IEA Implementing Agreement
Demand-Side Management
Technologies and Programmes

THIRTIETH
EXECUTIVE COMMITTEE
MEETING

MINUTES

11 - 12 October, 2007
Brugge, Belgium
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1. GENERAL BUSINESS

Welcome

The meeting was opened by Executive Committee Chairman Hans Nilsson and Christian Ferdinand welcomed the participants on behalf of the Federal Public Service Economy - DG Energy, Belgium, the host organisation for the meeting. Hans Nilsson welcomed the following new Executive Committee members, Mr. Robert Angioletti, Ademe, France, Mr. Devender Singh, Ministry of Power, India, who was accompanied by Mr. Balawant Joshi, the Indian Expert in Task XV, Mr. Seoungil Shin, Kemco, Korea, and Ms. Susana Bañares Hernandez, Red Eléctrica, Spain. Mr. Claude Ricaud, Schneider Electric, attended as an observer. Ulrik Stridbaek, IEA, LTO, and John Baker, ENARD also attended the meeting. The participants are listed in Attachment A.

Pre-Meeting Information

Anne Bengtson, the Executive Secretary, provided via e-mail, a document containing material associated with the Executive Committee meeting. This document will be referred to throughout these Minutes as the Pre-Meeting Document (PMD).

Adoption of the Agenda

The Agenda was reviewed and approved as shown in Attachment (B).

Approval of the Minutes from the Twenty Ninth Executive Committee Meeting

The Minutes from the Twenty Ninth Executive Committee Meeting were approved without changes.

Addition of a glossary to the Minutes

The Executive Committee members decided at the Executive Committee meeting in Seoul, to add a glossary to all future Minutes, to explain the numerous abbreviations of IAs, organisations and working groups. See Attachment (C).

Status of the Agreement

Hans Nilsson, informed the Executive Committee members that the status of the Implementing Agreement remains unchanged since the last meeting. New Zealand and South Africa are in the process of formalising their participation in the DSM IA. The Italian change of contracting party from CESI to CesiRicerca has not been formalised yet, but is expected to be so soon. Further, Hans Nilsson said that the National Development and Reform Commission, NRDC, which is responsible for DSM in China, and which give DSM high priority, will probably attend the next Executive Committee meeting as observers. Hans Nilsson also said that he would contact Fritjof Unander, ENOVA, Norway, and ask when a new Executive Committee member for Norway will be appointed.

DECISION:

The Executive Committee members decided:

- To invite NRDC, China, to the next Executive Committee meeting in New Delhi
ACTION:
- Contact Fritjof Unander, ENOVA regarding new ExCo representative for Norway
- Invite the National Development and Reform Commission (NRDC), China, to the next Executive Committee meeting in New Delhi

IEA Secretariat News

Carrie Pottinger, DSM Programme Desk Officer, IEA Secretariat, Paris, was unable to attend the meeting due to illness. The latest issue of the IEA Secretariat News (2007-1) was distributed in August 2007 and was included in the Pre-Meeting Document. The Executive Committee members expressed their disappointment and pointed out that it was the third time in a row that no desk officer was present at the Executive Committee meeting. This illustrates how vulnerable contact with the Secretariat is when the frequency of participation is low. Harry Schaap mentioned that the EUWP has two or three desk officers and that it should be possible to send one of the alternative desk officers to meetings.

The IEA has opened a new secretariat in Riyadh, Saudi Arabia, called “The International Energy Forum”, and is a joint forum for formal cooperation and contact between the IEA and OPEC.

Contact with possible sponsors

During the past six months Hans Nilsson has been in contact with Eurelectric (a European utility association), Edison Electric Institute (USA) and Schneider Electric, to interest them in becoming sponsors in the DSM IA. Eurelectric and Edison Electric Institute have provided positive responses and may consider joining the DSM IA. They were unable to attend the meeting. Claude Ricaud, Schneider Electric, attended the meeting as an observer, with the aim to become a participating sponsor, and gave a brief presentation about Schneider Electric.

Transpower, New Zealand, was also invited to the meeting as a possible sponsor, however New Zealand have in the past six months decided to join the DSM IA as members instead of sponsors. The paper work is underway to formalize their participation.

The Executive Committee members agreed to invite ELECTROLUX to become sponsors in the DSM Implementing Agreement, and attend the next Executive Committee meeting as observers.

ACTION: Invite ELECTROLUX to become sponsors in the DSM Implementing Agreement, and invite them to attend the next Executive Committee meeting as observers.

NEET activities

At the G8 summit in Gleneagles, 2005, the IEA was asked to perform work on energy efficiency, clean technology and climate policy to make special efforts to reach out to the five additional countries that were present at the Gleneagles summit namely: India, China, Brazil, Mexico and South Africa and come up with recommendations for the G8 summit in Japan 2008. The networking project of the IEA, NEET, has already arranged a workshop in South Africa, February, 2007.
Hans Nilsson informed the Executive Committee members that NEET will arrange a workshop in Brazil 19-20, November, 2007. Paul Davidson will attend the meeting to promote the DSM Implementing Agreement. Further, NEET is arranging a workshop in Beijing, China, 1-2 November, 2007. However, the DSM IA is not invited since the IEA contact is the Ministry of Industry and Research, which give a low priority to DSM.

The IEA Governing Board is also urging IAs to strengthen energy technology collaboration with Russia. In this respect, the NEET team will be accompanying the IEA Executive Director, Mr Nobuo Tanaka to Russia on 21-25 October, 2007, on a fact finding mission. Ulrik Stridbaek, IEA, who will accompany the IEA Director, was tasked with and agreed to speak for the DSM IA when in Russia.

**ACTION:**
- Paul Davidson will attend the NEET workshop in Brazil 19 – 20, November, 2007.
- Ulrik Stridbaek will speak for the DSM IA while in Russia on the NEET fact finding mission.

**Report from BCG meetings and workshops**

The BCG involves the seven buildings-related Implementing Agreements in the IEA, which are: Energy Conservation in Buildings and Community Systems (ECBCS), Energy Storage (ECES), Heat Pump Centre (HPC), Solar Heating and Cooling (SHC), District Heating and Cooling (DHC), Demand Side Management (DSM) and Photovoltaic Power Systems (PVPS). The Chairmen of the building related Implementing Agreements meet once a year to exchange information, interact with the IEA Secretariat and discuss how to deal with common issues and explore possibilities for cooperation. The next BCG meeting will be held in January, 2008.

**IEA Workshops**

Hans Nilsson has attended two deployment workshops at the IEA Secretariat in the past six months, where he presented experiences from the DSM Implementing Agreement. Documentation is available on:


An IEA workshop on “Promoting Information from Research” was held in October, 2007. Paul Davidson was unable to attend. The results from this workshop will be circulated to Executive Committee members by Paul Davidson once they are received.

**ACTION:**
- Distribute results from workshop on “Promoting Information from Research” to Executive Committee members.

**Progress on contacts with CTI, REEEP, CIGRE, ETSO, the European Union and other Implementing Agreements**

Hans Nilsson informed the members that no contacts have been made with REEEP, ETSO or CIGRE during the past six months. The Chairman of the Climate Technology Initiative (CTI) IA and the Chairman of the new Implementing Agreement on Deployment of Efficient Electrical End-Use Equipment and Appliances were invited to attend the Executive Committee meeting, but declined due to other engagements. India expressed its interest in
exploring the opportunities to co-operate with REEEP for specific purposes, and Spain and France said that they
would like to explore the opportunities for co-operation with ETSO based on earlier contacts and correspondence.

Hans Nilsson informed the Executive Committee members that the European Commission mentions more often the
possibility to cooperate more closely with the IEA Implementing Agreements. The Chairman has brought the issue
up again in contacts with the Commission. However there are several complications in developing this contact
further.

Seppo Kärkkäinen informed the Executive Committee members that he is part of one of the working groups in
CIGRE who are dealing with demand response. This working group will produce some results on demand response,
including case studies, which will be useful for Task XVII work.

**ACTION:**
- Provide India with contact details for REEEP
- Provide Spain and France with contact details for ETSO
- Renew DSM IA contacts with REEEP, ETSO and CIGRE

**Presentation by John Baker, ENARD - the IEA Implementing Agreement on Electricity Networks Analysis,
Research and Development (ENARD)**

John Baker, EA Technology Ltd. and the Operating Agent for Task I of the ENARD Implementing Agreement gave
a presentation on ongoing work.

John Baker started his presentation by stating that ENARD is a major new Implementing Agreement addressing a
variety of electricity T&D network issues. Annex I – Information Collation & Dissemination, was initiated in
September 2006. Several AnnexI workshops have already been delivered and/or planned, as a precursor to a small
series of follow-on (R&D) Annexes. ENARD’s mission is to: provide a major international forum for information
exchange, in-depth research and analysis and collaborative R&D in relation to electricity T&D networks.

ENARDS core objectives are: (1) the collation, exchange and dissemination of information and data; (2) the in-
depth review and analysis of a range of key issues relating to R&D, design, operation and management of T&D
networks; and (3) the complementary review and analysis of prevalent and anticipated regulatory frameworks and
their impact on the economic evaluation and optimisation of network asset portfolios.

Johan Baker stated that the potential for DSM is clearly recognised in the overall context of power systems operation
and development and contributions from the DSM Implementing Agreement have already been received at specific
ENARD workshops. DSM considerations are likely to apply in relation to: (1) on-line metering/active network
management; (2) DG system integration in context of multiple utility services; (3) overall system balancing, in the
context of large scale renewables developments; (4) network optimisation; and (5) transmission systems operation
and planning.

ENARD is eager to build upon existing knowledge and experience within the DSM Implementing Agreement; seek
opportunities to feedback information on network related implications, and welcomes interchange of ideas and
knowledge, particularly when Annex II and IV develop within ENARD.

The Operating Agent of Task XVII, Seppo Kärkkäinen, has been in contact with ENARD to inform them about Task
XVII and discuss co-operation.
John Baker informed the Executive Committee members of several workshops which ENARD is planning. A workshop on “Intelligent Networks” will be held in April, 2008. Information about other workshops and the ongoing work in ENARD can be found at [www.iea-enard.org](http://www.iea-enard.org).

**New IEA Secretariat Project: “Customer Choice in Electricity Markets – Retail Switching and Demand Response in Competitive Markets”**

Ulrik Stridbaek, IEA/LTO, presented a new IEA project on “Customer Choice in Electricity Markets – Retail switching and demand response in competitive markets” (see pages 11-14 in the Pre-meeting Document). The new IEA project is a follow up of earlier projects related to the development of competitive markets. The study will focus on policy and it will result in a series of publications. The study will focus on three categories of customer response: switching of supplier, shifting load from one period to another (demand response) and reduction of load (energy efficiency). The study will build on experiences from IEA Member countries, mainly drawing from a questionnaire submitted to a host of relevant authorities – governments, regulators and system operators, at both national and state/regional levels. The questionnaire will collect information about practices and market experience.

The following outlines some of the information and data that will be pursued through the questionnaire, looking at all three classes of customers (residential, commercial, and industrial): (1) retail competition; (2) consumer switching; (3) contracts/product development; (4) demand response; and (5) metering technology. The questionnaire will be distributed in the third quarter of 2007, with expected responses received and analysed during the fourth quarter of 2007. Final publication is targeted for mid 2008.

Ulrik Stridbaek stated that he was interested in establishing contacts with the DSM Implementing Agreement to make use of the expertise among members, Operating Agents and Task Experts.

The Executive Committee members and Operating Agents found this co-operation very interesting and expressed a willingness to also co-operate in, for example, workshops to present the results of the DSM Implementing Agreement.

2. OPERATING AGENTS MEETING

The Operating Agents meeting was held on 10 October 2007. The Chairman, one Vice Chairman, the Executive Committee Secretary, the Spotlight Editor and all of the Operating Agents, were present. The Chairman conducted the meeting in the absence of the Advisor Fred Morse.

3. End-of-Term Report – Future of the Agreement

The End-of-Term Report, and Future Strategy was provided on pages 15 – 61 in the Pre-Meeting Document and was presented by the Chairman, Hans Nilsson.

End of Term Report

Hans Nilsson presented the End-of-Term Report and reminded the Executive Committee members that the present term ends on 27 September 2008 and the End-of-Term Report will be submitted to the EUWP in May 2008 and to the CERT in June 2008.

The purpose of the End-of-Term Report is to provide the End-Use Working Party members with information on the DSM Implementing Agreement to enable the Working Party to decide whether to recommend that the term of the DSM Agreement be extended for another five years or not. The requirements are basically the same but the EUWP and CERT put more stress on future strategy than before.
Hans Nilsson pointed out that the End-of-Term Report still lacks some information and the Executive Committee members were reminded that their contribution was really needed, especially to show how the Implementing Agreement results were or were not useful in their daily work back home.

The Strategy

The strategy remains essentially unchanged, but some explanations to already existing text were suggested and the tables for suggested new work have been updated. The Vision and Mission statements should be edited for language and comply with the Vision and Mission statement on the Programme brochure.

Country Overviews

Executive Committee members were asked to make short country presentations on “DSM Priorities at present in their country”. The country priorities were summarised in a matrix. See Attachment (E).

All Executive Committee members were asked to contribute with their remarks and suggestions concerning:
- a) the End-of-Term Report
- b) the Strategy
- c) their country overview

no later than 26 October 2007.

The finalised End-of-Term report and strategy will be sent for ballot voting before the next Executive Committee meeting.

The Executive Committee members expressed their thanks to Fred Morse and Hans Nilsson for the tedious work in assembling the End of Term Report.

ACTION:
The Executive Committee members:
- should contribute to finalising the End-of-Term Report, the Strategy, and check the matrix to secure that their country priorities have been correctly recorded – deadline 26 October 2007.
The End-of-Term Report and Strategy should be:
- Sent for ballot voting, before the next Executive Committee meeting.

Changes to the format of the Annual Report

It was suggested that some of the statistics that the Operating Agent’s have to provide every 5 years for the End-of-Term Report should also be delivered on an annual basis, for the Annual Report. This would greatly facilitate the assembly of statistics every five years, especially when the Task is finished and the Operating Agent is no longer available or contactable. The Executive Committee members approved this suggestion, and if possible time wise, should be adopted for the Annual Report for 2007.

The Executive Committee members also suggested that Operating Agents take into account in their budgets that a certain commitment will be required after a Task has been completed. This budget would mainly cover dissemination of the Task results but also the continuing provision of information about the Task.

DECISION:
- Change the reporting format of the Annual Report
ACTION:
- Develop a new format for the Annual Report to allow for easy read of statistics for future End-of-Term report needs.

Change of DSM Implementing Agreement name

Harry Schaap commented that he and his country’s economy along with other participating countries in the DSM Implementing Agreement, have significant problems with the name of the DSM Implementing Agreement and strongly advocated, subject to vigorous discussion, a name change in the future. An addition of for example a subtitle stating energy efficiency or demand response would be helpful, said Harry Schaap. The Chairman, Hans Nilsson, decided not to open the floor for discussions without having prepared the subject before hand.

4. EXTENSION OF WORK AND NEW WORK

Demand Response & Efficiency Portfolio Standards

A proposed concept paper for a new Task on Demand Response & Efficiency Portfolio Standards was distributed at the meeting, see Attachment (D), and was presented by Ross Malme, RETX, United States.

