



**International Energy Agency**  
Implementing Agreement on  
Demand-Side Management  
Technologies and Programmes

**2002 Annual Report**

**International Energy Agency**

**Implementing Agreement on  
Demand-Side Management  
Technologies and Programmes**

**2002 Annual Report**

Edited by Anne Bengtson  
Executive Secretary  
IEA Demand-Side Management Programme

January 2003

# Foreword

This report is the ninth Annual Report of the IEA Implementing Agreement on Demand-Side Management Technologies and Programmes, summarising the activities of the ninth year.

The report was published by the Executive Committee and was edited by the Executive Secretary, with contributions from the Operating Agents.

*Stockholm, January 2003*

# Table of Contents

	Page
<b>Overview of the IEA and the Demand Side Management Agreement</b>	5
<b>Chapter I Chairman's Report</b>	7
<b>Chapter II Strategic Planning for the Future DSM Programme</b>	15
<b>Appendix 1</b>	20
<b>Appendix 2</b>	23
<b>Chapter III</b>	25
Task I International Database on Demand-Side Management Technologies and Programmes	25
Task II Communications Technologies for Demand-Side Management	27
Task III Co-operative Procurement of Innovative Technologies for Demand-Side Management	28
Task IV Development of Improved Methods for Integrating Demand-Side Options into Resource Planning	29
Task V Investigation of Techniques for Implementation of Demand-Side Management Technology in the Marketplace	30
Task VI Mechanisms for Promoting DSM and Energy Efficiency in Changing Electricity Businesses	31
Task VII International Collaboration on Market Transformation	33
Task VIII Demand Side Bidding in a Competitive Electricity Market	34
Task IX The Role of Municipalities in a Liberalised System	35
Task X Performance Contracting	36
<b>Chapter IV</b>	37
Task I International Database on Demand-Side Management Technologies and Programmes	37
Task II Communications Technologies for Demand-Side Management	44
Task VII International Collaboration on Market Transformation	50
Task VIII Demand Side Bidding in a Competitive Electricity Market	58
Task IX Municipalities and Energy Efficiency in a Liberalised System	62
Task X Performance Contracting	69
<b>Chapter V Executive Committee Members IEA DSM Technologies and Programmes</b>	75
<b>Chapter VI Operating Agents IEA DSM Technologies and Programmes</b>	81



# Overview of the IEA and the Demand Side Management Agreement

## International Energy Agency

The International Energy Agency, founded in November 1974, is an autonomous body within the framework of the Organisation for Economic Co-operation and Development (OECD) which carries out a comprehensive program of energy co-operation among its 26 member countries. The European Commission also participates in the work of the Agency.

The policy goal of the IEA includes diversity, efficiency and flexibility within the energy sector, the ability to respond promptly and flexibly to energy emergencies, the environmentally sustainable provision and use of energy, more environmentally-acceptable energy sources, improved energy efficiency, research, development and market deployment of new and improved energy technologies, and co-operation among all energy market participants.

These goals are addressed in part through a programme of international collaboration in the research, development and demonstration of new energy technologies under the framework of over 40 Implementing Agreements. The IEA's R&D activities are headed by the Committee on Energy Research and Technology (CERT) which is supported by a Secretariat staff in Paris. In addition, four Working Parties (in Conservation, Fossil Fuels, Renewable Energy and Fusion) are charged with monitoring the various collaborative agreements, identifying new areas for cooperation and advising the CERT on policy matters.

## IEA Demand-Side Management Programme

The Demand-Side Management Programme is a collaboration among seventeen IEA member countries plus the European Commission working to clarify and promote opportunities for Demand-Side Management (DSM).

### The participating countries are:

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

Ten projects or Tasks, have been undertaken since the beginning of the Demand- Side Management Programme. The overall programme is monitored by an Executive Committee consisting of representatives from each of the member countries. The leadership and management of the individual Tasks are the responsibility of Operating Agents. The Tasks and their respective Operating Agents are:

- Task I:** International Data Base on Demand-Side Management Technologies and Programmes – Mr. Harry Vreuls, NOVEM, The Netherlands
- Task II:** Communications Technologies for Demand-Side Management – Mr. Richard Formby, EA Technology, United Kingdom
- Task III:** Co-operative Procurement of Innovative Technologies for Demand-Side Management – Dr. Hans Westling, Promandat AB, Sweden
- Task IV:** Development of Improved Methods for Integrating Demand-Side Management into Resource Planning – Dr. Grayson Heffner, EPRI, United States
- Task V:** Investigation of Techniques for Implementation of Demand-Side Management Technology in the Marketplace – Mr. Juan Comas, ENDESA, Spain
- Task VI:** DSM and Energy Efficiency in Changing Electricity Businesses - Dr. David Crossley, Energy Futures Australia, Pty. Ltd., Australia
- Task VII:** International Collaboration on Market Transformation – Mr. Verney Ryan, BRE, United Kingdom
- Task VIII:** Demand Side Bidding in a Competitive Electricity Market – Ms. Linda Hull, EA Technology, United Kingdom
- Task IX** The Role of Municipalities in a Liberalised System – Martin Cahn, Energié Cités, France
- Task X** Performance Contracting – Dr. Hans Westling, Promandat AB, Sweden

*For more information, see our web site on the Internet:*

<http://dsm.iea.org>

## CHAPTER I

# Chairman's Report

**Hans Nilsson, Chairman  
Executive Committee**

## Introduction

The IEA Demand-Side Management Programme is an international collaboration with 17 IEA Member countries and the European Commission, working to clarify and promote opportunities for demand-side management (DSM). For the purposes of this Programme, DSM is defined to include a variety of purposes such as load management, energy efficiency, strategic conservation and related activities. DSM is thus forming a "tool-box" for utilities and governments in their work to make energy systems more suited to their purpose. Further, the Programme is developed to cover such needs under different regulatory regimes and market structures since the basic need to ensure an optimal function of the energy system is common throughout the world. There have been many changes in the organisation of the energy markets in the world and the DSM Programme has been accordingly adjusted to serve the actual and changing circumstances. The Programme and its Experts have thus achieved a profound knowledge and insight in the management of Energy Efficiency in modern contexts.

The IEA Demand Side Management Programme has for many years developed tools and delivered solutions so that the DSM concept can be used under different regulatory regimes, not the least of which is in liberalised markets. Through co-operative activities, participants will collaborate to help DSM technologies to reach their full market potential, thereby allowing energy systems to function more effectively and giving energy system investments enhanced value for gas and electricity customers. Thus, for whom ever wants to develop or use demand side management activities or related policies and for whatever purposes, the IEA DSM Programme should be the natural first resource to consult to make use of experiences learned and to further develop DSM and Energy Efficiency tools.

## End-Of-Term Review

During 2002 the Programme conducted an end of term review. A formal End-of-Term Report will be submitted to the EUWP in early 2003.

The end of term review established that the work done by this Programme is consistent with the strategies of the CERT and the EUWP and contributes to the energy technology policy goals of the participating countries and the IEA's energy technology programme. I believe that the results of the Programme's work contribute to the evolution of DSM, are used in the participating countries and have significant successes. I believe that the report and the summary will clearly show that the Programme is substantive and comprehensive, with good country participation.

The review also established that the strategy and the work in the Programme is relevant to, and continues to be needed in, the changing energy markets in the participating

countries. Industry and government participation continues to guide the strategy and work of the Programme.

The Programme's information dissemination efforts are, in my opinion, excellent within the participating countries and, as a result of our improved and current website, non-participating countries can access most Task results. The Programme contributes to the OPEN Bulletin and uses other communications channels.

Regarding the added value of the Programme, there is no doubt that participating countries benefit from reduced or avoided costs by collaborating in the Programme's many Tasks. Some Task results could not have been achieved by working on a national level. The benefits from participation clearly justify the costs as significant leveraging is obtained.

## Looking ahead

But it is also time to look further in terms of substance and opportunities. In many countries today there are two pressing issues to address. One is the ability to get a "Demand Response" to shortages in the supply capacity and the other is to make full use of the Demand Side in achieving environmental targets notably the climate targets that are codified in the Kyoto-agreement. As shown the DSM tool-box holds the necessary tools for both. Nevertheless it is important to notice that in present discussion the use of distributed generation could also fill the same purpose and should be considered in achieving the goals of a Least-Cost system. The DSM Programme needs to consider

- A closer collaboration with the other so-called Building Related Implementing Agreements<sup>1</sup> where we can reach out with our products and find partners or shape new collaborations and for dissemination of our products.
- Placing DSM more into the perspective of security of supply for energy systems since the ability to manage the system is what security requires. Energy systems balancing and control have been the subject for studies in the DSM-bidding activities and could be further generalised and dealt with in co-operation with those responsible for power systems functions.
- Green Public Procurement for both policy making and design as well as a practical reality for municipalities and for companies.

This list indicates that there is a reason for a positive outlook not only in terms of "geography" but in order to identify new partners for the new DSM-concept built on experience and good practices.

<sup>1</sup> The Seven Building Related Implementing Agreements are:

- Building and Community Systems
- Demand-Side Management
- District Heating and Cooling
- Energy Storage
- Heat Pumping Technologies
- Solar Heating and Cooling
- Photovoltaic Power Systems.

## News regarding current work

- The Programme has made the *INDEEP database of DSM programmes* available to the general public.
- More attention will be given to work on the development of an *Evaluation Guidebook for Energy Efficiency activities related to the Kyoto mechanisms*.
- The *Field Trial* of energy services using communication will take place and reporting on the trials will be made within the IEA DSM work in the future.
- Present work on *Transforming Markets* by high-profile marketing will come to an end, but may continue within a smaller group of interested countries.
- The work on *Demand Side Bidding (DSB)* has progressed into its final stages and will soon report on the technical rules and practical guidelines for DSB to work.
- A regular newsletter reports on the Programme's examination of *Municipalities* and how they can foster energy efficiency in a liberalised market.
- A final report on *Performance Contracting (ESCO)* is expected early in 2003.

## Discussions regarding possible future work

- *Monitoring and the DSM impact on energy end-use data*. There are great gaps in our knowledge about how energy is used, and therefore, decisions to motivate customers to save energy can easily fail in their objective and great opportunities can be missed.
- *Real-time metering* and the opportunity to give proper incentives to modify energy use in terms of tariffs and prices are often discussed but rarely explored.
- *Energy efficiency (White) and other certificates* have been discussed, based on the presentations at the special workshop on Certificate Trading in Milan held just prior to the ExCo meeting in April 2002, as a method to create a more market-like structure for the allocation of resources and create proper responses.
- *Global information systems for energy standards and labelling* are getting more and more important with the growth in global trade. APEC has created a system that might benefit from being more widely used.

## The future strategy for the DSM-Programme

A need for dealing with the effects of demand remains. The demand response required to solve several issues which are pressing for economic, system security/reliability, environmental and climatic reasons can easily be identified. However, the basic problems remain – there still is a need for more organised ways to deliver these opportunities. However, DSM as a concept has changed and so also might the scope for the programme in the direction of *Energy Demand and Systems Management*.

## Status of the Implementing Agreement

During 2002, a total of 17 countries plus the European Commission were official signatories of the Implementing Agreement. The nineteenth Executive Committee meeting was held in Milan, Italy in April 2002 and the twentieth Executive Committee meeting was held in Graz, Austria in October 2002.

## Programme Structure

In 2002, the Programme initiated 3 new subtasks, resulting in six total active Tasks at the end of the year. The work is thus presently focused on:

- Exchange of Programme experience in an expanding database, INDEEP, and to develop guidelines for the evaluation of the impacts of demand-side management and energy efficiency programmes on greenhouse gas emission targets. (Task I).
- A Field Trial Demonstration of Customer Services by use of a gateway for communication between energy supplier and user (Task II).
- Development of skills for Market Transformation and use of modern marketing methods (Task VII).
- The use of Demand Side Bidding in competitive electricity markets in order to manage systems either for balancing purposes or for frequency response (Task VIII).
- Development and tuning of the Municipalities roles in enhancement of Energy Efficiency in liberalised systems with different market structures (Task IX).
- The use of Performance Contracting and ESCOs and how these instruments and actors can be more widely and more effectively used. (Task X).

A brief description of these Tasks and the expected results follows in Chapters III and IV.

The Programme is considering the following topics for new Tasks:

- Demand Response in liberalised electricity markets
- Energy Efficiency Certificates
- Real Time Metering
- End Use Monitoring
- Energy Standards and Labelling

If these move forward to become new Tasks, they will be reported on in the next Annual Report.

## Achievements of the Programme

The three new subtasks that were initiated this year are responsive to the rapid changes occurring in the energy industry. From the start of this Programme the Executive Committee and Task experts have recognised the important link between energy and global environmental issues, such as climate change and greenhouse gases. And, it is encouraging to see that the results of this year's political events vigorously underline the importance of our work in energy efficiency. For example, the Kyoto Protocol strongly emphasises the necessity of energy efficiency and acknowledges that it is a demand side issue.

Achievements of the Programme's work during 2002 are highlighted below. The details of these and many other accomplishments are covered in the individual Task reports in Chapter III.

### **Task I: International Database on Demand-Side Management Technologies and Programmes**

Over 300 DSM and EE Programmes are now included in the INDEEP database. The software developed to access the database has been finalised. Efforts continued to

update the data and to improve the quality of the information. At the October 2002 ExCo meeting, the decision was made to make the database open to anyone who can use that information and to make the 2000 Analysis Report and the Final Report covering the years 1994–2000 available on the Task’s web site.

At the April 2002 ExCo meeting, the ExCo approved beginning work on a new subtask on the evaluation of energy efficiency programmes related to Kyoto’s GHG targets. Since then the general framework and content of the guidebook has been approved.

### **Task II: Communications Technologies for Demand-Side Management**

The field trial definition project to quantify bundled services, customer participation, technologies and trial costs, was started. National consortia including 30 companies who are contributing to the cost of the subtask were formed in the participating countries to define the trials. A report setting out the requirements of the field trials was completed and the field trials were planned to start during this year. The field trials will include hundreds of households and many services including energy management, audits and remote management of micro-generation.

### **Task VII: International Collaboration on Market Transformation**

The routine mid-term evaluation of this Task was completed and approved at the April 2002 ExCo meeting and the end date of the Task was extended until 31 December 2002. Work on the development of an international Market Transformation model based on the experiences from the UK and the Netherlands continued. The results from a market research study identifying the differences of value patterns in participating countries were presented at a series of workshops.

### **Task VIII: Demand-Side Bidding in a Competitive Electricity Market**

The experts completed their market and consumer survey reports on the potential for DSB in the domestic, commercial and industrial sectors and the Task report on this survey was completed. A workshop was held in March 2002 to explore technical and operational issues surrounding DSB. This highly interactive workshop was well attended. The Task web site now contains all of the relevant Task documents. The ExCo approved a no-cost extension of the Task until 31 May 2003.

### **Task IX: The Role of Municipalities in a Liberalised System**

The routine mid-term evaluation was completed and approved at the ExCo meeting in April 2002. The third Task newsletter was distributed covering a workshop that was held in the UK in December 2001. Two reports were completed in 2002. One was an evaluation of municipal roles and the other was on the impacts of liberalisation. The main conclusion of the two reports is that the municipal role in energy depends strongly on their involvement in district heating.

### **Task X: Performance Contracting**

The routine mid-term evaluation was completed and approved by the ExCo at its April 2002 meeting. Second drafts of country reports were reviewed and several have now been completed. Work on a “Tool Box” Report that will present specific action areas for national work in participating countries has begun. The Task web site was placed into operation in 2001 and is updated continuously.

## Participation in the IEA DSM Programme as of December 2002

COUNTRY	Tasks I		Tasks II	Tasks III compl.	Tasks IV compl.	Tasks V compl.	Tasks VI compl.	Tasks VII	Tasks VIII	Tasks IX	Tasks X
	subt. 8	subt. 9									
Australia					*		*				
Austria					*					*	
Belgium	*	*					*				
Canada		*									
Denmark	*	*		*	*		*	*			
European Commission				*	*		*				
Finland			*	*	*	*	*	*	*		*
France	*	*			*		*			*	*
Greece							*		*		
Italy		*			*						*
Japan	*				*		*				*
Korea	*	*		*	*		*	*			
Netherlands	*	*	*	*	*	*	*	*	*	*	*
Norway	*				*	*	*	*	*		*
Spain				*	*	*	*		*	*	
Sweden	*	*		*	*	*	*	*	*	*	*
Switzerland					*						
United Kingdom			*	*	*		*	*	*		
United States				*	*						*
World Bank/ Tanzania						*					

 Operating Agent and participating country
  Completed Tasks
   
 Participating country

At each of the ExCo meetings in 2002, the representatives from those countries that appear in the above table as not participating in any of the current Tasks and who were present at that meeting, expressed their willingness to explore the interest in their country to participate in one or more of the current Tasks. It is expected that they will join one or more of these Tasks during 2003.

During 2002, Austria, Belgium and Japan, formally changed their contracting parties. During that year, the Czech Republic and Germany sent observers to ExCo meetings. New ExCo members were welcomed from Belgium, Denmark, Japan and the United States.

## Programme Visibility

The Programme's visibility is maintained by its Website, Spotlight Newsletter and the Annual Report.

The Programme's website was redesigned in 2002 with specialised forums and sub-sites. The address is <http://dsm.iea.org>. All Task websites, both open and secure, are linked to the Programme's home page. A new "IEA DSM Awards" page was also added.

Four issues of the Spotlight Newsletter were distributed in 2002. Articles in this year's issues covered current DSM topics such as the relevance of DSM in the EC's European Climate Change Program and EE certificate trading to promote EE and DSM. Newsletter articles also reported on the Programme's work in the areas of performance contracting, market transformation, demand side bidding and Kyoto-related program evaluation. These issues were distributed to over 1200 key decision makers in the area of DSM and energy efficiency and are available on the Programme's website.

The Programme's 2001 Annual Report was printed in January 2002 and distributed to over 300 people associated with the Programme.

The ExCo accepted the resignation of Harry Schaap as Chairman of the Visibility Committee and acknowledged his many contributions to raising the quality of the website and the Spotlight Newsletter. Paul Davidson was selected to be the new Visibility Committee Chairman.

## Benefits of participation

The benefits of international collaboration and co-operative activities of this Programme will be of value in a number of additional important ways. The term Programme is used to describe the work to be done under the legal contract, the Implementing Agreement, and this Programme deals with data, software, analysis, strategy development and studies. A significant benefit for the participating countries is participation itself – the learning process.

- **Saves money.** Many types of activities can be carried out more economically in a collaborative mode than if conducted within one national program. Each country funds only a portion of the work, but has access to the entire results of the project.
- **Saves time.** Work can often be completed more quickly through task sharing and data sharing, accelerating the pace of technological development and application.
- **Increases the size of the technology data base.** The large number of countries included in a collaborative project enlarges the general pool of information available beyond what any one country could manage to assemble by itself.
- **Permits national specialisation.** As part of a collaborative effort, countries can specialise in certain aspects of a technology development or deployment while maintaining access to the larger pool of information from the entire project.
- **Enables complex and/or expensive projects to be undertaken.** Many countries do not have the expertise or resources to undertake every desirable research project. A collaborative project enables the strength and contribution of many countries to undertake collectively what individually would be prohibitive.

- **Enhances national R & D programmes.** National researchers involved in international projects are exposed to a multiplicity of ideas and approaches.
- **Promotes standardisation.** Collaborative work encourages the use of standard terminology, notation, units of measurement, while also encouraging the portability of computer programmes, and common methodology, procedures and reporting formats make interpretation and comparison easier.
- **Accelerates the pace of technology development.** Interaction among project participants allows cross-fertilisation of new ideas, helping to spread innovative developments rapidly, while increasing the range of technologies and approaches employed.
- **Promotes international understanding.** Collaboration promotes international goodwill, and helps participants broaden their views beyond their national perspective.

