



Hungarian –Polish conference on renewable energy  
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Panel II. Social Green Energy

# **Renewable energy in Central and Eastern Europe – possible utilisation in the agricultural sector**

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# Importance and challenges of RES for rural areas

## Local benefits

Heating costs reduction

Local employment

Local income

Local income

Strengthening of local infrastructure

Solid biomass  
Solar thermal energy  
small wind, PV off-grid  
Biofuels production

Agricultural biogas

Geo heat pumps

Small hydro

PV on-grid

Biofuels consumption

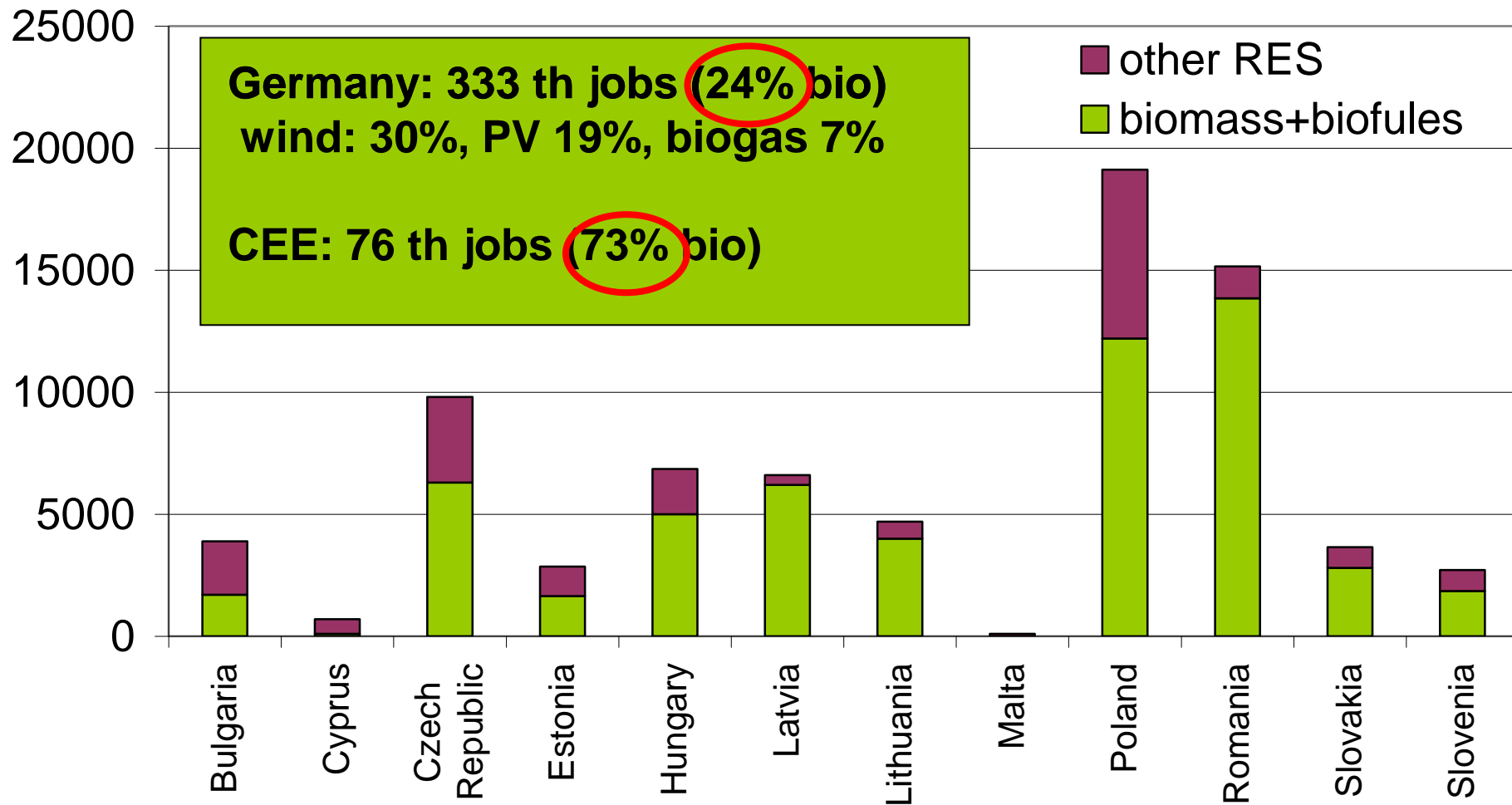
Geothermal district heating  
Sewage and landfill, MSW,  
industrial biogas

wind farms, off shore wind

Energy security  
Climate protection  
Fulfilling  
the national  
green energy targets

