



# *IEA Implementing Agreement*Demand-Side Management Technologies and Programmes

FORTIETH
EXECUTIVE COMMITTEE

MEETING

PRE-MEETING DOCUMENT (PMD) Part I

> 14 – 16 November Espoo, Finland

# Fortieth Executive Committee Meeting 14 – 16 November 2012, Espoo, Finland

14 – 16 November 2012, Espoo, Finland								
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#### MATTERS FOR THE EXECUTIVE COMMITTEE

#### EXTENSIONS 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

#### Report from the Project Preparatory Committee – Document B

This Project preparatory Committee report is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a request to:

• Approve the Report

# Agenda item: 3a. IEA DSM Programme Dissemination (The DSM University) – Document C

This report is submitted to the IEA DSM ExCo meeting in Espoo, Finland with a request for the ExCo to:

- Approve the Report
- Decide to proceed with the DSM University

# **Agenda item 3b. Work related to Transmission Company Issues – Document D** (not received for the PMD – may be distributed before the ExCo meeting)

This proposal is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a request to:

• Decide to develop the proposal further

# Agenda item 4a. Task 17 – Integrattion of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages – Task Status Report - Document E

The Task Status Report of Task 17 is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a request to:

- Approve the Task Status Report and the extension of Task 17 Pahse 2 which is finished
- Decide that the reports of the extension should be publically available immediately after the ExCo meeting

# Agenda item 4a. Extension of Task 17 - Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages – Document F

This proposal is submitted to the IEA DSM ExCo meeting in Espoo, Finland with the request to:

- Approve the proposal and decide on the topics that could be used to develop a draft work plan
- Research potential budgets for the proposed topics

# Agenda item 4b. Task 23 - Role of the Demand Side in Delivering Effective Smart Grids – Task Status Report - Document G

The Task Status Report of Task 23 is submitted to the IEA DSM ExCo meeting in Espoo, Finland with a request to:

- As the Task status report was not approved at the ExCo meeting in Norway, the Executive Committee members are requested to approve the Revised Work Plan
- Aprrove the Task Status Report

# Agenda item 4c. Task 24 - Closing the Loop - Behaviour Change in DSM: From Theory to Practice - Task Status Report - Document H

This Task Status Report is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a request to:

• Approve the Task Status Report

# Agenda item 4c. Proposal for Extension 2014 – 2016. Task 24 – Clogin the Loop – Behaviour Change in DSM: From Theory to Practice – Document I

The proposal for Extension for Task 24 is submitted to the IEA DSM ExCo meeting in Espoo, Finland with a request to:

- Hear the Executive Committee members thoughts on potential suitable thesemes or activities in the respective member countries at the ExCo meeting in Finland.
- Decide to work on a detailed and country tailored proposal to voted on at the ExCo meeting in April 2013.

# Agenda item 5a. Task 16 - Competitive Energy Services Phase 3 - Energy Efficiency Demand Response Services - Task Status Report - Document J

The Task Status Report for Task 16 is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a request to:

• Approve the Task Status Report

# Agenda item 5b. Task 21 – Standardisation of Energy Savings Calculations – Task Status Report – Document J

This Task Status report is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a request to:

• Approve the Task Status Report

# Agenda item 5c. Task 20 – Branding of Energy Efficiency – Task Status Report – Document K

This Task Status report has been submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a reuest to:

- The Executive Committee is requested to approve the request of the Operating Agent to restart the work and approve the Work Plan. Further the Operating Agent will not raise any further invoices to any country.
- Approve the Task Status Report

# Agenda item 6b. The IEA DSM Programme – (draft) New Work Plan – A synthesis of the questionnaire – Document M

The (draft) New Work Plan is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with the request to:

• Develop the New Work Plan

#### Agenda item 7a. Programme Visibility Report – Document N

The Programme Visibility Report is submitted to the IEA DSM ExCo meeting in Espoo, Finland, with a request to:

• Approve the report

#### Part III of the PMD

#### Agenda item 8a. Financial Report 2012 and proposed Budget 2013

The Financial report 2012 and proposed Budget 2013 is submitted to the IEA DSM ExCo meeting in Espoo, Finland with a request to:

• Approve the Financial Report 2012 and the proposed Budget 2013

#### IEA Demand-Side Management Programme Fortieth Executive Committee Meeting

14 – 16 November 2012

#### AGENDA - DOCUMENT A

#### Wednesday 14 November, 2012

09:30 – 16:30 **WORKSHOP:** "Current issues in Demand Side Management"

17:00 – 18:00 Visibility Committee meeting 18:00 – 20:00 Operating Agents Meeting

#### Thursday 15 November, 2012

1a. Welcome – *Rob Kool* 

1b. ExCo approval of the AgendaDOC A1c. ExCo approval of the Thirty Ninth ExCoDistributedmeeting Minutesearlier

1d. Status of the Implementing Agreement

1e. IEA Relations

- Secretariat news ATT A

- Contacts with country representatives

- Contacts with possible sponsors/ new participants

Rob Kool, Steve Heinen, Desk Officer
- IA relations, BCG and ECG, Rob Kool

#### 2. OPERATING AGENTS MEETING

2a. Operating Agents meeting report – Rob Kool

10:30 - 11:00 **Coffee Break** 

11:00 – 12:30 Report from the Project Preparatory Committee (PPC) DOC B

Rob Kool, Hyeoung-Jung Kim, Hans Nilsson

3. NEW WORK

3a. Development of a DSM University - Hans Nilsson DOC C

3b. Work related to Transmission Company issues

DOC D

Jan Ove Grande, Statnett, Norway (to be confirmed)

12:30 - 13:30 **lunch** 

#### 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.

- Decide to pursue the subject in co-operation with other parties within the IEA or elsewhere
- 5. Rejection (or moth-balling)

13:30 – 14:00	Pre	ese	ntati	on	Eu	ropean	Copper	Institute	(ECI) –
						•			

Mr. Hans de Keulenaer

Presentation Electricity Generating Authority (EGAT), Thailand – *Ms. Napaporn Phumaraphand* 

14:00 – 16.00 (Incl. coffee break)

#### 4. CURRENT TASKS - LOAD SHAPE CLUSTER

4a. Task 17 – Integration of DSM with other
Distributed Energy Resources – Phase 2
Seppo Kärkkäinen, Elektraflex, Finland

Extension of Task 17 – Matthias Stifter DOC F

4b. Task 23 - Role of the Demand Side in Delivering Effective DOC G Smart Grids – Task Status Report, *Linda Hull, EA Technology, United Kingdom* 

4c. Task 24 Closing the Loop – Behavior Change in DSM: DOC H From Theory to Practice

Sea Rotmann, EECA, New Zealand

Extension Task 24 – Sea Rotmann DOC I

#### 16:30 – 18:30 5. CURRENT TASKS – LOAD LEVEL CLUSTER

5a. Task 16 – Competitive Energy Services - Phase III DOC J Energy Efficiency and Demand Response Services Jan Bleyl, EnergeticSolutions, Austria

5b. Task XXI – Standardisation of Energy Efficiency
Calculations -Task Status Report DOC K
– Harry Vreuls, NL Agency, Netherlands

5c. Task XX – Branding of Energy Efficiency Services,
Task Status Report, *Balawant Joshi, ABPSInfra, India* 

Adjourn Hosted dinner 19:30

#### Friday 16 November, 2012

8:30 – 12:30 (incl. coffee break)	6. FUTURE OF THE DSM PROGRAMME –						
(mer. correct oreak)	6a. Report from the workshop						
	6b. Summary of the evaluation questions form - new work plan for the IEA DSM IA, next five years <i>Rob Kool and Hans Nilsson</i>	DOC M					
	6c. Discussions regarding the application for another 5 year term						
12:30 – 13:30	lunch						
13:30 – 14:30	<ul><li>7. PROGRAMME VISIBILITY</li><li>7a. Programme Visibility Report, <i>Rob Kool</i> Website statistics</li></ul>	DOC N ATT B					
	8. ADMINISTRATIVE MATTERS						
	8a. Financial Report 2013, Hyeong-Jung Kim	Part III					
	Accountax Status Report	Part III					
	5 year summary of account status	Part III					
	8b. Status of Common Fund payments – <i>Hyeong-Jung Kim</i>	Part III					

# APPENDIX TO THE AGENDA "Issues for the decisions and the process to reach decisions"

The delegates are URGED to prepare their responses to presentations carefully and primarily by contacting 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;
- Expectations/Results and Deliverables
- Dissemination plan what will need to be done to get the results adopted? Who will do it?
- Required resources

#### Concept and Task Definition Papers (Process and phases)

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

#### PHASE 1: IDENTIFY NEW ACTIVITIES

#### Resulting in a CONCEPT PAPER (2-5 pages) containing

- Motivation
- Objectives
- Approach
- Expectations/Results

#### **PHASE 2: DEFINE NEW ACTIVITIES**

#### Requiring an EXPERTS MEETING to propose

- Task Work Plan Resource needs: Task or cost sharing
- Dissemination, Task Information Plan

#### CONTENTS OF PROPOSALS FOR NEW WORK.

The document that will propose the new work to the ExCo could be organized and have the Following contents:

- 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 IA's, the Secretariat and other interested parties
- 12. Country contributions to funding and tasks

Annexes: Detailed description of sub-task

#### APPENDIX 1

	TASKS								
Participant	In Forc	e		In prepa	ration	Proposed			
	XVI	XVI ext.	XVII	XX	XXI	XXII	XXIII	XXIV	
	Competitive Energy Services	DR for smart grids. Business cases and energy services	Integration of DSM, Distributed generation, etc	Braning of Energy Efficiency	Energy Standards	Energy Eiency Portfolio Standardsffic	DSM in delivering smart grids	DSM From Theory to practice	DSM University
Australia,									
Austria,	X	X	X					?	?
Belgium	X	?					?		
Finland,		?	X					?	?
France,			X	X	X		?		
Greece,									
India	X			X		X			
Italy,									
Korea,		X			X		X	?	?
Netherlands,	X	X	X		X	?		?	?
New Zealand									
Norway,		?			X		X	?	?
Saudi Arabia								?	?
South Africa					?				
Spain,	X	?	X	X	X	X	?		
Sweden,		?		?			?	?	?
Switzerland		?			х			?	
United Kingdom,					?		?	?	?
United States,		?		X	X				
RAP						X		?	?
OPERATING AGENT (OA)	Jan W. Bleyl	Jan W. Bleyl	Seppo Kärkkäinen	Balawant Joshi	Harry Vreuls	Balawant Joshi	Linda Hull	Sea Rotamn	Hans Nilsson

# ACTION ITEMS RESULTING FROM THE FORTIETH EXECUTIVE COMMITTEE MEETING OF THE IEA DSM PROGRAMME

14 – 16 November, 2012, Espoo, Finland

	14 – 10 November, 2012, Espoo, Finiana	
WHO	ACTION	WHEN
Rob Kool	Inform Executive Committee members on the progress of finding a new Vice-Chairman	ASAP
Beglim, Finland France, Korea	Pay Common Fund invoice for 2011	ASAP
Rob Kool	Contact Schneider and confirm their intent to become Sponsors or not	ASAP
Rob Kool Anne Bengtson	Send letter to Greece, regarding the resolution to deem them withdrawn from the DSM IA	DONE
Rob Kool Hyeoung-Jung	Contact Doug Cooke IEA – re: IEA DSM contributing to IEA report that will examine retail market development and the potential role of smart technologies and related integration/deployment issues	ASAP
Steve Heinen	Look into why IEA workshop material is no longer available on the IEA website	ASAP
Rob Kool	Contact EUWP and EEWP to ask about added value in attending ECG and BCG meetings, and what are the options for the DSM Programme in relation to EUWP's work on Smart Cities.	ASAP
Rob Kool	Maintain contacts with New Zealand, South Africa, Kuwait, Saudi Arabia, Russia	Ongoing
Rob Kool	Maintain contacts with Eurelectric, Electrolux, Edison Electric Institite, the National Resource Defense Council (NRDC), the Research Group on Energy and Communications Technologies (EnCT), Germany, the National Development and Reofrm Commission (NRDC), China, Kuwait Institute for Scientific Research and the King Abdul-Aziz University, Saudi Arabia.	Ongoing
Anne Bengtson	Send monthly reminders to countries to pay their invoice(s) to the Common Fund	Ongoing
Operating Agents	Send papers that have been presented at conferences and seminars to ExCo members and put on the website	Ongoing
Hans Nilsson	Develop the Scoping Study further and present at the Next ExCo meeting	Ongoing
ExCo members OA's	Submit ideas and contributions for the special issue on DSM in the journal "Energy Policy"	Ongoing
Harry Vreuls	Finalise the draft Work Plan and send to Executive Committee members May/June	May/June
Operating Agents	Include costs in the overall budget for updating their Task after completion	Ongoing
Seppo Kärkkäinen	Write article and column to highlight the results of Task 17 to pave the way for continuation of the work	ASAP
ExCo members	Help find a new Operating Agent for Task 17	ASAP
Linda Hull	Follow up on interest in the Task and start up work as soon as four countries have joined the Task	ASAP
Jan Bleyl	Follow up interest from countries to participate in task 16 – Phase III	Ongoing
Rob Kool	Ask Operating Agent Task 20 for new proposal and work plan	ASAP
Anne Bengtson	Send out ballot with new proposal and work plan for Task 20.	ASAP when received

#### Cont. Action Items

Richard Cowart	Publish the Task 22 report through RAP's publication process	ASAP
Richard Cowart DSM	Disseminate the published report immediately through RAP and DSM distribution channels	ASAP
Secretariat		
DSM Secretariat	Send out press release	ASAP
Task 24 and AdvisoryCommittee	Test Task 24 Expert Platform	ASAP
Anne Bengtson	Ballot final Work Plan Task 24 to Executive Committee members	ASAP
Solstice	Provide revised proposal to Chairman and Vice Chairman based on Visibility Committee and ExCo discussions	ASAP
ExCo members	Future of the Agreement: Come up with suggestions for the evaluation questions	Mid September
Anne Bengtson	Send reminder about mid-September deadline for suggestions to the evaluation questions	First September
Hans Nilsson	Prepare developed Scoping Study and send to Anne	12 October
	Bengtson for inclusion in the Pre-Meeting Document	2012
Sea Rotmann	Prepare Task Status Report and send to Anne Bengtson	12 October
Ruth Mourik	for inclusion in the Pre-Meeting Document	2012
Linda Hull	Prepare Task Status Report and send to Anne Bengtson	12 October
** ***	for inclusion in the Pre-Meeting Document	2012
Hans Nilsson	Further develop the proposal on a DSM University and	12 October
	present at the next ExCo meeting – send to Anne  Pengtoon for inclusion in the Bra Meeting Decement	2012
Ion Dlavi	Bengtson for inclusion in the Pre-Meeting Document  Property of Took Status Penert for Took XVI Place III and	12 October
Jan Bleyl- Androschin	Prepare a Task Status Report for Task XVI Phase III and send to Anne Bengtson for inclusion in the Pre-Meeting Document	2012
Seppo	Prepare Final Management Report and send to Anne	12 October
Kärkkäinen	Bengtson for inclusion in the Pre-Meeting Document	2012
Rob Kool	Prepare PPC progress report and send to Anne Bengtson	12 October
Hyeong-Jung Hans Nilsson	for inclusion in the Pre-Meeting Document	2012
ExCo members	Suggest article for the Spotlight Newsletter and provide input	Ongoing
Pam Murphy	Distribute issues of the Spotlight Newsletter	July, October
Pekka Koponen	Prepare administrative details for the Fortieth Executive	ASAP
Anne Bengtson	Committee meeting in Espoo, Finland	
Jan W Bleyl	Prepare a Task Status Report for Task XVI Phase II – Competitive Energy Services and send to Anne Bengtson for inclusion	12 October 2012
Harry Vreuls	Prepare a Task Staus Report on Standardisation of Energy Savings Calculations and send to Anne Bengtson for inclusion in the Pre-Meeting Document	12 October 2012
Balawant Joshi	Prepare a Task Status Report on Task XX – "Branding of Energy Efficiency" and send to Anne Bengtson for inclusion in the Pre-Meeting Document	12 October 2012
Hyeong-Jung Kim	Prepare Financial Report for 2013 and send to Anne Bengtson for inclusion in the Pre-Meeting Document	12 October 2012
Anne Bengtson	Prepare Visibility Committee report and send to Anne Bengtson for inclusion in the Pre-Meeting Document	12 October 2012
Operating	Prepare task Information Plan and include in each Task	Ongoing
Agents	Status report	Oligonig
Solstice	Provide statistics for every Task every six months, sen to	12 October
	Anne Bengtson for inclusion in the Pre-Meeting	2012

	Document	
Anne Bengtson	E-mail pdf file Pre-Meeting Document for the Fortieth	21 October
	Executive Committee meeting to the Executive	2012
	Committee members and Operating Agents.	

# AGENDA 2a. (40th meeting of the IEA DSM Programme) Document B

# Report from the **Project Preparatory Committee**

September 2012

Prepared by Rob Kool

This Project Preparatory Committee report is submitted to the IEA DSM IA EXCO meeting in Espoo, Finland with a request for the EXCO to:

• Approve the Report

Participants: Hyueong-Jung Kim, Hans Nilsson,

Rob Kool, Anne Bengston, Maria Alm,

Absent: Sea Rotmann

Date: 24-08-12

#### Short Notes:

1. Opening: Rob will have his holiday in October, so preparation of the next ExCo will have to be done in September.

- 2. Adoption of the agenda: ok
- 3. Vice chair: Maria will answer in about a week if she's able to accept the VC role. This is no problem for our work. Doing the work right and having the necessary time is an important part of the decision.
- 4. Actions in Norway minutes. Most of them concern the next agenda items. Here we have to discuss:
  - 1. Rob will most likely succeed Renée Bruel as Dutch delegate of EUWP with. This might help with the info they are asking. Anne and Rob tried to provide them with the necessary information.
  - 2. Rob will contact Doug Cooke and Schneider Electric, Edison Electric, NRDC. Anne will provide the contact details (Action Anne, Rob)
  - 3. In our last telecom we noticed IEA material/website problems are caused by transfer to new website. This still seems to be a mess. Rob will ask Steve Heinen to look at is.
- 5. Visibility / Proposal Solstice
  - 1. Anne has send out a press release. This caused a lot of problems due to the limitation of the number of e-mails that one can send at once. Anne will contact Matt of Solstice.
  - 2. Anne to ask Matt when the agreed upon new developments on the DSM website will take place the sooner the better!
- 6. Ongoing work:
  - 1. Task XVI: Jan Bleyl will have a first meeting on the extension of his Task in September. We'll try to push him to come with a scoping paper before November.
  - 2. Task XVII: Austria and the Netherlands have indicated they want to take over the O.A. We'll talk with Seppo and ask him to coach them, as recent experience has showed that new OA's really need that. Hans will contact Seppo.
  - 3. Task XX: Balawant will finalise the report based on the available material. Ajay Mathur didn't react, but we have to take a decision.
  - 4. Task XXIII: Linda has started the Task
  - 5. Task XXIV: Also up and running, but we'll have to discuss the extension. Norway was the last country that signed up.
- 7. New work:
  - 1. DSM university: Hans is working on it, University of Porto, Portugal has shown interest.
  - 2. TSO's is a topic mentioned after the workshop in Trondheim. Norway is working on defining a new Task. Need to present a concept paper at the meeting in November.

