

Lessons learned on energy policy implementation from the 20 case studies analysed in the framework of AID-EE project

Nicola Labanca,
end-use Efficiency Research Group
Politecnico di Milano
Nicola.labanca@polimi.it
www.eerg.it

ECOFYS



Science Centre
North Rhine-Westphalia
Institute of Work
and Technology



Institute for Culture
Studies

Wuppertal Institute for
Climate, Environment and
Energy

December 5, 2006
Politecnico di Milano



Supported by
Intelligent Energy  Europe

Contents

1. Characterisation of the sample analysed
2. Lessons learned
3. The choice of policy instruments

Evaluated policy instruments

1. Building standard (NL)
2. Energy regulation buildings (IT)
3. Energy manager obligation (IT)
4. Top runner approach (JP)
5. Energy Efficiency Commitment (UK)
6. Mandatory targets for network companies (BE)
7. ACEA agreement (EU)
8. Voluntary agreement (DK)
9. Audit programme (FIN)
10. FEMP (US)
11. EE Procurement group (SE)
12. Energy+ (EU)
13. Advice service (DE/NRW)
14. Energy concept for industrial branches (DE)
15. Industrial EE network (NO)
16. Local energy advisors (SE)
17. Eco-driving (NL)
18. Appliances labelling (NL)
19. Soft loans for buildings (DE)
20. Energy investment deduction scheme (NL)

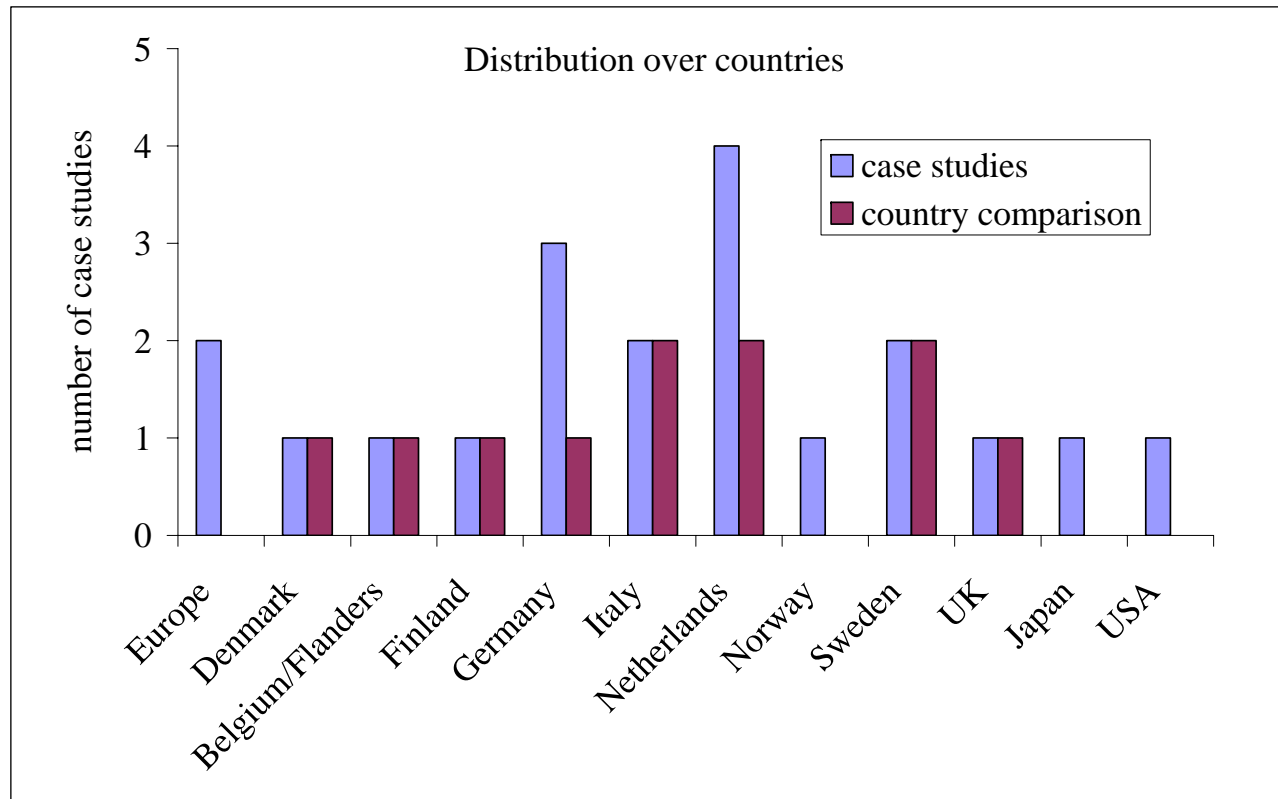
Separate reports of casestudies are available on the project website www.aid-ee.org