## Global benefits

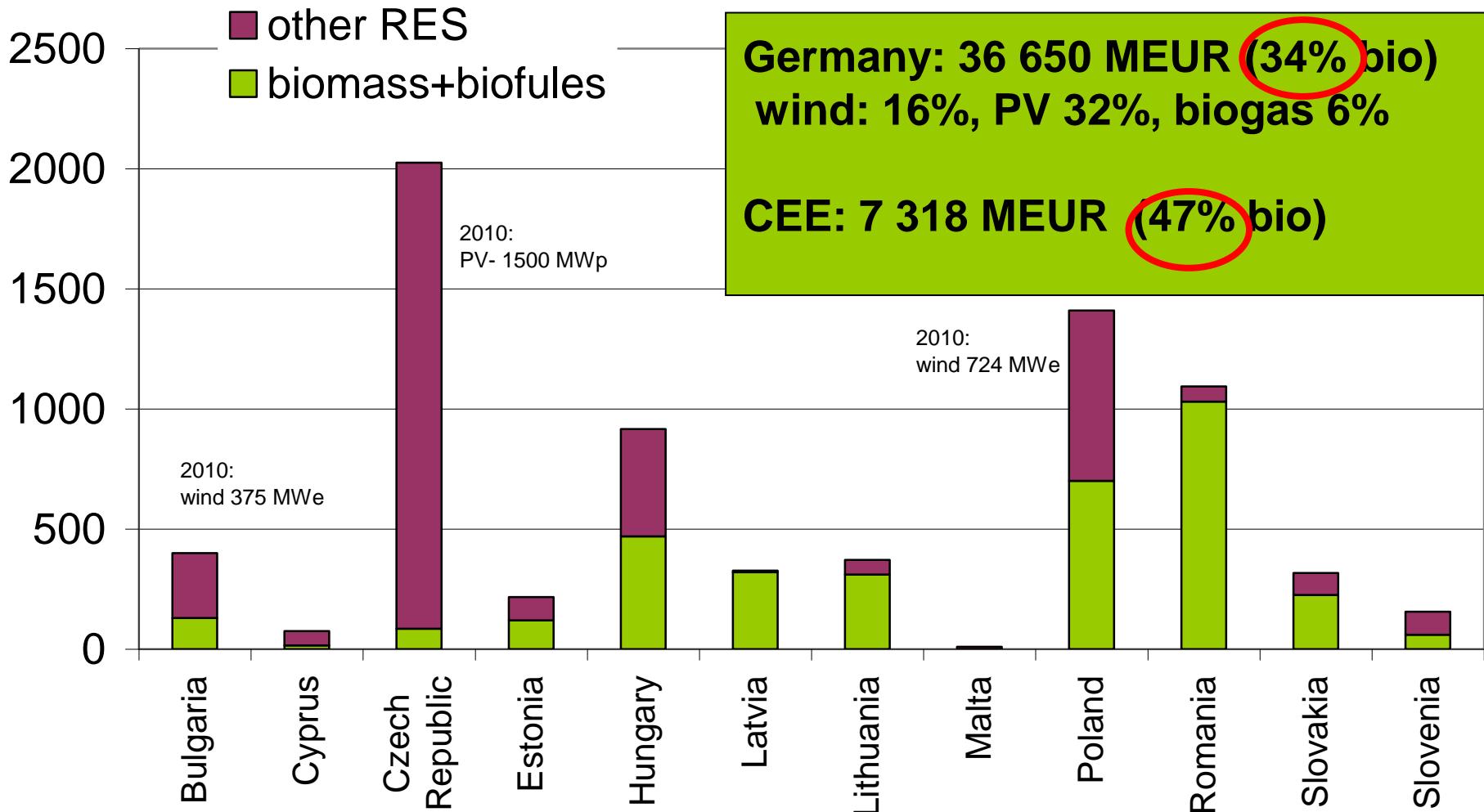
## RES employment in CEE (2009)



