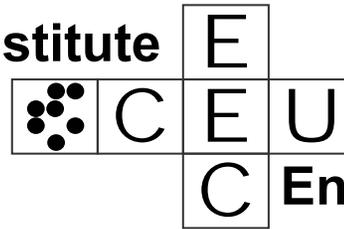
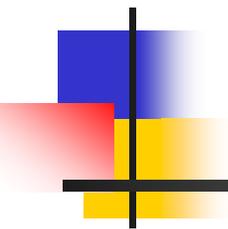


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Key Barriers for Cogeneration in Slovenia

Andreja Urbančič, Jožef Stefan Institute

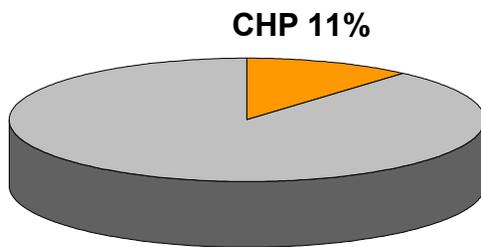
REALISE FORUM, *Experiences with feed-in tariffs: lessons from the German and the Spanish model for the new member states*

Maribor, 10 – 11 May 2006

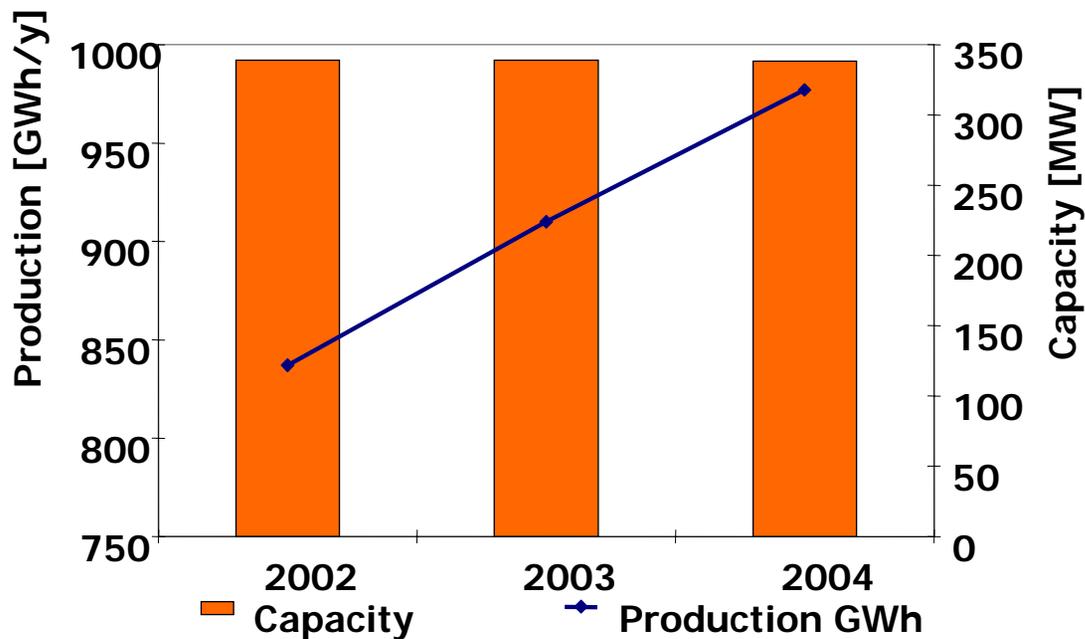
CHP in Slovenia

CHP:

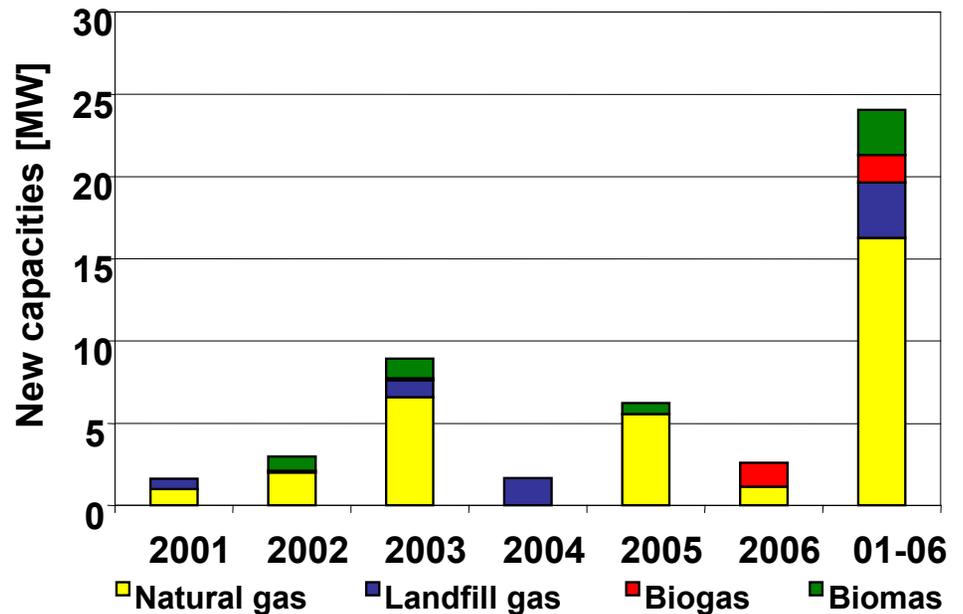
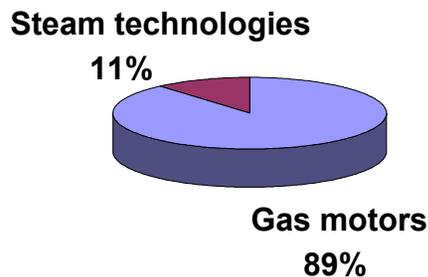
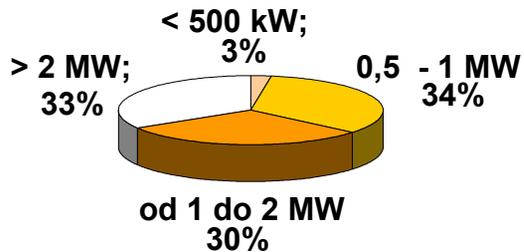
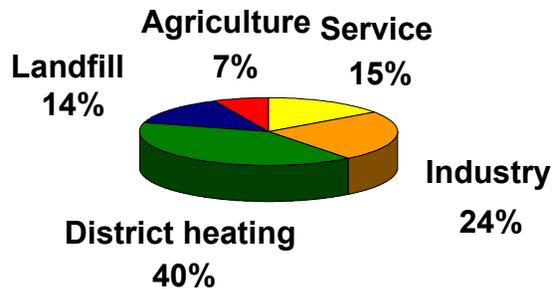
- 11% in total installed capacity
- 7 % in electricity production
- 42% high efficiency cogeneration

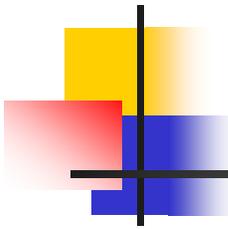


Electricity only 89%



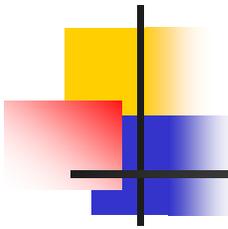
CHP Development 2001 - 2006





CHP Support Schemes

- **Main support mechanism:**
 - Feed-in tariffs and premium for qualified producers (QP includes RES-E and CHP)
 - DSO/TSO obliged to purchase all power offered by QP at the price determined by the government
 - Network (only minimum justified network costs can be charged to small QP)
 - Balancing costs are not charged for QP
- **Other financial instruments:**
 - Tax on carbon dioxide emissions: tax rebates, based on CHP-E produced
 - National allocation plan
 - Investment subsidies; soft loans (Environmental fund of RS)
- **Planning:**
 - CHP should be installed if Environmental Impact Assessment indicates it is economically and technically feasible
 - Financial support for feasibility studies
 - An element of local energy plans



