



# From Theory based Policy Evaluation to SMART policy design : *lessons learned from 20 ex-post evaluations of energy efficiency instruments (paper 4,070)*

Results from the AID-EE project (Active Implementation of the Directive on Energy Efficiency)



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## Objectives of AID-EE project

- Provide lessons learned on success and failures of policy instruments. With the aim to guide Member States in implementing effective policies to reach the indicative target set in the EE-Directive
- Provide input to Member States for drawing up their Energy Efficiency Action Plan (EEAP) among others through 7 workshops for policy makers across Europe



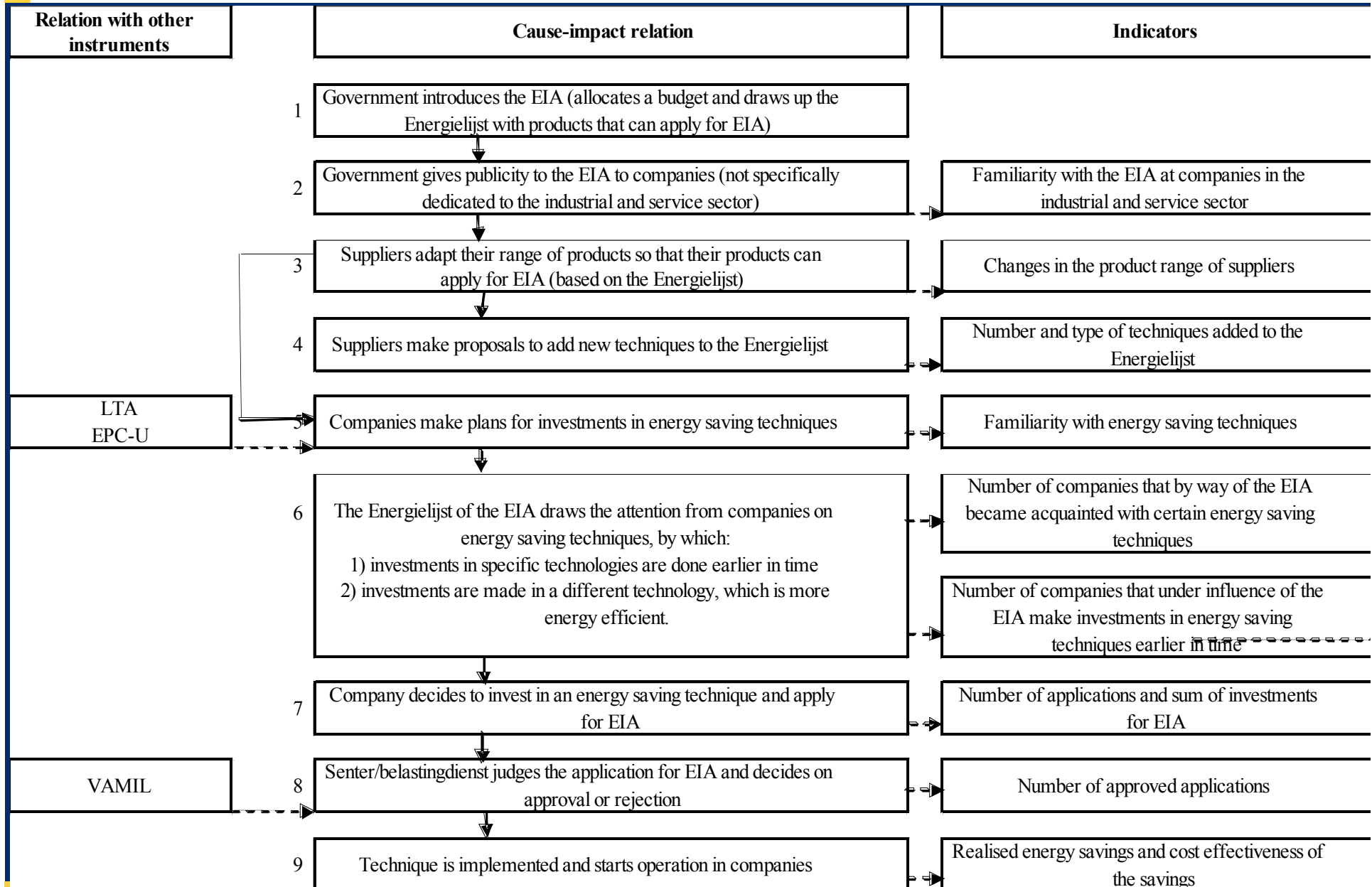
## Approach: standardized evaluation method

