International Energy Agency
Implementing Agreement on
Demand-Side Management
Technologies and Programmes

EVALUATING ENERGY EFFICIENCY POLICY MEASURES & DSM PROGRAMMES

A useful step for demonstrable progress and impacts of policies and measures to reduce CO_2 emissions

Two volumes
EVALUATION GUIDE BOOK

BASED ON NATIONAL CASE STUDIES & NATIONAL AND INTERNATIONAL EXPERIENCES

October 2005

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The two volumes are available at: http://dsm.iea.org

Financed by Sweden, the Netherlands, Korea, Italy, France, Denmark, Canada and Belgium

Many governments have signed the UNFCCC and the Kyoto Protocol to this Convention. Also the EU Directive for Buildings Performance (EDBP) and the (fore coming) EU Directive on Energy End-use and Energy Services (ESD) request demonstrable progress and verified savings. In the light of these developments experts from Sweden, the Netherlands, Korea, Italy, France, Denmark, Canada and Belgium worked together to prepare an evaluation *Guidebook*, which contains two volumes. Volume I deals with evaluation theory and advises on how to conduct evaluations for five types of policy measures and programmes and Volume II hold over thirty evaluation case examples.

Guidebook Volume 1

Chapter 1 lays out a basic framework of selecting methods for evaluating specific energy efficiency policy measure or DSM programmes, and includes:

- A taxonomy of energy efficiency policy measures that is useful for quickly identifying the relevant evaluation issues associated with a given programme.
- Identification of seven key analytic elements that need to be addressed in virtually all energy efficiency programme evaluations.

Chapters 2 through 6 apply this framework in providing guidance to the types of policy measures identified in the taxonomy, as well as to programmes that combine several different policy measures. Each chapter is structured according to the seven key analytic elements:

- Policy measure theory used.
- Specification of indicators for the success of a measure.
- The baselines for the selected indicators.
- Assessment of outputs and outcomes.
- Assessment of energy savings and emissions reductions and other relevant impacts.
- The calculation of cost, cost-efficiency and cost-effectiveness.
- The level of evaluation effort.

Chapter 2 deals with the evaluation of regulation policy and measures and more in detail with building codes minimum equipment energy performance standards. The evaluation of information programme is the topic of chapter 3 that also holds two main sections: one deals with evaluation of general information, labelling and information centres and the other with energy audits and education and training. Chapter 4 deals with economic incentives: price reducing, taxation systems, financial arrangements and policy and measures ensuring a minimum market. Chapter 5 deals with the evaluation of Voluntary Agreements and chapter 6 with the combination of policy and measures and give special attention to market transformation.

Chapter 7 lists the conclusions and includes experiences from the case studies and the country reports as presented in Volume II. Two examples from the conclusions are follows:

- Evaluation should already start prior to the implementation and
- ensure that the level of evaluation effort is targeted and appropriate.

Guidebook Volume II

Covers the country examples and an overview on these examples.
The country reports all follow the same structure, describing the national system of energy efficiency policy measures in chapter 2 followed with the system for evaluating, monitoring and data collection on energy policy measures and relevant scenarios (chapter 3). Chapter 4 deals the methods on evaluating energy efficiency programmes (1995 onwards) and presents a short overview for