#### 8. (New) Members:

- 1. Saudia Arabia is still not clear, Rob will contact Abdul Aziz. HJ had contacts with an electricity agency responsible for DSM. HJ to send the name to PPC. We'll inform both of our contacts and try to get the country to become member.
- 2. Answer from Schneider Electric is also a point of attention (action Rob)
- 3. H.J. will a closer look at the latest answer from Japan on the possibilities and give advice on who to approach.
- 4. HJ has been to a conference at the VAR. They have some interest. Korea will keep in touch with them. And HJ will keep pushing them (continued).
- 5. Rob will have a meeting with the European Copper Institute (Hans de Keulenaer) next month to become a sponsor.

#### 9. Finances

1. HJ send a 5 year analyses that can be used for presenting the finances. We'll use this in the next PMD.

#### 10. Next work plan.

- 1. Only Italy has reacted so far on the questionnaire. Anne will send reminders.
- 2. She will also do the data.
- 3. Rob will write the "future" part.
- 4. Anne will ask Steve how the timing is (EUWP & CERT)
- 5. Rob will write the new strategy

#### 11. Any other business.

- 1. Next telecom early November, shortly before the next EXCO.
- 2. Maria mentioned and attended a new IA 4S, related to technological appliances, they are discussing a Task which is rather close to DSM. Maria to send info to PPC members.

Agenda 3a.

#### **DOCUMENT C**

# IEA DSM Programme Dissemination (The DSM University)

Hans Nilsson, Advisor FourFact, Sweden

This report is submitted to the IEA DSM IA EXCO meeting in Espoo with a request for the EXCO to:

- Approve the Report
- Decide to proceed with the DSM University

#### **IEA DSM-Programme Dissemination (The DSM University)**

It has been recorded a good amount of results from in total 24 Projects (Tasks-Annexes) during the 20 years of Programme work. Much of these are still relevant even if technologies for DSM-applications have developed significantly and supply side technologies for small-scale, distributed use have been made available. The earlier clear distinction between demand side and supply side has been more diffuse, but the logic that energy efficiency (reduction of demand) should go first in order to reduce the need for supply capacity, remains. As the IEA DSM Strategy (2008-2012) says:

<u>Vision</u>: Demand side activities should be **the first choice** in all energy policy decisions designed to create more reliable and more sustainable energy systems.

#### Introduction

The aspiration for demand side activities has been to "level the playing field" so that demand side investments should be made on conditions equal to those on the supply side. The energy service (light, heat, cooling, motive power) that the user asks for can be delivered and maintained by use of energy either in an installation with low efficiency or one with high efficiency (that requires less energy for the job). The latter is often subject to a higher investment that is motivated by the savings in energy. The customer (demand side) with little knowledge in technology and with little access to finances is reluctant to make such investments.

The supply side companies on the opposite are professionals in technology and have better access to financing. Since selling energy is their business they prefer the option to build more capacity and sell more energy.

The traditional DSM activities have been to make the demand side options more attractive and accessible to users by providing the more efficient options on more favourable terms. The development of the DSM has however aimed on changing the business for the utilities to deliver the services instead of the energy.

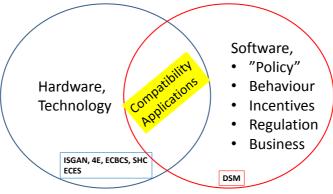
We are however still (at best) in the middle of this transition of business models. The British researcher Walt Patterson has said: "We hear a lot about competition as a way to get the best energy services. What we need to understand is that the key competition is not between different suppliers of fuel or electricity. The key competition is between fuel and technology. The better the user-technology, the less fuel we need to get the service we want. We need to shift the balance away from fuel, toward technology."

The results from the IEA DSM-Programme have both theoretical, experimental and "best case" backgrounds for different applications of DSM, depending on circumstances in different environments.

We have however found that these experiences are not sufficiently disseminated. Once the projects have delivered to its stakeholders the material goes on the shelf. Given the urgent need to improve energy efficiency globally the low level of dissemination is unsatisfactory.

<sup>&</sup>lt;sup>1</sup> "Everything you know about electricity is wrong". http://www.abc.net.au/environment/articles/2011/06/10/3239321.htm

We have also noted an IEA-internal demand for results that the DSM-Programme has made. Many of the more technology oriented Programmes have a need for material on <u>technology function and -market</u> developed within the DSM-Programme for their considerations on <u>technology design</u> (see figure). There is an equal need to supply information within other global actions (including the IEA secretariat) to make joint efforts more rewarding and to avoid duplication.



The guiding principles for the DSM-Programme must take dissemination more seriously. Our mission (according to the present strategy) is:

Mission: To deliver to our stakeholders useful information and effective guidance for crafting and implementing DSM policies and measures, along with the necessary technologies and applications, which together can transform markets and facilitate energy system operations.

#### The stakeholders

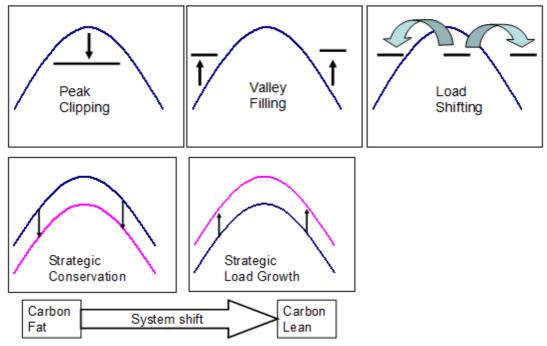
Our stakeholders are of 2 categories. The primary who represents those who finances our work and who performs DSM as a part of their daily work (decision makers, manages and programme responsible). The secondary who has their own missions (Initiatives, Missions and Research), but who can be co-workers and/or whose results can cross-breed ours.

Target Group	Should learn about	Via Channel	With Product
Decision makers	Costs and Benefits	<ul><li>IEA Secretariat,</li><li>ExCo members,</li><li>Operating Agents</li></ul>	<ul> <li>Direct Contacts (supported by e.g. flyers)</li> <li>Seminar presentations</li> </ul>
Managers	<ul><li>Organisations,</li><li>Governance,</li><li>Planning,</li><li>Methods</li></ul>	<ul><li>Workshops</li><li>Newsletter</li><li>Journals (engineering and R&amp;D)</li></ul>	Articles (both on projects, tasks, and on crosscutting issues)
Programme responsible	"Tricks" of the trade	Social Media	
Initiatives (e.g. IPEEC, CEM, IRENA etc.) Missions (ICLEI, Energy-Cities, etc.)	THAT IEA DSM exist and WHAT we can do together	<ul> <li>IEA Secretariat,</li> <li>ExCo members,</li> <li>Operating Agents</li> </ul>	<ul> <li>Direct Contacts (supported by e.g. flyers)</li> <li>Seminar presentations</li> </ul>
Research and organisations (e.g. ACEEE, ECEEE, CCEEE)	What material that is available for their "inspiration" and how it connects to their work.	Assessment lists, surveys, act studies, activation of member	tive participation in e.g. summer rs on social media.

#### The issues - Framework

#### DSM and what it can do

In the Annual Report 2010 there was a survey of how DSM appeared in Scientific Journals called "There is a DSM for every need". In this there is a structure that can be used to address the needs for decision-makers and managers to learn about what DSM can do. We need to produce some overarching material that describes cost-benefit in relation to how DSM-measures impacts the load (see figure below), provides some brief examples and shows the basic elements in a DSM strategy for a company/country.



Such a description should be:

- a) Updated and reflect on today's policy issues (climate, reliability, energy security)
- b) Relate to present discussion items (smart meters/grids, renewables, integration of resources, etc.)
- c) Relate to our tasks and indicate what they have to provide
- d) Relate to technology IAs within the IEA
- e) Possibly name secondary stakeholders (as above) when relevant.

#### Implementation and business models

DSM applications are different depending on local circumstances (market organisation, tradition, skills, etc.) but still with similarities. There is a need for planning, calculation, verification etc.

We may consider to provide a survey that can guide readers to find proper and relevant models that fits their situation, c.f. Annual Report 2008 and table below.<sup>3</sup>

 $^2 \, \underline{\text{http://www.ieadsm.org/Files/Exco\%20File\%20Library/Annual\%20Reports/2011AR.pdf}$ 

			Example	
DSM	-concept	Change agent role	Place	#
	Monopolised markets	Deliver products and services	Paradip Port (India)	A
utilities as they are)	Customer aggregation	Fundraising	Public Benefit Charges (USA)	В
	Liberalised markets	Mandate utilities to achieve a set level of energy efficiency	White Certificates (Italy, some Australian states) and EE Commitment (UK)	С
Incentivising utility to deliver energy		Decouple profit from sales volume	California Investor-owned Utilities	D
Energy Efficiency Power Station		Aggregate energy efficiency projects to the scale of a virtual power plant	Jiangsu, Shanghai and Guangdong (China) Efficiency Vermont	Е
Government Deployment schemes		Aggregation of purchasing power	FEMP (USA), Technology procurement (Sweden)	F

In particular there is a need to describe different business models that can be used either by utilities or by companies that provide energy efficiency services.

Tis must be related also to technological issues and development as above.

#### Energy Journals and conferences

We should address different journals (international and national) with articles within the framework above but with results from the tasks, ongoing and past.

These journals may be both scientific and more popular.

Conferences, in particular the more wellknown aceee and eceee, should be suggested to cover also DSM-issues, but we should also consider to address existing panels with our material but tailored to them. Example for eceee 2013:

ECEEE 2013 panel topic	IEA DSM relation
Foundations of future energy policy	Evolution of the DSM concept and application
	in new surroundings, e.g. Task XVI, XVII,
	XVIII, XXII
Energy efficiency policies: What delivers?	Examples from several tasks e.g. Task XIV
Local action and national examples	Task XI and XV
Transport and mobility: How to deliver	-
energy efficiency	
Cutting the energy use of buildings	E.g. Tasks dealing with Demand Response
Appliances, product policy and ICT	As above
Monitoring and evaluation	Task I and XXI
Dynamics of consumption	Task XXIII and XXIV

#### **Contacts made**

Energy Policy, Life Academy, IRENA, European Energy Innovation, SIDA South Africa, GIZ Mongolia, University of Porto

3

 $\underline{http://www.ieadsm.org/Files/Exco\%20File\%20Library/Annual\%20Reports/ar08\_091028\_we\_\underline{b.pdf}$ 

# Agenda 3b. (40<sup>th</sup> meeting of the IEA DSM Programme)

#### **Document D**

## **Work related to Transmission Company issues**

### Jan Ove Grande Statnett

## Not received any documentation for the PMD

This proposal is submitted to the IEA DSM ExCo meeting with a request for the ExCo to:

• Approve the proposal and decide to proceed

# Agenda 4a. (40<sup>th</sup> meeting of the IEA DSM Programme)

#### **Document E**

#### **Task Status Report**

## Task 17 – Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages

Seppo Kärkkäinen Elektraflex Oy

The Task Status Report of Task 17 is submitted to the IEA DSM ExCo meeting with a request for the ExCo to:

- Approve the Task Status Report and that the extension of Task XVII Phase 2 is finished
- Decide that the reports of the extension should be publically available immediately after the ExCo meeting.

#### INTERNATIONAL ENERGY AGENCY

# IMPLEMENTING AGREEMENT ON TECHNOLOGIES AND PROGRAMMES FOR DEMAND SIDE MANAGEMENT

Task 17: Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages

# Task Status Report October 2012

Seppo Kärkkäinen
Operating Agent
seppo.karkkainen@elektraflex.com

Prepared for the EXCO meeting in Finland 15 - 16, November 2012

#### 1. INTRODUCTION

At the Executive Committee meeting in April 2006 in Copenhagen the executive committee members decided to start the Task XVII.

The negotiation phase took clearly more time than originally planned. Finally, the Task definition and legal annex were finalised in August 2007 and the Task started in September/October 2007 and the first phase of the Task was finished in November 2008. Task extension was accepted in Vienna EXCO in April 2009 and confirmed in Chester EXCO in October 2009.

#### 2. SUMMARY OF OBJECTIVES AND SUBTASKS OF THE PHASE I

#### 2.1 Objectives

The main objective of the Task is to study how to achieve the optimal integration of flexible demand (Demand Response, Demand Side Management) 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 at the electricity market. The Task deals with integration aspects both at local (distribution network and customer) level and at transmission system level where large wind farms are connected.

Thus the integration means in this connection

- how to optimally integrate and combine Demand Response and Energy Efficiency technologies with Distributed Generation, Storage and Smart Grids technologies, at different network levels (low, medium and high voltage)
- and how to combine the above mentioned technologies to ideally support the electricity networks and electricity market

The Task will provide the integration based solutions and examples on successful best practices to the problems defined above to the different stakeholders.

#### 2.2 Approach

The first step in the Task was to carry out a scope study collecting information from the existing IEA Agreements, participating countries and other sources (research programmes, field experience, information collected through Cigre working groups, etc), analyse the information on the basis of the above mentioned objectives and synthesize the information to define the more detailed needs for the further work.

On the basis of the collected information a systematic analysis was carried out to produce the state of the art to the integrated approach of the utilisation of Demand Response and Energy Efficiency in combination with other DER aspects and barriers related to it and to define the detailed further work. Also the first sets of best practices were produced.

At the end of the scope study a workshop with the stakeholders was arranged to get feedback and inputs from outside to the conclusion and the definition for the future work.

#### 2.3 Results of the scope study

The final reports were reviewed by the experts and published in the web-site as the key publications:

- Task XVII Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages - Final Synthesis Report vol 1.
- Task XVII Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages - Final Synthesis Report vol 2.

Vol 1. includes the main report and Vol 2. is the annex report with country descriptions, analysis tools etc.

In spite of these public reports the secure web-site includes the answers to questionnaires of the experts and descriptions of about 50 case studies.

# 3. TASK EXTENSION: the assessment the effects of the penetration of emerging DER technologies to different stakeholders and to the whole electricity system

In the EXCO meeting in Vienna the task extension was accepted and it was confirmed in the Chester meeting with some modifications related to the participation of Australia. The main topic of the Task extension is to assess the effects of the penetration of emerging DER technologies to different stakeholders and to the whole electricity system. The emerging DER technologies to be discussed include:

- plug-in electric and hybrid electric vehicles (PEV/PHEV)
- different types of heatpumps for heating and cooling
- photovoltaic at customer premises
- micro-CHP at customer premises
- energy storages (thermal/electricity) in the connection of previous technologies.
- Other technologies seen as feasible in 10 20 years period, especially by 2020. At the
  first expert meeting the following additions were agreed: smart metering, emerging ICT
  and possibly small wind at customer premises.

The main Subtasks are (in addition to Subtasks 1 - 4 of the phase one):

Subtask 5: Assessment of technologies and their penetration in participating countries

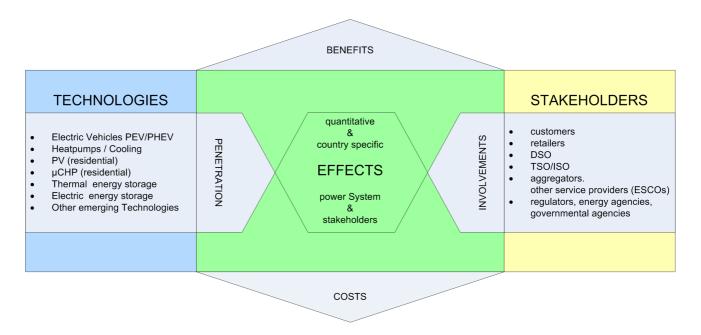
Subtask 6: The collection of new pilots and case studies

Subtask 7: Stakeholders involved in the penetration and effects on the stakeholders

Subtask 8: Assessment of the quantitative effects on the power systems and stakeholders

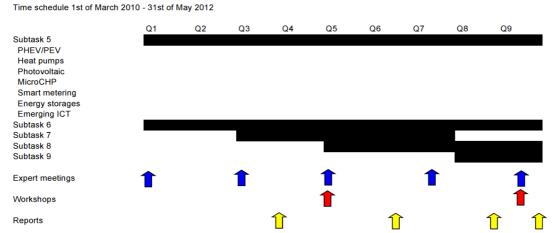
Subtask 9: Conclusions and recommendations

The figure below describes the concept of this extension. The more detailed descriptions of the subtasks is given below



#### 3.1 Time schedule

The total length of the Task extension is 2 years. The aim was to start work in May/June 2009. In practice, the work started in March 2010 and the original aim was that the work will be finished by the end February in 2012. However, in EXCO meetings in Jeju and Norway 3 moths' no-cost extensions were accepted, and the finishing date is 31<sup>st</sup> August 2012.



#### 3.2 Budget and invoicing

Original budget was as follows

#### **Operating Agent**

Personnel costs (12 person months) 174,000 € Travels and workshops 21,000 € **Total** 195,000 €

The assumed number of participants was 6, which gave the costs per country  $32,500 \, €$ . However, the final number of participating countries is only 5. In the EXCO meeting in Washington it was agreed to decrease the total budget into  $162,500 \, €$  which means that the costs per country remains as  $32,500 \, €$ .

The countries will be invoiced in three amounts. The estimated invoicing times are:

In 2010: 16,250 € per country (paid)

In 2011: 8,125 € (paid) and

In 2012: 8,125 € (at the end of Task, invoiced)

#### 3.3 Country experts

Estimated inputs from country experts are about 2 person-moths

#### 3.4 Participation

Five countries expressed the strong interest in the Task extension: Austria, Finland, France, the Netherlands and Spain have confirmed the participation. Negotiations with several other countries have been finished without success and the final number of participants in the Task is 5.

#### 4. ACCOMPLISHMENTS SINCE MARCH 2012

The Task arranged the second public stakeholder workshop in Arnhem, the Netherlands, 25<sup>th</sup> of March. There were 31 participants from the participating countries and Belgium. The presentations are available at the IEADSM website.

Final expert meeting was arranged after the workshop 26<sup>th</sup> and 27<sup>th</sup> of April. The final inputs from the experts were agreed aiming to finish the Task at the end of August.