## How to Participate

If your country has signed the Implementing Agreement, contact the Operating Agent of the Task(s) you are interested in, or the Executive Committee member from your country.

If your country has not signed the Implementing Agreement, and is an IEA-member country, contact the Executive Committee member from your country, or the Executive Secretary, Ms Anne Bengtson, who will provide you with the name of your country's representative to the IEA/CERT. If your country has not signed the Implementing Agreement or is not an IEA-member country, contact Mr. Benoit Lebot, the IEA Secretariat, who will provide you with information on how to proceed.

Chairman  
Mr. Hans Nilsson  
Grubbensringen 11  
112 69 Stockholm  
Sweden  
Telephone: (46) 8 650 6733  
E-mail: [nosslinh@telia.com](mailto:nosslinh@telia.com)

Executive Secretary  
Ms. Anne Bengtson  
Box 621  
182 16 Danderyd, Sweden  
Telephone: (46) 8 510 50830  
Telefax: (46) 8 510 50831  
E-mail: [anne.bengtson@telia.com](mailto:anne.bengtson@telia.com)

Desk Officer  
Mr. Benoit Lebot  
International Energy Agency  
Office of Energy Conservation  
and Efficiency Division  
9 rue de la Fédération  
75739 Paris Cedex 15  
France  
Telephone: (33) 1 40 57 67 27  
Telefax: (33) 1 40 57 67 49  
E-mail: [benoit.lebot@iea.org](mailto:benoit.lebot@iea.org)

## ACKNOWLEDGEMENTS

The efforts of the following people continue to be essential to the Programme's success. The Operating Agents who are identified in Chapter VI, the Executive Secretary, Anne Bengtson, the Advisor, Fred Morse, the Newsletter Editor, Pamela Murphy, and the Webmaster, Verity Saunders.

## CHAPTER II

# Strategic Planning for the Future DSM Programme

The Strategic Plan for the IEA DSM Programme will expire in 2004. A new plan will be based on recent and anticipated changes in the energy market and hence the policy framework within which the IEA DSM Programme must operate.<sup>2</sup>

The DSM Programme has, at its regular meetings, had special sessions and workshops to continuously follow the changes and the priorities of the markets and the related policies:

- The Role of Electrical Energy Efficiency as Part of National GHG Response Measures, Eskilstuna, May 2001
- National Programmes and Energy Market Changes, Barcelona, October 2001
- Energy Efficiency Certificate Trading, Milan, April 2002
- Positions of DSM in the Energy Marketplace, Graz, October 2002

The development of a new strategic plan is also based on a survey of the members of the Executive Committee (ExCo) with the purpose of describing the market and policy environment in each country as well as how the participants perceived strengths and weaknesses of the present DSM Programme. This to assure that the Programme initiates activities that solve real and current problems for the participants.

During the strategic planning session at the latest meeting of the Executive Committee, and in addition to the survey, the members presented highlights of their survey response. The oral presentations are summarized in APPENDIX 1 to show the variety of national concerns rather than being an exhaustive description of their situations.

## The problems to solve are largely common

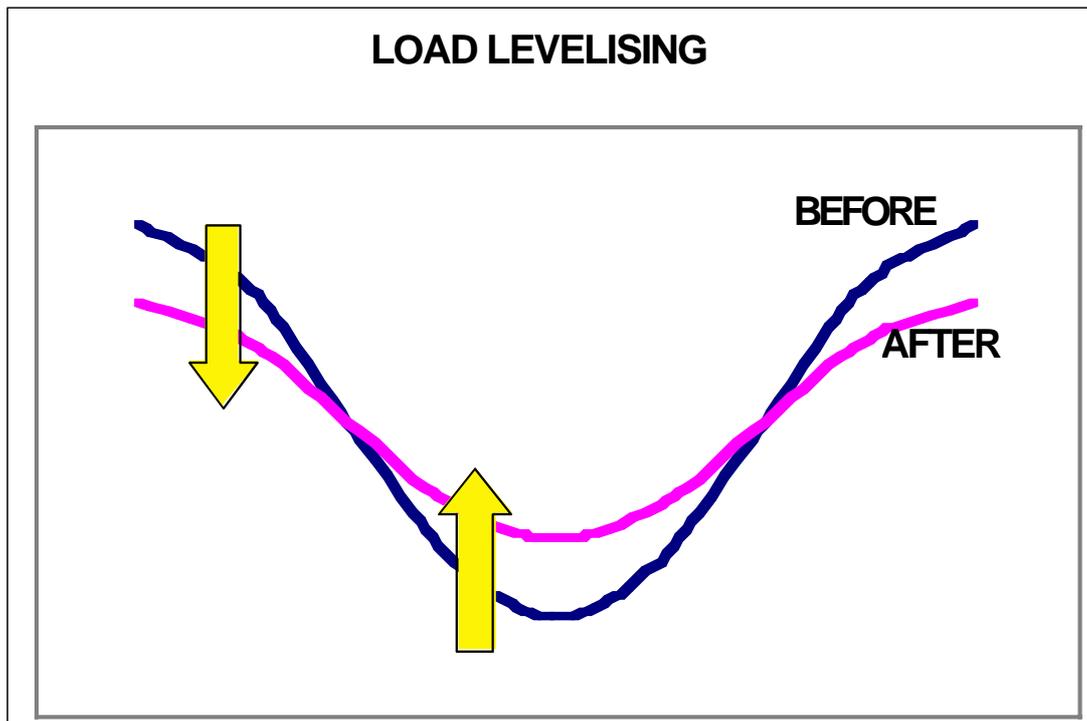
With few exceptions all countries state that there are two main issues to focus on:

1. Security of supply
2. **Reduction of Green House Gas emissions** from generation and especially related to the commitments made by setting of the "Kyoto targets".

For security of supply almost all give priority to measures to reduce peaks and/or **levelise loads** (over a time period). Some also mention demand reducing energy

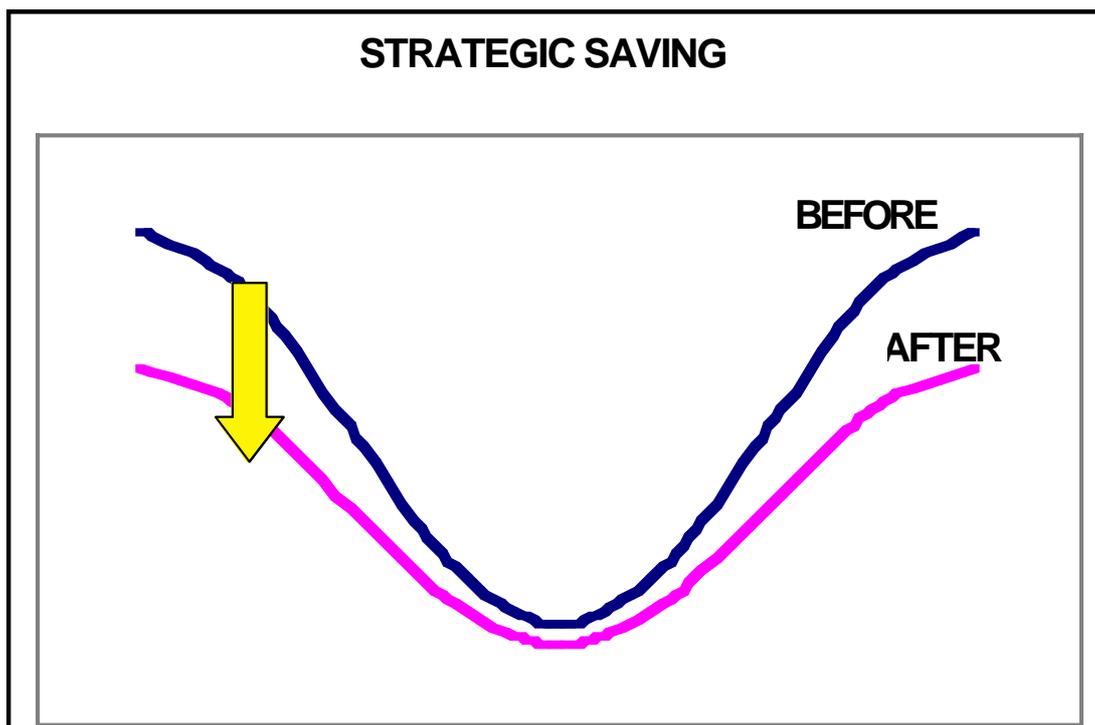
<sup>2</sup> Five important priority areas in old Strategic Plan are:

- 1 Traditional DSM including load levelling
- 2 Competitive energy markets
- 3 Financing DSM and Energy Efficiency
- 4 Market transformation
- 5 Sustainability and environmental issues



efficiency measures as a means to diversify supply since it is easier to find alternative supply for a lower level of demand being less dependent on large distribution systems. Even distributed generation could thus be a solution to a “demand side problem”.

For the energy efficiency measures it is obviously the **strategic saving** that is of interest, but rather in the context of delivering the required energy services by use of less energy and not a reduction in welfare.



It seems fair to say that the basic problems that DSM should solve remain unchanged and the objective for the policy maker and for the measures to support can be distinguished as:

- **Reducing the peaks**, especially when utilisation of power comes close to its limits of availability
- **Shifting the loads** between times of day or even seasons
- **Filling the valleys** to utilise the existing power resources better
- **Reducing overall demand (strategic saving)**
- **Strategic growth** especially to shift between one type of supply to another with more favourable characteristics in terms of e.g. environment

## The market framework is different – and changing

Most countries are in the process of liberalising the energy, notably the electricity, markets. This process is different in terms of speed, organisation and proportion for all the countries concerned. The traditional actor, the electric utility, does not have the same role and interest as it used to have. The regulators have, in some cases, shown an interest in making use of DSM as a tool and to task the utilities with some responsibility for the execution. Market and actors are nowadays more fragmented where no one takes responsibility for the complex whole, hence, the executions of DSM-activities in the future must involve new actors. In many countries there is an expression of will to make use of DSM in more commercial terms and to ensure that delivery of services can be developed.<sup>3</sup>

Closely linked to the issue of how DSM should be used and by whom is the more overriding question: “Can DSM deliver substantial amounts of improvements necessary for fulfilment of policy goals?” Whether these goals are those of security of supply or commitments made as regards environment and climate.

Some of the issues to be covered in the new strategy are then:

- **Capacity for DSM measures to deliver** what they promise. Potential and implementation.
- **Actors and actor relations.** The role of utilities, Municipalities, Agencies, Regulators, Municipalities etc. New actors such as ESCO and of traditional companies working with installations and buildings.
- **The “Marketability”** of DSM. Can DSM measures be a commodity as anything else? Would certificates for energy efficiency be a useful instrument etc.
- **The customer response** and the design of incentives with enough attraction.
- **The portfolios of measures** and their internal relation such as standards, labels, tariffs, fiscal measures, information, audits, etc.
- **The technologies** to be used. How suitable are they and do they really apply to the different situations.

<sup>3</sup> The European Commission has advertised a directive in the area of DSM during 2003 and many of the participating countries are also members of the European Union. The contents of this directive seems to be alluding more to DSM as Energy Services that can be delivered by several market actors though the utilities may have a specific role in releasing the services.

- Is DSM also applicable on **other energy supplies** than electricity? With development of distributed generation should this also be covered as a DSM measure?
- **Endurance of DSM measures.** Will they last and will the market change towards use of more efficient technology also in the future.
- And last but not least. **“Is DSM an adequate name** for the Programme as time has changed?” The acronym is somewhat contaminated in the policy debate and associated with monopolised markets.<sup>4</sup>

It should be remembered that also traditional DSM measures have in some cases shown to be very efficient and could be easily applied on markets in transition in other countries than those presently participating in the Programme. The results achieved have to be better known and disseminated in the entire IEA-family.

A list of issues that are on the table of the Executive Committee and has been raised and/or discussed in terms of specific work is listed in APPENDIX 2.

## Strengths and weaknesses in the present work

After the round-the-table highlights of the national situations was completed, the ExCo noted the priority areas in the current Strategic Plan and also made a brief SWOT-overview.

Issue	What is it?	What can we do with it!
<b>S</b> (trength)	Existing work and results We work globally We know the issues and the tools	<ul style="list-style-type: none"> <li>• Better dissemination</li> <li>• Make more available</li> <li>• Arrange and participate more in conferences and workshops</li> </ul>
<b>W</b> (eakness)	Market and actor fragmentation Some “tools” related to customer response have not been treated	<ul style="list-style-type: none"> <li>• Find new partners (agencies)</li> <li>• Develop the tools</li> </ul>
<b>O</b> (pportunities)	Turning trend in policy awareness Collaboration within the IEA-family (BCG)	<ul style="list-style-type: none"> <li>• Support the changes</li> <li>• Use (the new) IEA institutions more</li> </ul>
<b>T</b> (hreats)	Funding is dwindling away Management (ExCo members change, OAs remain) Inequal experience and different contexts in the participating countries	<ul style="list-style-type: none"> <li>• Find new partners (agencies)</li> <li>• Be more specific as relates to applicability of results</li> </ul>

<sup>4</sup> During the latest meeting the following names were proposed for the DSM Programme

- Energy Demand Management (EDM)
- Energy Demand Systems Management (EDSM)
- Energy Demand Saving Market (EDSM)
- Energy Efficient Services and Demand Responsiveness (EESDR)
- EE Policies and Energy Services (EEPES)
- Efficient Demand Response (EDR)
- Demand Side Efficiency Management (DSEM)

## Next steps

Next Steps to develop the new Strategic Plan for the Years 2004–2009:

<b>Date</b>	<b>Action</b>
January 2003	Form the Strategic Planning Sub-Committee Draft a discussion paper for the new Strategic Plan
February 2003	Revise summary document and distribute to ExCo as input for the Strategic Planning Session at next ExCo-meeting
March 2003	Deliver this summary of this initial strategic planning session along with the End Of Term Report and old strategy, with a draft for a new Strategic Plan, to the EUWP
April 2003	Conduct a session at the April 20 ExCo meeting
May–September 2003	Draft the new Strategic Plan Revise draft Strategic Plan and submit to ExCo
October or November 2003	Discuss and approve at ExCo meeting
December 2003	Finalise and submit to EUWP

# Appendix 1<sup>5,6</sup>

**Australia** – Average electricity demand will grow at 3 % per annum (pa), over the next 10 years, while peak demand will grow at 4 % pa creating a major imbalance. Generation is a major GHG emissions problem. Thus end-use is a key target for government actions and the key question is how much savings can DSM/EE deliver. Can DSM (effectively) reduce demand by 10 % and also save money by using less energy?

**Austria** – The energy sector is fully liberalised and has adequate capacity. There is little interest by regulators or utilities in DSM, although this might change under competition. A major driving force for DSM and energy efficiency is Kyoto as energy efficiency is seen as a means to reduce CO<sub>2</sub> emissions. Local actions will be required, hence new actors – municipalities and local energy agencies, ESCOs, etc. are anticipated. The DSM Programme should address all fuels.

**Belgium** – Meeting the Kyoto targets are a main challenge. Belgium will need to use energy efficiency as much as possible and will have to develop a low carbon economy. A new Federal plan will affect the market and is expected to have a policy of strong promotion of DSM. New program areas include information exchange on local and regional DSM programs, international comparison of energy standards and labels, sustainable buildings, fiscal measures, tariffs, labelling, standards and public awareness.

**Denmark** – Meeting Kyoto targets is very important. DSM is a concern for the energy companies and the government via the electricity savings fund, which collects money (0.01 ?c/kWh) and pays for energy efficiency. Denmark also uses labels and building certification. The distribution companies must provide energy efficiency information to their customers. Practical experience on DSM measures, e.g., how can labelling be used by utilities to make people buy better equipment, how best to get small users to use energy more efficiently, etc., is of great interest. The DSM Programme should work more closely with the EU as it is more active in our field, e.g., the DSM Directive, the role of EE in EU policies, etc.

**Finland** – Finland has a fully liberalised electricity market. The Kyoto commitment is important. The Parliament has accepted building of a new nuclear plant. A new committee is looking at DSM and energy efficiency. Supply security is important in winter and peak load times and DSM is expected to play a future role. Hence there is an interest in impact of energy consumption feedback on customer behaviour based on new metering and IT technologies. Also ESCO activities are increasing. Market based solutions for DSM for both energy efficiency and peak demand are important.

**France** – The concern for the Kyoto-commitments and the liberalisation of the electricity are important drivers. Energy efficiency will be expected to contribute 30 TWh by 2010 corresponding to 7 % of today s' total 430 TWh. EDF wants to keep the residential market, hence DSM is not a business matter and is not yet a strategic issue.

<sup>5</sup> This material was edited by Hans Nilsson and Fred Morse, based on the oral presentations made by ExCo members during the meeting. Therefore they represent the editors interpretation of what was said and do not necessarily reflect the policy of the indicated countries.

<sup>6</sup> New Zealand was invited to make a statement during the session.

**Italy** – Policy issues are primarily the Kyoto-commitments and security of supply. New ambitious and difficult directives have been issued with specific goals to reduce the use of primary energy by energy-efficiency measures. The measures will be financed from the distribution price, backed by tradable Energy Efficiency certificates, and can be selected from a long list of acceptable actions. The national government and the local distributors have the greatest impact on DSM.

**Japan** – Security of energy supply and global warming (environmental protection) are the main issues facing Japan's energy market. Energy efficiency and DSM will play a major role. Electricity rates are expected to fall with liberalisation. The IEA DSM-Programme should study how DSM fits into the liberalised market. It must address both load levelling (DSM) and load reduction (Energy Efficiency).

**Korea** – Korea wants to reduce energy imports and reduce GHG emissions. Restructuring of the energy sector is guided by the Electricity Business Act, which also concerns governmental investment in DSM. The energy market is also governed by the mandatory Rational Energy Use Act. Key players are the Ministry of Commerce, Industry and Energy, KEMCO, the Grid company and six Distribution companies. DSM is focusing on load management by using time-of-use rates and rate design, but is also trying to use utility subsidies and financial loans. Energy efficiency is focused on audits, ESCOs and labels and standards.

**New Zealand** – New Zealand is self sufficient in energy and concern for the Kyoto-commitments is not a big driver. It is not clear that energy efficiency will deliver GHG reductions. There is full retail competition and there is no meaningful DSM in the electricity market and no place for Demand Side Bidding. High peak power prices help avoid new transmission costs – people switch to standby generators for those few hours.

**Norway** – The energy market is deregulated. Energy security is increasingly important since loads are growing and there is a need to import power in winter for short periods of time, from Denmark and Sweden. There are strong objections towards building of new hydropower, new natural gas fired power stations and also siting of wind power in sensitive environments. Should be easy to sell DSM and energy efficiency but delivery must be market focused. However, energy prices are low so price signals don't work. There is a new organization to promote energy efficiency – ENOVA.

The focus of the system operator and utilities has been on Demand Side Bidding and they are slow to adopt DSM measures – so those organisations must be more involved in the programme. Norway is interested in energy efficiency, e.g. – end use monitoring and end-use metering, and information to customers

**Netherlands** – Along with market liberalisation, market parties were expected to take over more involvement including the participation in the DSM Programme from the government. As they did not, the government will continue its participation but will communicate with the utilities about priorities and concerns.

