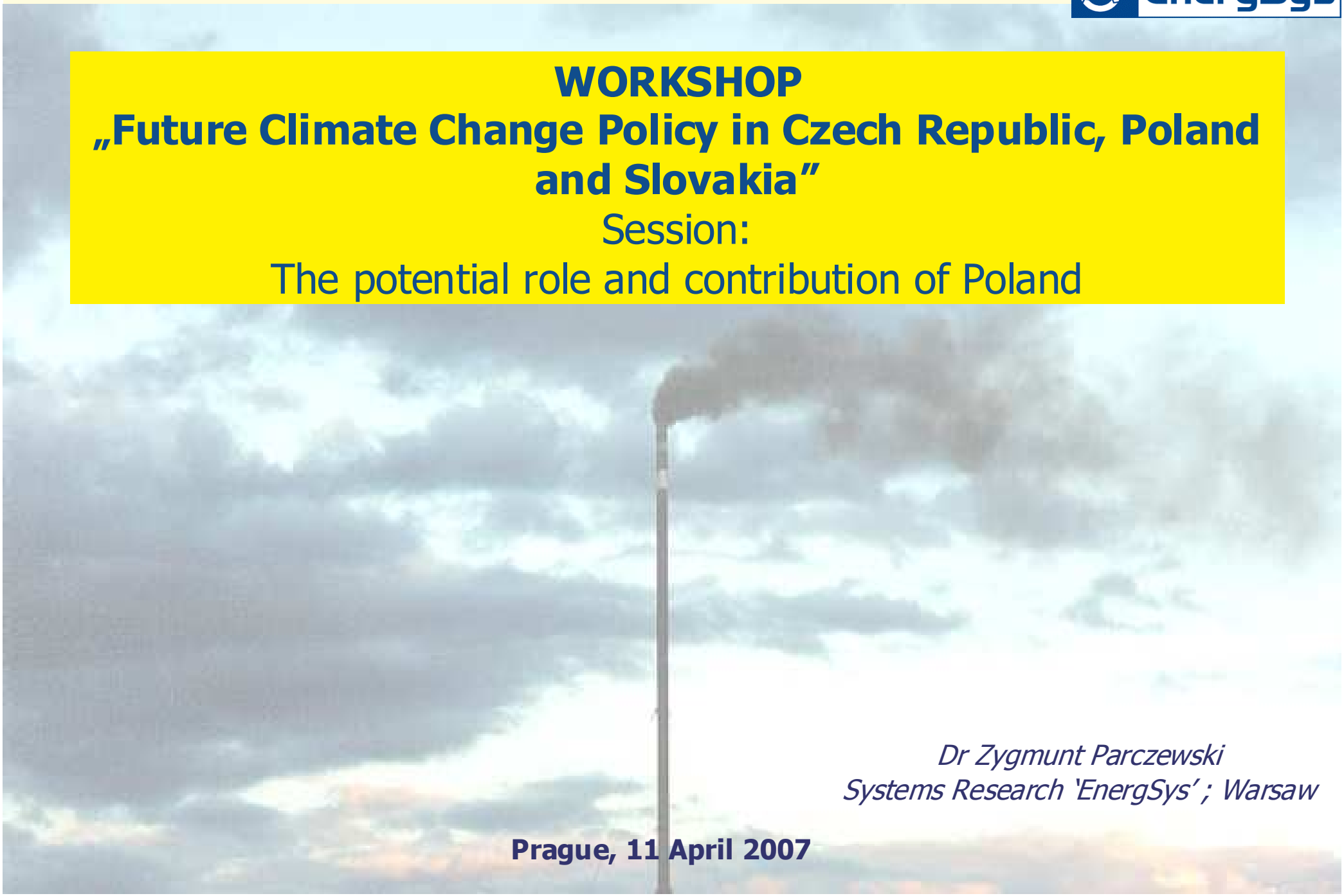
WORKSHOP
„Future Climate Change Policy in Czech Republic, Poland and Slovakia"

Session:

The potential role and contribution of Poland



Dr Zygmunt Parczewski
Systems Research 'EnergSys' ; Warsaw

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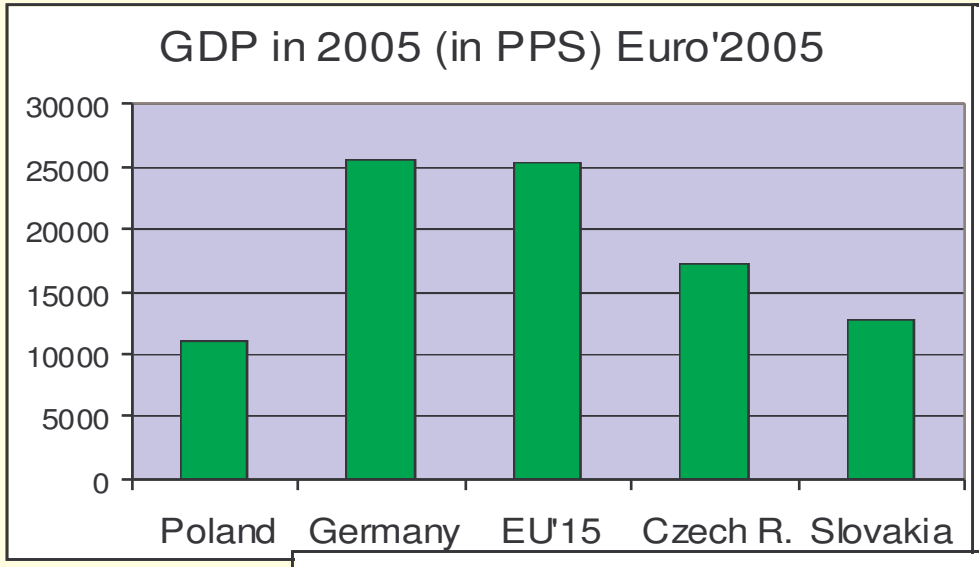
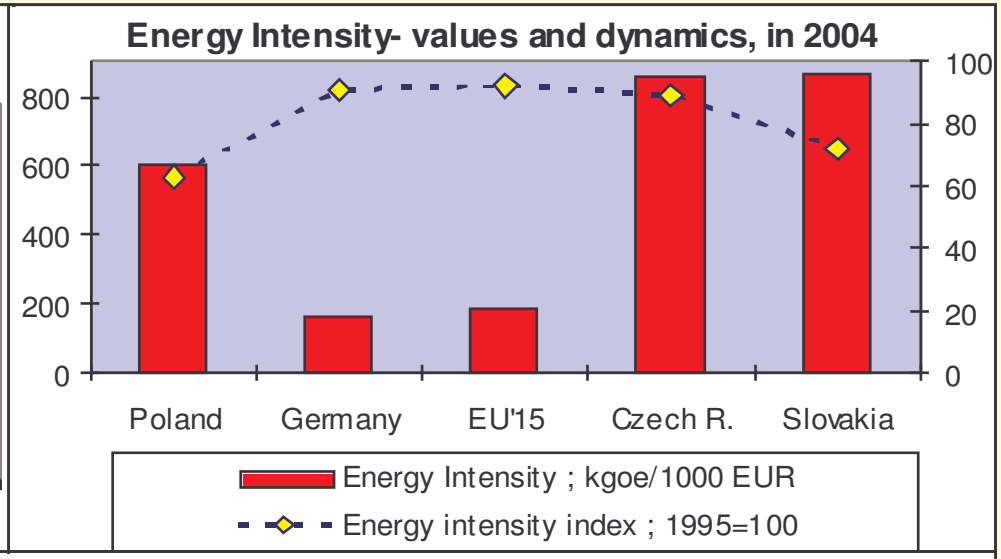
Key topics

