

Evaluation and Monitoring for the EU Directive
on Energy End-Use Efficiency and Energy Services

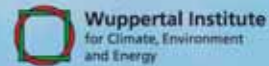
Introduction to the EMEEES Project and Terminology for Methods

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European Expert Workshop
4 June 2007

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Introduction to the EMEEES project and the workshop agenda

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EMEEES – Our Mission

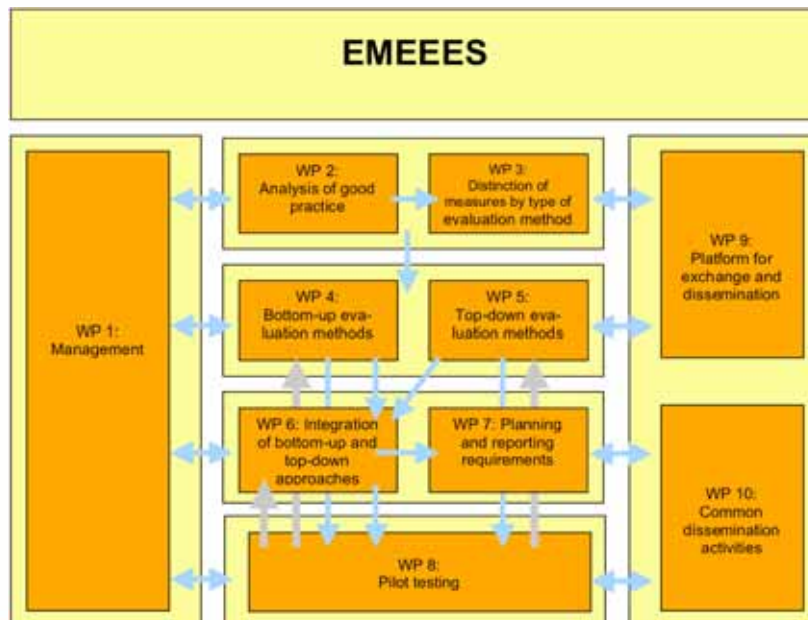
- **support** the implementation of the EU Directive on energy end-use efficiency and energy services (ESD) (2006/32/EC)
- develop harmonised **methods** for evaluation of energy savings
- build trust in methods and hence in savings evaluated
- develop a **template** for energy efficiency action plans
- provide **practical advice and support** for the European Commission
- provide **platform for exchange**:
www.evaluate-energy-savings.eu


Project duration: November 2006 to April 2009

Elements (Work Packages)

- WP1: Management
- WP2: Analysis of good practice
- WP3: Distinction of measures by type of evaluation method
- WP4: Bottom-up evaluation methods
- WP5: Top-down evaluation methods
- WP6: Integration of bottom-up and top-down approaches
- WP7: Planning and reporting requirements
- WP8: Pilot testing
- WP9: Platform for exchange and dissemination
- WP10: Common dissemination activities

How Work Packages are linked to each other



The EMEEES Consortium

21 partners well-experienced in evaluation of energy savings

Project partner	Country
Wuppertal Institut for Climate, Environment, Energy (WI)	DE
Agence de l'Environnement et de la Maitrise de l'Energie (ADEME)	FR
SenterNovem	NL
Energy research Centre of the Netherlands (ECN)	NL
Enerdata	FR
Fraunhofer-Institut für System- und Innovationsforschung (FhG-ISI)	DE
SRC International A/S (SRCI)	DK
Politecnico di Milano, Dipartimento di Energetica, eERG	IT
AGH University of Science and Technology (AGH-UST)	PL
Österreichische Energieagentur – Austrian Energy Agency (A.E.A.)	AT
Ekodoma	LV
Istituto di Studi per l'Integrazione dei Sistemi (ISIS)	IT
Swedish Energy Agency (STEM)	SE
Association pour la Recherche et la Développement des Méthodes et Processus Industriels (ARMINES)	FR
Electricité de France (EdF)	FR
Enova SF	NO
Motiva Oy	FI
Department for Environment, Food and Rural Affairs (DEFRA)	UK
ISR – University of Coimbra (ISR-UC)	PT
Dong Energy	DK
Centre for Renewable Energy Sources (CRES)	GR

EMEEES – public events foreseen

- **4 June 2007:**
EU Expert Workshop during eceee Summer Study, France
- **Autumn 2007:** National Expert Workshops in 13 EU Member States and Norway
- **May 2008:**
Final conference for presenting results, Brussels

