

From theory based policy evaluation to smart policy design: lessons learned from 20 case studies on energy efficiency improvement

Results from the AID-EE project (**A**ctive **I**mplementation of the proposed **D**irective on **E**nergy **E**fficiency)



Copenhagen April 19, 2006

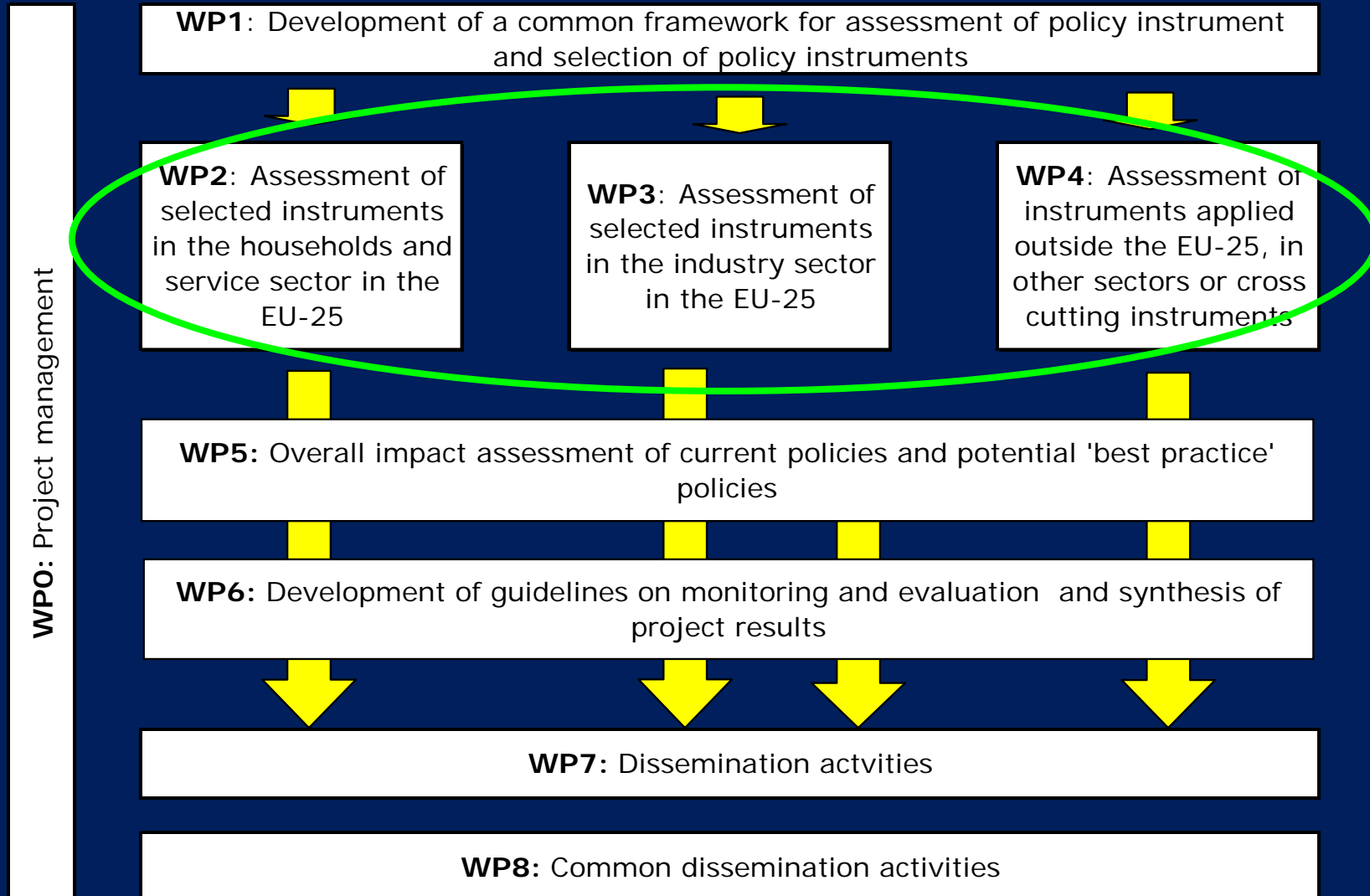
Lars J. Nilsson, Lund University



Objectives

1. Reconstruct and analyze the policy implementation process with the purpose to identify and explain key factors behind success and failure of energy efficiency policies
2. Actively disseminate knowledge on implementation, monitoring and evaluation of policy instruments across Europe amongst others through a number of workshops