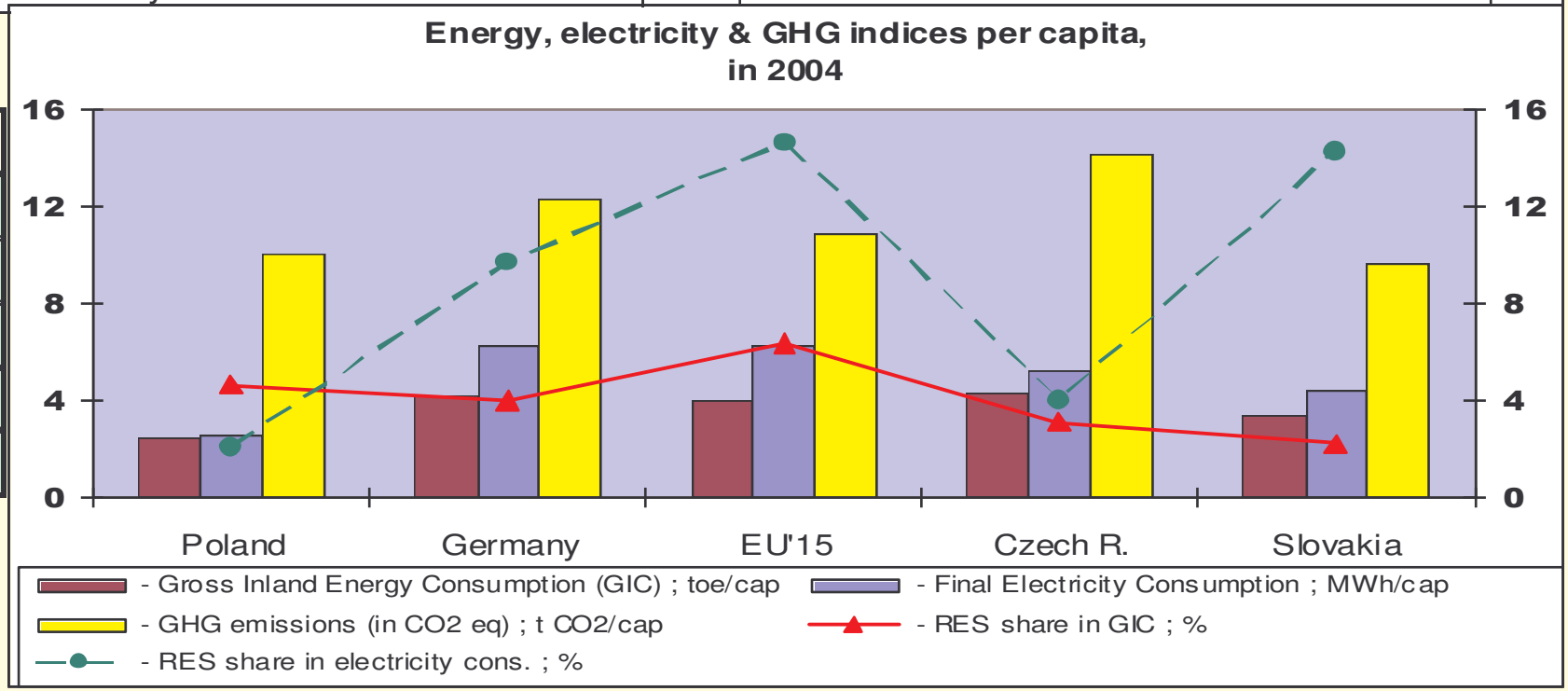
1. **Poland- highlights (facts - viable & realistic?):**
   - **Macro- situation**
   - **Cross- country comparison**
   - **CO2 emissions breakdown in 2005**
   - **Households energy costs (social)**
   - **Other aspects (technical, emission, weather …)**
2. **ETS perspectives (until 2020, …) – *author's viewpoint*:**
   - **Reduction target**
   - **The new burden sharing agreement**
   - **Common and different inter-state conditions**
3. **Closing remarks (*author's*)**

