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ODYSSEE-MURE

Energy Efficiency Policies – Impact and Indicators
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3rd Regional Training Workshop of ODYSSEE-MURE
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**How to evaluate energy efficiency policies:
the “Impact evaluation facility” in MURE**

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General framework for the evaluation of energy efficiency policies

Objectives

- Overall national EE targets
- Targets of a specific EE policy



Indicators

- Definition of suitable indicators for target verification
- Selected indicators must be made operational



Methodologies

- Top-down / Bottom-up
- Qualitative / Quantitative
- Surveys
- Measurement
- Modelling / Econometrics

Necessary criteria for the evaluation:

- **Effectiveness** — contribution of the policy measure to target achievement
- **Efficiency** — costs of the measure and their justification with regard to target achievement
- **Relevance** – was the measure suitable and causally for target achievement

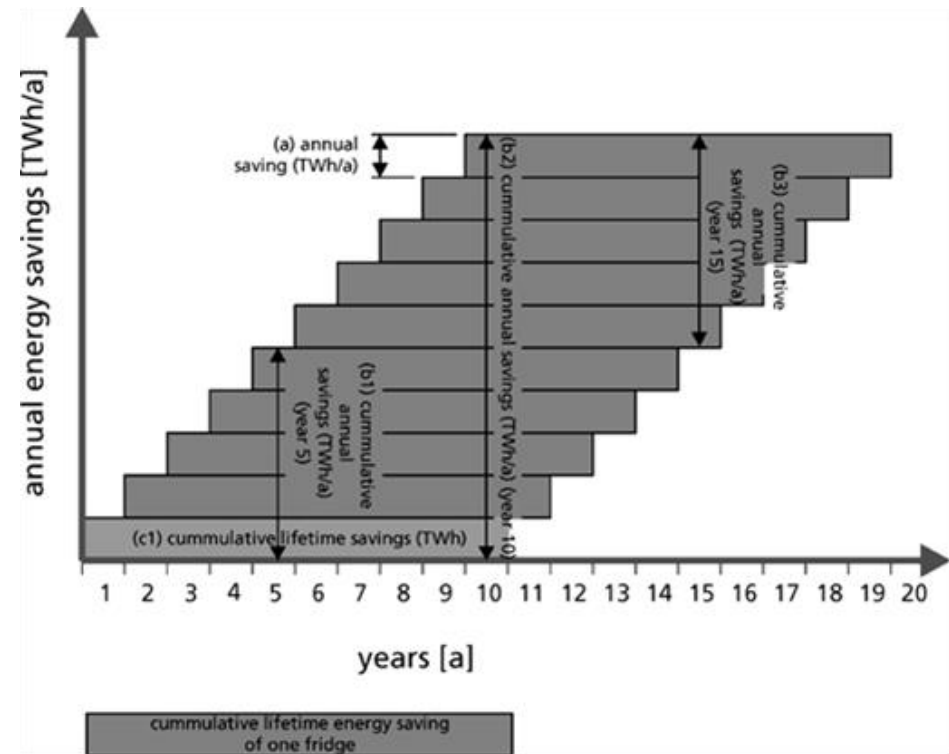
Further criteria:

- **Coherence** — is the measure coherent with other interventions
- **Side effects** – which positive and negative side effects are caused by the policy measure (impacts on jobs, GDP, competitiveness, energy poverty, energy security.....)

