



Methodology for Tracking and Fulfilment of Energy Efficiency Targets

Dr. Ondřej Vojáček

Jiří Louda

Ladislav Sobotka

University of Economics, Prague
IREAS (Institute for Structural Policy)

Energy Efficiency Directive – Article 7



- **Option A: Energy efficiency obligation scheme**

Member States create a scheme that will deliver savings of 1.5% of annual energy sales to final consumers

- **Option B: Alternative measures**

Member States can count savings towards the annual 1.5% target, including financing schemes, taxes and the creation of Energy Efficiency Funds.

Obligation schemes – Danish model



- The obligation is passed to the energy distribution companies, who promote the decrease of the consumption via consultation services
- The investment costs are paid by customers, who save on the lower energy consumption later
- Consulting costs are for free, but included in the electricity price
- Minuses:
 - Increasing costs of the electricity
 - Costly savings verification

Energy savings tracking: Methodology outline



1. Energy savings in the public funding programmes
2. Energy savings in the business sector
3. Setting the priorities in the public funding programmes



Assumed costs to reach the EED target

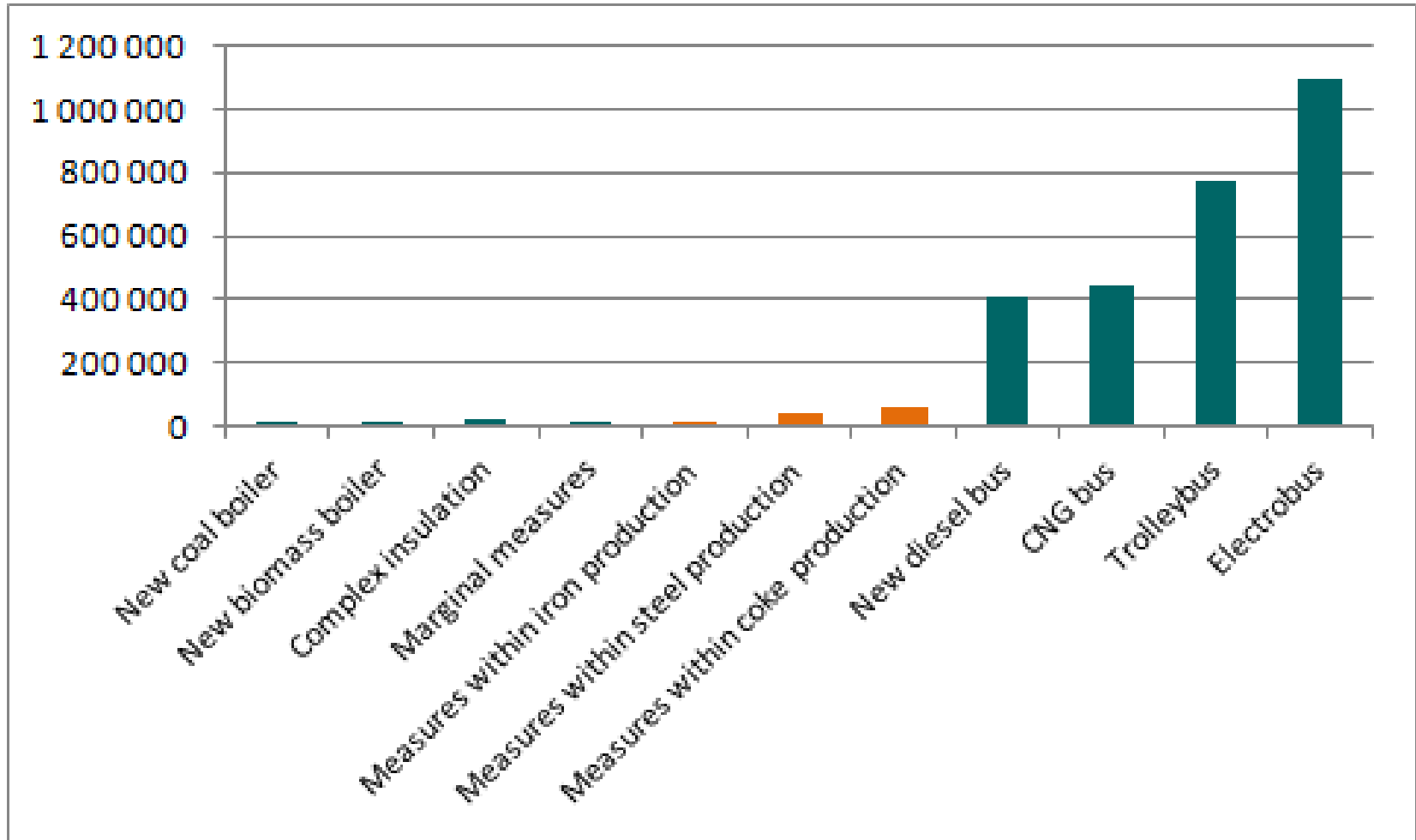
- Public funding programmes relevant for the EED: CZK 100 bill.
- Total investments at least: CZK 370 bill.
- Potential of high efficiency increase if programs are properly prioritized in terms of energy efficiency and cost efficiency