Ross Malme started his presentation by stating that the world recognizes that climate change is for real, and that the First Commitment period of the Kyoto Protocol ends in 2012, so new ideas are needed. The DSM Implementing Agreement should not only be a part of the conversation but be a contributor of ideas.

In the proposed Task, the DSM Programme would investigate the benefits of incorporating demand response and energy efficiency into existing market portfolio requirements and/or creating one of its own standard.

The Task would consist of four Subtasks: **Subtask 1** – Identification of Existing Portfolio Standards; **Subtask 2** – Impact Assessment; **Subtask 3** – Demand Response/Energy Efficiency Portfolio Standard Design; and **Subtask 4** – Recommended Assessment Methodology. The Task would take 12-18 months to complete.

Discussions took place and several Executive Committee members agreed that the proposed Task is an initiative that needs to be explored in some depth.

DECISION:
- Ross Malme was asked to develop the concept paper further with assistance from Schneider Electric and Finland.

ACTION:
- Develop the concept paper on Demand Response & Efficiency Portfolio Standards further with assistance from Schneider Electric and Finland, and present at the next Executive Committee meeting.
Initiating New Work

The following areas of work as well as volunteers to draft concept papers to be presented at the next Executive
Committee meeting were identified, they are:

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<td>1) “Smart Systems” (Meters, communications, appliances, etc)</td>
<td>Susana Bañares, Spain, and Harry Schaap, Australia will develop a concept paper, with assistance from Belgium, Finland, France and Paul Davidson.</td>
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<tr>
<td>2) Standardisation of Energy Efficiency Calculations”</td>
<td>Harry Vreuls, the Netherlands, will develop a concept paper with assistance from India.</td>
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<tr>
<td>3) Demand Response &amp; Efficiency Portfolio Standards</td>
<td>Ross Malme, Retx, USA, will develop a concept paper with assistance from Schneider Electric and Finland.</td>
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It was further noted that India wants to find a way to deduce earlier work material that could be useful in capacity building and that lighting deployment programs/guidance are important in the light of the proposed bans on incandescent lighting.

**DECISION:**
- Australia and Spain will develop a concept paper on “Smart Systems” (Meters, communications, appliances, etc.) with assistance from Belgium, Finland, France and Paul Davidson.
- Harry Vreuls will develop a concept paper on “Standardisation of Energy Efficiency Calculations” with assistance from India.
- Ross Malme will develop the concept paper on “Demand Response & Efficiency Portfolio Standards” further, with assistance from Schneider Electric and Finland.

**ACTION:**
- Australia and Spain will develop a concept paper on “Smart Systems” (Meters, communications, appliances, etc.) with assistance from Belgium, Finland, France and Paul Davidson.
- Harry Vreuls will develop a concept paper on “Standardisation of Energy Efficiency Calculations” with assistance from India.
- Ross Malme will develop the concept paper on “Demand Response & Efficiency Portfolio Standards” further, with assistance from Schneider Electric and Finland.

DSM and Climate Change

A concept paper for a new Task on DSM and Climate Change was provided on pages 62 – 73 in the Pre-Meeting Document and was presented by David Crossley, Energy Futures Australia. The Concept Paper was a revised version of the paper that David Crossley presented at the previous Executive Committee meeting in Seoul and included comments made at the Task Definition meeting held in Brugge prior to this Executive Committee meeting.

David Crossley started his presentation by reminding the Executive Committee members that the topic of DSM and Climate Change was identified as a possible new area of work at the April 2006 Executive Committee meeting in Copenhagen. At the Executive Committee meeting in Seoul, April, 2007, the members requested revisions to the concept paper which consisted of incorporating an additional subtask on fungibility of DSM greenhouse gas emission reductions from DSM measures. The Executive Committee members also agreed that a Task Definition
meeting should be held. The Task Definition meeting was held on 9 October, 2007 in Brugge, Belgium, where participants made several suggestions for modifying the design of the Task.

David Crossley stated that emission mitigation measures: focussed on increasing end-use efficiency usually do not consider any benefits to the electricity system (eg peak load reductions) that might be gained through implementing the measures. DSM measures: are implemented primarily to assist and improve the operation of electricity systems; any impacts (positive or negative) of DSM measures on climate change are very much a minor consideration. The objective of the proposed new Task will be to reconcile these two different approaches to identify areas and circumstances in which DSM can contribute to mitigating greenhouse gas emissions and emissions mitigation measures can contribute benefits to electricity systems.

The objectives of the Task are: (1) to identify circumstances in which DSM may help to mitigate GHG emissions and in which emissions mitigation programs may deliver benefits to the electricity system; (2) to identify the principles involved in methodologies for assessing the GHG emissions reductions available from specific DSM measures; (3) to identify ways in which DSM programs can be modified so they contribute to mitigating GHG emissions; and (4) to identify ways in which GHG emissions mitigation programs can be modified so they deliver benefits to electricity systems; (5) to identify opportunities for funding DSM programs with revenue from trading GHG emission reductions; (6) to explore whether time of use pricing can be utilised to achieve mitigation of GHG emissions; and (7) to identify and engage stakeholders and communicate and disseminate information about DSM as a resource and as a mechanisms for mitigating GHG emissions.

The Task will consist of six Subtasks: Subtask 1 - Interactions between DSM and Climate Change; Subtask 2 – Principles for Assessing Emissions Reductions from DSM Measures Subtask 3 – Mitigating Emissions and Delivering Electricity System Benefits; Subtask 4 – Fungibility (Interchangeability) of DSM and Emissions Trading; Subtask 5 – Time of Use Pricing and Emissions Mitigation; and Subtask 6 – Communicating Information about DSM and Climate Change.

The major Task deliverables will be: (1) a report summarising the interactions between DSM and climate change; (2) a report summarising the principles involved in methodologies for assessing the GHG emission reductions available from specific DSM measures; (3) a report summarising the ways in which DSM programs and emission mitigation projects can be modified; (4) a report summarising the ways in which DSM programs can be funded with revenue from trading GHG emission reductions (subtask 4), and explore whether time of use pricing can be used to achieve mitigation of GHG emissions (subtask 5); (5) a Task Newsletter, and an information database about DSM and climate change, as well as four regional workshops about DSM and climate change, in conjunction with Task Experts meetings.

Each country Expert will be required to undertake approximately two person-month of work during the 18 month duration of the Task and attend two Experts meetings. David suggested that the results and database be held for 12 months before going public, this will however be discussed and decided among the participating countries in accordance with the DSM IA rules. Several countries suggested that the Task be extended to a 24 month period, in view of the additional work resulting from the Task Definition meeting which was held in Brugge, Belgium, prior to the Executive Committee meeting.

Hans Nilsson mentioned that efforts have been made in the past six months to bring the issue of DSM and Climate Change onto the agenda of other parties. One of the contacts made, aside from the UNFCCC and REEEP, is the World Bank, and Hans Nilsson and David Crossley plan to meet with Martina Bosi, World Bank, in conjunction with the Energy Efficiency Global Forum, which will be held in Washington, USA, in November, 2007, to discuss further work.

The Executive Committee members were asked to state their interest in participating in the Task. Australia, France, Finland and Spain declared a positive interest and Austria, Belgium, Denmark, India, Korea and the United States
were prepared to give the Task further consideration and/or support Claude Ricaud, Schneider Electric who had already left the meeting, but indicated earlier that he was interested in participating in the Task Definition Phase.

The Executive Committee members **unanimously** decided to initiate this work as Task XVIII and the Operating Agent David Crossley should continue to seek support for further participation in the Task.

**DECISION:**
- The Executive Committee members unanimously agreed to initiate Task XVIII – DSM and Climate Change.

**ACTION:**
- The Operating Agent is to continue to seek support for further participation in Task XVIII

### Smaller Customer Energy Services and Aggregators

A concept paper for a possible new Task or extension to Task XI was provided on pages 74 – 78 in the Pre-Meeting Document, and was presented by Richard Formby, EA Technology Ltd, the United Kingdom.

Richard Formby reminded the Executive Committee members that at the meeting in Seoul, October 2007, it was decided that a new concept paper should be developed in co-operation between the Experts of Task XI and Task XVI. At the time it was considered that there was a role for both Tasks to play. After discussions and the development of a concept paper, the view held now is that the topic is not something which is common in both Tasks as Task XVI is dealing with ESCO businesses for large customers, whereas Task XI deals with millions of small customers, where the cost of service per customer has to be very low. The Tasks are looking at completely different models for driving the sorts of services suggested for new work, and so the conclusion is that Task XI with their previous work and expertise, are more suited to carry out this new work.

Several Executive Committee members pointed out that the word ESCOs was misleading, and that the word aggregators should be added instead.

Richard Formby suggested that the Task consist of five work packages (WP) which will: (WP1) define mechanisms for motivating and delivering energy savings by residential and SME customers (EUMF, ToU, remote switching, and DSB) and define “smart mechanisms for delivering demand response by residential and SME customers; (WP2) identify specific end use demands for demand response businesses; identify what demand response may be possible by SME end-uses; identify what demand response may be possible by residential end-uses; and determine technical architectures for aggregating and delivering demand response; (WP3) determine smaller customer energy services and aggregators business case for SME customer energy saving services; determine aggregator implementation methodologies and route for viable SME service businesses; investigate energy efficiency accreditation possibilities for demand response (white certificates, EEC/CERT); (WP4) determine smaller customer energy services and aggregators business case for delivering residential customer demand response energy saving services; determine smaller customer energy services and aggregators implementation methodologies and route for viable residential customer service businesses; (WP5) determine customer financial instruments and reward mechanisms to deliver energy saving demand response; and evaluate energy advisor role to deliver EUMF energy savings.

It was suggested that the duration of the new Task or extension to Task XI be one year.

The Executive Committee decided that Richard Formby should take the proposal to the Task Definition stage and present a work plan at the next Executive Committee meeting.
The Executive Committee members were asked to express their interest in sending an Expert to a Task Definition meeting. Australia, Austria, Belgium, Denmark, France, JFC Solutions, Japan (sponsor), Finland, the Netherlands, Spain, UK and Schneider Electric were prepared to send Experts.

**DECISION:**
- Take proposal to the Task Definition stage and present a work plan at next Executive Committee meeting

**ACTION:**
- Hold a Task Definition meeting and present a work plan at the next Executive Committee meeting.

**Branding of Energy Efficiency Services**

A concept paper for a new Task on Branding of Energy Efficiency Services was provided on pages 79 – 86 and was presented by Balawant Joshi, ABPS Infrastructure Private Ltd., India.

Balawant Joshi started his presentation by pointing out the primary motivation behind undertaking “Branding of Energy Efficiency Services” as a Task, namely: (1) to understand the reasons for absence of energy efficiency brands; and (2) to develop a suitable framework for development of strategies for successful branding of energy efficiency.

Balawant Joshi pointed out that likely areas for research could include: (1) knowledge and attitude of consumers in the developed as well as developing electricity markets; (2) capability of energy efficiency suppliers in the market; (3) best practices in definition of suppliers of energy efficient products and services; (4) potential for energy efficiency products and services in other energy consuming sectors such as agricultural, industrial & commercial, etc.; (5) potential for a programmatic approach towards energy efficiency; and (6) barriers to branding of energy efficiency.

Balawant Joshi said that the proposed Task warrants analysis at three levels: (1) products & services; (2) consumers; and (3) at a strategic level for development of solutions. The following three Subtasks were suggested:
- Subtask I: Energy Efficiency Offerings Analysis
- Subtask II: Energy Efficiency Consumer Analysis
- Subtask III: Strategic Analysis (to develop branding strategy)

The expectations/results of the proposed work would: (1) develop significant understanding of barriers associated with branding of energy efficiency; (2) identify appropriate strategies to overcome those barriers; and (3) develop a suitable framework for development of strategies for successful branding in energy efficiency.

The Executive Committee members were asked to express their interest in sending an Expert to a Task Definition meeting and the outcome was: Australia, Austria, Belgium, Finland, France, India, Korea, Spain, the UK and the US were prepared to send Experts to such a meeting.

The Executive Committee members decided that Balawant Joshi should take the proposal to a Task Definition stage and present a work plan at the next Executive Committee meeting.

**DECISION:**
It was decided that Balawant Joshi should take the proposal to the Task Definition stage and present a work plan at the next Executive Committee meeting.

**ACTION:**
- Hold a Task Definition meeting and prepare a work plan to be presented at the next Executive Committee meeting.
5. CURRENT TASKS – LOAD SHAPE CLUSTER

Task XI - Time of Use Pricing and Energy Use for Demand Side Management Delivery - Smaller Customer Participation in Dynamic Demand Shifting

The Task Status report was provided on pages 92 - 101 in the Pre-Meeting Document and was presented by Richard Formby, EA Technology, United Kingdom.

Richard Formby reminded the Executive Committee members that Task started in February 2004 and Subtasks 1, 2 and 3 were completed in November, 2005. Denmark, Finland, Greece, Netherlands, Spain, Sweden and the UK participated in the Task. New Subtasks 4 & 5 – which addressed profile settlements and demand validation, started in November, 2006. The Netherlands, Spain and the UK participated. The Subtasks were completed in October 2007.

During the past six months: (1) the draft and final report for Subtask 4 has been completed; (2) a draft and final report for Subtask 5 has been completed; and (3) a concept paper on “Smaller Customer Energy Services and Aggregators” has been developed

DECISION:
The participating Executive Committee members:
- Approved the Task Status Report.

Task XV - Network-Driven DSM

The Task Status Report for the extension of Task XV on Network-Driven DSM was provided on pages 113 - 119 in the Pre-Meeting Document and was presented by David Crossley, Energy Futures Australia.

David Crossley started his presentation by pointing out that the purpose of the Task XV extension is: (1) to enable new members to access and contribute to the already completed work in Task XV; and (2) to carry out an additional new subtask on load control and smart metering for electricity networks. The work will be carried out in Subtask 6 and the Subtask deliverable will consist of a report summarising ways in which load control and smart metering can be effectively utilised to achieve network-related objectives. David Crossley stated that he will add at least 5 new projects to the existing database.

David Crossley welcomed India, as a new participant to the Task XV extension. David Crossley also informed the Executive Committee members that New Zealand and South Africa are at present formalising their participation in the DSM Implementing Agreement and Task XV.

Participating in the Task extension will enable countries to: (1) understand how load control and smart metering can be used to defer network augmentation and to provide network operational services; (2) gain information about the functionalities and capabilities of load control and smart metering devices; (3) gain information about load control and smart metering projects currently being implemented in other countries and about the relative effectiveness of these projects; (4) identify best practice in the use of load control and smart metering to achieve network-related objectives.

Major accomplishments in the past six months included: (1) extensive updating of the Task XV website; (2) initiating participation of three new countries; (3) developing a new on-line database; and (4) publishing an edition of the Task XV newsletter that included details about the Task XV extension.
In the next six months the following work is planned to take place: (1) present a workshop on Task XV in New Zealand; (2) complete not less than five new case studies of load control and smart metering projects and add them to the on-line case studies database; (3) incorporate information from each of the new participating countries into second editions of the existing Task XV Research reports; (4) publish another edition of the Task XV Newsletter; (5) add more descriptions of load control and smart metering technology products to the on-line database; and (6) complete the survey of currently available load control and smart metering technologies.