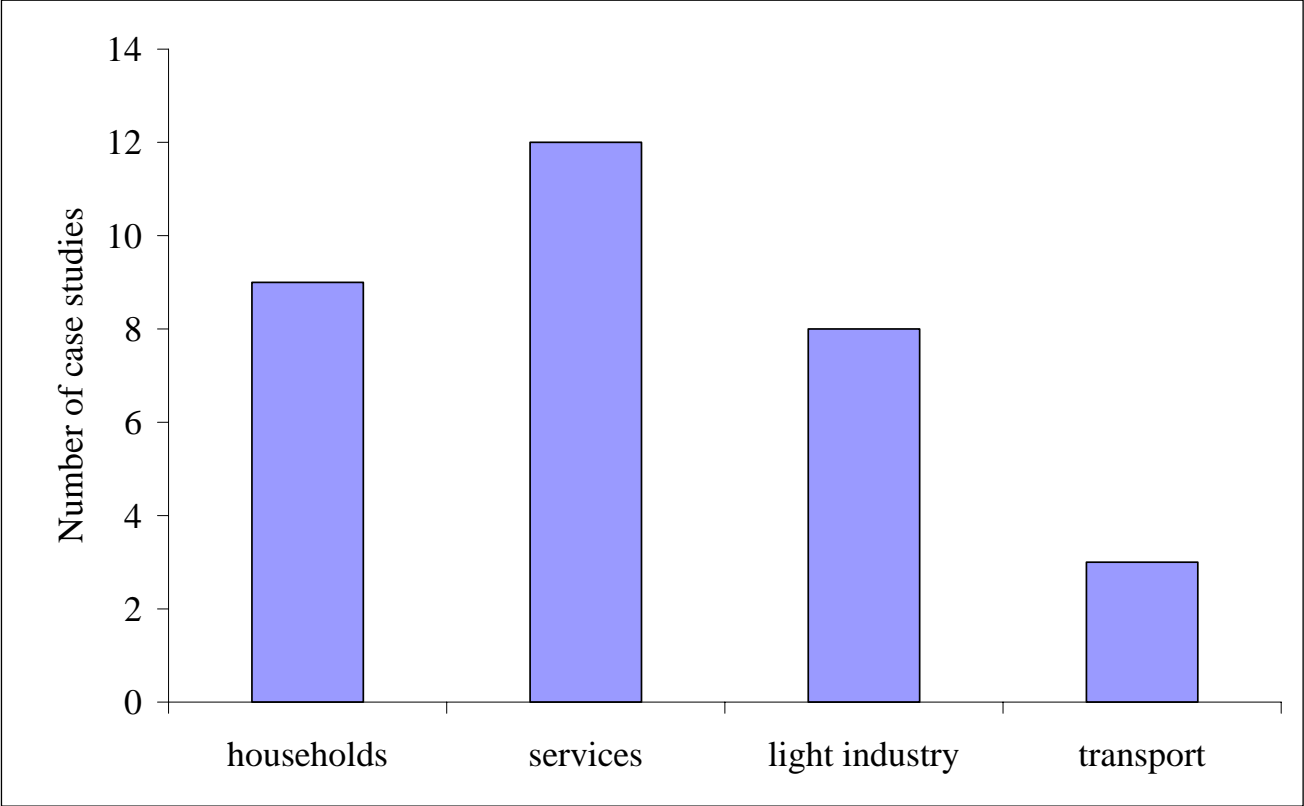
Classification of policy instruments

1. Energy performance standards
2. Mandatory targets/tradable permits
3. Labelling (appliances, cars, buildings)
4. Financial / fiscal instruments (such as soft loans, subsidies, investment deduction schemes, rebates)
5. Energy/carbon taxes
6. Voluntary agreements
7. Procurement programmes
8. Generic information and education campaigns