- Ex-post evaluation of *20 instruments* applied in different sectors (households, services, industry, transport) across Europe
- Application of a *standardised evaluation methodology* based on the 'theory based policy evaluation'. Main characteristic of the methodology:
  - Central element is the *policy theory* which describes how a policy instrument is expected to lead to energy savings
  - Method not only focuses on the final impact (energy savings) but also on *intermediate results* and on the *interaction* between instruments



## Evaluation in practice: 6 steps

1. Make an initial characterisation of the policy instrument
2. Draw up a policy theory > mapping cause-impact relations
3. Translate the policy theory to concrete indicators and identify success and fail factors
4. Draw up a flow-chart of the policy theory
5. Verify and adjust the policy theory
6. Collect information and analyse all aspects of the policy theory (including target achievement, net impact and cost-effectiveness)





## 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)

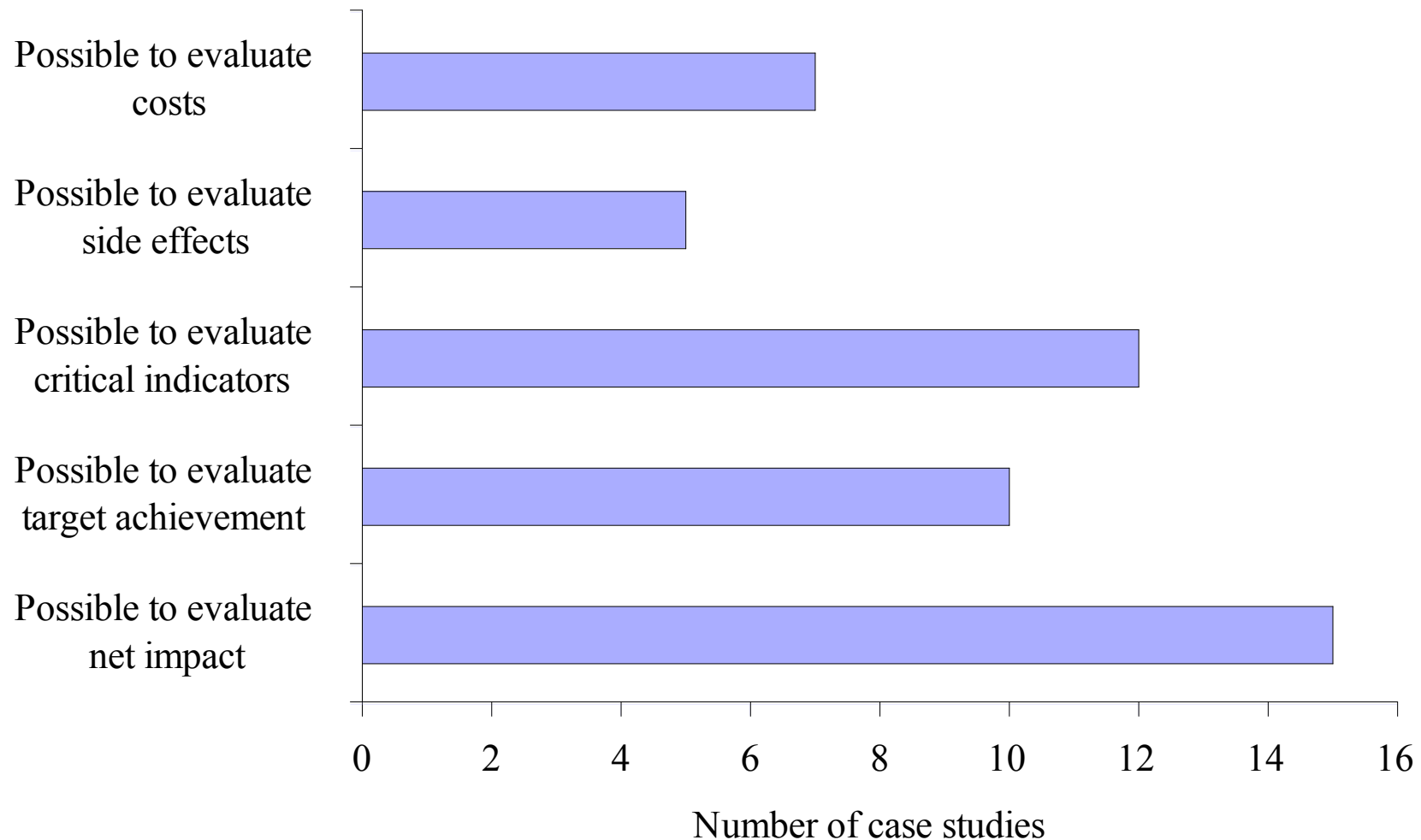
**Seperate reports of casestudies are available  
on the project website [www.aid-ee.org](http://www.aid-ee.org)**