Work programme



Approach

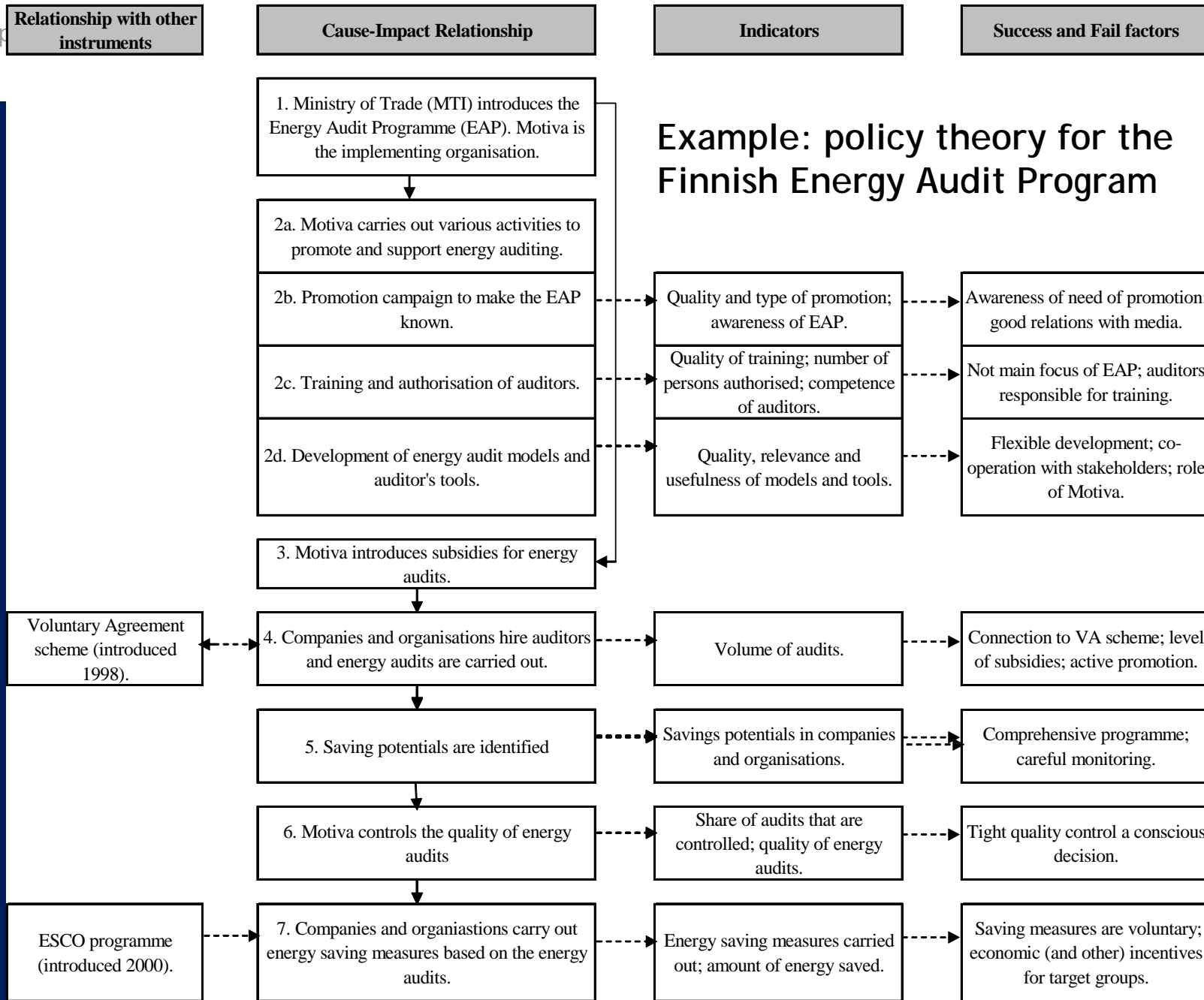
- Ex-post evaluation of 20 instruments applied in different sectors (households, services, industry, transport) across Europe
- Application of a standardised evaluation methodology based on the 'theory based policy evaluation', which not only focuses on the final impact (energy savings) but also on intermediate indicators