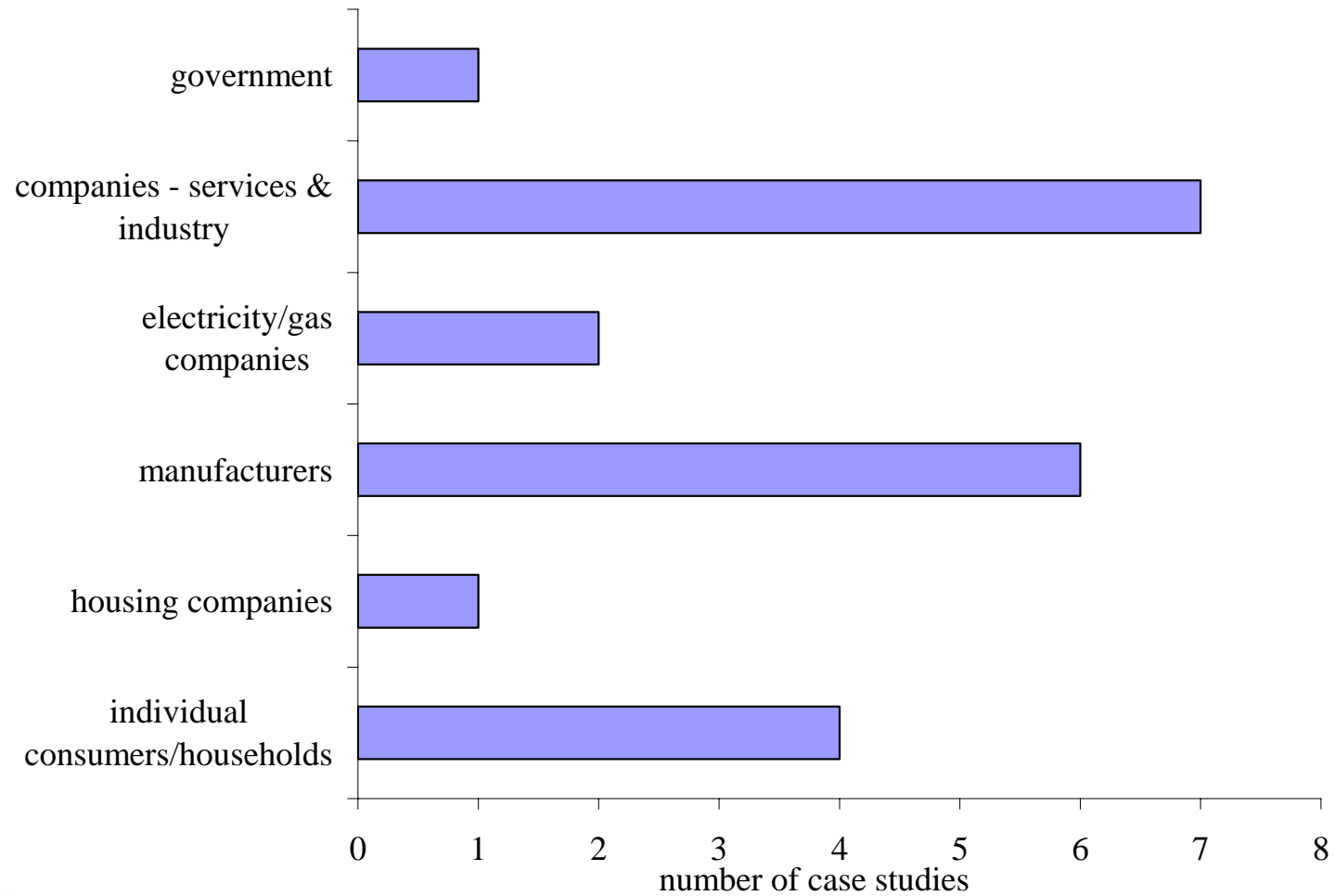
Countries covered



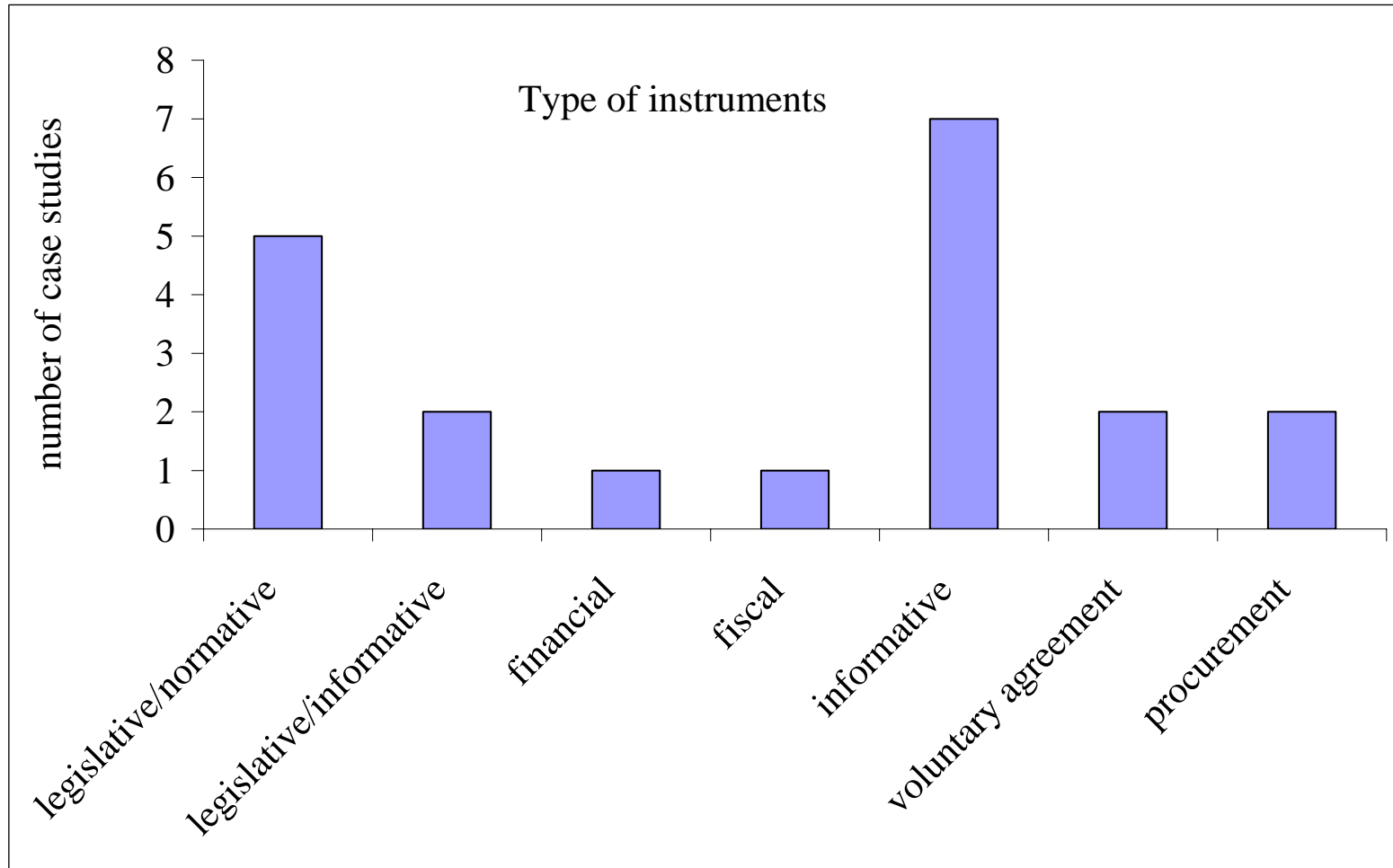
Sectors Addressed



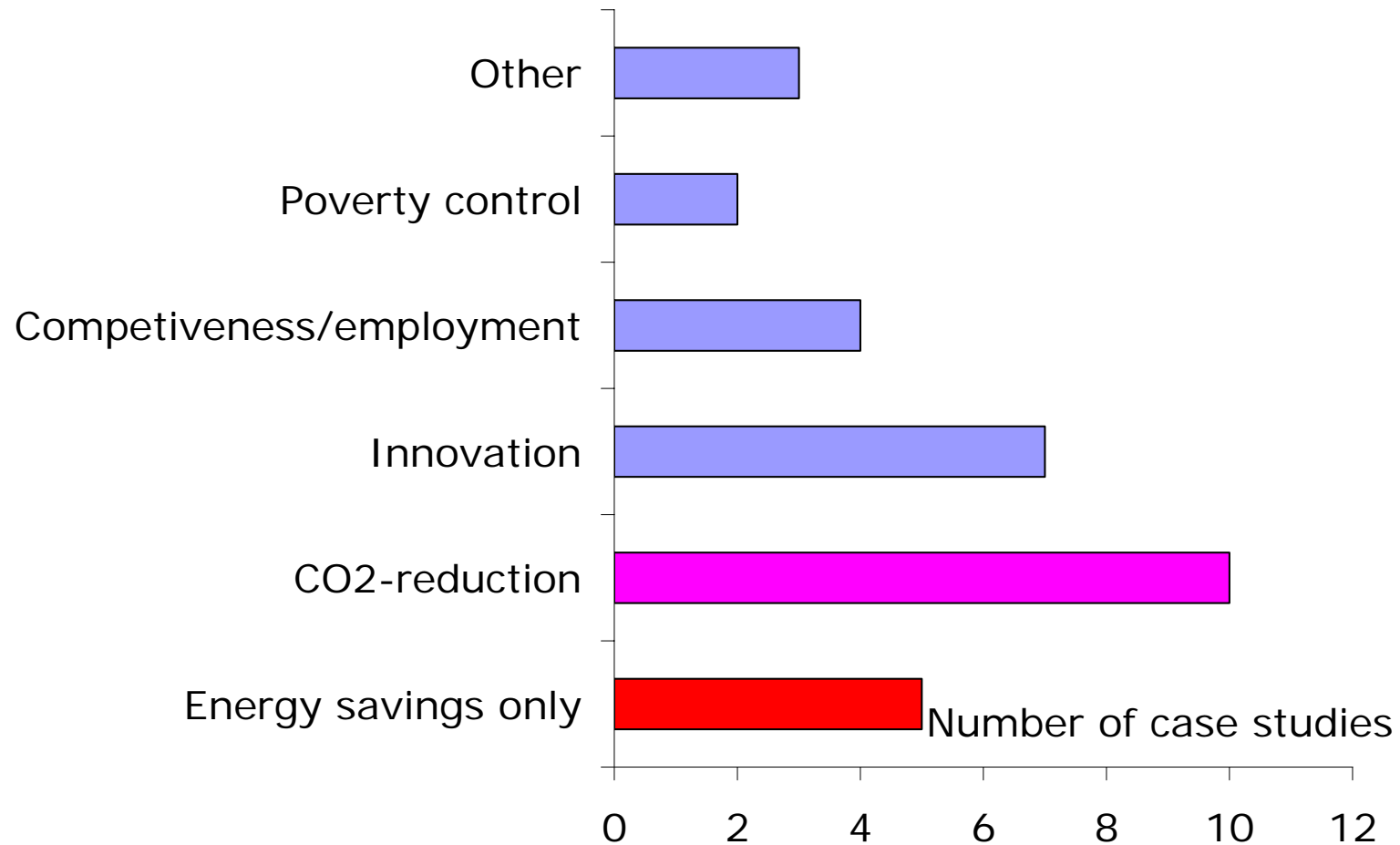
Target groups



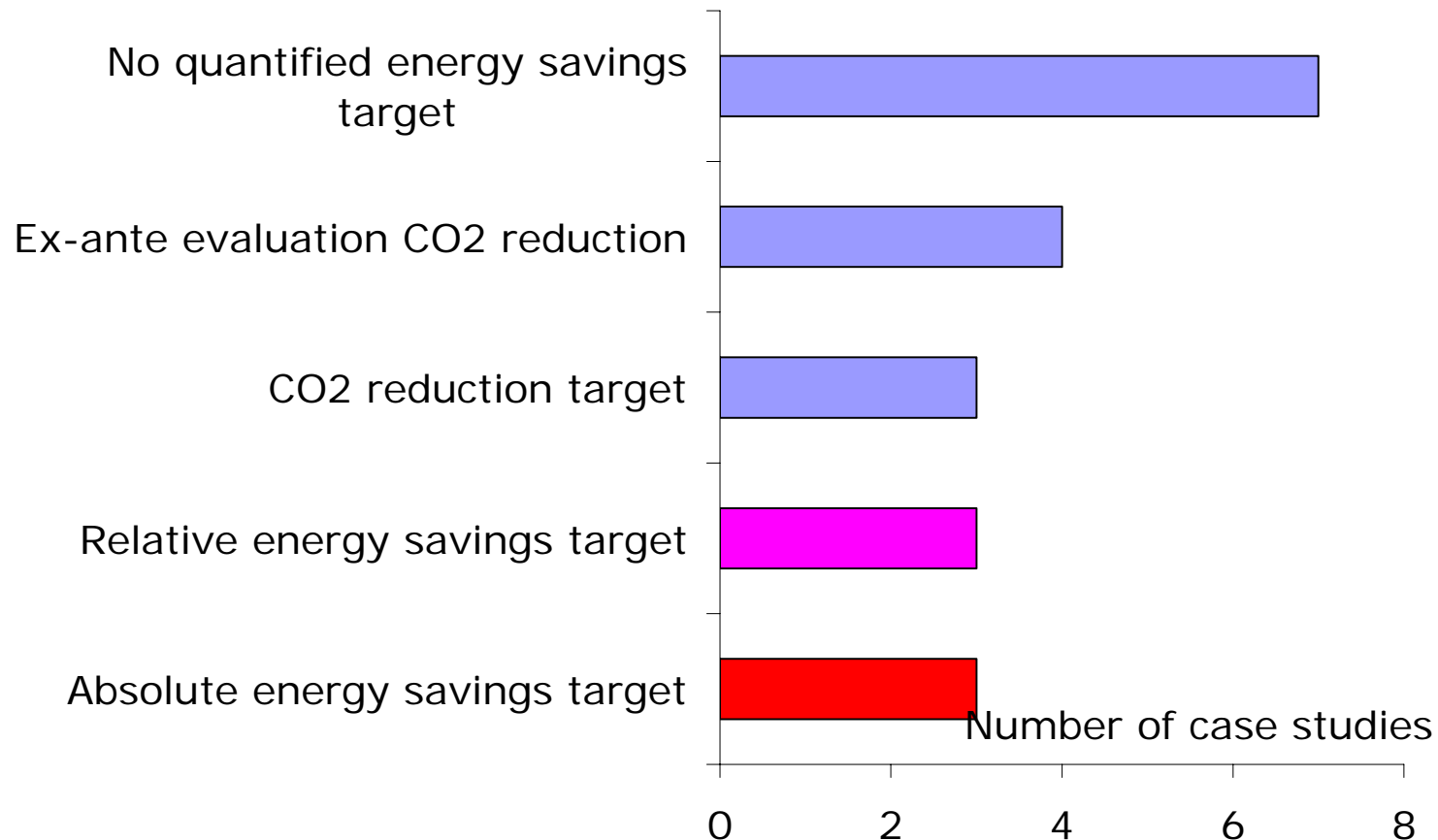
Policy instrument categories



Often policy instruments have multiple and/or unclear objectives resulting in a low effectiveness and efficiency



Very often quantitative targets on expected energy efficiency improvements and clear time frames are lacking resulting in lack of focus for the policy instrument



Most instruments are part of a policy package and it is often difficult to isolate the energy saving impact of a single policy instrument

Instrument category	Regulation	Information	Economic incentives	Voluntary agreements
Regulation	Building code + energy performance standard	Building code + training tools	Building code + subsidies for demonstration	NA
Information	Labelling + energy performance standard	Labeling, audit	Labeling / audit + subsidy	Labeling + voluntary standard
Economic incentives	Subsidy + energy performance standard	Subsidy + energy information centre	Subsidies + tax	Subsidy + VA
Voluntary agreements	NA	VA + audit	VA + tax exemptions	NA

TARGETS AND TARGET ACHIEVEMENT (1/3)

In general for regulatory instruments and voluntary agreements quantified targets are set, whereas this quantification lacks for most of the informative instruments.

Seven of the evaluated instruments reached their target; five of them are regulatory instruments.

Three instruments did not reach their (intermediate) target: German soft loans, Finnish energy audit programme, Dutch Ecodriving programme

For two instruments it is uncertain whether target achievement is on track: FEMP- US, ACEA covenant-EU

TARGETS AND TARGET ACHIEVEMENT (2/3)

Intermediate targets provide a means for monitoring target progress

The RUE obligation on grid companies in Flanders and the White Certificate system in Italy (country comparison) set both annual targets. This provides up to date information to policy makers on the success of the instrument (with the possibility to adjust it).

Instruments that are part of a policy package should get well-defined sub-targets