Accounting of energy savings

The indicators on energy savings are accounted in several ways:

- new annual savings
- **cumulative annual savings** (accounting in MURE database and NEEAPs)
- cumulative savings in a specific evaluation period („EED Art. 7 accounting“)
- cumulative savings taking into account the lifetime of an energy efficiency measure

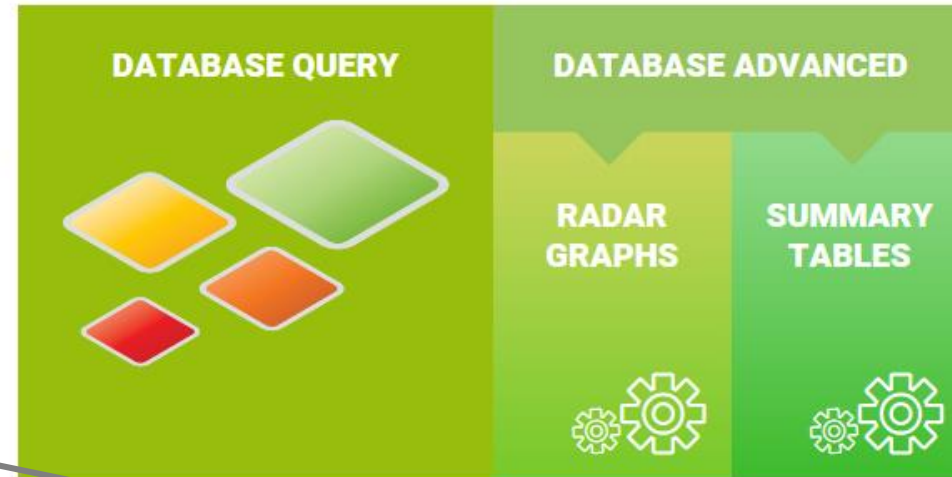


The MURE tools on energy efficiency policies

ABOUT THE MURE DATABASE

MURE (Mesures d'Utilisation Rationnelle de l'Energie) provides information on energy efficiency policies and measures that have been carried out in the Member States of the European Union. The information is accessible by query in the database. The distribution of measure by type can be visualized through radar graph. Finally several facilities enable specific queries.

Close cooperation
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Functionalities of the new “Impact Evaluation Tool” (IEF) in MURE

The IEF gathers functionalities which to a large degree are already available or have been available in a previous version of MURE:

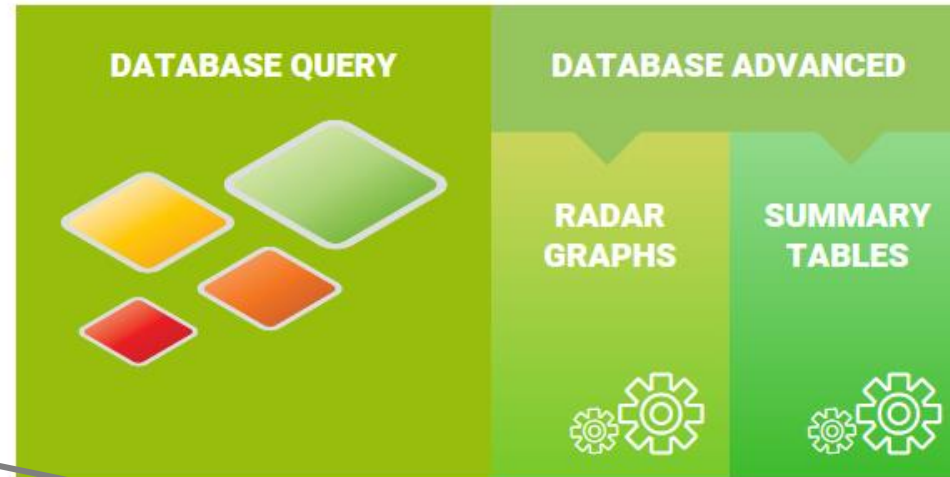
- Access measures by type of evaluation method (methods mainly taken from the EMEEES project and Annex EED)
- Extract information on outputs (quantitative and semi-quantitative impacts) and inputs (e.g. volumes of financial measures)
- Access to “good” impact evaluations (around 3-5 per country)
- Guide to carry out own impact evaluations (by a combination of MURE tools)
- Overview information on impact evaluations (graphs)
- Information on “ideal” impact evaluations (matrix impact evaluations – measure types)

