Annex 21
Standardisation of Energy Savings Calculations

1. *Objective*

The overall aim of Task 21is to identify basic concepts, calculation rules and systems for Energy Savings Calculations (ESC) standards. Both energy savings and emissions avoidance calculation methods and standards will be evaluated for efficiency activities. Additional a methodology should be developed to nominate and describe the several Demand Response products. The Task will also explore how and by what type of organisations these draft standards could be used (and improved) to increase international comparable evaluation of policies and measures.

The three primarily objectives of this Task are to:

1. Summarize and compare the current methods and standards used for determining energy use, energy demand and energy and emissions savings from energy efficiency actions and policies;
2. Identify the organizations that are and could be responsible for use and maintenance of such methods and standards;
3. Recommend how existing methods, standards and resources can be expanded and/or used for comparing different countries' and international efficiency policies and actions.

While this project may recommend future efforts to develop international energy efficiency EM&V standards and/or resources, this Task does not involve efforts to produce harmonized standards among the countries involved with this Task.

2. Means

The actual research work will be carried out by a combination of the country experts, the Operating Agent, inputs from (experts involved in) standardisation bodies and from Operating Agents and reports for other relevant IEA DSM Tasks. In general the experts are responsible for identifying and obtaining information on ESC standards in their countries. The Operating Agent is responsible for mobilising inputs and comments from standardisation bodies, from other IEA Tasks, and for analysing and drawing conclusions for the information provided by the experts.

The Work will comprise four subtasks:

- Subtask 1: Existing energy savings calculation (ESC) standards and standards under development, and use of most relevant reports for ESC
- Subtask 2: Basic concept, rules and systems for ESC standards
- Subtask 3: Potential for use and continue development and maintenance of ESC standards
- Subtask 4: Communication and information

The work will be conducted in a combination of task sharing (work by the country experts) and cost sharing (work by the Operating Agent).

Subtask 1: Existing energy savings calculation (ESC) standards and standards under development, and use of most relevant reports for ESC

The objectives of the subtask are:

- To identify national and regional existing energy saving calculation (ESC) standards and standards under development;
- To identify and asses the most relevant evaluation and monitoring reports for ESC;
- To identify basic terms and definitions, calculation rules and systems;
- To identify the key elements to structure Demand Response products.

The subtask will deliver a report summarising the most relevant guidelines and standards – national and international - on ESC, with a focus on identifying common approaches for determining savings and terminology as well as key elements to structure Demand Response products.

The country experts will identify national standards and indicate regional standards and also what barriers exist for transforming energy savings calculations into agreed standards. As far as possible these barriers will be researched for different parties (governmental organisations, producers, consumers, scientific groups). The country experts, as well as the Operating Agent, will identify the most relevant evaluation and monitoring reports for ESC. They will assess these reports for use to define basic terms and definitions (concepts), calculation rules and systems. In this process the country experts and the Operating Agent will also investigate key elements in existing DR products in the participating countries. The experts summarise the outcome of the work in a country report.

The Operating Agent will ensure (in co-operating with the participating national experts) that the international standards will be included. He will include experiences from other Tasks within the IEA DSM Agreement, will also take care of knowledge development in other IEA Implementing Agreements as the 4E for Efficient Electrical End-Use Equipment and ensure that existing knowledge from the UNFCCC (e.g. CDM projects) is considered.

The Operating Agent will review the DR products, as indicated by the country experts for the potential to develop a methodology to structure the DR products. He will also take into account the products from Task 13 Demand Resources. The work is restricted to key elements and is focussed on how definitions as used in DR products could come more in line with those used for energy efficiency improvement programs and definitions use in electric system operation as well as in the ESCO´s business (Task 16).

He will organise the country experts' assessment of the most relevant documents and review the draft country reports. Once all the information is collected, the Operating Agent will summarise the results and draft a report summarising the most relevant guidelines and standards on ESC and barriers to realise standards as well as key element to structure DR products. The country experts will discuss and comment the draft report.

Subtask 2: Basic concepts, rules and systems for ESC standards

The objectives of the subtask are:

- To draft the basic terms and definitions, calculation rules and systems are in use in ESC and how these are transformable to (draft) standards;

- To develop a methodology to structure Demand Response products, including 'general accepted' criteria;
- For existing standards or standards under preparation to identify how and why these standards are or could be used in impact evaluation for policies and measures;
- To provide comments to organisations those have draft ESC standards or standards under development.