One Experts meeting is planned to be held in connection with the Task XV extension and India has offered to host this meeting.

There are no issues for consideration by Executive Committee.

**DECISION:**

The participating Executive Committee members:

- Approved the Task Status Report

**Task XVII - Integration of Demand Side Management Energy Efficiency, Distributed Generation and Renewable Energy Sources**

Task XVII - Integration of Demand Side Management Energy Efficiency, Distributed Generation and Renewable Energy Sources was provided on pages 105 - 112 in the Pre-Meeting Document and was presented by Seppo Kärkkäinen, VTT, Finland.

Seppo Kärkkäinen started his presentation by pointing out that at the Seoul Executive Committee meeting six countries were willing to send Experts to a Task Definition meeting. A Task Definition workshop was arranged in Espoo, Finland, 14 – 15 June, 2007. Experts from Austria, Finland, Korea, Netherlands, Spain and the US attended. On the basis of discussions at the workshop a final version of the Task Definition was available in mid August, and an Annex Legal Text was prepared. Draft National Participation Plans were sent out to interested countries.

The main objective of the Task is to study how to achieve the optimal integration of flexible demand with Distributed generation, Energy Storages and Smart Grids, and thus increase the value of Demand Response, Demand Side Management and Distributed Generation and decrease problems caused by intermittent distributed generation (mainly based on RES) in the physical electricity systems and the electricity market. The Task deals with distributed energy resources both: (1) at local (distribution network) level; and (2) at transmission system level where large wind farms are connected. The Task will also provide integrated based solutions and examples on successful best practices to the problems defined above to the different stakeholders.

The first step of the Task’s approach is to carry out a scoping study, collecting information from the existing IEA Implementing Agreements, participating countries and other sources such as research programmes, field experience, information collated through CIGRE working groups, etc. The information will be analysed on the basis of the above mentioned objectives and the information with be synthesised to define the more detailed needs for further work. Information exchange and coordination with the Wind IA and the ENARD IA is of special importance and the possibility of having a common workshop together with ENARD is being considered.

Four Subtasks are planned: (1) Subtask 1 – information collection on the characteristic of different types of DER in the integrated solutions; (2) Subtask 2 – analysis of the information collected and preliminary conclusions (state of the art); (3) Subtask 3 – feedback for the stakeholders through a workshop; and (4) Subtask 4 – final conclusions and the detailed definition for further work.
Expected results from the first stage of the Task will include: (1) state of the art report on integration with conclusions and first set of best practices; (2) workshop proceedings; and (3) detailed plan for further work. The duration of the first phase is planned to take one year.

In the past six months: (1) a Task Definition workshop has been held; (2) a draft version of the Anne Legal text has been prepared, and (3) draft National Participation plans were sent to interested countries.

During the next six months: (1) the first Experts meeting will be held in Madrid, 1-2 November, 2007; (2) the Operating Agent will prepare an information collection form to be discussed at the Expert meeting; information collection by Experts and the Operating Agent will take place between November 2007 and January 2008; (3) analysis of the information and a draft report of the state of the art will be prepared; and (4) the second Experts meeting will be held at the end of March.

Seppo Kärkkäinen proposed that all the information becomes public immediately after the end of the Task, the reason being that the results are needed to plan future work.

**DECISION:**
The Executive Committee members:
- Approved the Task Status Report

6. **FINAL TASK and MANAGEMENT REPORTS**

**Task XI – Time of Use Pricing and Energy Use for Demand Side Management Delivery - Smaller Customer Participation in Dynamic Demand Shifting**

An Executive Summary of the Final Task Report for Task XI - Time of Use Pricing and Energy Use for Demand Side Management Delivery – Smaller Customer Participation in Dynamic Demand Shifting, was provided on pages 102 - 104 in the Pre-meeting Document and was presented by Richard Formby, EA Technology Ltd., the United Kingdom. See Attachment (F) for the draft report.

The Subtask 4 & 5 reports have been signed off by the Netherlands and Spain, and will be signed off by the UK in the next few weeks. The subtask 4 & 5 reports along with the Final Task Report will then be posted on the website, after having been checked by Paul Davidson, Visibility Committee Chairman.

Harry Schaap commented that Final Task reports should be allowed more time to be presented.

The Executive Committee members commended Richard Formby on the excellent work performed in Task XI.

**DECISION:**
The participating Executive Committee members:
- Approved the Final Task Report

7. **NEW AND CURRENT TASKS – LOAD LEVEL CLUSTER**

**Task XVI - Competitive Energy Services**

The Task Status Report for Competitive Energy Services was provided on pages 120 - 126 in the Pre-Meeting Document and was presented by Jan W. Bleyl, Graz Energy Agency Ltd., Austria.
Jan Bleyl started his presentation by welcoming India as the sixth participant to the Task. Further, Jan Bleyl reminded the Executive Committee members of the overall objectives of the Task, which are: (1) to establish an IEA DSM Energy Services Expert Platform; (2) to develop and follow up country specific activities to implement energy services in the market with a focus on selected market segments; (3) to design, elaborate and test innovative energy services and financing models; (4) to position the Task XVI Energy Services Expert Platform as a Competence Centre for international dissemination and assistance services (e.g. coaching, training, etc.) in the field of energy services and to contribute to an “IEA DSM Centre of Excellence”.

During the past six months the Task has: (1) India has nominated an Expert to actively take part in Task XVI; (2) the Subtask 1 report “Review of Previous Task X work” has been completed by Seppo Silvonen and the report has been uploaded onto the DSM website; (3) Experts have drafted reports on “National Implementation Activities” which form a basis for further Expert work; (4) the third meeting of the Expert Platform has taken place; (5) the Think Tank is fully operational; and (6) presentations at various national and international conferences and seminars have taken place.

During the next six months the following is planned to be accomplished: (1) integration of India into the Task XVI work; (2) hold the fourth meeting of the Expert Platform as well as an external workshop, which will be open to stakeholders; (3) Think Tank will focus on “Innovative Financing Options for Energy Services” and “Integration of Demand Side Measures into Energy Supply Contracting Models” this will be dealt with in more depth, and result in a publication; (4) implementation of National Activity Plans will be followed up and exchange of information and experiences between Experts will take place on various topics; (5) presentations at various national and international conferences and seminars will take place; and (6) final contributions will be made to the “Urban Energy Transition” book, which will be published at Elsevier.

**DECISION:**

The Executive Committee members:

- **Approved** the Task Status Report

### 8. PROGRAMME VISIBILITY

**Programme Visibility Report**

The Programme Visibility Report was provided on pages 87 - 91 in the Pre-Meeting Document and was presented by Paul Davidson, Chairman of the Visibility Committee.

Paul Davidson reminded the Executive Committee members that the members of the Visibility Committee are the Chairman, Hans Nilsson; the Vice Chair Paul Davidson; the Advisor, Fred Morse; the Webmaster, Dave Cattermole; the Spotlight Newsletter Editor; Pam Murphy, the Executive Secretary, Anne Bengtson and the Operating Agent representative David Crossley. Paul Davidson pointed out that the Visibility Committee is short of an Executive Committee member representative, now that Egil Øverholm is no longer a member of the DSM IA,. Paul Davidson asked for volunteers to fill Egil's place. Volunteers should contact Paul Davidson. The Visibility Committee members present in Brugge, met prior to the Executive Committee meeting.

**Annual Report**

Paul Davidson informed the Executive Committee members that the Annual Report 2007 will be prepared by Anne Bengtson, the Operating Agents, the Advisor and the Chairman and will be distributed in printed and electronic format in January, 2008. Paul Davidson said that the Annual Report will have the same design and cover as last year, and proposed that some pages in colour with illustrations of demand side management be added, to make the Annual Report more interesting and more attractive to read.
The main theme chapter will be written by the Chairman, and the Executive Committee members and Operating Agents were asked to provide suggestions/ideas for the theme chapter, as well as colour illustrations. Operating Agents were asked to provide their input by mid November, 2007 and to adhere to the requested format.

**DECISION:**
The Executive Committee members agreed to add colour in the Annual Report.

**ACTION:**
- Suggest topics for the theme chapter of the Annual Report
- Provide colour illustrations
- Contact Paul Davidson to volunteer as Executive Committee representative on the Visibility Committee

**Spotlight**

Paul Davidson stated that the 29th issue of the DSM Spotlight Newsletter was distributed electronically, and posted on the website in July, 2007. Article topics were:

- Task XIII - Demand Response Resources
- Task XV - Network Driven DSM
- India - DSM Policies and Strategies

The Executive Committee members were encouraged to suggest topics for Spotlight articles for the 30th issue of the Spotlight Newsletter and provide input for those articles latest 1 November, 2007. Some suggestions provided at the meeting were an article on new countries joining, an article on the "Smart Metering" workshop held in Brugge, the newly started Task XVIII, achievements and successes from ongoing Tasks. The next issue of the Spotlight Newsletter will be published on 1 December, 2007.

Paul Davidson reminded the members that the Spotlight Newsletter is designed to be printed off the website and distributed widely, and will be published twice a year.

**ACTION:**
- Suggest topics for articles for the next issue of the Spotlight Newsletter
- Distribute the next issue of the DSM Spotlight Newsletter in December 2007.

**Programme Brochure**

Paul Davidson reminded the Executive Committee members that the brochure is the DSM Programme's main PR document and is designed to last 3-5 years. The brochure is now being used in various forums, with great success. The brochure is designed as a folder so that Executive Committee members and Operating Agents can add inserts as appropriate. Several inserts have been printed: (1) a summary on the benefits and results of the DSM programme; (2) a Programme overview; and (3) a blank letterhead page for the Executive Committee members and Operating Agents to print Task flyers, national information, etc. Paul informed the Executive Committee members that Pam Murphy is working on several new flyers. If Executive Committee members need more brochures, they should contact Pam Murphy.

**ACTION:**
- Develop flyers for Task I - VII, X, XVII and XVIII
Website

The principal activity over the past six months has been the ongoing hosting and maintenance and user support. In addition to these standard activities, two distinct blocks of development have been undertaken in April and in August, 2007.

A collection of ad-hoc enhancements and modifications to the online resources was undertaken in the past six months. These included: (1) the facility to store publication dates against all files; (2) modification of user privilege model; (3) integration of dedicated discussion forums with all five Tasks; (4) upgrading of workshop materials element of site to be a primary menu page; (5) enhanced task ordering facility for admin users; (6) set up of new domain www.ieadsm.org <http://www.ieadsm.org/>. An agreed total of 9 days of development was spent implementing these enhancements. Several updates and modifications to Task XV data bases have also been undertaken in the past six months. These have been paid for by Task XV.

Several additional developments and enhancements were suggested by the Executive Committee members and Operating Agents at the meeting. They include: (1) development of sub-folders within Tasks; (2) provide Task Experts with the ability to specify the order of task publications; (3) provision of document and Task level statistics; (4) Task & projects map, showing which Task are completed and which are current; (5) "Remember me" function; (6) Update User Guide; (7) inclusion of Spanish documents on the Task Publications section, specifically for Task VI; (8) creation of a new page for Task XVIII - DSM and Climate Change; and (9) make case studies from the Task XV data base available to the public.

DECISION:
The Visibility Committee Report was:
· unanimously approved by the Executive Committee members
· Paul Davidson, Chairman of the Visibility Committee was given authorisation to negotiate changes to the Website.

9. ADMINISTRATIVE MATTERS


The Financial Report for 2007 and proposed 2008 budget was provided on pages 127 - 130 and was presented by Harry Schaap, Chairman of the Financial Committee.

Common Fund Payments

Harry Schaap made a presentation of the Financial Status of the Common Fund for 2007. Seven countries have not paid their 2007 invoices, and Greece has not paid their invoice for 2006 and 2007.. Harry Schaap said it was a significant concern that almost half of the countries had not paid their 2007 contribution. It would appear that no immediate problems are foreseen in receiving these funds. The Executive Secretary will continue to send out monthly reminders to those failing to pay, until payments are received.

The carry over sum from last year was incomplete or incorrect, and Harry Schaap said he had not received detailed information but would investigate and inform the Executive Committee members of the exact sum.
DECISION:
The Executive Committee members unanimously:
• Approved the Financial Report for 2007
• Approved the proposed budget for 2008

ACTION:
• provide Executive Committee members of the exact carry over sum from 2006 – 2007.

Plans for the Thirty First Executive Committee meeting
Devender Singh confirmed India’s intention to host the thirty-first Executive Committee meeting in New Delhi, India on the 2-4 of April, 2008. On the 2 of April a workshop on “Standby Power” will be held, in collaboration with the IEA.

Plans for the Thirty Second Executive Committee meeting
At the Executive Committee meeting in Seoul, Paul Davidson tentatively offered to host the thirty-second Executive Committee meeting in the United Kingdom. Paul Davidson unfortunately could not confirm this offer. Spain volunteered to hold the thirty-second Executive Committee meeting in Spain, if no other countries volunteer. No dates were set.