**Spain** – Growing dependence on natural gas raises concerns about price fluctuations. Since liberalisation, DSM as a utility service has disappeared, unless the government pays for it. The proposed EU directive may change this situation for the better. Peaking problems are growing in winter and on the coast in the summer. Demand Side Bidding is attracting interest.

**Sweden** – Fulfilment of the Kyoto targets and concern over the security in electricity supply are the main drivers of energy policies. The electricity market is deregulated and

prices dropped initially but are now back to original levels. Utilities have learned how to handle the system, but have not developed a way to assure power availability. Energy efficiency tools are information and technology procurement. Technology procurement has new funding but also more obstacles. The DSM Programme should help determine which DSM measures to apply in specific cases, the pros and cons, and which combination of measures might be most effective.

**United Kingdom** – A new energy policy is expected by the end of 2002 and will be dominated by climate change and GHG issues. A major increase in energy efficiency is anticipated to significantly reduce demand by several means including new technologies for the long term. The measures in the new law will put a value on carbon and stress emissions trading, but also use a carbon tax to provide funds for investments in EE, and will require utilities to promote EE to their customers. There is a need to increase energy performance in buildings. The Carbon Trust Fund is trying to reduce energy demand. The UK wants to learn from other countries and to avoid their mistakes.

**United States** – The US is concerned about security and reliability of the grids and sees a growing role for distributed energy generation. There are three objectives on the demand side –

- long term market transformation,
- resource acquisition (getting saved kWh soon) and
- demand response (load levelling or load shaping to get an immediate response once).

There is also a continued tension between liberalisation vs returning to a planning directive approach. The DSM Programme should:

1. conduct research to better understand how, why and when customers of different types respond to pricing that ranges from simple to dynamic,
2. develop and investigate roles of government in leading the market and getting new technologies into the market via purchasing, public buildings and local infrastructure,
3. develop bench marking of today's best practices of all sorts – buildings, commissioning, ESCO services, training, etc. – establishing what we collectively think is good and how experience can be transferred,
4. take a systematic look at the role of labelling as a communication device for customers.

# Appendix 2

The Programme is currently discussing the following as possible new Tasks that must be compatible with the new Strategic Plan:

1. Demand response in liberalised electricity markets
2. White certificates
3. End use monitoring
4. Real time metering
5. Energy standards and labelling
6. Scoping Study II – a packaging of the knowledge gained in the Tasks

Additional new Task opportunities to be considered in the new Strategic Plan include:

1. Document the current state of the art of EE and DSM in the participating countries.
2. Document the current state of the art of EE and DSM policies in the participating countries.
3. Evaluate the impact of current EE/DSM policies on GHG emission reduction in participating countries.
4. Estimate the contribution that EE and DSM could make to future GHG emission reductions (based on the potential of EE and DSM).
5. Develop new tools for international comparison of the impact of different tariff systems and energy labels on GHG emission reduction.
6. Perform a comprehensive analysis of various economic incentives and fiscal measures, including pricing systems, tariffs and levies – type and response.
7. Assess system responses to crisis – What happens during a crisis – What do users actually do, do they do load levelling and what impact does this have on reliability, security in terms that decision makers understand, etc.
8. Assess local responses – Address a wider aspect of local responses to energy system problems aside from demand side activities, energy and end use activities.
9. Evaluate optimal regulatory approaches to energy efficiency – What areas of energy efficiency is best regulated and what should be purely market-based.
10. How do economies cut electricity growth by 10 or 20 percent in 10 years.
11. Study the cost-effectiveness of energy efficiency programs and measures to reduce GHG emissions.

12. Analyse the economic benefits of the greater use of energy efficiency.
13. Determine how to make energy efficiency work in market-based economies with falling energy prices and less regulation.
14. Assess the benefits to electricity supply businesses of DSM and energy efficiency in dynamic electricity markets.
15. Study smart technologies to advance DSM/EE, including communication technologies.
16. Conduct information exchange on national and regional EE and DSM programs and initiatives.
17. Assess the impact of combinations of different EE and DSM measures, including labelling, on load and GHG emissions reductions.
18. Conduct education, training and public awareness programmes.
19. Assess the role of Load levelling in liberalised energy markets, perhaps as a coordinated Task with Energy Storage.
20. Perform detailed demand monitoring in domestic premises.

## CHAPTER III

# Task I: International Database on Demand-Side Management Technologies and Programmes

## Description

Task I was originally divided into seven subtasks during the period 1994–2001. These seven subtasks are finalised by 2001. At the moment two new subtasks (number eight and nine) are operational. In June 2001 Subtask 8 started. This subtask has a major element, the maintenance of the INDEEP Database, developed in the first seven subtasks. The database information will be kept up to date, expanded to include new programmes from countries around the world and the analyses will be continued. In May 2002 the work in this Task was enriched with a topic focussing on evaluation: Subtask 9, to draft an Evaluation Guidebook on the Impact of DSM and EE Programmes for Kyoto GHG Targets. In this subtask a tool will be developed to judge the sustainability results of national and regional energy programmes, based on existing experiences in participating countries and on international work as well as related to the UNFCCC guidance and guidelines.

The work in the period 1994–2001 was organised in seven subtasks. The first Subtask was a pilot project to explore the feasibility and nature of an international database on DSM programmes. Participants assessed the transferability of DSM programme results, the usefulness of existing data collection instruments for databases on DSM programmes, and the level of interest among potential users of an international database on DSM programmes. The second Subtask built on the results of the first, to identify DSM programmes for an international database. Participants distributed a questionnaire – known as a data collection instrument (DCI) – to collect information on DSM programmes and analyse the responses. The outcome of the first two Subtasks resulted in the design of an international database, the third Subtask, which produced a database that is accessible to all participating countries. The programme information is entered into the database and the quality of the data is improved under Subtask 4 (finalised in 1999). This information is used for analysis and dissemination of the results, Subtask 5. Annual updates have been implemented in Subtask 6, and international promotion has been carried out as part of Subtask 7. Subtasks 4 to 7 are interrelated and continue throughout the entire work plan period. These seven subtasks are finalised and the report on developing the INDEEP database is approved by the Executive Committee in 2001.

In October 2002 the Executive Committee decided that also the three most recent results from the first seven subtasks are public.

**Achieved results (from the first seven subtasks)**

- INDEEP Annual and Progress reports
- INDEEP Analysis Report 1998 and 2000.
- Final Report Developing INDEEP 1994–2000.
- Multi-languages database at the IEA/DSM Website at <http://dsm.iea.org/indeep>

**Expected results (from subtasks eight and nine) include**

- Updated software for the online INDEEP Database at the IEA DSM Website.
- Additional data collection on Energy Efficiency Programmes.
- Report analysis INDEEP database 2002.
- Country reports on national evaluation methods and evaluation studies.
- Report on a general framework for programme evaluation.
- Report on available databases and models and their usefulness for evaluations.
- Draft Evaluation guidebook on the impact of DSM and EE programmes on Kyoto 's GHG targets.

*More information about Task I reports and the INDEEP database can be found on the web site:*  
<http://dsm.iea.org/NewDSM/Work/Tasks/1/task1.asp>

# Task II: Communications Technologies for Demand-Side Management

## Description

This Task is to assess the best available options and strategies for applying communications to DSM and customer services programmes in the Participants' countries, develop models to carry out evaluations and specify and develop the technology and demonstration efforts to bring these options to fruition. To date the assessment has covered communications technologies for load control, data transmission, data processing, load management, automated meter reading and billing, customer alarm services, customer generation management, remote diagnostics and audits. Separate Subtasks have been to specify and implement in prototype form a customer, flexible gateway, through which the identified services can be provided. A business case evaluation has been completed which identified the most likely actors to provide bundles of services and infrastructure and assessed the commercial viability. The study showed that bundled services were required for financial viability. A field trial of the provision of advanced customer services is planned. A Subtask to define the scope and contents of co-ordinated Field Trials of bundled services in partner countries has been completed. The main criteria for evaluating these services in Field Trials is their potential to improve the efficiency of energy resource use and to provide customers with better service at lower cost.

## Delivered results

- Report on communications requirements for utility/customer services
- Report on assessment of communications technology for delivering criteria in pursuit of demand-side management and customer services.
- Report on assessment of harmonised standards for communications technology to system compatibility across participating countries.
- Report on key research, development and demonstration to bring energy related communications technologies to the marketplace.
- Report on communications traffic and system costs calculation methodologies and algorithms.
- Communications and costs evaluation model – report and software.
- Report on specification for customer flexible gateway.
- Report on migration strategies from narrowband to wideband communications media.
- Development and demonstration of prototype, customer flexible gateway – hardware and software.
- Report on business case assessment for bundled customer services.
- Report on definition of Field Trials of bundled services.

## Expected results

- Field Trial Co-ordination proposal has been submitted to EXCO.

*More information about Task II can be found on the website:*

<http://dsm.iea.org/NewDSM/Work/Tasks/2/task2.asp>

# Task III: Co-operative Procurement of Innovative Technologies for Demand-Side Management

## Description

The work on this Task was completed in 1999 and the final reports submitted to the Executive Committee in 2000. Eight countries – Denmark, Finland, Korea, The Netherlands, Spain, Sweden, United Kingdom, United States – and the European Commission participated. A process for collaborative procurement actions for introduction of innovative, more energy-efficient products was developed and tested in a number of pilot projects. A clothes drier with the energy use cut by half (the first “Class A” drier on the market), electric motors with losses reduced by 20-40% and “copiers of the future”, where the energy use has been reduced down to 25%, are concrete results of the Task III international procurement collaboration. After evaluation of proposals and prototypes, the suppliers of these products received the “IEA DSM Award of Excellence”, introduced by Task III. The products are now commercially available. Two international workshops were organised during the years – in Paris 1994 and in London 1999 - each with about 80 participants. A list of lessons learned and recommendations have been drawn up. Creation of buyer groups, formulation of performance criteria and creation of mechanisms for recognition are some of the important elements in co-operative procurement efforts.

## Achieved results

- Report on Co-operative Procurement – Market Acceptance for Innovative Energy Efficiency Technologies.
- IEA DSM Award of Excellence ceremony.
- IEA Drier Promotion Competition.
- IEA Hi-Motors Competition.
- IEA Copier of the Future Competition.
- Lessons learned summarised in the London Workshop proceedings and in the Final Management Report.

This Task is completed and therefore not included in the chapter on Task Reports.

*More information about Task III, the pilot projects and lessons learned can be found on the web-site: <http://dsm.iea.org/NewDSM/Work/Tasks/3/task3.asp> and [www.stem.se/IEAProcure](http://www.stem.se/IEAProcure).*

# Task IV: Development of Improved Methods for Integrating Demand-Side Options into Resource Planning

## Description

This Task reviewed and documented utility structures and integrated planning approaches in IEA-member countries. Participants performed a review and comparative assessment of government and utility power sector planning priorities in IEA-member and non-member countries with a view to their implications for the integration of DSM options into resource planning. They also compiled information on the methods, techniques, and models for demand forecasting and integrated planning being used in their respective countries by utilities and government.

Based on this review, a guidebook was developed describing alternative approaches and summarising examples of how these methodologies have been incorporated. Case studies documenting successful applications from several countries were included.

Taking into consideration the factors influencing DSM in participating countries, guidelines were developed on how to transfer processes, methods, techniques, and models for incorporating DSM in resource planning from one country to another. Included in this book were issues related to differences in market conditions, supply characteristics, utility structure, regulatory environments, pricing and tariff structures and government policies.

Task IV also investigated mechanisms to promote DSM and energy efficiency in new business environments. This included a critical review mechanisms which have been used, or proposed for use, to incorporate DSM and energy efficiency into restructured electricity industries. The results were presented in three workshops and are available on the Programmes web site.

## Achieved results

- Report comparing utility structures and characteristics in different countries.
- Report on existing processes, models, methods, and techniques in various electric resource planning applications.
- Recommendations for development of improved methodologies.
- Guidelines on transfer methods, techniques and models
- Guidebook approaches and methodologies for analysis and planning of demand-side programs and integration of DSM options in utility resource planning
- Report on existing and new mechanisms for promoting DSM and energy efficiency in new electricity business environments.

This Task is completed and therefore not included in the chapter on Task Reports.

*More information about Task IV can be found on the web site:*

<http://dsm.iea.org/NewDSM/Work/Tasks/4/task4.asp>

# Task V: Investigation of Techniques for Implementation of Demand-Side Management Technology in the Marketplace

## Description

Participants developed a common methodology for implementing DSM technology with residential small commercial and small industrial customers. This methodology modelled small customer markets in basic units with objective characteristics such as kinds of end-use equipment, cost of network equipment, family or business types, and socio-cultural values. Participants also conducted a survey in their countries of the methods that utilities and governments have successfully used to market DSM technologies in residential, small commercial and small industrial markets.

Based upon the methodology developed above, each participant carried out a pilot project for a particular small customer market. The results of the pilot programmes were measured and their success evaluated. Results in different countries were compared, and their similarities and differences were explained. Within each country, results of the pilot programme were compared with results of previous programmes in order to document improvements realised in programme effectiveness.

## Achieved results

- Marketing methodology for implementing DSM technologies in small customer markets.
- Tools to analyse, follow-up and evaluate DSM programs in these markets, always from a marketing point of view.
- Analysis of previous DSM programs in the participating countries.
- Real pilot programs for effective implementation of DSM technologies in such markets and analysis and evaluation of pilot program results.
- Report on all these items.
- A better overall understanding of the actors in the small customer market for DSM technology has evolved.

This Task is completed and therefore not included in the chapter on Task Reports.

*More information about Task V can be found on the web site:*

<http://dsm.iea.org/NewDSM/Work/Tasks/5/task5.asp>

# Task VI: Mechanisms for Promoting DSM and Energy Efficiency in Changing Electricity Businesses

## Description

The objective of Task VI was to develop mechanisms for promoting the implementation of demand-side management (DSM) and energy efficiency in changing electricity businesses, such as in restructured electricity industries and competitive electricity markets.

During the Task, 99 existing mechanisms already in use in the countries participating in Task VI were identified and described. Twenty-five mechanisms were developed in detail and reviewed by practitioners who may be involved in using the mechanisms. The effectiveness of the developed mechanisms was assessed against a range of criteria.

### Four types of mechanisms were developed

*Control Mechanisms* – these are used to direct energy businesses to change behaviour;

*Funding Mechanisms* – these provide funding for other mechanisms;

*Support Mechanisms* – these provide support for behavioural changes by end-users and energy businesses;

*Market Mechanisms* – these enable the use of market forces to encourage behavioural changes by end-users and electricity businesses.

Task VI also identified the public policy goals and objectives which governments may seek to achieve through the reform and restructuring of the electricity industry. It analysed how the effectiveness of mechanisms in promoting DSM and energy efficiency is influenced by different structural models for the electricity industry. Effectiveness was judged by analysing the effects of different electricity sector structural models on the mechanisms, and by reviewing the barriers to the implementation of DSM and energy efficiency, which were addressed by the mechanisms.

The developed mechanisms were subjected to review by a range of relevant practitioners through a series of Practitioners Workshops held in Australia, France and Japan. The purpose of the Practitioners Workshops was to present preliminary summaries of the mechanisms developed in Task VI for comment by a range of practitioners who may be involved in using the mechanisms. The Practitioners Workshops were designed to provide a “reality check” on the practicality of the developed mechanisms.

The products from Task VI constitute a comprehensive catalogue of information on incorporating DSM and energy efficiency into restructured electricity industries. The products will be of immediate practical use to government policy makers, industry regulators, electricity business managers, and analysts and commentators on the electricity industry.

### **Achieved results**

The major products from Task VI comprise:

- three Task VI Research Reports;
- two Task VI Working Papers;
- a database of 99 existing mechanisms for promoting DSM and energy efficiency;
- a database of 25 developed mechanisms for promoting DSM and energy efficiency.

This Task is completed and therefore not included in the chapter on Task Reports

*More information about Task VI can be found on the web site:*

<http://dsm.iea.org/NewDSM/Work/Tasks/6/task6.asp>

# Task VII: International Collaboration on Market Transformation

## Description

The need to meet Kyoto targets and to reduce greenhouse gas emission through greater energy efficiency provides the driving force behind the Market Transformation Task. Utilising the forces of the market and transforming those markets to better respond to energy efficient products helps to contribute to a more sustainable path whilst still maintaining a future vision of economic prosperity. In the broadest sense the Task is expected to facilitate a new approach to market transformation in order to bring about the changes that are required in international markets so that new energy efficient technologies penetrate the market and start to achieve their true potential. If successful, the Task will contribute significantly to the accelerated take up of energy efficient technologies in the market place and will assist in the conservation of energy and reduction in the emissions of greenhouses gases.

## The Task will

- Increase the market share of today's energy-saving products and practices
- Accelerate the use of the most efficient new technologies in order to reduce the use of energy and other primary resources, thereby reducing the emission of greenhouse gases and other potentially harmful pollutants.
- Provide an on-line forum for exchange of Market Transformation information

One important aspect will be the deeper involvement of retailers – both in the formulation of key criteria that will accelerate the acceptance of energy efficient products, and intensified targeting of the most appropriate methodology that will lead to an increase in sales. The involvement of multinational chains of distributors and retailers with business in a wide range of participating countries will be key to this process.

## Expected results include

- Shared knowledge of international approaches to market transformation.
- Access to information about best practice and lessons learned in market transformation.
- Access to, and contacts with, a wide variety of participating countries from which to draw project partners.
- A conference dealing with Market Transformation and sharing international perspectives.
- Regular briefings on current practices and latest knowledge of Market Transformation practice.

*More information about Task VII can be found on the web site:*  
<http://dsm.iea.org/NewDSM/Work/Tasks/7/task7.asp>

# Task VIII: Demand Side Bidding in a Competitive Electricity Market

## Description

The objective of Task VIII is to evaluate and promote demand side bidding (DSB) as a means of improving the efficiency of operation of the electricity supply chain. DSB is a mechanism that enables the demand side of the electricity market to participate in energy trading. More specifically, DSB allows electricity consumers to offer a specific reduction in demand, at a given time, in return for a specified income.

DSB can improve the efficiency of the electricity supply chain by increasing competition in the wholesale energy market and by acting as an alternative to conventional generation. For example, DSB can be used to balance electricity supply and demand and also maintain the quality and security of supply. In addition, DSB could have important environmental and energy efficiency benefits in some situations when it is used as an alternative to conventional generation.

## The Task will

- Evaluate and promote DSB as a means of improving the efficiency of the electricity supply chain and global environment.
- Examine current DSB mechanisms and assess their strengths and weaknesses.
- Identify the main barriers to DSB and assist in their removal through the provision of practical guidelines for the development of new schemes and enhancements to existing ones.

## Expected results include

- Characteristics and role of DSB in the electricity industry in each country participating in the Task.
- Potential for DSB in each participating country.
- Guidelines on the ability of specific customer types to participate in DSB and their opinions on participation.
- Report aimed at potential demand side bidders on the different types of DSB and the necessary control and monitoring technology for participation.
- Practical guidelines on the technical rules for DSB.
- A practical guide for the development or improvement of DSB schemes.

*More information about Task VIII can be found on the web site:*

<http://dsm.iea.org/NewDSM/Work/Tasks/8/task8.asp>

# Task IX: The Role of Municipalities in a Liberalised System

## Description

This Task will investigate how the roles of local authorities in demand side management are affected by a liberalised market and in the light of these changes and examples of good practice, will prepare guidelines for improving the local authorities' service delivery in this field. Demand side management includes action to improve energy efficiency, load management and action to reduce CO<sub>2</sub> emissions by energy substitution. Local authority activities in this field will be assessed for replicability, choice of targets, their effectiveness in producing long term results, response to social and political needs, response to conditions of the liberalised market and the likelihood of resources and financing being found on a long term basis. The Task will provide an up to date view of municipal action in the participating countries and the likely results that can be expected from such action.

