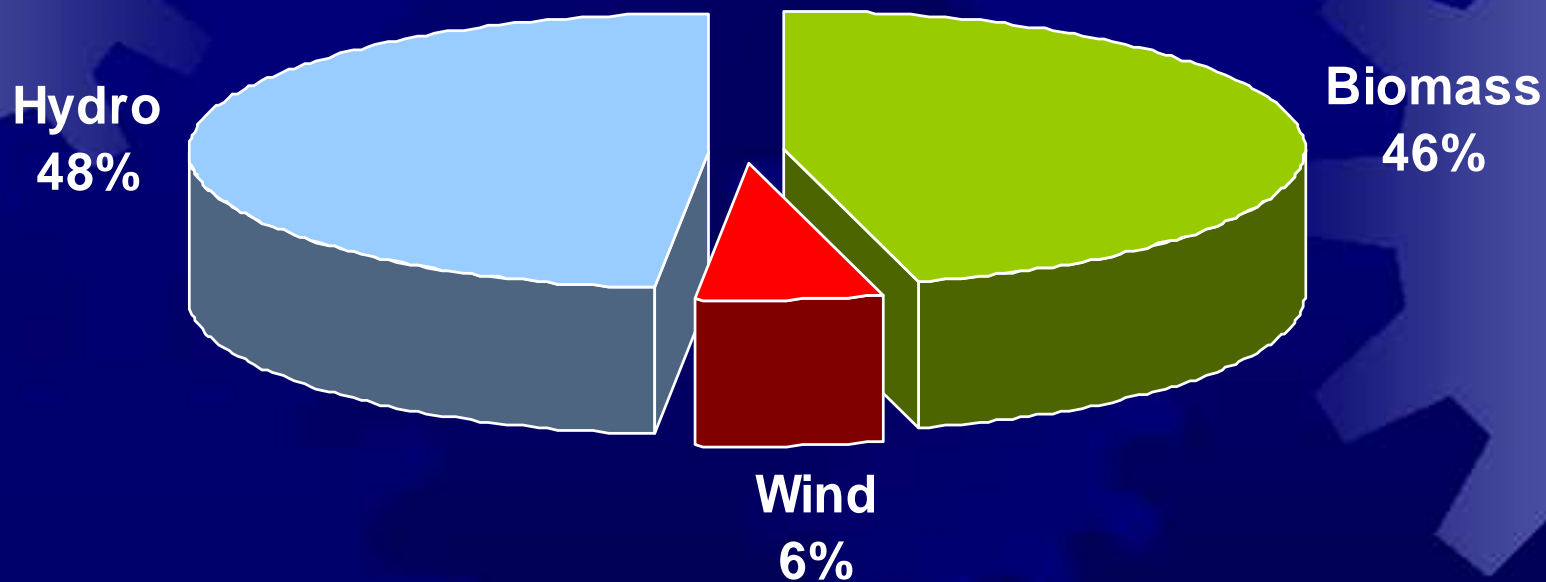


Generation from RES

RES	2005 [MWh]	2006 [MWh]
Biomass	467 976	503 846
Biogas	104 465	116 692
Wind	135 292	257 037
Hydro	2 175 559	2 029 636
Co-firing	877 009	1 314 337
Total	3 760 301	4 220 203