Policy instruments included

- Appliances labelling (NL)
- Building code (NL)
- KfW Building modernisation programme (DE)
- EEC (UK)
- Local energy advisors (SE)
- Energy+ (EU)
- AirCond-regulation (CH)
- EE Procurement group (SE)
- Energy manager obligation (IT)
- EE investment deduction scheme (NL)
- Voluntary agreement (DK)
- Audit programme (SF)
- Industrial EE network (NO)
- Energy concept for industrial branches (DE)
- Eco-driving (NL)
- ACEA agreement (EU)
- FEMP (US)
- Top runner approach (JP)
- Advice service (DE/NRW)
- Mandatory targets for network companies (BL)

Practical approach: 6 steps

1. Characterization of the policy instrument
 2. Draw up a policy theory and map out cause-impact relationships
 3. Translate theory to concrete indicators
 4. Draw up a flow chart
 5. Verify (and adjust) policy theory
 6. Collect information to draw-up indicators and draw conclusions
-
- ```
graph TD; 2 --> 5; 5 --> 2; 5 --> 6;
```



# Preliminary results from the AID-EE project



# Lessons learned (1)

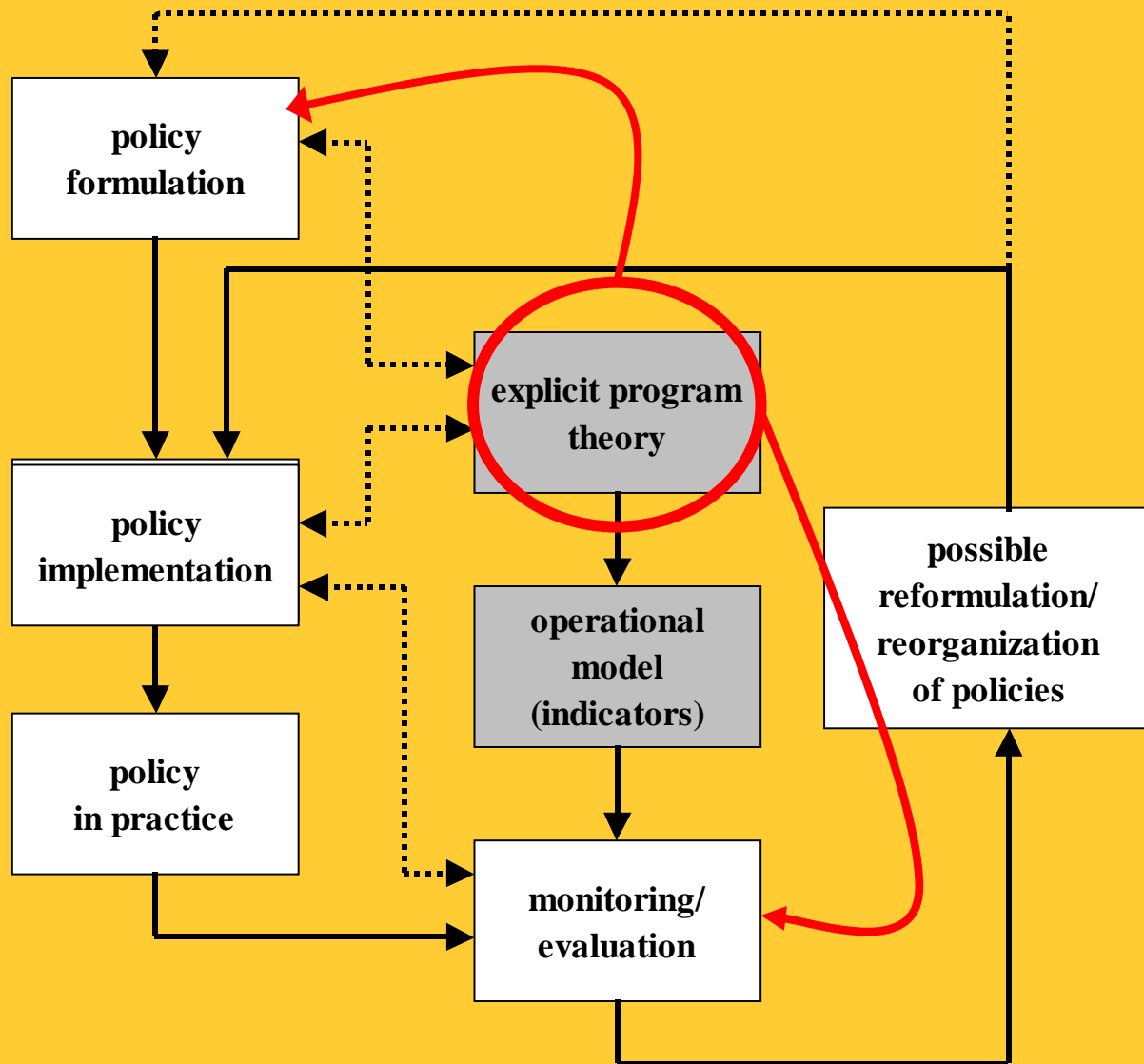
- Smart objectives are good starting point for policy making but they are not always there:
  - Specified: be as concrete as possible, what is aimed for, who is targeted, what seems the most appropriate instrument or policy package to achieve the target
  - Measurable: objectives have to be measurable to determine whether results / effects have been achieved at a later stage
  - Aceptable: commitment within the target group facilitates policy implementation
  - Realistic: with respect to desired effect, available budget, the timeframe, a combination of these
  - Timeframe: It should be clear when the result / effect is to be achieved