Poland- Highlights (1)- macro-indicators

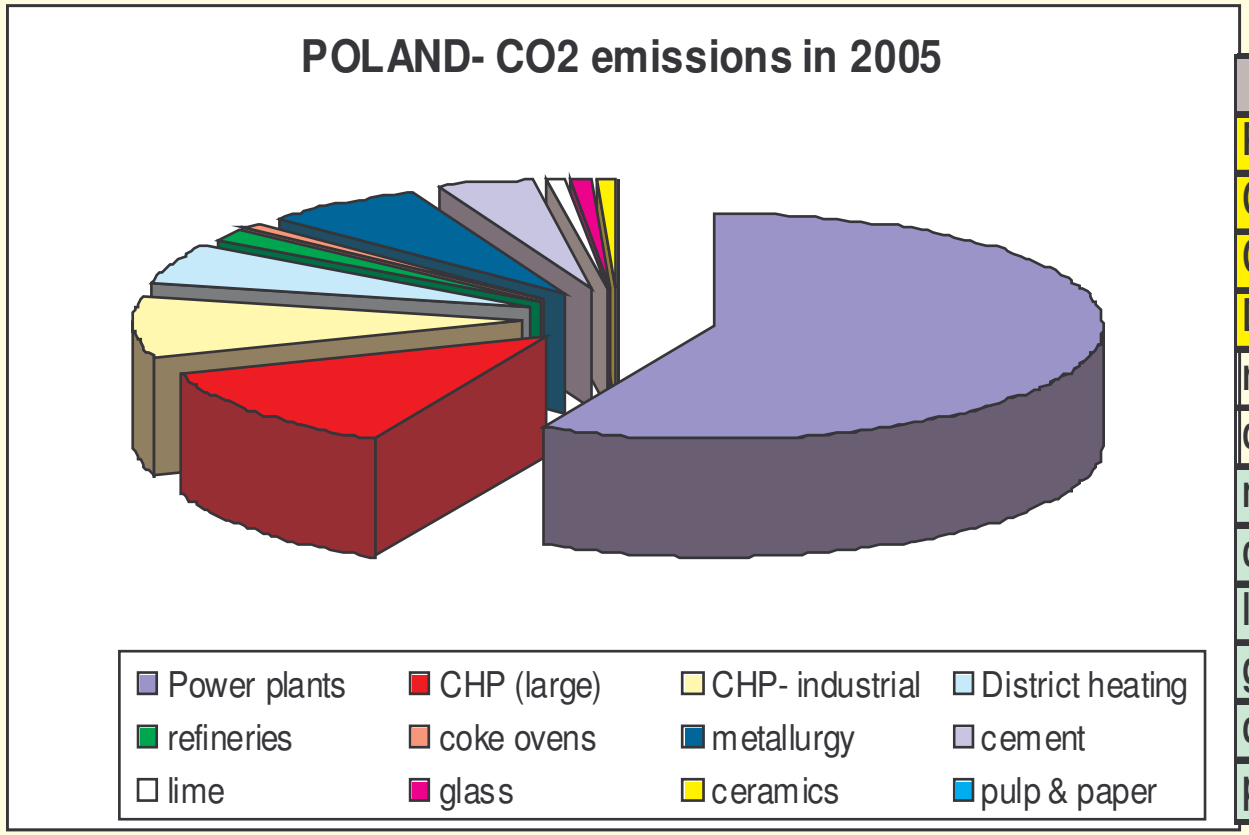




2004	
electricity	kWh/cap
Poland	2625
Slovakia	4466
Czech R.	5269
Germany	6220
EU'15	6279



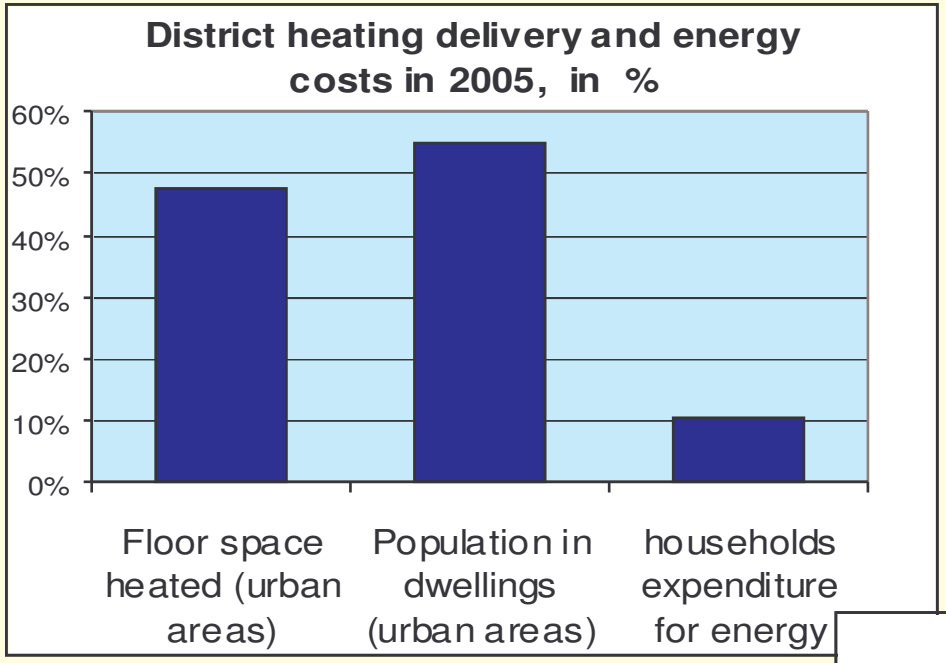
Poland- Highlights (2) – CO2 breakdown



ETS sectors	t CO2	structure
Power plants	116610960	57,2%
CHP (large)	25628328	12,6%
CHP- industrial	17563000	8,6%
District heating	12106999	5,9%
refineries	3220000	1,6%
coke ovens	2290748	1,1%
metallurgy	13550000	6,6%
cement	8080000	4,0%
lime	1720000	0,8%
glass	1440000	0,7%
ceramics	1420000	0,7%
pulp & paper	270000	0,1%

