



## Reporting on dissemination activities carried out within the frame of the DESIRE project (WP8)


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| <b>Title of dissemination</b>                                 | CHP and Renewable Energy Sources in Strategy for Developing District Heating Systems in Poland  |
| <b>Type of activity</b>                                       | Presentation at thematic seminar  |
| <b>Title of forum</b>   | Polish – Norwegian Thematic Seminar<br>“Energy supply and Mitigation of Environmental Impacts”  |
| <b>Language</b>   | English   |
| <b>Date of dissemination</b>                                  | October 17 – 19 , 2006  |
| <b>Place of dissemination</b>                                 | Trondheim Norway  |
| <b>Brief abstract / description of dissemination activity</b> | <p>The Production of electricity and heat for local heat markets are important role for energy sector. Centralised heating systems cover at the average 72% of heat demand in cities and testify for it. In the power sector decentralisation strategy are recommended: development of small capacity dispersed sources, producing electricity and heat in cogeneration; acceleration of local energy resources, mainly renewable and waste; development of local energy markets.</p> <p>A short presentation about the DESIRE – project and results was given.</p> |
| <b>Audience assessment</b>                                    | <p><b>impact</b> Same of presentation was sacrificed of developing renewable sources of energy. Discussing trends in electricity &amp; heat production was very interesting and conclusion were similar to conclusions from the DESIRE – project.</p>   |
| <b>Dissemination</b>  | <p>The presentation has been published on the webside <a href="http://www.ntnu.no/polen2006/eng">www.ntnu.no/polen2006/eng</a> The total number of Polish and Norwegian presentation was 38</p> <p>Included after this form</p>   |

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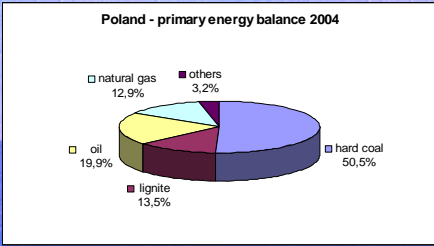
**Polish -Norwegian Seminar:  
"Energy Supply and Mitigation of Environmental Impacts"  
Trondheim 2006.10.18**

**„CHP and Renewable Energy Sources in Strategy  
for Developing District Heating Systems in Poland”**

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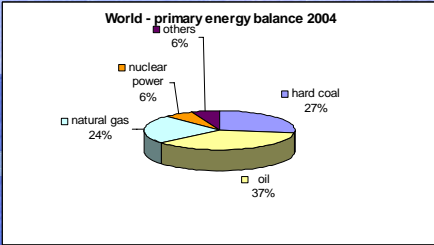
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**Poland - primary energy balance 2004**



| Energy Source | Percentage |
|---------------|------------|
| hard coal     | 50.5%      |
| oil           | 19.9%      |
| lignite       | 13.5%      |
| natural gas   | 12.9%      |
| others        | 3.2%       |