## Lessons learned (2)

- In most cases with policy packages it is not possible to isolate the energy saving impact of a single policy instrument. Each instrument has its own specific role:
  - Creating awareness, setting a standard, showing opportunities, providing financial means etc.
  - This means that the objective / target of an instrument in the package is not necessarily an energy saving target.
- The interaction of the policy instruments counts up to the total impact:
  - Would the impact still be the same when leaving out one of the instruments?
- The interaction is dynamic and asks for proper instrument management:
  - e.g. due to increase of eco-tax the payback time of a measure declines which might lead to an increased amount of free riders in a subsidy scheme.
  - Be critical on the instrument portfolio

## Lessons learned (3)

- Monitoring information is often lacking or is insufficient to determine the effect and efficiency of an instrument
  - Monitoring does not have priority in the design phase
  - The need for monitoring is often not addressed (e.g. by setting an annual budget for monitoring)
  - Because objectives are often not clear and measurable, monitoring and evaluation becomes difficult.
  - An explicit policy theory would facilitate monitoring and evaluation.



How policy theory can help to design:

- Smart objectives
- Smart monitoring protocols

# Preliminary summary conclusions

- Often multiple and mumbled objectives.
- There are policy packages and interplay between instruments.
- Monitoring and verification has been a relatively low priority.
- Organization matters – a clear mission and proper funding seem important for success.
- Acknowledge the different natures of different instruments.
  - The concept of smart objectives is relevant for all types of instruments, but should be applied differently
  - Different instruments ask for different monitoring protocols
- One should take into account relevant differences in:
  - Behavioral, cultural, and socio-demographic conditions
  - Market structures and policy/regulatory style
  - Climatic & geographical conditions
- A policy/program theory approach can guide policy design and subsequent monitoring and evaluation efforts.

## E4SD reflections - AID-EE implications

- The directive provides much needed impetus for running a tighter ship.
- Resource acquisition or market transformation – will only hard kWh's count towards target?
  - Bottom-up quantifiable energy savings from sales data, participation rates, engineering estimates, M&V, etc.
  - Top-down estimated effect of taxes or tariffs from price elasticities.
  - But what is the effect of building declarations, development of supporting tools, demonstrations, education, etc?
- Develop "approved methodologies" in dialogue with policy owners (cf. CDM Executive Board)?

## Further information:

Lund University, Sweden

Lars J. Nilsson

+46 46 222 4683

email: [Lars\\_J.Nilsson@miljo.lth.se](mailto:Lars_J.Nilsson@miljo.lth.se)

OR

Project coordinator

Ecofys BV, the Netherlands

Contact person: Mirjam Harmelink

+31 30 2808495, email: [M.Harmelink@ecofys.nl](mailto:M.Harmelink@ecofys.nl)

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