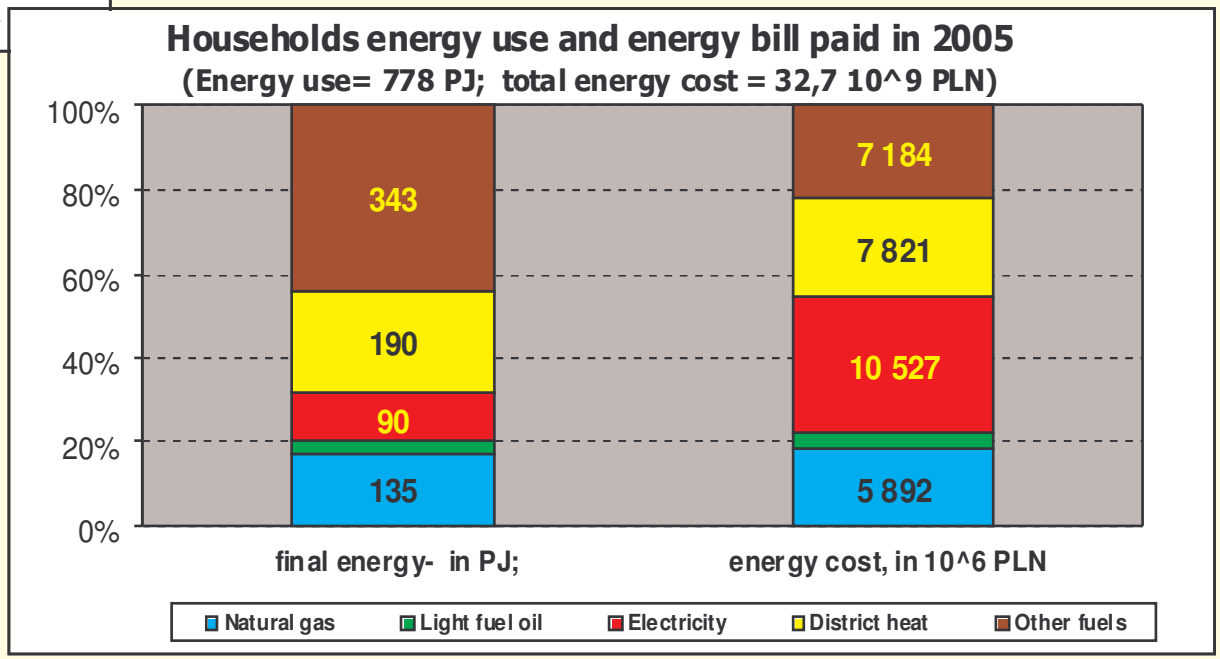
Source: Authors own estimation

Poland – highlights (3) - households energy costs



Remarks:

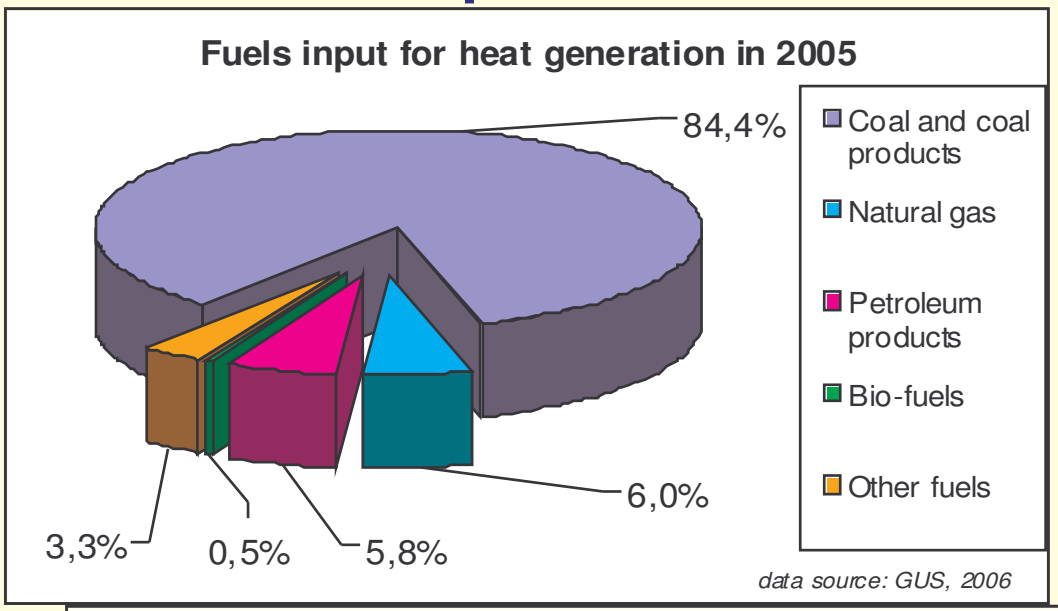
- District heat (DH) plays crucial role in urban areas of Poland
- Energy costs paid by households is > 10% of their expenditure, in which DH share >50%; electricity ~ 35% - (Motor fuels excluded)
- Share of solid fuels used by households still extremely to large (= high low emissions of PM, SO2, CO2, CO and other !!! = low efficiency; low standard living; but low cost)