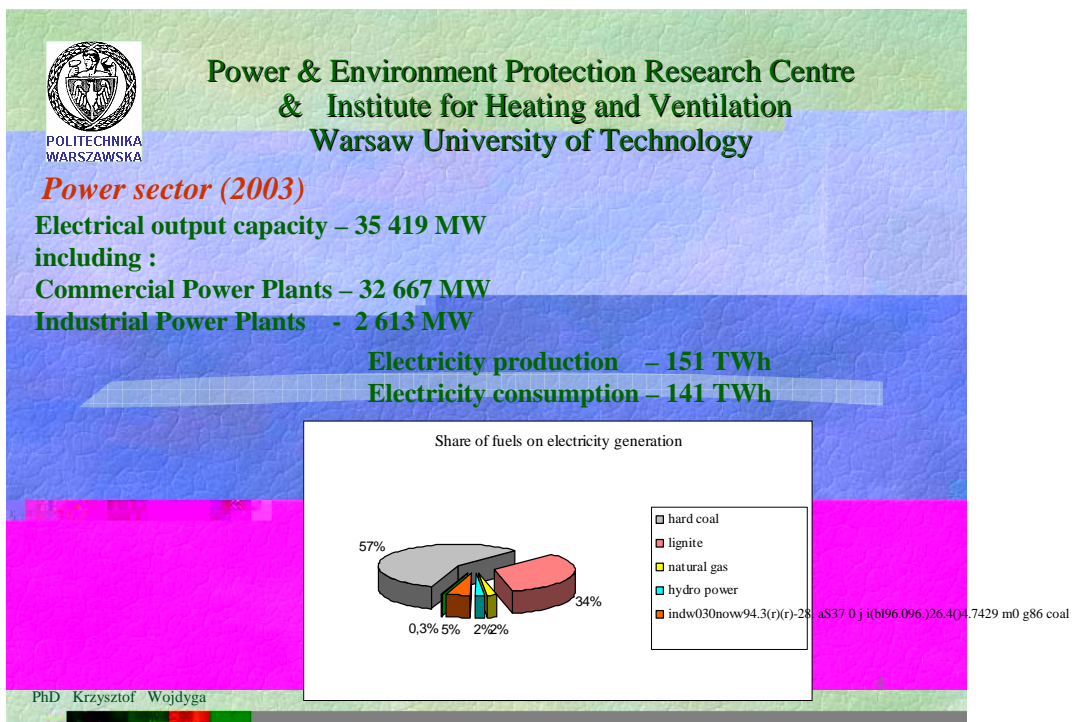
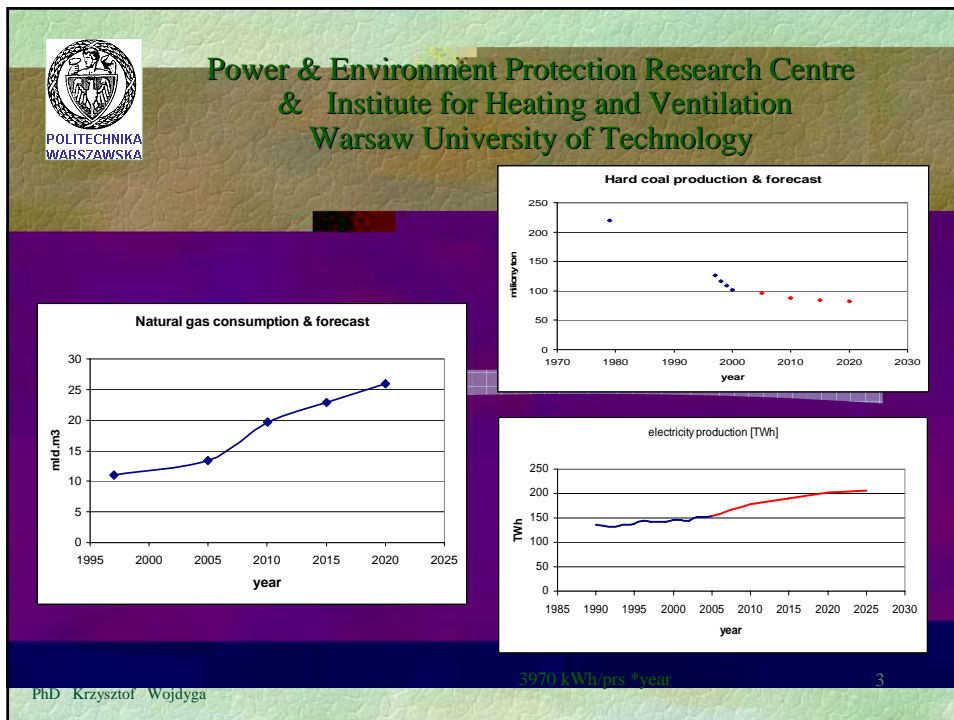
**World - primary energy balance 2004**




| Energy Source | Percentage |
|---------------|------------|
| oil           | 37%        |
| natural gas   | 24%        |
| hard coal     | 27%        |
| nuclear power | 6%         |
| others        | 6%         |

- **Poland is one of the most coal dependent countries in the world.**
- **Poland has significant coal resources.**
- **Total recoverable reserves of hard coal are estimated at over 32 billion tons.**
- **Recoverable reserves of lignite and sub-bituminous coal are estimated at 14 billion tons.**

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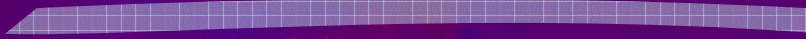




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*District heating sector -2003*


**8197** DH Companies  
including 7080 companies - heat for own use  
Registered companies 2002 - 887 (>1 MW),  
2005 - 665 (>5 MW).