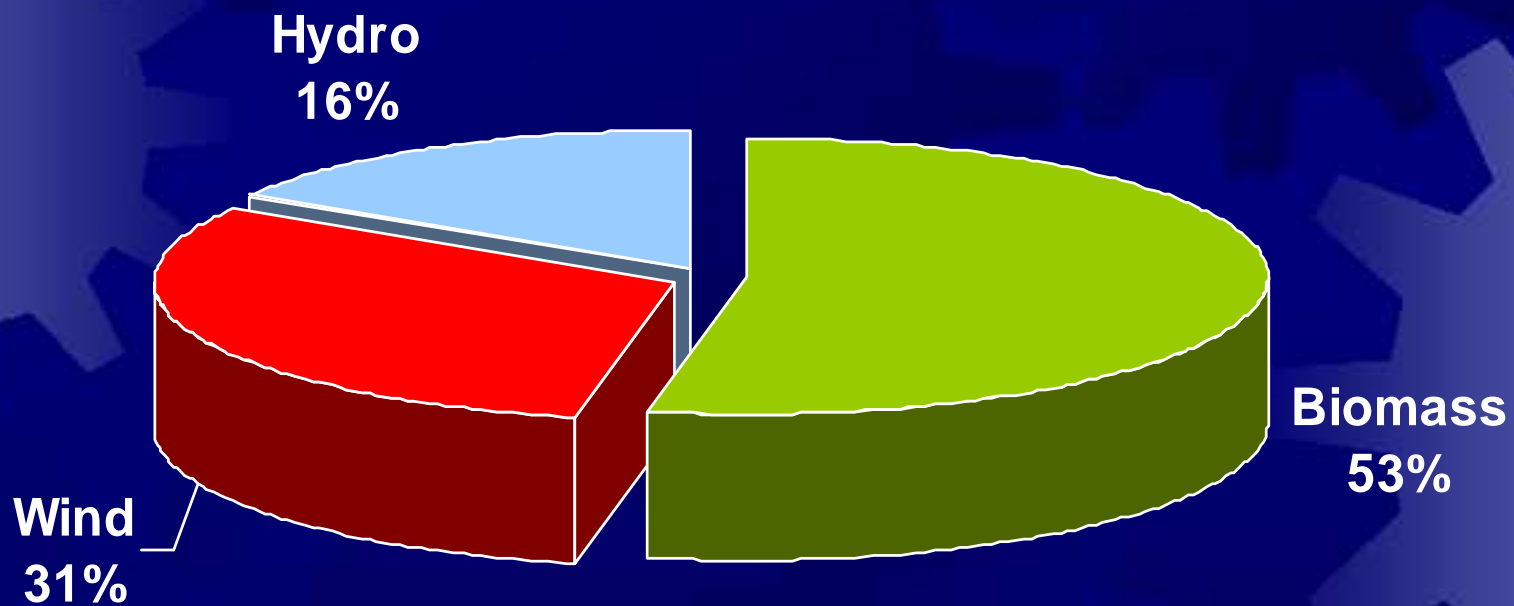


Electricity from RES in 2006 - structure





Foreseen structure in 2010





2020 in-depth analysis for electricity

- Wind energy – very big growth of installed capacity is expected.
- Biomass – cogeneration units, municipal waste usage, co-firing but the development not that dynamic, and use of energy crops.
- Biogas – use of biogas from landfills, waste water treatment plants and biomethane plants.



2020 in-depth analysis for electricity (2)

- Hydro – development of small hydro power plants.
- Photovoltaic – limited because of huge costs.
- Geothermal – if technology is available and commercially applicable.



Basic support mechanism for electricity from RES

- Quota system obligation introduced in the „Green certificates” formula on 1st October 2005.