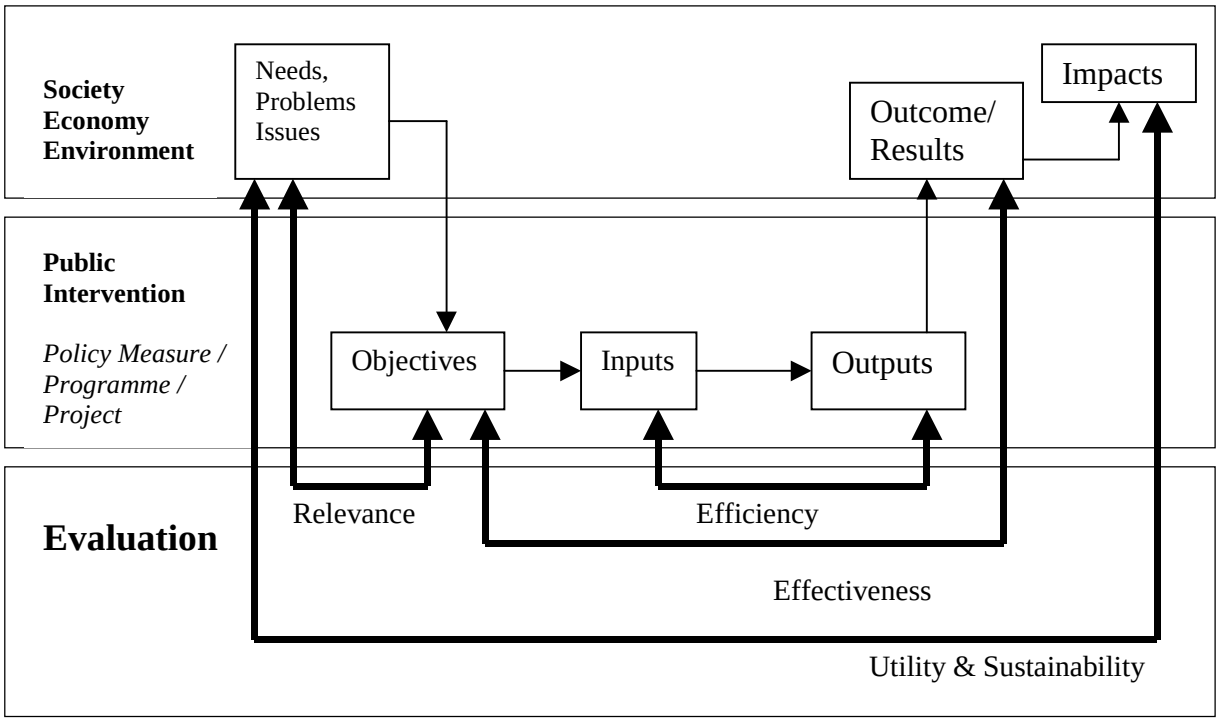
- Methods used
- Baseline (ex ante evaluation) and relation with national scenario/model
- Ex post evaluation
- Use of indicators
- Calculations on GHG emission impact for evaluated programmes

Chapter five holds the case examples on evaluations while chapter 6 gives the relations with international work.

The following evaluation case examples by type of policy measure are included:

	Policy type	Case examples	Country
1	Regulation	Building codes	Belgium
		Energy Efficiency Regulations for Residential Equipment	Canada
		Energy management scheme for large buildings	Denmark
		Minimum energy performance standards	Korea
		Energy Performance Standard (EPS) for houses	Netherlands
2	Information	Local energy efficiency information centres	Belgium
		Energuide for houses	Canada
		Energy labelling of small buildings	Denmark
		Free-of-charge electricity audit	Denmark
		Project 'Red-Hot' (element of stand-by campaign)	Denmark
		The 'A' campaign 1999	Denmark
		Promotion campaign for efficient ventilation	Denmark
		Information campaign (2001)	France
		Local energy information centres (Espaces Info Energie, EIE)	France
		Audits ("Aides a la decision")	France
		Energy audits in industry	Korea
		Energy audits in buildings	Korea
		Energy Efficiency Rating Labelling	Korea
		Information centres in local region	Sweden
		Information and education programme 1998-2002	Sweden
3	Economic	Criteria adopted for the evaluation of primary energy savings in end-uses	Italy
		EE Certificates	Italy
		Rebate programme for highly efficient electric inverters	Korea
		Financial incentives for DSM	Korea
		Energy premium scheme households	Netherlands
		Energy Investment Reduction (EIA and EINP)	Netherlands
4	Voluntary Agreements	Canadian Industry Program for Energy Conservation (CIPEC)	Canada
		Voluntary Agreements	Korea
		Voluntary Agreements on Industrial energy Conservation 1990 - 2000	Netherlands
		Eco-energy	Sweden
5	Combined policy Measures	Rebate programme for household appliances	Belgium
		STEM programmes	Sweden

Evaluation framework for a normative evaluation, presented in Volume I



Evaluation Questions

- *Relevance*: To what extent are the objectives justified in relation to needs?
- *Effectiveness*: To what extents have the expected objectives been achieved?
- *Efficiency:* Have the objectives been achieved at lowest cost?
- *Utility & Sustainability*: Do the expected or unexpected effects contribute to a net increase in social welfare and sustainability?

Adapted from European Commission 1999 and Technolopolis France 2001

More information on the guidebook and on future actions dealing with evaluation within the IEA DSM Agreement as well as suggestions for common actions, courses, training to transfer the knowledge presented in the guidebook are welcome by e-mail to h.vreuls@senternovem.nl

Contact information on the involved experts from Belgium, Canada, Denmark, France, Italy, Korea, the Netherlands and Sweden as well as evaluation literature is available at http://dsm.iea.org