Telemeetings with experts were held in June and July to follow-up the progress of the Task. The following draft reports were completed in the beginning of September and sent to the acceptance of EXCO members in the middle of September.

#### In Subtask 5:

- Full electric and plug-in hybrid electric vehicles from the power system perspective. Subtask 5, Report n:o 1, 90 p.
- Micro-CHP technologies for distributed generation. Subtask 5, Report n:o 2, 55 p.
- Heat pumps for cooling and heating. Subtask 5, Report n:o 3, 65 p.
- Photovoltaic at customer premises. Subtask 5, Report n:o 4, 38 p.
- Smart metering. Subtask 5, Report n:o 5, 56 p.

#### In Subtask 7:

• Stakeholders involved in the deployment of microgeneration and new end-use technologies. Subtask 7 Report, 168 p.

#### In Subtask 8:

• Assessment of the quantitative effects on the power systems and stakeholders. Case studies from Austria and Finland. Subtask 8 Report, 48 p.

#### In Subtask 9:

• Summary and conclusions. Subtask 9 Report, 43 p.

In Subtask 6 data collection from existing pilots continued and 12 new cases were included in the database

The continuation of the Task XVII was discussed between experts and EXCO-members, and Matthias Stifter from Austria prepared a plan for the next Phase. This will be discussed in the EXCO meeting.

Seppo Kärkkäinen has participated as the representative of DSM Agreement in the IEA Head Office action:

 GIVAR 3 (Grid Integration of Variable Renewables Phase 3: The Economics of Flexibility), the first meeting in Paris December 12, 2011 and the second in Copenhagen April 16, 2012. This GIVAR 3 is still in progress, but Seppo Kärkkäinen has not been an active member since June 2012.

An article "Emerging DER technologies" was published in October Spotlight.

#### 5. WORK PLAN FOR THE NEXT 6 MONTHS

This Task extension is finished in the EXCO meeting and no official actions are planned for next 6 months.

However, Operating Agent produces two additional articles to the Spotlight on the results. The proposal of the continuation of the Task will be discussed separately.

#### 6. MATTERS FOR THE EXECUTIVE COMMITTEE

To accept the Task status report and that this Task extension (Phase 2) is finished. To decide, that the reports of the Task extension are public immediately after this EXCO meeting.

## Agenda 4a. (40<sup>th</sup> meeting of the IEA DSM Programme)

#### **Document F**

## **Extension of Task 17**

Matthias Stifter Austrian Institute of Technology

The proposal is submitted to the IEA DSM ExCo meeting with a request for the ExCo to:

- Approve the proposal and decide on the topics that could be used to develop a draft work plan
- Research potential budgets for the proposed topics

#### DSM Task XVII – Phase 3 – Definition

Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages

Author: Matthias Stifter (AIT) Version: 20.08.2012 - DRAFT

#### 1. Introduction

#### 1.1.1 Motivation

#### From the IEA-DSM Task XVII Definition (2008)

"Energy policies are promoting distributed energy resources such as energy efficiency, distributed generation (DG), energy storage devices, and renewable energy resources (RES), increasing the number of DG installations and especially variable output (only partly controllable) sources like wind power, solar, small hydro and combined heat and power. Intermittent generation like wind can cause problems in grids, in physical balances and in adequacy of power.

Thus, there are two goals for integrating distributed energy resources locally and globally: network management point of view and energy market objectives.

Solutions to decrease the problems caused by the variable output of intermittent resources are to add energy storages into the system, create more flexibility on the supply side to mitigate supply intermittency and load variation, and to increase flexibility in electricity consumption. Combining the different characteristics of these resources is essential in increasing the value of distributed energy resources in the bulk power system and in the energy market.

IEA has several Implementing Agreements dealing with distributed generation (DG) (such as wind, photovoltaic, CHP), energy storage and demand side management (DSM). However, the question of how to handle the integration of various distributed energy resources is not actually studied.

This Task is focusing on the aspects of this integration."

#### 1.2 Phase 1

- Subtask 1: Information collection on the characteristics of different types of DER in the integrated solutions
- Subtask 2: Analysis of the information collected and preliminary conclusions (state of the art)
- Subtask 3: Feedback from the stakeholders: Workshop
- Subtask 4: Final conclusions and the detailed definition of the further work

#### 1.3 Phase 2

- Subtask 5: Assessment of technologies and their penetration in participating countries
- Subtask 6: Pilots and case studies
- Subtask 7: Stakeholders involved in the penetration and effects on the stakeholders
- Subtask 8: Assessment of the quantitative effects on the power systems and stakeholders
- Subtask 9: Conclusions and recommendations of phase 2

#### 2. Scope of Phase 3

#### 2.1 Subtasks

# 2.1.1 Subtask 10 – Role and potentials of flexible consumers (households and buildings)

#### **Objectives**

Assessing the concepts and implementations of customer energy management systems (CEMS) in different (participating) countries:

- Comparing specific requirements in households vs. functional (office) buildings
- Energy balancing possibilities and potentials
- Role of Smart Meters (SM) and (CEMS) in the terms of technical concepts

#### *Technologies:*

In order to enable DSM, existing functionality and requirements of SM and CEMS according to the specifications (M/441, country specific) will be analyzed as following:

- Local balancing / local markets of the generated power/energy with the consumption
- Controlled charging and discharging of EV
- Integrating electrical storages
- Support aggregation to participate in markets and grid operation.

#### Country Experts:

Have to provide specific information about ongoing functional requirements of CEMS platforms in conjunction with smart meters and their role in market and grid participation. Innovative applications in projects and pilots will be projected to future developments by discussing penetration scenarios based on previous subtask 5.

#### Operating Agent:

Provide a semi-structured guided discussion and analysis of the country specific inputs. A methodology for generalized application and estimation of DSM potential in the future based on the provided data will be developed.

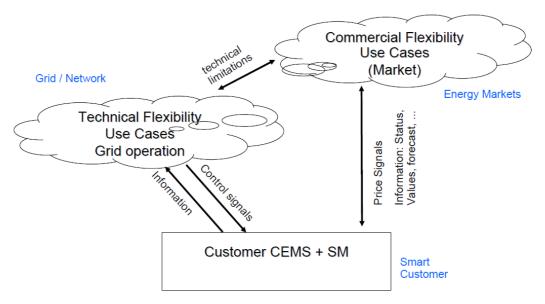


Figure 1: Providing network user's flexibilities [1]

# 2.1.2 Subtask 11 – Changes and Impacts on the grid and market operation

#### Objectives:

Quantification of impact on grid and market operation based on technology penetration scenarios developed in subtask 5.

- Improvement on grid operation
- Customer benefits
- Optimization potentials
- Methodology to estimate potential and to cost effective activation.
- Regulation issues for grid and (local) market operations

#### Interaction:

How do CEMS interact with flexibility operators (aka. aggregators)?

- Impact on the grid operation (technical flexibility)
- Impact on the market (market flexibility)
- Technical feasible but optimization necessary:
- Requirements for establishing this grid operating and market mechanisms? regulatory and legislative
- Installation and operation costs vs. delayed network investments.

#### Country experts:

Provide data and information to support the analysis of the impact on grid and market operation. This should include information from distribution network operators, system operators, energy trading and market operators.

#### Operating agent:

Analyze the country specific information and summarize the information for general recommendations, also based on the quantified effects of subtask 8.

#### 2.1.3 Subtask 12 – Sharing experiences and finding best practices

#### *Objectives:*

Based on the collected pilots and case studies from the previous subtasks the results and findings of the finished projects in term of successful implementations, barriers and effectiveness will be analyzed.

- Lessons learned from existing pilots: Workshops (E-Energy, EcoGridEU, ...)
- Comparisons and analysis of country specific differences in the implementation
- Assessment and development of a methodology to apply different DSM mechanism to individual countries.
- Extrapolation of the results from previous collected projects on applicability.

Knowledge sharing (Country experts and operating agent):

- Successful DSM projects in International context and EU context.
- Knowledge and exchange of experience best practices

#### 2.1.4 Subtask 13 – Conclusions and Recommendations

Recommendations will be based on the experts' opinion and will at least provide a priorisation based on impacts, costs and likely future penetration of the technologies.

Operating Agent and Country Experts

Final Reports: Conclusion and recommendations

#### 2.2 Task deliverables

- 1. Subtask reports and final report
- 2. Workshop proceedings

#### 2.3 Time schedule

IEA-DSM TASK XVII - Phase 3	Q1 13	Q2 13	Q3 13	Q4 13	Q1 14	Q2 14	Q3 14	Q4 14
Subtasks								
Subtask 10 - Role and potentials of flexible consumers								
Subtask 11 - Changes and impact on the grid and market operation	n							
Subtask 12 - Sharing experiences and finding best practices								
Subtaks 13 - Conclusion and recommendations								
Expert meetings								
Biannual country expert meeting								
Workshops								
Workshops with stakeholders and experts								
Reports								
Subtasks reports								
Final report								

#### 2.4 Estimated budget and resources needed

Operating agent (cost shared)

The administrative efforts for the operating agents are travel costs and personnel costs / resources necessary for editing and analyzing country specific inputs for the reports. This will be covered by the task fee:

• 15k€ per participating country

Country experts (task shared)

The estimated resources needed for the inputs of the country experts are between 1 and 2 person month.

#### References

[1] Mandate on Smart Grids, M/490, Smart Grid Standardization and Practice, CEN/CENELEC, DKE, VDE

## Agenda 4b. (40<sup>th</sup> meeting of the IEA DSM Programme)

#### **Document G**

# Task 23 Role of the Demand Side in Delivering Effective Smart Grids

#### Task Status Report October 2012

#### Linda Hull EA Technology, United Kingdom

The Task Status Report of Task 23 is submitted to the IEA DSM ExCo meeting with a request for the ExCo to:

- Approve the Task Status Report
- Approbve the revised Work Plan

International Energy Agency

## IMPLEMENTING AGREEMENT ON TECHNOLOGIES AND PROGRAMMES FOR DEMAND SIDE MANAGEMENT

# Task 23 Role of the Demand Side in Delivering Effective Smart Grids

## Task Status Report 1 October 2012

#### **Operating Agent:**

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1.	SUMMARY
2.	PROJECT WORKPLAN
3.	OBJECTIVES FOR THE LAST SIX MONTHS
4.	PROGRESS AGAINST OBJECTIVES
5.	WORK PLAN FOR THE NEXT SIX MONTHS

**MATTERS FOR THE EXCO** 

**FINANCE** 

6.

7.

#### 1. SUMMARY

The aim of the new Task is to identify and where possible quantify the risks and rewards associated with Smart Meters and Smart Grids from the perspective of the consumer, both now and in the future. By identifying the potential risks and rewards the Task would seek to develop best practice guidelines in order to ensure the demand side contributes to the delivery of effective Smart Grids

From the point of view of ordinary users, who are uninterested or unable to play an active role either on the generation or the demand side, a Smart Grid may look like a plain traditional network, to which a number of time-variable, non dispatchable generators have been added, but one that needs costly and sophisticated technologies in order to deliver an acceptable service (equal at least to the one supplied by the original network). Thus, a first step in the effective deployment of Smart Grids needs to involve the engagement of customers so that they understand that a Smart Grid is instrumental to the implementation of certain measures (renewable generation, efficiency, demand response) that facilitate the reduction of greenhouse gas emissions and make the use of energy a sustainable activity. In this perspective it is important for every user to the able to take advantage of the "smartness" of the Grid, otherwise customers will simply end up paying the cost of the Smart Grid without receiving any of the benefits.

At the 37th Executive Committee Meeting, held in Washing in April 2011, the Executive Committee members decided to initiate the Task. The members unanimously approved Linda Hull to be the Operating Agent for the Task.

#### 2. PROJECT WORK PLAN

Task 23 comprises the following Subtasks:

(For a complete description of the scope of each Subtask and its associated activities, See the full Proposal within the Pre-Meeting Document for the 37<sup>th</sup> Executive Committee Meeting, held in Washington D.C., USA, April 2011)

#### Subtask 1 Impact of energy markets on the role of customers

There are many stakeholders in the energy market with different interactions with consumers and different responsibilities. This subtask would map the interactions of different stakeholders in a 'market map' for each participating country, with the consumer as the central focus. This could include power and information flows and responsibility (e.g. for billing and metering). Ownership of data may also be an important issue from the consumer perspective and so the current situation in each country will be shown on the map.

#### **Outputs to include:**

- Market map for each participating country
- Analysis of impact of different market structures on Smart Grid implementation from the perspective of customers

#### **Subtask 2 Interaction between technology and customers**

There a number of technologies associated with the Smart Grid concept including Smart Meters, electric vehicles, heat pumps, micro-generation and energy storage as well as the control and communications needed to actively manage end-use consumption. The way that customers use and relate to these technologies has a significant impact on their ability to contribute towards an effective Smart Grid.

This subtask will draw upon the available information on Smart Grid enabling technologies in order to consider the appropriateness of these technologies, both from the customer perspective and the Smart Grid industry perspective.

#### **Outputs to include:**

- Summary of experiences of customer interactions with Smart Grid technologies
- Analysis of TRLs and MRLs of selected technologies and the impact on Smart Grid deployment.

#### Subtask 3 Identification of Risks and Rewards associated with Smart Grids

This subtask will identify the possible risks and rewards relating to the Smart Grid concept from the consumer perspective. Each of these risks and rewards are influenced by a number of stakeholders for which the Smart Grid can meet specific needs and requirements.

#### **Outputs to include:**

- Map of risk and rewards from perspective of customers
- Report chapter (s) detailing risks and rewards from perspective of customers

## Subtask 4 Defining offers and programmes (tools) to help ensure Smart Grids meet needs of customers

The effectiveness of the Smart Grid can be improved by engaging with the demand side. In order to engage with consumers and achieve their "buy-in", the Smart Grid should provide tangible benefits to customers themselves. This could include direct benefits associated with Smart Grid deployment, or additional functionality or services which represent "added value" to the consumer.

This subtask will draw upon the work that has already been undertaken in this area, and will focus on highlighting the costs and benefits associated with different approaches that have been adopted. For example, the benefits of mandating vs the ability to opt-in to a program will be considered, and the trade off between the level of functionality included within smart meters as standards against the risks and rewards for customers.

#### **Outputs to include:**

- Overview of Smart Grid experiences from the perspective of customers
- Best practice approaches
- Report chapter(s) identifying tools to ensure Smart Grids meet needs of customers

## **Subtask 5 Helping customers to actively engage with Smart Grids – Synthesis and Dissemination of Findings**

The main objective of this activity is to understand how the findings of subtasks 1 to 4 come together, and disseminate the results via a series of regional workshops organised and delivered by the Task participants. Thus, this subtask will identify the key issues that impact on the way customers interact and view Smart Grids. This will include the impact of market structure, the role of technology, the ability for customers to realise any potential rewards whilst minimising the risks, and the effective deployment of tools and measures indentified in subtask 5. Thus this subtask will focus on the factors that need to be addressed in order to ensure Smart Grids are able to achieve their full potential by ensuring that all industry stakeholders, including customers, benefit from their deployment. This subtask would include an industry workshop, to which a wider group of cross-industry stakeholders could be invited to discuss the results and findings of the Task.

#### **Outputs to include:**

- Cross-sector workshop
- Workshop proceedings
- Final report

#### 3. OBJECTIVES FOR THE LAST SIX MONTHS

The objectives for the last six months were:

- To continue to follow up on the positive responses within the Executive Committee meeting regarding participating in Task XXIII; and
- Once the minimum of four countries have signed up to participate, the Operating Agent will commence work on the Task and organise the 'kick-off' meeting.

#### 4. PROGRESS AGAINST OBJECTIVES

#### **Participation**

At the 37th Executive Committee Meeting in Washington, a total of 10 countries expressed various levels of interest in joining the Task.

Since then, participation letters have been sent out to all Executive Committee members. There have been a number of positive responses indicating a 'positive intent' to participate in the project from a number of countries. By the middle of June 2012, South Korea, Norway, Sweden and the Netherlands had signed and returned their National Participation Plans confirming their intention to participate in the project, and also signed a letter of engagement or contract with EA Technology.

Although Belgium had indicated that their intention to participate and were in the process of returning their National Participation Plan and letter of engagement with EA Technology, they subsequently withdrew their support.

There is still strong interest from UK energy suppliers and network companies, and the process of securing funding to establish a UK national team is on-going.

The possibility of Italy joining the Task on a task share basis has been raised by Italy. They have no funding to support the cost shared element of the work programme but are willing to share the results of their experiences with smart metering and time of use tariffs in Italy. This was discussed with the Task Experts during the June meeting. The experts were asked to discuss three potential options with their Executive Committee members, namely;

- 1. Italy join the project as a full participant, with access to all project outputs.
- 2. Italy attend one or two meetings, with access to all meeting documents and outputs.
- 3. No involvement.

The feedback received via the Experts was mixed. In general, participation from Italy was recognised as being of value to the project. However, one participant indicated a reluctance for option 1, as it could make it more difficult to justify the need to provide direct funding on future Tasks. Another participant, however, indicated that option 1 would not be unacceptable. As yet, no firm response has been provided from the other two participants. On this basis, it is therefore proposed that Italy be invited to one or two task meetings (Option 2).

The current status of Task 23 participants and potential participants is summarised below:

	Participation	Letter of participation	Task Expert
Korea	Confirmed	Signed and returned to	Appointed
		EA Technology	
Norway	Confirmed	Signed and returned to	Appointed
		EA Technology	
Sweden	Confirmed	Signed and returned to	Appointed
		EA Technology	
Netherlands	Confirmed	Signed and returned to	Appointed
		EA Technology	
UK	Strong interest	On-going	On-going

Thus, by mid-June the project had four confirmed project participants – the minimum number required for project commencement.

A draft legal annex text was prepared and circulated to the participating Executive Committee members for comment at the beginning of July. To date, no comments or feedback has been received.

#### **Progress against Work Programme**

The first Experts Meeting was held on 25<sup>th</sup> & 26<sup>th</sup> June, in Chester, UK. It was attended by a total of nine participants, summarised as follows:

Date	Place	Total Experts	Type of meeting	Government	Industry	Academic
25 <sup>th</sup> – 26 <sup>th</sup> June 2012	Chester, UK	9	Experts meeting	1	8	0

A National Report template was sent to Task Experts in order to collect country specific information on electricity markets. The completed National Reports were returned by all the Task Experts at the beginning of September, and the information used to produce an overall report examining the impacts of electricity markets on consumer involvement in Smart Grids.

The draft report Sub-task 1 report was completed at the end of September, and sent to the Task Experts for comment and review. It is anticipated that a further iteration of the report will be required, prior to its release to the ExCo for approval.