**Overall finding on target achievement,  
impact, cost-efficiency and success  
factors**

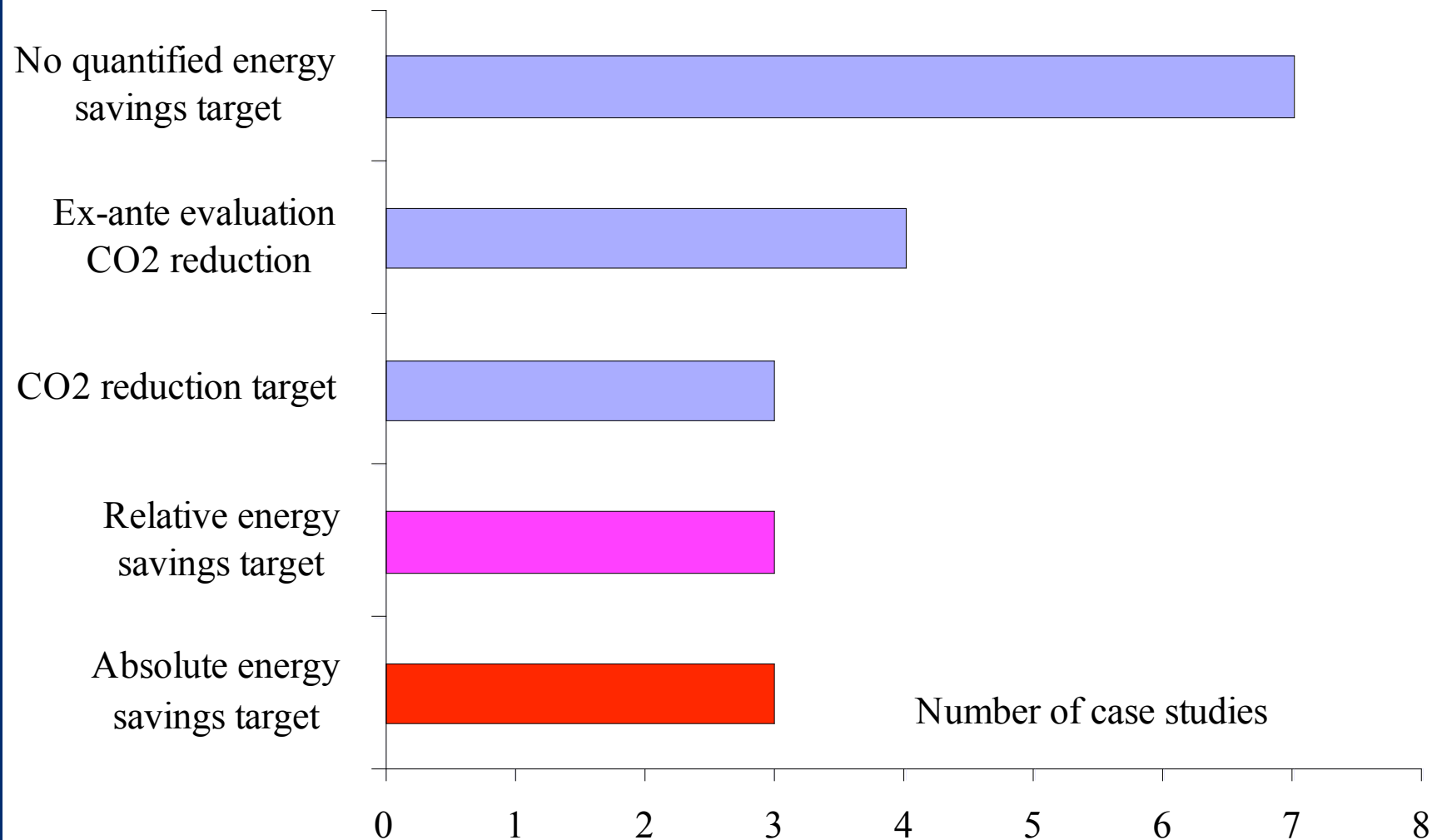


## For most instruments monitoring information is collected on a regular basis, however, monitoring does not have high priority



