# IEA-DSM task XXI: Standardisation of Energy Savings Calculations

## Report 1st experts meeting

25th & 26th of March 2009
SenterNovem, Utrecht

**Present:**
Klemens Leutgöb (E-sieben, AU) , H. Vreuls (SenterNovem, NL), Dr. Hyeong-Jung Kim (KEMCO, KOR), Ahn Sangsoo (KEMCO, KOR) , Asier Moltó, (REE,ES), Kurt Bisang (Bundesamt für Energie, CH)

**Apologies:**
Tim McIntosh, (NR Canada, CAN), Luc Bodineau (Ademe, FR), Even Bjørnstad (ENOVA, NO), Steve Schiller (Schiller Consulting, USA)

**Notes:**

- Ils Moorkens, the expert of Belgium, indicated that there are no funds available for her to participate in task XXI.
- The experts of Denmark (Richard Shalberg, DEA), Sweden (Jorgen Sjordin) and Finland indicated that that they have too little time available to participate in task XXI.
- No contact could be established with the expert of South Africa.
- Harry Vreuls indicated that he will carry on seeking participation from the UK and from Italy in task XXI.

Meeting administration: C. Maas (SenterNovem, NL)

## 1. Welcome and introductions

The participants were formally welcomed by the operating agents, Mr. Harry Vreuls. The participants introduced themselves and their organisations.

To date 4 EU countries (ES, FR and NL, while Austria is 90% sure), Switzerland, Norway and Korea decided to participate in task XXI. In addition the US will most likely join, but still has some open questions and also Canada will probably join the task. OA is actively seeking to incorporate experts from the UK and Italy.

## 2. Overview if the meeting

In this first experts meeting of task XXI the following three major topics were discussed:

- Evaluation; the use of evaluation guidebooks, tools and calculations
- Energy savings calculation; key elements (basic concepts, calculation rules, systems
- Demand Respons; key elements related to energy savings

## 3. Introduction to IEA-DSM agreement and task XXI

OA provided a short overview to IEA organisation and to the IEA-DSM operations. Overview of available material (i.e. International Evaluation Guidebooks).

## 4. The work plan

OA layed out the revised work plan (proposed). In general terms the responsibilities of the experts and the operating agent are addressed. A rough time-table for the activities within task XXI was presented. The task should be finalised in 2010.

To facilitate the exchange and the accessability of relevant documents it was announced that a dedicated and restricted area on the IEA-DSM website would be created for this purpose.

## 5. Summary of the discussion

General support was expressed for the work plan as layed down. The discussion continued around the main topics of the meeting. The OA provided in several presentations input for the discussion.

### 5.1 Evaluation; the use of evaluation guidebooks, tools and calculations

- None of the participating countries have overall guidelines for ESC.
- Switzerland indicated that there are some calculation rules for ESC, but they are very globally described.
- For several categories of energy savings separate guidelines exist in a variety of countries. Heat pumps, lighting, solar energy, voluntary agreements were mentioned here as examples.
- Often program evaluations use their own methodology. Consultants often use their own methodology for ESC and evaluations.
- ESCO's often have their own procedures
- In EU countries in sometimes EU standards can be used (EPBD buildings).

**Conclusions:**

- In absence of national evaluation standards no decision could be made with respect to documents and guidebooks that could be used as a starting point..
- The choice of documents to be used will be dependant upon the scope and the emphasis placed on different aspects of evaluation.

This topic was addressed in more detail in the discussion on key elements.

**Tasks:**

- **AO** Will make a dedicated and restricted area available on the (a.s.a.p.) IEA-DSM website to facilitate the exchange and the accessability of relevant documents.
- **Experts** Will provide (if possible) evaluation guidelines as (A.s.a.p) used in their country (preferably Englih translations)

### 5.2.1 Energy savings calculations: focus / scope

- There was discussion on the focus and scope of the work, i.e.

| | | |
|---|---|---|
| EEI Facilitating Measures (Evaluation) | EEI Actions (M&V) | Energy Savings |

With the focus shifting from right to left this means an increase in workload and effort within task xxi. This corresponds also to different interests in the evaluation, market evaluations (for example distribution companies) have their gravity point more to the right, policy evaluations more to the left. Relevant information for key elements of ESC might also be found in CDM. The AO will look into this and incoprporate the results in an evaluation framework.