## The Task will

- Identify municipal roles and practices in DSM activity within the context of their national energy scene and evaluate their effectiveness.
- Evaluate the impact of liberalisation of energy markets and identify how municipalities can respond to this.
- Define priorities for municipal action on DSM.
- Make recommendations how municipalities can improve their demand response services both in-house and to third-parties.
- Propose an action guide relating to demand response at municipal level, presenting common factors and specific features and illustrating it with examples.

## Expected results include

- Report on the roles and responsibilities of municipalities in the energy field and the role of participating countries role in promoting energy efficiency.
- Report of the different approaches to liberalisation and their impact on energy efficiency activity in participant countries, which will form the basis of an assessment of the situation faced by municipalities.
- Report on best practice projects to promote energy efficiency which have been introduced by municipalities and action introduced in response to liberalisation.
- Recommendations for guidelines at local and national levels regarding the role of municipalities in demand response and how the current restructuring process affects the role that they can play.
- Publication of an action guide on local authority practice in energy efficiency including specific guidelines and recommendations and illustrated by practical examples.

*More information about Task IX can be found on the web site:*

<http://dsm.iea.org/NewDSM/Work/Tasks/9/task9.asp>

# Task X: Performance Contracting

## Description

The objective of this new work is to facilitate the use of performance contracts and other energy service company (ESCO) contracts. Performance contracting is on some markets a well-established mechanism for promoting the installation of energy efficient building equipment and systems. For example, facility owners and energy service contractors use this method to retrofit equipment to save money on building operations. The savings in energy bills due to the installation of this more energy efficient equipment is then shared between the facility owner and the ESCO under the terms of the agreement they entered. In this scenario, the ESCO has taken on the project's performance risk by guaranteeing a specified level of energy savings. Its compensation for this risk is directly tied to achieving savings. The financing for such a project could come from the ESCO, the equipment supplier or a third-party company.

Reasons why a property owner may enter into a performance contract vary. It could be a financial reason – a property owner may lack the money to invest in new equipment. It could be a business strategy – a property owner only wants to pay for the equipment once the value-added functions, such as reduced energy bills, are demonstrated. For an ESCO, the motivation could be that it provides another way to connect with customers and initiate new business relations. For some companies and government organisations, performance contracts can be used to inspire innovations and encourage the use of more energy efficient equipment.

## Expected results

By building upon the experiences of those countries familiar with performance contracting, such as Canada, the United States and some European countries, and listening to the needs of countries that are developing such systems, the Task Experts will:

- Provide a better understanding of how performance contracts and other ESCO financial options and services can be used.
- Outline the benefits of performance contracting and their potential to promote energy efficiency and mitigate global climate change.
- Outline the regulatory and legal context for such contracts to function.
- Identify the market potential in countries that lack a mature performance contracting industry.
- Identify and share information on potential barriers and problems associated with implementing these contracts.
- Share success stories and solutions to problems that may arise.
- Formulate definitions of different types of performance contracting.
- Identify solutions and schemes on how to find suitable ESCOs and how to improve the tendering process.

*More information about Task X can be found on the web site:*

<http://dsm.iea.org/NewDSM/Work/Tasks/10/task10.asp>

## CHAPTER IV

# Task I: International Database on Demand-Side Management Technologies and Programmes

**Operating Agent: Mr Harry Vreuls, Netherlands Agency for Energy and the Environment (NOVEM), the Netherlands**

## Objectives

The objectives of Task I are to establish and maintain an international database on demand-side management programmes and to improve the evaluation of DSM and energy efficiency improvement programmes and their international comparison.

The INDEEP database itself, the analysis report on the data collected, and the dissemination of the information resulting from the work and the analysis should help utilities and governments in participating countries to design demand-side management (DSM) programmes, which reach more customers and save more energy at lower cost. The draft evaluation guidebook should give governments, energy and/or environmental agencies and utilities more insight in the contributions of national and regional programmes for reducing greenhouse gas emissions and international comparison for the impact of policies and measures.

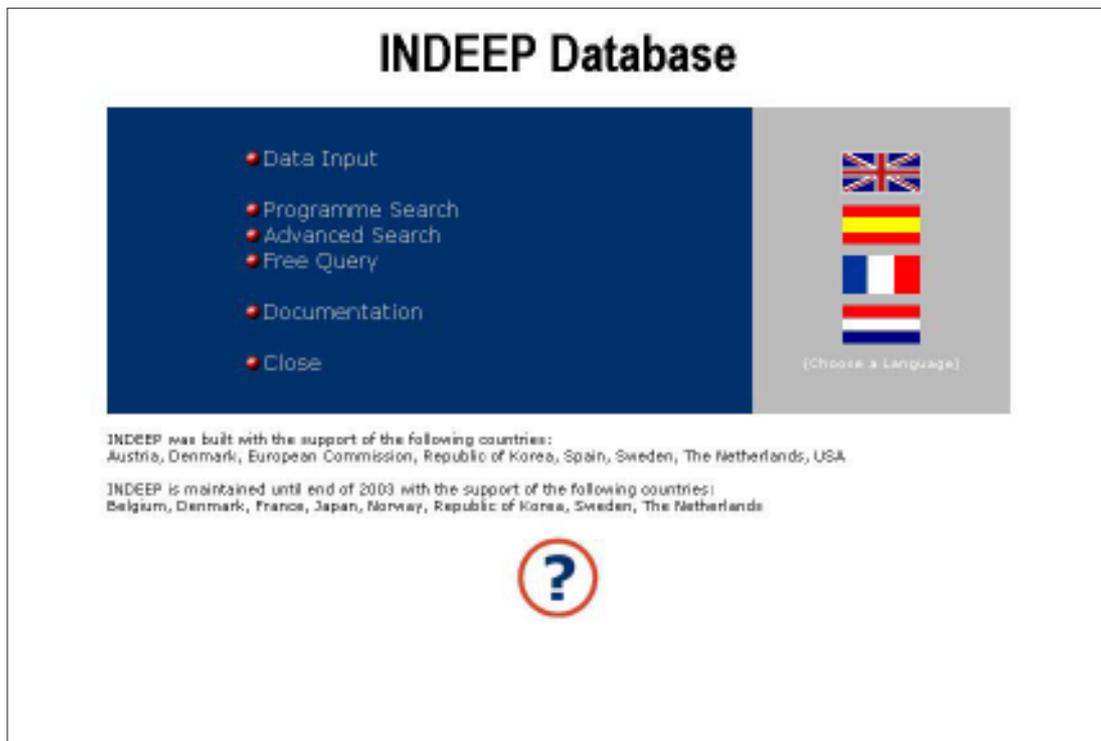
In the year 2001 the development of the INDEEP database (subtasks 1-7) was finalised. At the moment two (new) subtasks are operational. One (subtask 8) will pertain to maintenance of the data base and the other (subtask 9) will be to develop a draft evaluation guidebook on the impact of DSM and EE programmes related to Kyoto greenhouse gas targets.

## Progress

### INDEEP database maintenance & analysis (subtask 8)

The maintenance of the INDEEP database and the analysis of the data is organised in subtask 8. In this work the following countries participate: Denmark, France, Japan, The Netherlands, Norway, Republic of Korea, and Sweden. In 2002 Belgium also decided to join this subtask.

In 2002 an update of the contact information in the INDEEP database has been conducted. The experts agreed on a system to update contact information, including an option if the contact person is no longer available at the company. The update of the programme information is divided into two steps. The first one is an action to improve the quality in priority fields, to get all programmes to a more common quality level, prior to updating the programme information. This action has been finalised in 2002. The second action is to update the information for ongoing programmes.



INDEEP is an Internet database, but was restricted to the participating countries. The Executive Committee decided in 2002 that the database should be generally accessible. As a result, the structure of the database is changed, to keep the update of programme information restricted. This is necessary to control the quality of the updated information. In spring 2002 a new procedure to update data on ongoing programmes in the INDEEP database by using e-mail is tested: the contact person receives an e-mail with an Internet link to the specific DSM programme he wants to update. The updated information is controlled before adding it to the online database. This procedure works well and will be used for updating in 2003.

The response time using the database on the Internet is heavily influenced by the multi-languages structure of the database. To improve the response time it was decided to keep four languages: English, Spanish, French and Dutch. On the opening screen a user can choose the language he or she prefers.

The contact with (potential) users has been improved. An INDEEP newsletter has been produced to inform about the database, its use and maintenance. It is distributed as an electronic newsletter, to the people that subscribed for information on the database, and it is also available on the IEA DSM website to download.

### **Evaluation guidebook on the impact of DSM and EE programmes for Kyoto's GHG targets (subtask 9)**

The work plan for this subtask holds two phases. The first phase is to develop a common framework, to clarify the function of scenarios and measurements for evaluation guidelines, to compile a draft international evaluation guidebook for energy efficiency programmes, focussed on GHG mitigation and also to communicate and promote the guidebook. The second phase holds activities to test, modify and finalise the evaluation guidebook. In 2002 the Executive Committee approved this first phase.

Eight countries are participating in this subtask: Belgium, Canada, Denmark, France, Italy, Korea, The Netherlands and Sweden.

A first expert meeting was organised in June 2002 and a second one in December 2002. At those meetings the experts discussed the work, more specific the general framework, the outline of country reports and the structure of the guidebook.

For the general framework the discussion concentrated on the following questions:

- To focus on EE 'programmes' on a more aggregate programme level or on a more detailed project level;
- The level of detail for energy end-use groups and the combination with energy services (technology and behaviour);
- The selection of cross sectional elements (e.g. free rider's, rebound effect, transaction costs) and the classification of policy instruments and measures;

The discussion on the elements to be included in the draft guidebook included the following elements:

- Presentation of general methodology for evaluation and methods used in evaluation (qualitative and quantitative methods)
- Main questions related to cross sectional issues
- Description of "How to evaluate a specific measure X (e.g. audit), Y (e.g. labelling) etc. as well as package of measures
- Issues for cross national comparison (how to assure transparency in evaluations)
- Focus of the work will be based on joint discussions on programme evaluations conducted in the participating countries.

On 8 October, 2002 the work on the evaluation guidebook was presented at an Energy Efficiency Policy Evaluation Workshop, to the IEA Energy Efficiency Working Party.

## **Activities completed in 2002**

- A new method for updating data on the INDEEP database has been tested and approved
- A quality control on priority fields in the existing programmes has been conducted and key words have been included in the programme summaries
- The updating of the contact information has been finalised
- The INDEEP database has been made generally available on the IEA DSM Website
- A first draft of the general framework for evaluating energy efficiency and DSM programmes
- A discussion paper on main items in country reports and the draft evaluation guidebook

## **Activities planned for 2003**

### **INDEEP database maintenance & analysis (subtask 8)**

In 2003 the collection of new programme data for the INDEEP database will start and the update of ongoing programmes in the database will be finalised. Information will

be collected for the target number of 130 programmes, the quality will be controlled and included in the database. The data collection on the existing, ongoing programmes in the INDEEP database will be finalised. This includes the update of the contact information and the programme information, including realised savings and lessons learned.

A new analysis report will be produced, based on the updated and new programme information.

The software improvements will continue as well as the promotion of the database. The need to improve the software was post-prioritised in 2002. This will be discussed and necessary improvement will be conducted before the end of the year 2003. There are plans to produce a newsletter two to three times a year and to distribute it as an electronic newsletter

A draft marketing strategy will be developed for the use of the database after the year 2003.

### **Evaluation guidebook on the impact of DSM and EE programmes for Kyoto's GHG targets (subtask 9)**

Each expert will prepare a country report on the evaluation methods, models and scenarios that are used for energy efficiency programmes and the relation to GHG emissions. These reports will be discussed at the experts meeting before publication.

A draft general framework for programme evaluation will be developed and discussed. Related to this work and the country reports, a catalogue of available databases and models, costs and usefulness for evaluation will be drafted for comments.

Drafts for the evaluation guidebook will be circulated to country experts and for discussion on the IEA DSM website. Broader input will be gathered by presenting the project and provisional outputs at international conferences. This will take place in March at the conference in Sydney, Australia, and at the ECEEE summer study in France and at the International Evaluation Conference IEPEC in the USA.

Also an electronic newsletter will be used to inform interested people and to get feedback on the drafts.

### **Involvement of industry and other organisations**

Each national expert is responsible for contacting utilities, governmental agencies, research institutes etc. within their country, to assess general DSM information needs and the specific need for (and usefulness of) an international database on energy efficiency programmes. For the evaluation guidebook especially involvement from departments and organisations dealing with environment and GHG emissions is essential. Involvement from the UNFCCC secretary and related organisations is stimulated.

## **Reports**

1. INDEEP procedure to update programme information
2. INDEEP, how to use the internet database
3. INDEEP 2002, programmes, keywords, summaries and lessons learned

## Meeting schedule

### Meetings in 2002

1–2 July, Stockholm, Sweden (subtask 8)

24–25 June, Lund, Sweden (subtask 9)

2–3 December, Copenhagen, Denmark (subtask 9)

### Meetings planned in 2003

28–29 January, (subtask 8) Valbonne, France

6–7 March, (subtask 9) Gent, Belgium

16–17 June, (subtask 9) Seoul, Korea

October, (subtask 8)

November, (subtask 9)

## Activity time schedule

Task I came into force on 1 May 1994 and will continue at least until 31 December 2003.

Activity	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1. Programme Identification (participating countries)	■	■	■							
Additional programmes (including non-participating countries)		■	■	■	■	■				
2. INDEEP design planning Data Collection Instrument		■	■	■	■					
3. Design Database		■	■							
4. INDEEP data collection & entry		■	■	■	■	■	■			
5. INDEEP data analysis and report preparation				■	■	■	■			
6. Updates to the Database			■	■	■	■	■			
7. Promotion and Marketing		■	■	■	■	■	■			
8. Maintenance and update: end of 2003								■	■	■
9. Evaluation Guidebook, phase 1: starting mid 2002 and ending 2003									■	■

## Participants

### Subtask 8

#### Belgium

Mr. Willem de Groot  
Universiteit Gent,  
Sint-Pietersnieuwstraat 41  
9000 Gent  
Telephone: (32) 9 264 33 55  
Telefax: (32) 9 264 35 75  
E-mail: Willem.DeGroot@rug.ac.be

#### Denmark

Mr. Casper Kofod  
Energy Piano  
L.F. Cortzensvej 3  
DK-2830 Virum  
Telephone: (45) 40 459 876  
Telefax: (45) 45 858 041  
E-mail: epiano@image.dk

#### France

Mr. Hervé Lefebvre  
ADEME  
27 rue Louis Vicat  
757 37 Paris, Cedex 15  
Telephone: (33) 4 939 579 58  
Telefax: (33) 4 936 531 96  
E-mail: herve.lefebvre@ademe.fr

#### Japan

Mr. Mitsuharu Sugano (contact person)  
Energy Efficiency Group  
Marketing & Customer  
Relationship Department  
TEPCO (Tokyo Electric Power Company)  
1-3 Uchisaiwai-cho, 1-Chome  
Telephone: (81)3 4216 6064  
Telefax: (81)3 4216 5244  
E-mail: sugano.m@tepcoco.jp

#### Korea

Mr. Seungchan Chang Ph.D.  
(contact person)  
Korea Energy Management  
Corporation (KEMCO)  
1157 Pungduckchun, Suji  
Yongin Kyunggi  
449-994, Republic of Korea  
Telephone: (82) 31 260 4454  
Telefax: (82) 31 260 4459  
E-mail: schang@kemco.or.kr

#### Netherlands

Mr. Harry Vreuls  
NOVEM  
P.O. Box 17  
NL-6130 AA Sittard  
Telephone: (31) 46 4202 258  
Telefax: (31) 46 4528 260  
E-mail: h.vreuls@novem.nl

#### Norway

Contact person to be nominated

#### Sweden

Ms. Tea Alopaeus-Sandberg  
(till September 2002)

Ms. Heini-Marja Suvilehto  
(from January 2003)  
Swedish Energy Agency (STEM)  
P.O.Box 310  
SE-631 04 Eskilstuna  
Telephone: (46) 16 5442058  
Telefax: (46) 16 5442060  
E-mail: heini-marja.suvilehto@stem.se

#### Operating Agent

Mr. Harry Vreuls  
NOVEM  
P.O.Box 17  
NL-6130 AA Sittard  
Telephone: (31) 46 4202 258  
Telefax: (31) 46 4528 260  
E-mail: h.vreuls@novem.nl

## Participants

### Subtask 9

#### Canada

Ms. Malika Nanduri  
Natural Resources Canada  
Office of Energy Efficiency,  
580 Booth Street, Ottawa  
Ontaria, K1A EO4  
Telephone: (1) 613 943 2396  
Telefax: (1) 613 947 4120  
E-mail: mnanduri@nrcan.gc.ca

#### Denmark

Ms. Kirsten Dyhr-Mikkelsen  
SRC International A/S,  
Hovedgaden 8  
3460 Birkerød  
Telephone: (45) 70 20 45 90  
Telefax: (45) 70 20 45 91  
E-mail: kdm@srci.dk

Mr. Richard Schaiburg  
ELFOR  
Rosenoerns Allé 9  
1970 Frederiksberg C  
Telephone: (45) 35 300 932  
Telefax: (45) 35 300 999  
E-mail: ris@elfor.dk

#### France

Ms. Jean-Marie Bouchereau  
ADEME  
27, rue Louis Vicat  
75737 Paris Cedex 15  
Telephone: (31) 1 4765 2407  
Telefax: (31) 1 4095 7453  
E-mail:  
jean-marie.bouchereau@ademe.fr

Mr. Didier Bosseboeuf  
ADEME  
27 rue Louis Vicat  
75737 Paris Cedex 15  
Telephone: (31) 1 4765 2355  
Telefax: (31) 1 4095 7453  
E-mail: didier.bosseboeuf@ademe.fr

#### Italy

Ms. Ornella Celi  
CESI SFR – Business Unit Usi Finali  
Servizi Industria e Rinnovabili  
Via Rubattino 54  
20134 Milano  
Telephone: (39) 02 21255299  
Telefax: (39) 02 21255626  
E-mail: celi@cesi.it

#### Korea

Mr. Jong-Duck Kim Ph.D.  
Korea Energy Economics Institute  
(KEEI)  
665-1 Naeson-Dong, Euiwang-Si  
Kyunggi-Do 437-713, Republic of Korea  
Telephone: (82) 31 420 2240  
Telefax: (82) 31 420 2162  
E-mail: jdkim@keei.re.kr

#### Netherlands

Mr. Harry Vreuls  
NOVEM  
P.O. Box 17  
NL-6130 AA Sittard  
Telephone: (31) 46 4202 258  
Telefax: (31) 46 4528 260  
E-mail: h.vreuls@novem.nl

#### Sweden

Ms. Lena Neij  
Lund University  
Environmental and  
Energy System Studies  
Gerdagatan 13  
SE-223 62 Lund  
Telephone: (46) 46 2224 604  
Telefax: (46) 46 2228 644  
E-mail: lena.neij@miljo.lth.se

#### Operating Agent

Mr. Harry Vreuls  
NOVEM  
P.O. Box 17  
NL-6130 AA Sittard  
Telephone: (31) 46 4202 258  
Telefax: (31) 46 4528 260  
E-mail: h.vreuls@novem.nl

# Task II: Communications Technologies for Demand-Side Management

**Operating Agent: Mr. Richard Formby, EA Technology, United Kingdom**

## Objectives

The provision of wide ranging householder and small business services using communications is a developing major market in the deregulation of energy, communications and services. This Task is to assess the best available options and strategies for applying communications to DSM and customer services programmes in Participants' countries, develop models to carry out evaluations, and specify and develop technology and demonstration efforts to bring these options to fruition. To date the assessment has covered communications technologies for load control, data transmission, data processing, load management, automated meter reading and billing, customer alarm services, customer generation management, remote diagnostics and energy audits. Separate Subtasks have specified and implemented a customer, flexible gateway through which the diverse services can be provided. A business case evaluation has been completed which quantified bundles of services for financial viability and identified the most likely actors to provide services and infrastructure in the services market. Field Trials of the provision of advanced customer services are being prepared. A Subtask to define bundled services Field Trials has been completed which identified the most attractive service bundles and technical and business architectures for their delivery.