The potential for complementarity between Task XXIII and Task XXIV was highlighted during the first Experts Meeting. Contact has been initiated with the Operating Agents for Task XXIV, to discuss areas of potential overlap and the potential for holding a joint meeting. Following this, the Task Experts of Task XXIII were invited to attend a workshop in Oxford for Subtasks 1 and 2 for Task XXIV: Closing the loop - behaviour change in DSM: From theory to practice, on 9<sup>th</sup> and 10<sup>th</sup> October, Oxford UK.

The second Task Expert's meeting for Task XXIII was planned to take place in Oxford on 11<sup>th</sup> October, to which the Task XXIV Operating Agents were invited.

#### 5. WORKPLAN FOR THE NEXT SIX MONTHS

The objectives for the next six months are to continue to progress Task XXIII, specific tasks are:

- Complete Subtask 1 report
- Complete Subtask 2
- Commence Subtasks 3 and 4;

#### 6. FINANCE

The budget for Task XXIII is set at £279,220 based upon five participating countries. Thus, the financial contribution per Participant will be £55,844 (based upon five Participants).

In the event of more than five Participants, the financial contribution per Participant will be based on the total Operating Agent's budget of £279,220, divided pro-rata by the number of Participants.

In the event of less than five Participants, the individual Participant financial contributions shall be maintained at £55,844 per Participant and a reduced programme-of-work shall be agreed accordingly, subject only to a minimum of four Participants supporting the Task.

If a Participant decides to join the Task once work has commenced, the Operating Agent reserves the right to revisit the costing shown above. If necessary, the total costing will be

adjusted to reflect any additional administrative or project management costs associated with incorporating the additional Participant. These revised costs will be agreed with existing Participants.

To date, initial payments have been received from all four participating countries, as stipulated in each participant's letter of engagement.

The total income received is

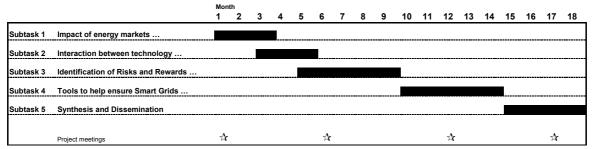
Participant	Amount due at project commencement	Status
Netherlands	£30,000	Paid
Norway	£30,000	Paid
Sweden	£30,000	Paid
South Korea	£55,844	Paid

Expenditure is in line with expected for project status.

#### 7. MATTERS FOR THE EXCO

The previous Task Status Report (submitted at the 39<sup>th</sup> ExCo meeting in Norway) was not approved, as the Operating Agent was not present to present the report in person.

The request for the Exco to approve the revised work plan, as per the previous Task Status Report is repeated here. The original start date for this project was anticipated to be January 2012. It took longer for the project to get underway, and the earliest start date for the project was June 2012. The ExCo are asked to approve the revised work plan shown below, where Month 1 is June 2012.



The reasons for the non-attendance of the Operating Agent were explained in an e-mail sent to the Secretary of the ExCo on 22 March 2012, and subsequently forwarded to the ExCo Chair. It is not known if this information was conveyed to the ExCo Members – therefore a copy of is appended below for completeness.

\_\_\_\_\_\_

Dear Anne,

#### **IEA DSM Implementing Agreement:- Task XXIII**

I note your recent correspondence with our Linda Hull and Barry Watson, in relation to the proposed Task XXIII and, in particular, our submitting apologies, for the forthcoming 39<sup>th</sup> ExCo Meeting, in Norway.

You will recall that Linda formally presented the case for Task XXIII at the 37<sup>th</sup> ExCo Meeting, in Washington DC, in April of last year. At the time, some dozen countries indicated at least some interest in participating in the Task and, indeed, the Task was adopted by the ExCo and with EA Technology approved as the Operating Agent (Designate).

Based on the adoption of the Task and the indicative potential participant base, we therefore engaged with the full set of candidate participants, from June 2011 on, with a view to developing the essential quorum, with which to commence work on the Task (in this context, it is worth noting that the Task was planned on the basis of 5 x participating countries, although with a possibility of running with a reduced scope (via agreement with the participants) with only 4 x participating countries).

Notwithstanding the expressed desire at the 37<sup>th</sup> ExCo Meeting in Washington DC, for a prompt start, the process of securing formal commitment to Task XXIII has taken far longer, than we would have expected. As at the end of last year, we had secured the commitment of 2 x countries only (Norway and Republic of Korea).

From January on, we have therefore devoted considerable time, effort and resource, to secure the necessary commitment to establish a viable Task; indeed, with our proposing an Inaugural Experts' Meeting, to take place  $22^{nd}$ - $23^{rd}$  March. We did, however, have to postpone this, due to the fact that, as of February, we still only had two firm signatories.

Notwithstanding this, we have persevered, and, most recently have also secured the commitment of Sweden and with favourable indications from both Belgium and The Netherlands. Over and above this, we are also in active dialogue with multiple parties in the UK, to establish a viable UK National Team. We are now in the position where we could be in a position to initiate the Task, via a re-scheduled Inaugural Experts' Meeting, to be convened  $10^{th}$ - $11^{th}$  May 2012, subject to the establishment of the necessary quorum.

It is therefore against the context above, that we reviewed the justification for our participation in the forthcoming 39<sup>th</sup> ExCo Meeting, in Norway. The reality of the situation is as summarised above and, indeed, as reported in Linda's Task Status Report; ie that we are working very hard to establish the Task, but that the work programme itself has yet to start. In this context, we find it very difficult to justify the time, effort and expenditure involved, to present this position statement directly to the ExCo, with the fact that the Meeting is to be held on the Hurtigruten coastal steamer, not helping matters here; hence our apologies for the meeting. Our view is that such resources are more appropriately directed in (a) securing the necessary participant base, to allow the Task to start and (b) in the delivery and management of Task XXIII in itself.

Please rest assured that we remain absolutely committed to the development and subsequent delivery of Task XXIII and to the DSM Implementing Agreement, as a whole. As such, we would very much anticipate that we will be in a position to report to the autumn meeting, on the start of work in this Task. In closing, may we extend our best wishes to you, for a successful ExCo Meeting.

Yours sincerely, John Baker, Manager - New Energy Technologies, EA Technology Consulting.

## Agenda 4c. (40<sup>th</sup> meeting of the IEA DSM Programme)

#### **Document H**

# Task 24 Closing the Loop – Behaviour Change in DSM: From Theory to Practice

Dr. Sea Rotmann – New Zealand Dr. Ruth Mourik - Netherlands

This Task Status Report is submitted to the IEA DSM ExCo with a request to:

• Approve the Task Status Report.

#### INTERNATIONAL ENERGY AGENCY

IMPLEMENTING AGREEMENT ON TECHNOLOGIES AND PROGRAMMES FOR DEMAND SIDE MANAGEMENT

Task 24: Closing the Loop - Behaviour Change in DSM: From Theory to Practice



#### **Annual Report October 2012**

Dr Sea Rotmann, Operating Agent, New Zealand <a href="mailto:drsea@orcon.net.nz">drsea@orcon.net.nz</a>
Dr Ruth Mourik, Operating Agent, Netherlands <a href="mailto:info@duneworks.nl">info@duneworks.nl</a>

Prepared for the EXCO meeting in Espoo, November 14-16, 2012.

#### **DESCRIPTION**

The year 2012 brought the start of new work that concentrates specifically on energy end user behaviour, and how to improve it. There is great opportunity for Demand Side Management programmes if this behavioural potential (estimated to be as vast as 30% of total energy demand - Dietz *et al*, 2009) could be easily accessed and directed. However, as many other IEA DSM Tasks have discovered, the 'market failure' of energy efficiency is often due to the vagaries of human behaviour and choice. The best ideas, policies and programmes have been shown to fail again and again in achieving their desired outcomes. The current social and policymaking norm is still NOT to see energy saving behaviour as a major priority in achieving a transition to a sustainable energy system.

There are several reasons for these challenges and this Task sets to uncover, unravel and define them in order to provide clear recommendations to policymakers and DSM implementers. One of the main challenges is that humans are often still regarded as economically rational actors whose behaviours can be influenced by fiscal incentives alone. However, the complexities influencing human behaviour are so vast and manifold that such simplistic approaches almost invariably fail. It is imperative to uncover the context-specific factors (from infrastructure, capital constraints, values, attitudes, norms, culture, tradition, climate, geography, education, political system, legislature, etc) that influence human behaviour in specific sectors (the factors that influence our transport behaviours often differ from the ones driving our hot water usage, for example).

In addition, there are a large variety of research disciplines that endeavour to study human behaviour (social and environmental psychology; environmental and behavioural economics; anthropology; science technology studies; practice and innovation diffusion theory etc), each with their own models and frameworks, advantages and disadvantages. Unfortunately, they usually do not communicate well – not with each other and not with the end users of their research – the policymakers, technology developers, and DSM programme designers and implementers. This leads to confusion and lack of context- specific programme or policy design that is based on the best behavioural information or models.

Another crucial issue relates to monitoring, understanding, learning about and adapting initiatives in a more systematic manner. DSM projects demonstrate a great diversity of goals, scope, participants, resources, etc to meet the diversity of implementing environments. As a consequence, developing a generic evaluation and monitoring framework that is widely applicable and does justice to this diversity is difficult. However, there is a real and urgent need for more appropriate and effective monitoring, evaluation and learning of successful DSM implementation. The fact that there is little robust and concrete evidence on the contribution of DSM to a more sustainable energy system is not helpful when trying to garner support and demonstrate value to investors, policymakers and other relevant actors — especially when different actors are likely to be interested in different contributions and outcomes. Currently, DSM policymakers and other relevant stakeholders fund and/or support DSM programmes on a rather ad-hoc basis because they lack the means of assessing their impact on contributing towards a more sustainable energy system.

In conclusion, there is no behaviour change 'silver bullet', like there is no technological silver bullet. Designing the right programmes and policies that can be measured and evaluated to have achieved lasting behavioural and social norm change is difficult. We hope that this two-year Task will help address these difficulties and come up with guidelines, recommendations and examples of best (and good) practice and learnings from various cultures and contexts. We will rely on sector-specific experts (researchers, implementers and policymakers) from participating and interested countries to engage in an interactive, online and face-to-face expert platform and contribute to a comprehensive database of the variety of behaviour

change models, frameworks and disciplines; various context factors affecting behaviour; best (and good) practice examples, pilots and case studies; and guidelines and examples of successful outcome evaluations. In the end, there will be several deliverables, the most important being the expert network and platform for continued exchange of knowledge and successes.

#### Task aims and objectives

The main objective of this project is to create a global expert network and design a framework to allow policymakers, funders of DSM programmes, researchers and DSM implementers to: I. Create and enable an *international expert network* interacting with countries expert networks II. Provide a *helicopter overview* of behaviour change models, frameworks, disciplines, contexts, monitoring and evaluation metrics

- Provide detailed assessments of successful applications focussing on participating/sponsoring countries needs (smart meters, SMEs, transport, building retrofits)
- Create an internationally validated monitoring and evaluation template
- Break down silos and enable mutual learning on how to turn good theory into best practice

The benefits for the participating countries and for the DSM agreement will encompass:

- a. Participation in the IEA DSM Behaviour Change Expert Platform and knowledge exchange with a large variety of international and national stakeholders
- b. Maintaining an ongoing platform of shared learning, best practice examples and know-how
- c.A database of global knowledge and examples of behaviour change programmes, models and outcomes
- Mutual feedback, coaching and experience exchange for country- and context-specific issues
- e. Reducing the silos in research disciplines and fostering inter- and intradisciplinary sharing and research end user involvement
- f. Better ability to get funding and collaborations involving behaviour change programmes and interventions
- g. Ability to monitor, evaluate and prove ongoing success of behaviour change outcomes leading to energy and CO2 savings, health and social benefits, financial savings and community benefits
- h. Contribute to an IEA DSM competence centre.

#### **Approach**

The Task is broken into 6 subtasks (see schedule of deliverables and subtasks below).

Phase / Duration of the action (in months)	1-2	3-4	5-6	7-8	9-10	11-	13-	15-16	17-	19-	21-	23-24
Subtask 0: Management of the task						12	14		16	20	22	
).1 Set-up an advisory board		_			_							
Norkshop to finalise task definition in Austria/NL plus VC, 6-		WS	Ev		AB	Ex			Ex		AB	ExCo
nonthly ExCo meetings. Annual Advisory Board (AB) meetings		AT/			No.	Co			Co Co		, Co	EXCO
, , , , , , , , , , , , , , , , , , , ,		NL	۳.			۳.			۵.			
Subtask 1: Helicopter overview of models, frameworks, contexts, case studies and evaluation metrics												
.0 Development of template to analyse models, frameworks.		-	-	_					-		_	
fisciplines and evaluation metrics												
1.1 Inventory of available models, frameworks and disciplines		-	-			-			-		_	
and analysis of applicability of models in differing contexts												
.2 Deliverable on definitions of models and frameworks and				_					-			
heir contextual applicability												
.3 Build-up and continuous updating of database (wiki style)					_	_						
to build up and continuous apacing of database (with adjus)												
Norkshops in BEL (August 2012) and UK (October 2012)				WS BEL	WS UK				Г			
Subtask 2: In depth analysis of topics of particular interest												
o participating countries												
2.1 Detailed characterisation of targeted cases and												
development of case study template												
2.2 Collection and analysis of case studies for different selected		_							-			
ectors, themes and countries with inventory of key context												
actors and success stories and learnings. Insert in database												
developed under ST1.3												
2.3: Development of deliverable on context factors influencing												
OSM activities in topics of particular interest to participating												
countries												
Norkshops and webinars in BEL and UK (same as in ST1)		_		ws	ws	Web						
,				BEL	UK							
Subtask 3: Evaluation Tool												
3.1: Identifying relevant indicators/metrics/tools for monitoring		-	-									
and evaluation of DSM project and programmes												
3.2 Assessing context sensitivity of indicators/metrics/tools,		-	_	_								
dependent on stakeholder needs												
8.3: Developing and testing monitoring and evaluation tool		-	-	_	+							
Vorkshops New Zealand, Norway, Switzerland		-	$\vdash$	-	+	-		WS	VC	WS	WC.	WS CH
vorkshops New Zealand, Norway, Switzerland								NZ	VC.	NO	VC.	WS CH
Subtask 4: Country-specific project ideas, research		-						142		-		
priorities, to do/not to do lists and ideas for pilot projects												
.1 Development of stakeholder-tailored to do's and not to do's		_			_	_			_			
or successful context (country) sensitive implementation,												
nonitoring and evaluation of DSM projects on selected topics												
and target groups (i.e. smart metering, SMEs and transport)												
.2 Development of country specific research priorities, project		-										
deas and pilot plans - to be put in practice if task extension is												
approved												
.3 Dissemination of the to do's and not to do's												
Vorkshops Switzerland, Norway, New Zealand and others if	_	-	$\vdash$			Web		ws		ws	MC.	WS CH
vorksnops Switzenand, Norway, New Zealand and others if other countries become participants			1			*A6D		NZ		NO	***	Wa CH
Subtask 5: Social media expert platform					_	_		INC.		NO		
dutask 5. Social media expert platform												
5.1 Overall coordination of the project		т										
5.2 Design of a Stakeholder Engagement Plan												
		-										
5.3 Design of the online platform and specification of its		1										
		-										
ndividual components in consultation with experts		1										
6.4 Utilisation of ongoing expert platform												
.4 Utilisation of ongoing expert platform		11/10	Mak	Mah	Moh	Mak	Mak	Moh	Mak	Mak	Web	Mob
		WS Aut/	Web	Web	Web	Web	Web	Web	Web	Web	Web	Web

Note: VC = video conferencing or webinars; Web = web-based engagement; WS= expert workshops; ExCo = DSM Executive Committee meetings (6 monthly); AB= Advisory Board meetings. Also note that not all countries mentioned have already signed Notice of participation letters.

#### **Deliverables**

Subtask	Deliverable	Deliverable name	Type of deliverable	Month of completion
0	D0	Advisory committee	Network	8
1	D1	Database/wiki listing collected models, cases	database	12 but ongoing
1	D2	Final 'report' on work in ST1	Interactive format	12
2	D3	Surveys and post-evaluation of detailed case studies topics of particular interest to participating countries	Report/interactive	12
3	D4	Tool to evaluate 'successful outcomes' of DSM programmes	Interactive	16
4	D5		Briefs and other formats	24
5	D6	Social platform and meeting place for DSM and behaviour change experts and implementers	Online social media platform	ongoing

#### **Definitions**

It is important to explain the approach and terminology used in the context of this IEA DSM Task and the policies of its participating countries. The target audience for this task is *not the energy end user*, but the *end user of behaviour change research*. We therefore aim not at changing energy using behaviour *per se*, rather, help improve policymaking and programme design by intermediaries who have this goal, via on the one hand offering them better insights into how to turn good theory into practice and on the other hand provide research developers better insight into how to frame and develop research that is being seen as useful in practice and policy.

Demand Side Management (DSM): DSM generally refers to changes that originate from the demand (energy user) side. DSM refers to policies, mechanisms and techniques designed to influence energy behaviour, and encompassing the entire range of management functions (planning, implementation, evaluation and monitoring). Note, we concentrate on all fuels, not just electricity in this Task. The intention of the influence may include changes in energy:

- conservation (overall reduction in energy use).
- efficiency (the energy services provided per unit of energy input) and
- load management (shifting patterns of energy use).

Thus, energy conservation may or may not be associated with an increase in energy efficiency, depending on how energy services change. That is, energy consumption may be reduced with or without an increase in energy efficiency, and energy consumption may increase alongside an increase in energy efficiency. The DSM goal is to achieve large-scale energy efficiency improvements and overall consumption reduction, usually (but not

exclusively, we mainly focus on behaviour-driven efficiencies here) by deployment of improved technologies.

Energy-using behaviour: Energy-using behaviour refers to all human actions that relate to the use of externally acquired energy. It includes the practices of acquiring energy- related technologies and materials and functions, their maintenance; and consumption of energy. Or simply: what we do, with what and with whom. The behaviour can be **intentional** (e.g. investment in energy efficient technologies) or **routine** (e.g. switching off the lights when leaving a room), but this is not a clear distinction, rather a continuum dependent on the individual and their specific context and situation. And the behaviour can be viewed from the individual but also the collective or social perspective.

A successful behaviour change outcome, in this Task, results in improved energy use by households and businesses. This does not necessarily focus solely on reduction in total energy use (although this is the medium to long-term goal), but on the most efficient and environmentally friendly use of energy to derive the services that underpin societal and economic wellbeing (e.g. comfort, mobility, entertainment, cleanliness, production etc). This means that we include case studies (on pilots, projects, programmes, issues or themes) and examples that may have had 'perverse' energy outcomes, e.g. due to rebound, or which may have had social or health drivers as primary focus for behaviour change interventions. What is defined as successful outcome is very much dependent on different stakeholder perspectives, expectations, temporal issues and contexts and can refer to both the process and the outcome of the process. We will explicitly aim to be sensible to this situated definition.