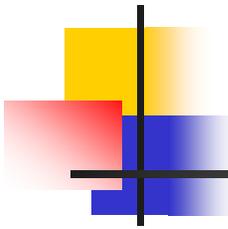
Conditions for QP Status

Conditions:

- Fossil fuelled CHP:
 - Efficiency > 78 %
 - PES > 8 % iff ($P > 1$ MW) and ($90\% > \text{efficiency} > 78\%$)
 - PES > 0 % otherwise
 - (For existing DH units, 5 years of transition period when minimum efficiency should be > 70 %)
- Biomass: if share of biomass fuel is at least 90 %
- Appropriate metering devices required

Definitions and calculation rules:

- PPE reference values:
 - Heat: 100 % (natural gas in LPG) in 90 % (other fuels) in
 - Electricity: 55 % (> 20 kV), 50 % (< 20 kV) and 45 % (micro units < 35 kW)
- Overall efficiency: ratio between sum of net electricity production and useful heat and fuel used excluding renewable sources (LCV considered)



Price Setting Rules

Forms:

- Feed-in tariffs for guaranteed purchase
- Premium for independent electricity sales
- 30% of premium for use inside company
market price + premium = feed-in tariff
- An option: seasonal/time of use rates (obligatory for industrial CHP)

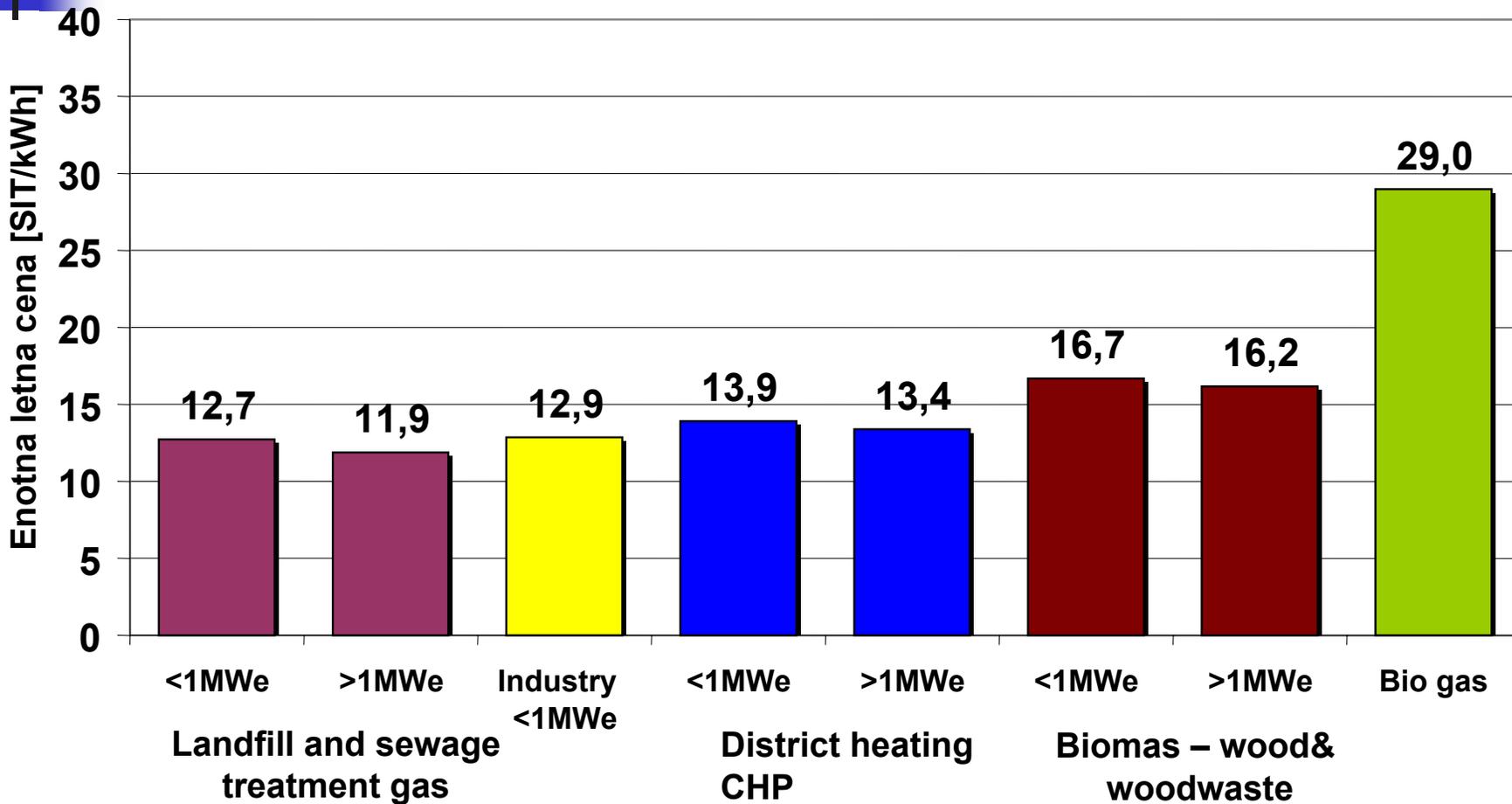
Prices vary by:

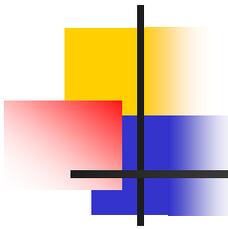
- Application:
 - Industrial CHP up to 1 MW (no special rates for medium size industrial CHP)
 - District heating: up to 1 and up to 10 MW (over 50% of heat produced should be sold to the public grid)
- Voltage level (5 % lower rates when connected at 20 kV or higher)
- Age (5 % lower rates after 5 years)
- State aid received (5 % lower tariff rate for each 10 % aid received in share of investment)

Changes:

- A rule: rates are corrected once per year

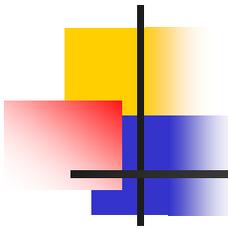
Feed in Tariffs for CHP





Legal Basis

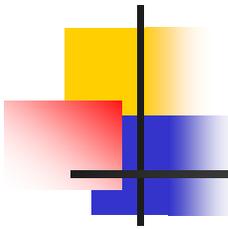
- **Energy Act (1999, 2004)**
 - Determines support mechanisms: network system operators are responsible for the purchase of all electricity offered by QP at the price determined by the Government
 - Sets legal basis to grid system issues for qualified producers (QP, using renewable sources or high efficiency cogeneration)
- **Decrees on QP**
 - Decree on condition to obtain status of qualified producer of electricity (2001)
 - Decree on rules for price setting and for purchase of electricity from qualified producers (2002)



Policy

Resolution on the National Energy Programme (2004)