The subtask will deliver two reports. One report dealing with the basic terms and definitions, calculation rules and systems and the other and with experiences with commenting on draft ESC standards. This first report will be organised in such a way that national and international standard organisation(s) and or comparable institutions can use it in their standardisation work processes. Additional this report will present definitions as used in Demand Response programmes and products and that are related to energy savings terms and definitions and also give attention to reduced greenhouse gas emissions related to energy savings. The second report will be a compilation report on the comments to and experiences with commenting on draft ESC standards, including reactions from the standardization organisations on comments and their views on identified barriers (from subtask 1).

The country experts will contribute and comment on updated versions of the report on the basic concepts, calculation rules and systems as well as on the section dealing with a methodology to nominate Demand Response products. They will give attention to the opportunities to implement the common elements in the national and regional standards for energy savings calculations and report on the (potential) usefulness of the three level approach and the harmonisation of energy savings lifetime. Related to ongoing or planned standardisation work for energy savings calculations they will consult the national standardisation bodies and – if applicable - draft comments on (selected) national standards. The country experts will also collect information on potential 'general accepted' criteria to be included in a methodology to structure Demand Response products.

The Operating Agent will draft a report on the terms and definitions, calculation rules and systems for experts' discussion. He will co-ordinate the improvements of this draft report ensuring input from ongoing relevant work in other IEA-DSM Tasks. He will take care that definitions, originating for DR products, will be compatible with relevant existing terminologies, especially the system operation and the market operation terminology as used in energy companies. He will draft the method to structure the DR products and the general accepted criteria that could be used to make the products of IEA DSM Task dealing with DR more comparable and useful to combine by organisations acting in the energy field (e.g. aggregator and ESCO´s).

The Operating Agent will draft comments on regional standards while the country experts will do this for the national standards. The Operating Agent will be responsible for organising the process of discussion on these drafts and the co-ordination of the reactions to and from the standardisation organisations.

The Operating Agent will consult the international standardisation organisations and is responsible for the co-ordination of the country experts' consultations. He will also ensure that there is a good communication process with the Operating Agents for other relevant Tasks within the IEA DSM Agreement, for ESC as well as for DR definitions.
He will present preliminary conclusions from the work on international meetings to get involvement from as broader range of market organisations.

Subtask 3: Potential for use and continue development and maintenance of ESC standards

The objectives of the subtask are:

- To finalise the report on the basic terms and definitions, calculation rules and systems including related GHG emissions and Demand Response products;
- To explore how the information in the report could be used as training material
- To identify what organisations could be the main actor to continue the development, the maintenance and future development of these standards;
- To explore to what extent the basic terms and definitions, calculation rules and systems could be organised in such a way that (inter) national standards organisations can use these to improve international comparability of energy efficiency impacts;
- To explore how these standards can ease international more comparable evaluations of policies and measures;
- To explore how the methodology to nominate and describe the Demand Response products, including 'general accepted' criteria could be used by other IEA DSM Tasks and relevant (inter) national organisations.

The subtask will deliver two reports. One report will be the final report on the basic concepts, calculation rules and systems and the second one on roadmaps along which ESC standards could be further developed, taken into account the working processes of responsible standardisation organisations, but given more attention to international comparability of energy efficiency impacts and related emissions savings.

The country experts will research, using the (draft) reports from subtask 1 and 2, the national organisations responsible for the further development of the results of the IEA work into official ESC standards, the working processes and the planning. They will assess the expected use of existing and future ESC standards in evaluation of policies and measures and meta-evaluation and/or reports. They will take into account the relations with (inter) national estimations of GHG emissions. They will consult relevant national organisations for commenting to the draft methodology to structure Demand Response products, including 'general accepted' criteria. The experts will give input to and comments on the drafts of the final report and the report on roadmaps. They will give special attention to the potential of the draft report for use as support material for training.