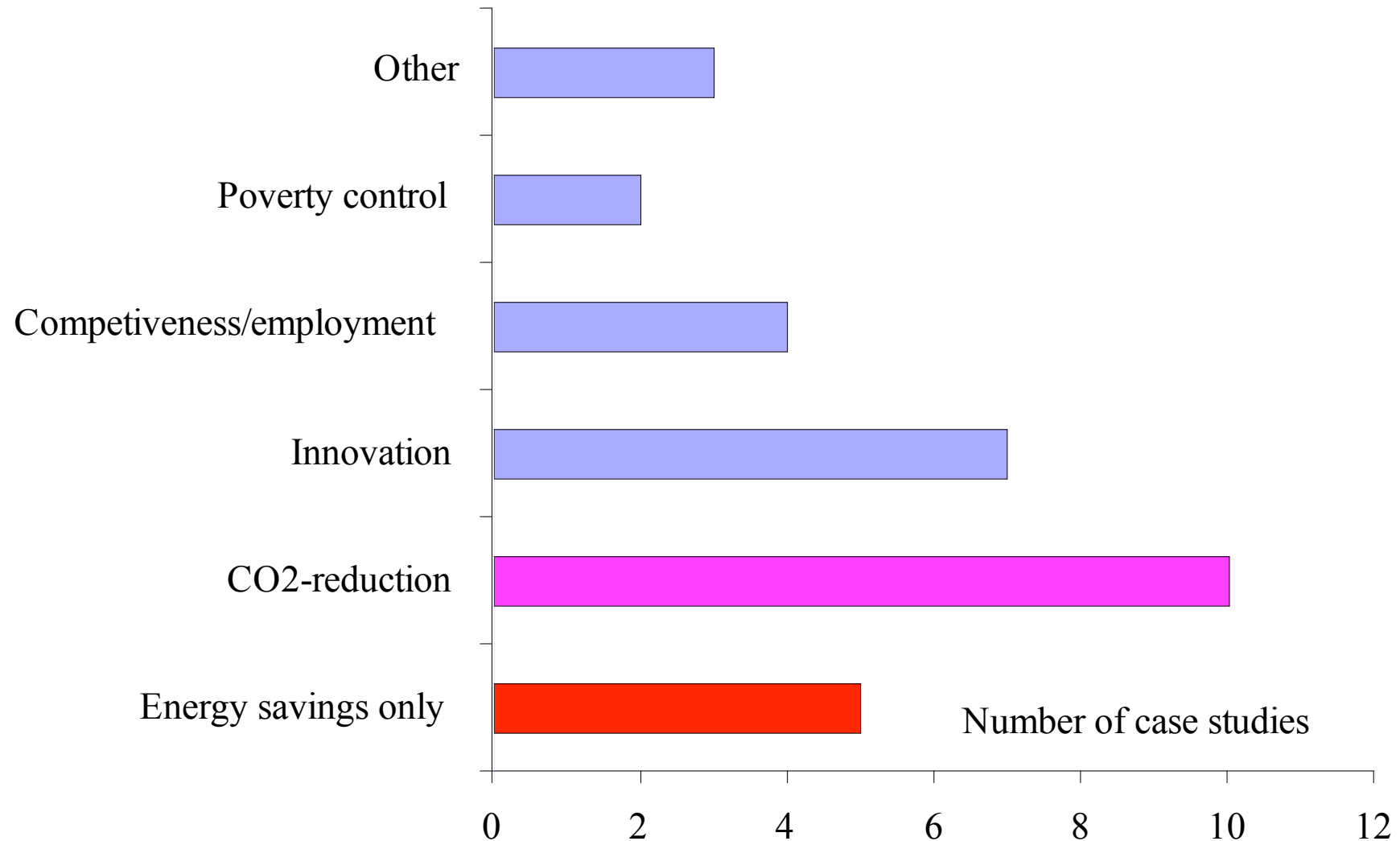


# Often quantitative targets on energy efficiency improvements and clear time frames are lacking





## Often policy instruments have multiple and/or unclear objectives

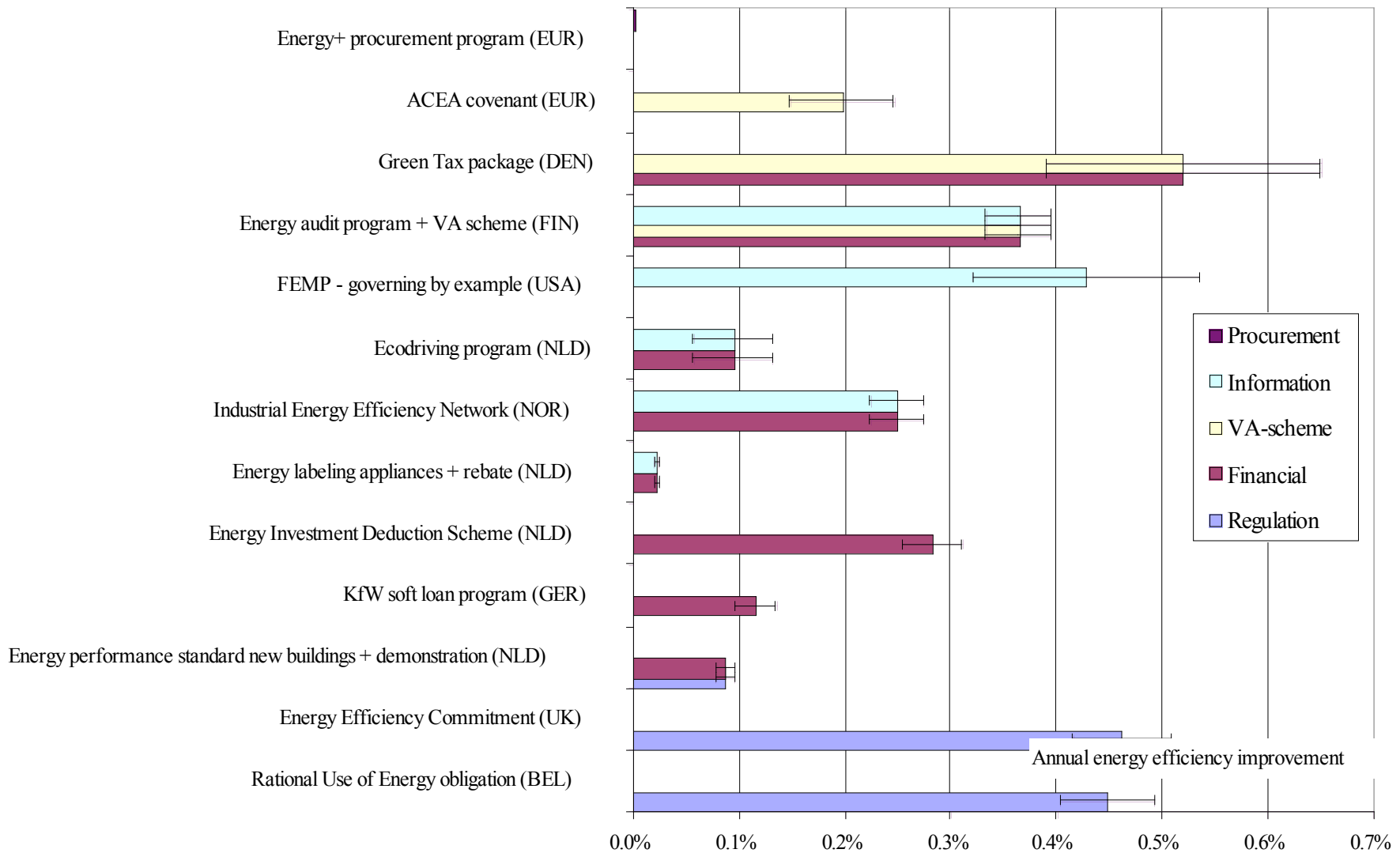




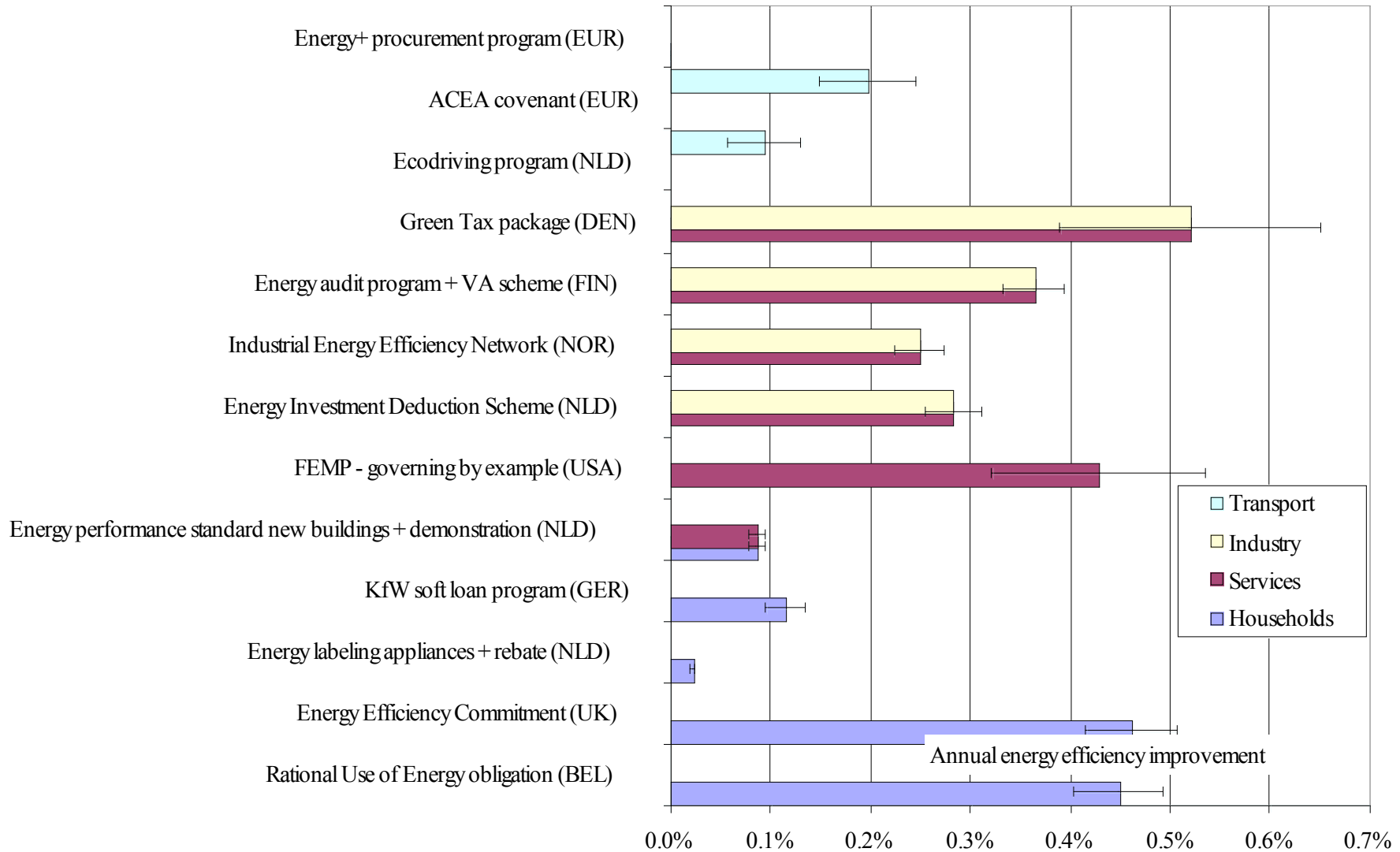
# Target and target achievement

	Instrument	Evaluated period	Target	Target achievement
Regulation	Energy performance standard for buildings (NLD)	1996-2004		