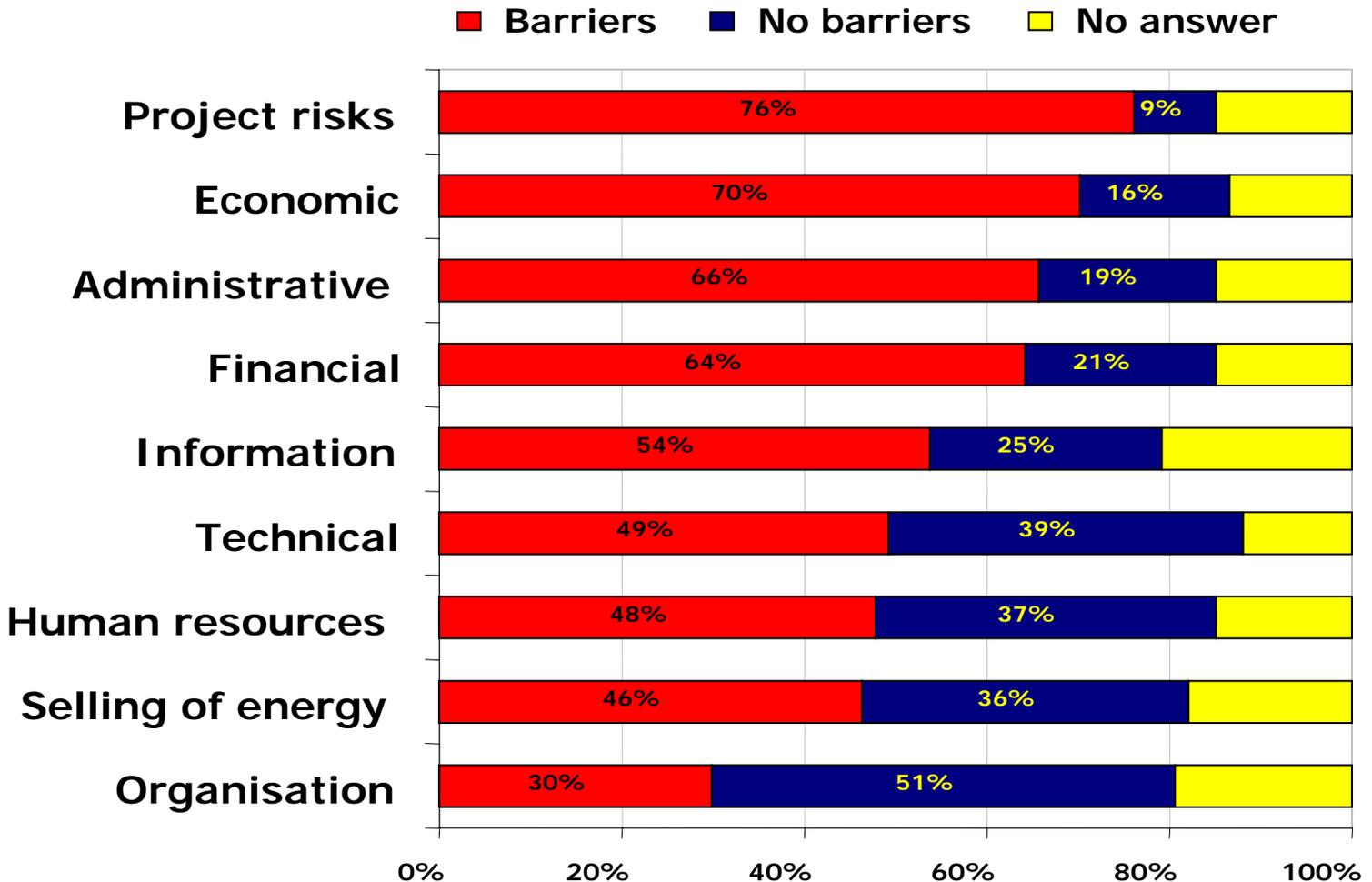
- National target:
to increase electricity produced in CHP
from 800 GWh in year 2000 to 1600 GWh
in 2010