First results

- **Working clarifications on terms and definitions in ESD (WP 6),**
e.g. types of bottom-up and top-down evaluation methods
- **First analysis of existing evaluation methods (WP 2 - in your material)**
- **Draft overview of methods appropriate for several types of energy efficiency improvement (EEI) measures (WP 3)**
- **Methodology for developing harmonised bottom-up and top-down methods (WP 4 and 5) (for your comments today)**
- **List of bottom-up and top-down methods that could be developed (WP 4 and 5)**
- **First preliminary draft methods (for your comments today)**
- **Template for NEEAP 2007 (WP 7, in your material)**
- **Eceee paper (in your material)**

Workshop agenda

- 9.20** Terminology for working on monitoring methods
- 10.00** Methodology for developing harmonised bottom-up methods (WP 4)
- 10.50 *Coffee break*
- 11.10** Methodology for developing harmonised top-down methods (WP 5)
- 12.00** The special case of white certificates
- 13.00 *Lunch break*
- 14.00** Parallel working groups
 - WG 1: EMEEES - Bottom-up methods
 - WG 2: EMEEES - Top-down methods
 - WG 3: EuroWhiteCert - evaluation and design of TWC schemes
- 15.30** Closing Plenary
- 16.30** End of the Workshop

EMEEES – further activities

- **Summer/autumn 2007:**
draft more bottom-up and top-down methods,
and integrated methods
- **Autumn 2007:** review of methods; advice to Commission on NEEAPs
- **Spring 2008:**
Finalise, publish and present results on methods
- **Autumn 2007 to early 2009:** pilot cases testing the methods
- **April 2009:** End of project

Terminology for working on monitoring methods



Analytical clarification: subject of monitoring (1)

- **Energy efficiency improvement (EEI) measure (ESD Art 3 (h)):**

Distinction useful between

- **EEI measures**
(=> *the cause*) that stimulate end-use EEI actions and are delivered to final consumers or other market actors

and

- **end-use EEI action(s)**
taken by final consumers or other market actors
(=> *can be an impact of an EEI measure*)

Analytical clarification: subject of monitoring (2)

- **EEl measures** stimulate end-use EEl actions
Can be: Energy services, EEl programmes, EEl policy instruments, and other EEl measures
Examples:
 - energy performance contracting,
 - incentive programme,
 - building codes,
 - voluntary agreement
- **end-use EEl action(s)** are taken by final consumers or other market actors
Can be : technical, organisational, or behavioural action that actually improves energy efficiency at the end-use level
Examples:
 - thermal insulation,
 - energy management,
 - purchase of efficient car instead of ‚gas-guzzler‘,
 - practising eco-driving

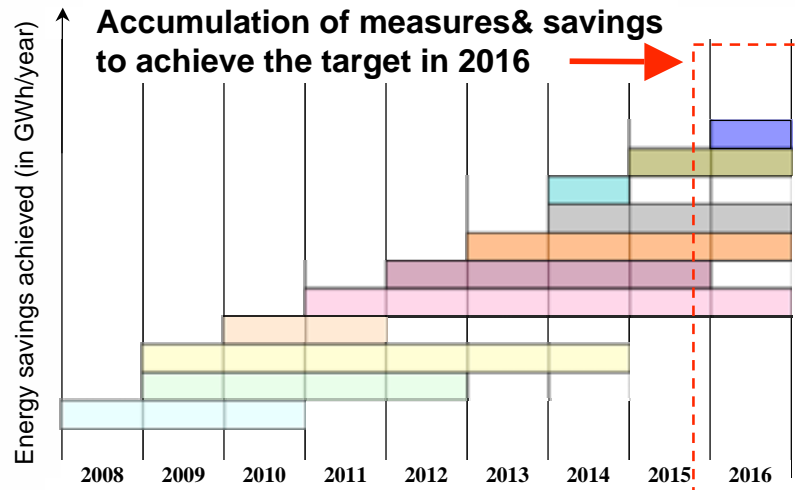
Analytical clarification: subject of monitoring (3)

				EEl (facilitating) measures		
				Example 1: energy performance contracting	Example 2: white certificate schemes	Example 3: energy taxation
End-use EEl actions	Sector	Energy end-use	Efficient Solution			
	Residential	example 1: heating	efficient boiler s		B 1	C
			heat pump s		B 2	
			etc.			
	Tertiary	example 2: lighting	CFL		B i	
			etc.			
			example 1: heating	efficient boilers, pumps, etc.	A 1	
example 2: lighting			CFL		etc.	
		efficient ballasts	A 2			
		etc.				