In CEE employment is created prevailingly by biomass fuel production, employment in more advanced technologies should be encouraged

## RES turnover in CEE (2009)

M EUR



Turnover is generated prevailingly by biomass fuel supply and centralised/imported equipment (wind, PV)

# Only RES targets?

Different RES development aims are behind national (NREAP) and regional policies

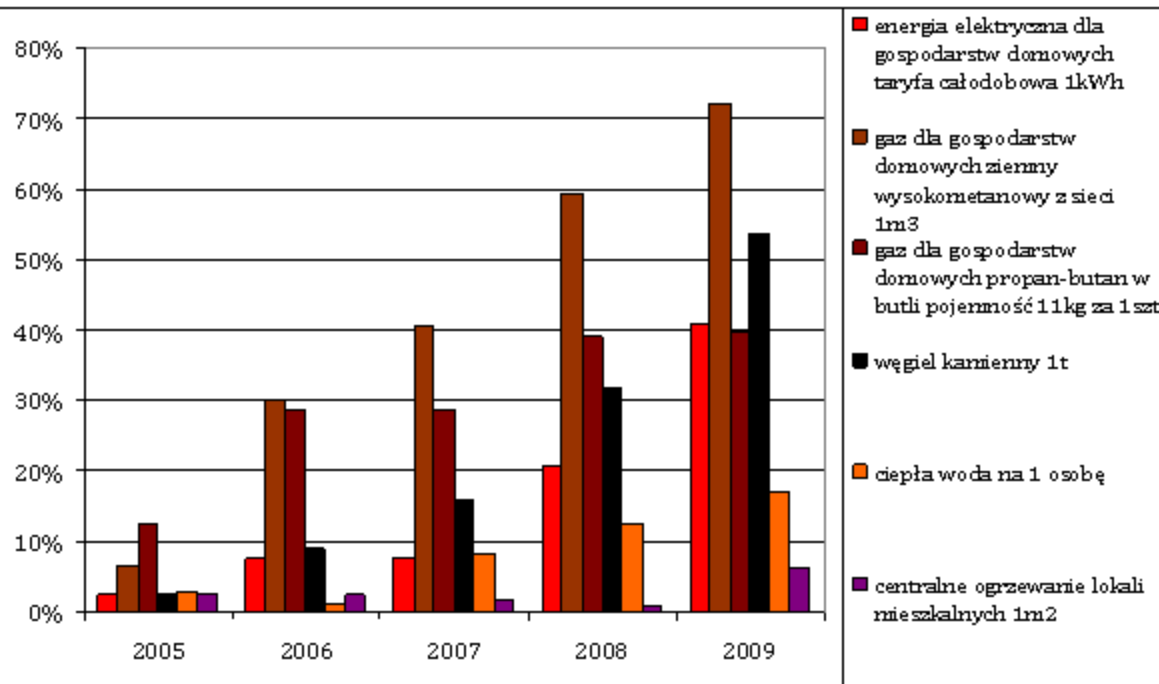
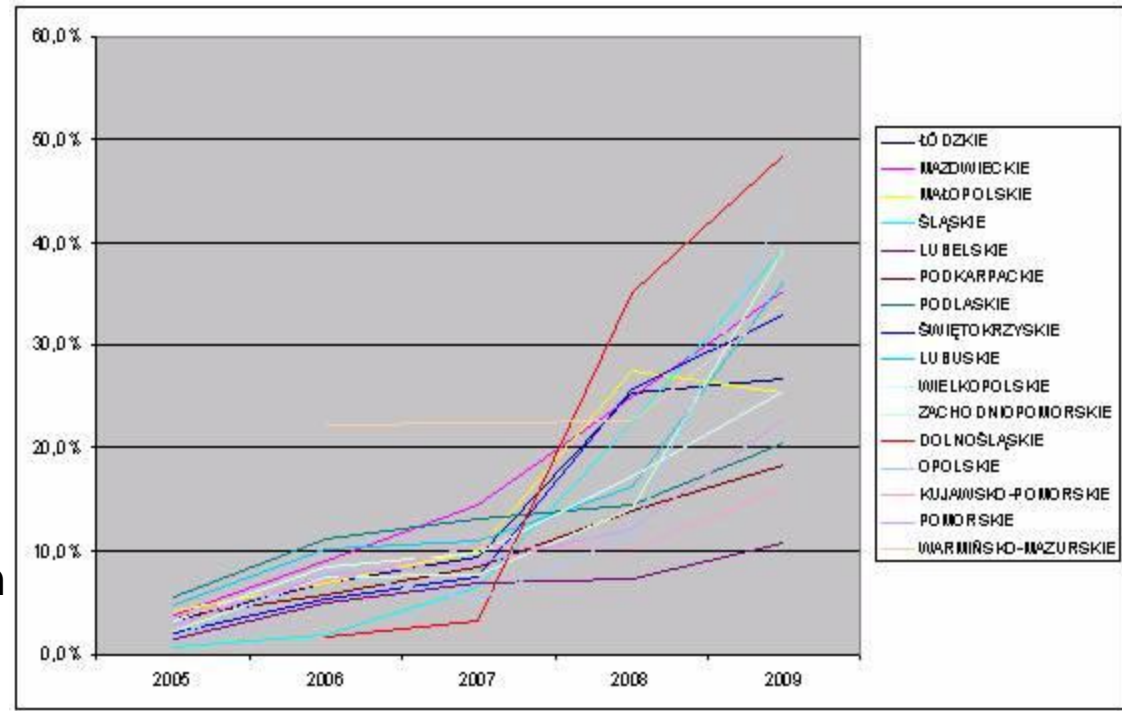
For rural development (employment, turnover, value added) regional policies are more effective e.g.:

- Jász-Nagykun-Szolnok county
- Mazovian Voivodship

# Quality of energy supply/ energy security in CEE rural areas

- Liberisation of the energy markets is followed by lowering of the quality of electricity and gas supply in remote areas
- Demand for electricity increases, demand for heat decreases
- Prices for energy in rural areas increase

## Increase in electricity prices in rural areas since 2004 in Poland



## Increase in energy prices since 2004 in rural areas in the South of Poland

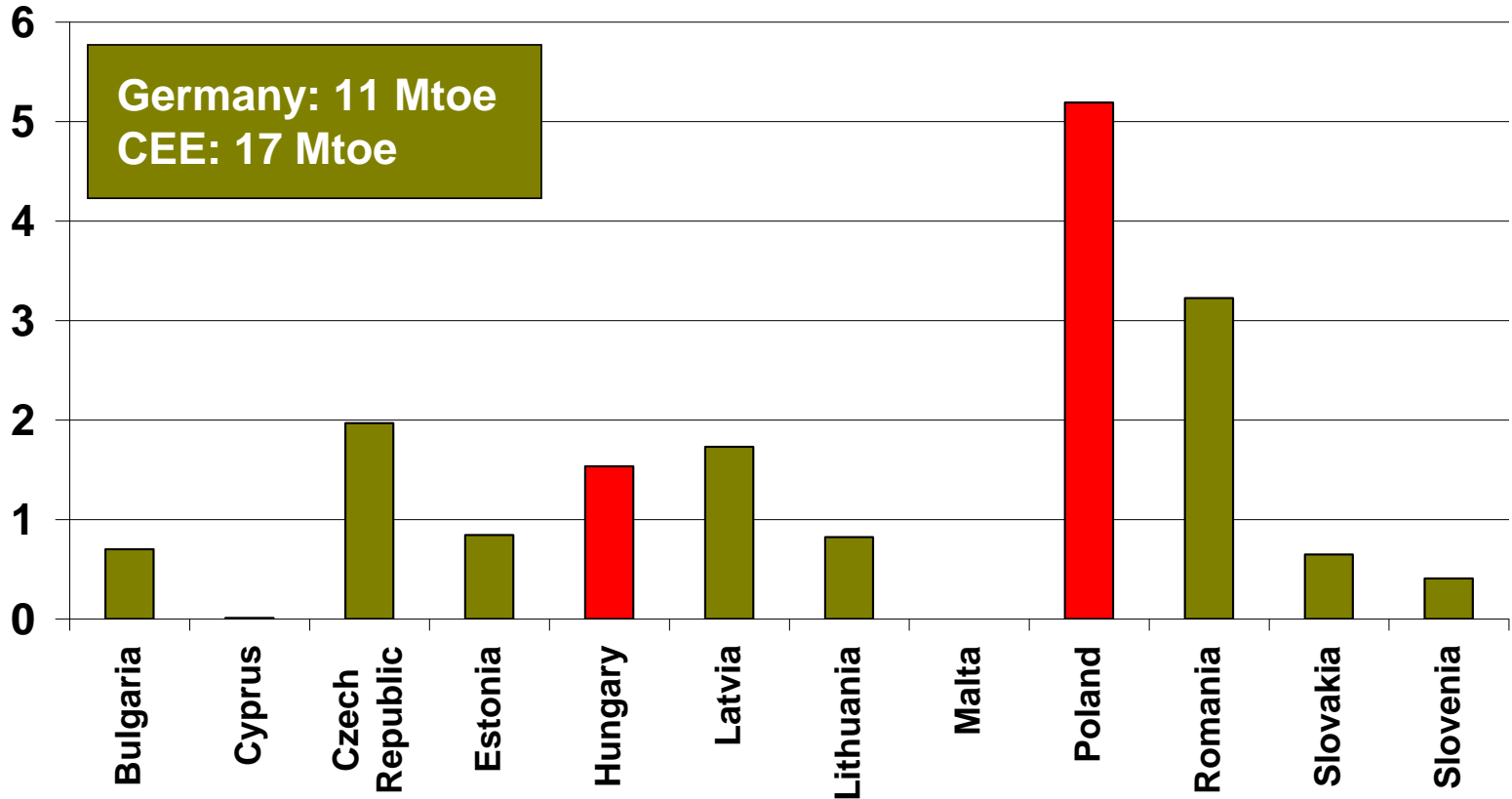
# Are the alternative income/ employment opportunities created by biomass attractive for rural areas

- The food prices are increasing thus the motivation to look for additional income (e.g. energy crops) is less attractive
- CAP support has been withdrawn
- The sustainability criteria (RES directive) for biofuels and competition with biofuels from outside Europe (Brazil, Malaysia) make this alternative even less attractive



