



MINISTRY OF ECONOMY

**Directions of development of biogas plants in
Poland by 2020**

7th April 2011, Ministry of Economic Affairs



Renewable Energy Sources (RES)

The main targets:

- Increasing the use of RES in the final energy use to 15% in 2020
- Increasing the share of bio-fuels in the market of transport fuels to 10% by 2020



Main measures:

- Stimulating development of RES through support mechanisms (*green certificates*)
- Introducing additional support instruments
- Effective use of biomass (agricultural biogas installations, second generation of biofuels)
- Creating conditions for building offshore wind farms
- Development of RES supported by European Funds



Energy policy of Poland

- **Energy Policy of Poland until 2030**
(<http://www.mg.gov.pl/Gospodarka/Energetyka/Polityka+energetyczna>)
- **National Action Plan for renewable energy**
(<http://www.mg.gov.pl/node/12326>)
- **Directions of development for agricultural plants in Poland between 2010-2010**
(<http://www.mg.gov.pl/node/11898#>)





Electricity generation

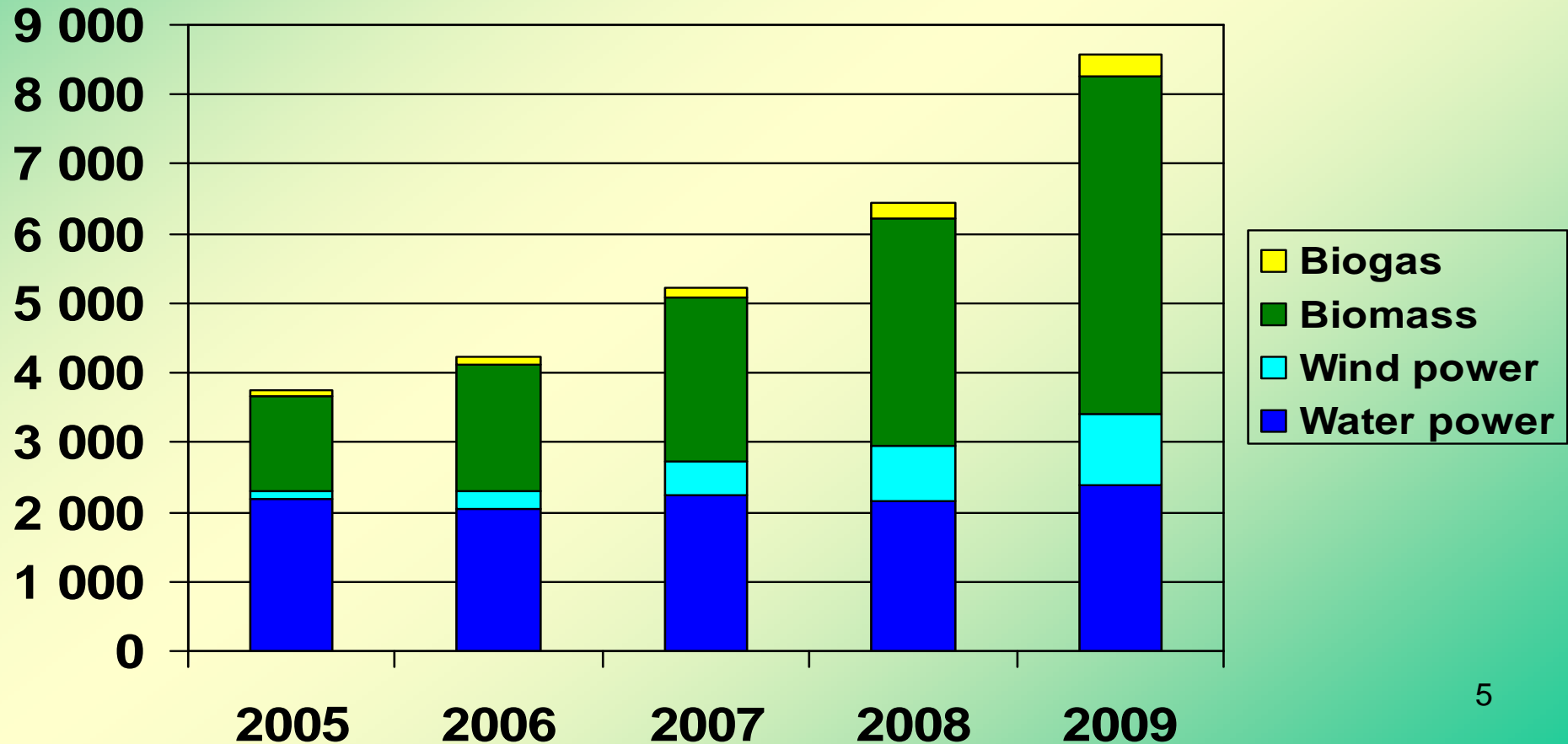
RES Generation (electricity) in the years 2005 – 2009 [GWh]