The main purpose for Field Trials of bundled services is to evaluate their potential to improve the efficiency of energy resource use and provide customers with better services at lower cost.

## Progress

Different countries and different parts of a country have different requirements, different criteria and are at different stages of development in the application of energy related services and other services in competitive markets. The level of sophistication of available and developing communications technologies is also important in these differences. This Task has examined available standards and codes of practice for software, hardware, communication protocols and interfaces for energy services, as well as relevant international standards. The Task has developed and promoted best practice in meeting different national needs and derived value judgements on communications systems and technologies that offer cost effective solutions to energy management and services deployment.

The Task has defined the climate for the application of energy management and services which could use Customer/Service Provider communications within each participating country. It has also defined Customer services which are seen as being the most attractive and necessary in each country and converted them into information flows and data rates for communication between Customers, Utilities, and Services Providers and ESCOs. The study has collected information from each participating country and

defined the Utility/Customer communications environment and technology developments which are taking place and planned for all the potentially usable communications media. The media particularly include radio, telephone and power line communications, as well as wideband media.

The Task has developed methodologies and models to implement bundles of services and determined the required communications capacity for a population of customers. This has enabled multiple media communications hierarchies such as telephone, power line and radio communication to be constructed which utilise the potential of each medium in the most efficient and effective way from the point of view of complexity, reliability and security. The models have also enabled the costs of technically viable communication solutions to be quantified.

The results of these communication architecture studies are being used as inputs to standards forming organisations to assist with the tasks of defining protocols, signalling, interfacing standards and gateways for customer/Services Provider communications systems on an international basis.

An important requirement in order to assist in the development of a dynamic market for the provision of customer, energy related services in single building houses is a multi media and multi protocol communication gateway. This is required to future proof investment in communications at customer premises. Subtasks to specify and implement a flexible gateway through which to provide identified customer DSM and other services has been completed with the participation of six countries.

The demonstration gateway uses the telephone network as the external to the premises communication medium. The media used inside the customer premises are power line and twisted pair which use LON and Mbus and EHS protocols. Expansion to other media and protocols both inside and outside customer premises can be readily accommodated

Before wide scale implementation and roll-out of customer services and communication infrastructure can be considered, the business case must be positive. An evaluation of the business case for providing bundles of services has been completed which showed how an attractive return on investment can be achieved.

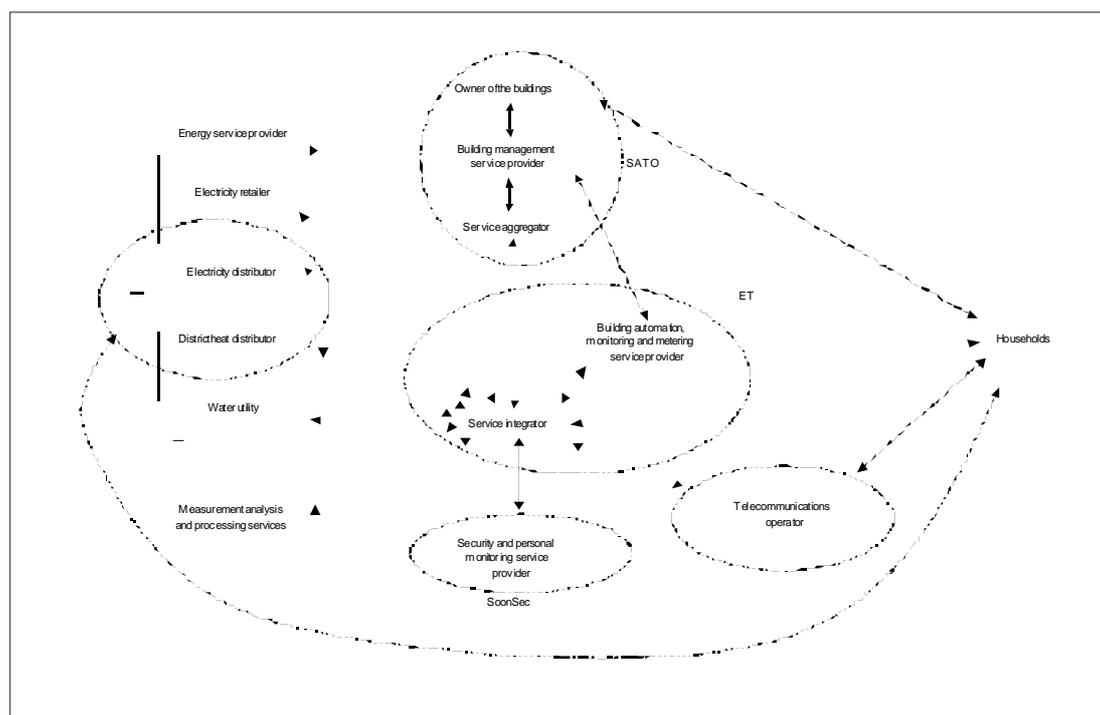
A business architecture for the provision of bundles of services to multi dwelling buildings in Finland is shown in Fig 1.

A CD ROM illustrating the provision of energy related and other bundled services has been produced to advertise and promote the future services scenario.

In order to prime the market and develop routes for providing customer services, Field Trials of services, technologies and customer reactions are proposed which will be coordinated across partner countries. A Subtask to define partner country Field Trials has been completed. Consortia comprising manufacturers, service providers, service aggregators, communication providers and other agencies were established in partner countries to complete the Subtask.

The Subtask defined and co-ordinated the objectives and benefits of the Field Trials in each country so as to obtain maximum value from the overall investment. The results and information required from the trials, particularly customer reactions, potential business opportunities and technology and service performance, have been defined and routes to obtaining them agreed. The approach taken has been to define attractive,

**Fig 1 Operational Business Architecture**



potential service bundles in terms of their content, benefit and method of implementation. Business and Technical architectures have been developed which are applicable to a wide market for bundled services and a subset of these defined for the Field Trials. Based on the definition of bundles of services to be installed and delivered to a population of single and multi dwelling houses, implementation and management costs for the Field Trials have been estimated.

All customers are potential users of energy related and other service bundles using communication and implemented via ESCOs. Bundles of services will be targeted at specific customer groups using the most appropriate communication infrastructure and managed by Service Provider Companies. Access management of Service Providers to households and buildings is a key business to deliver a competitive services market.

An outline proposal to co-ordinate the implementation of Field Trials in partner countries has been proposed.

## Activities completed in 2002

- Field Trial Definition Subtask to quantify service bundles, customer participation, technologies and trial costs in partner countries.

## Activities planned for 2003

- Commence Field Trial Implementation with co-ordination via the IEA DSM EXCO.

## **Involvement of industry and other organisations**

The collection of information about Customer Services and the communication technologies and protocols in participating countries has involved a great deal of interaction with industrial organisations in each country. Much of the work has been carried out through detailed dialogue with utilities and hardware manufacturers. Customer groups and Government organisations have also been involved in consultations to assess national needs and service motivators. The Gateway implementation project directly involved manufacturers from several countries in the development, with licences issued. Exploitation of the technology and implementation and development of services will involve many industrial and service provider partners. The Field Trial Definition project involved consortia in participating countries collaborating to quantify all the parameters and business requirements. Some of these consortia included manufacturers, government agencies, service providers, utilities and others. Plans to organise funding and implement and coordinate Field Trials in participating countries are in place.

## **Reports**

### **Reports produced in 2002:**

Definition of Field Trials of Bundled Customer Services in Finland, Netherlands and UK

### **Reports planned for 2003:**

None

## **Meeting Schedule**

### **Meetings held in 2002:**

7–8 February, Roermond, Netherlands

### **Meetings planned for 2003**

None

## **Activity Time Schedule**

Task II was entered into force on 1 October 1993, and was extended by the addition of two new Subtasks to a total duration of three and a half years i.e. 31 March 1997. A new Subtask commenced in January 1998, to specify a Customer Gateway for delivering value added services. An additional Subtask to define strategies for using wideband communication channels for Customer services commenced in March 1998. A Subtask to implement the design of a flexible customer gateway, specified earlier, started in July 1999. A business evaluation of the provision of customer services was completed in 2001. A project to define a field trial of customer services provision commenced in November 2001 and was completed in 2002.

## Activity Time Schedule

Activity	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Customer/Utility needs		■								
Communications Technologies		■								
Relate needs and Communications			■							
International Standards		■	■	■						
R&D Priorities				■	■	■				
Costing Model				■	■					
Communications Model						■	■			
Customer Gateway Specification						■				
Wideband Communication Strategy						■				
Customer Gateway Implementation							■	■		
Business Evaluation of Services									■	
CD Rom of Customer Services									■	
Definition of Field Trial										■

## Participants

### Finland

Dr. Pentti Uuspää  
Senior Research Engineer  
VTT Energy  
Energy Power and Systems  
Tekniikantie 4C, Espoo  
P O Box 1606  
FIN-02044 VTT  
Telephone: (358) 9 456 6438  
Telefax: (358) 9 456 6538  
E-mail: pentti.uuspaa@vtt.fi

Mr. Pekka Koponen  
Research Scientist  
Distribution Automation  
Tekniikantie 4C, Espoo  
P O Box 1606  
FIN-02044 VTT  
Telephone: (358) 9 456 6755  
Telefax: (358) 9 456 6538  
E-mail: pekka.koponen@vtt.fi

### Netherlands

Mr. Jan Griffioen  
Innomet  
Koningshof 76  
Pinacker  
2641 GV  
Telephone: (31) 15 369 4268  
E-mail: jan.griffioen@hetnet.nl

Mr. Arnold J W Sijben  
NOVEM Departments of  
Energy Supply and Coal  
Swentiboldstraat 21  
P O Box 17  
6130 AA Sittard  
Telephone: (31) 46 4202 300  
Telefax: (31) 46 4528 260  
E-mail: a.sijben@novem.nl

### United Kingdom

Mr. Andrew David  
Energy Advice Centre  
Terminus Building  
Wood Street  
Cardiff CF10 1EQ  
Telephone: (44) 2920 231245  
Telefax: (44) 2920 641754  
E-mail: andrew@sewenergy.fsnet.co.uk

### Operating Agent

Mr. Richard Formby  
EA Technology Ltd  
Capenhurst Technology Park  
Capenhurst  
Chester CH1 6ES  
Telephone: (44) 151 347 2318  
Telefax: (44) 151 347 2411  
E-mail:  
richard.formby@eatechnology.com

### Administrator

Ms. Maureen Smith  
EA Technology Ltd  
Capenhurst Technology Park  
Capenhurst  
Chester CH1 6ES  
United Kingdom  
Telephone: (44) 151 347 2344  
Telefax: (44) 151 347 2411  
E-mail:  
maureen.smith@eatechnology.com

# Task VII: International Collaboration on Market Transformation

**Operating Agent: Mr. Verney Ryan, BRE, United Kingdom**

## Objectives

The need to meet Kyoto targets and to reduce greenhouse gas emissions through greater energy efficiency provides the driving force behind the Market Transformation Task. Utilising the forces of the market and transforming those markets to better respond to energy efficient products helps to contribute to a more sustainable path whilst still maintaining a future vision of economic prosperity.

## Specific objectives of this Task are to:

- Increase the market share of today's energy-saving products and practices.
- Accelerate the use of the most efficient new technologies in order to reduce the use of energy and other primary resources, thereby reducing the emission of greenhouse gases and other potentially harmful pollutants.

One important aspect is the deeper involvement of manufacturers, retailers and marketing – both in the accelerated acceptance of energy efficient products, and intensified targeting of the most appropriate methodology that will lead to an increase in sales.

## Scope

The Market Transformation Task has three main areas of work as follows:

1. Market Transformation integrated Policy and Programmes development – developing a co-ordinated international approach to Market Transformation
2. Market Transformation Marketing - developing marketing based actions to deliver Market Transformation
3. Promoting Advanced Products Approach – using procurement, requirements, specifications and other tools in a targeted way to deliver Market Transformation.

## Progress

During the course of 2002 a shift in emphasis of the work of Annex VII occurred. This was mainly due to an altered global economic climate and the need to build trust and support for the mt7 Market Transformation approach with industry.

Much of this change in strategy was the result of repositioning mt7 to better engage industry in the concept of marketing and branding energy efficiency. Despite success in some participating countries, workshops have not been successful in all - with only small audiences in some, and in the case of the UK and the Netherlands almost complete disinterest from industry. It became apparent that more groundwork was required to prepare industry for an innovative new approach to marketing energy efficiency as outlined by Annex VII.

Annex VII experts recognised a need to build on past success in a realistic and focussed manner. The group was seeking to achieve a major objective of IEA DSM policy, which is to engage industry in a discussion of the main energy efficiency challenges facing us, and the possible solutions to those barriers. Importantly Annex VII's new approach is to seek to understand why manufacturers and retailers do not seem to be interested in promoting and associating their products with the energy efficiency concept. We also seek to understand how energy efficiency might be marketed and branded in a positive consumer style campaign using people's values and attitudes to sell the concept as a positive lifestyle choice. This approach forms the basis of an enhanced programme of work for Annex VII suggested for 2003.

## **Progress on Subtasks**

A brief synopsis of the progress in subtasks during 2002 is outlined below:

### **Subtask A – Defining a Common International Approach to Market Transformation**

Work on the development of an international Market Transformation model based on some of the experiences from the UK and the Netherlands moved forward in 2002 with a further four meetings held in Rome (April) and Berlin (February and June) and Brussels (September). The MTPIF group now comprises UK, Netherlands, Germany, Italy and Denmark, with an indication of interest also from France. There is a wide general interest in the Market Transformation Policy Information Forum, mainly out of the group of people associated with the EU regulatory labelling committee meetings. The scheme is operating as an un-funded programme with countries covering their own costs of attendance and participation – The UK is currently acting as secretariat. A link is maintained with Annex VII Subtask A in order to keep IEA participants informed and to further the reach of MTPIF within IEA circles. All *government* representatives are asked to look at [www.mtpif.com](http://www.mtpif.com) for more details.

### **Subtask B – International Market Research**

The market research conducted in 2001 clearly proved that a cross-country analysis of public attitudes to energy efficiency was possible. The results provided valuable information about 'selling' energy efficiency as a branded concept, and were disseminated to press and industry within many of the participating countries. The findings from the market research have provided the Annex with a solid tool with which to approach and engage industry. Current discussions within the Annex indicate that many countries are interested in pursuing a second round of market research in 2003 to compare results.

A presentation of the research results and the approach was made to conference participants of 'Selling Energy Efficient Appliances – strategies for improving Sales and Climate Protection' on the 19<sup>th</sup> September 2002 in Berlin. This generated high levels of interest with industry players including Philips and Sony.

### **Subtask C – Market Transformation Forum & Market Transformation Workshop**

#### *The workshops*

Successful workshops have been held in Finland, Norway, and Sweden. However, despite significant levels of effort within the UK and the Netherlands, both countries had considerable difficulty inviting and encouraging participation in planned Synergy

workshops. This may have been due to a different perception of the priority of energy efficiency issues within the UK and the Netherlands – or it may in part be the result of a more conservative economic climate following September 11<sup>th</sup>.

### *The Forum*

The lack of interest within industry for the Synergy workshops in some countries indicated that support needs to be built slowly amongst key industry stakeholders before a successful Forum event can be held. Importantly it indicated to Annex VII participants that pursuing the high level forum and international symposium was a high risk strategy in the current economic climate – and that resources were better focussed on developing a bedrock of support for these events in the future through a more intimate and useful dialogue with industry. The idea of the Forum still holds great promise – but the timing may have to wait until Annex VII has encouraged enough interest in the concept for it to be successful at the level that is required. Therefore a revised approach to developing the forum has been set out in an enhanced programme of work for Annex VII.

### **Subtask D – Website and Communication**

Throughout 2002 work continued by the webmaster to provide a functional and interesting presence on the web for mt7.

### **Subtask E – Promoting Advanced Products**

In 2002 the level of interest in Subtask E lessened amongst participating countries. Annex VII continues to provide a framework for this to be redeveloped should any two members of the group wish to pursue this approach. There may well be scope for integrating work carried out under this subtask within the enhanced work plan – particularly in discussions regarding motivation for companies developing ever more energy efficient products.

## **Activities completed in 2002**

- Developed a common methodology and understanding of the issues of market transformation and more importantly developed a common understanding of the need for marketing the concept of energy efficiency in alignment with peoples attitudes and values.
- Policy Information sharing at EU level through the MTPIF programme – four additional MTPIF meetings held.
- Development of phase two of market research subtask undertaken including provision of a list of international manufacturers of energy efficiency products and industry approach developed to utilise market research results.
- Development of a new Subtask F to advance the market research in participating countries including production of a programme of work for utilising the research results for dialogue with international manufacturers of energy efficiency products and industry.
- Engaged industry in many of the countries taking part in MT7 and held discussions about marketing and branding energy efficiency

- Worked with press and media to disseminate market research (including conducting interviews with companies that might use the results)
- MT7 Presentations made at Selling Energy Efficient Appliances Conference in Berlin.
- Presented market research and other activities to the IEA
- Shared examples of Best Practices in both energy efficiency and in transforming markets.

## **Activities planned for 2003**

Activities planned for 2003 will be dependent on a successful extension to the Task Plan. At the time of writing this is still under negotiation with participating countries. Therefore the operating agent for Annex VII is unable to provide a definitive activities plan for 2003. However, as an indication of work to be pursued, a synopsis of the new subtask and enhanced plan is provided below.

## **An Enhanced Programme of Work for MT7**

### **Subtask F – Engaging Industry**

MT7 participants have developed an enhanced programme of work under a new subtask F. This is currently awaiting approval from participating countries. The emphasis of the enhanced programme of work for mt7 is to collectively engage industry in dialogue about marketing and branding the concept of energy efficiency and encouraging the sales of products that use less energy and other resources.

The core of this activity will focus on a series of meetings between the MT7 group and leading national and international manufacturers and retailers of energy using products. The meetings will follow a pre-prescribed format where MT7 experts will provide a summary of the MT7 market research findings and set the basis for discussions. Industry will then be asked a series of pre-determined questions to facilitate an open discussion. The discussions will be guided and focused on developing creative insights into industry's unique view of energy efficiency as a marketing concept.

The results of the meetings will be written up and used in the following ways:

- As case studies for websites, Spotlight, magazines etc and as a catalyst to further the debate amongst industry and government players;
- As a series of published IEA DSM reports starting with the national perspectives and culminating in a single international report;
- As material for a series of articles, presentations and papers;
- To inform and engage other industry players and act as the foundation for workshop and Forum events;
- As a platform for further collaborative projects.