## Biomass primary energy in CEE (2009)

Mtoe



**S:** Reduction of heating costs, energy crops: local jobs and income

**W:** Resource availability, low quality furnaces/boilers

**O:** New more efficient equipment, replacement of forest biomass with agri biomass

**T:** Competition for resources (cofiring)/ energy crops dependent on the external subsidies

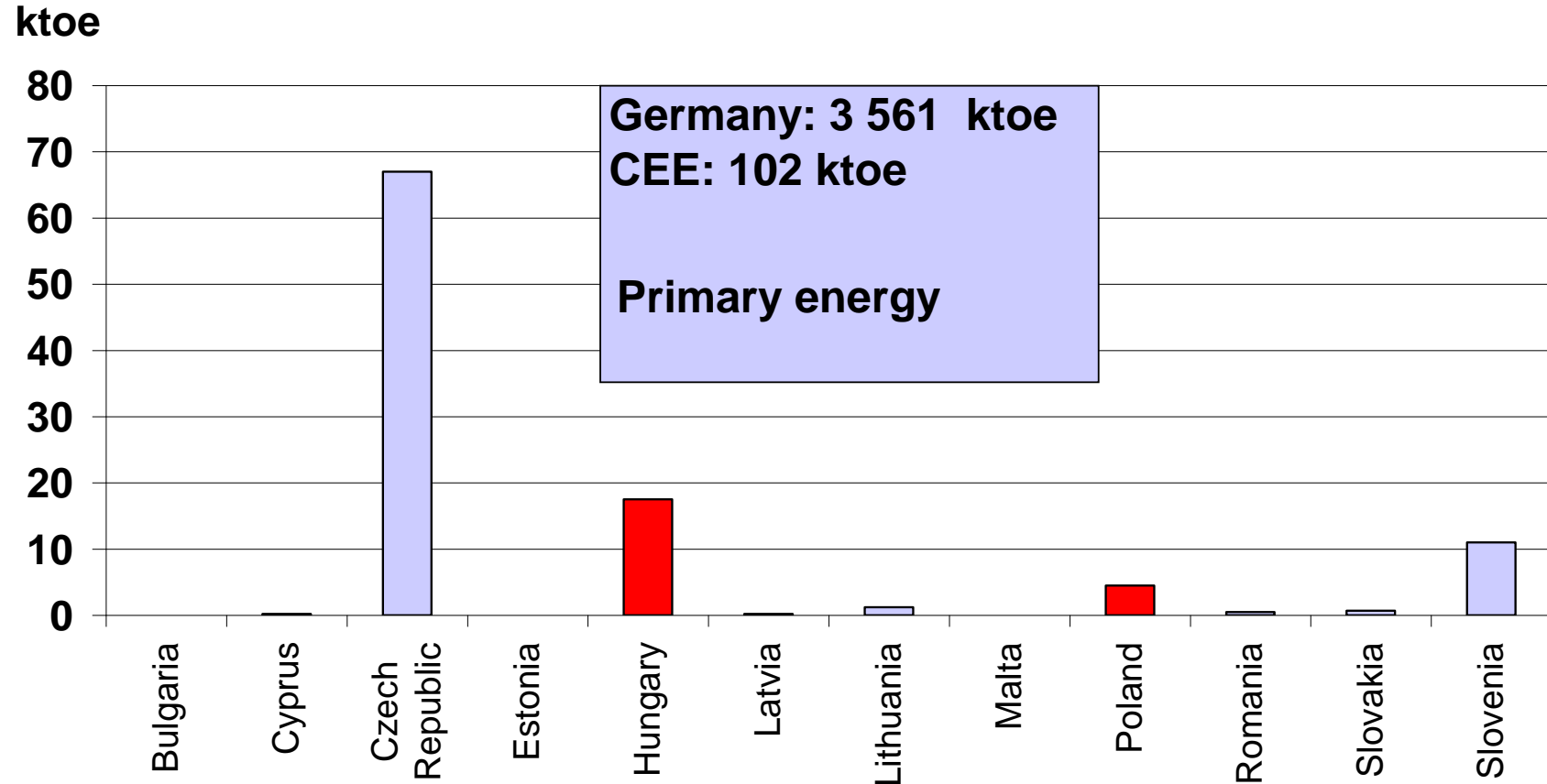
# Opportunities for other RES vs. biomass domination in rural areas?

Inefficient use of resources: solid biomass is used in low quality furnaces (heat efficiency c. 40% vs. 80-85% of modern installations)

In some countries the use forest biomass has been already used and in addition restricted – Natura 2000, competition with other industries, incentives to use more expensive agro biomass

Too slow departure from inefficient use of biomass prohibits the development of modern infrastructure: micro grids, smart grids, local balancing groups, district heating.