	Building regulation (ITA)	2003-2005		
	Energy Efficiency Commitment (UK)	2002-2005		
	Mandatory targets on energy consumption (BEL)	2003-2004		
	Top Runner (JAP)	1999-2005		
	Labeling of domestic appliances (NLD) (+ rebate)	1995-2004		
	Obligation on having an energy manager (ITA)	1999-2003		
Financial	Soft loans for building modernization (GER)	1996-2004		
	Energy investment deduction scheme (NLD)	1997-2004		
Informative	Local Energy Advice (SWE)	1998-2004		
	Energy audits program (FIN) (+ subsidy) <b>Public</b> services	1992-2004		
	Energy audits program (FIN) (+ subsidy) <b>Private</b> services	1992-2004		
	Energy audits program (FIN) (+ subsidy) <b>Industry</b> services	1992-2004		
	Industrial energy efficiency network (NOR)	1996-2004		
	Energy concept for branches (GER)	1996-2003		
	Individual Advice Services (GER)	1990-2005		
	Eco-driving (NLD)	2000-2004		
	FEMP (USA)	1985-2004		
VA	Voluntary agreements on energy efficiency (DEN) (+ subsidies)	1996-2003		
	ACEA covenant (EUR)	1998-2003		
Procurement	Energy+ (EUR)	1999-2004		
	BELOK (SWE)	2001-2005		
	Quantitative target			
	Target has been achieved or overachieved.			
	Target has not been achieved.			
	Target year has not been reached yet; unclear whether target achievement is on track.			
	Due to a lack of a quantified target, target achievement cannot be assessed.			