10. OTHER MATTERS
Paul Davidson thanked Christian Ferdinand on behalf of the Executive Committee, for the excellent meeting arrangements and then he adjourned the meeting.
**ACTION ITEMS RESULTING FROM THE THIRTIETH EXECUTIVE COMMITTEE MEETING OF THE IEA DSM PROGRAMME**  
*10 – 12 October, 2007, Brugge, Belgium*

<table>
<thead>
<tr>
<th>WHO</th>
<th>ACTION</th>
<th>WHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece</td>
<td>Pay Common Fund invoice for 2006</td>
<td>Immediately</td>
</tr>
<tr>
<td>France, Greece, India, Italy, Korea, Sweden, US</td>
<td>Pay Common Fund invoice for 2007</td>
<td>Immediately</td>
</tr>
<tr>
<td>Anne Bengtson</td>
<td>Add a glossary to the Minutes</td>
<td>Immediately</td>
</tr>
<tr>
<td>Hans Nilsson</td>
<td>Contact Fritjof Unander, ENOVA regarding new Executive Committee representative for Norway.</td>
<td>Immediately</td>
</tr>
<tr>
<td>Anne Bengtson</td>
<td>Send monthly reminders to country’s that have outstanding payments to the Common Fund for 2006 and 2007.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Operating Agents</td>
<td>Send papers that have been presented at conferences and seminars to ExCo members and put on the website</td>
<td>Ongoing</td>
</tr>
<tr>
<td>ExCo members</td>
<td>Contribute to finalising the End of Term Report, the Strategy and check the matrix to secure that country DSM priorities have been correctly recorded.</td>
<td>26 October, 2007</td>
</tr>
<tr>
<td>Ulrik Stridbaek</td>
<td>Speak for the DSM IA while on the NEET fact finding mission to Russia</td>
<td>October, 2007</td>
</tr>
<tr>
<td>ExCo members, Operating Agents</td>
<td>Suggest topics for the 30th issue of the Spotlight Newsletter</td>
<td>1 November 2007</td>
</tr>
<tr>
<td>Operating Agents</td>
<td>Provide Anne Bengtson with input to the Annual Report 2007.</td>
<td>15 November 2007</td>
</tr>
<tr>
<td>ExCo members, Operating Agents</td>
<td>Provide colour illustrations for the Annual Report 2007</td>
<td>15 November 2007</td>
</tr>
<tr>
<td>Paul Davidson</td>
<td>Attend the Networks of Expertise in Energy Technology (NEET) workshop (19 – 20 November, 2007) in Brazil and try to get them to join the DSM Programme</td>
<td>19 – 20 November 2007</td>
</tr>
<tr>
<td>Who</td>
<td>Action</td>
<td>When</td>
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<tr>
<td>Pamela Murphy</td>
<td>Distribute next issue of the Spotlight Newsletter</td>
<td>1 Dec 2007</td>
</tr>
<tr>
<td>Hans Nilsson</td>
<td>Invite the National Development and Reform Commission (NRDC), China to the next Executive Committee meeting</td>
<td>ASAP</td>
</tr>
<tr>
<td>Hans Nilsson</td>
<td>Invite Electrolux to become a sponsor in the DSM IA and to attend the next Executive Committee meeting</td>
<td>ASAP</td>
</tr>
<tr>
<td>Paul Davidson</td>
<td>Distribute results from workshop on “Promoting Information from Research” to Executive Committee members</td>
<td>ASAP</td>
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<tr>
<td>Hans Nilsson</td>
<td>Provide India with contact details for REEEP</td>
<td>ASAP</td>
</tr>
<tr>
<td>Hans Nilsson</td>
<td>Provide France and Spain with contact details for ETSO</td>
<td>ASAP</td>
</tr>
<tr>
<td>Hans Nilsson</td>
<td>Renew DSM IA contacts with REEEP, ETSO and CIGRE</td>
<td>ASAP</td>
</tr>
<tr>
<td>Hans Nilsson</td>
<td>Send End of Term Report and Strategy for ballot voting before the next Executive Committee meeting</td>
<td>ASAP</td>
</tr>
<tr>
<td>Anne Bengtson, Paul Davidson, Hans Nilsson</td>
<td>Develop a new format for the Annual Report, to allow for easy read of statistics for future End of Term Reports</td>
<td>ASAP</td>
</tr>
<tr>
<td>David Crossley</td>
<td>Continue to seek support for further participation in Task XVIII – DSM and Climate Change</td>
<td>ASAP</td>
</tr>
<tr>
<td>Richard Formby</td>
<td>Hold a Task Definition meeting for a new Task or extension to Task XI – Smaller Customer Energy Services and Aggregators</td>
<td>ASAP</td>
</tr>
<tr>
<td>Balawant Joshi</td>
<td>Hold a Task Definition meeting on Branding of Energy Efficiency Services</td>
<td>ASAP</td>
</tr>
<tr>
<td>ExCo members</td>
<td>Suggest topics for theme chapter of the Annual Report 2007</td>
<td>ASAP</td>
</tr>
<tr>
<td>ExCo members</td>
<td>Contact Paul Davidson to volunteer as Executive Committee representative on the Visibility Committee</td>
<td>ASAP</td>
</tr>
<tr>
<td>Pam Murphy</td>
<td>Develop/produce flyers for Task I – VII, XVII and XVIII</td>
<td>ASAP</td>
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<tr>
<td>WHO</td>
<td>ACTION</td>
<td>WHEN</td>
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<tr>
<td>Fred Morse</td>
<td>Update and distribute Policy &amp; Procedures Guidelines</td>
<td>ASAP</td>
</tr>
<tr>
<td>Anne Bengtson</td>
<td>Provide Executive Committee members with the exact carry over sum from 2006 to 2007.</td>
<td>ASAP</td>
</tr>
<tr>
<td>Harry Schaap</td>
<td>Develop a concept paper on “Demand Response &amp; Efficiency Portfolio Standards” with assistance from Schneider Electric and Finland and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 29&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>Australia Spain</td>
<td>Develop a concept paper on “Smart Systems” with assistance from Belgium, Finland, France and Paul Davidson, and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 29&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>Harry Vreuls</td>
<td>Develop a concept paper on “Standardisation of Energy Efficiency Calculations” with the assistance of India and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>Richard Formby</td>
<td>Prepare a revised concept paper including a work plan on “Smaller Customer Energy Services and Aggregators and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>Balawant Joshi</td>
<td>Prepare a revised concept paper including a work plan on “Branding of Energy Efficiency Services” and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>Jan W Bleyl</td>
<td>Prepare a Task Status Report for Task XVI – Competitive Energy Services and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>Seppo Silvonen</td>
<td>Prepare Task Status Report on the extension of Network-Driven DSM and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>David Crossley</td>
<td>Prepare Task Status Report on DSM and Climate Change and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
</tr>
<tr>
<td>Seppo Kärkkäinen</td>
<td>Prepare a Task Status report for Task XVII - Integration of DSM, EE, DG and Renewable Energy Sources, and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28&lt;sup&gt;th&lt;/sup&gt; February 2008</td>
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<tr>
<td>Name</td>
<td>Task Description</td>
<td>Due Date</td>
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<tr>
<td>Fred Morse</td>
<td>Prepare Financial report for 2008 and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28th February 2008</td>
</tr>
<tr>
<td>Harry Schaap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paul Davidson</td>
<td>Prepare Visibility Committee Report and send to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28th February 2008</td>
</tr>
<tr>
<td>Operating Agents</td>
<td>Prepare Task Information Plans and include in each Task Status Report.</td>
<td>Friday 28th February 2008</td>
</tr>
<tr>
<td>Larry Mansueti</td>
<td>Provide written clarification on the availability of material for the participating and non-participating countries in Task XIII – to be revisited at 31st ExCo meeting in accordance with Minutes from Seoul. Send clarification to Anne Bengtson for inclusion in the Pre-Meeting Document</td>
<td>Friday 28th February 2008</td>
</tr>
<tr>
<td>Paul Davidson</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anne Bengtson</td>
<td>E-mail pdf file of Pre-meeting Document for the Thirty First Executive Committee meeting to the Executive Committee members and Operating Agents.</td>
<td>Friday 7th March 2008</td>
</tr>
</tbody>
</table>
ATTACHMENT A

Executive Committee Members IEA DSM Technologies and Programmes
Participants at the ExCo meeting 11 – 12 October, 2007, Brugges, Belgium (changes/additions in **bold**)

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IEA DSM Implementing Agreement on Demand Side Management Technologies and Programmes - Operating Agents

* Participated at the ExCo meeting in Brugge, Belgium, 11 – 12 October, 2007. (changes/additions in bold)

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ATTACHMENT B

IEA Demand-Side Management Programme Thirtieth Executive Committee Meeting
10 – 12 October, 2007, Brugge, Belgium
Novotel Hotel

AGENDA

Tuesday 9th, October, 2007
14:00 – 17:00
DSM and Climate Change – Task Definition Meeting

19:30 - 20:30
Visibility Committee meeting

Wednesday 10th, October, 2007
09:30 – 17:00
WORKSHOP:
“Smart metering to use less energy”
Novotel Hotel

18:00 – 20:00
OPERATING AGENTS MEETING
Novotel Hotel

Thursday 11th October, 2007
09:00-11:30
1. GENERAL BUSINESS/WELCOME
(incl. coffee break 30 min.)

1a. Welcome – Hans Nilsson
1b. ExCo approval of the Agenda
   DOC A
1c. ExCo approval of the Twenty Ninth ExCo meeting Minutes
   ATT A
1d. Status of the Implementing Agreement
1e. IEA Relations

   - Secretariat news
   - ATT C
   - Contacts with possible sponsors (Eurelectric, Edison Electric INSTITUTE, Schneider),
   - NEET activities (China; Brazil)
   - Meetings and workshops (BCG, Deployment workshops); Hans Nilsson, Paul Davidson
   - IA relations ENARD (John Baker)
   - IA relations End-Use Efficiency (New IA)
     Ture Hammar
   - IA relations CTI
1f. External contacts

   - REEEP, ETSO and CIGRE- The European Union

11:30 – 12:00
1g. IEA Secretariat Project
   “Empowering Electricity Consumers”
   DOC B
   (Ulrik Stridbaek)
12:00 – 13:00  
**Lunch**

13:00 – 17:00

3. End of Term Report and FUTURE STRATEGY OF THE DSM PROGRAMME. Priorities for work

3a. End of term report   
3b. Future Strategy   
3c. Business Contacts (Presentation by Utility Associations and Schneider)   
3d. Country Priorities (Each Country 10 minutes)

All countries are requested to present what DSM-issues have the highest priority for them in relation to:

- Energy system reliability and security
- Energy system optimisation
- Climate Change and environment

and to present it in 1-2 slides submitted in advance

3e  Conclusions and decisions for reporting to the EUWP

15:00 – 15:30  
**Coffee break**

17:00  4. EXTENSION OF WORK AND NEW WORK

The delegates are URGED to prepare their responses to these presentations carefully and primarily by contacting the possible stakeholders before the meeting. The format for these proposed New Tasks will be a brief presentation that focuses on the:

- **Motivation** for the proposed work (what issues does it tackle?) what is it trying to achieve? Who is the target audience?;
- **Objectives**;
- **Approach** to accomplishing the proposed work;
- **Deliverables** – (what will be delivered? What will you do with it to get it adopted?)
- **Dissemination plan** – what will need to be done to get the results adopted? Who will do it?
- **Required resources**

The proposed New Tasks discussion will aim at one of the following decisions:

1. Decide to initiate the new Task based on work done to date.
2. Decide to initiate the Task Definition for a new Task. Interested countries must be prepared to assign the appropriate expert(s) to participate in that process.
3. Decide that additional work is needed on the concept paper. Interested countries must be prepared themselves, or to assign the appropriate Experts to help further develop the concept.
4. Decide to pursue the subject in co-operation with other parties within the IEA or elsewhere
5. Rejection (or moth-balling)

SEE APPENDIX TO THE AGENDA

17:00-18:30  
4a. Presentation of the Operating Agents meeting report  
   *Fred Morse*
Friday 12 October, 2007

8:30 – 10:00

*Agenda item 4 - EXTENSION OF WORK AND NEW WORK resumed*

4e. Branding of Energy Efficiency Services

Devender Singh, BEE/MOP, India

DOC G

10:00 – 10:30

Coffee Break

10:30 – 11:30

5. PROGRAMME VISIBILITY

5a. Programme Visibility Report – Paul Davidson

DOC H

11:30 – 12:30

6. FINAL TASK MANAGEMENT REPORT(S)


Task Status Report followed by Final Task Report

DOC I

12:30 – 13:30

Lunch

13:30 - 14:30

7. CURRENT TASKS – LOAD SHAPE CLUSTER

7a. Task XVII – Task Status Report – Integration of DSM with other Distributed Energy Resources

Seppo Kärkkäinen, VTT, Finland

DOC J

7b. Task XV – Network Driven DSM

Task Status Report – David Crossley

DOC K

14:30 – 15:00

8. CURRENT TASKS – LOAD LEVEL CLUSTER

8a. Task XVI “Competitive Energy Services”

Task Status Report – Seppo Silvonen

DOC L
15:00 – 16:00  

9. ADMINISTRATIVE MATTERS

9b. Status of Common Fund payments – Harry Schaap  
9c. ExCo approval of plans for the Thirty First ExCo meeting  
9d. Plans for the Thirty Second ExCo meeting  
9e. Other issues

16:00  ADJOURN

APPENDIX TO THE AGENDA

Concept and Task Definition Papers.¹

Before a new Task is starting the concept has to be defined and presented in order to attain the interest of possible participants.

Concept and Task Definition paper checklist
The draft Concept Paper should present the motivation, objectives, approach, and expectations/results of the proposed Task and explain the relationship of the proposed new work to the Executive Committee's strategic plan and/or other IEA programmes or policy statements. Overlap with other Implementing Agreements has to be checked. The proposing (Executive Committee) member will identify a Task Organiser and is encouraged to bring that person to the meeting where the draft Task Concept Paper is to be discussed.

An experts meeting should define the work in details and terms of work plan, resources and dissemination

¹ This description is based on the Policies and Procedures Guidelines for the DSM Implementing Agreement.
PHASE 1: IDENTIFY NEW ACTIVITIES
Resulting in a CONCEPT PAPER (2-5 pages) containing

C  Motivation
C  Objectives
C  Approach
C  Expectations/Results

PHASE 2: DEFINE NEW ACTIVITIES
Requiring an EXPERTS MEETING to propose

C  Task Work Plan
   Resource needs: Task or cost sharing
C  Dissemination. Task Information
   Plan
CONTENTS OF PROPOSAL FOR NEW WORK.

The document that will propose the new work to the ExCo could be organised and have the contents as follows:

1. Background and motivation
2. Objectives
3. Issues for the new work (scope)
4. Structure (sub-tasks)
5. Management (responsibilities of the Operating Agent, Sub-task leaders and Experts)
6. Deliverables (for whom, target groups)
7. Time Schedule and milestones
8. Funding and Commitments (Resources needed)
9. Meetings plan
10. Information activities
11. Co-operation with other IAs, the Secretariat and other interested parties
12. Country contributions to funding and tasks

Annexes: Detailed description of sub-task
### Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>APEC</td>
<td>Asia-Pacific Economic Cooperation</td>
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<tr>
<td>BCG</td>
<td>Buildings Co-ordination Group (consists of 7 Implementing Agreements)</td>
</tr>
<tr>
<td>CERT</td>
<td>Committee on Energy Research and Technology in the IEA</td>
</tr>
<tr>
<td>CIGRE</td>
<td>International Council on Large Electric Systems</td>
</tr>
<tr>
<td>CTI</td>
<td>Implementing Agreement on Climate Technology Initiative</td>
</tr>
<tr>
<td>DHC</td>
<td>Implementing Agreement on District Heating and Cooling</td>
</tr>
<tr>
<td>DSM</td>
<td>Implementing Agreement on Demand-Side Management</td>
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<tr>
<td>EC</td>
<td>European Commission</td>
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<tr>
<td>ECEEE</td>
<td>European Council for an Energy Efficient Economy</td>
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<tr>
<td>ECES</td>
<td>Implementing Agreement on Energy Storage</td>
</tr>
<tr>
<td>EEWP</td>
<td>Energy Efficiency Working Party in the IEA</td>
</tr>
<tr>
<td>ENARD</td>
<td>Electricity Networks Analysis, Research &amp; Development</td>
</tr>
<tr>
<td>EOT</td>
<td>End of Term</td>
</tr>
<tr>
<td>ESD</td>
<td>Energy Services Directive in the European Commission</td>
</tr>
<tr>
<td>ETE</td>
<td>Energy Technology Essentials (3-4 page briefs)</td>
</tr>
<tr>
<td>ETSO</td>
<td>European Transmission System Operators</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EUWP</td>
<td>End-Use Working Party in the IEA</td>
</tr>
<tr>
<td>FBF</td>
<td>Implementing Agreement on Future Buildings Forum</td>
</tr>
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<td>GHG</td>
<td>Green House Gas</td>
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<td>HPC</td>
<td>Implementing Agreement on Heat Pump Centre</td>
</tr>
<tr>
<td>IEA</td>
<td>International Energy Agency</td>
</tr>
<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
</tr>
<tr>
<td>JFS</td>
<td>Japan Facility Solutions (Japanese Sponsors participating in Task XVI)</td>
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<td>----------------------------------------------------------------------------------</td>
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<tr>
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<tr>
<td><strong>PMD</strong></td>
<td>Pre-Meeting Document</td>
</tr>
<tr>
<td><strong>PVPS</strong></td>
<td>Implementing Agreement on Photovoltaic Power Systems</td>
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<tr>
<td><strong>REEEP</strong></td>
<td>Renewable Energy and Energy Efficiency Partnership</td>
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<td><strong>SANERI</strong></td>
<td>South African National Energy Research Institute</td>
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<td><strong>SHC</strong></td>
<td>Implementing Agreement on Solar Heating and Cooling</td>
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ATTACHMENT D

DEMAND RESPONSE & EFFICIENCY PORTFOLIO STANDARDS
A NEW TASK CONCEPT PAPER

Submitted by: Ross Malme, Task XIII OA
October 2007 ExCo Meeting

Background:

The world has recognized that climate change is a reality. The debate has shifted from whether there is an issue, towards developing solutions that can be agreed to and implemented.