## Agricultural biogas primary energy in CEE (2009)



**S:** Solution to waste, environmental problems/ energy crops -local jobs and income

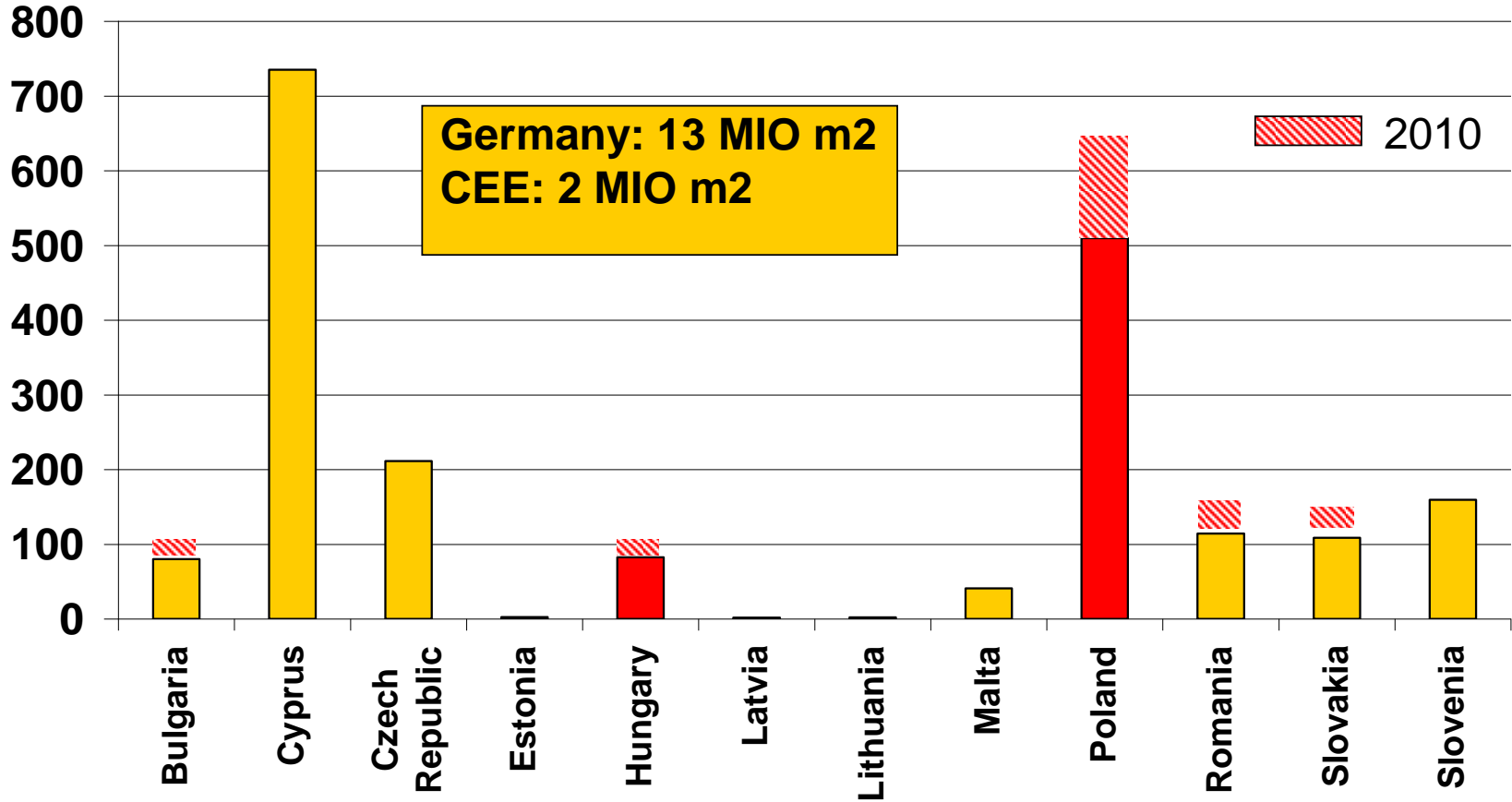
**W:** Costs, farm size in CEE too small to make the investment profitable/ too small on-farm heat demand

**O:** Special support schemes for biogas plants below 100 kW<sub>e</sub>

**T:** Dependence on the external support schemes due to low profitability

## Solar thermal in CEE (2009)

'000 m<sup>2</sup>



**S:** Reduction of heating costs

**W:** In colder climates along with additional energy source, costs

**O:** Dynamically developing technology

**T:** The dynamics depends on the external funding schemes

# Design of policies

- Rural areas should be beneficiaries of the national RES policies, so far development shows that centralised RES energy production has been preferred
- Reasons for preference of centralised systems over dispersed generation: support is easier to organise, control and benefit, it is cheaper in terms of direct income but the local benefits in the rural areas are missing
- New priorities for distribution of EU funds in the 2014-2020 period in order to redirect benefits to rural actors, bigger role of regions in distribution of funds



**Thank you for your attention**

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**Biogas Seminar 2011**

State of the art and perspectives to 2020

26th October 2011

Warsaw