A model of understanding, framework or discipline includes all disciplinary and interdisciplinary theoretical approaches and insights to investigating, assessing, influencing or intervening in, and measuring energy-using behaviours in individuals and society. Models of understanding can refer to actual models, such as e.g. Energy Cultures, an inter-disciplinary model from New Zealand. A framework can relate to a wider theory, eg Attitude Theory, which provides a framework of understanding energy-using behaviours. And a discipline can refer to the wider academic distinctions of e.g. environmental psychology vs behavioural economics. We have created a template to collect information on approaches from all these areas in this Task. The template aims to collect information about issues that are deemed relevant to understand the interaction between a model and an energy practice and its context.

Contexts affecting behaviour change: To meet the complex behaviour change challenge, approaches that point out the importance of the **direct and wider context** or environment in which DSM efforts are situated, have been developed. If this environment is not supportive of changing behaviour towards more efficient energy use, then it is very difficult (sometimes even impossible) for individuals to uphold these new behaviours after the support of a DSM programme has finished. To achieve ongoing, effective DSM outcomes, individuals as well as their social, institutional, physical, technological, economic and cultural contexts (see Table below) need to be targeted. We aim to collect information on context factors that have been assessed in pilots, programmes and policies; and that form important parts or foci of various models of understanding.

Context	How they affect opportunities towards lasting behavioural change
'factors'	now they affect opportunities towards lasting behavioural change
People	Behaviours are affected by the people around us: direct peers like family, friends, neighbours, colleagues. In order to reach long-lasting behavioural changes, it is important that peers also support or take up these new behaviours. Moreover, people learn best from other people so building social networks is important in DSM interventions. Stakeholders on a more distant level are important as well, e.g. policy actors who facilitate or inhibit change through policy support; or banks providing finance to new initiatives; energy companies.
Norms &	Practices are underpinned by norms which are socially-shared among smaller
Values, Culture	or larger groups of people. Changes in practices need to be supported by changes in social norms which provide the changed behaviours' legitimacy. Opportunities for change are affected by (local, regional, national) cultures, but cultures can of course also change due to changes in practices (over longer periods of time). Factors influencing cultural differences: learning culture; tradition and upbringing; risk attitude; prior experience of community engagement with similar projects and/or project developers; social cohesion/interpersonal relations; individual vs. group involvement; community trust; attitudes to new technology; privacy
Political factors	History of civic democratic engagement; types of government policies; stability of national policy; partisanship or collaborative governance (political culture); centralisation or federalisation of national government; tradition of top-down vs bottom-up initiatives; regulation and legislation.
Physical	Urban and spatial infrastructure can inspire, encourage, constrain or even
infrastructure	inhibit the uptake of more sustainable lifestyles. In cities, the uptake of healthier travel behaviour is not always supported by pedestrian-friendly or bike-friendly infrastructure. Physical infrastructure refers to all sorts of technologies, applications and products that are part of our daily lives and ways of doing (e.g. the short lifecycle of products limits possibilities to use these products sustainably).
Technology and	
Material 'Culture'	or small, centralised or decentralised, radical or incremental); technological flexibility and advancements; how technology fits into existing infrastructure. Also, energy-related materials and technology's direct influence on energy practices, eg ability to change heat settings, complexity of its operation, convenience of use.
Geography	Options to behave more energy efficiently are constrained by climate, land availability, rural vs urban locations etc
Socio-Economy	The overall economic situation affects peoples' daily lives, and ways of doing – and hence also opportunities for behavioural change (e.g. the need to save money may be a first trigger to change practices). Availability of natural resources and social acceptability of their exploitation; energy prices; technology and other input prices; perception of foreign investment; importance of energy independence; security of supply; interest in local employment and job creation; nationally-competing technologies and innovators.
	Policy support is crucial and can either support or inhibit DSM interventions in several ways and on several levels. How is DSM implemented (community/local, regional or national level); organisational strength and make-up of policymakers and implementers

*An end user of behaviour change research* includes actors and stakeholders on various levels of DSM:

- \* Intermediaries who work directly with energy users to implement energy behavioural change programmes (e.g. local NGOs, ESCOs, transition town initiatives, technology developers and implementers to DSOs etc)
- \* **Policymakers** who design, implement and measure policies aimed at improving energy use at local, city, regional, national, EU, international (OECD) levels
- Funders/investors/social entrepreneurs who are interested in financing energy DSM initiatives, and who are interested in learning how to evaluate and judge existing and new projects and initiatives.

Behaviour change interventions (policies, programmes, projects, pilots) refer to designed attempts to achieve improved energy use. They will be used to demonstrate how various models of understanding, frameworks and disciplines have been utilised in the past, intentionally or implicitly. To collect this information, we have created two templates (one for programmes, one for policies). We aim to get insights and learnings into the role of the individual, role of the energy practice, role of social context, role of technology, actors and institutions, behavioural change processes, social change, relevant conditions and factors affecting behaviour change, context particularities and monitoring and evaluation that has been undertaken in real-life examples. To differentiate (modified from Vreuls 2005):

**Policy measure:** A specific type of political action or market intervention designed to persuade energy consumers to improve energy use and encourage market parties to promote energy-efficient goods and services.

**Programme:** An organised set of projects targeted towards defined market parties over a specific time period to achieve increased end-use energy efficiency or reduced use of energy services. A package of selected policy measures is used. This selection is based on a programme theory.

**Project:** An organised set of activities to create output(s).

**Pilot:** A smaller study (often called feasibility study) conducted in advance of a planned project.

Evaluation and monitoring of interventions: Because DSM projects/programmes/pilots/ policies demonstrate great diversity of goals, scope, participants, resources etc (necessary to meet the diversity of implementing environments), developing a generic evaluation and monitoring framework is problematic. There is an enormous diversity in terms of aims, goals, scale, scope, sort of participants involved, modes of involvement/engagement, management structures, involvement of other stakeholders, availability of locally committed participants with relevant skills (e.g. social, technical, political) and possible metrics used to collect data to evaluate change. Many energy DSM projects include goals relevant to different stakeholders, for example goals for both policymakers (energy-related goals i.e. energy savings and carbon reduction) and end-users (e.g. improved health, comfort, financial savings, social cohesion). In addition, both the process and the outcome of a policy/ programme/project/pilot can be monitored and evaluated and the description of the process or outcome can differ depending on the stakeholder doing the description. This diversity requires the tailoring of projects to the particular contexts in which they are implemented. To ensure the success of the project and increase its potential for mainstreaming, criteria for success for different stakeholders need to be met to gain the essential support from these stakeholders. Finally, there is no collectively designed set of indicators and methods to assess the successfulness that is sensitive to the above challenges.

**Problem 1:** It seems to be a waste of effort if the DSM programme and policy implementers do not know how well their intervention has achieved what it set out to achieve (and/or what else it might have achieved). Without this learning, interventions will replicate previous unsuccessful interventions and slow up progress towards the goal of improving energy use in households and businesses.

**Problem 2:** Many interventions set out to achieve changes in energy use but either (a) don't set out to evaluate whether the intervention achieved what it intended, or (b) do carry out an evaluation but it is poorly done (e.g. not rigorous enough to stand scrutiny, evaluates the wrong things, fails to account for change occurring from other sources, is not long enough to show ongoing change), or (c) do carry out an evaluation but are unable to compare it with anything else so have no sense of relative effectiveness of the intervention.

**Problem 3:** It is very difficult to show a simple, linear relationship between an intervention and actual changes in energy-using behaviour. The longer or more complex an intervention is (and a 'toolbox' of interventions has often been shown to be most effective in changing behaviours), the more difficult it is to measure direct impact.

This Task, therefore, sets out to develop means to **evaluate ongoing successful behaviour change outcomes** (leading to improved energy use), in a way that makes sense to the actor or stakeholder who initiated an intervention. We need to collect and understand a variety of evaluation metrics and examples that have been used to assess (un)successful behaviour change outcomes in the past. We also want to know which evaluation methods are best suited to various models of understanding.

Mainstreaming best behaviour change practice: Mainstreaming depends on the success of best practice to diffuse amongst the micro-contextual level of households and from this micro-context to the meso level of society, facilitated by (changes in) the macro (wider, global) level. To achieve lasting and mainstreamed changes in behaviours we need to understand what is happening on all levels, from individual to systemic; from the micro to the macro level and all the various interconnections. In order to provide optimal support to research end users, insights into the different levels and how to affect them with interventions, have to be provided. The table below clarifies the different levels to consider.

Micro-level	DSM interventions can trigger behavioural changes and social innovation that are still niches or experiments, in the early stages. New rules and norms are not yet institutionalised, but flexible and unstable. However, the 'old' ways of doing have partially been replaced by 'new practices'.
Meso-level	The meso-level constitutes the context of 'normal' practices. Thus, the challenge is to accomplish that 'new practices' become normal in the course of time. This level entails systems of provision, which enable and constrain choices and behaviours. They are built up over a longer period of time, and they do not change overnight.
Macro-level	The macro-level is the wider background setting for social innovation, enabling and constraining opportunities for meso-level change (socio-economic, demographic, political and international developments; e.g. wars or environmental disasters). This layer is difficult to influence and usually changes quite slowly.

#### Four main themes in the IEA Task

The participating countries have indicated four main topics as being of special interest for Task XXIV. These topics fall under two end users (households and SMEs) and two sectors (transport and buildings), with smart meters as an overarching technology. We hope to collect intervention examples, and more in-depth case studies from each of the topics on both, routine and intentional behaviours. However, some of the case studies may overlap among themes, for example, building retrofits and smart meters in SMEs; smart meters and transport; transport and SMEs etc.

The table with examples below is intended to keep track of whether we are collecting cases that cover all four themes and different behaviours (e.g. efficiency & curtailment; or

investment & routine behaviours). We know they are sitting on a continuum, rather than being black & white delineations.

	Households Efficiency behaviour	Households Curtailment behaviours	SMEs Efficient behaviours	SMEs Curtailment behaviours
Transport	eg fuel efficient vehicles	eg switching to biking or walking	eg fuel efficient vehicles	eg switching to fewer trips, consolidating
Transport Smart Metering	eg EVs connecting into a smart grid, smart house with smart appliances	eg using fuel consumption feedback device to drive more effectively	eg EVs connecting into smart grid	eg using GPS and fuel consumption feedback to encourage smarter driving
Building renovation	eg installing insulation	eg removing the bathtub and installing a shower	eg Installing efficient HVAC system	eg removing number of lifts to encourage staff to use stairs
Building renovation Smart Metering	eg installing smart metering and feedback displays	eg ripple control	eg installing smart building management system	eg providing feedback clues to encourage conservation behaviour (eg green light when to open window)

#### Smart metering and consumer feedback devices

We take the widest scope of 'smart metering' in order to collect projects and case studies in this task - smart grids, smart meter technology and feedback displays - as long as they have means and ways to affect energy using behaviour. Smarter metering here consists of all sorts of feedback systems that allow for a tailored information feedback to end-users and customers and home energy management. Smart meter devices have the potential to support a shift of use by end-users as well as a reduction of energy usage. As such they can support behavioural changes towards enhanced energy efficiency and demand reduction.

#### **Building renovation/retrofits**

Since renovations are moments of change, these can offer windows of opportunity to address energy behaviours (both investment and routine behaviours). We look at all types of building retrofits (residential, single-housing, apartments and commercial buildings), but they may fall under either the 'household' or 'SME' sector in the collected case studies and examples.

#### **SMEs**

'SME' stands for small and medium-sized enterprises – as <u>defined in EU law</u>. The main factors determining whether a company is an SME (also in the sense of this Task) are:

- **number of employees** (medium <250; small <50) and
- either **turnover** (medium <€50m; small <€10m) or **balance sheet total** (medium <€43m; small <€10m).

Next to households, schools and public buildings, SME's offer a huge potential for energy saving through behavioural change. But problems include (a) energy often being such a small element of their whole outgoings that its not seen as worth addressing and (b) huge

diversity in the sector and thus very hard to address across the board (far more diverse in types of energy used than households).

#### **Transport**

Transportation in this Task refers to:

- Any device used to move an item from one location to another. For simplicity, we will concentrate on 4-wheel transport (unless we discuss mode- shifting, see below) here.
- The process of shipping or moving an item from point A to point B. We will look at case studies that involve fleet/vehicle and fuel purchases; mode shifting (eg driving to walking and biking); and fuel-efficient driving behaviours.

#### Dissemination of Results and Discussion with Stakeholders

Task XXIV has produced a number of publications and given presentations at various conferences and workshops to disseminate and discuss the Task results. It is also widely disseminated and publicised online, via social media and social networks. Furthermore, stakeholder workshops and webinars were organised in conjunction with each project meeting to discuss behaviour change topics relevant to the host country of the meeting.

#### Task XXIV Publications and reports

- 1. IEA DSM Spotlight 45 Issue, June 2012 on social media
- 2. IEA DSM Task Flyer XXIV (updated)
- 3. IEA DSM website Task XXIV (updated)
- 4. Draft positioning paper for Brussels workshop
- 5. Positioning and definitions paper for Oxford workshop
- 6. Template for Models of Understanding Behaviour Change
- 7. Template for Programmes and Pilots
- 8. IEA DSM Task XXIV Pecha Kucha presentation (powerpoint/film)
- 9. 5 participating countries' Pecha Kucha presentations (powerpoint/film)
- 10. Brussels workshop meeting minutes (powerpoint)
- 11. Interviews of experts' own energy stories (film)
- 12. Belgian DSM and behaviour change story (film) underway
- 13. UKERC Meeting Place report of Oxford workshop Dec 2012

#### **Previous publications**

- IEA DSM Spotlight 43 Issue, December 2011
- 2. IEA DSM Task Flyer XXIV
- 3. IEA DSM Initial Positioning Paper on Behaviour Change
- 4. IEA DSM Task XXIV Draft and Final Workplans
- 5. IEA DSM website, twitter, facebook and linkedIn groups
- 6. On the company website of Dr. Ruth Mourik, DuneWorks
- 7. In the internal ECN (Energyresearch Center of the Netherlands) Newsletter, December 2011

#### Online sharing and administration of Task XXIV

- 8. Widely disseminated via IEADSM on twitter, linkedIn and facebook group; also ECEEE columns and energy and behaviour linkedIn groups
- 9. Weekly publication of Behaviour Change & Energy News by Dr Sea Rotmann
- 10. Expert platform went 'live' in July 2012: <a href="www.ieadsmtask24.ning.com">www.ieadsmtask24.ning.com</a>, to join: <a href="www.bit.ly/jointask24">www.bit.ly/jointask24</a> includes videos, photos, discussion fora, subtask groups, events

- 11. Mendeley (<u>www.mendeley.com</u>) Task XXIV Group and bibliography database of >400 behaviour change and energy publications
- 12. CRM Capsule (<u>www.crmcapsule.com</u>) contact relationship management system, collects all emails and contact information related to the Task
- 13. Behaviour change and energy pearltree (<a href="www.pearltree.com">www.pearltree.com</a>) to collect and manage related websites etc
- 14. Task XXIV dropbox (<u>www.dropbox.com</u>) to share templates and collected models etc
- 15. Task XXIV wikipedia (under development)

### Meetings and workshops held in 2012

Date	Place	Total # Experts	# of countries	Type of meeting	Govern ment	Business	Academic
10/4	Utrecht, NL						
10/4	Graz, AUT	5	2	Task kick-off	4	1	1
11/4	online	13	6	Webinar - Task kick-off	2	2	9
3/5	online	6	5	Webinar - Expert Platform	1	1	4
	Utrecht, NL			Stakeholder Meeting NL			
30/8	Utrecht, NL			Stakeholder Meeting NL			
7/9	Brussels, BE	24	8	Expert Workshop	3	8	13
9-10/	Oxford, UK	55	9	Expert Workshop	3	13	39
19/10	online	TBC	5	Expert Webinar			

## Seminars and/or Conferences where Task was presented in 2012

Date	Place	Total # Experts	# of countries	Type of meeting
8/5	Linköping, SE	20	2	Presentation on Task XXIV to University
29-31/8	Basel, CH	~300	15+	Task Presentation at 3rd Intl Sustainability Conference
19/9	Helsinki, FI	20	3	Task Presentation to Finnish Experts
20-21/9	Helsinki, FI	~250	15+	Task Presentation and session chairing at BEhavE conference
24-25/10	Berlin, GER	100s	10+	Attendance at 'Energy Recovery in Industry: Opportunity for energy efficiency' conference by EEIP

#### Positioning of the Task - vs. other bodies

Task XXIV "Closing the Loop - Behaviour Change in DSM: From theory to practice" is a unique Task in providing an international expert platform for anyone designing, implementing, evaluating and funding programmes, policies and initiatives aimed at changing behaviour via improving energy using practices. The members of the Task work and cooperate with their respective national bodies and programmes and are involved in a variety of other international projects, dealing with behaviour change research and the implementation of energy efficiency. On top of the national experts from five participating countries, we have a very large number of experts from over 12 countries involved in the Task. Over 90 experts are currently on the Expert Platform (<a href="https://www.ieadsmtask24.ning.com">www.ieadsmtask24.ning.com</a>), and dozens others have attended Task workshops and webinars.

We have invited Task XXIII experts to participate in our largest workshop in Oxford (October 9-10), and will attend their first Task meeting on October 11. The two Tasks will work closely together to ensure maximum knowledge sharing and no duplication of efforts. ISGAN is also very interested in our Task and have attended some workshops/webinars. The IEA energy efficiency policy unit (contact: Sara Pasquier) is in close contact with the Task Operating Agent and promotes it actively.

#### **Technology development success stories**

Task XXIV is not developing any particular technology itself, however it is examining the interaction of behavioural practices and technology, especially smart metering. To this end, several multi-national technology developers are interested in, and contributing to the Task. We are currently examining a possible Task extension which may have a stronger focus on tchnology-based interventions.

#### Reports and Publications planned for 2013

- Subtask I Helicopter Overview Database of models, contexts and evaluation metrics
- Subtask I interactive report-back
- Subtask II analysis of case studies and best practice in four overarching themes
- Subtask III template to enable better evaluation of successful behaviour change outcomes depending on the stakeholder point of view
- Subtask IV Country-specific recommendations, to-do's and plans going forward
- Subtask V social media 'paper' to be presented via social media at ECEEE summer study 2013
- ECEEE summer study paper and poster on Task XXIV
- BECC conference paper on Task XXIV
- Special Issue on Sustainable Knowledge Society and Role of Social Media academic paper
- Spotlight issues on NZ participation and various aspects of the Task

#### Meetings planned for 2013

Several meetings, both face-to-face and online, are planned for 2013. We will have 2-monthly webinars with our national experts (unless there is a face-to-face workshop instead) to discuss ongoing work and any potential issues or questions. Our next face-to-face expert workshop will be in New Zealand on February 14, following from a 2-day workshop (to which all Task experts are invited) by the NZ ExCo member, the National Energy Research Institute (www.neri.org). Further expert workshops are planned for Norway and Switzerland later in the year. In each expert workshop, hosted by a participating country, the country will get to tell its unique behaviour change and DSM 'story'. A collection of these stories (via film) will be provided at the end of the Task.