IEA’s DSM Programme should not only be a part of the conversation, it should be a contributor of ideas. It’s widely agreed that demand response and energy efficiency are key elements in an efficient energy market. Both of these solutions play unique roles in balancing market costs and mitigating additional supply requirements. By implementing these solutions, the industry can reduce its future carbon emissions.

The Kyoto Protocol did a great job getting nations and individuals thinking about ways to curb greenhouse gasses. Unfortunately, it never reached its full potential and the current agreement is set to expire in 2012. This means that the world needs fresh ideas. But, many world experts believe that hard standards are needed. For example, Reuters quoted John Ashton, Britain's climate envoy, to say the following on September 28, 2007, "I think that the argument that we can do this through voluntary approaches is now pretty much discredited internationally."

Concept:

In the United States, a number of individual state governments have taken it upon themselves to adopt something known as a “Renewable Portfolio Standard”. The state governments created this rule to establish minimum levels of renewable generation sources. This is consistent with the British climate envoy’s assertion that mandatory requirements are needed.

By way of this Task, IEA DSM Programme would investigate the benefits of incorporating demand response and energy efficiency into existing market portfolio requirements and/or creating one of its own standard.
### Proposed Subtasks:

<table>
<thead>
<tr>
<th>Subtask</th>
<th>Title</th>
<th>Description</th>
<th>Deliverable</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Identification of Existing Portfolio Standards</td>
<td>Survey task participants to identify existing energy portfolio standards with emphasis on renewable generation, EE, &amp; DR.</td>
<td>Report describing existing standards and identifying which standards may have international applicability.</td>
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<tr>
<td>B.</td>
<td>Impact Assessment</td>
<td>Estimate the benefits of a DR/EE portfolio standard.</td>
<td>Report estimating the impact DR/EE portfolio standard can have on future carbon emissions</td>
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<td>C.</td>
<td>DR/EE Portfolio Standard Design</td>
<td>Determine key elements of a DR/EE portfolio standard while considering how it could be implemented.</td>
<td>Report detailing the key elements of standard with explanations why each element is important.</td>
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<tr>
<td>D.</td>
<td>Recommended Assessment Methodology</td>
<td>World leaders need mechanisms for considering what DR/EE Portfolio standard should be considered. IEA DSM has created many tools that can be useful in this regard (e.g. DR Valuation Methodology). These tools can be packaged and</td>
<td>Written guidelines and tools for assessing the benefits and requirements of a DR/EE Portfolio Standard.</td>
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</table>

### Timeline:

This Task will take 12-18 months to complete.

### Commitment:

This Task will require at least one designated Country Expert from each participant. The Country Expert will be required to complete in-country research for each subtask and provide input and insights on the Task findings. The Country Expert may need to provide up to 300 hours of effort during the Task. The Task will likely require up to five Expert Meetings.
### ATTACHMENT E

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<thead>
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<th>Smart Meters</th>
<th>Smart grids</th>
<th>Old to new lamps</th>
<th>Ageing network</th>
<th>Distributed generation / integration</th>
<th>User participation / comms</th>
<th>Climate change</th>
<th>Non-electric energy</th>
<th>Energy efficiency</th>
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#### Explanations

1. A coloured cell means the country regards this topic as important in its national policy. Not a commitment to work in it internationally, but a possible start. We tried to capture your interest too, though you're obviously not a country.

2. The headings were my shorthand way of capturing the DSM-type topics mentioned by the delegates, for the purposes of looking for common interests. Nothing more than that. There is no written definition, but the following expansion might help:
   a) Smart Meters - any mention of smart meters, for any purpose
   b) Smart Grids - wider smart technologies
c) Ageing network - the problems of old networks
d) Distributed generation/integration - local distributed generation of any sort, and issues about integration (eg renewables)
e) User participation/comms - encouraging greater user participation in demand management, by communication, TOU pricing, etc.
f) Climate change - obvious?
g) Non-electric energy - covering energy sources other than electricity (eg gas)
h) Energy efficiency - where improved EE is a key aim, as opposed to load shifting
i) ESCOs - energy services and ESCOs, for whatever purpose
j) Financial tools - incentives, etc
k) Standards and labelling - of products, services or companies
l) White certificates - if specifically mentioned
m) DR to market - encouraging the promotion of Demand Response to achieve greater market penetration
n) Cooling a/c - where cooling and/or HVAC was mentioned as a key problem
o) Costs pass through - means to pass real costs through to end consumer
p) Portfolio standards - as defined by Ross in his Task proposal.
Task XI
Time of Use Pricing and Energy Use for Demand Management Delivery

Final Report

OCTOBER 2007

Report no: 6178

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Maureen Edwards, EA Technology, UK
Background

Many countries are concerned that liberalised markets may not deliver adequate peak electricity generation and network capacity. The domestic sector consumes between 20% and 40% of electricity in developed countries and is very attractive for energy saving. Customers can save energy by reducing use and shifting use from high to low demand times. Savings are achieved by increasing the propensity of customers to purchase energy efficient end uses, changing their behaviour to reduce thermostat settings, use hot water and lighting more wisely, reduce system losses and reserve generation and increase off peak space for wind generation.

Objectives

The objectives of Task XI are to determine whether and how smaller customers can participate in demand markets and change end use behaviour to deliver energy saving, reduced energy costs and maintain supply security.

Approach

Three mechanisms, by which smaller customers can save energy and assist system security have been developed and evaluated.

- End Use Monitoring and Feedback (EUMF), where customers are presented with a breakdown of their individual end uses of electricity, its costs and environmental impacts.
- Time of Use (TOU) and Dynamic TOU pricing, where customers are presented with different prices at different times and respond by shifting demand from high to low price periods.
- Demand Side Bidding (DSB), where customers participate in energy trading, by contracting and delivering specific demand changes in response to requests by System Operators or Suppliers.

This study has analysed work carried out and results of trials of EUMF, TOU pricing and DSB involving smaller customers in the participating countries. It has also considered the impact that dynamic demand changes could have on profile settlements systems and methodologies for validating that participating customers have responded to requests for demand change. Analysis has also been carried out into end use demands which could respond to dynamic TOU pricing, aggregated and made available to System Operators as part of DSB processes.

Response modelling and communication and metering mechanisms, to enable payments to be made to customers participating in DSB, have been considered for each Demand Response (DR) delivery process.
Approach (cont’d)

Five reports have been completed:

- Subtask 1 - Smaller Customer Energy Saving by End Use Monitoring and Feedback (July 2005)
- Subtask 2 - Time of Use Pricing for Demand Management Delivery (Sept 2005)
- Subtask 3 - Demand Side Bidding for Smaller Customers (Sept 2005)
- Subtask 4 - The Impact of Dynamic Demand Changes on Profile Settlement Systems (Oct 2007)
- Subtask 5 – Demand “available” and “turndown” Mechanisms for Market Bidding of Smaller Customer Demand (Oct 2007)

Results

Task XI has quantified the potential of EUMF, TOU pricing and DSB mechanisms to deliver demand reductions and energy savings. It has also provided routes dealing with dynamic profile changes in profile settlement for systems and rewarding DSB participation.

Monetary savings resulting from the application of EUMF (Task XI Subtask 1) to direct electric heating customers have been estimated to be worth approximately 100 Euro per year per customer. Clever and very “smart” meters have been considered for the provision of limited, demand disaggregation information as alternatives to customer interviews.

Task XI Subtask 2 has estimated the financial viability of implementing different TOU pricing regimes by equating reliable and flexible demand shift with scheduled generation, transmission and distribution network construction costs. The financial benefits, available to motivate smaller customers to participate in TOU pricing, are not large.

Task XI Subtask 3 has shown that there is a role for smaller customers to bid demand to assist system operation, improve supply security and reduce supply costs. The study has shown that unobtrusive as well as obtrusive management of end uses of energy may be possible in order to enable smaller customers to be “available” for automatic “turn down” of demand.

Dynamic TOU and Critical Peak pricing, if widely applied, will have an impact on profile settlements as examined in Subtask 4. If the profile settlement error becomes unacceptable, new, dynamic profiles may be needed to reduce it. This would be technically feasible by feeding the dynamic control signals into the settlements process.

Task XI Subtask 5 has shown that validation requirements of DR, in order for it to be used as DSB, should not present a fundamental barrier for smaller customers. In principle DR validation can be estimated based on control group measurement, statistical modelling and Grid substation measurements of demand “turndown” in response to DR motivator signals on specific days and at specific times. Various meter “smartness levels” have been considered for this process.

The ESCO (Energy Service Company) route to delivering smaller customer DR is considered very attractive in moving forward.

Implications

Motivating customers to buy energy efficient end uses and use them in a price flexible way to save energy and assist system security, is a difficult challenge. EUMF and TOU pricing have very important roles to play in this process. End use disaggregated energy data statistics, available now in many countries for national populations, should be added to smaller customer energy bills to start the education process of making them more aware of end use costs and environmental impacts.
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Task XI – Final Report
Time of Use Pricing and Energy Use for Demand Management Delivery

Summary

Energy plays a central role in everyday lives of residential and small business customers but its use impacts our environment and contributes to global warming. Many countries are concerned that liberalised markets may not deliver adequate peak electricity generation and network capacity in future. In this regard, smaller customer energy saving and behaviour change in response to financial and environmental stimuli can achieve energy savings, reduce peak demand and increase electricity supply security.

Customers can save energy by reducing its use and by shifting demand from high to low, system demand times. Savings in energy occur as a result of reduced system peaks which contribute to reduced system losses and more effective use of generation capacity. The shifting of demand to low demand times enables wind generation to make a greater contribution in some countries.

Three mechanisms follow from this by which smaller customers can be motivated to change behaviour, save energy and be rewarded for making the changes.

- **End Use Monitoring and Feedback, EUMF**
  - customers are presented with a breakdown of their individual end uses of electricity, its costs and environmental impacts and are motivated to make general energy savings

- **Time of Use (TOU) electricity pricing**
  - customers are presented with different prices for electricity at different times and respond by shifting demand from high to low cost price periods. A variation of this motivating mechanism is Dynamic TOU pricing where customers can change their use of electricity with reasonably short notice times (typically 24 hours notice) in response to notified price changes.

- **Demand Side Bidding (DSB)**
  - customers participate in energy trading, by contracting specific demand changes in response to requests by System Operators or Suppliers. Dynamic TOU pricing is a valuable motivator for delivering DSB, which can deliver energy saving as a result of reduced system losses and reserve generation capacity and overall increases in operational efficiency.

IEA, DSM, Task XI study has analysed work carried out and results of trials of EUMF, TOU pricing and DSB involving smaller customers in participating countries in order to understand their responses to these end use energy saving motivators and identify cost effective implementation solutions. It has also considered the impact that dynamic demand change profiles could have on profile settlements systems. Key to delivering DSB is a methodology for validating that participating customers have responded to requests for demand change.
Methods of applying EUMF as a cost effective and continuous methodology for motivating end use energy savings have been quantified for different levels of end use data disaggregation and presentation and levels of metering “Smartness”. Demand disaggregation methods have been reviewed including the use of “Very Smart Metering”. Face to face interviews between customers and energy advisors has been identified as being a very effective method for end use data disaggregation and motivator for customers.

TOU pricing and metering have been evaluated by considering three main types, Tariff, Dynamic and Real Time. Individual end use demands and micro generation have been evaluated for their potential to be remotely switched and inhibited for infrequent, short periods. Particular attention has been paid to whether customers are allowed to manually override remote demand switching commands.

The study has estimated the financial viability of implementing different TOU pricing regimes by equating reliable demand shift, including operation of embedded generation, with scheduled generation and transmission and distribution network construction costs. The results show that these energy saving and supply security maintaining measures can be cost effective but that automatic switching of demand based on customer/supplier contracts is likely to be the most effective mechanism for delivering reliable demand participation. “Smart metering” has a role to play in each of these mechanisms.

Analysis has been carried out into potential smaller customer end use demands which could respond to dynamic TOU pricing and which could be aggregated and made available to System Operators as part of DSB processes. Successful participation by customers depends on the development of cost effective mechanisms for aggregating their demand and validating and rewarding the customers which actually deliver end use demand changes. Smart metering has a role to play in delivering these energy saving mechanisms. The study showed that there is a role for smaller customers to bid demand to assist system operation, improve supply security and reduce supply costs. Savings in CO$_2$ may also be possible.

Dynamic and Real Time pricing measures result, if successful, in dynamic changes to customer usage profiles and this will impact profile settlement systems used in competitive supply markets. Profile settlements in Netherlands, Spain and the UK have been analysed for their potential to accommodate dynamic demand profiles of smaller customers resulting from TOU pricing.

Modelling and communication mechanisms to enable payments to be made to customers participating in DSB have been studied for each Demand Response (DR) delivery process.
1 Background/Introduction

Energy plays a central role in the everyday lives of residential and small business customers yet our use of energy impacts our environment and contributes to global warming. Total energy consumption in the EU is approximately 20% higher than can be justified on purely economic grounds. The domestic sector consumes between 20% and 40% of electricity use in developed countries and is very attractive for consideration of energy saving and system operation processes.

End uses of energy and smaller customer behaviour change in response to financial stimuli are very important in achieving energy savings, reducing peak demand and increasing electricity supply system security. Energy saving regulations and measures are in place in developed countries which assist with more effective use of energy in houses and small businesses. Savings are achieved in many cases by increasing the propensity of customers to purchase energy efficient end uses and also in changing their behaviour so as to reduce thermostat settings and use hot water and lighting more wisely.

The financial benefits shown to be available to motivate smaller customers to participate in modifying end use behaviour are relatively small. No definitive studies have been identified which have analysed customer reaction to the disabling of appliances for short periods a few times per year and the financial incentives required. Reducing demand for short periods a few times per year can have significant benefits in reducing critical peak demands. This is illustrated in Figure 1 which shows, for Spain, that the last 1600 MW of generation peak capacity was used for only 6 hours in 2004/2005. Similar capacity utilisation is the case in other countries.