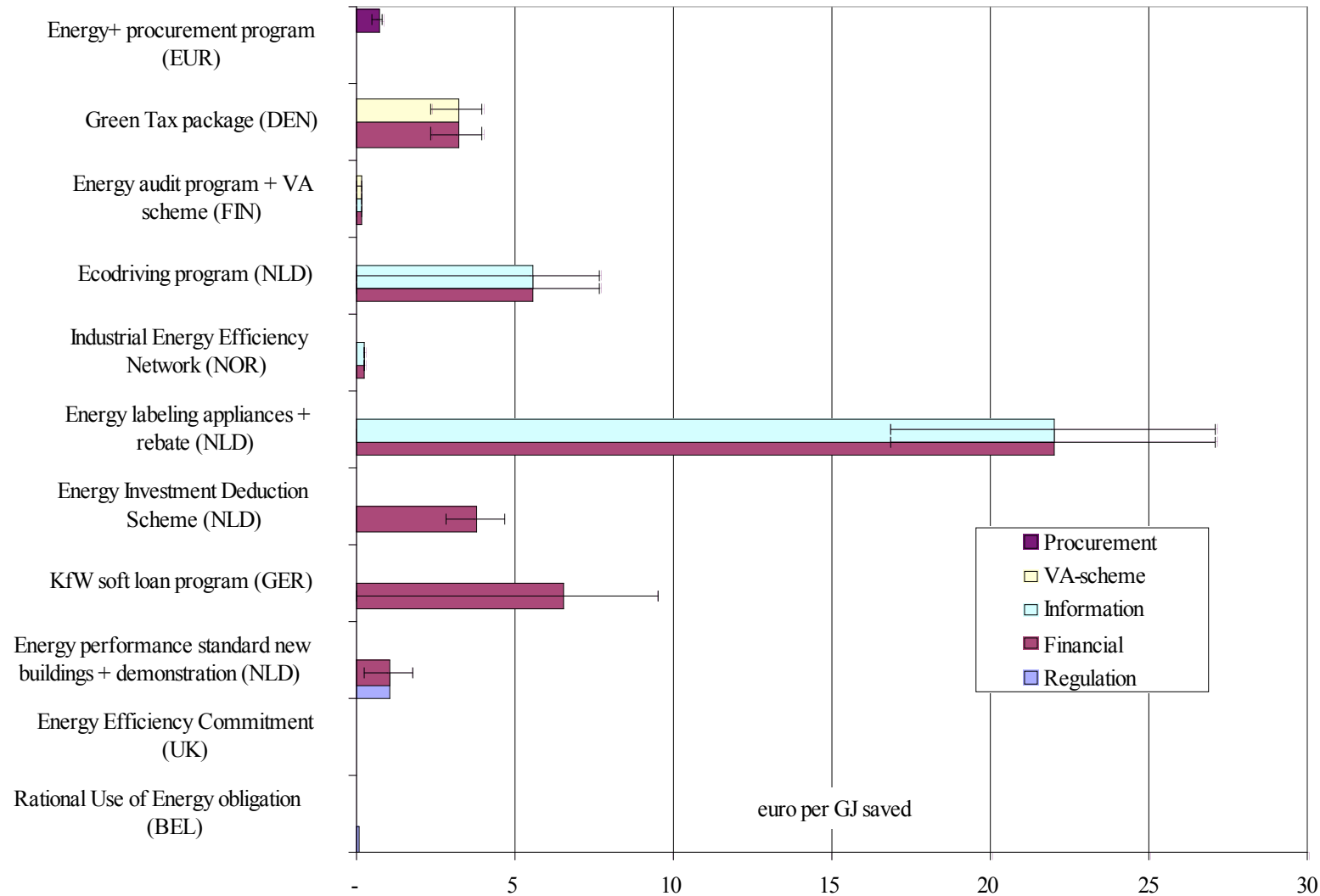
# No clear differences can be observed in annual savings for the different types of instrument



# Largest saving in industry/service sector, lowest in transport



# Cost for the government





## Success factors

- There is no such thing as a 'best practice' policy instrument...
- ...however, typical circumstances in which to apply different types of instruments and generic characteristics that determine success or failure can be identified



# Energy performance standards for buildings, cars or appliances

## Applying when

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

## 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?



# 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?



## Conclusion on method

- Our project showed that the applied method can be a useful in evaluation and design phase of policies as it forces policies makers to think about:
  - The whole implementation process;
  - The relationship and possible overlap with other instruments (already) in place;
  - The crucial indicators that need to be monitored;
  - SMART objectives for the (new) policies.
- However, a number of practical issues make it often difficult to follow all steps of which lack of monitoring data is the most common problem



Thank you for your attention!

More information on the project

[www.aid-ee.org](http://www.aid-ee.org)

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