ESD energy savings and targets

What does “cumulative annual energy savings” mean?

=> sum of the annual energy savings (kWh/year) from the different EEI measures, but **only in 2010 and 2016** (accumulation of annual energy savings)



General principle for method development

- Be as thorough as possible in analysing the relevance of correction factors, and the possibilities to evaluate them.
- But be as pragmatic as possible in the methods proposed as a result of the analysis,
- With as many EU-level average values as possible

Bottom-up methods (1)

- ESD Annex IV (1)

*“A bottom-up calculation method means that energy savings obtained through the implementation of a **specific** energy efficiency improvement measure are measured in kilowatt-hours (kWh), in Joules (J) or in kilogram oil equivalent (kgoe) and added to energy savings results from other specific energy efficiency improvement measures”.*

Bottom-up methods (2): types of methods

Type of method	Example of existing method
1 Direct measurement	EPS building standards (NL)
2 Analysis of energy bills and energy sales data	Electricity Savings Trust (DK)
3 Enhanced engineering estimates	Energy audit programme (FI)
4 Mixed deemed and ex-post estimate	Energy Efficiency Commitment (UK)
5 Deemed estimate	White certificates activities (FR, IT)
6 Bottom-up modelling based on surveys	Effect of building codes (e.g., DE, NL)

Top-Down methods (1)

- ESD Annex IV (1)

*“A top-down calculation method means that the amount of energy savings is calculated using the **national or larger-scale aggregated** sectoral levels of energy savings as the starting point”.*

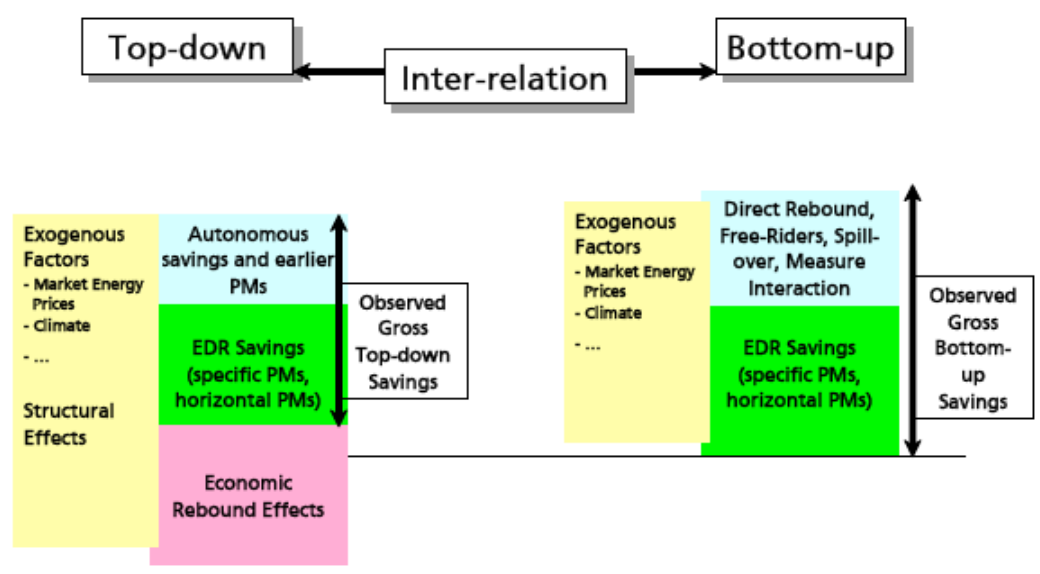
Top-down methods (2): types of methods

Type of method	Example of existing indicator or method
TD 1 Monitoring of diffusion indicators	ODYSSEE indicator on average energy consumption per appliance (kWh/year)
TD 2 Monitoring of specific energy consumption indicators	ODYSSEE index on sectoral energy consumption
TD 3 Econometric modelling	Evaluation of the effects of energy taxation (e.g., DE, SE)

Bottom-up or top-down methods? Two types of methods can be either-or

Type of method	Example of existing method	Conditions for switching type
BU 6 Bottom-up modelling based on surveys	Effect of building codes (e.g., DE, NL)	If cause for end-use EEI actions taken is not known => top-down
TD 1 Monitoring of diffusion indicators	ODYSSEE indicator on average energy consumption per appliance (kWh/year)	If change in indicator exclusively due to EEI measures => bottom-up

Integrated methods



Thank you very much for your attention!

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