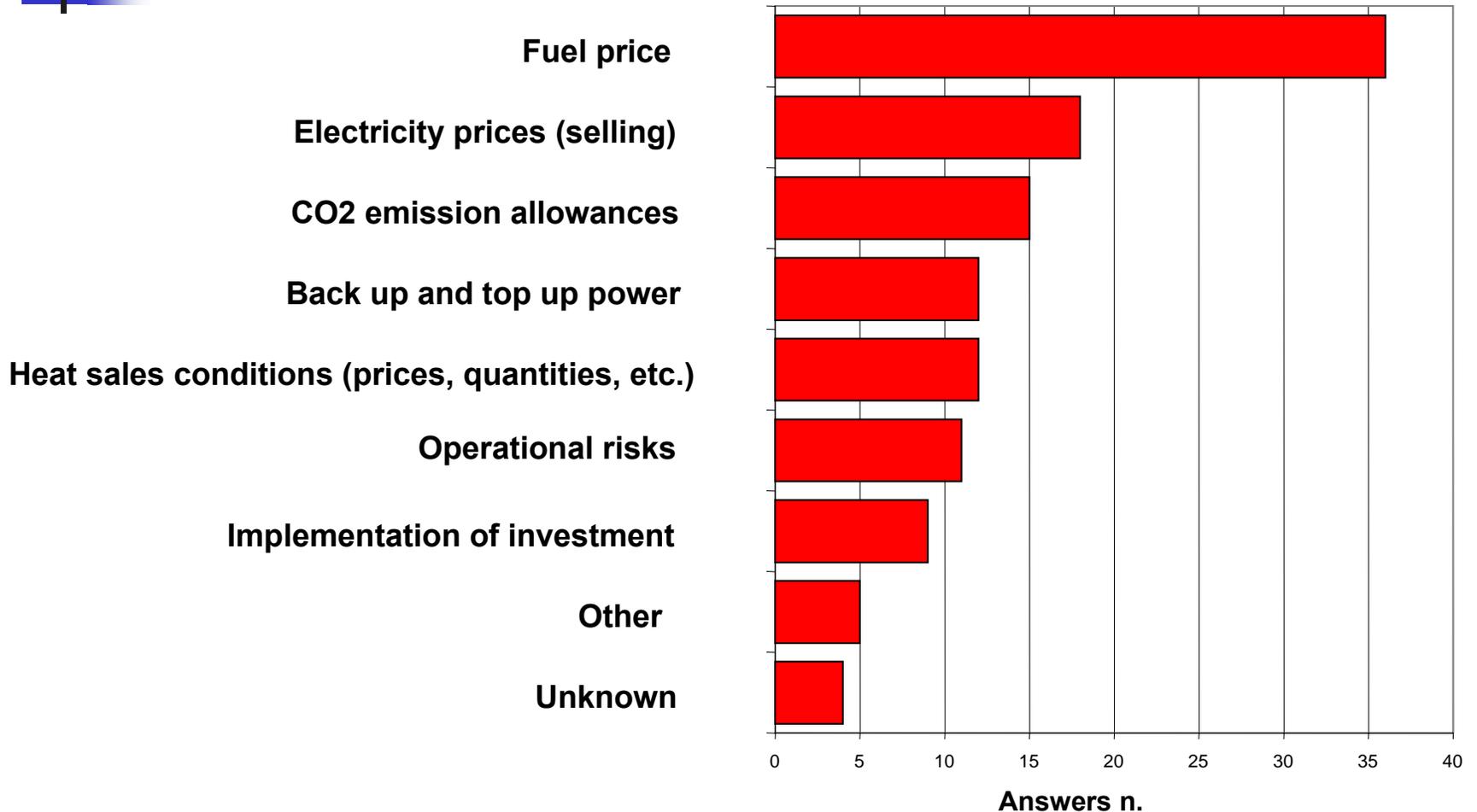
A Pool on Barriers for CHP

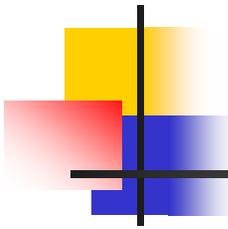
- A pool in November 2005 in the frame of analysis of national potentials for CHP in Slovenia – focused on industry
- Purpose: to assess market potential
- Good response

Barriers for CHP in Slovenia



Project Risks Related Barriers

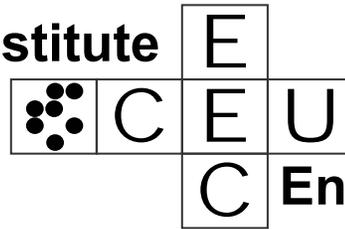




Conclusions

- An adequate system for CHP support is set up in Slovenia
- Certain specific conditions need to be improved to boost further CHP development:
 - Higher support to industrial CHP is needed (support is needed also for medium size units and for electricity used in a firm)
 - Stronger link between fuel price and feed-in tariff is needed to reduce/share risks related to the fuel price
 - Certain feed-in prices categories need to be increased to cover all costs including capital costs
- Availability of financial resources is a problem for many potential CHP locations, and the administrative procedures can be shortened and simplified
- Variety of measures is in force in the frame of energy and climate policy. Several planned policy instruments in ReNEP still need to be carried out

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Energy Efficiency Centre

Thank you!

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