#### **Activity Time Table**

Task XXIV started its operation in January 2012, although its final work programme was not officially balloted by the ExCo until July 2012. We would therefore ask the ExCo to consider taking the official Task starting date as July 2012, which will mean it will finish in June 2014 (at no extra cost to participating countries). A 3-year Task extension is planned to turn theory into practice via action research projects to be standardised and contrasted amongst participating countries. Particular emphasis will lie on evaluation methods of ongoing, long-term behaviour change outcomes which can be linked back to specific DSM interventions.

Subtasks	20	012	2013		20	14
Subtask 0 - Admin						
Subtask I - Helicopter Overview				ı		
Subtask II - Case Studies						
Subtask III - Evaluation Template						
Subtask IV - Recommendations						
Subtask V - Expert Platform						

#### Costs

Description	Cost	personmonths Sea Rotmann	personmonths Ruth Mourik	total costs	total costs	
personmonths/costs	(Euro)	per subtask	per subtask	Sea Rotmann		total sum
Subtask 0	4500	2	1	9000	4500	13500
Subtask 1	4500	4	2	18000	9000	27000
Subtask 2	4500	4	2	18000	9000	27000
Subtask 3	4500	6	3	27000	13500	40500
Subtask 4	4500	4	2	18000	9000	27000
Subtask 5	4500	4	2	18000	9000	27000
Total personmonths/costs		24	12	€108000	€54000	€162000
Description costs	Costs					
		costs travel Sea Rotmann and Ruth Mourik including extended stay in Europe of Sea Rotmann and frequent face to face meetings RM and SR (4 times				
		travel SR to Europe from New Zealand and one time RM from Europe to New				
OAs travel costs	25000	Zealand)				
stakeholder analyses	5000	separate meetings and costs associated with stakeholder analyses				
website and data						
management	5000	including website, webinars, VC, social media, blogs/vlogs, database etcetera				
overheads and incidentals	3000					
Total	€38000					€200000

We expect the participating countries to reimburse the experts that attend workshops.

We expect the participating countries to finance the organisation of the workshops in their countries

The probable number of participants is at the moment 5 - 8. The countries will be invoiced in two amounts (during 2012 and 2013).

In addition to the cost sharing for the OA budget, each country will be required:

- to provide expert time of approximately 42 days in total
- to attend up to six meetings/workshops of the Task and prepare for them
- to host a meeting/workshop during the lifetime of the Task
- . to carry out the national dissemination activities
- to provide us with all relevant publicly available material produced in that country, plus
- to actively engage in the expert platform.

#### **Accomplishments since June 2012**

Negotiations with all potential participating countries are continually underway. New Zealand has re-joined the DSM Implementing Agreement specifically to participate in this Task. Over 100 interested experts from 10+ countries have expressed interest and/or contacted their relevant ExCo members to foster support for country participation. We still hope to have 8 countries participate and/or sponsor this Task, as it requires the widest input of experts and case studies possible.

The international interest in the Task is enorm, this was demonstrated clearly at the BEhavE conference in Finland, where the Task was widely publicised by the organisers and the IEA Secretariat. The 'social' nature of the Task - from the very successful expert platform (which is invite-only, and which has organically grown to 90+ experts in <4 months), to the amount of experts coming to workshops, stakeholder meetings and webinars - clearly works, and befits the topic (of human behaviour). In addition, the Task is very strongly represented in global behaviour change exchange via social media eg the twitter hashtag #behaviourchange is largely associated with this Task. Several experts who are highly involved in the Task have been attracted to the Task via social media - either via the Operating Agent's linkedIn profile, the 'Behaviour Change & Energy News' editorials, the ECEEE column or her tweets. Although it is obviously not possible to forego face-to-face workshops and meetings, it is highly advisable for a Task such as this to increase and foster participation via social networking.

We are still collecting models of understanding and examples of best (and not so good) practice programmes, policies, pilots and initiatives. We have received many from our national experts, but also from interested participants. We have also received good input and feedback from various (national and otherwise) experts on the draft positioning and definitions papers. The Oxford workshop, funded by UKERC Meeting Place, was one of the fastest-filled workshops in UKERC's history and several people had to be turned away. The Dutch stakeholder meetings, initiated by Agency NL, also turned out to be extremely successful. So much so, that we hope to find a way to replicate them in the other participating countries. The participating countries' Pecha Kucha (<a href="www.pecha-kucha.org">www.pecha-kucha.org</a>) presentations were excellent, as were the short interviews of various experts' own energy 'stories'. We generally feel very humbled and grateful for the extensive showing of humour

and goodwill from participating experts, especially when it comes to pushing the boundaries via creative ways and means of dissemination and collaboration.

#### **Participation**

Eleven countries expressed strong interest in the Task, the Netherlands, Norway, Belgium, New Zealand and Switzerland have confirmed their participation. We await final notice of (non-) participation from the US, UK, Finland, Sweden, France and Austria. Several non-DSM countries have also expressed interest, including Germany, Denmark, Australia and Saudi Arabia. In addition, there are countries that have expressed the willingness to participate as sponsor with in-kind expert time (Spain for example offered 1.5 to 2 expert person months).

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## Agenda 4c. (40<sup>th</sup> meeting of the IEA DSM Programme)

#### **Document I**

## Task 24: Closing the Loop – Behaviour Change in DSM: From Theory to Practice

## **Proposal for Extension 2014-2016**

The Proposal is submitted to the ExCo with the request to:

- Hear the ExCo thoughts on potential suitable themes or activities in your respective countries at the ExCo meeting in Finland
- Decide to work on a detailed and country tailored proposal to be voted on in April 2013.

#### INTERNATIONAL ENERGY AGENCY

## IMPLEMENTING AGREEMENT ON TECHNOLOGIES AND PROGRAMMES FOR DEMAND SIDE MANAGEMENT

Task XXIV: Closing the Loop - Behaviour Change in DSM: From Theory to Practice

**Proposal for Extension 2014-2016** 

Dr Sea Rotmann, Operating Agent, New Zealand drsea@orcon.net.nz Dr Ruth Mourik, Operating Agent, Netherlands info@duneworks.nl

Prepared for the EXCO meeting in Espoo, November 14-16, 2012.

#### Task 24 aims and objectives

The main objective of the first two years of Task 24 is to create a global expert network and design a framework to allow policymakers, funders of DSM programmes, researchers and DSM implementers to:

- Create and enable an international expert network interacting with countries' expert networks
- Provide a helicopter overview of behaviour change models, frameworks, disciplines, contexts, monitoring and evaluation metrics
- Provide detailed assessments of successful applications focusing on participating/sponsoring countries' needs (smart meters, SMEs, transport, building retrofits)
- Create an internationally validated monitoring and evaluation template
- Break down silos and enable mutual learning on how to turn good theory into best practice

#### Background to this proposal for an extension for Task 24:

Summarised, the several hundred stakeholders now committed to the running task want to participate because of three reasons:

- 1. Opportunities to share knowledge and learnings, to network and to position themselves.
- 2. Shortcomings of current DSM pilots that could benefit from findings from task 24
- 3. Shortcoming on the policymaking level when it comes to applying learnings from research to the design of more effective DSM related policies.

What has become apparent is that the stakeholders feel the process that now takes place on the international level is extremely important and several matchmaking successes have been undertaken between technology developers, researchers, NGOs, intermediaries and practitioners.

The stakeholders acknowledge that this process of creating a learning platform and engaging with different stakeholders to learn about possibilities to transfer and translate research to relevant end-users of that research takes time. However, the participating experts have provided comments and submitted queries for further research, demonstration pilots and additional activities that we would like to summarise next.

#### **Content of the extension**

The proposal encompasses several recommendations for extensions. We do not necessarily propose to do all, but would like to demonstrate the wide set of potential extension themes and subjects and explicitly ask the EXCO to reflect on what they would find interesting extensions for their own countries. The extension can be tailormade to perform different activities in the different participating countries, although a standardized intervention would allow for very interesting country/cultural comparisons. The proposal has four discrete areas where an extension could focus on:

- **I.** in-depth research on the national level.
- II. the roll-out of demonstration projects on the national level to validate the recommendations from the first two years of the task,
- **III.** the creation of a national/domestic platform of experts, even up to the more regional level that meet in varying formations regularly to discuss issues pertinent to that country.
- **IV.** Policy recommendations on the national level on how to provide suitable support for different types of DSM activities.

#### Research questions that were put forward as potential extension activities

As part of the subtasks 2 and 4 of the current task 24, many DSM issues will be identified that lack in-depth understanding and are in need of further research, particularly on the national level, to account for the context specificities. Below are a list of issues that have been raised several times already in the different workshops that task 24 has undertaken so far.

#### How to address end-user acceptance issues:

- e.g. if part of the control of smart meters is automatic and/or from distance,
- or generally related to accepting smart metering and not going for the opt-out option,
- or acceptance of retrofitting by tenants/landlords

• And many other acceptance issues

#### Segmentation of households and SMEs and mobility/transport segments:

- Little is known about the response diversity of different households to different interventions. Very often the segmentation is not performed or at a very general level.
- SMEs are a missing link in research on DSM. They are viewed as a homogeneous group, but no understanding is available as to the variety of DSM relevant issues within the SME group. Are restaurants different from retailers? Are small industrial SMEs differing from service sector SMEs? Is there a segmentation necessary for offices and commercial buildings?

#### Specific technology and behaviour issues:

• There are lists for the participating countries that highlight the top 25 behaviours that could actually make a significant contribution to load reduction and load shifting. However, a big barrier for many DSM implementers in the participating countries is that the advice on suitable interventions too often remain on the general level of retrofitting, feedback, sustainable mobility and do not apply to specific behaviours or technologies. Insufficient knowledge is available as to what the specific context barriers for very specific behaviours and purchasing or use of DSM technologies are, e.g. changing lights, insulating the house, lowering the thermostat, buying smart appliances?

#### Pilot and demonstration related extension

- One issue that has been raised more than once by participating experts is that it is a challenge to design good DSM pilots and programmes, with well integrated monitoring and evaluation. Participating country experts have expressed the wish to be able to design context-appropriate DSM projects based on the key findings from task 24 for each participating country.
- A challenge even bigger than designing good DSM pilots and programmes is the challenge to upscale the successful ones. Pilots building on successful ones could be implemented on a larger scale to test successful scaling-up methodologies in the different participating countries.
- Another issue that is often raised is that there is insufficient evidence on the willingness to pay by end-users for DSM technologies and services. This needs to be tested in real life demonstrations and roll-out projects. Linked to this are research questions that focus on how people think about investment and Return on Investment and what the adequate communication channels and content are to address these people?

#### **Policy-related extension**

Many stakeholders have provided feedback on several policy-related issues our extension could focus on:

- There is insufficient knowledge about suitable policy instruments to support upscaling. The extension could explicitly investigate the potential design of suitable policy instruments within each of the countries to support upscaling of good DSM practices.
- The extension could provide recommendations on suitable policy instruments on the national level how to support municipalities, housing corporations, intermediaries, technology developers and citizens to collaborate in addressing behavioural issues.

• For each country participating, a research agenda could be provided on DSM-related research gaps and priority ranking of key questions to be addressed.

#### **Expert platform-related extension**

- Potentially one of the most valued outcomes of the running task is that it creates oopportunities to share knowledge, expertise and experience; to learn more about what is going on and who does what in the broad field of Energy DSM and behavioural change.
- However, several additional needs have already been identified. The most important one is that the participating stakeholders in the respective countries have expressed the need to also create expert platform activities on the national level. We are experimenting with this set-up in the Netherlands, and so far are being evaluated with high scores on the effectiveness of this approach. The approach focuses on sharing results and knowledge on pilots and, as a result, the building-on instead of duplication of efforts. Technology developers often found themselves developing something another technology developer already completed and tested in pilot settings and are now exploring joining forces. These outcomes would be worthwhile to spread to the other participating countries as well, and potentially even tailor to the more regional and or local level where pilots actually are undertaken, e.g. on a city level. That way stakeholders that are involved in the pilot could more closely learn from and align with the local context stakeholders that will support, ignore or oppose their pilots and potentially allow the pilot implementers to pre-empt the less supportive actions.

#### **Question to the EXCO**

We would like to hear your thoughts on potential suitable extension themes or activities in your respective countries at the next EXCO meeting in Finland, and hope to get a positive vote to be allowed to work on a detailed and country tailored proposal for extension to be voted on in April 2013.

Thank you, Sea and Ruth

## AGENDA 5a. (40<sup>th</sup> meeting of the IEA DSM Programme)

#### **Document J**

## Task 16 Competitive Energy Services Phase 3 Energy Efficiency and Demand Response Services

**Task Status Report** 

Jan W. Bleyl

The Task Status Report for Task XVI is submitted to the IEA DSM ExCo meeting with a request for the ExCo to:

Approve the Task Status Report

IEA DSM TASK XVI: Competitive Energy Services – Phase III

# Energy Efficiency and Demand Response Services Task Status Report

prepared for the IEA DSM ExCo meeting in Finland, November 15<sup>th</sup>-16<sup>th</sup>, 2012



Graz, Austria, October 2012

### Legend, Synopsis and Authors

This report was developed within Task XVI "**Competitive Energy Services** (Energy-Contracting, ESCo Services)" of the IEA's Demand Side Management Implementing Agreement.

International Energy Agency
IA Demand Side Management (DSM)
Task XVI "Competitive Energy Services"
<a href="http://www.ieadsm.org">http://www.ieadsm.org</a>

### Synopsis:

This is the 6-monthly **Task Status Report** of IEA DSM Task XVI "**Competitive Energy Services** (Energy-Contracting, ESCo Services)" - Phase III: "**Energy Efficiency and Demand Response Services**" to the Executive Committee of the IEA Demand Side Management Implementing Agreement to be included in the pre-meeting document.

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With contributions from Task XVI national experts

(contact details on back cover).

IEA DSM Task XVI - Phase III builds on work, which was previously led by Graz Energy Agency. Thank you GEA!



Energetic

Solutions

DDI Jan W. Bleyl



### Financing partners

Austria (until 06/2012)
Federal Ministry of Transport,
Innovation and Technology
www.bmvit.gv.at
www.energytech.at

### **Belgium**

Federal Public Service Economy, S.M.E.s, Self-Employed and Energy DG Energy – External relations <a href="http://economie.fgov.be/">http://economie.fgov.be/</a>

**Finland** (until 06/2009)
Tekes – the Finnish Funding Agency for Technology and Innovation
<a href="https://www.tekes.fi">www.tekes.fi</a>

India (until 06/2012)
Bureau of Energy Efficiency
Ministry of Power
www.bee-india.nic.in

Japan (until 06/2009) Tokyo Electric Power Company www.tepco.co.jp/en/index-e.html

**Korea** (since 07/2012) Korea Energy Management Coorperation www.kemco.or.kr

### **Netherlands**

Agentschap NL Ministerie van Economische Zaken www.agentschapnl.nl

**Spain** (since 07/2009) Red Eléctrica de España www.ree.es

**Switzerland** (since 07/2012) Swiss Federal Office of Energy SFOE www.bfe.admin.ch/





















The project partners wish to **explicitly thank the IEA DSM ExCo members of the participating countries** and their **financing partners** for their support.



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For a summary of the background and motivation, objectives, expectations and results of IEA DSM Task XVI please refer to the task work plan or the annual IEA DSM report.

### **1** Participating Countries in Phase III

As of October 10<sup>th</sup> 2012 the following countries have confirmed participation in IEA DSM Task XVI – Phase III (in alphabetical order):

- ✓ Belgium
- ✓ Korea
- ✓ Netherlands
- ✓ Sweden
- ✓ Switzerland

In addition, Spain has expressed a "very strong maybe". Other "maybes" have been expressed by Austria, China, Germany, Norway and Portugal.

Request to ExCo members: Please remember to sign and send your official letter of participation for Task XVI to the IEA head quarters (a template is available from the Executive Secretary).

### 2 Structure of the Work and Subtasks

The proposed Task XVI Work Plan extension will continue to work with its well established structure and add demand response services as an addi-



tional subtask (depending on participation of Spain, who initiated this subtask). The five operational subtasks are:

- 1. IEA DSM Energy Services Expert Platform (ES-Platform, subtask 13)
- 2. Innovative and competitive Energy-Contracting Think Tank (Think Tank, subtask 14)
- 3. Demand Response services business models (DR, subtask 15)
- 4. Coaching of individual National Implementing Activities (NIAs, subtask 16)
- 5. Dissemination (subtask 17)

The following scheme illustrates the general structure and workflow of the task extension:

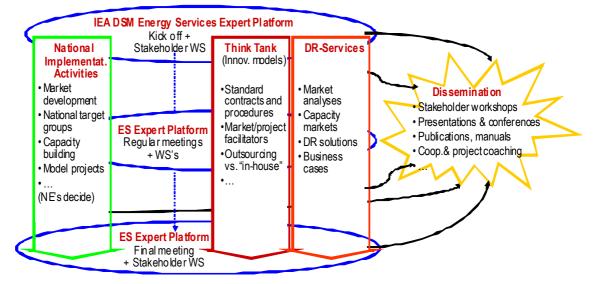


Figure 1 Task XVI - Phase III: Structure and work packages

In the left pillar, the national implementing activities (NIAs) such as market development and capacity building activities take place according to the individual needs and resources of the participating country. In the other two pillars, "Think Tank" and "DR-services", the experts will discuss new developments and elaborate innovative energy and demand response service and business models.

The IEA DSM Energy Services Expert Platform (ES platform) serves as the link between the two pillars, as the communication tool internally and externally and as the starting point for developing services like coaching and training for the outside world (towards a "Centre of Excellence").

The results of Task XVI are disseminated in a series of stakeholder workshops, presentations at conferences, workshops and through publications. Additionally co-operations with international organizations and assistance services may be offered.