Source	2005	2006	2007	2008	2009
Water power	2 176	2 030	2 253	2 153	2 376
Biomass	1 345	1 818	2 343	3 267	4 863
Biogas	105	117	162	221	295
Wind power	135	257	472	806	1 034
Total	3 761	4 222	5 230	6 447	8 568



Electricity generation

RES Generation (electricity) in the years 2005 – 2009 [GWh]





Directions of development for agricultural plants in Poland between 2010-2010

- **Document prepared in cooperation with Ministry of Agricultural and Rural Development**
- **Document accepted by the Council of Ministers on 13th July 2010**
- **The goals of the document:**
 - 1. Creation of optimal condition for the development of instalations manufacturing agricultural biogas.*
 - 2. Indication of the possibility for cofounding of these types of installations from public assets.*
 - 3. Performance of appropriate educational and promotional activities in the scope of constructing and using of agricultural biogaz plants.*



Directions of development for agricultural plants in Poland between 2010-2010

Major objective:

Building at least one agricultural biogas plants in each commune by 2020 (assuming the existence of optimum conditions for the start of such projects).



Directions of development for agricultural plants in Poland between 2010-2010

- Forecasted effects:

- 1. Improvement of the nation's energy security through the increase of the energy supply based on renewable energy sources generated from the nation's own raw materials.*
- 2. Stimulation of the development of local initiative connected with usage of locally generated heat.*
- 3. Improvement of the energy infrastructure and increase in the competitiveness of the Polish agriculture (distributed energy infrastructure).*
- 4. Generation of significant volumes of electricity and heat from raw materials not in direct competition with the food industry, categorized as by-products of agriculture and waste from the agriculture and food industry.*



Directions of development for agricultural plants in Poland between 2010-2010

- Forecasted effects:

5. Utilization of the potential of the environmentally-friendly agriculture in areas of natura 2000 for the development of RES usage.

6. Increase of own income for local governments and farmers.

7. Obtaining of significant quantities of high quality environmentally-friendly organic fertilizers in the form of post-fermentation remainders from an agricultural substrate in the form of a granulated product.

8. Use of organic wastes which emit green-house gasses in to the environment, for energy production.



Directions of development for agricultural plants in Poland between 2010-2010

Biogas' energy-generating potential:

1. Theoretical potential

- *large energy-generating potential of the nation agriculture*
- *theoretical raw material potential is estimated at the capability of generating of 5 billion m³ of biogas – (Ministry of Agriculture and Rural Development)*
- *utilization in first order: by-products of agriculture, liquid and solid animal wastes and by-products and remainders from the agricultural and food industry; next approximately 700 thousand hectares for cultivates plants, designated as energy-generating.*



**Directions of development for agricultural plants in
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Biogas' energy-generating potential:

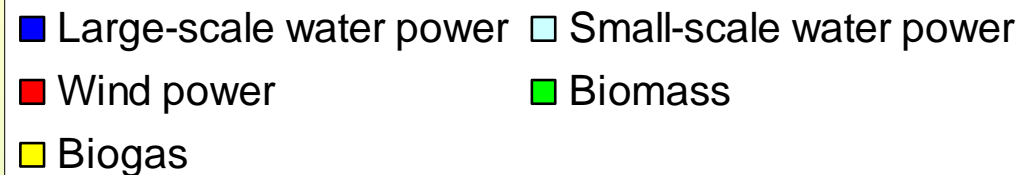
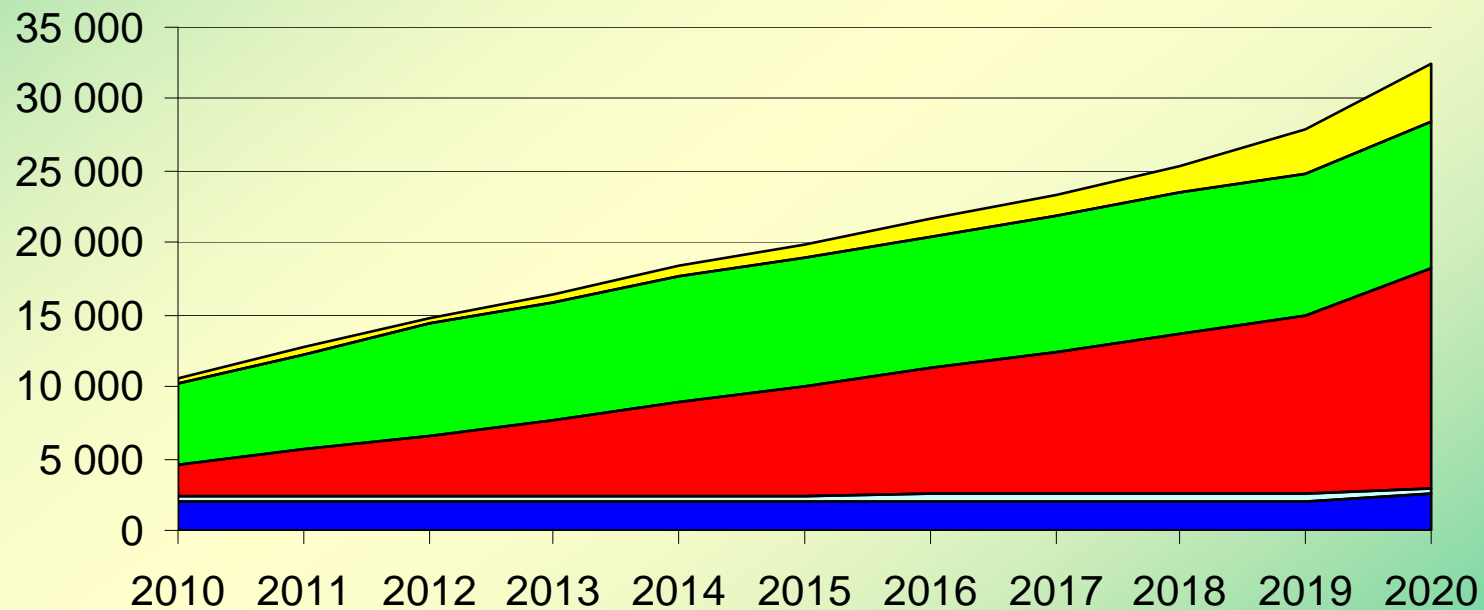
1. Realistic potential

- *1,7 billion m³ of biogas per year (produced from by-products of agriculture and the agricultural and food industry)*
- *annual, natural gas consumption in Poland is about 14 billion m³ including individual consumers from rural areas who use approximately 500 million m³ of gas*
- *this volume of biogas, after purification, could cover approximately 10% of the national requirement for gas*



Electricity generation

Forecasted RES Generation (electricity) in the years 2010 – 2020 [GWh]





**Thank you
for your attention**

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