EXAMPLE 1: Energy efficiency increase potential



Air quality improving measures

Dust particles abatement costs (EUR/tonne)



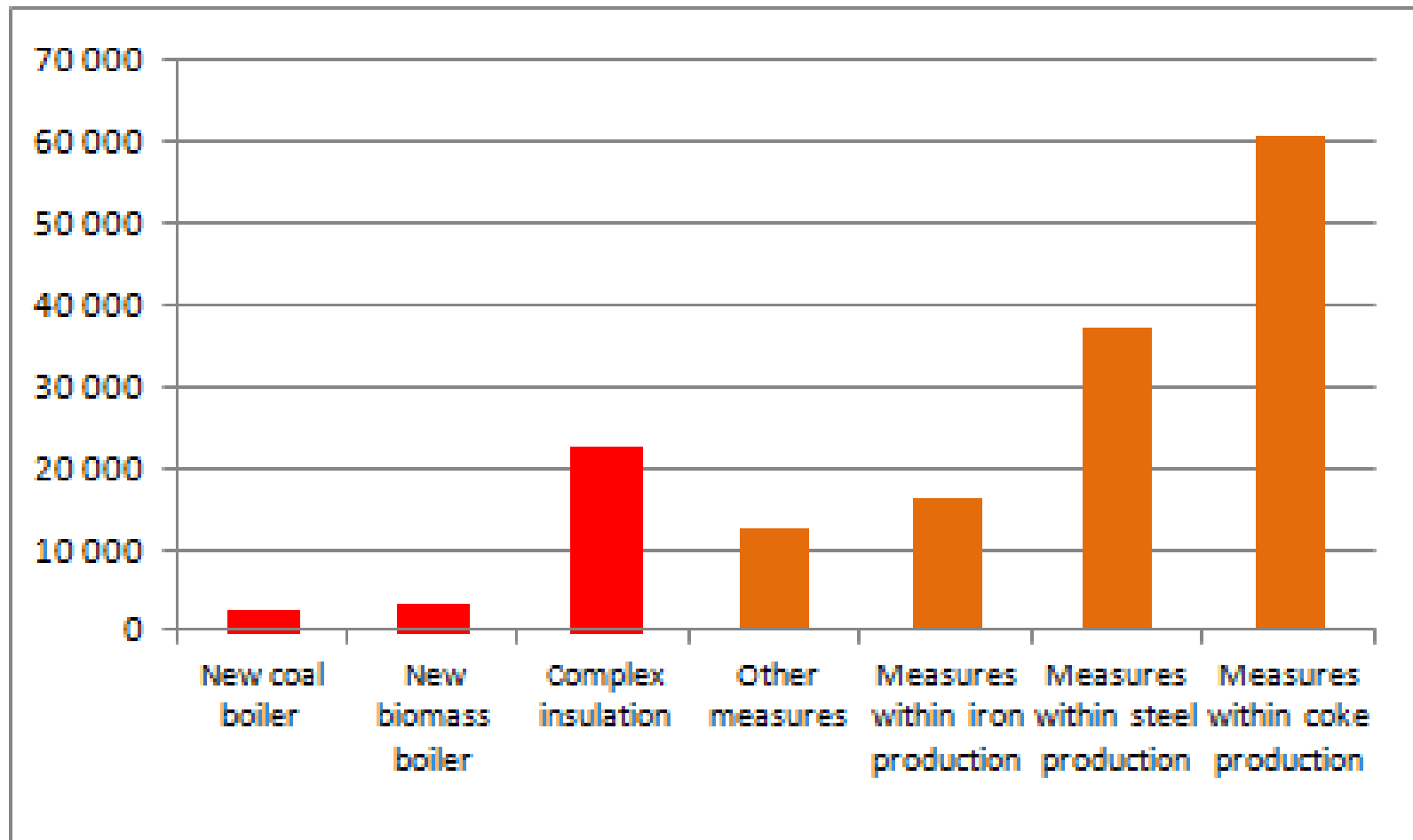
Households **Industrial sector** **Transportation sector**

EXAMPLE 1: Energy efficiency increase potential



Air quality improving measures

Industry and households (EUR/tonne):



 Households

 Industrial sector

EXAMPLE 1: Energy efficiency increase potential



Air quality improving measures

- Measures focused on households start at 2700 EUR/tonne PM10
- Some transportation sector measures costs 400 000 EUR/tonne
- Currently financial sources also allocated on efficient heating in the region

=> 5 000 boilers subsidized (2012-2014)