![Fig 1 Annual Duration of use (hours) of generation capacity 2004/2005 (maximum 100 hours)](image)

Demand profiles of customers will change as a result of applying demand response motivating tariffs and controls. Smaller customers demand profiles are used in competitive supply markets to settle the accounts between Suppliers and Generators.
on a time of use basis. New profiles will be required for Suppliers to gain benefit from motivating Demand Response. The actual demand response will be uncertain if customers have control of power usage and may choose to use power at times of high price by overriding the remote switching commands. The change in profile shape may be mixed and possibly reduce over time. With remotely variable, dynamic tariffs, Suppliers could increase the price differential to encourage customers to continue to smooth their demand profile.

Subtask 4 report describes the profile Settlement systems developed in Netherlands, Spain and UK, together with mechanisms implemented, the number of profiles in use, the way these profiles are kept up to date and what factors are used to modify profile shape on a daily basis to account for seasonal changes, embedded micro generation and demand switching. The compatibility of profile settlements and Dynamic Demand Response is investigated.

Customer profiles are also used to estimate the real time demand of each Supplier on a continuous basis. Metering systems with added intelligence are being implemented for smaller customers in some countries and can be considered for Supplier Settlements as an alternative to profile settlements. The balancing of these issues determines the viability of smaller customer dynamic demand side participation using TOU metering or dynamic profiles for settlements.

DR in its simplest form is an optional activity carried out by customers to save money by shifting demand in response to, for example, TOU pricing. TOU pricing signals can also be linked to automatic processes where the change in demand is carried out automatically in response to price or other motivator. Participation of the demand side in the form of DR is particularly challenging for smaller customers where energy use and cost are not generally regarded as major priorities. The degree of interest by smaller customers over the long term in DR activity is unknown. However, estimates have been made based on limited studies which show that most smaller customers are not very interested in manually managing demand based on TOU pricing.

Demand Side Bidding (DSB) is the formalisation of DR whereby contracts are put in place between customers and System Operators/Suppliers so as to deliver more reliable DR, which can be used in emergencies to meet capacity constraints or as alternatives to generation. DSB contracts usually specify the size, duration and delivery time for specific DR. This makes DR more predictable and reliable and hence more valuable to System Operators/Suppliers. Specific payments and penalties by System Operators/Suppliers for delivery and failure of delivery are being put in place as incentives for customers to meet their contracted demand changes.

Mechanisms are required to validate both that demand is “available” as a Demand Side Bid and that the demand was “turned down” as defined in the contract. Validation is a significant challenge for smaller customers in part because an Aggregator is needed in order to bid sufficiently large demand blocks to be of interest to System Operators and Suppliers. The Aggregator collects blocks of demand from groups of smaller customers and is responsible for managing delivery of the DR as contracted in the DSB. An Aggregator is likely to have a portfolio of customers and demands from which to deliver a contracted demand “turndown”. DR delivery processes to meet DSB contracts are likely to be by remote or automatic switching of demands.

Three major issues require solutions in order to drive energy saving and System capacity enhancing behaviour change by smaller customers. These are :-
• Provide end use feedback information to assist customers understand the financial and environmental costs of their energy end use activities
• Provide TOU pricing, metering and control mechanism information to assist customers modify times of use of energy so as to save money and reduce peak demands
• Provide mechanisms and information for customers or their agents to bid their DR measures into System Operation so as to save money and possibly save CO₂.

Motivators for potential customer participation are:-

• Environmental concern (CO₂ saving) and saving money from reducing energy use
• Saving money and helping environment as a result of peak capacity reductions
• Being paid for “availability” and implementing demand “turndown” and start up of embedded generation

Customer response to TOU pricing is likely to be both an energy reduction and a demand reduction. The extent to which this happens, and therefore the impact on profile settlements, is not known. It is also not known, the extent to which profile shape changes take place when individual end uses are remotely switched. In order to bid demand as equivalent to reserve generation capacity, it is necessary to pre-determine (estimate) the demand change potential “available” to be delivered and the demand change actually delivered by specific switching instructions or price signals.

Task XI has quantified the potential and viability of EUMF, TOU pricing and DSB mechanisms for delivering demand reductions and profile shape changes. It also provides routes to dealing with dynamic profile changes in profile settlement systems and rewarding DSB participation.

2 Objectives

The objectives of Task XI are to determine whether and how, smaller customers can participate in demand markets and change end use behaviour to deliver energy saving, reduced energy costs and increased supply security. This involves quantifying and developing mechanisms to motivate smaller customers to save energy through energy end use presentation, modify their energy demand profile through time of use pricing and bidding, contracted Demand Response into energy markets.

Task XI has analysed and quantified all of these issues by means of five Subtasks.

Subtask 1  EUMF (April 04 to July 05)
Subtask 2  TOU pricing (April 04 to Sept 05)
Subtask 3  DSB (April 04 to Oct 05)
Subtask 4  Profile Settlements ( Oct 2006 to Oct 2007)
Subtask 5  Demand Validation (Oct 2006 to Oct 2007)

Subtask 1
The objective of Subtask 1 was to quantify work carried out in participating countries to provide energy end use feedback for smaller customers, how
successful it had been, what further measures could be implemented and whether disaggregation and feedback have a viable role to play in current and future thinking for energy saving. It was also to quantify the degree of disaggregation and feedback needed to motivate end use behaviour changes and whether the feedback needs to be automatically implemented.

**Subtask 2**
Subtask 2 had the objective of quantifying TOU pricing and manual/remote switching of demand as methodologies for motivating and delivering obtrusive as well as unobtrusive changes in specific energy end uses and embedded generation. It also has the objective of evaluating the costs and benefits of implementing tariff, dynamic and real time, TOU pricing systems.

**Subtask 3**
Subtask 3 had the objective of quantifying the feasibility and viability of DSB for smaller customers. DSB is a process for formulating, delivering and validating demand changes at customer premises in order to benefit System Operators, Suppliers and customers. It allows demand changes to be predicted, made to happen on a reliable basis and be built into schedules as alternatives to generation in meeting system demand.

**Subtask 4**
Subtask 4 had the objective of quantifying the potential for existing profile settlement systems to deal with demand profile changes resulting from smaller customers participating in Demand Response.

**Subtask 5**
The objectives of Subtask 5 were to identify and develop mechanisms which can be used to validate that smaller customer demand is “available” for demand change and also, following instruction that the demand was “turned down”.

### 3 Approach

IEA, DSM, Task XI has analysed work and results of trials of EUMF, TOU pricing and DSB involving smaller customers carried out in participating countries in order to understand their potential for motivating demand changes, develop mechanisms for their implementation, identify obstacles to that implementation and find solutions. Each motivator mechanism has been evaluated for its delivery of energy saving, by reducing energy use because of better information and shifting energy use in time to reduce system peaks and constraints and participate in system operation.

#### 3.1 End Use Monitoring and Feedback

One of the ways in which customer motivation to save energy can be developed is by presenting them with a breakdown of their individual end uses of energy, their costs and environmental impact (End Use Monitoring and Feedback, EUMF). In order to be effective, presentation of end use information needs to be made in ways which are not too intrusive for customers yet have powerful impacts at the right times. If end use demand profile shape for smaller customers can be reliably and dynamically changed, the change can reduce the requirement for peak generation capacity and spinning reserve and more effectively enables demand participation in balancing and reserve markets. With the growth of embedded generation, there is an added motivator for local areas to become “self balancing” in terms of local demand and
local generation. The potential electricity savings and the options available for delivering demand aggregation have been estimated and reviewed as have the costs and benefits.

3.2 Time of Use Pricing

Time of Use (TOU) electricity pricing is a mechanism for encouraging electricity demand profile shape change. It is not generally used by smaller customers where electricity use, “settlement” costs among suppliers is achieved using demand “profiles”. Single rate and sometimes two rate tariff metering is generally used for smaller customer billing. The demand elasticity in response to price of smaller customer end uses of energy is largely unknown, particularly the financial incentives needed to mobilise specific end use demand changes. The scale of the required incentives, the specific end uses which can be influenced and the size of the resulting demand changes will be different for different households.

Individual end use customer demands and micro generation have been evaluated for their potential to be remotely switched and demand possibly inhibited for infrequent, short periods. The costs and benefits of demand change resulting from TOU pricing have been estimated.

Figure 2 illustrates the smaller customer end use components of demand contributing to system peak demand in Spain.
This curve shows demand contributions from:-

<table>
<thead>
<tr>
<th>Spanish</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calefaccion</td>
<td>Space Heating</td>
</tr>
<tr>
<td>Lavavajillas</td>
<td>Clothes Washing Machine</td>
</tr>
<tr>
<td>Secadora</td>
<td>Tumble Dryer</td>
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<tr>
<td>Television</td>
<td>Television</td>
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<tr>
<td>Lavadora</td>
<td>Dishwasher</td>
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<tr>
<td>Cocina</td>
<td>Cooker</td>
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<td>Horna</td>
<td>Oven</td>
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<tr>
<td>Illuminacion</td>
<td>Lighting</td>
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<tr>
<td>Miscelanea</td>
<td>Miscellaneous</td>
</tr>
<tr>
<td>Agua Caliente</td>
<td>Water Heating</td>
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<tr>
<td>Congelador</td>
<td>Freezer</td>
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<tr>
<td>Frigorifico</td>
<td>Refrigerator</td>
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</tbody>
</table>

The range of average demand per customer on peak in different countries has been investigated in IEA, DSM, Task XI, Subtask 2 and shown to be between 450 and 2000 watts.

3.3 Demand Side Bidding

Many countries are concerned that liberalised markets may not deliver adequate network and peak generation capacity in future. Greater participation of the demand side is a very important mechanism for making contributions to solving this issue and improving overall system balancing. Demand Side Bidding mechanisms have already been developed for larger customers in many countries. Customers participating in DSB are rewarded for making demand “available” and for implementing demand “turndown” when required.

Smaller customer demand Aggregators have an important, perhaps fundamental, role in the implementation of successful DSB schemes for smaller customers because purchasers of DSB specify minimum demand block sizes which can be bid. This is usually a minimum of several MW. In order for Aggregators to have sufficient incentive to become involved, the income derived from DSB needs to more than offset the costs incurred in setting up bidding schemes and infrastructure. Task XI Subtask 3 has identified and developed possible mechanisms by which smaller customer demands can participate in markets for generation. The more effective and predictable demand changes are, as a result of automatic switching, the more valuable they are to System Operators.

3.4 Profile Settlements

Profile settlements is a potential obstacle to the implementation of smaller customer DR because DR changes the shape of participating customer profiles. Profile settlements is used in competitive supply markets to settle accounts between Suppliers and Generators and is a problem which potentially reduces the scope for smaller customer DR. The impact on profile settlements resulting from DR is influenced in part by what motivators are used to deliver it. This is because the settlements process relies for its accuracy on the stability of the demand profile for large numbers of smaller customers. This issue has been analysed in Task XI, Subtask 4 by considering DR against the profile settlements systems in Netherlands, Spain and the UK. Solutions have been identified and proposed.
3.5 Demand Validation

DR can only participate in DSB markets if it can be validated as being “available” for demand change and also that demand “turndown” has taken place following a request.

Validation of demand “available” and “turned down” is a requirement of System Operators in order to give confidence that DSB can be used in place of generation. This validation requirement potentially inhibits the participation of smaller customers in the market for generation because individual customer validation using 2 way communication is expensive and may not be possible. Subtask 5 has analysed the situation regarding the use of customer demands identified in Task XI, Subtask 2. The demands have been considered for DSB using a range of methodologies for delivery and validation.

These methodologies, using different metering “Smartness” levels and demand change modelling, remote/automatic control and communication of price signals have been evaluated.

3.6 Completion of Task XI Deliverables

Task XI has completed the five Subtasks by means of the following analyses and studies:

- Quantified mechanisms and technologies to motivate smaller customer, energy reduction through feedback of end use information.
- Quantified energy end use disaggregation methods and their value for providing feedback to customers to achieve energy savings.
- Analysed TOU and Dynamic TOU pricing for smaller customers and differing levels of meter “smartness” to deliver energy savings.
- Assessed the potential impacts of Tariff TOU pricing, Dynamic pricing and Real Time pricing on smaller customer end uses.
- Defined technical, system and smaller customer requirements for bidding aggregated demand and local generation into energy markets.
- Considered mechanisms for implementing customer demand changes using DR as DSB and dealing with customer over ride.
- Estimated costs and benefits of energy end use monitoring and feedback, TOU pricing and DSB for smaller customers.
- Estimated the impact on profile settlement systems of the use of Tariff and Dynamic TOU pricing.
- Quantified methodologies for demand change validation to enable smaller customer DR to be used as DSB.
4 Results

Energy efficiency and energy saving are recognised as having fundamental roles in the goals of Governments to reduce carbon dioxide emissions, with the smaller customer sector expected to make a substantial contribution to the overall targets. While there are many measures and policies in place to increase thermal insulation in houses and improve energy efficiency of appliances, the behaviour of customer is recognised as having a key-role in reducing energy consumed by households. There is still a long way to go to achieve the optimum economic balance, especially with energy prices reduced by competitive markets. Significantly increasing energy prices to include environmental damage factors is difficult politically, with a requirement of governments also to protect low income households. Consequently in order to complement and augment the energy saving measures already carried out, there is an opportunity to encourage customers to make minor lifestyle changes in order to save energy.

4.1 EUMF

Feeding back detailed information to customers using a range of methodologies has been shown in Task XI to motivate energy savings by smaller customers of the order of 10%. The results of field trials work analysed in Task XI suggest that customers respond well to direct feedback of information on their energy use. For example, in the Mansouri and Newborough study the energy used for cooking was reduced by more than 10% in 7 out of 10 households provided with a display providing information about the energy use of their cooker. Similarly, the installation of key pad meters in households in the Northern Ireland Electricity trial led to an 11% reduction in electricity bills. Denmark has been promoting lifestyle energy savings among all customers for the past 30 years using advertising and promotional campaigns. A survey showed that 70% of smaller customers would make changes to save energy if they were advised how to do it and it involved little inconvenience. Technology developments now allow more detailed information and potential environmental savings to be displayed to smaller consumers.

Adding general, national, end use statistics to the energy bill is not highly regarded by many customers but some customers have an interest. Specific customer end use information is regarded highly. Consequently there is a major technical and economic challenge to collect and derive cost effective end use data and feed it back to customers. If systematic and reliable end use information for individual customer could be established, and this was combined with simple and effective advice and messages, then EUMF would be an important methodology for influencing energy saving.

EUMF motivator messages have been shown to encourage customers to replace energy inefficient end use with efficient ones. This has required customers to change their spending priorities so that end use have been changed not just because they were life expired but because they were energy inefficient. These messages can also motivate customers to increase the expenditure priority of such things as improved thermal insulation of their houses. This is the same motivator which encourages customers to draw curtains at night, ensure that thermostats are not set too high, minimise draughts, part fill kettles and use low temperature wash programmes where possible.
Many EUMF techniques and methods have been analysed to assess their suitability as energy saving motivators. Methods for applying EUMF as a cost effective and continuous methodology for motivating end use energy savings have been quantified using different levels of end use demand disaggregation and presentation. Monetary savings resulting from the application of EUMF to direct electric heating customers have been estimated to be worth approximately 100 Euro per year per customer.

