



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

2004 Annual Report

International Energy Agency

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

2004 Annual Report

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

January 2005

Foreword

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

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

Stockholm, January 2005

Table of Contents

	Overview of the IEA and the IEA Demand-Side Management Programme	Page 5
Chapter I	Chairman's Report	8
Chapter II	Task Summaries	20
Task I:	International Database on Demand-Side Management Technologies and Programmes	20
Task II:	Communications Technologies for Demand-Side Management	22
Task III:	Co-operative Procurement of Innovative Technologies for Demand-Side Management	23
Task IV:	Development of Improved Methods for Integrating Demand-Side Options into Resource Planning	24
Task V:	Investigation of Techniques for Implementation of Demand-Side Management Technology in the Marketplace	25
Task VI:	Mechanisms for Promoting DSM and Energy Efficiency in Changing Electricity Businesses	26
Task VII:	International Collaboration on Market Transformation	28
Task VIII:	Demand Side Bidding in a Competitive Electricity Market	29
Task IX:	The Role of Municipalities in a Liberalised System	30
Task X:	Performance Contracting	31
Task XI:	Time of Use Pricing and Energy Use for Demand Management Delivery	32
Task XII:	Co-operation on Energy Standards	33
Task XIII:	Demand Response Resources	34
Task XIV:	Market Mechanisms for White Certificates Trading	35
Task XV:	Network-driven DSM	36
Chapter III	Task Status Reports	37
Task I:	International Database on Demand- Side Management Technologies and Programmes	37
Task VII:	International Collaboration on Market Transformation	44
Task IX:	Municipalities and Energy Efficiency in a Liberalised System	51
Task XI:	Time of Use Pricing and Energy Use for Demand Management Delivery	54
Task XII:	Co-operation on Energy Standards	59
Task XIII:	Demand Response Resources	60
Task XIV:	Market Mechanisms for White Certificates Trading	67
Task XV:	Network-driven DSM	74
Chapter IV	State of DSM and EE in the World – Special Appendix Edition	79
Chapter V	Executive Committee Members IEA DSM Technologies and Programmes	88
Chapter VI	Operating Agents IEA DSM Technologies and Programmes	93

Overview of the IEA and the IEA Demand-Side Management Programme

The International Energy Agency

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

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

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

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

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

IEA Demand Side Management Programme

The Demand-Side Management (DSM) Programme, which was initiated in 1993, deals with a variety of strategies to reduce energy demand. The following 17 member countries and the European Commission have been working to identify and promote opportunities for DSM:

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

Programme Vision: In order to create more reliable and more sustainable energy systems and markets, demand side measures should be the first considered and actively incorporated into energy policies and business strategies.

Programme Mission: To deliver to our stakeholders useful information and effective guidance for crafting and implementing DSM policies and measures, as well as technologies and applications that facilitate energy system operations or needed market transformations.

The Programme's work is organized into two clusters:

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

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

A total of 15 projects or "Tasks" have been initiated since the beginning of the DSM Programme. The overall program is monitored by an Executive Committee consisting of representatives from each contracting party to the Implementing Agreement. The leadership and management of the individual Tasks are the responsibility of Operating Agents. These Tasks and their respective Operating Agents are:

Task I	International Database on Demand-Side Management & Evaluation Guidebook on the Impact of DSM and EE for Kyoto's GHG Targets Harry Vreuls, SenterNovem, the Netherlands
Task II	Communications Technologies for Demand-Side Management - <i>Completed</i> Richard Formby, EA Technology, United Kingdom
Task III	Co-operative Procurement of Innovative Technologies for Demand-Side Management - <i>Completed</i> Hans Westling, Promandat AB, Sweden
Task IV	Development of Improved Methods for Integrating Demand-Side Management into Resource Planning - <i>Completed</i> Grayson Heffner, EPRI, United States

- Task V** Techniques for Implementation of Demand-Side Management Technology in the Marketplace – *Completed*
Juan Comas, FECSA, Spain
- Task VI** DSM and Energy Efficiency in Changing Electricity Business Environments – *Completed*
David Crossley, Energy Futures, Australia Pty. Ltd., Australia
- Task VII** International Collaboration on Market Transformation – *Completed*
Verney Ryan, BRE, United Kingdom
- Task VIII** Demand-Side Bidding in a Competitive Electricity Market – *Completed*
Linda Hull, EA Technology Ltd, United Kingdom
- Task IX** The Role of Municipalities in a Liberalised System *Completed*
Martin Cahn, Energie Cites, France
- Task X** Performance Contracting *Completed*
Hans Westling, Promandat AB, Sweden
- Task XI** Time of Use Pricing and Energy Use for Demand Management Delivery
Richard Formby, EA Technology Ltd, United Kingdom
- Task XII** Energy Standards
Frank Pool, New Zealand
- Task XIII** Demand Response Resources
Ross Malme, RETX, United States
- Task XIV** Market Mechanisms for White Certificates Trading
Antonio Capozza, CESI, Italy
- Task XV** Network-driven DSM
David Crossley, Energy Futures Australia Pty. Ltd, Australia