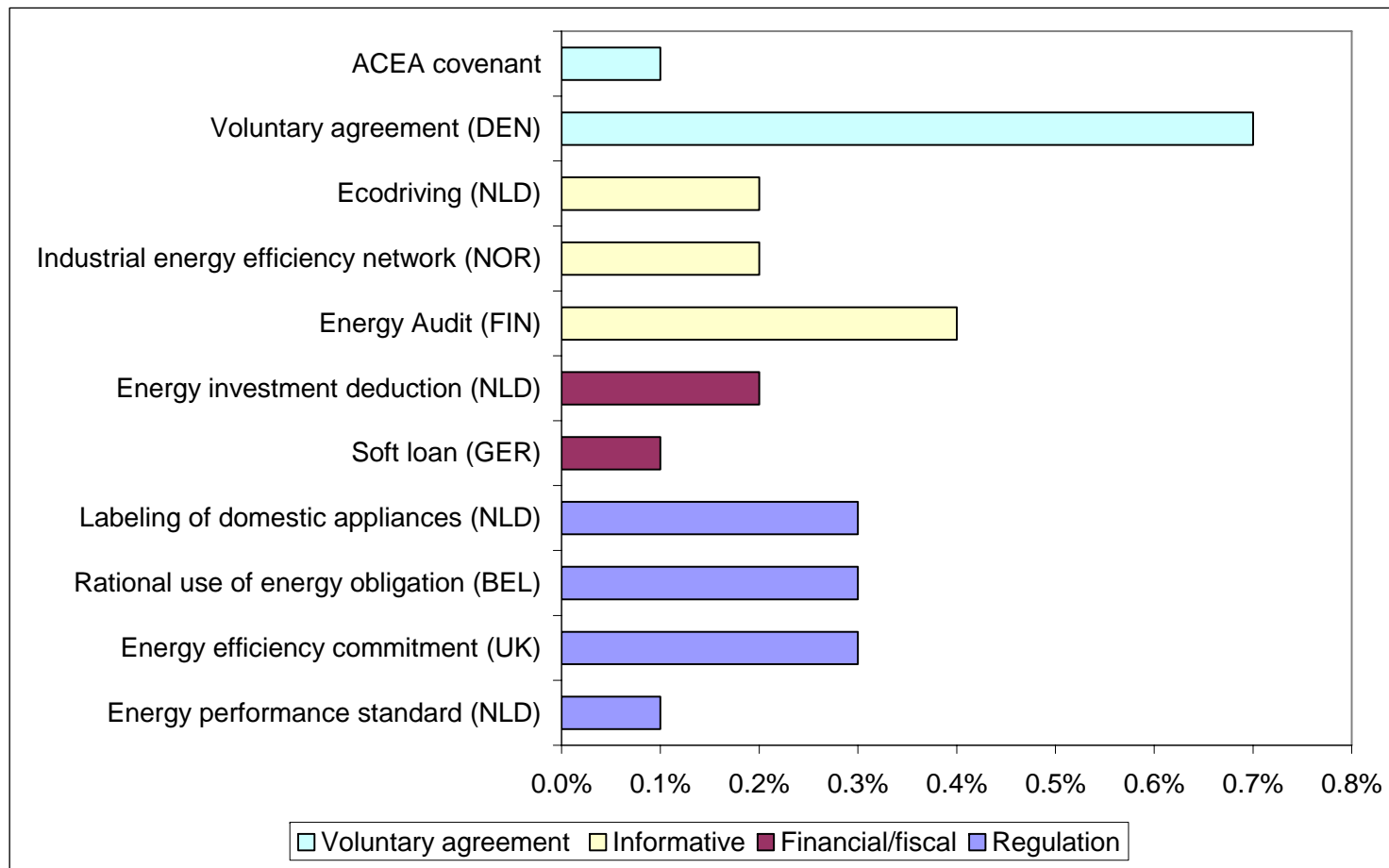
In the Finish Energy Audit Programme the target is formulated as a percentage of the building volume (public & private services) or energy use (industry) that should be audited.

TARGETS AND TARGET ACHIEVEMENT (3/3)

In general, policy makers should make sure that SMART targets are defined

Type of instrument	Examples of SMART targets
Energy performance standard	<p>S: Focus on specific product or product group</p> <p>M: Performance characteristics aimed for / set baseline</p> <p>A: Performance standard links to best available product on the market and is regularly updated</p> <p>R: Best available product is accepted by the target group</p> <p>T: Set clear target period</p>
Subsidy scheme	<p>S: Focus on a specific target group and on specific technologies</p> <p>M: Quantified energy savings target / set baseline</p> <p>A: Minimize freeriders</p> <p>R: Link the savings target to the available budget</p> <p>T: Link the energy savings target to a target period</p>
(Voluntary) energy audit	<p>S: Focus on a specific target group</p> <p>M: Quantify the targeted audit volume (m2, number of companies, % of energy use etc.) / set baseline</p> <p>A: Encourage to implement recommended measures, e.g. by offering financial incentives.</p> <p>R: Ensure that sufficient qualified auditors have been assigned and financial incentives are in place to carry out audits</p> <p>T: Link the quantified target to a target period</p>