The meetings will also be used to engage industry in the debate about energy efficiency and marketing, as well as a providing a catalyst for national or international action depending on results.

For more details of the suggested approach including benefits, goals, targets and deliverables please see the mt7 Enhanced Work Plan Proposal on the IEA DSM website.

## Proposed Activities Plan 2003 Subtask F

Annex VII Activities Plan 2003	J	F	M	A	M	J	J	A	S	O	N	D	
6 national interviews with industry representatives from product manufacturers and/or retailers													
6 interview/qualitative market research reports		X		X		X	X	X	X				
1 national report combining information from the 6 national interview results													X
1 or more national press release/case study/article													X
6 interviews with international industry representatives from product manufacturers and/or retailers		X		X		X		X		X		X	
6 individual qualitative market research reports			X		X		X		X		X		X
1 international report combining information and advice from the 6 international interviews													X
1 or more international press release				X									X
3 case studies/articles				X				X					X
Workshop/Forum event to publicise results and further engage industry – 2004 (based on success of international meetings)													? ?

## Task Extension

Annex VII is due to finish December 2002. However, for the results of this new activity to be realised the Task will need to continue for another year. Furthermore it is hoped that the targeted industry meetings will build such a good level of dialogue with industry that follow on work may be suggested into 2004. Notably the Market Transformation Forum, bolstered by increased support and understanding from industry may be possible in 2004. This will be dependant on the success of the international industry meetings.

The Operating Agent is currently trying to secure a Task Extension to Annex VII to carry out this important new subtask.

## Involvement of industry and other organisations

Industry involvement has been developing within the work of Annex VII mainly through the dissemination of the market research results. Some countries, notably Norway and Finland have made promising contact with industry and have utilised the research results with great effectiveness. Difficulties in holding successful Synergy

workshops in The Netherlands and The UK suggest that industry buy in is harder to achieve – although in the UK the lack of success in the workshops resulted in a telephone survey of industry attitudes to energy efficiency that has provided much useful strategic information. Additionally, the MTPIF Policy Information approach linked in Subtask A is the starting point of engaging industry in dialogue as various policy options are discussed at government level. Policies can be outlined, based on shared international information about the current state of the market place regarding energy efficiency products and projections of Carbon targets. The approach in the UK and the Netherlands indicates that this generates a greater dialogue with multinational chains of distributors and retailers and involves them in the goals and objectives of Market Transformation.

## **Reports**

### **Reports produced in 2002**

Task Status Report April 2002

Task Status Report October 2002

Market Transformation Annex VII Annual Report 2002

### **Reports planned for 2003**

Task Status Report April 2003

Publication of Annex VII Market Research results

International Collaboration on Market Transformation – End of Phase One Report

## **Meeting Schedule**

### **Meetings held in 2002**

Experts meetings

27 January, Oslo, Norway

26 June, London, United Kingdom

### **MTPIF meetings**

26 February, Berlin, Germany

23 April, Rome, Italy

10 July, Berlin, Germany

24 September, Brussels, Belgium

### **Meetings planned for 2003**

Dependent on:

1. Task extension and acceptance of enhanced work plan amongst participating countries
2. Schedule of Industry meetings as set out in enhanced work plan

## Activity Time Schedule

Task VII came into force in January 2000 and, following one extension, has a nominal date for ending at the end of December 2002. An extension to the Task has been requested in order to take advantage of the projects already underway, particularly the market research – and to more fully engage industry with Annex VII objectives and results. A comprehensive work plan has been developed in collaboration with the Task Experts.

Subtask	Date	1999	2000	2001	2002	2003
Subtask A: Developing a unified policy approach to Market Transformation and integration with MTPIF	Sept 99- Dec 02		████████████████████			
Subtask B: Market Transformation Market Research	Jan 2000- Dec 02		████████████████████			
Subtask C: Market Transformation Workshop and Forum	Jan 2000- Aug 2002		██████████████████			
Subtask D: Market Transformation Website	June 2000- Dec 2003		████████████████████	██████████████████		
Subtask E: Promoting Advanced Products	Sept 99- Dec 2001		██████████████████			
Subtask F: Engaging Industry	Sept 2002- Dec 2003				██████████	
Subtasks G: [...X,Y,Z]: Additional Subtasks (to be confirmed)	April 2003- Dec 2003					██████

## Participants

### Denmark

No Participating Expert in 2002  
 Main Contact at ExCo level  
 Mr. Jens H. Laustsen  
 Ministry of Environment and Energy  
 44 Amaliegade  
 DK-1256 Copenhagen K  
 Telephone: (45) 33 926700  
 Telefax: (45) 33114743  
 E-mail: jhl@ens.dk

### Finland

Mr. Heikki Härkönen  
 Motiva  
 PO BOX 489  
 FIN-00101  
 Helsinki  
 Telephone: (358) 9 8565 3109  
 Telefax: (358) 9 85653199  
 E-mail: heikki.harkonen@motiva.fi

### Korea

Mr. Seung Chan, Kim Ph.D.  
 DSM Dept. KEMCO (Korea Energy  
 Management Corporation)  
 1157 Pungduckchun, Suji, Yongin  
 Kyunggi, 449-994  
 Telephone: (82) 31 260 4454  
 Telefax: (82) 31 260 4459  
 E-mail: schang@kemco.or.kr

### Netherlands

Ms. Annemie Loozen  
 NOVEM B.V.  
 Swentiboldstraat 21  
 P.O. Box 17  
 6130 AA SITTARD  
 Telephone: (31) 46 4202282  
 Telefax: (31) 46 4528260  
 E-mail: a.loozen@novem.nl

**Norway**

Mr. Johnny Almvang  
E-CO Smart  
Postboks 2543 Solli  
N-0202 Oslo  
Telephone: (47) 22 97 129  
Telefax: (47) 22 5 63077  
E-mail: ja@oee.no

Ms. Anita Eide  
Senior Advisor  
Energy Policy and Analysis  
ENOVA SF  
Innherredsveien 7A  
7014 Trondheim  
Telephone: (47) 73 845770  
Telefax: (47) 73 845751  
E-mail: anita.eide@enova.no

**Sweden**

Ms. Tea Alopaeus-Sandberg  
(for part of the year)  
STEM  
Box 310  
SE 631 04 Eskilstuna  
Telephone: (46) 16544 2044  
Telefax: (46) 16544 2260  
E-mail: tea.alopaeus-sandberg@stem.se

Ms. Heini-Marja Suvilehto  
(maternity leave)  
STEM  
Po BOX 310  
SE-631 04 Eskilstuna  
Telephone: (46) 16 544 20 58  
Telefax: (46) 16 544 20 60  
E-mail: heini-marja.suvilehto@stem.se

**United Kingdom****Operating Agent**

Mr. Verney, Ryan  
BRE  
Bucknalls Lane  
Garston  
Watford  
Herts WD25 9XX  
Telephone: (44) 1923 664318  
Telefax: (44) 1923 664097  
E-mail: ryanv@bre.co.uk

# Task VIII: Demand Side Bidding in a Competitive Electricity Market

**Operating Agent: Ms. Linda Hull, EA Technology, United Kingdom**

## Objectives

The objective of Task VIII is to evaluate and promote demand side bidding (DSB) as a means of improving the efficiency operation of the electricity supply chain. This aim will be fulfilled by evaluating the characteristics, strengths and weakness of existing DSB schemes and creating guidelines for the development and enhancement of new schemes.

## Progress

The move towards competitive electricity markets has led to many changes in the way that electricity is traded. For environmental reasons and to improve market liquidity, the demand side participation is often considered an essential feature of these competitive markets. Yet, in the rush to establish a market place, the demand side is often overlooked.

Demand side participation has several important implications for the efficient operation of any electricity network, and the successful development of DSB is dependent upon the involvement of all market participants, but particularly on the involvement the Market and System Operators. The Market Operator provides the opportunity for consumers, suppliers and generators to have contracts in place for all of the electricity they expect to deliver or supply during each trading period and thus avoid energy imbalance charges. The System Operator is responsible for balancing electricity supply and demand in real time and maintaining the quality and security of supply.

There are many opportunities for the demand side to actively participate in the electricity market, and a workshop was held to explore the technical and operational issues associated with demand side participation. An active demand side is essential if electricity markets are to work effectively. A competitive electricity market will ultimately lead to lower electricity prices as a result of prices more accurately reflecting costs, encouraging efficiency in both operation and investment decisions.

Whilst it is generally accepted that an active demand side is essential, it is often only at times of crisis that the demand side are actually called upon to participate, by which time the emphasis is on getting a solution quickly to alleviate the immediate problems. This could lead to the development of non-optimal solutions that could lead to further problems in the future, such as a market distorted in favour of the demand side.

Market liberalisation is often seen as a way of enabling demand side participation, however it can in reality create the reverse situation. Liberalised consumers are rarely 'tied-in' to their supplier for a fixed period as this is viewed as anti-competitive, instead they are able to move between suppliers at relatively short notice, e.g. 1 month. This makes it unattractive for suppliers to install control and monitoring equipment at consumers' premises, creating an obstacle to suppliers who wish to offer demand side

bids into the electricity market on behalf of a consumer or a group of consumers. Market liberalisation also makes it difficult to ensure that the benefits of demand side participation are shared appropriately amongst the market.

Understanding the technical rules that govern the environment within which Demand Side Bidding Schemes must operate was identified as the next important step on the road to identifying the requirements for successful DSB schemes. Therefore, progress during 2002 has concentrated on exploring the technical rules in each of the participating countries that define the environment within which demand side participants must operate. Without a clear and detailed understanding of these technical rules, it will be almost impossible to understand how DSB schemes should be structured.

## **Activities completed in 2002**

- A workshop was held in Amsterdam, March 2002, to explore the technical operational and financial issues associated with demand side participation.
- The Task Experts produced national reports detailing the results of the surveys carried out on the consumer potential for demand side participation.
- The Task Experts collated information on the technical requirements and rules that govern the environment within which DSB must operate in their own country. These rules apply to both existing DSB products and potential areas where demand side participation could play an important part in ensuring the balance of demand and generation.

## **Activities planned for 2003**

- National reports on the survey of technical requirements will be produced by the Task Experts. These reports will enable market participants to directly compare DSB products from one market place to another.
- The information gathered during Stages 1, 2 and 3 of Task VIII will be collated to produce a practical guide for all participants with an interest in developing DSB products.

## **Involvement of industry and other organisations**

The collection of information for the survey of technical rules has relied upon the involvement of several organisations within the participating countries. Much of the

## **Reports**

### **Reports produced in 2002**

The consumer potential for DSB: National Reports for Finland, Greece, Netherlands, Norway, Spain, Sweden and the UK

### **Reports planned for 2003**

Evaluation of existing Demand Side Bidding Schemes

Technical requirements for DSB: National Reports for Finland, Greece, Netherlands, Norway, Spain, Sweden and the UK

Practical guide to DSB

## Meeting Schedule

### Meetings held in 2002

5 April, Helsinki, Finland

28 June, Trondheim, Norway

23–24 October, Chester, UK

### Meetings planned for 2003

February, Madrid, Spain

March, Chester, UK

## Activity Time Schedule

Task VIII was entered into force in January 1999 and shall remain active until May 2003 unless an extension to the Task activities is required.

Activity	Start	Finish	1999	2000	2001	2002	2003
Stage 1							
<i>Subtask 1</i>	Jan 1999	Mar 1999	—				
<i>Subtask 2</i>	Mar 1999	Dec 2001	—	—	—		
Stage 2							
<i>Subtask 3</i>	Feb 2000	Nov 2002		—	—	—	
<i>Subtask 4</i>	May 2000	Oct 2001		—	—		
<i>Subtask 5</i>	May 2000	Jan 2003		—	—	—	
Stage 3							
<i>Subtask 6</i>	Nov 2001	Mar 2002			—		
<i>Subtask 7</i>	Apr 2002	Feb 2003				—	
<i>Subtask 8</i>	Dec 2002	May 2003					—

## **Participants**

### **Finland**

Mr. Seppo Kärkkäinen  
VTT Energy  
Energy Systems  
PO Box 1606  
FIN-02044 VTT  
Telephone: (358) 9 456 6404  
Telefax: (358) 9 456 6538  
E-mail: seppo.karkkainen@vtt.fi

### **Netherlands**

Mr. Jan Griffioen  
Innomet  
Koningshof 76  
2641 GV Pijnacker  
Telephone: (31) 15 369 42 68  
Telefax: (31) 6 4415 88 51  
E-mail: j.h.griffioen@hetnet.nl

### **Norway**

Mr. Björn Grinden  
Sintef Energy Research  
Energy Systems  
Sem Sælansvei 11  
7465 Trondheim  
Telephone: (47) 73 59 72 25  
Telefax: (47) 73 59 72 50  
E-mail: Bjorn.Grinden@sintef.no

### **Spain**

Ms. Victòria Homar  
Gesà  
Juan Maragall, 16  
07006 Palma de Mallorca  
Telephone: (34) 971 77 1500  
Telefax: (34) 971 46 2921  
E-mail: vhomar@gesa.es

### **Sweden**

Ms. Margareta Bergström  
Swedish Energy Agency  
PO Box 310  
SE 631 04 Eskilstuna  
Telephone: (46) 16 544 2148  
Telefax: (46) 16 42 12 17  
E-mail: margareta.bergstrom@stem.se

### **United Kingdom**

Mr. Mark Bailey  
ETDL  
1a Tower Square  
33 Wellington Suite  
Leeds LS1 4HZ  
UNITED KINGDOM  
Telephone: (44) 113 209 5570  
Telefax: (44) 113 209 5600  
E-mail: mark.bailey@etdl.co.uk

### **Operating Agent**

Ms. Linda Hull  
EA Technology  
Capenhurst  
Chester CH1 6ES  
United Kingdom  
Telephone: (44) 151 347 2336  
Telefax: (44) 151 347 2412  
E-mail: linda.hull@eatechnology.com

# Task IX: Municipalities and Energy Efficiency in a Liberalised System

**Operating Agent: Mr. Martin Cahn, Energie-Cités, France.**

## Objectives

Local authorities have a key role in promoting energy efficiency. This applies in their own stock of buildings and equipment which provides approximately 2–4% of energy demand, depending on the country. Certain activities have a significant demand and at the same time provide major opportunities for improved efficiency.

Energy efficiency activity has been identified as one of the main potential casualties of market liberalisation and this is felt to be a key problem by local authorities and others. There is a tendency for energy producers, traders and distributors to concentrate into large conglomerates which compete with traditional local authority utilities. While profitable energy efficiency activity is integrated into the services offered, there is a retreat from promoting energy efficiency to the small consumer which is less profitable in the short term. This makes the public service roles, including energy efficiency activity, more difficult to maintain.

The Task's main role is to investigate energy efficiency activity by local authorities in markets affected by liberalisation to:-

- discover how those impacts of liberalisation discouraging energy efficiency activity can be circumvented,
- recommend how the action of local authorities in this field can be made more effective and
- disseminate this information to local authorities and those arms of government responsible for supervising municipal activity in this field.

The people involved in the project are of two types. Firstly there are representatives of participant local authorities – normally two per country, that act as a source of information on the local authority context and the practicability of proposed solutions – effectively a sounding board for consultation. Secondly there is a consultant input from each country, the experts, who actually prepare the project reports, gather together information and prepare each country's input to reports. Local authorities themselves are not generally fulfilling this role however in Austria a local authority sponsored agency is acting as expert. In addition to the operating agent, some of the organisations representing the participant countries on the Executive Committee are also directly involved.

## Progress

Action by municipalities is critically dependent on the powers and responsibilities given to them by the legal framework in their country.

The Task is looking at responsibilities under all local authority roles, as an energy consumer, as an energy producer or distributor, as a regulator and planner and as an awareness raiser. It is identifying how local authority action to fulfil them can promote energy efficiency and will propose management and administrative mechanisms to improve the response to the challenge of liberalisation. The areas where action to reduce the demand for energy is most likely to be significant lie in their roles as an energy consumer and as an awareness raiser.

The delays in confirming participation that had been affecting the project since the start were finally resolved during the last year and all five countries are now actively participating.

The Task has been designed as a partnership in which the participants each carry out studies of the same issues in parallel to enable lessons on good practice to be exchanged. Therefore it is vital that the programme proceeds with all the partners at the same stage and at the same time. However the fact that the United Kingdom and USA are not participating is a distinct handicap and it was decided to organise short visits to these two countries to analyse the situation on the ground.

The Task is proceeding through seven sub-tasks. These include:

- Subtask 1 A launch meeting to bring the partners together and discuss the framework of the project,
- Subtask 2-3 Studies of the roles of municipalities in the partner countries and the impacts of liberalisation on them,
- Subtask 4 Detailed case studies of best practice in the participant countries and others
- Subtask 5 Evaluation of these to prepare recommendations for governments.
- Subtask 6 Preparation of an Action Guide and Web Site
- Subtask 7 A dissemination phase to ensure that the conclusions reach their intended targets.

The project will produce five reports and a regular task newsletter.

The analysis of municipal roles and the impacts of liberalisation in the participant countries and the UK has been completed and two reports have been published.

The results of the Workshop held in the Milton Keynes, UK in December 2001 which were too late to be reported in last year's Annual Report, were incorporated in the two reports. A very open liberalisation regime in the UK had been associated with resources designed to reduce emissions and also in particular reduce the impact of liberalisation on the "fuel poor", i.e. those whose incomes limit their ability to pay for the energy they need to use. Much of this action has been channelled via local authorities which provide structures that are widely respected at local level as "honest brokers".

A study tour was made to California in November 2002 which reviewed the response of municipalities and administrations in this state to the crisis induced by liberalisation there.

## **Conclusions of the study tour to California, 3–10 November, 2002**

Municipalities have taken a lead in promoting action to reduce energy use and encourage the use of renewables for reasons of energy security, to mitigate the high cost of energy and to reduce environmental impact. The resources made available by the state's public goods charge has made a significant impact on municipal activity and have funded a significant number of programmes, but the role of utilities in the dispersal of these funds is a major political issue. Local authorities have promoted environmentally sustainable building design in their own stock, including the use of natural ventilation as an alternative to air conditioning.

### **Action as a consumer**

With the abandonment of consumer choice in 2001, the opportunities for choice in energy purchase are limited. Nevertheless some local authorities, such as Santa Monica, have maintained "green" electricity supply contracts already negotiated. However the net effect of the experiment with liberalisation was to increase prices and so this has given a greater incentive to all to save energy and to substitute bought in energy with self generated capacity. In view of the increased cost of network energy and a fear of disconnections, even solar PV becomes interesting, albeit still with a long pay back period. Some authorities, e.g. San Francisco, have run their own municipal utility to supply the needs of their own stock for a number of years and such structures are now coming into their own.

### **Action as a utility**

Although it had been widely predicted that municipal utilities would open their market to other suppliers, in practice the utilities benefited from isolation from the open market and access to long term supply contracts. Many sold surplus current and reduced outstanding deficits. Attempts to take back the local networks into municipal ownership have surfaced, with a proposal to set up a Municipal Utility District in San Francisco narrowly failing to get the necessary support.

The question of aggregation has been taken forward by three states and is proposed in others. California has recently passed a law permitting aggregation.

Under the aggregation procedure, local authorities can act as a fallback trader for all small consumers who do not actively choose the local investor owned utility. This allows them to bid for supplies on the market, develop their own capacity if they so desire, and obtain bulk supply prices for their customers. It is suggested that the aggregator can also promote energy efficiency among their consumers as an alternative to additional energy purchases.