### 3 Accomplishments since last Report

During the last period the following activities have been performed:

- ✓ Subtask 13 Energy Service Expert Platform
  - Preparation of the 13<sup>th</sup> experts meeting, which will be the kick off for the new Task XVI - Phase III extension. It will be held in Stockholm, Sweden from October 25<sup>th</sup>-26<sup>th</sup> 2012. The main topics are: Kick off Phase III, integration of new participants into the team, discussion of national implementation activities plans and preparation of Think Tank topics and dissemination activities.
- ✓ Subtasks 13 + 16 Energy Service Expert Platform + Dissemination
  - Preparation of the 13<sup>th</sup> Task XVI stakeholder workshop to be held in Stockholm, Sweden on October 24<sup>th</sup> 2012. The topic will be "The Development of Energy Services Market in Sweden".
- ✓ Subtask 14 Think Tank:
  - Initiation of a paper on "ESCo Market Development: The Role of Market and Project Facilitators". The abstract was also submitted to ECEEE for their summer study in June 2013.
  - Continuation of research on Demand Response Energy Services and possible business models as an additional source of income for ESCos.

Results of the think tank work can be downloaded from the public Task XVI website (<a href="www.ieadsm.org/ViewTask.aspx?ID=16&Task=16&Sort=0">www.ieadsm.org/ViewTask.aspx?ID=16&Task=16&Sort=0</a>).

- ✓ Subtask 15 Demand Response Services business models
  - For the kick off of this subtask, Spain's decision to participate will be awaited, since Spain originally initiated this subtask.
  - Some national activities in Austria in Slovenia, in particular a research proposal for a "hybrid virtual power plant for distributions system" have been submitted, which will hopefully be successful and serve as inputs to this subtask.
- ✓ Subtask 16 Coaching of individual National Implementation Activities
  - This subtask will be kicked off at the Kick off meeting in Sweden.
- Subtask 17 Dissemination: Publications and presentations at various national and international conferences and seminars were given, e.g.:
  - Presentation on ESCo development at a workshop for managers of State Grid China in July 2012 in Dalian, China.
  - Presentation of the Task XVI Integrated Energy Contracting model at a workshop in Hungary in October 2012.



- Support for a first training course on IPMVP to certify measurement and verification professionals (CMVPs) in Austria.
- Preparation of an ESCo university to be run as pre-conference workshop to the ESCo Europe conference 2013 (in cooperation with Berlin Energy Agency) in Copenhagen in January 2013
- ✓ Subtask 12 Management and Reporting (in addition to regular work):
  - Gathering support and participants for 2<sup>nd</sup> extension of Task XVI including Demand Response services as a new subtask

### 4 Goals and work plan for the next period

The main goal is to kick off Phase III successfully and to integrate the new participants Korea and Sweden into the work and team.

For the next reporting period, the following activities are planned:

- ✓ Subtask 13 Energy Service Expert Platform
  - Preparation of the 14<sup>th</sup> experts meeting possibly in conjunction with the ECEEE summer study.
- ✓ Subtasks 13 + 16 Energy Service Expert Platform + Dissemination
  - Preparation of the 14<sup>th</sup> Task XVI stakeholder workshop.
- ✓ Subtask 14 Think Tank:
  - Finalization of a paper on "ESCo Market Development: The Role of Market and Project Facilitators", which will hopefully be accepted for the ECEEE summer study in June 2013.
  - Continuation of research on Demand Response Energy Services and possible business models as an additional source of income for ESCos.
  - Preparation of next Think Tank topics as agreed at kick off meeting.
- ✓ Subtask 16 Coaching of individual National Implementation Activities
  - Implementation of the individual national implementation activity plans to develop energy service markets will be followed up, based on the experts plans and discussion during the platform meetings and exchange of good practices.
- ✓ Subtask 17 Dissemination: Publications and presentations planned at:
  - Presentation of IEA DSM at Chinese GIZ DSM mission to Germany in November 2012



- GIZ ESCo fact finding and planning mission to South Africa in December 2012
- ESCo Europe conference 2013 in Copenhagen (pre-conference workshop and panel discussion on procurement)
- Application for peer review for a contribution in Springer's Energy Efficiency Journal. Working title: "How to unite energy Conservation and (Renewable) Supply? The new Integrated Energy-Contracting Model"
- A national seminar on "Implementing Energy Efficiency. Energy Contracting vs. in house implementation" for potential new ESCo customers in Vienna.
- Co-operation with other ongoing energy service projects (Re-Co, IEA ECBCS) to share information and distribute results
- Subtask 18 Management and Reporting (in addition to regular work):
  - Secure participation of Spain and possibly one more country and finalize formal paper work for Phase III.

### 5 Project Time Table

The project time table and current status is shown below:

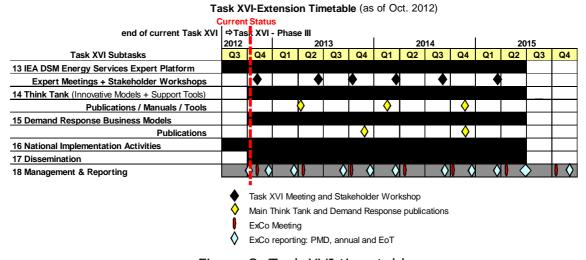


Figure 2 Task XVI time table

Time wise we have spent 4 months out of the 36 month project duration.

All scheduled events and reporting targets have been met.



### **6** Financial Report

The budget is based on five participating countries.

(Budget and cost accumulation by item in € excl. VAT as of October 2012)

Subtask	Total budget €	Cumulative spending €	% spent	Remaining €
13 Energy Services Expert Platform	36.000	5.600	16%	30.400
14 Energy Services Think Tank	72.000	2.000	3%	70.000
15 Demand Response ES Business Plans	12.200	0	0%	12.200
16 Coaching of National Implementation Activities	12.800	0	0%	12.800
17 Dissemination (Internat. + Nat.)	13.000	800	6%	12.200
18 Management & Reporting	42.000	3.200	8%	38.800
Subtotal	188.000	11.600	6%	176.400
Travel costs	28.000	1.200	4%	26.800
Printing&other	9.000		0%	9.000
Total	225.000	12.800	6%	212.200

Figure 3 Budget

After 4 months (out of the 36 month project duration) 6% of the budget has been spent.

With Spain's anticipated joining of Task XVI Phase III, the additional budget available will be mainly allocated to Think Tank research on Demand Response Services.



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### Switzerland (since 07/2012)

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Energetic Solutions (since 07/2012)



Energetic Solutions

### **Belgium**

Fedesco

www.fedesco.be

EnergInvest (since 07/2010) www.energinvest.fr

Factor4 (since 07/2010) www.factor4.be

**Finland** (until 06/2009) Motiva Oy www.motiva.fi

**India** (until 06/2012) Bureau of Energy Efficiency www.bee-india.nic.in

**Japan** (until 06/2009) Japan Facility Solutions, Inc. www.j-facility.com

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Contact details are provided at the inside of the cover.























### AGENDA 5b. (40<sup>th</sup> meeting of the IEA DSM Programme)

### **Document K**

# Task 21: Standardisation of Energy Efficiency Calculations

Harry Vreuls, NL Agency

Task Status Report November 2012

This Task Stats Report is submitted to the IEA DSM ExCo with a request to:

\* To approve the Task status report

### Participating countries

The following countries are participating: France, Korea, Netherlands, Norway, Spain, Switzerland and the USA.

### Progress in the work

Since the last expert meeting April 2011 in Seoul (Korea) no additional meeting was organised.

The Operating Agent analysed and updated all country reports, taken into account a harmonisation on the notation in formulas. As several formulas in case applications were related to national approved notations while changing notations would make it more difficult to understand the case applications in combination with more detailed underlying reports, the formulas in the country reports continued to be as they ware provided by the country experts. All draft final country reports hold the same structure and if applicable the Demand Response case application where added. The section on standards related to energy savings calculations has been compared with additional sources, especially for ongoing international activities and where needed updated and improved. The same quality check has been conducted to the section use of international guidelines and guidance.

The harmonised notations are included in summaries on calculations for each technology case application and providing information on each country case application. The Operating Agent provided for these summaries for:

- lighting in households;
- heat pumps in households;
- air conditioning in commercial building/offices;
- residential insulation:
- variable speed drives and high efficient motors in industry;
- heating system in commercial buildings.

The experts reacted on these final drafts in the period August-September. All experts approved the draft, while those from Norway and Korea provided for the country report additional, updated and improved information to be included in the final version for Exco approval. The final country reports are about to be sent to Exco delegates for their approval.

The summaries on energy savings calculations for the technologies are also approved by the country experts. These summaries will be sent to the Exco delegates for approval, together with the final country reports.

The information from the country reports and the summaries is input to the draft Report on Guidelines for energy savings calculations. In this report also information for the ongoing work in different states and regions in the USA on harmonisation and on the use of deemed savings (e.g. the Northeast Energy Efficiency Partnerships (NEEP) and the draft CEN standard on energy savings calculation is incorporated. At the moment The OA and the expert at NL Agency are working to finalise the draft within the coming weeks, including the output from the discussions during the meeting of the ISO standardisation on energy savings

calculation, that took place end of September in Berlin, as well as the impact from the new EU Directive on Energy Efficiency that has been approved by the Council early October. It is foreseen to send the draft for approval prior to the Exco meeting in November.

The Operating Agent updated and improved the information on the case application of DR programmes. For those DR programmes that were also (partly) relevant for the Task XV, Network driven DSM case studies and Task XVIII, DSM Projects database the information from these Task has been used and included in the references. The following DR programmes are included in the Task:

France: Tempo Tariff, Critical Peak Pricing;

Italy: Interruptible and load shedding Programmes;

Norway: Remote Load Control; Spain: Interruptible service;

USA: State-wide Pricing Pilot Program in California.

The DR programmes are included in the country reports, which are approved by the country experts.

In the report on Roadmaps along which ESC standards could be further developed it will be concluded that the European (CEN) as well as the international standardisation organisation (ISO) are in the process of creating general standards on energy savings and energy savings calculations. These standards will hold more general guidance. For Europe the CEN Taskforce has discussed to develop more examples, but for the moment funding is missing to start this work. In the USA the Uniform Methods Project is started. DOE aims to establish easy-to-follow protocols based on commonly accepted engineering and statistical method for savings for energy efficiency measures. In Europe the new EED might result in more energy providers obligations (and related energy savings calculations) while EU member states using additional policy measures has to provide more detailed description on the methods for energy savings by the end of 2013. As proposed during last Exco meeting, additional work within the IEA DSM Agreement could be in:

- Develop case applications for selected additional technologies as input for the follow-up of the EU/ISO standardisation work, the EU programmes and/or the US uniform methods projects;
- Develop case applications and evaluations for packages of P&M:
- Develop guidance for energy savings impacts in packages of P&M;
- Develop default values, and/or a range of values including guidance on how to develop and update such values for energy savings calculations;
- Develop a toolbox with a computer program that conducts several comparable energy savings calculations and produce also a harmonised one.

A first draft of this report is now under discussion at NL Agency and a final version will be available latest at the Exco meeting.

The draft Report on Guidelines for energy savings calculations is in progress. While the report on energy savings concentrates on the harmonised energy savings calculations, this report summarises existing approaches, terminology and key elements for energy savings calculations in use in monitoring and evaluation of energy savings programmes. The evaluation practises as collected by the country experts and the Operating Agent are the input for this report. Additional the report holds a chapter on key elements for DR products. This report is under preparation and a draft is foreseen to be available early November.

The international standardisation organisation (ISO), Task Committee 257, rules for determination of energy saving, organised their third meeting in September 2012 in Berlin. The Operating Agent continued to participate in this work. Results of this ongoing ISO work is incorporated in the report on roadmaps.

### Financial status

### **Budget**

The budget, as included in the work plan is follows:

		Manpower	Project	Total
		(€)	costs (€)	(€)
Subtask 1	Existing ESC standards, standards under development and most relevant reports for ESC	46000	4000	50000
Subtask 2	Basic concepts, rules and systems for ESC standards	72000	5000	77000
Subtask 3	Potential for use and continue development and maintenance of ESC standards	67000	9000	76000
Subtask 4	Communication and information	38000	39000	77000
TOTAL		223000	57000	280000

#### **Status**

By 1<sup>st</sup> October 2012 the expenditures for manpower were  $\in$  198,760 and the project costs were  $\in$  39,233. So the total costs were  $\in$  237,993. For manpower in October and November additional  $\in$  15,000 is foreseen. As agreed in earlier Exco meeting a part of the budget is set aside for communication actions after finalisation of the subtasks. Some of this time might also be used for preparing a new subtask. The contract for editing the reports is not included in these expenditures yet.

It is foreseen that the project can be finalised within the budget. Within the budget of subtask 4, communication and information capacity is allocated for communication (e.g. distribution of the outcome of the Task at conferences and providing answers to questions) up to early 2013. Part of this budget will be used to ensure that the information from the Task is used by the international standardisation organisation (ISO).

All countries received the invoices. Final payment by Switzerland is waiting the approvals of the reports.

Work plan for the coming months

There will be some outstanding work on lay-out and editing of the reports. It might be possible that not all the comments on draft reports will be taken into account by the time the Exco will meet. Also the leaflets have to be updated. As usual the Operating Agent will provide input to the Annual Report 2012.

All the reports will be published on public section of the IEA DSM Website.

The Operating Agent will continue to provide information to relevant stakeholders. It is foreseen to prepare a paper on the Task results for an international conference.

The Operating Agent will continue to co-operate with the ISO work group "Definition of a methodological framework applicable to calculation and reporting on energy savings".

Items for the EXCO

1. To approve the status report

### AGENDA 5c. (40<sup>th</sup> meeting of the IEA DSM Programme)

### **Document L**

# TASK 20: Branding of Energy Efficiency Services

### Task Status Report November 2012

Balawant Joshi, ABPSInfra, India

The Task Status report is submitted to the IEA DSM ExCo with a request to:

 Approve the request of the Operating Agent to restart the work and approve the Work Plan.

### Task XX - Branding of Energy Efficiency

### Operating Agent: Balawant Joshi, ABPS Infrastructure Private Limited, India

#### Introduction

"Branding of Energy Efficiency" was first identified as an area for new work at April 2006 Executive Committee meeting in Copenhagen. At the 31st Executive Committee meeting held in April 2008, Task XX on Branding of Energy Efficiency was put into force.

The Task is expected to develop significant understanding of barriers associated with branding of energy efficiency and strategies to overcome those barriers. The Task has been proposed with the belief that it should be possible to reverse the fortunes of energy efficiency products and services, if successful branding is achieved. Branding of energy efficiency products and services would increase their visibility and credibility.

The Task is expected to build in the achievement of Task VII. While Task VII has taken the initial step towards development of a framework for market transformation, it is necessary to evolve a comprehensive framework, which could be used by the government and industry to develop the market for energy efficient products.

### **Objectives**

The Primary Objective of this Task would be to 'Develop cogent and comprehensive framework for promotion of branding of energy efficiency in electricity markets at different level of maturity'. Apart from the above mentioned main objective, need for research in the following areas was felt to be immediate:

- To identify knowledge & attitude of households in developing electricity markets;
- To identify best practices in definition of suppliers of energy efficiency products and services;
- To identify the potential for energy efficiency products and services in other energy consuming sectors such as agriculture, industrial and commercial, etc.;
- To identify the potential for programmatic approach towards energy efficiency; and
- To identify the barriers to branding of energy efficiency;

### Subtasks:

Following subtasks were identified in Task XX-Branding of Energy Efficiency.

Sub-task I: Energy Efficiency Offerings Analysis

Sub-task II: Energy Efficiency Consumer Analysis

Sub-task III: Assessment of relationship between EE product pricing and maturity of electricity market

Sub-task IV: Review of branding strategies in similar areas

Sub-task V: Identification of 'Best Practices in Branding EE'

Subtask VI: Communication and Outreach

### Status of the Task

According to original work plan, the task was to begin in October 2009 and task was to be completed within 24 months. The first expert meeting of the task was held in Madrid on December 7-8, 2009. As per Work Plan, OA initiated sub-task I and carried out substantial research in this regard. However, owing to administrative issues faced by the OA, he requested ExCo to keep the task in abeyance. Currently, the task is on HOLD.

### Problems faced by the Operating Agent:

As per the procedures laid down under IEA – DSM Implementing Agreement, Operating Agent raised invoice towards the first year annual contribution on February 5, 2010 on four participating countries. While India paid invoice in March 2010, Spain and France paid in December 2010 after significant follow up. It was noticed that participating countries are imposing difference administrative requirements on the Operating Agent. USA indicated that it had budget for only one year. Further, USA required that the OA enter into separate agreement with the entity in USA. As a result, the contract could never be entered into with USA.

IEA – DSM IA requires participating countries to appoint the country experts to assist the OA on tasks. While Spain and USA appointed country experts, India never appointed the country expert. Further, country expert appointed by France left the organization. As a result, necessary support was not available to OA.

OA brought to the notice of the Executive Committee that the administrative overheads for IEA – DSM task are very high. Also, the budgets were prepared using charge out rates in 2008, which are very low. Also, he informed the ExCo about losses incurred due to taxes and foreign exchange. As a result, task has been kept on hold.

In view of the above, the Operating Agent has proposed that the task should be restructured and reduced to sub task V. This would mean submission of the "Report on Best Practices in Branding of Energy Efficiency". Spain, France and USA have already confirmed their acceptance to this proposal. The request has been sent to India to confirm acceptance to the proposal. The Sub-task V is discussed in detail below:

### Sub-task V: Identification of 'Best Practices in Branding EE'

Subtask Objective

To identify case studies and develop best practices in branding of energy efficiency and to identify role of institutional structures and government support in development of successful branding strategies.

Subtask Deliverables

A report summarising best practices in branding of energy efficiency.

### Work to be carried out

In this sub-task, survey of successful efforts in branding of energy efficiency in the participating countries as well as other countries will be undertaken. In this regard, Operating Agent will develop questionnaire and circulate the same to all the participating country experts for the development of Case Studies.

This sub-task will also help to develop the best practices in branding of energy efficiency. The Country Expert in consultation with the Operating Agent will undertake the following activities for the development of best practices in branding of energy efficiency: development of case studies for successful branding efforts across the globe, synthesize information collected during subtask-I & II, understand business enablers for branding in each case, identify best practice in branding of energy efficiency, identify inter linkages for different aspects of branding, identify role of institutional structures and government support in development of successful branding and identify key lessons which may be adopted in development of successful branding strategies.

### Activities planned for next six months

The research will be carried out related to sub-task V and further report will be submitted for sub-task V.

### Expenditure

As on February 28, 2011, the Operating Agent had spent Euro 67783 on the task, which is 20.52% of total value of the task, Euro 330400. The details of expenditure are as given below:

Sr. No	Item	Expenditure
1	Task Definition Phase	4400
2	Sub-task 1	16534
3	Sub-task 2	11609
4	Administrative	30370
5	Task Expert Meetings	4870
	Total	67783

No further contribution is envisaged from either participating countries or ExCo. Contributions received in 2010 from three countries would be adjusted against expenses already incurred and to be incurred on execution of sub-task 5.