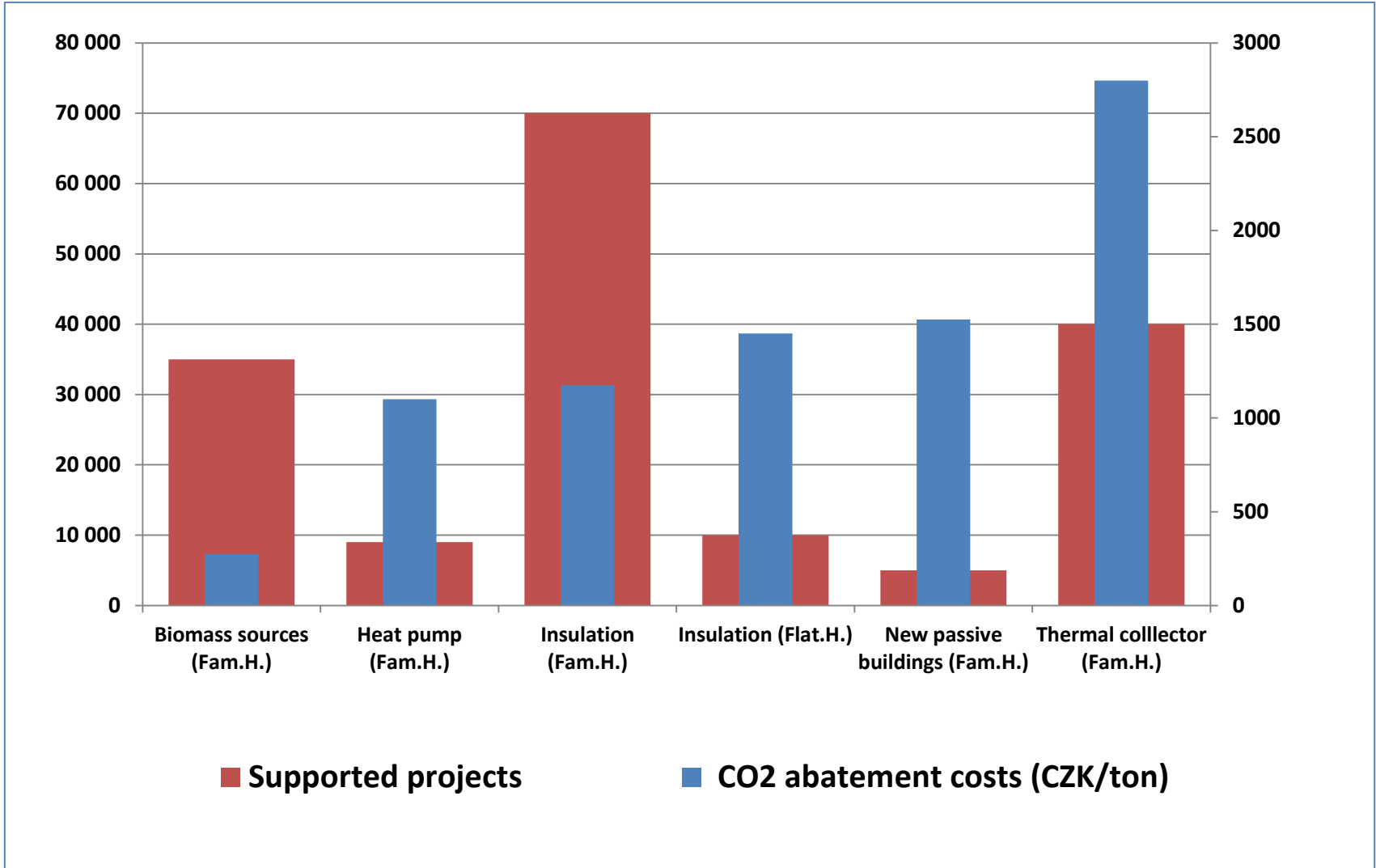
10 million EUR invested

50 000 not efficient household boilers still active in the region

=> to achieve similar emission decrease from the industrial sector, about 35 million EUR subsidy would be needed

=> **25 million EUR saved** by choosing the right policy/measures (rough estimate)

EXAMPLE 2: The Green Investment Scheme Programme



Source: Prieslová, Vojáček, 2010



EXAMPLE 3: Energy audits

- 2 projects assessed
- Variant 1=> CZK 1.4 mill. => NPV CZK 41 000
- Variant 2 => CZK 2,4 mill. => NPV CZK – 49 300

- Supported Variant 2!

Current situation:

- The energy efficiency targets will be traced
- Indicators of the energy efficiency increase will be included in the energy audits and reported to Ministry of Industry

Current state of effectiveness



- EUR 942 mill. allocated on the energy efficiency (2007-2013) (European Court of Auditors, 2012)
- Costs on the GJ saved 339 EUR (pay-off period 52 years)
- The Czech programmes EFEKT (MPO): average costs 74 EUR/GJ (78 % of the average)
- In Denmark max pay-off period 5 years (public buildings)
- Italy pay-off period 288-444 years
- Lithuania 861 EUR/GJ
- Czech Republic (State env.fund):
 - 722 EUR/GJ (pay-off period 61 let);
 - later 339 EUR/GJ (pay-off period 28 let)

What has been done and needs to be done



- **What was done:**
 - 1. Energy saving tracking within the energy audits
 - 2. The energy savings within **Energy labelling of Buildings**
 - 3. Slightly higher focus on energy efficiency measures within the Ministry of Industry funding schemes



The end...

Ondřej Vojáček

ondrej.vojacek@gmail.com