### **The local authority as a planner and regulator**

Local authorities have a significant role in setting local ordinances and some authorities have imposed ordinances with higher requirements than the national or state codes, particularly regarding green building standards. While sub-regional cooperation is not developed in California, San Diego has developed an Energy Office, broadly parallel with European energy agencies, which has a role in developing local energy policy.

## **The local authority as an awareness raiser**

Particular effort has been placed on action to reduce peak use, which in the California situation means reducing the use of electricity for air-conditioning, and on action to promote the development of distributed generation. Programmes have concentrated on simple measures. Up to 12MW of capacity has been saved by the development of a white roofs programme which reduces the natural warming of properties. Major local authority programmes are under way to promote efficient lighting in small businesses in San Francisco (\$8M) and Berkeley (\$2M). Particular effort has been placed on residential solar PV, promoted by the development of a net metering regulation. This has been promoted by a tranche of the public goods charge funds that was distributed directly by the California Public Utilities Commission in 2002. The utilities have successfully lobbied for all the funds to pass via them again in 2003 and it was commented that local action was much more successfully passed to local level action when the funds were distributed directly by the CPUC (in effect the regulator). Similar comments were heard in the UK and may be of general applicability.

## **Activities completed in 2002**

The final drafts of the reports on the evaluation of municipal roles and the impacts of liberalisation were prepared during Spring and Summer 2002 following the agreement of the manner of Swedish participation. They were presented to the Executive Committee in October 2002. The framework for the case studies was agreed in an experts meeting in Odense, Denmark in June 2002, linked to a parallel conference held by Energie-Cites on the impact of liberalisation on municipal action in the energy field. Work started on these in the latter part of the year. A study tour of California, postponed from 2001 due to the terrorist attack on the US, took place in November 2002.

## **Activities planned for 2003**

Preparation of detailed studies of good practice.

Evaluation of the action taken in the participant and other countries

Preparation of an Action guide and its presentation on the Energie-Cites and IEA web sites

Dissemination of the results to national and regional organisations in the partner countries

## **Involvement of industry and other organisations**

The main organisations that are participating in this project are local authorities in the participant countries. To date two French local authorities and one French association of local authorities, three Dutch local authorities and one Swedish local authority are participating. In Spain it is planned that one local authority promoted energy agency and one other local authority participate. The Catalan Institute for Energy will provide funding for the participation. In Austria the consultant expert works for a city energy agency and will liaise with four other municipalities or municipal utilities, while in Sweden the consultant expert works for the Swedish Association of Municipalities. Help in organising the study tour in the California was provided by the Local Government Commission, a non-profit making association.

## **Reports**

### **Reports produced in 2002**

Proceedings were prepared for the Milton Keynes Workshop, held in December 2001, in early 2002.

Report 1: A General Background to the Energy Sector in the Participant countries and how it has been affected by Liberalisation and Report 2: The Roles of Municipalities in the Energy Sector were at the point of approval at the time of going to press and should be generally available by the end of the year.

The third Task newsletter was published in May 2002 and a fourth is planned in December to cover Reports 1 and 2 and the study tour of California.

### **Reports planned for 2003**

March/ April 2003 Report 3: Best Practice examples in municipalities in the participant countries.

June 2003 : Report 4: Evaluation of Best Practice and Recommendations for guidelines at national and local levels regarding the role of municipalities in DSM and how the current restructuring process affects the role that they can play.

September 2003 : Report 5: Action Guide

## **Meeting Schedule**

### **Meetings during 2002**

June, Odense, Denmark

November, California USA.

December, Cambridge, UK

### **Meetings planned for 2003**

February/March, Stockholm, Sweden

May, Paris, France

October/November, Arnhem, The Netherlands.

## **Activity Time Schedule**

The Task began on 1 January 2000 and will be completed on 31 December 2002. The delayed agreement on Swedish participation has had a significant impact on progress and put the project still further behind the original schedule. However now that all participants are actively pursuing progress, it is hoped that at least some of the delays can be recovered.

## Activity Time Schedule

Activity	Start	Completion	2000	2001	2002	2003
1 A Launch Seminar	01 05 2000	31 8 2000	—			
B Survey of municipal roles	01 08 2000	30 9 2002		—	—	
C Survey of context of Liberalisation	01 08 2000	30 9 2002			—	
2 D Best Practice Studies	01 06 2002	31 3 2003			—	
3 E Evaluation Analysis of Municipal Roles and Projects	01 12 2002	30 4 2003				—
Prepare Recommendations	01 12 2002	31 5 2003				—
4 F Prepare Action Guide	01 02 2003	31 09 2003				—
G Final Seminar Disseminate reports	01 08 2003	15 12 2003				—

## Participants

### Austria

Dipl.-Ing. Mr. Boris Papousek  
Grazer Energieagentur  
Kaiserfeldgasse 13  
A-8010 Graz  
Telephone: (43) 316 811 8480  
Telefax: (43) 316 811 8489  
E-mail: papousek@grazer-ea.at

### France

Municipalities:  
Dunkerque  
Mr. Frederic Mabile, Xavier Henriot  
Communauté Urbaine de Dunkerque  
Hotel Communautaire  
Pertuis de la Marine  
B.P. 5530  
59386 Dunkerque Cedex 1  
Telephone: (33) 3 28 62 70 06  
Telefax: (33) 3 28 62 71 78  
E-mail: Xavier.henriot@dgl.cc  
Website: www.dgl.cc

Mr. Vincent Fristot  
Conseiller municipal politique  
de l'énergie  
Hotel de Ville, 11 Bd. Jean Pain  
BP 1066  
38021 Grenoble  
Telephone: (33) 4 7676 3636  
Telefax: (33) 4 7676 3940  
E-mail: vincent.fristot@ville-grenoble.fr  
Website: www.ville-grenoble.fr

Mr. Nicolas Garnier

AMORCE  
10 quai Sarrail  
69006 Lyon  
Telephone: (33) 4 72 74 09 77  
Telefax: (33) 4 72 74 03 32  
E-mail: acaban@amorcerce.asso.fr

Consultant Expert:

Mr. Gérard Magnin,  
Executive Director  
Energie-Cités  
2 chemin de Palente  
25000 Besançon  
Telephone: (33) 3 8165 3680  
Telefax: (33) 3 8150 7351  
E-mail: gmagnin@energie-cites.org  
Website: www.energie-cites.org

### The Netherlands

Municipalities:  
Mr. Inge van de Klundert  
Gemeente Utrecht  
Postbus 16200  
3500 RK UTRECHT  
Telephone: (31) 30 989 9189  
Telefax: (31) 30 294 6634  
Telephone: (31) 30 286 4598  
Telefax: (31) 30 286 1471  
E-mail: i.van.de.klundert@utrecht.nl  
Website: www.utrecht.nl

Ing. Mr. A.W.P. (Toon) Buiting  
Energiebeleidsmedewerker,  
Gemeente Nijmegen  
Directie Grondegebeid  
Bureau Milieucoördinatie  
Stationplein 13, Postbus 9105  
6500 HG Nijmegen  
Telephone: (31) 24 329 9439  
Telefax: (31) 24 360 6749  
E-mail: t.buiting@nijmegen.nl

Consultant Expert:  
Mr. Roberto Bernadina  
Ambit  
Zijpendaalseweg 1c  
NL-6814 CA Arnhem  
Telephone: (31) 26 442 726  
Telefax: (31) 26 442 4276  
E-mail: r.e.bernadina@ambit.nl  
Website: www.ambit.nl

#### **Sweden**

Municipality:  
Mr. Anders E. Johansson  
Umea Energi  
Box 225,  
Storgatan 34.  
90105 UMEA  
Telephone: (46) 90 163901  
Telefax: (46) 90 163959  
Mobile: (46) 70 5712377  
E-mail:  
anders.e.johansson@umeaenergi.se  
Website: www.umeaenergi.se

Consultant Expert  
Mr. Rogert Leckstrom  
Svekom -Swedish Association  
of Local Authorities  
Hornsgatan 20,  
SE-118 82 Stockholm  
Telephone: (46) 8 452 7100  
Telefax: (46) 8 452 7113  
E-mail: rogert.leckstrom@svekom.se  
Website: www.svekom.se

#### **Spain**

Consultant expert/  
Barcelona Energy Agency:  
Mr. Josep Puig i Boix  
BarnaGEL, Ecoserveis  
Via Laietana 15, 3,4  
ES-08003 Barcelona  
Catalunya  
Telephone: (34) 93 319 3586  
Telefax: (34) 93 319 3586  
Mobile: (34) 62 993 2908  
E-mail: peppuig@eic.ictnet.es

Operating Agent:  
Mr. Martin Cahn  
Project Manager,  
Energie-Cités  
ul. Sikorskiego 8  
32-400 Myslenice, Poland  
Telephone: (48) 12 272 2850  
Telefax: (48) 12 274 2632  
E-mail: martin@tf.com.pl  
Website: www.energie-cites.org

# Task X: Performance Contracting

**Operating Agent: Dr. Hans Westling, Promandat AB, Sweden**

## Objectives

The overall objective of Task X is to facilitate the greater use of performance contracts and other Energy Service Company (ESCO) financial options and services in the participating countries. It is a business-to-business Task, limited to efforts involving the performance contracting arrangements and other ESCO-related financial options and services between client, businesses and all types of companies offering these services. In other words, it is a mechanism introducing “payment in relation to performance”.

## The Task will:

- Promote an understanding of the benefits of performance contracting and other ESCO financial options and services and the potential contribution of these financial options and services to promoting energy efficiency and mitigating global climate change.
- Identify the market potential in countries for which no mature performance contracting industry currently exists.
- Identify and share information concerning potential problems and solutions associated with implementing performance contracting and other ESCO financial options and services.

## Progress

Performance contracting, or energy service contracting, is an established mechanism for promoting the installation of energy efficient building equipment and systems. Energy service contractors, or ESCOs, enter into agreements with facility owners to perform retrofit installations of equipment that can save money on building operations. The savings in energy bills due to the more efficient equipment are shared between the facility owner and the ESCO under terms of the agreement. Most importantly, the ESCO takes on the project’s performance risk by guaranteeing a specified level of energy savings. The ESCO’s compensation is directly tied to achieving these savings. The financing can either be by the ESCO, by the suppliers of the system or components, or by an outside third-party company - or a combination. ESCOs can also employ other financial options and services in support of their clients.

The performance contracting industry (an industry employing performance contracts and other financial options and services) is well established in the United States and Canada, and some European countries. The success of an ESCO industry depends on energy sector regulations, contracting law, and an awareness of building owners of the benefits of performance contracting.

However, different problems and barriers have reduced the introduction and wider spreading of this mechanism. The purpose of this collaborative Task is to facilitate the use of performance contracting and enlarge the market for Energy Performance Contracting (EPC) contracts.

The Task, which started in December 2000, is divided into four Subtasks:

- Subtask A – Initial Workshop
- Subtask B – Country Reports
- Subtask C – Interactive Workshop comparing Country Reports and Ideas
- Subtask D – Country Plans and Lessons Learned

Eight countries participate in the Task – Finland, France, Italy, Japan, The Netherlands, Norway, Sweden and the United States. Several other countries, e.g. Austria, Czech Republic, Denmark, Germany and United Kingdom, have shown interest in the work and there have been contacts and meetings with these countries.

Much of the work in Task X in 2001 was spent on preparing and drawing up the first drafts of the Country Reports. Draft guidelines for the contents in the reports were drawn up in order to get similarities in the reports and to facilitate comparisons. In order to facilitate the presentation of the reports, a matrix for the editing and layout was also set up. The countries summarised the present situation in their respective country. Some countries had already long experience of performance contracting (e.g. regarding contractual, legal or financing issues) and could identify many lessons learned. Some preliminary findings could also be summarised.

A new way of distributing material has been used in the Task. A Task website was set up, which includes a secure section, on which the participants have uploaded their draft material, thus making it available to all participants at the same time. This way of working has been very efficient.

In 2002, the work on the Country Reports has proceeded. The countries have identified needs and barriers for the introduction and/or further expansion of performance contracting. The specific energy situation and earlier use of performance contracting or Third Party Financing (TPF) have been described. Case studies have been reported and lessons learned formulated. At the three experts meetings in 2002, the draft Country Reports have been compared, and in discussions, important areas for further clarification and preliminary concrete actions have been agreed upon.

Some of the countries have completed their Country Reports and submitted final versions, whereas others are working on their final versions, which are expected to be ready at the turn of the year 2002/2003.

The Operating Agent has summarised the most interesting findings in the Country Reports in a draft Summary Report, which has been discussed at the experts meetings. A revised Summary Report is scheduled to be ready within two months after the submission of the last final Country Report.

Information on the Task work has been widely spread, for example through papers and presentations at several international conferences and seminars. National meetings have also been held with different stakeholders.

In Country Plans, or “Tool Boxes for National Activities” as the Task Experts prefer calling them, concrete action areas for national work will be presented. The Operating Agent has drawn up draft guidelines for the contents. Work on these Tool Boxes has started in most of the participating countries and some reports about national activities have been presented at meetings.

One important issue in Task X is the compliance of Energy Performance Contracting (EPC) with the public procurement regulations. A legal expert and former World Bank procurement specialist has been commissioned to investigate the legal aspects and has summarised his findings in two memos. These findings were presented and discussed at experts meetings. To summarise some of the findings, competition must be strived for at all stages. Regardless of the form of financing, also arrangements like leasing and other acquisitions come under the rules of public procurement. Consequently, EPC and Third Party Financing (TPF) are subject to the rules of public procurement.

However, the guidelines for the EPC process should be further elaborated. Also issues like procurement, financing, measurement and verification need more and careful preparation on suggestions. This could be done during a possible extension of Task X with one year, 2003, which has been proposed. Some more interested countries could also join the Task and contribute further important background information and experience. The Task should then be able to base its final suggestions on a broader scope of perspectives.

## **Activities completed in 2002**

- Further identification of case studies and demonstration projects.
- Involvement of specialists in legal issues, model contracts, financing and verification methods.
- Draft or final versions of the Country Reports submitted.
- Draft versions of the Summary Report submitted.
- Draft Country Plans / "Tool Boxes for National Activities" formulated and submitted.
- Presentations about Task X at the "Energy Efficiency Certificate Trading" Workshop in April in Milan, Italy.
- A Task X Seminar on "ESCO and Third Party Financing: National Experiences in the International Context" held in Milan, Italy, in June.
- Presentation about Task X at the Colloquium "Elements of an energy efficiency economy – New changes for sustainability in changing energy markets?" in Salzburg, Austria, in September.
- Presentation about Task X at the "NAESCO International Energy Efficiency Financing Roundtable" in Los Angeles, United States, in October.
- Papers on Task X presented at the "2nd International Conference on Improving Electricity Efficiency in Commercial Buildings (IEECB)" in Nice, France in May, and at the "14<sup>th</sup> Conference of the Electric Power Supply Industry (CEPSI) 2002" in Fukuoka, Japan, in November.

## **Activities planned for 2003**

- Finalisation of the Country Reports.
- Finalisation of the Summary Report.
- Compilation of all the Country Reports and the Summary Report into a complete Performance Contracting Publication as a web report, available at first at the Task X secure website section, and later, when so decided, at the open site.
- Printing of the Summary Report in a monochrome version.
- Completion of the Country Plans / "Tool Boxes for National Activities".

- Continued spreading of the experience of the Task work to other countries through participation with presentations or posters at suitable conferences.
- Collaboration in the organising of the European Commission's "First Pan-European Conference on Energy Services Companies: Creating the Market for Energy Services (ESCO) Industry in Europe", in Italy in May.
- Paper presentation about Task X at the ECEEE 2003 Summer Study in Southern France in June.
- Presentation of Task X at different national conferences and seminars.
- Start work in one or more new Subtask(s) in case of a decision on an extension of the Task.
- Formulation of the Task X Final Management Report in case of a non-extension of the Task.

## **Involvement of industry and other organisations**

The collection of background information for the Country Reports has involved contacts and a great deal of interaction and meetings with organisations (government, federal, municipal and others), industrial companies, utilities and energy service companies in all the countries participating in Task X.

Setting up of national reference groups and/or organising regular exchange of ideas with representatives of energy companies, facility managing companies and suitable industrial companies as well as with legal and financial specialists has taken place in most of the countries. The Task X experts agree that these groups should include as many players as possible for giving inspiration to the national experts and for finding possible demonstration projects.

## **Reports**

### **Reports produced in 2002**

- Country Reports from most of the countries – drafts or final versions
- Draft Summary Report

### **Reports planned for 2003**

- Final Country Reports
- Final Summary Report
- A Complete Performance Contracting Publication, including the Summary Report and the Country Reports, available as a web-report
- Task X Final Management Report

## **Meeting Schedule**

### **Meetings held in 2002**

14–15 March, Oslo, Norway

13–14 June, Milan, Italy

28–30 October, Tokyo, Japan

### **Meetings planned for 2003**

30–31 January, Stockholm, Sweden

## Activity Time Schedule

Task X came into force on 1 December 2000 and will continue until 31 December 2002. An extension of Task X with one year, 2003, has been proposed. A slight delay of the Task has arisen at first after the September 11<sup>th</sup> events in 2001, which made international meetings and travelling difficult. Later the establishment of contacts with different stakeholders in the participating countries, and funding issues and change of experts in some of the countries have caused a delay.