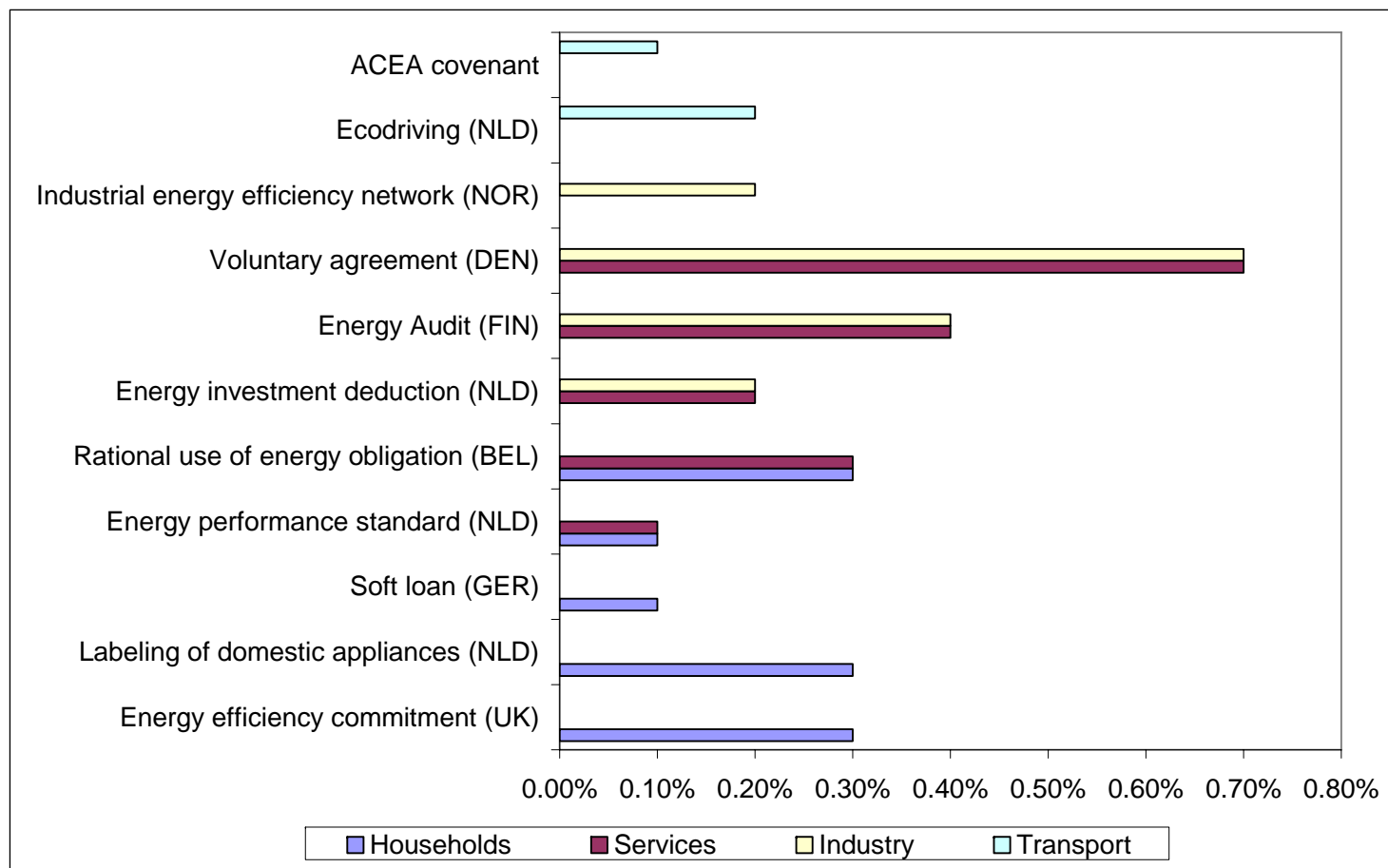
Annual energy efficiency improvement rates (1/2)



- Results for VA-DEN, labeling- NLD and audit FIN are given for the policy package and not the individual instrument

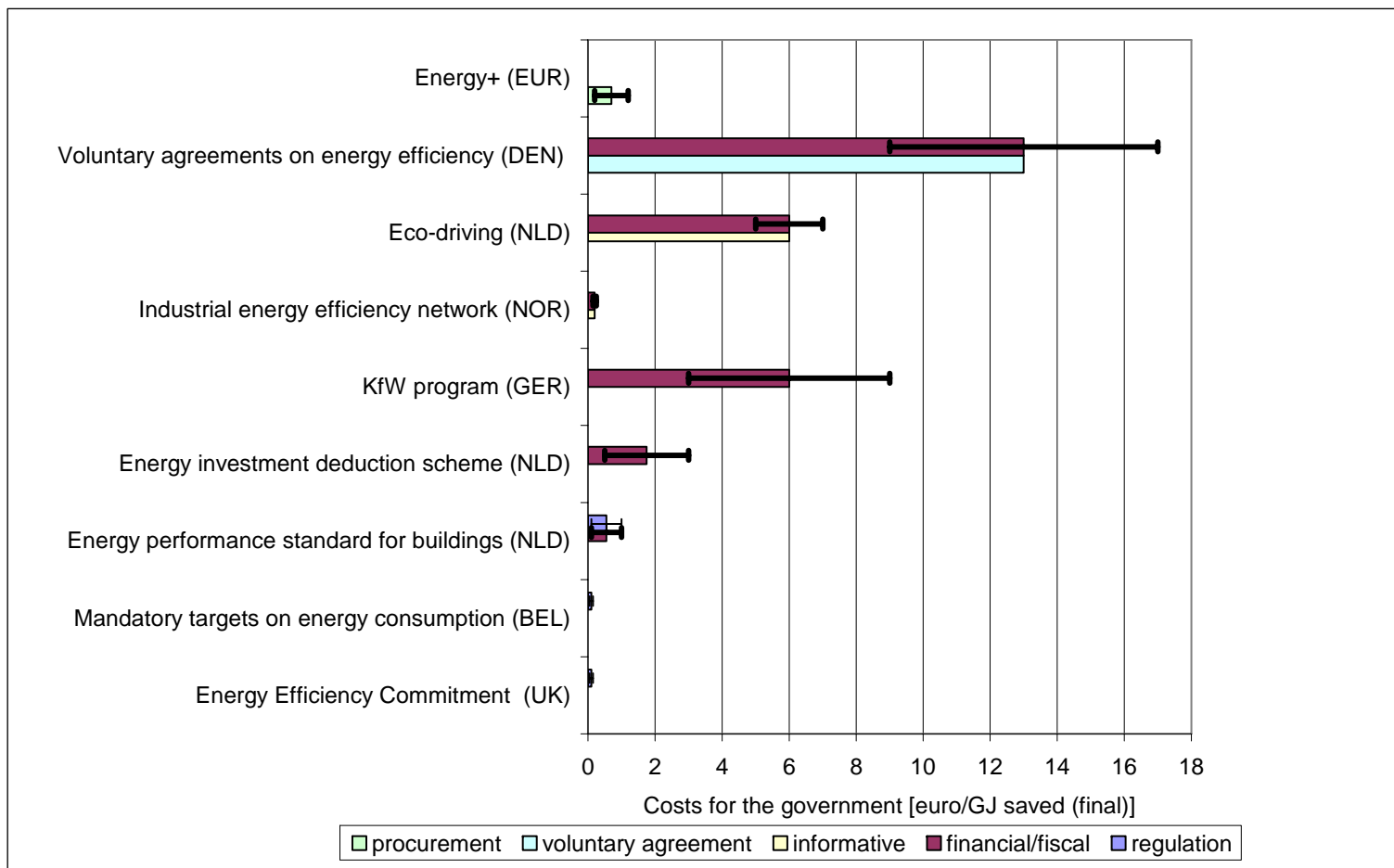
- Only new buildings are addressed in the NLD performance standard, whereas the energy efficiency rate is calculated for the whole sector