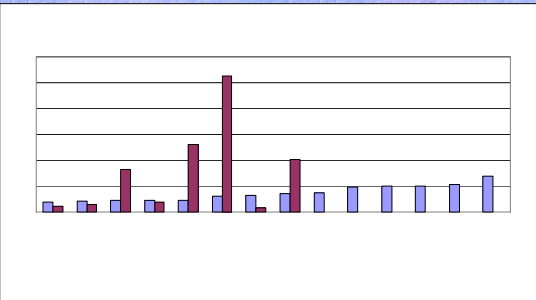
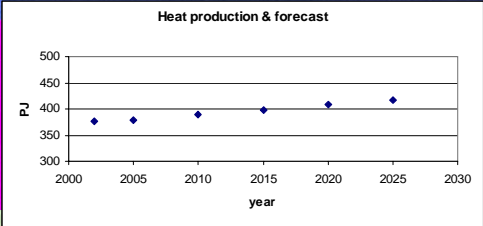
Installed heat power 2005 **65 189 MW**  
Total route length of pipeline system **18 577 km**

Heat production 168,3 TWh (599 PJ) (heating purposes and industrial needs),  
Heat delivered to the network **105 TWh (375PJ)**.

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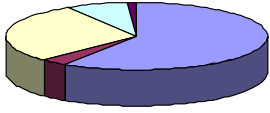
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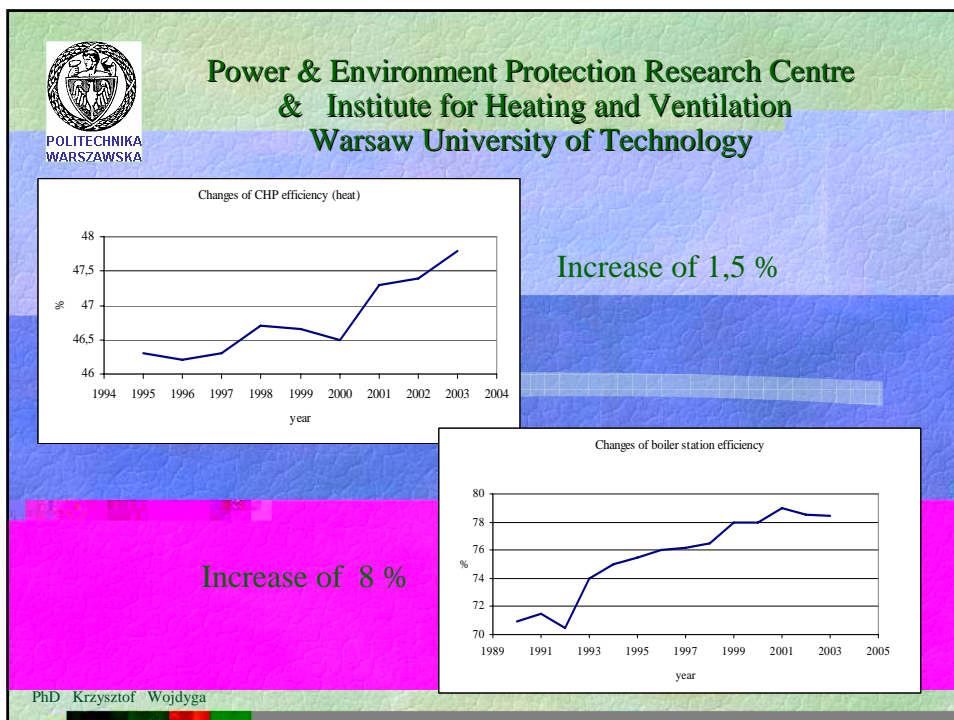
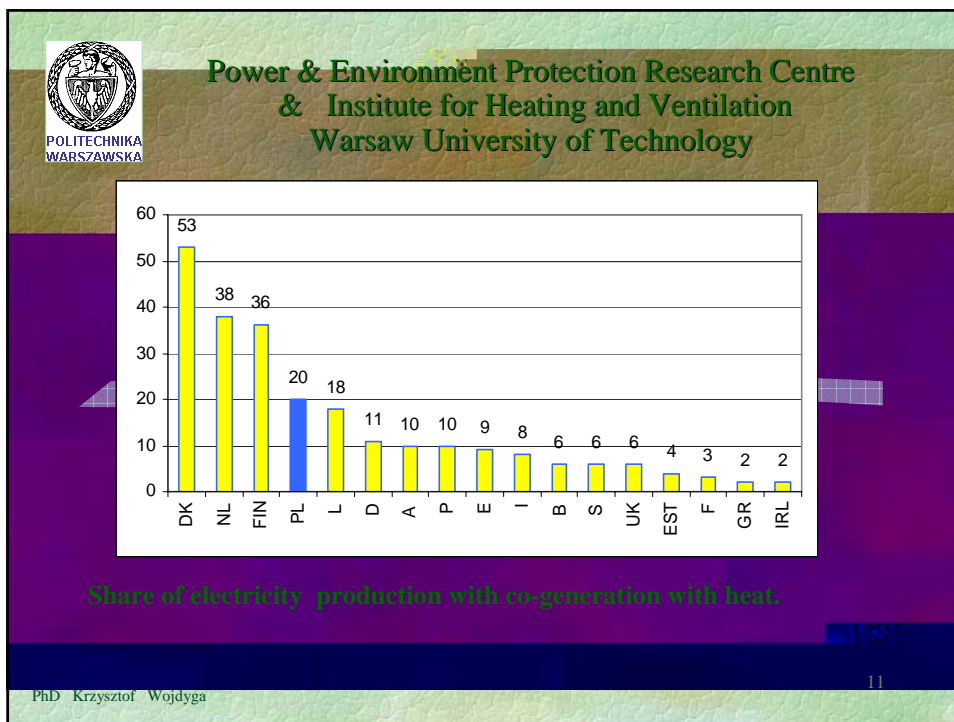