The Impact Evaluation Tool in MURE

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Main page

Allowing for a structured approach to measure impact evaluations

- Overview of evaluation methods for energy efficiency policies and measures in MURE -

Help and Good Practices

See how the measures are distributed per evaluation method and which are the recommended evaluation methods per measure types



- Distribution of evaluation methods (matrix)
- Distribution of evaluation methods (graphs)

Submit

Then see which measures have been evaluated with a given evaluation methods and evaluate their impact with the Policy Interaction Facility



Sector

Evaluation Method

Country

Submit

Evaluation methods distribution (matrix)



Recommended evaluation methods and actual measures distribution of evaluation methods per measure type - Household



Sector

**= the method is recommended, **= the method provides reliable results, *= it is possible to use this method if the others are not possible, nr.= number of measures

			Bottom Up				Bottom Up/Top Down		Top Down		Integrated BU/TD	
			Direct measurement	Billing analysis	Enhanced engineering estimates	Mixed deemed and ex-post estimate	Deemed estimate unit savings	Stock modelling	Diffusion indicators	Specific consumption indicators	Econometric modelling	Integrated BU/TD methods
Regulatory/Normative												
Mandatory Standards for Buildings												
29	1	Energy Performance Standards	* 0	*** 1	** 4	6	4	*** 3	** 0	*** 4	0	*** 7
10	2	Minimum thermal insulation standards	* 0	0	** 2	1	0	*** 0	** 0	*** 1	0	6
Regulation for Heating Systems and hot water systems												
6	3	Minimum efficiency standards for boilers	* 0	1	0	1	*** 2	*** 0	0	*** 0	0	2
0	4	Compulsory replacement of old boilers above a certain age	* 0	0	0	0	*** 0	*** 0	0	*** 0	0	0
0	5	Thermostatic zone control	** 0	0	0	0	*** 0	0	*** 0	*** 0	0	0
1	6	Control systems for heating (Regulation)	** 0	0	1	0	*** 0	0	*** 0	*** 0	0	0
4	7	Mandatory heating pipe insulation	* 0	1	1	0	*** 0	0	*** 0	*** 0	0	2

Evaluation methods distribution (Graphs)

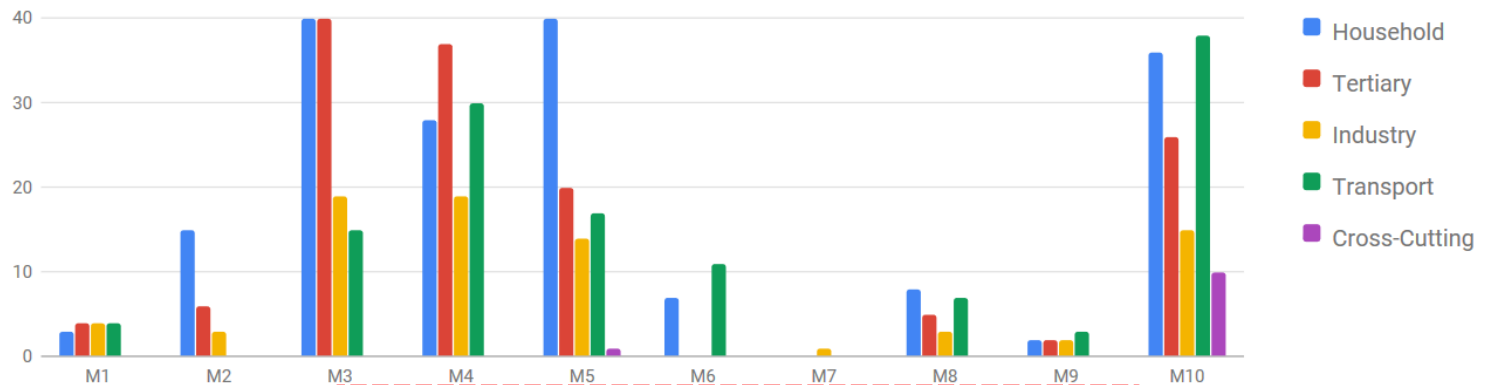


Number of measures per type of Evaluation Method - Country= All

Country

Legend:

- M1=Direct measurement
- M2=Billing analysis
- M3=Enhanced engineering estimates
- M4=Mixed deemed and ex-post estimate
- M5=Deemed estimate unit savings
- M6=Stock modelling
- M7=Diffusion indicators
- M8=Specific consumption indicators
- M9=Econometric modelling
- M10=Integrated BU/TD methods



The graph takes into account only the measures with a quantitative impact evaluation

The outputs from the measures retrieving by evaluation method



Impact Evaluation measures with the method Direct measurement - Household - All end-uses - All countries

Code	Title	Status	Type	Starting Year	Semi-quantitative Impact	NEEAP Measure	EU-related Measure	Quantitative Evaluation	Description
HOU-BG3	Residential Energy Efficiency Credit Line REECL	Ongoing	Financial	2005	High	Yes	No	YES	YES
HOU-CY11	Net metering scheme was introduced for the promotion of small residential photovoltaic systems	Completed	Financial	2013	Medium	No	No	No	YES
HOU-MAL3	Grants on purchase of micro-RES generation equipment	Ongoing	Financial	2006	High	No	No	YES	YES



Household - Measure Detail

Measure Code	HOU-BG3							
Country	Bulgaria							
Title	Residential Energy Efficiency Credit Line REECL							
Reference	http://www.reecl.org							
Status	Issuing Date	Starting Date	Ending Date	Semi-quantitative Impact	European Measure	NEEAP Measure (1,2,3)	Article 7	Impact Evaluation
Ongoing	5/2005	2005	2014	High	No	Yes (1,2,3)	No	Yes
Financing	€ from to							
Types	22) Financial - Grants / Subsidies - For investments in energy efficient building renovation							
Actors	central government, financial institutions, local government							
Target Audience	housing associations, owner-occupiers							
Targeted End Use	Total final consumption							
View Detailed Measure Description								

Targeted End Use	Type of impact evaluation	Impacts: saving determined with respect to			Starting impact year	Evaluation method	Comments
Total final consumption	Ex-ante	Year:	2020	1990	2005	Direct measurement	
		Compare:	Fixed year	Fixed year			
		PJ:	1.33				
		CO2:	72	0			

Policy interaction

Illustration of the methodological approach through 3-5 case studies on impact evaluations per country in MURE

Basis: Description of the evaluated energy efficiency policy in the MURE database

Homogenous “Five-step-approach” for each case study:

- Step 1: Short description of the evaluation study (background, objectives, ex-post/ex-ante evaluation, top-down/bottom-up)
- Step 2: Financial means and output (information on public budget involved, costs for obligated parties, administrative costs, triggered investments)
- Step 3: Collection of data on energy savings
- Step 4: Calculation method(s) for energy savings and key methodological choices (type of method(s), baseline(s), type of adjustments, correction factors, additionality)
- Step 5: Other aspects evaluated (e.g. CO₂ emissions, impacts on jobs)

Structure of these case studies is directly taken from the **EPATEE case studies** in order to enlarge the number and geographical scope → direct link between MURE and EPATEE case studies is foreseen

Integration of the case studies in the MURE database

Selection of case studies

- 3-5 case studies per country
- Covering different types of EE instruments (subsidy programs, EEOs, information)
- Covering different sectors
- Focus on good examples from stakeholder training sessions
- Collaboration with H2020 project EPATEE

<i>Title of the measure:</i> □ □	
<i>General description</i> ¶	
¶	
<i>Impact evaluation</i> ¶	
¶	
<i>Interaction of measures</i> ¶	
¶	
<i>Historical data</i> ¶	
¶	
<i>References</i> ¶	
¶	



Integration of the case studies in the already existing detailed measure description

Thank you for your attention

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[**www.odyssee-mure.eu**](http://www.odyssee-mure.eu)