From the information and analysis of end use disaggregation and feedback methods and field trials presented in the Task XI Subtask 1 report, it is possible to make broad conclusions about the potential viability of EUMF to motivate savings of energy for smaller customers. From the summary of findings and analysis, the financial savings potentially available from EUMF to help justify the investment needed on a commercial basis are quite small. In order to consider financial, ball park viability for the different methodologies, estimates have been made of relative costs for the energy end use data collection feedback methods. These relative estimates indicate that actual direct measurement of specific customer end uses of energy on a continuous basis is probably too expensive for wide scale application to smaller customers. This direct measurement process includes the use of sub-metering and end use signature recognition and correlation methods. The only situation which contradicts this view is where individual appliances are fitted with a direct display when manufactured, showing the financial and environmental cost of use. This is only true if a communication system is not required in order to update the display.

Estimates of the costs of face to face and Internet interviews with customers to both collect data and feedback processed end use data and advice based on models, show this to be an attractive option with low to medium costs yet having potentially high impact. Shared saving schemes by ESCOs may be an attractive way of delivering these services. It is a role similar to that carried out by ESCOs for larger customers where shared savings are used to off set some of the costs of energy saving. In order to be effective, computer models are required to process the face to face collected data immediately and deliver end use derived data and saving advice together with projected benefits to customers. Estimates of the cost saving and environmental value of national, disaggregated end use data targeted at broad customer categories such as those with electric heating are considered to have only a low impact. However, many participating countries have this national data available, particularly as a result of competitive energy markets where understanding actual profiles of energy use allows competitive tariffs to be offered. This information and advice could be included in electricity bills at little extra cost. Although the impact is likely to be low, it would help develop customer awareness of energy use and potential savings.

Improved metering and display have been shown to be attractive for presenting electricity consumption data to samples of customers. Clever and very “smart” meters can be considered for the provision of demand disaggregation information as alternatives to customer interviews. However, this process is complicated and probably not cost effective. Very “smart” meters may be able to perform limited demand analysis to guide customer demand reductions and assist making savings.

With the general progress of remote metering for smaller customers in many countries, as well as the prospect of “smart homes”, which include communication buses, the collection of actual energy end use data will become a lower cost activity in future. Customer displays will also become more common within households in order to provide access to smart home systems. These displays can be used for end use data and energy saving advice feedback and presentation. Combinations of
TOU metering data and customer behaviour modelling may be able to deliver some valuable but limited demand disaggregation.

Within the next 5 years, Denmark will change at least 700,000 meters in the domestic sector to remote reading and provide bi-directional communication; this corresponds to almost 25% of all meters in the sector.

By 2009, the meters of all profiled customers in Sweden will be read monthly, probably to a large extent remotely. This will lead to a monthly bill based on factual consumption. Customers will also have additional information presented on the bill regarding energy saving advice. Netherlands are also installing TOU metering for all smaller customers.

4.2 TOU Pricing

Time of Use Pricing has an important role to play in motivating and delivering energy savings by smaller customers.

Task XI Subtask 2 identified that, other than direct space and water heating demand shift by reducing thermostats, air conditioning, lighting and some domestic appliances are end uses, which could in principle be moved off-peak. Customer small scale micro generation also has an important role to play in generating outside normal heat led times and made responsive to TOU energy pricing.

Notice times required by customers in order to accept remotely switched demand changes as well as reward mechanisms have been considered and assessed. Quantification of the benefits of Dynamic TOU pricing, in reducing peak demands and the costs of implementation of individual end use switching have been carried out. The benefits have been compared with the cost of new peak supply capacity.

Consideration has been given to relating together the three main types of TOU pricing: Tariff, Dynamic and Real Time. The study showed the difference between them to becomes very unclear if no customer override option to the automatic demand shift is allowed and a single rate tariff is used for billing. With this scenario, some customer end uses could respond automatically to real time prices (thermostat reduction), yet be billed using a single rate tariff. If a customer override option is allowed, then multi rate metering is required for billing purposes. The question of whether the cost savings associated with not providing customers with an override option are sufficient to overcome customer reluctance to participate needs further study. The answers to this question are likely to be end use specific. Thermostat set point changes are relatively unobtrusive. Lighting reduction and appliance disabling are obtrusive and would cause customer inconvenience. This inconvenience would be small if only applied for a few hours per year. However extensive marketing campaigns would be required to persuade customers to participate.

Communication has not been identified as a major technical constraint on the implementation of TOU pricing but is very important in the financial viability of these measures. Low cost communication is needed based on both broadcast radio technologies which communicate directly to end uses or on hybrid systems which use separate external and internal to the premises communication systems for the control of the many different services and energy end uses. These separate systems are linked together using customer gateways. The choice between these two approaches depends mainly on economics and whether the communication infrastructure is shared by other services, such as alarms and monitoring etc. The
more the cost of communication and control can be reduced, the more feasible it becomes to apply demand management to smaller end uses.

Task XI Subtask 2 estimated the financial viability of implementing different TOU pricing regimes by equating reliable and flexible demand shift with scheduled generation, transmission and distribution network construction costs. In order to do this, the study estimated the costs of implementing TOU pricing regimes per kW of demand shift and the ball park cost of new supply side construction. Based on comparison of these estimates, on average, annual payment to customers of €234 is available as an incentive and motivator for them to participate. This is very much a global figure and will vary greatly in specific situations in different countries. It will be reduced if customers with direct space and water heating are not included. However it is likely that TOU implementation routes would be based initially on targeting customers with the largest demands.

4.3 Demand Side Bidding

Task XI Subtask 3 has shown that there is a role for smaller customers to bid demand to assist system operation, improve supply security and reduce supply costs. Savings in CO₂ may also be possible. Aggregation of smaller customer demands into minimum blocks of several MW is a requirement for DSB participation. The study has shown that unobtrusive as well as obtrusive management of end uses of energy may be possible in order to enable smaller customers to be “available” for automatic “turndown” of demand. No real understanding has been obtained as to whether and to what extent smaller customers would be prepared to accept end use inhibits of every day appliances for relatively short durations even if 24 hours notice is provided. Automatic temperature changes of the space environment and refrigeration appliances are regarded as unobtrusive and the most likely energy end use demands, the management of which could be accepted by customers. The management of washing machines and other white goods is technically feasible but is relatively obtrusive and less likely to be acceptable to customers. The management of lighting by making small changes to illumination levels would be obtrusive but may be accepted by customers. However, the extent to which customers could be influenced by extensive marketing and promotion so as to allow management of these end uses and the incentives required are not known. If smaller customers can be motivated to participate in demand management of everyday end uses of energy, a demand of between 0.5kW and 3kW per customer is potentially “available”.

An important factor in the acceptability of DSB schemes in system operation and supply contract balancing is that market players have confidence that contracted demand is “available” for management and will “turn down” when requested. This confidence can only be provided by demonstrating that aggregated demands and embedded generation from large numbers of smaller customers can be predicted with reasonable accuracy.

Task XI Subtask 3 analysed the requirements and mechanisms for validation of blocks of smaller customer demands which could be aggregated and made available by customers to System Operators. Consideration was given to payments made for demand “turndown” by smaller customers and possible costs of implementing automatic systems.

The technical feasibility of carrying out DSB for smaller customer space heating has been demonstrated in country field trials using two-way communication. Rewards
and costs for customer participation in DSB have been presented based on payments made to larger customers and the results of earlier communication studies. These studies showed that the economic case for smaller customer DSB is marginal using two way communication to achieve validation of demand change. Two-way communication and detailed monitoring of demands and override switches allows validation that customers are participating in DSB and meeting their contractual obligations and agreements. However, the validation of end use devices such as washing machines may not be so feasible using communications because of the requirement not to interrupt the cycle once started. One way communication is significantly lower in cost than two way communication but requires validation of customer participation to be carried out using statistical methods. This may require that customers, once contracted to deliver automatic demand changes, cannot override that option at short notice. This also removes a requirement for TOU metering.

Task XI Subtask 3 identified potential barriers to implementing wide scale DSB for smaller customers. These included the making of a viable business case which provides cost effective mechanisms for validating demand “available” and “turned down”. They also include the need to make a powerful marketing case to persuade smaller customers to participate. This study identified the system infrastructure and control requirements likely to be needed in such a business evaluation. The use of Aggregator businesses, possibly linked to ESCOs, may be the way forward for smaller customers. Profile Settlement Systems were also identified as an inhibitor of DSB for smaller customers.

4.4 Profile Settlements

Profile settlements used in competitive supply markets will be impacted by demand changes delivered by customer behaviour change, TOU pricing and DSB.

If Demand Response is delivered by means of presenting end use energy information and costs to customers, then the customer profiles are unlikely to change much in shape but more in amplitude. This volume error will be included in profile settlements reconciliation processes based on normal meter readings. Consequently the impact on profile settlements accuracy of this energy saving measure should be small.

If Demand Response is delivered by Tariff TOU pricing alone, then it is likely that peak demand will be reduced and therefore profile shape changed. If the TOU pricing is based on fixed times and prices and manual actions are required by customers to modify demand then some customers will modify their end use behaviour to save money. Customer profile shape changes resulting from fixed TOU tariff times and prices are likely to be a flattening of the profile. However, this change is a result of manual actions by customers, so that the actual amount of change is likely to vary significantly. The overall impact on profile settlements could be significant if a large percentage of customers opted for this metering arrangement and were prepared to alter their behaviour over the long term. TOU metering could be considered instead of profile settlements for settling Supplier accounts. Profile settlements may still be required in order to calculate real time Supplier demand. New customer profiles could be developed for Tariff TOU metered customers based on measured profiles of selected groups over a period of time.

If Dynamic TOU or Critical Peak pricing, together with remote switching of end uses is used to deliver Demand Response, there will be a significant impact on customer profiles. The impact and its predictability will be influenced by whether a demand
switch override option is allowed for customers. With this option allowed, the results could be similar to that for TOU metering without remote switching, although the price signal may dissuade customers from exercising the override option. If the override option is not allowed then demand changes will be more predictable.

The proposed way forward for these Dynamic Demand Response motivating mechanisms within profile settlements is to monitor their impact in field trials of real but limited implementations. If the profile settlement error becomes unacceptable then new, dynamic profiles may be needed to reduce it. This would be technically possible. It would also be possible to mandate that TOU metering is required for Dynamic Demand Response customers.

4.5 DSB Validation

Task XI, Subtask 5 showed that the driver mechanisms for converting DR to DSB were dynamic TOU pricing with manual or automatic switching of demand in response to price.

Manual responses to DR motivators are considered unsuitable for delivering DSB except possibly together with intelligent Maximum Demand limiters as used in Spain where manual, demand switching is needed to restore supply. These systems can also be linked to automatic “in house” management of end uses so as to maintain demand below the trip level. For all other motivators, there is a technology requirement for “in house” communication with remote control enabled end use devices such as white goods and heating and cooling thermostats. Some of these end uses, such as heating, air conditioning, showers, some white goods are available on the market already equipped for remote switching (enabling and disabling). However, infrastructure investment is needed to enable them to be used for DSB.

It is evident from the Task XI Subtask 5 study that validation requirements of DR in order for it to be used as DSB do not present fundamental barriers to the adoption of smaller customer, DSB in generation markets. In principle DR validation can be estimated based on control group measurement, statistical modelling and Grid substation measurements of demand “turndown” in response to DR motivator signals on specific days and at specific times. It can also be carried out by using remotely read, TOU metering and the Aggregation of groups of participating customers, in order to measure the demand change. However, there is a significant need to understand and develop customer behaviour change and participation in DR measures.

Summary of Reports for Task XI

Five reports have been completed and made available to the participating countries, viz:-

Subtask 1 - Smaller Customer Energy Saving by End Use Monitoring and Feedback
Subtask 2 - Time of Use Pricing for Demand Management Delivery
Subtask 3 - Demand Side Bidding for Smaller Customers
Subtask 4 - The Impact of Dynamic Demand Changes on Profile Settlement Systems
Subtask 5 – Demand “available” and “turndown” Mechanisms for Market Bidding of Smaller Customer Demand
5 Conclusions

Saving energy use by smaller customers is an important objective of governments in all developed countries. Three major issues require solutions in order to drive energy saving and System capacity enhancing behaviour change by smaller customers and these have been identified and analysed by Task XI. These issues are:-

- How to provide information to customers on how they actually use energy, its costs and environmental impact.
- How to provide motivators to encourage customers to move electricity use from high to low cost times to save money and CO$_2$.
- How to provide mechanisms for aggregating, contracting, validating and delivering DR as DSB and information for customers to participate and save energy and CO$_2$.

Task XI has concluded that disaggregated end use presentation of energy end use to customers is the most powerful motivator for customer behaviour change but expensive to implement. A compromise solution is for an energy advisor to conduct face to face interviews with customers regarding energy use behaviour and convert the results immediately into an estimated end use disaggregation of demand. Models have already been developed to do this conversion in Denmark. It may also be possible to cost effectively provide some limited disaggregation of demand to assist customers understand large and small demand end uses. This may be possible using “smart” metering where step changes in demand could be recognised without actually knowing what the specific end use was that caused it.

National statistics on overall disaggregated end uses of energy, which are available in many countries, should be presented now on customer bills as an introduction to EUMF and to assist customer decision making regarding the purchase of new, energy efficient end uses.

Task XI has analysed the possibilities and cost benefit for TOU pricing as a motivator for demand profile change and saver of energy and proposed mechanisms to deal with manual and automatic switching of demand. Some customers will manually respond to price changes. However many customers prefer automatic/remote control switching of end uses in response to price but with an over ride option available to them if required. These systems require that remotely controlled end uses are enabled for communication, which is not the situation at the present time. Intelligent Plugs, which can be switched by a broadcast signal, are a possibility.

With Dynamic TOU pricing, manual response to the price changes is not really practical so that automatic/remote control switching is required. Dynamic Demand Response is more valuable to System Operators than Tariff Demand Response because the times of the price changes can be varied to suit system operations. TOU metering with possibly only two rates may deliver the majority of Demand Response using Tariff or Dynamic motivator mechanisms and would be simple for customers to understand.

Tariff and Dynamic TOU pricing regimes will change customer demand profiles and if widely adopted will impact on profile settlement systems used in many countries as part of the competitive supply market. Task XI has considered the options for dealing with this by means of new profiles or Suppliers accepting the additional error in settlements. It is considered that a prudent way forward is to monitor the impact of TOU pricing and metering on existing profile settlements error and if and when that
becomes unacceptable, new profiles for TOU pricing customers are developed. This will be a complicated process especially for Dynamic TOU pricing where the actual price switching signals would need to be input to the profile generation process and customer override options would need to be included. This methodology is already being considered for some other remotely switched demands in some countries. For countries with competitive markets just starting for smaller customers, the use of remote TOU metering should be considered for settlement processes.

DSB can deliver energy saving as a result of reduced reserve generation capacity requirements, reduced system losses and an overall increase in operational efficiency. It can also provide CO₂ savings by enabling more wind generation to operate at off peak times. Reward to customers for participating in DSB can be made by direct payment or through the tariff. In order for System Operators to use DSB effectively and with confidence, validation is needed both of the actual demand “available” for change and the response “turn down” following a request. Task XI has evaluated the options available for this validation process and considers that direct monitoring of demand “available” and “turned down” to be expensive and difficult to implement for countries already having profile settlements infrastructure. The validation methodology proposed is for modelling and measurement of demand changes in response to a range of motivators at different times, days and seasons. Dynamic TOU metering and pricing is regarded as the main motivator of demand change, which can be used for DSB. It is not considered to be the most suitable mechanism for validation. With experience, confidence in delivery of Dynamic Demand Response could be developed to such a level that smaller customer DSB plays an important role in contributing to system capacity. Providing information to customers on:-

- End use demands and potential savings;
- TOU pricing, potential savings and ways to do it;
- DSB, potential rewards and ways to participate

are the preferred ways of providing energy saving motivation.