The Operating Agent will organise the communication with the international standardisation organisations. Two regional workshops could be organised assuming that one workshop will be hosted and one organised from the Task' budget. He will contact (international) organisations that could be the main actor to continue the work and research how the reports should be organised to fit with the work processes in (inter) national standards organisations. In these contacts he will also explore whether the information for improved international comparability of energy efficiency impacts and international more comparable evaluations of policies and measures as well as definitions for Demand Response products should be presented all together or in different ways.

Subtask 4: Communication and information

The objectives of the subtask are:

- To inform experts and engage stakeholders and communicate the ongoing work in the Task on ESC standards;

- To provoke the Reference manual for DR products and discuss this with other IEA DSM Tasks;
- Stimulate adoption of the concepts and terms by IPEEC and other international institutions on policies, research, trade and education.

There will be a range of products. Task leaflets and newsletters will be produced and distributed. At least one presentation on a relevant international conference will be given and one and potential two regional workshops on ESC standards (and relevant DR products) will be organised in co-operation with the country experts. Status reports for the EXCO meetings and a final report to the EXCO will be prepared. In relevant workshop related to the EXCO meetings will be participated and the work from the Task will be presented. Contributions will be made to the IEA DSM Annual reports and editions of the spotlight newsletter.

The Operating agent will be responsible for the communication and information distribution. The country experts will be involved in drafting the newsletters and organising the regional workshop(s).

3. *Results*

Results of this Task will include reports as

- Energy Savings Calculations for selected end use technologies and existing evaluation practices in the participating country;
- Guidelines for Harmonised Energy Savings Calculations;
- Harmonised Energy Savings Calculations for selected end-use technologies, key elements and practical formulas;
- Roadmaps for improved Harmonised Energy Savings Calculations;
- A Template to document energy savings calculations and related GHG emissions reductions.

And paper(s) and/or presentations at international conferences.

4. *Time Schedule*

This Annex shall remain in force for three years (April 2009- April 2011). It may be extended by agreement of two or more Participants, acting in the Executive Committee, and shall thereafter apply only to those Participants.

5. *Specific Responsibilities of the Operating Agent*

In addition to carrying out the specific responsibilities enumerated in Article 5 of this Agreement, the Operating Agent shall:

- Ensure that relevant experiences from other Tasks within the IEA DSM Agreement and other IEA Implementing Agreements as the 4E for Efficient Electrical End-Use Equipment and existing knowledge from the UNFCCC (e.g. CDM projects) is considered;

- Consult international standardisation organisations;
- Present preliminary conclusions from the work on international meetings to get involvement from a broader range of market organisations.

6. *Funding*

a) *Task Costs.* The overall three year Budget of the Operating Agent for carrying out the management of the Annex is set at EURO 280,000 at January, 2009. If significant changes in price levels or the scope of activities under the Annex occur, the Executive Committee, acting by unanimity of the Participants, shall consider whether to adjust the Programme of Work to the available funds or increase the Budget.
b) *Sharing of Task Costs.* The Budget shall generally be funded by Participants through equal shares
c) *Changes in Number of Participants.* If the number of Participants changes, the shares of contributions to the costs will be adjusted accordingly by the Executive Committee, acting by unanimity of the Participants. New Participants shall pay the full share of the costs beginning with the project year in which they become Participants.
d) *Individual Financial Obligations.* Aside from the contributions described in sub-paragraph *(b)* above, each Participant shall bear all the costs it incurs in carrying out its obligations under the Annex, including the costs of collecting data on DSM programmes in its country.
e) *Task-Sharing Requirements.* The expected contribution of each Participant to task-sharing under the Annex is depending on the country specific situation, but is expected to be in total it will be about 12 men week. Additional are the travel cost for experts meetings and regional workshops
f) *Withdrawal.* As specified in Article 12*(g)* of this Agreement, Participants in this Annex may withdraw by giving written Notice of Withdrawal to the Executive Director of the Agency.

7. *Operating Agent*

SenterNovem, The Netherlands, is designated as Operating Agent.

8. *Participants in this Task*

The Contracting Parties which are Participants in this Task are the following:

1. Ademe, France
2. Enova SF, Norway
3. Korea Energy Management Corporation (KEMCO), Republic of Korea
4. SenterNovem, The Netherlands
5. Red Eléctrica de España, Spain
6. Bundesamt für Energie, Switzerland
7. Department of Energy (DEO), United States of America