For additional information contact the DSM Executive Secretary, Anne Bengtson, Box 1320, SE-183 13 Täby, Sweden. Phone: +46 8 510 50830, Fax: +46 8 510 50831. E-mail: anne.bengtson@telia.com

Also, visit the IEA DSM website: <http://dsm.iea.org>

CHAPTER I

Chairman's Report

Large scale energy efficiency – only possible with DSM!?

The IEA Secretariat published an eye-opening report in 2004 titled, "30 Years of Energy Use in IEA Countries". This report shows that our development to our present standard of living, since the first oil-crisis in the early 70's, is mostly depending on energy efficiency improvements. Without the more effective use of energy we would have to use 50 per cent more energy than we actually do today. Energy use in 11 OECD-countries¹ has grown by some 20 per cent but is exceeded by a factor 2–3 by efficiency improvements. The report also shows that the efficiency improvements are slowing down since the first decade. This slow down is however not correlated to a depletion of the efficiency potential. On the contrary, the potential is growing but it seems as if we have got lax in our attitude to reap its benefits or that we have lost the grip of management, or both? And it is certainly not because we need energy efficiency less today.

Anyone who has studied energy efficiency in relation to the energy systems and the interaction between such systems and their surroundings can easily identify the positive effects from efficiency improvements such as lower costs, improved security and reliability, stabilisation of supply prices from lower and fewer peaks, environmental benefits, economic growth, numerous innovations and development, and improved sustainability. Yet these clear and multiple benefits do not make energy efficiency the first and obvious choice in policy decisions! How come?

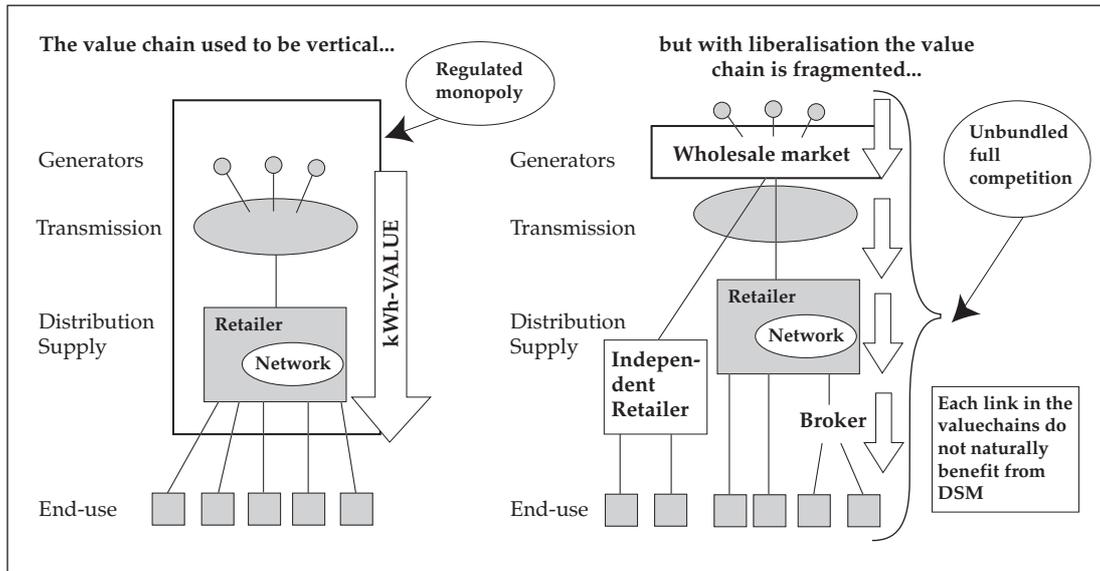
More energy efficiency is not an easy choice in relation to a decision to use more energy for two reasons. The first is that energy efficiency is not a product but a characteristic in products that are made for other purposes, like lamps for light, motors for power, cars for transport, refrigerators for cooling and so on. This simple truth seems always to get lost in policy decision when the call for "a level playing field" makes the decision makers believe that people really make energy calculations in every move they make. The second is that a shift towards energy efficiency often requires that you change a habit or change the way you look on the things you buy and use. Such reconsiderations are often difficult to make for the individual and especially with short notice. The individual makes biased decisions even with perfect information and with the capability to make "correct" calculations.² So even the level playing field is not as level as it looks!