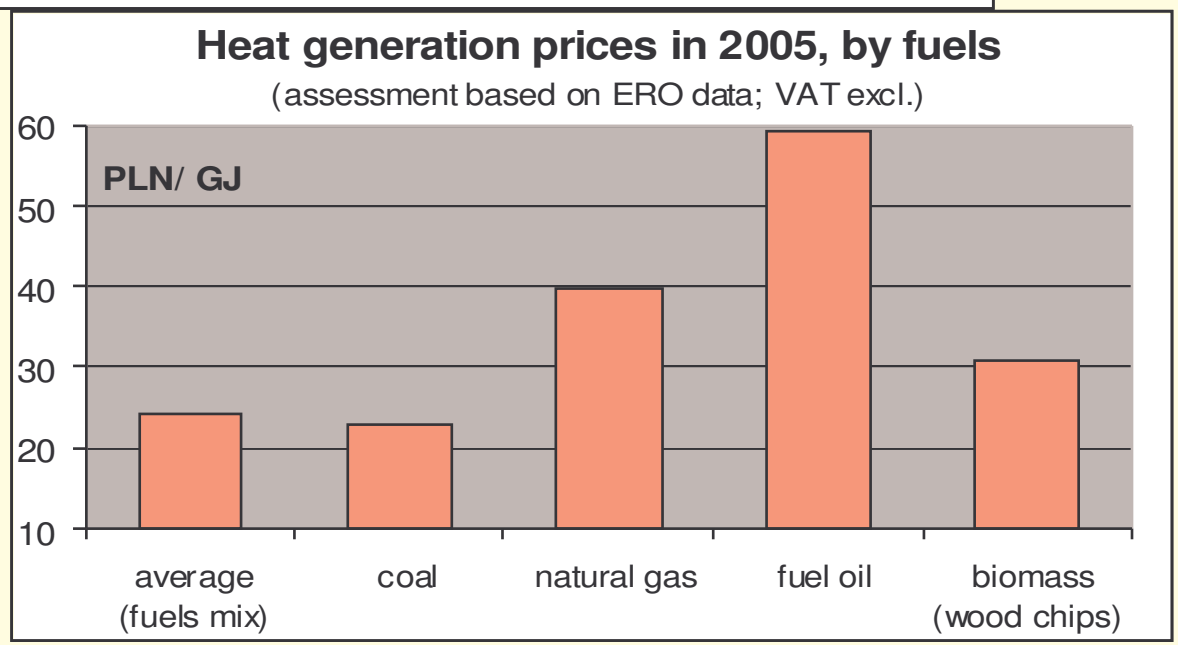


Source: Authors own estimation

Poland– highlights (4)– fuels structure & competition

3. Structural aspects:





Remarks:

- **Electricity and district heat generations are dominated by- respectively ~ 96%** (hard coal + lignite)**, and ~85%** (hard coal)
- **Hydrocarbons play supplementary role only (pick- load boilers and a few CHP gas fired)**
- **Biomass in DH is growing- (micro-units), in electricity generation – co-fired with coal**
- **The oil & gas prices are 2-3 times less competitive comparing to coal**

