Netherlands Enterprise Agency

Final Management Report Task 21 Harmonisation of Energy Savings Calculations

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Three primary objectives

- 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
- Identify the organizations that are and could be responsible for use and maintenance of such methods and standards
- Recommendations how existing methods, standards and resources can be expanded and/or used for comparing different countries and international efficiency policies and actions

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 concepts, rules and systems for ESC standards
- Subtask 3: Potential for use and continue development and maintenance of ESC standards
- Subtask 4: Communication and information

Coordination with other work

- Information on DR programmes
  - From **Task 15**, Network driven DSM case studies and
  - **Task 18**, DSM Projects database has been used as input in the country reports, where relevant
- Information on Energy Efficiency Obligation Schemes included in the publication produced for the **Task 22** (Energy Efficiency Portfolio Standards) as input for the report guidelines on energy savings calculations
- Information was shared with **Task 16** (Competitive Energy Services) on the use of harmonised energy savings calculations in the standard contracts for ESCo services
- On-going work on standards dealing with energy savings in **CEN and ISO** are take into consideration for the reports on energy savings calculations. Comments were provided during the drafting process of CEN and ISO standards on energy savings calculations

Work performed by the experts

Subtask 1

- Identification of national standards and indication of regional standards and barriers for transforming energy savings calculations into agreed standards. As far as possible these barriers were researched for different parties
- Identification and assessment of the most relevant evaluation and monitoring reports
- Produced a country report
- The Spanish expert produced two reports on literature and practises for energy savings calculation

Work performed by the experts

Subtask 2

- Contributed and provided comments to drafts of the report on the basic concepts, calculation rules and systems
- Commented on the section dealing with a methodology to nominate Demand Response products.
- Gave attention to the opportunities to implement the common elements in the national and regional standards for energy savings calculations and report on the (potential) use.
- Collected information on potential 'general accepted' criteria to be included in a methodology to structure Demand Response products.

Work performed by the experts

Subtask 3

- Researched what national organisations could be responsible for the further development of the results of the IEA work into official ESC standards, their working processes and their planning.
- Assessed the expected use of existing and future ESC standards in evaluation of policies and measures and meta-evaluation and/or reports.
- Provided input to and comments on the drafts of the final reports.
- Participated in a workshop for energy expert in Korea

Deliverables

- Country reports
- Template to document energy savings calculations and related GHG emission reduction
- Report Harmonised Energy Savings Calculations for selected end-use technologies, key elements and practical formulas
- Report Guidelines for Harmonised Energy Savings Calculations
- Roadmaps for improved Harmonised Energy Savings Calculations

Information Dissemination

- Several version of the general leaflet on Task 21
- A leaflet including summaries on case applications dealing with energy efficiency calculations on selected technologies.
- A poster presented at the IEPEC conference 2011: High reported energy savings, are they real or fake? International case applications help to understand pitfalls in energy savings calculations.
- A paper presented at the IEPEC Europe conference 2012: Comparable energy savings: how to ensure that singers form a harmonious chorus?
- A paper presented at the IEPEC conference 2013: Energy savings calculations and EE Obligation schemes.
- Contributions to IEA DSM Workshop and Annual reports
- Several articles in the IEA DSM Spotlight.

Recommendations for Further Work

- Additional case applications for selected additional technologies as input for the follow-up of the EU/ISO standardisation work
- Develop case applications and evaluations for packages of Policies & Measures
- Collect existing and develop default values, and/or a range of values and provide guidance on how to develop and update such values for energy savings calculations, based on a Tiered approach
- Generate a database with links to (library) reports and best practices and holding key savings data for technologies: deemed, defaults, technical and life times energy savings. Additional a toolbox that conducts several comparable energy savings calculations and produce a harmonised one.

Not enough support to develop one or more of this topic in a new (sub)Task.

Lessons Learned and Conclusions

- Only a moderate number of evaluation reports outside the USA that hold detailed information on conducted energy savings calculation.
- Most of the information needed for the key information on energy savings calculation had to be generated by the experts using different sources and/or experts opinions.
- The country reports and the report on harmonised energy savings calculations are showing the availability and use of default values for case applications and illustrating the learning over time on energy savings calculation parameters
- The key elements for energy savings calculation are a practical stepwise approach, going from inherent technical country independent aspects, toward more situation specific elements. By more clearly distinguishing these elements it will be easier to understand the reasons for different outcomes

Lessons Learned and Conclusions

- Through discussions between experts is was possible to develop better guidance on using what type of base line and to when and how to update base line estimates.
- There are no publications founds that are dealing with international impact evaluation of energy efficiency policies and measures. Most of the research output is in articles presented at international conferences

- **In general** the Task
  - was well in time and could provide important input into the development of international standards;
  - generate global agreement and understanding between experts on the key elements of energy savings and
  - provided unique comparable information on energy savings calculations for a number of technologies in countries all over the world.