In the regulated monopoly there could be (a theoretical) direct benefit for the generator from reduced demand from the customer. But even when this could be proven, the utility culture (and the interests of the stakeholders) was still favouring growth in supply to reduction in demand. The liberalisation of the energy markets further complicated the matters since the vertical value-chain has been fragmented and thus

¹ These 11 countries count for 80 % of the entire energy use within the OECD, which makes the figures and result significant.

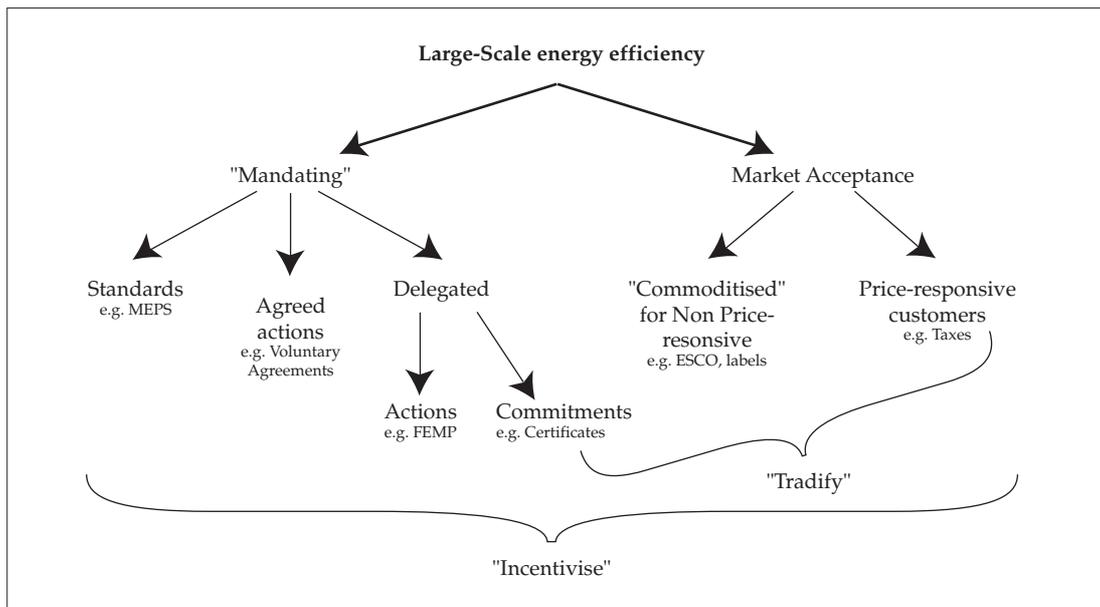
² These things are studied and described in great detail by Daniel Kahneman, Nobel-prize winner in economy. In DSM-literature the macro-representation of this is known as the phenomenon "(high) implicit discount rate"

cannot transmit the “steering” signal from the customer efficiency improvements to show up as a benefit in reduced generation emissions with the generating company.



Still the world desperately needs large-scale energy efficiency improvements. And there are two major different, but not excluding, ways to achieve that. Certain changes could be mandated or attempts could be made to get acceptance in the market, see figure below. This is however a division in principle. In present policy-making and implementation one can see activities to:

- Make all actions rewarding – by incentivising good and fast actions
- Make products of energy efficiency – by commoditising the changes and deliveries
- Make use of actors rationality and innovations – by tradifying energy efficiency actions



The DSM Programme stands in the middle of this process and has recently initiated Tasks to develop the tools and make them “default” for the policy-makers and for the people that will implement the changes.