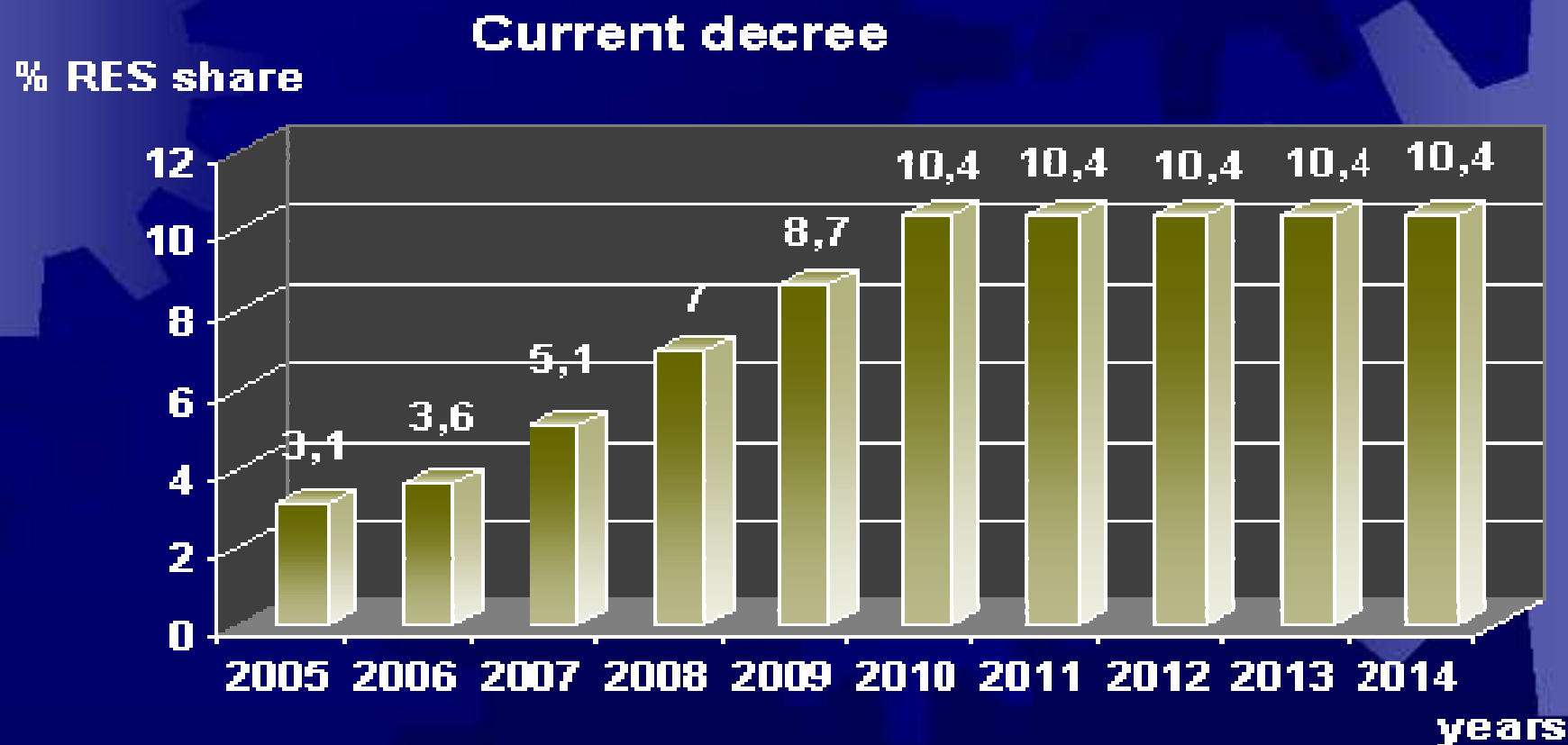
Obligation imposed on energy companies selling electricity to final consumers

- Obtaining and submitting the certificates of origin for cancellation to the President of the Energy Regulatory Office.
- Paying a substitution fee.



The scope of obligation defined in the regulation determines % share of electricity produced from RES sold to final consumers.

The share is:





The scope of obligation defined in the projected regulation determines % share of electricity produced from RES sold to final consumers.

The share is:





Fulfilling the basic obligation

- The basic obligation has been fulfilled in the year 2005 and 2006 with a surplus.
- That confirms that support mechanism in green certificates formula functions very well and it boosts investments.



Substitution fee

$$O_z = 240 \times (E_0 - E_U)$$

O_z – *Substitution fee [PLN]*

$(E_0 - E_U)$ – *extent to which obligation is not fulfilled*

Funds from substitution fee constitute a revenue of the National Fund for Environmental Protection and Water Management supporting only RES development.



Additional obligation

- Obligation of purchase of the whole amount of electricity generated from RES at average market price of "conventional electricity" from the previous year.
- Average market price is announced by the President of the Energy Regulatory Office.



Property rights resulting from
the certificates of origin can be
traded at Power Exchange.



Investors and Producers of electricity from RES have two kinds of income

- From guaranteed by the law sales of electricity at the market price.
- From sales of property rights from the certificates of origin at Power Exchange.



Penalties

- For not fulfilling the basic obligation minimum penalty is:

$$K_o = 1,3 \times (O_z - O_{zz}).$$

- For not fulfilling the additional obligation minimum penalty is:

$$K_{oz} = C_c \times (E_{oo} - E_{zo}).$$



Additional preferences for RES

- 50% of payment for connection to the grid of RES with capacity up to 5 MW – until the year 2010 regardless the capacity.
- Different balancing method for wind power plants than for other electricity sources taking into account natural fluctuation of electricity generation due to the nature of the wind – functioning transitionally until the year 2010.



Thank you for your attention

Contact: Paweł Małycka
Energy Department
Ministry of Economy
of the Republic of Poland
Pl. Trzech Krzyży 3/5
00-507 Warszawa

E-mail: pawel.malyska@mg.gov.pl
Phone: + 48 22 693 56 36
Fax: + 48 22 693 40 35