### Poland

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>38.1 mln</td>
</tr>
<tr>
<td>Moderation climate zone</td>
<td>5 zones</td>
</tr>
<tr>
<td>Average air temperature</td>
<td>7 °C</td>
</tr>
<tr>
<td>GDP</td>
<td>13,800 USD per capita</td>
</tr>
</tbody>
</table>
District heating sector

- 2.2 bln EUR turnover
- 63 000 MWth installed capacity
- 430/270 PJ heat
- 18 800 km net length
- 500 companies
- 70% market share
- 15 mln people

Polish District Heating
District heating systems in EU

Total district heat delivery - TJ (Austria 2006, Slovakia 2005)

Source: EH&P
Ownership structure

- Private companies: 81%
- Municipal companies: 9%
- Other companies: 4%
- Housing associations: 3%
- State companies: 3%
Fuel structure

• 25 mln t. of coal
Heat prices

1 zł = 0.22 EUR
• 21 TWh from CHP

Commercial CHP
• 190 boilers with capacity of 18 000 MW
• 140 turbines with capacity of 5 300 MW

Industrial CHP
• 180 boilers with capacity of 5 800 MW
• 115 turbines with capacity of 1 750 MW
Quota obligations

% 25

% 20

% 15

% 10

% 5

% 0

2008 2009 2010 2011 2012

gas and small units CHP units bigger than 1 MW
CHP development

Huge production capacity located in heat-only boilers instead of CHPs
The largest DH system in Poland and in EU – Warsaw

- DH delivered, GJ/year: 38 000 000
- Total length of pipeline network (in km): 1 600
- Flow of heat: 50 000 m³/h
- Residents receiving heat from DH: over 1 mln citizens

19 000 buildings
The largest DH system in Poland and in EU – Warsaw

Production in 2008:
- heat: 10.8 TWh
- electricity: 4.0 TWh

- HP Wola: 465 MWt
- CHP Pruszkow: 186 MWt
- CHP Zeran: 1561 MWt, 350 MWe
- HP Kaweczyn: 605 MWt
- CHP Siekierki: 2078 MWt, 620 MWe

Production in 2008:
- heat: 10.8 TWh
- electricity: 4.0 TWh
Polish Energy Policy

Energy Policy for Poland until 2030
- Energy efficiency improvement
- Energy security
- Diversification
- RES development
- Increase market competition
- Minimizing environmental effects

Double electricity production in cogeneration till 2030
Challenges for Polish DH market

- Influence of ETS and IPPC Directives will force modernization of DH of the sector
- Necessary a new price creating scheme
- New support scheme after 2012 for CHP
- Development of renewable energy sources
- Energy efficiency improvement
- Closer cooperation with final customers
  - temperature comfort
  - complement services