Task XXI could involve elements

- ESC
- reporting
- documentation
- measurement & verification (M&V)
- costs
- system design & implementation

Remarks, questions:

- Dealing with saving energy or saving fossil energy?
- Dealing with efficiency improvement related to energy savings.
- Should costs be included in evaluations (are measures economically viable)?
- Attention should be payed to the moment that reductions occur. Reduction of peek demand (time shift, or savings) makes the energy supply system more efficient ➔ extra energy savings

In the discussion a consensus was achieved that the first emphasis should be on ESC and expanded with M&V for the most common energy efficiency measures.This consensus was worked out in further discussion on key elements.

### 5.2.2 Energy savings calculations; key elements

| | |
|---|---|
| Energy use (levels) | Measured<br>Calculated<br>Deemed (average) |
| Baseline | vs. before situation<br>vs. assumed normal change<br>vs. a specified level |
| Gross to net | Service level change |
| Time frame | How long can action be counted as e-saving,<br>At what moment does the efficiency occur. |
| Savings: | ESC * - (unitary) object of assessment<br>- Per action<br>- Energy end user |
| End-users | ➔ categorisation |
| Technologies | ➔ 30-40 most commonly used,<br>projects (including behavioural elements and energy management systems) |
| Necessary imput data | Input data ➔ 'algorithm'➔ result |

**Examples of technologies included in 1st research**:

- boilers (exchange, change of fuel, new houses)
- heat pump (exchange, change of fuel, new houses)
- domestic hot water system (boiler, solar system)
- lighting (e-bulb)
- washing machines
- air conditioners
- high effective glazing
- comprehensive building refurbishment (more than 1 measure)
- industrial motors
- CHP
- Energy management system (including the element of time)

**Conclusions:**

- Relevant information for key elements might also be found in CDM
- The first emphasis should be on ESC and expanded with M&V for the most common energy efficiency measures.
- Start with 15 most prioritsed techniques
- 30 a 40 techniques to be described (could include behavioural elements and energy management systems)
- Concentrate on household sector, service sector and industry

**Tasks:**

| | | |
|---|---|---|
| • **AO** | Prepares list of 15 prioratised techniques | (April 30th) |
| • **AO** | Prepares evaluation framework and one worked out example | (April 30th) |
| • **Experts** | Comment on list and framework and imput paper prepared by AO | (May 15th) |
| • **Experts** | Prepare an example technique using the framework | (May 15th) |
| • **Experts** | Use the framework to report in as many of the 15 techniques as they can (for their country) | (July 6th) |
| • **AO** | Prepares input paper for M&V (including relevant elements of CDM) | (July 13th) |
| • **AO** | Overview of experts input | (July 13th) |
| • **Experts** | Delivery description rest of techniques | (Aug 31st ) |
| • **AO** | Overview input experts, input 2nd meeting | (Sep 7th ) |

### 5.3 Demand Respons

The subject of Demand Respons and its relevancy for ESC was added to the workplan on the request of Spain, Which country also prepared a presentation on this topic. DR has relations to the topic of energy savings.

- Already the issue addressed of the element of time at which energy savings occur (or time shift in the demand), thus reducing the peek load of the system increases the efficiency on the system level, which renders extra savings.
- What is exactly meant by Demand Respons products?
- Which elements of Demand respons are related to key elements of energy savings.
- There is some material available with respect to the evaluation of DR products; i.e. the report of IEA-DSM task XVI and 3 evaluations reports from the USA (North-east)

**Tasks:**

- **AO** Will prepare input paper on DR products and key elements related to key elements of ESC. (Sep 7th )

Finalisation of the techniques discussion is envisaged before the end of September.

## 6. Time table

| Who | What | When |
|---|---|---|
| Experts | Identify national standards used (English translations) | a.s.a.p. |
| OA | Create restricted area on IEA-DSM website to facilitate documentation and information exchange. | a.s.a.p. |
| OA | List of 15 priority techniques | April 30th |
| OA | Evaluation framework with key elements | April 30th |
| OA | One prepared (filled in) example. | April 30th |
| OA | Input paper for monitoring and verification, including relevance of CDM | April 30th |
| Experts | Feed back 15 techniques; comments & suggestions on papers; 1 filled in example of technique | May 15th |
| OA | Determine 15 priority techniques definately | May 15th |
| Experts | Delivery of 15 prioritised techniques | July 6th |
| OA | Input paper for monitoring and verification, including relevance of CDM | July 13th |
| OA | Overview experts input | July 13th |
| Experts | Delivery of rest of techniques described | Aug 31st |
| OA | DR Input paper DR, including report task XVI and 3 US NE evaluation reports, | Sept 7th |
| OA | Overview experts, input second meeting | Sept 7th |

## 7. Next Meeting

- The Second meeting to be held before mid September, hosted by a European country.
- There will be discussion on the relation between key elements DR and key elements ES (the prepared imput paper on DR can serve as a basis).