### Involvement of industry and other organisations:

### India

Bureau of Energy Efficiency

### Spain

Red Electrica de Espana

### **United States**

Lawrence Berkeley National Laboratory,

### France

**ADEME** 

Département Marchés et Services d'Efficacité Energétique,

### Reports produced in 2012

Nil

### Reports planned for 2013

Name of report	
Best Practices in Branding Energy Efficiency	

### Technology development success stories

Nil

### Positioning of the Task - vs. other bodies

Χ

### **Activity Time Schedule**

Subtasks	Starting date	Ending date
Subtask V: Identification of "Best Practices in Branding EE"	2012-12-01	2013-04-31

### **Expert Meeting**

No expert meeting is planned.

*Issues to be considered by the Executive Committee* 

The Executive Committee is requested to approve the request of the Operating Agent to restart the work and approve the Work Plan. Further Operating Agent will not raise any further invoices on any country.

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### AGENDA 7b. (39th meeting of the IEA DSM Programme

### **Document M**

### **Future of the Agreement**

Synthesis of the evaluation questionnaire

November 2012

**Rob Kool/Hans Nilsson** 

### DRAFT 2012-10-10 rev. 15 Hans Nilsson

### The IEA DSM-Programme - New work plan.

### A synthesis of the questionnaire.

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### 1. Value of the Output from the Programme

The output from the Programme seems to be relevant for the participants. The output is even deemed to be, in some instances, innovative. The scope of the Programme however seems to be a problem. Not necessarily that it is wrong but it is complicated. Comments are made that it is being wide, being policy-related (rather than technology) and being in risk of duplication with other IAs. The duplication risks mentioned relate to IAs: 4E, ISGAN, SHC, and ECBCS.

The participants seem to both have a difficulty in <u>positioning</u> of the Programme (relate it to other (technology-oriented) IAs) and to <u>communicate</u> the Programme scope (idea) to decision-makers and stakeholders in their surroundings. Partly the terminology and concepts are found confusing, which could depend on that the DSM-concepts are archaic since they were developed as far back as 30-40 years ago?

There is a lack of <u>visibility</u> and <u>dissemination</u> of the work in such a format that enables outside uptake of experiences/results. This limits the value to a restricted group of task-participants and for the limited time of task-duration.

### **COMMENTS:**

The overlaps should be reduced by the existing internal <u>IEA co-ordination groups</u> for buildings, energy and renewable fuels.

The concepts are fairly well described in the existing strategy (2008-2012) but the text is not easy in particular for someone that is not involved in the daily work

Dissemination remains a problem and has at least 2 faces. One is to make <u>stakeholders</u> aware of the subject and the work. The other is to make the <u>results accessible</u> in wider circles both among participants and outside.

### 2. Applications in national policies

The application of results from the work, thus being channelled into national policies, seems very limited for national policies. With the exception that the work might have inspired national activities and stakeholders.

In spite of the somewhat restrained comments on general applications there are several examples where very practically oriented work regarding e.g. technology procurement (III), Demand Response (XIII and XIX), ESCO and EPC (X and XVI), "White Certificates" (XIV), Verification and Calculation (XXI), and EERS (XXII), have been "fed in" to local actions.

To some extent material has also been used for <u>capacity building</u> in participants' own organisation.

Recent events, such as the Fukushima incident, have also motivated governments to <u>rethink</u> <u>their energy policies</u> and put more emphasis on DSM-actions. When (and if) this happen some of the past work may be particularly useful.

Participants to <u>some (but very little) extent</u> seem to <u>brief stakeholders</u> in their constituencies about work (tasks) when started and terminated. This could happen either in direct briefings or in workshops.

The variety of DSM-measures has a value in that it can be shown to policy-makers that there is a multitude of options and that several of them brings not only economic benefits.

### **COMMENTS:**

The crucial issue here seems to be accessibility and availability of material that is of such a <u>format</u> (length, language) that addresses the concern of important parties such as decision-makers in departments, states, regions and administrations.

To the extent that there is a trend to make use of Energy Efficiency Obligations this may call for renewed actions to bring in <u>utilities and their associations</u> to have an exchange on what works and what doesn't.

The same for <u>regulators</u> on their applications of EEO.

### 3. Applications in Industry

There is a difference in the participants view on industry. Most refer to <u>utility business</u> and <u>service providers</u> whereas others primarily think of <u>industry as users of energy</u>. For the former there are clear cases of how ESCO-EPC (XVI), DR (XIII and XIX) and Integration (XVII) material has been of interest and been applied in developing business-models as well as simulating operations.

For the latter there is less such evidence, but the development of smart grids have been indicated as serving also local production of energy as well as more sophisticated control (DR).

### **COMMENTS:**

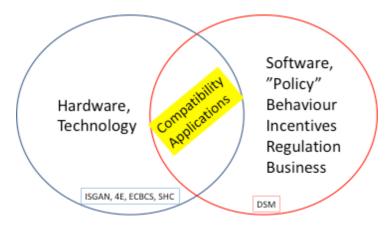
This might be a <u>new focus area</u> in particular with a more defined collaboration with e.g. ISGAN to <u>deploy "Smart Applications"</u> making use of the full range of DSM-activities.

### 4. Application with end-users

Task XVI and in the future Task XXIII and XXIV seems to be those that have most relevance for end-users.

### 5. Overlap (in particular within the IEA)?

There are several recorded <u>assumptions</u> (or <u>fear</u>) of <u>overlaps</u>. Most (all of them?) seem to be related to IAs who primarily deal with hardware technology issues and where we deal primarily with software policy matters. To the extent that there is a real overlap these should be fairly easy to reconcile (see figure).



The possible overlap between the DSM-Programme and the IEA secretariat is also mentioned. Which should be possible to handle with a more <u>dedicated secretariat involvement</u>. It might be possible to illustrate the relation between the two main strands as two circles with a partial overlap <u>and define the area for common issues</u>.

Overlaps with other outside programmes, with European Commission (EC) and IPEEC<sup>1</sup> are mentioned, should also be considered but <u>cannot be as easily handled</u> within "the family". Such overlaps can be more genuine, but nevertheless be reconciled. The EC participates in some of the IEA IAs working with Renewables. IPEEC is drawing upon the IEA secretariat resources which should, in principle, allow for a harmonic development

An overlap issue is the <u>emergence of new and related networks</u>. IPEEC has been mentioned. The Clean Energy Ministerial<sup>2</sup> has launched several projects. IRENA<sup>3</sup> might be involved in some actions that relate to DSM and utilities.

The advice to avoid duplications however acknowledges both that <u>complete avoidance cannot</u> <u>be expected</u> and that some overlap <u>might be a part of a creative/innovative process</u>. That said, it is important that <u>preparations are thorough</u> enough. Potential overlap should be a title in the preparatory documentation.

<u>Common and back-to-back ExCo meetings</u> was suggested as well as invitations to other IAs that may be concerned as <u>guest at ExCos</u>.

### **COMMENTS:**

We need to reiterate that the IEA secretariat has a crucial responsibility for the co-ordination both between IAs and between themselves and the IAs as well as for the "bigger picture" of global sustainability work. The backbone of this is the desk-officer function which would require a closer and more determined participation from them.

The combined function of IAs and secretariat could be a very strong unit that might allow more joint forces instead of splits as happen today when new initiatives mushrooms.

The secretariat managed <u>Co-ordination groups</u>, that imply that all IAs are invited once a year to discuss co-ordination among them, are good but <u>needs to be elaborated</u> by allowing IAs to closer follow each other by use of web-functions.

The preparatory work for new tasks should take <u>not only overlaps but also possible joint</u> interests into account.

The ExCo meetings (and related workshops) should be used for both outreach and coordination by invitations to important partners both within and outside the IEA.

### 6. How does DSM complement others (in particular within the IEA)?

Reasonably the DSM-Programme should have a <u>distinct profile different</u> from many others, see figure above. This has however not been communicated or <u>understood</u> in full.

The complement that seems to be the most important is that <u>related to smart grids</u> (ISGAN), which is so much more important after the ISGAN workshop (see separate report) where their focus on applications is DR (XIII, XIX and XXIII) and Integration (XVII) but also Behaviour (XXIV) though they have not yet managed to articulate that.

An aspect put forward is the DSM-Programme <u>relevance for resource planning and investment</u> which is covered at least in part in e.g. Task XV (Network Driven DSM) but also requires that several task results are pulled together and synthesised.

<sup>&</sup>lt;sup>1</sup> http://www.ipeec.org/default.aspx

<sup>&</sup>lt;sup>2</sup> http://www.cleanenergyministerial.org/

<sup>&</sup>lt;sup>3</sup> http://www.irena.org/home/index.aspx?PriMenuID=12&mnu=Pri

The IEA internal organisation with <u>EEWP and EUWP</u> was mentioned as both an opportunity and a problem. Maybe EEWP should be better informed about our activities.

### **COMMENTS:**

A start for any improvement of co-operation must start with a better <u>communication</u> (and <u>possibly rephrasing/definition</u>) of our work, call it DSM or whatever. In doing so we also must define (name) <u>receivers of output in categories</u>, define topics of work and possibly <u>refine products to communicate</u>.

Considering the amount of initiatives that comes from several other organisations (see 3 above) and the growing mutual interest among IEA IAs there could be a case for a "formal" SWOT-analysis to illustrate how parties can make use of each other competence

### 7. The DSM portfolio- Additions and priorities

There is a huge amount of suggestions on both work and the ranking. In the following there is an attempt to bring some order, but there are still many cross-cutting opportunities between the entries. It was pointed out that there is no obligation to cover the entire field of possible DSM ©!

### **BUSINESS AND GOVERNANCE**

- a) <u>Business Models/Conditions.</u> A vast potential for energy efficiency is recorded and some of the barriers addressed whether they are institutional or behavioural. But business organisation remains a problem. Energy Efficiency is technically easy but organisation of the delivery is still complicated. Business is not staged and prepared to deliver Negawatthours
- b) <u>Management of releasing Energy efficiency as a resource.</u> Related to the above governing a system that delivers energy efficiency as standard remains a problem. Actors, Financing, Calculation including all benefits, etc.
- c) <u>Country Specific analysis and calculation of the potential.</u> Many agrees on DSM activities in general and as a principle, but the way forward may have to be more well defined/illustrated to get attention.
- d) <u>Pilot Projects (documented) Best/Worst Practice?</u> To give features and examples whether to follow or avoid.
- e) <u>Municipalities.</u> In many parts of the world municipalities take their own initiatives and show great innovativeness that can be multiplied.

#### **SMART APPLICATIONS**

- f) <u>Demand Response.</u> A huge area but important as a part of the "smartness" of the system. Finland has provided a catalogue of aspects that should be considered.
- g) Smart use of the power e.g. for mobility (charging of vehicles)
- h) <u>Local Generation</u>. Onsite generation and storage for more reliable systems.

Other remarks were that <u>DSM</u> does not necessarily require high-tech. installations, that we may need some more long-ranging projects but still being able to deliver <u>more fast responses</u> to distinct problems and finally that there is a need <u>for increased involvement of industry and local government</u>.

### **COMMENTS:**

Our "Cluster" organisation is based on technical consideration but there may be a need to consider a <u>different "clusterisation"</u> that focus on the actors that should implement the results.

### 8. Internal Operational issues

There is a general satisfaction with the way the programme is managed. Some criticism to the way that the tasks are run in particular when the <u>deliver too late</u> and need extensions to complete the work.

There are however several ideas on improvements. One concern is the dissemination which is judged to be weak. Another is the slow start of projects. A third is that the need (and interest) in energy efficiency is more important in the world outside the present participants – are we addressing the right issues and right partners today?

The ExCo-meetings are highly valued for their opportunities to exchange views even if there are some feelings that twice a year is too often OR that we could make <u>use of webmeetings</u> as a complement. The <u>ExCo meeting format could be widened</u> e.g. with brainstorming sessions.

<u>More active ExCo-delegates</u> also between the meetings would facilitate and drive the task experts to deliver more accurately.

The <u>social network</u> might be more used as a tool for <u>exchange of expert views</u>. Some suggest <u>independent external evaluations</u> of the work.

<u>Categorization of membership</u> based on "country-size" has been used from the beginning of the Programme but has since been changed to equal fees for all.

### **COMMENTS:**

Part of the problems could be handled with <u>more active ExCo-delegates</u> between meetings. Maybe those who participate in a Task should have midway-web-conferences between ExCo-meetings to make sure that the task experts and the OA stays on track.

<u>The DSM-University</u> idea needs to be developed further with the main task to make material accessible and available and target it to wider audiences.

The cluster organisation (see above) may have to re-considered and developed. We may need "cluster-chairs" that keep track of work and of work preparations.

There could be a case for <u>"fast tracking"</u> to solve problems in partnership between just a few participants and then these may find if there is a need to go further and develop new Tasks.

Our presence in the ASEAN-region and together with APEC (who already has established partnerships on energy efficiency) must be explored.

### 9. Communication

The existing means, website, newsletter and Facebook are generally appreciated. There is a need to <u>distinguish</u> between the strategic communication and the operational, but we must also limit our ambitions and understand that we will never be strong enough to be a policy driving force.

DSM hot topics could be subject for webinars.

The <u>website is a bit too static</u> and information (even if standardised) on tasks are not easy to find. Maybe they should have their own websites.

More <u>linking with other IAs</u> (joint workshops) and with research activities within the participating countries.

We should seek publicity in journals more often.

### **COMMENTS:**

Should ExCo-delegates be more active in dissemination and in social media? We need to build <u>partnerships and alliances</u> in a more effective way both to gain visibility and to pave for dissemination

Agenda 7a.

### DOCUMENT N

# Visibility Committee Report

Submitted by Anne Bengtson, Executive Secretary Presented by Rob Kool, Chairman

The Visibility Committee report is submitted to the ExCo in Espoo to:

Approve the Report

### **DOCUMENT N**

#### IEA DSM PROGRAMME VISIBILITY COMMITTEE REPORT

Submitted by Anne Bengtson, Executive Secretary

### **Annual Report**

The 2011 Annual report, including a Theme Chapter on DSM – Trends, Needs and Opportunities, was made available electronically to ExCo members by the end of January and were uploaded to the IEA DSM website. Printed copies (250) were sent out in March to the EUWP, EEWP, ExCo Members and Operating Agents. Executive Committee Members and Operating Agents should ensure that copies are distributed to all interested parties.

Input from the Operating Agents for the 2012 Annual Report is usually required around mid-November, however, with the ExCo meeting taking place mid November, the deadline will be 30 November 2012.

The ExCo members should consider including a Theme Chapter on DSM.

### Issues

Any thoughts on format or content in the Annual report should be raised at the ExCo meeting in November or through the Visibility Committee Chairman beforehand. As we don't have a Visibility Committee Chairman at the moment you can send your concerns to anne.bengtson@telia.com

### Website

All ExCo delegates and Operating Agents are strongly encouraged to review the whole website regularly, particularly areas relevant to their activities. It is very easy for information to become outdated. Operating Agents have considerable freedom to keep their own Task areas up to date, but other feedback, reporting of functions that appear not to work and suggestions for further improvements should be made via Anne Bengtson and/or the Visibility Committee. In particular, we would be interested to know how useful the social network links are.

### **Statistics**

Total website hits:

September 2010 to August 2011 – 821 809 visitor hits September 2011 to August 2012 – 995 224 visitor hits

Hits per day:

September 2010 to August 2011 - 2252 per day September 2011 to August 2012 - 2727 per day

Download information for Task's – see attachment.

### Website Solstice

At the time of writing this report the below improvements to the DSM website have not yet been developed. This will happen in the end of October and the new sections will be populated before the ExCo meeting by the Executive Secretary:

- Addition of a new Columns section to allow approved articles by Members or Third parties that are of interest or relevance to the Implementing Agreement to appear on the website.
- Addition of a calendar of events to the public-facing website

- General maintenance which will include: installing drop-downs on the main menu, displaying sub-pages within each section
- Better use of news by providing a means of adding news items in a similar method to columns
- Adding a Press Release section to the website
- Adding a Newsletter section to the website

### Solstice proposal for further developments

The IEA DSM Programme has identified a need to send regular email newsletter and other correspondence to members of the public that have registered their interest via the website.

Currently, this relies on a lot of manual effort in extracting a list of recipients as Excel and then emailing using a standard email client in small batches (5400 names in the database at present). This is both time consuming and impractical and so it is suggested that the secure Administration area of the IEA DSM website is further developed to allow for bulk email sending as and when required. (See proposal from Solstice - Attachment)

#### **Issues**

- 1. We would welcome suggestions for further developments
- 2. Members should review the website regularly
- 3. Decide on suggested developments from Solstice

### Spotlight Newsletter

In 2012 four DSM Spotlight newsletters will have been published. It is proposed that the same be done in 2013.

To date the following 2012 newsletters have been published and are posted on the DSM website:

- Issue 44/March 2012
- Issue 45/June 2012
- Issue 46/October 2012

The last issue will be published:

• Issue 47/December 2012

Articles in Issue 47: Task 21 report, Task 23, New Zealand joining the Programme, Chairman's note – recap of IEA DSM activities and accomplishments and plans for 2013, Hans Nilsson recap of DSM in 2012 and hopes for 2013.

We are grateful to all the ExCo members and OAs who have contributed articles to the Spotlight Newsletter this year. In 2013 the Editor looks forward to highlighting not only the Task work, but also DSM work in the Member countries.

The Programme has tremendous news to share so please continue to think about, suggest and submit future articles. The Editor is happy to work with you on an article in any form – completed article by you or someone else, information for an article that you would like for the Editor to write, a

conference paper that the Editor can convert into a newsletter article or just an idea that you think would make an interesting article. If you have an article to contribute, please email it to Pamela Murphy [pmurphy@kmgrp.net].

### Issues

With four newsletter issues published in 2012, it is proposed that the same be done in 2013.

The proposed schedule for 2013 is:

- Issue 48/March 2013
  - o Articles due: February 1
- Issue 49/June 2013
  - o Articles due May 1
- Issue 50/September 2013
  - o Articles due August 1
- Issue 51/December 2013
  - o Articles due November 1

### **BROCHURE**

Comments on the format, style and content of the brochure and the inserts are welcome. The inserts were last updated in October 2012.

#### Issues

Please provide comments on the brochure and its contents at the November ExCo.

### TASK FLYERS

Task flyers for Task 23 and Task 24 have been published and are on the DSM website

Anne Bengtson Executive Secretary

### **DOCUMENT O**

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## Task XVII – Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages Operating Agent

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### Task XX - Branding of Energy Efficiency Services Operating Agent

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### Task XXI – Standardisation of Energy Saving Calculations Operating Agent

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### Task XXIII – The Role of Demand Side in Delivering Effective Smart Grids

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### Task XXIV – Closing the Loop – Behaviour Change in DSM: from theory to policies and practice Operating Agent

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