Task XI has shown that in principle, demand shift and energy reductions based on EUMF, TOU Pricing and DSB for aggregated smaller customers are technically feasible and could be made available and reliable in sufficient quantities to significantly contribute to peak demand management. However, the financial incentives for customers to participate in energy saving measures are not large. Significant marketing and promotion will be needed to motivate smaller customers to participate. The use of ESCOs is considered to be an attractive route to the development of smaller customer energy saving and demand profile change infrastructure as well as for demand aggregation and marketing. A number of areas where further study is needed have been identified.
6 Implications

Governments in the developed world are committed to delivering energy savings and maintaining system security. Providing regulations that remove energy inefficient end uses from the market is the relatively easy part of the process. Motivating customers to buy energy efficient end use and use them in a price flexible way to save small amounts of money and assist maintaining system security, is more difficult. Marketing and information effort is needed to support EUMF, TOU pricing and DSB and focus customer attention on the value and need for energy audits, using energy efficient end uses and modifying behaviour to minimise energy costs.

These measures can all deliver energy saving with Dynamic TOU pricing and DSB also assisting with system security. However, in order to implement these measures and assist customers to deliver the savings, significant investment is needed. Metering “Smartness” is an important factor in the dive to deliver the savings. However, it is only one factor, with “smart” controls and “smart” end uses also very important. These controls may be included in the meter or implemented separately by direct broadcast communication with end uses. The level of customer participation in energy saving in response to motivations is largely unknown but is a critical factor. Energy saving metering and controls infrastructure costs have a significant fixed part and a customer numbers, dependent variable part. Consequently it is important for economic viability that large numbers of customers participate.

All these energy saving measures are driven through the provision of high quality information to customers. This information comprises end use energy costs, CO₂ generation and electricity price and environmental benefits of demand shifting. A start should be made to provide customers with initial information of this type to start the education process.
7 Recommendations

- National Governments should ensure that end use disaggregated energy data statistics available now in many countries for national populations should be added to smaller customer energy bills to prepare them for more detailed EUMF measures in future and start the education process of making them more aware of end use costs and environmental impacts.

- Studies should be carried out to quantify the specific value of the different feedback methods described and analysed in the Task XI reports. Assessments should be made of the costs of implementing the different processes and the impact of each process on customer motivation and demand elasticity. Consideration should also be given to increasing the financial value attributed to saving CO$_2$.

- Study should be carried out, possibly within the IEA DSM Agreement, into how to motivate customers to attend energy saving interviews and participate in energy saving measures and behaviour changes. It may be possible to include the saving of other resources such as water in the same interview. Modelling of disaggregated end use and feedback should be carried out at the same time to help achieve cost effectiveness. Models should be developed or existing ones enhanced to quickly convert information collected during face to face customer interviews into disaggregated energy end uses and energy saving advice.

- Studies should be carried out to evaluate the potential and acceptability of different end use, demand management and customer participation methodologies with no customer override and single rate metering.

- Evaluation of the possibilities for lighting management should be carried out, taking into consideration the limitations imposed by energy efficient lights. No studies have been identified which have analysed the possibility or acceptability of reducing lighting levels for a few hours a few times per year. These studies should be carried out together with assessments of the financial incentives needed to obtain customer participation, particularly with no override options allowed.

- Evaluate the potential for using micro CHP and fuel cells to respond to demand change signals and reduce the demand to be met by scheduled generation.

- Estimate the required financial and motivating incentives needed to obtain customer participation in obtrusive demand side measures for relatively few hours per year.

- Evaluate combined Tariff, Dynamic and Real Time, TOU pricing in a single household and applied to different elements of the demand with different notice times and controls.

- Develop cost effective modelling and measurement mechanisms and processes for aggregating smaller customer demand and validating demand “available” and “turn down”.
• Quantify the impact of smaller customer, dynamic profiles on “profile” settlements systems and evaluate in more detail, the routes proposed for dealing with it.

• Develop technical and business architectures for smaller customer DSB within the IEA DSM Agreement. This includes business models to define how to market packages of measures and roll out DSB enabled end uses of energy and their management. Evaluate the use of ESCOs to fulfil this role.
8 References

6. Svenska Kraftnät och STEM (2002), Industribud, Delutredning i effektkomponentutredningen. (Industry bids, part of the investigation on the power demand balance)
7. Nordel (2005), Report on Peak Load Mechanisms – A background report prepared by the Nordel Operation Committee/OPG in the Nordel project Enhancing efficient functioning of the Nordic electricity market (Feb 2005)
8. Nordel (2005), Survey of system responsibility in the Nordic countries, Final report (February 2005)
11. Magnus Stephansson, Krister Bäck, Svenska Kraftnät, meeting May 26, 2005
12. Jurek Pyrko och Kerstin Sernhed, meeting May 12, 2005
13. Stefan Lindskoug, Esselcon, meeting May 12, 2005
15. Hermansson T., Analys av belastningskurvor för småhus med hjälp av Artificiella Neurala Nätverk ISRN LUTMDN/THMP--04/5038—SE SE
16. von Knorring, M., Analys av en ny prissättning med effektkomponent för elkunder, ISRN LUTMDN/THMP--04/5040—SE
28. 2004 Seven Year Statement, National Grid Company (UK)
29. Demand Side Developments, Operational Forum 5 March 2003, Presentation by Andy Malins, National Grid Transco
31. Domestic Energy Fact Files, Building Research Establishment, Housing Centre, 2000
32. Radio Teleswitching Sub-Group Meeting Notes, 13 March 2003
33. SV Allera and AA Cook; Domestic Customer response to a multi-rate tariff; 7th Int Conf on Metering Apparatus and Tariffs for Electricity Supply; Glasgow; IEE, November 1992.
34. Demand Side Developments, Operational Forum 5 March 2003, Presentation by Andy Malins, National Grid Transco
35. Energy Consumption in the UK, Department of Trade and Industry, 2004
36. The Electricity Supply Handbook, 2004
37. Demonstration Projects on DR in Denmark, Mikael Togeby and Marlene Hein Nybroe, Synergy Metering Conference, Berlin, Sept 2004
44. California Public Utilities Commission, “Interim Opinion in Phase 1 Adopting Pilot Programme for Residential and Small Commercial Customers, Decision D.03-03-036, 14 March 2003
46. “Use of embedded generators for the provision of ancillary and balancing services under NETA, DTI/OFGEM Generation Working Group, 9 November 2000
53. IEA DSM Agreement, Task XI Reports:
   Subtask 1 - Smaller Customer Energy Saving by End Use Monitoring and Feedback (July 2005)
   Subtask 2 - Time of Use Pricing for Demand Management Delivery (September 2005)
   Subtask 3 - Demand Side Bidding for Smaller Customers (September 2005)
   Subtask 4 - The Impact of Dynamic Demand Changes on Profile Settlement Systems (October 2007)
   Subtask 5 – Demand “available” and “turndown” Mechanisms for Market Bidding of Smaller Customer Demand (October 2007)
54. Testing domestic consumer take-up of energy services: trial suspension of 28 day rule, Consultation Document, January 2004
55. The Building Regulations 2000
56. Lothian and Edinburgh Environmental Partnership (LEEP); Securing the Savings, A Report on the First Two Years of the Billsavers Project
57. Lothian and Edinburgh Environmental Partnership (LEEP); Counting the Cost, A Report on the First Year of the Billsavers Project
58. Lothian and Edinburgh Environmental Partnership (LEEP); Defining the Differences, A Report on the Extension of the Billsavers Project to Higher-Income Households
60. Wright, Formby and Holmes; A review of the energy efficiency and other benefits of advance utility metering, EA Technology, April 2000
61. L Carmichael; Nonintrusive appliance load monitoring system; EPRI Journal pp45-47; September 1990
62. F Sultanem; Using appliance signatures for monitoring residential loads at meter panel level; Electricité de France; IEEE transactions on power delivery; Vol. 6 no. 4 pp1380-1385; October 1991
63. E Campero Littlewood and J Romero-Cortes; Demand profile of domestic appliances obtained from total demand curve of household; UPEC 1997; pp899-901
65. Centre for Sustainable Energy, Towards Effective Energy Information, Improving Consumer Feedback on Energy Consumption, A report to Ofgem
66. Jerry Sprecher, BCN Data Systems Press Release, British Gas project turns up the heat, June 2002
68. SV Allera and AA Cook; Domestic Customer response to a multi-rate tariff; 7th Int Conf. on Metering Apparatus and Tariffs for Electricity Supply; Glasgow; IEE, November 1992
73. 1I Mansouri and M Newborough, Dynamics of Energy Use in Households: End-use Monitoring of Electric Cookers, Cranfield University.
77. Energywatch Work Plan 2004, p 11
78. Ofgem press release, Ofgem Urges Industry to Back Billing Campaign, July 2004
89. Haakana, Maarit VTT, Sillanpää, Liisa TTS. The effect of feedback and focused advice on household energy consumption. LINKKI Research Program on Consumer Habits and Energy Saving. Publication 16/1996 (in Finnish)
96. Data bank of Finnish legislation. www.finlex.fi
100. "The demand of electric energy, Econometric estimates and forecasts (1993-2002)”, by Dr. Evangelos Voloudakis (March 1993), ex-Chairman of Public Power Corporation S.A.
103. "Pricing measures for the electric energy saving" by Dimitrios Voumvoulakis Ass. Manager of the Retail Department (March 1999) supported in the “Estimates on the demand and offer of energy in period 1986-2000” by A. Diavolitsi and S. Balfousja (Hellenic Centre of Economics Researches 1986) and in the "Econometric investigation of the electric energy consumption in Greece", by Economy University of Piraeus (1989) about the price elasticity of the demand are the following:
Overview of the International Energy Agency (IEA)
and the IEA Demand-Side Management Programme

The International Energy Agency

The International Energy Agency (IEA), established in 1974, is an intergovernmental body committed to advancing security of energy supply, economic growth, and environmental sustainability. The policy goals of the IEA include:

- diversity, efficiency, and flexibility within the energy sector,
- the ability to respond promptly and flexibly to energy emergencies,
- environmentally-sustainable provision and use of energy
- development and use of more environmentally-acceptable energy sources,
- improved energy-efficiency,
- research, development and market deployment of new and improved energy technologies, and
- undistorted energy prices
- free and open trade
- co-operation among all energy market participants.

To achieve those goals, the IEA carries out a comprehensive program of energy cooperation and serves as an energy forum for its 26 member counties.

Based in Paris, the IEA is an autonomous entity linked with the Organization for Economic Cooperation and Development (OECD). The main decision-making body is the Governing Board, composed of senior energy officials from each Member Country. A Secretariat, with a staff of energy experts drawn from Member countries and headed by an Executive Director, supports the work of the Governing Board and subordinate bodies.

As part of its program, the IEA provides a framework for more than 40 international collaborative energy research, development and demonstration projects, known as Implementing Agreements, of which the DSM Programme is one. These operate under the IEA’s Energy Technology Collaboration Programme which is guided by the Committee on Energy Research and Technology (CERT). In addition, five Working Parties (in Energy Efficiency, End Use, Fossil Fuels, Renewable Energy and Fusion Power) monitor the various collaborative energy agreements, identify new areas for cooperation and advise the CERT on policy matters.

IEA Demand-Side Management Programme

The Demand-Side Management (DSM) Programme, which was initiated in 1993, deals with a variety of strategies to reduce energy demand. The following 18 member countries and the European Commission have been working to identify and promote opportunities for DSM:

Australia    Italy
Austria    Japan
Belgium    Korea
Canada    The Netherlands
Denmark    Norway
Finland    Spain
France    Sweden
Greece    United States
India    United Kingdom

Programme Vision: In order to create more reliable and more sustainable energy systems and markets, demand side measures should be the first considered and actively incorporated into energy policies and business strategies.
**Programme Mission:** To deliver to our stakeholders useful information and effective guidance for crafting and implementing DSM policies and measures, as well as technologies and applications that facilitate energy system operations or needed market transformations.

**The Programme’s work is organized into two clusters:**

- The load shape cluster, and
- The load level cluster.

The “load shape” cluster includes Tasks that seek to impact the shape of the load curve over very short (minutes-hours-day) to longer (days-week-season) time periods. The “load level” cluster includes Tasks that seek to shift the load curve to lower demand levels or shift loads from one energy system to another.

A total of 17 projects or “Tasks” have been initiated since the beginning of the DSM Programme. The overall program is monitored by an Executive Committee consisting of representatives from each contracting party to the Implementing Agreement. The leadership and management of the individual Tasks are the responsibility of Operating Agents. These Tasks and their respective Operating Agents are:

**Task 1**
International Database on Demand-Side Management & Evaluation Guidebook on the Impact of DSM and EE for Kyoto’s GHG Targets - Completed
Harry Vreuls, NOVEM, the Netherlands

**Task 2**
Communications Technologies for Demand-Side Management - Completed
Richard Formby, EA Technology, United Kingdom

**Task 3**
Cooperative Procurement of Innovative Technologies for Demand-Side Management – Completed
Dr. Hans Westling, Promandat AB, Sweden

**Task 4**
Development of Improved Methods for Integrating Demand-Side Management into Resource Planning - Completed
Grayson Heffner, EPRI, United States

**Task 5**
Techniques for Implementation of Demand-Side Management Technology in the Marketplace - Completed
Juan Comas, FECSA, Spain

**Task 6**
DSM and Energy Efficiency in Changing Electricity Business Environments – Completed
David Crossley, Energy Futures, Australia Pty. Ltd., Australia

**Task 7**
International Collaboration on Market Transformation - Completed
Verney Ryan, BRE, United Kingdom

**Task 8**
Demand-Side Bidding in a Competitive Electricity Market - Completed
Linda Hull, EA Technology Ltd, United Kingdom

**Task 9**
The Role of Municipalities in a Liberalised System Completed
Martin Cahn, Energie Cites, France

**Task 10**
Performance Contracting Completed
Dr. Hans Westling, Promandat AB, Sweden

**Task 11**
Time of Use Pricing and Energy Use for Demand Management Delivery
Richard Formby, EA Technology Ltd, United Kingdom

**Task 12**
Energy Standards
To be determined
Task 13  Demand Response Resources - *Completed*
          Ross Malme, RETX, United States

Task 14  White Certificates – *Completed*
          Antonio Capozza, CESI, Italy

Task 15  Network-Driven DSM
          David Crossley, Energy Futures Australia Pty. Ltd, Australia

Task 16  Competitive Energy Services
          Jan W. Bleyl, Graz Energy Agency, Austria

Task 17  Integration of Demand Side Management, Distributed Generation, Renewable
          Energy Sources and Energy Storages
          Seppo Kärkkäinen, VTT, Finland

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