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Increasing heat production in co-generation is possible.  
But only in small and medium size DHS.  
In DHS ( 15 GW) supply from boiler station  
heat demand for hot tape water are 3 GW.  
It is potential for co-generation  
During next 20 years is possible build installations  
with heat demand about 1,5 -3 GW.

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**According to the EU Accession Treaty Poland signed obligation of use  
RES to electricity production - share in 2010 - 7,5 %.**

**In 2005 Ministry of Economy prepared Rozporządzenie (WE) nr 26/2005 z dnia 15 lutego 2005 r. w sprawie wykonania niektórych przepisów Dyrektywy Parlamentarnej i Rady (WE) nr 2001/77/WE z dnia 25 października 2001 r. w sprawie wspólnych zasad dotyczących wyłączenia z systemu krajowego energii elektrycznej wyprodukowanej z odnawialnych źródeł energii.**

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Heat production using renewable energy resources (RES) must increase to the level 7,5 % in 2010.

It is target signed in "Strategy for RES development" but this target isn't obligatory and government instructions are refer only to electricity.

Achieving targets from "Strategy for RES development" will be impossible without good economical conditions for RES new investment

Our government must prepare principles and action for RES development

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Important role for increasing renewable can play directives connected to environment protection.


*Directive 2001/80/EC of 23.10.2001, on emission limitation of air pollution from large combustion plants (Directive LCP),*

*Directive 2003/87/EC of 31.10.2003 r., establishing a scheme for greenhouse gas emission allowances trading within the Community*

*Directive 96/61/EC of 24.09.1996 r., on integrated pollution prevention and control (Directive IPPC),*

*Directive 2001/81/EC of 23.10. 2001 r., on national emission ceilings for certain atmospheric pollutants (Directive NEC).*

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**DESIRE PROJECT**

In case countries with high share of electricity production from renewable especially from wind farms there is big problem with balancing electricity production.

As proportions of renewable electricity rise, so does the threat to pan-European trading in electricity.

Trans-boundary electricity inter-connectors will become blocked with international transfer of excess wind power supplies.

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**DESIRE PROJECT**


**DESIRE will disseminate practices which will integrate fluctuating renewable electricity supplies such as wind power into electricity systems using combined heat and power.**

**In the project take part 6 EU countries as Denmark, Germany, UK, Spain, Estonia and Poland.**

**In the short term we can use wind power and CHP plant to co-produce a balanced, non-fluctuating, electricity output.**

**This project will promote the integration of fluctuating renewable electricity supplies into local and regional electricity systems.**

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### Conclusions I

- State energy policy in connection with renewable is unsatisfactory.
- Statistic data of renewable and heat & electricity must be more accurately
- Heat production for DHS during next years will be on the same level
- Consumption of natural gas, wood and straw in DHS will be increase

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### Conclusions II

- Heat sources will be modernized: efficiency increase, decrease emission and air pollution, decreasing production costs
- In small DHS will be new investment as CHP with gas engines and heat accumulators
- In small DHS wood & straw will be burning as main fuels basing on local resources
- New boilers will burn only biomass but in old boilers biomass will be co firing with coal
- Burning of wood & straw in big power plants must be forbidden.

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