Activity Time Schedule	2000	2001	2002	2003
Subtask A: Initial Workshop	—			
Subtask B: Country Reports		—————		
Subtask C: Interactive Workshop comparing Country Reports and Ideas		———		
Subtask D: Country Plans			———	
Subtask E: Country Actions (if decided)				———

## Participants

### Finland

Mr. Heikki Väisänen  
Ministry of Trade and Industry  
P.O. Box 32  
FIN-00023 Government  
Telephone: (358) 9 1606 4834  
Telefax: (358) 9 1606 3997  
E-mail: heikki.vaisanen@ktm.fi

### France

Mr. Robert Angioletti  
ADEME  
Centre de Sophia Antipolis  
500 route des Lucioles  
F-06560 Valbonne  
Telephone: (33) 4 93 95 7931  
Telefax: (33) 4 93 65 3196  
E-mail: robert.angioletti@ademe.fr

Mr. Jérôme Adnot  
Ecoles des Mines de Paris  
60, bd St Michel  
F-75272 Paris Cedex 06  
Telephone: (33) 1 40 51 9174  
Telefax: (33) 1 46 34 2491  
E-mail: adnot@ensmp.fr

Mr. Dupont  
Ecoles des Mines de Paris  
60, bd St Michel  
F-75272 Paris Cedex 06  
E-mail: dupont@cenerg.ensmp.fr

Mr. Bernard Jamet  
46 rue de Vouillé  
F-75015 Paris  
Telephone: (33) 1 45 65 0808  
Telefax: (33) 1 45 65 0808  
E-mail: jamet.b@wanadoo.fr

Ms. Thérèse Kreitz  
DSM Division  
ADEME  
27 rue Louis Vicat  
F-75737 Paris CEDEX 15  
Telephone: (33) 1 47 65 2134  
Telefax: (33) 1 47 65 2229  
E-mail: therese.kreitz@ademe.fr

### Italy

Mr. Antonio Capozza  
CESI/SFR  
Industry, End Uses and Renewables  
Unit  
Via Rubattino, 54  
I-201 34 Milano  
Telephone: (390) 2 2125 5016  
Telefax: (390) 2 2125 5626  
E-mail: capozza@cesi.it

## **Japan**

Mr. Naoya Sugai  
Tokyo Electric Power Co.  
1-1-3, Uchisaiwai-cho,  
Chiyodaku, Tokyo  
Telephone: (81) 3 4216 1111  
Telefax: (81) 3 4216 5244  
E-mail: sugai.n@tepcoco.jp

Mr. Mitsuharu Sugano  
Tokyo Electric Power Co.  
1-1-3, Uchisaiwai-cho,  
Chiyodaku, Tokyo  
Telephone: (81) 3 4216 1111  
Telefax: (81) 3 4216 5244  
E-mail: sugano.m@tepcoco.jp

Mr. Tetsuya Maekawa  
Japan Facility Solutions, Inc. (JFS)  
1-15 Kagurazaka, Shinjuku-ku  
Tokyo 162-0825  
Telephone: (81) 3 5229 2911  
Telefax: (81) 3 5229 2912  
E-mail: maekawa@j-facility.com

## **Netherlands**

Mr. Arnold J.W. Sijben  
(Novem BV)  
Belenbroeklaan 18  
NL-6093 BT Heythuysen  
Telephone: (31) 651 203 550  
Telefax: (31) 475 300 687  
E-mail: a.sijben@novem.nl

## **Norway**

Mr. Harald Birkeland  
Norwegian Water Resources  
and Energy Directorate (NVE)  
Postboks 5091 – Majorstua  
NO-0301 Oslo 3  
Telephone: (47) 22 95 9323  
Telefax: (47) 22 95 9053  
E-mail: hbi@nve.no

Ms. Ingrid H. Magnussen  
Norwegian Water Resources  
and Energy Directorate (NVE)  
Postboks 5091 – Majorstua  
NO-0301 Oslo 3, Norway  
Telephone: (47) 22 95 9595  
Telefax: (47) 22 95 9953  
E-mail: ihm@nve.no

## **Sweden**

Mr. Arne Andersson  
Swedish Energy Agency  
P.O. Box 310  
SE-631 04 Eskilstuna Sweden  
Telephone: (46) 16 544 2145  
Telefax: (46) 16 544 2099  
E-mail: arne.andersson@stem.se

## **United States**

Ms. Nina Kogan Lockhart  
NAESCO, National Association of  
Energy Service Companies  
1615 M Street, N.W., Suite 800  
Washington D.C. 20036  
Telephone: (1) 202 822 0952  
Telefax: (1) 202 822 0955  
E-mail: nkl@dwgpc.com

Ms. Terry E. Singer  
NAESCO, National Association  
of Energy  
Service Companies  
1615 M Street, N.W., Suite 800  
Washington D.C. 20036  
Telephone: (1) 202 822 0950  
Telefax: (1) 202 822 0955  
E-mail: tes@dwgpc.com

## **Operating Agent**

Dr. Hans Westling  
Promandat AB  
P.O. Box 24205  
SE-104 51 Stockholm  
Sweden  
Telephone: (46) 8 667 8020  
Telefax: (46) 8 660 5482  
E-mail: hans.westling@promandat.se

## CHAPTER V

# Executive Committee Members IEA DSM Technologies and Programmes

### Chairman

Mr. Hans Nilsson  
Grubbensringen 11  
112 69 Stockholm  
Sweden  
Telephone: (46) 8 650 6733  
E-mail: nosslinh@telia.com

### Vice Chairman

Mr. Arnold J.W. Sijben  
NOVEM Departments of Energy  
Supply and Coal  
P.O. Box 17, 6130 AA Sittard  
Send mail to:  
Belenbroeklaan 18  
6093 BT Heythuysen  
Telephone: (31) 6 5120 3550  
Telefax: (31) 4 7530 0687  
E-mail: a.sijben@novem.nl

### Vice Chairman

Dr. Harry Schaap (until 3 Oct 2002)  
Assistant Director-Environment  
Electricity Supply Association  
of Australia  
(ESAA) Ltd  
GPO Box 1823Q  
Melbourne Victoria 3001  
Telephone: (61) 3 9670 1014  
Telefax: (61) 3 9670 1069  
E-mail: schaap@esaa.com.au

Dr. Paul Davidson  
(as of 4 October 2002)  
Director Sustainable Energy Centre  
BRE – Energy Division  
Building Research Establishment  
Garston  
Watford WD2 7JR  
Telephone: (44) 1923 664 437  
Telefax: (44) 1923 664 087  
E-mail: davidsonp@bre.co.uk

## AUSTRALIA

Dr. Harry Schaap  
Assistant Director-Environment  
Electricity Supply Association of  
Australia  
(ESAA) Ltd  
GPO Box 1823Q  
Melbourne Victoria 3001  
Telephone: (61) 3 9670 1014  
Telefax: (61) 3 9670 1069  
E-mail: schaap@esaa.com.au

Mr. Alan Morrison  
Corporate General Manager  
Strategy Division  
ACTEW Corporation  
G.P.O. Box 366, Canberra 2601  
Telephone: (61) 6 248 3301  
Telefax: (61) 6 249 7552  
E-mail: alan.morrison@actew.com.au

## **AUSTRIA**

Mr. Boris Papousek  
Grazer Energieagentur GES.m.b.H  
Kaiserfeldgasse 13/1  
A-8010 Graz  
Telephone: (43) 316 811 848-0  
Telefax: (43) 316 811 848-9  
E-mail: papousek@grazer-ea.at

## **BELGIUM**

Mr. Christian Ferdinand  
Ministry of Economic Affairs  
North Gate III – Bd du Roi Albert II, 16  
B-1000 Brussels  
Telephone: (32) 2 206 4297  
Telefax: (32) 2 206 5732  
E-mail:  
christian.Ferdinand@mineco.fgov.be

Dr. Georges Liébecq  
ECONOTEC Consultants  
Quai de la Boverie, 25  
4020 Liege  
Telephone: (32) 4 349 5618  
Telefax: (32) 4 349 5610  
E-mail: econotec.gl@bct.be

## **CANADA**

Mr. Tim McIntosh  
Senior Economist  
Office of Energy Efficiency  
Natural Resources Canada  
580 Booth Street  
Ottawa, Ontario, K1A 0E4  
Telephone: (1) 613 943 2396  
Telefax: (1) 613 947 4120  
E-mail: tmcintos@nrca.gc.ca

## **COMMISSION OF THE EUROPEAN COMMUNITIES**

Mr. Randall Bowie  
European Commission  
DG TREND/D.1  
Rue Demot 24-4/131  
BE-1040 Brussels  
Belgium  
Telephone: (32) 2-295 3633  
Telefax: (32) 2-296 4254  
E-mail: Randall.BOWIE@cec.eu.int

## **DENMARK**

Mr. Jens Laustsen  
Ministry of Economic and Business  
Affairs  
Danish Energy Agency  
44 Amaliegade  
DK-1256 Copenhagen K  
Telephone: (45) 33 926700  
Telefax: (45) 33 114743  
E-mail: jhl@ens.dk

Mr. Michael Iven  
ELFOR  
Rosenørns Allé 9  
DK-1970 Frederiksberg C  
Telephone: (45) 35 300900  
Telefax: (45) 35 300999  
E-mail: miv@elfor.dk

## **FINLAND**

Mr. Jari Eklund  
Senior Technical Advisor,  
Energy and Environment  
National Technology Agency (Tekes)  
Kyllikinportti 2, P.O. Box 69  
FIN-00101 Helsinki  
Telephone: (358) 10 521 5734  
Telefax: (358) 10 521 5905  
E-mail: jari.eklund@tekes.fi

Mr. Seppo Kärkkäinen  
Technical Research Center of Finland  
Energy and Power Systems  
Tekniikantie 4C  
P.O. Box 1606  
FIN-02044 Espoo  
Telephone: (358) 9-456 6406  
Telefax: (358) 9-456 6538  
E-mail: seppo.karkkainen@vtt.fi

## FRANCE

Mr. Jean-Pierre Tabet  
Economic Division  
ADEME  
27 rue Louis Vicat  
75737 Paris, Cedex 15  
Telephone: (33) 1 47 652063  
Telefax: (33) 1 40 957453  
E-mail: jean-pierre.tabet@ademe.fr

## GREECE

Mr. Dimitrios Nomidis  
Hellenic Republic  
Ministry of Development  
80 Michalakopoulou Street  
GR-101 92 Athens  
Telephone: (30) 1 770 9100  
Telefax: (30) 1 771 7612  
E-mail: NomidisD@ypan.gr

## ITALY

Mr. Walter Grattieri  
Electrical Research Center, ENEL  
Via A, Volta 1  
20093 Cologno, Monzese (Milan)  
Telephone: (390) 2 2125 5714  
Telefax: (390) 2 2125 5626  
E-mail: grattieri@cesi.it

Dr. Antonio Capozza  
CESI/SFR  
Industry, End Uses and  
Renewables Unit  
Via Rubattino, 54  
201 34 Milano  
Telephone: (390) 2 2125 5016  
Telefax: (390) 2 2125 5626  
E-mail: capozza@cesi.it

## JAPAN

Mr. Kenichi Yoda  
Executive Director  
Heat Pump and Thermal Storage  
Technology Centre of Japan  
1-28-5 Kakigaracho, Nihonbashi,  
Chuo-ku, Tokyo  
Telephone: (81) 3 5643 2401  
Telefax: (81) 3 5641 4501  
E-mail: yoda@hptcj.or.jp

Mr. Kazuhiko Serita  
Heat Pump and Thermal Storage  
Technology Centre of Japan  
1-28-5 Kakigaracho, Nihonbashi,  
Chuo-ku, Tokyo  
Telephone: (81) 3 5643 2401  
Telefax: (81) 3 5641 4501  
E-mail: serita@hptcj.or.jp

## REPUBLIC OF KOREA

Mr. Seungchan Chang  
The Korea Energy  
Management Corporation  
1157, Pungdukchun, Suji, Yongin  
Kyunggi, 449-994  
Telephone: (82) 31 260 4454  
Telefax: (82) 31 260 4459  
E-mail: schang@kemco.or.kr

Mr. Ki Sung Cho  
Director of Energy  
Technology Division  
Ministry of Commerce, Industry  
and Energy (MOCIE)  
1, Joongang, Kwacheon, Kyunggi  
427-723, Republic of Korea  
Telephone: (82) 2 2110 5421  
Telefax: (82) 2 504 5001  
E-mail: kscho@mocie.go.kr

Mr. Myung Yong Lee  
Executive Director  
The Korea Energy Management  
Corporation (KEMCO)  
1157 Pungdukchun Yongin, Kyunggi  
449-994, Republic of Korea  
Telephone: (82) 31 265 5004  
Telefax: (82) 31 260 4029  
E-mail: mylee@kemco.or.kr

## **NETHERLANDS**

Mr. Arnold J.W. Sijben  
NOVEM Departments of Energy  
Supply and Coal  
P.O. Box 17, 6130 AA Sittard  
Send mail to:  
Belenbroeklaan 18  
6093 BT Heythuysen  
Telephone: (31) 6 5120 3550  
Telefax: (31) 4 7530 0687  
E-mail: a.sijben@novem.nl

## **NORWAY**

Ms. Anita Eide  
ENOVA SF  
Abelsgate 5  
N-7030 Trondheim  
Telephone: (47) 73 190 439  
Telefax: (47) 73 190 431  
E-mail: anita.eide@enova.no

Ms. Ingrid Magnussen  
Senior Engineer  
Norwegian Water Resource and  
Energy Administration (NVE)  
Middelthunsgate 29  
Postboks 5091-Majorstua  
N-0301 Oslo 3  
Telephone: (47) 22 959595  
Telefax: (47) 22 959053  
E-mail: ihm@nve.no

## **SPAIN**

Mr. Juan Comas  
ENDESA  
Paralelo 51  
08004 Barcelona  
Telephone: (34) 93 509 1537  
Telefax: (34) 93 509 1360  
E-mail: jcomas@fecsa.es  
jcomas@eic.ictnet.es

Ms. Carmen Rodriguez Villagarcia  
DSM Department Manager  
Red Eléctrica de Espana  
Plaza de los Gaitanes 177  
La Moraleja 28109 Madrid  
Telephone: (34) 91-650 8500/2012  
Telefax: (34) 91 650 4542/7677  
E-mail: carmenrodri@ree.es

Mr. Carlos Gonzalez  
Unidad Electrica S.A. (UNESA)  
Francisco Gervas 3  
28020 Madrid  
Telephone: (34) 91 567 4800  
Telefax: (34) 91 567 4982  
E-mail: cgonzalez@unesa.es

## **SWEDEN**

Mr. Hans Nilsson  
Grubbensringen 11  
112 69 Stockholm  
Telephone: (46) 8 650 6733  
E-mail: nosslinh@telia.com

Ms. Tea Alopaeus-Sandberg  
(until September 2002)  
Swedish Energy Agency (STEM)  
Box 310  
S-631 04 Eskilstuna  
Telephone: (46) 16 544 2000  
Telefax: (46) 16 544 2260  
E-mail:  
thea.alopaeus-sandberg@stem.se

Mr. Egil Öfverholm  
(as of October 2002)  
Swedish Energy Agency (STEM)  
Box 310  
S-63104 Eskilstuna  
Telephone: (46) 16 544 2000  
Telefax: (46) 16 544 2099  
E-mail: egil.ofverholm@stem.se

## **UNITED KINGDOM**

Mr. Pete Gorman  
DEFRA – Department  
for Environment,  
Food & Rural Affairs  
Room 6/H11, Ashdown House  
123 Victoria Street, London, SW1E 6DE  
Telephone: (44) 20 7944 6635  
Telefax: (44) 20 7944 6559  
E-mail: pete.gorman@defra.gsi.gov.uk

Dr. Paul Davidson  
Director Sustainable Energy Centre  
BRE-Energy Division  
Building Research Establishment  
Garston  
Watford  
Herts WD2 7JR  
Telephone: (44) 1923 664 437  
Telefax: (44) 1923 664 087  
E-mail: davidsonp@bre.co.uk

## **UNITED STATES**

Ms. Cathy Iverson  
Team Lead, Regional Partnerships  
Denver Regional Office  
Office of Energy Efficiency  
and Renewable Energy  
U.S. Department of Energy  
1617 Cole Blvd., MS 1721  
Golden, CO 80401  
Telephone: (1) 303 275 4805  
Telefax: (1) 303 275 4830  
E-mail: cathy.iverson@ee.doe.gov

## **ADVISOR TO EXCO**

Dr. Frederick Morse  
Morse Associates, Inc.  
1808 Corcoran St. N.W.  
Washington D.C. 20009, United States  
Telephone: (1) 202 483 2393  
Telefax: (1) 202 265 2248  
E-mail:  
FredMorse@MorseAssociatesInc.com

## **WEBMASTER**

Ms. Verity Saunders  
Strategic Communication  
Focussing on Energy  
Efficiency Information  
Silodam 434  
1013 AW Amsterdam  
The Netherlands  
Telephone: (31) 20 320 6494  
Telefax: (31) 20 320 6494  
E-mail: verity@ijnnet.nl

## **IEA SECRETARIAT**

Desk Officer  
Mr. Benoit Lebot  
International Energy Agency  
Office of Energy Conservation  
and Efficiency Division  
9 rue de la Fédération  
75739 Paris Cedex 15  
Telephone: (33) 1-40 57 67 27  
Telefax: (33) 1-40 57 67 49  
E-mail: benoit.lebot@iea.org

## **SPOTLIGHT/ NEWSLETTER EDITOR**

Ms. Pamela Murphy  
Morse Associates Inc.  
1808 Corcoran Street N.W.  
Washington D.C. 20009  
United States  
Telephone: (1) 202 483 2393  
Telefax: (1) 202 265 2248  
E-mail:  
PMurphy@MorseAssociatesInc.com

## **EXECUTIVE SECRETARY**

Ms. Anne Bengtson  
Box 621  
182 16 Danderyd, Sweden  
Telephone: (46) 8 510 50830  
Telefax: (46) 8 510 50831  
E-mail: anne.bengtson@telia.com

## CHAPTER VI

### TASK I

#### International Data Base on Demand-Side Management Technologies and Programmes

##### Operating Agent

Mr. Harry Vreuls  
NOVEM Sittard  
Swentiboldstraat 21  
P.O. Box 17  
6130 AA Sittard  
The Netherlands  
Telephone: (31) 46 4202 258  
Telefax: (31) 46 4528 260  
E-mail: h.vreuls@novem.nl

### TASK II

#### Communications Technologies for Demand-Side Management

##### Operating Agent

Mr. J.R. Formby  
Technology Group Manager  
E.A. Technology Ltd  
Capenhurst Technology Park  
Capenhurst  
Chester CH1 6ES  
United Kingdom  
Telephone: (44) 151 347 2318  
Telefax: (44) 151 347 2411  
E-mail:  
richard.formby@eatechnology.com

### TASK III

#### Co-Operative Procurement of Innovative Technologies for Demand-Side Management

##### Operating Agent

Dr. Hans Westling  
Promandat AB  
Box 24205  
S-104 51 Stockholm  
Sweden  
Telephone: (46) 8 667 8020  
Telefax: (46) 8 660 5482  
E-mail: hans.westling@promandat.se

### TASK IV

#### Development of Improved Methods for Integrating Demand-Side Options into Resource Planning

##### Operating Agent

Dr. Grayson Heffner  
15525 Ambiance Drive  
North Potomac, MD 20878  
United States  
Telephone: (1) 301 330 0947  
Telefax: (1) 301 330 0141  
Mobile: (1) 240 381 3118  
E-mail: gaheffner@worldbank.org

## **TASK V**

### **Investigation of Techniques for Implementation of Demand-Side Management Technology in the Marketplace**

#### **Operating Agent**

Mr. Juan Comas  
ENDESA  
Paralelo 51  
08004 Barcelona  
Spain  
Telephone: (34) 93 509 1537  
Telefax: (34) 93 509 1360  
E-mail: jcomas@fecsa.es  
jcomas@eic.ictnet.es

## **TASK VI**

### **DSM and Energy Efficiency in Changing Electricity Businesses**

#### **Operating Agent**

Dr. David Crossley  
Energy Futures Australia Pty Ltd  
11 Binya Close  
Hornsby Heights NSW 2077  
Australia  
Telephone: (61) 2 9477 7885  
Telefax: (61) 2 9477 7503  
Mobile: (61) 2 411 467 982  
E-mail: crossley@efa.com.au

## **TASK VII**

### **International Collaboration on Market Transformation**

#### **Operating Agent**

Mr. Verney Ryan  
Building Research Establishment BRE  
Energy Division  
Garston, Watford WD2 7JR  
United Kingdom  
Telephone: (44) 1923 664 318  
Telefax: (44) 1923 664 097  
E-mail: ryanv@bre.co.uk

## **TASK VIII**

### **Demand-Side Bidding in a Competitive Electricity Market**

#### **Operating Agent**

Ms. Linda Hull  
EA Technology  
Capenhurst Technology Park  
Capenhurst  
Chester CH1 6ES  
United Kingdom  
Telephone: (44) 151 347 2336  
Telefax: (44) 151 347 2412  
E-mail:  
linda.roberts@eatechnology.com

## **TASK IX**

### **The Role of Municipalities and Energy Efficiency in a Liberalised System**

#### **Operating Agent**

Mr. Martin Cahn  
Ul. Sikorskiego 8  
32-400 Myslenice  
Poland  
Telephone: (48) 12 274 2850  
Telefax: (48) 12 274 2632  
E-mail: martin@tf.com.pl

## **TASK X**

### **Performance Contracting**

#### **Operating Agent**

Dr. Hans Westling  
Promandat AB  
Box 24205  
S-104 51 Stockholm  
Sweden  
Telephone: (46) 8 667 8020  
Telefax: (46) 8 660 5482  
E-mail: hans.westling@promandat.se