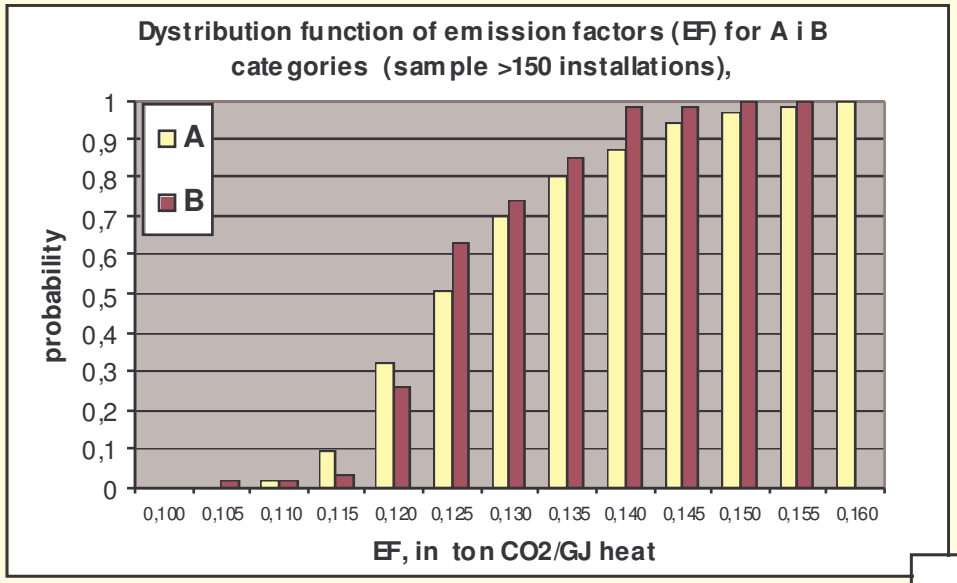
Conclusions:

- **The key challenges are:**
- **In DH – heat supply costs**
- **In coal mine sector – huge subsidies reduction and/ or removal (= highly political)**

- **Inter-fuel substitution (coal to gas) is limited:**
- **Russia– gas supply security?**
- **Uncompetitive gas prices**

Poland– highlights (5)– technical, emission & weather

3. Emission aspects:



Remarks:

- Power plants: hard coal fired emission factors (EF) ranges [0,87- 0,98 t CO2/MWh]; lignite fired – 1,017- 1,106 t CO2/MWh
- CHP large plants– narrow ranges of EF
- DH generation plants (A & B emission categories) is characterised by wide range of EF values (0,11- 0,16 t CO2/GJ heat)
- CHP- autoproducers – extremely wide range of EF

Weather conditions remarks:

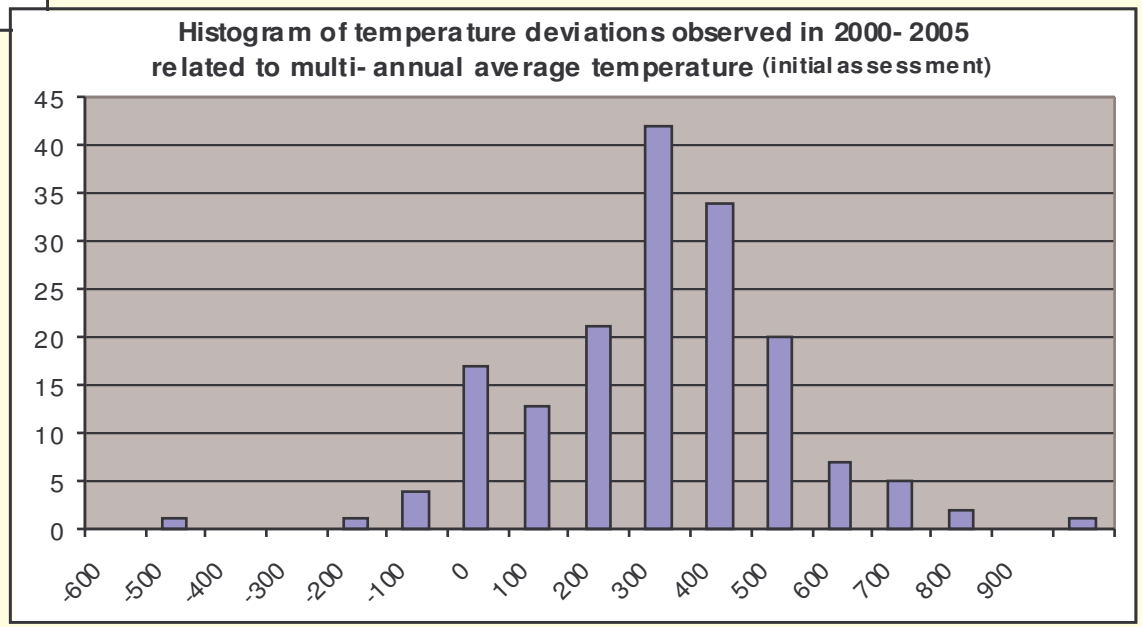
- Period 2000- 2005 was wormer *(see graph on the right)* and reduced considerably of heat supply
- Summer-time extreme temperature forced new electricity supply challenges