Annual energy efficiency improvement rates (2/2)



- Energy savings in the transport sector are difficult to achieve
- Instruments addressing the service sector only are rare. Would such instruments be more effective in exploiting the saving potential available in this usually difficult to be achieved sector?

Cost effectiveness for the government (1/2)



Financial instruments (esp. investment subsidies) and VA combined with investment incentives are relatively expensive per GJ final energy saved, whereas regulatory instruments are relatively cheap.

Cost effectiveness for the government (2/2)

The choice for financial or regulatory instruments should always link to typical circumstances that either favor financial type or regulatory type of instrument

Useful cost-effectiveness figures highly rely on firm impact assessments (for informative instruments it is recommended to define other indicators to assess their efficiency)

To minimize free riders in subsidy schemes, one should also closely monitor the cost-benefit ratio (or another investment criterion) for end-users in order to timely adjust the list of eligible technologies.

Cost categories for the government

- Design costs
- Administration costs
- Enforcement costs (in case of regulation)
- Programme costs (campaigns, training etc.)
- Costs for monitoring and evaluation
- Subsidies
- Tax exemptions / deductions

The choice of policy instruments:

- typical circumstances in which to apply the different types of instruments**
- characteristic that determine the success**

Energy performance standards for buildings, cars or appliances

Applying when

- aiming at removing the worst products or services from the market with regard to energy consumption
- dealing with a target group which is unwilling to act or difficult to address (e.g., land-lord – tenant problem)

Key characteristic determining success

- Is the target group well prepared?
- Are there sufficient resources in place to enforce the legislation?
- Are there penalties in place for non-compliance?
- Are the penalties at a sufficiently high level to stimulate meeting the standard?
- Is the standard timely adjusted to technology progress?

Mandatory targets/tradable permits

Applying when

- aiming at energy savings with large target groups being difficult to address
- knowledge, financial and institutional barriers play a role

Key characteristic determining success

- Is the target set beyond business-as-usual?
- Is measurement and verification of savings possible at low costs?
- Is measurement and verification sufficiently accurate?
- Is the cost-recovery mechanism clear and transparent?
- Are there penalties in case of non-compliance and set at such a level that target achievement is stimulated?
- Is the market for tradable certificates transparent?

Financial incentives (subsidies, fiscal measures, soft loans)

Applying when

- there is a financial barrier in place.
- an informative instrument (e.g. energy audit) needs financial incentives to attract the target group

Key characteristic determining success

- Is the financial support sufficient to attract new investments?
- Is the procedure for getting financial support simple enough?
- Is it clear for the target group which technologies are eligible for financial support?
- Is the list of technologies regularly updated to limit free riders?
- Is the instrument implemented for a long time period to ensure security for investors?

Voluntary agreements

Applying when

- dealing with a small number of actors with which you need to negotiate or a strongly organized sector
- there is much relatively cheap saving potential (low hanging fruit)

Key characteristic determining success

- Is the target group motivated to participate in the voluntary agreement?
- Is the target set beyond business-as-usual?
- Are there penalties in case of non-compliance (or are there other incentives in place to prevent non-compliance)?
- Is there a good monitoring system in place?
- Are supporting instruments in place ?

Energy taxes

Applying when

- dealing with large target groups
- aiming to internalize external costs

Key characteristic determining success

- Is the target group well informed on existence and planned future development of the energy tax?
- Is use of tax income properly justified and marketed to market actors?
- Does the energy tax take account of global or European-wide competition aspects?
- Are energy tax exemptions used as an incentive for implementing EE measures?

What to do with existing instruments ?

- AID-EE project shows that for a great number of existing policy instruments quantitative targets are lacking, it is not possible or very hard to assess target achievement, the contribution of an instrument to net energy savings is unknown or subject to large uncertainty ranges.
- EU member states have a huge task to improve energy efficiency in all economic sectors
- Existing instruments for which the effectiveness and efficiency is unknown should be reassessed.
- More focus should be put on the development of clear and unambiguous baselines, SMART targets and the reinforcing and mitigating interaction between policy instruments.
- A monitoring protocol should be developed for each individual instrument