Remark:

- DH is very sensitive on outdoor temperature

Open question:

How to compensate it in ETS (*special reserve, financial instruments, others*)



ETS perspectives– reduction targets *(author's viewpoint)*

Until 2020: Poland should comply in full with the EU'27 objective - 20% reduction of CO2 emission:

- The most efficient measures, potentially 'viable and realistic' can be:
  - **Strengthening of CHP development, incl. HoB repowering** *(Cogen directive + domestic regulations and incentives)*
  - **Power plants modernisation and/or replacement; decommissioning 'dirty plants'**
  - **All new power plants must comply to BAT standards** *(LCP+ IPPC directives + BREF)*
  - **Buildings refurbishment** *(building directive)*
  - **Highly efficient equipment and appliances in common use** *(set of directives)*,

Instruments proposed (except legal obligations as directives mentioned above)**:**

- ETS emission limits – well implemented and better operated (all levels)
- Hard coal subsidies removal and moving part of released resources to both: the RES support *(e.g. linked with dispersed micro- cogeneration) and pilot installations (PC + CCS)*
- Institutional capacity building of Polish administration

Beyond 2020 – CCS technologies implementation – after the 'viable and realistic' set of data gathered on schedule with 'Energy technology plan, incl. Clean coal'

ETS perspectives– new burden sharing agreement *(author's viewpoint)*

Recommendation:

„Be most adequately distributed"

Common set of fair criteria and rules:

- Economic development – current state and perspective *(country and enterprises economic ability; short- run and Long- term)*
- Environmental country profiles *(historical and current indices; future impact on all beneficiary: Poland, EU'25, others)*
- Social development *(direct and indirect, e.g. unemployment; energy prices growth impact on energy bills, GDP level, etc.)*
- Security of energy supply and energy market distortions *(specific country conditions)*
- Agreed calculation methodology and statistic approach producing reliable data sets

Instruments:

- Agreement similar to **First Burden Sharing Agreement** with respect the **SOLIDARITY RULE**

ETS perspectives– identify specific conditions *(author's viewpoint)*

Recommendation:

„Be relevant with respect to climate policies"

Activities enhancing the **new Burden Sharing Agreement:**

- Step I: Credible assessment of economic and market potentials of CO2 reduction options available by member States
- Step II: Sectoral and Political discussions focused on how to reach consensus about (a) before its implementation

Instruments:

- Phase 1- Research & Development Project
- Phase 2- Pilot Projects
- Phase 3- Implementation in full-scale

Open question:

How to organise efficient funding at EU and country levels?

Poland – Closing remarks

VIABLE and REALISTIC *recommendations for Poland's Climate Change Policy means:*

- **Challenges:**
  - How to sustain fast, L-T economic growth without significant increase of electricity consumption *(in Polish conditions with more then 2 times less)*?
  - How to accommodate the new considerable burden to Polish poor society *(excl. RO, BG)*?
  - How the future Polish energy system will look like? *(electricity and heat generated by plants equipped with CCS installations or nuclear stations)?*
- **Threats:**
  - Lack of social and political acceptance, as a result of significant energy costs increase *(potential rise of unemployment rate, which is probably the highest in EU'27)*
  - Lack of political acceptance as a result of worsening energy supply security and increased import dependency of hydrocarbons
- **Opportunities:**
  - **To overcome threats**
  - **to create knowledgeable modern economy**

Thank you for attention

Systems Research "EnergSys" Ltd.

4 Rostafinskich Str.
02-593 Warsaw, POLAND
Phone: (+48) 22 849 40 22; fax: (+48) 22 848 06 17

biuro@energsys.com.pl
www.energsys.com.pl

EnergSys