But we are not there yet. We will especially have to be much more forceful in dissemination and the discussions at the latest Executive Committee meeting (see Chapter X) opens up a new way to operate, primarily in the way we produce and disseminate results. The concept is that we establish a continuous activity, a “DSM-University”, to allow for enriching of DSM-capacity in the world. We should be capable to provide solutions, advice, experiments, training, presentations, databases on programme experiences, analysis and expertise. The way forward could be described as follows related to the University idea:

1. Completed Tasks should be re-evaluated to see what they produced, if the results were presented in a form suitable for dissemination, how we can transform the results into training or into material that can be used in training of “DSM-staff” (in utilities, administrations, companies, municipalities)
2. Current Tasks should do their work once they have a sufficient number of participants but also be prepared to open for new “classes” in the future. Such newcomers could be from the whole range of member and non-member countries as well as from sponsors.
3. We should make both formal and informal contacts with entities who have an interest in DSM and to whom we could deliver useful products (as mentioned above). The recently established contact with CTI can serve as a first model.
4. We must develop the contacts with the IEA secretariat to give them access to our products and for us to get access to the convening power of the IEA.
5. Quantitative methods have to be developed for the decision making process so energy efficiency (and DSM) get a better position when levelling the playing field.
6. We will make an overview of “state of DSM in the world” on a regular basis to serve both as an assessment and as a base for exchange of experiences.

Highlights

Three Tasks completed their work in 2004. Highlights of these Tasks are presented below.

Task VII: International Collaboration on Market Transformation

The IEA DSM Market Transformation Task VII has been supported by government agencies from seven member countries comprising Denmark, Finland, Netherlands, Norway, Sweden, Korea and the United Kingdom. The aim of the Task, which was completed in 2004, was to find a way to encourage a greater market share for the most energy efficient appliances and products in the marketplace.

Task VII seeks to understand why it is that energy efficiency is so low down on the consumer’s hierarchy of needs. Why do some retailers and manufacturers shy away from selling the benefits of the energy efficiency of their products? Can we make ‘energy efficiency’, as a marketing concept, as popular or as strong as the brands of Coca-Cola or Adidas? And how might we do this?

One of the most important products produced by Task VII has been an extensive market research study focusing on the issue of branding energy efficiency in connection with consumers' aspirations and values. The results of this multi-national research indicate that the marketing challenge for the branding of energy efficiency is not a question of spreading knowledge but of establishing image.

This critical marketing data enables Task VII participants and industry to explore new promotional ideas for energy efficiency and to seek solutions that will increase consumers' desire for energy efficient products and services. The results of this market research, in conjunction with a cooperative industry, may provide the key to stimulate a demand for the 'brand' of energy efficiency that could be as strong as the demand for the brand of 'organic food'.

It is hoped that industry will use the information from the market research to develop a 'brand' approach to energy efficiency. This 'brand' approach would focus more strongly on people as brand aware, self-conscious consumers, thereby lifting the promotion of energy efficiency beyond the usual 'save money and the planet' arguments and seeking to identify energy efficiency with the lifestyles, values and attitudes that currently drive consumer purchasing. This has the capacity to transform the chain of market actors, from manufacturing through to the selling and buying of products, as the demand for the most energy efficient products increases.

Task IX – The Role of Municipalities and Energy Efficiency in a Liberalised System

Energy efficiency is often delivered at local level, in bits and pieces that together make up a national program. Local authorities are essential partners in delivering this service. However liberalization has an impact on their role as competition throws into question the role of the municipal energy company. It reduces prices so making energy efficiency a less saleable commodity but also opens up the market so giving consumer choice to municipalities and the citizen.

IEA DSM Task IX, which ran from Jan 2000 to Jan 2004, looked at these issues to try and find ways that local authorities could better respond to the challenges presented by competition. This is a difficult task. As the organisations participating in the Task, we all hoped in a corner of our hearts to find a magic solution, the "best practice", that someone else had developed to make the problems disappear. But in "real practice" we learned of the vital importance of the continuity of current good policies.

Our study looked at the roles played by municipalities and the solutions that they have adopted to cope with the challenges presented by competition. Specific action directly responding to the open energy market is rare, but many programmes are linked to it or use a competitive mindset. But the key factor to remember is that the good ideas that have been developed over the years are still good and still needed. In fact that need is even greater now that we have so many more environmental challenges to meet. The project emphasized the necessity of maintaining stability in energy efficiency policy over a number of years; it must always stay on the menu!

The Task participants have all examined the situation in their own countries, plus also the United Kingdom whose early experience of liberalization can be expected to give some lessons to others. The team of experts identified good practice at local level in a series of case studies in their own countries and elsewhere, and have used these to develop a series of 12 guidelines for local authorities to help them in preparing a

strategy to meet the challenge of liberalization. The resulting reports are available free of charge on the IEA DSM website (<http://dsm.iea.org>).

Task X – Energy Performance Contracting

Energy Performance Contracting (EPC) is a general term for a number of mechanisms by which building owners can have energy efficient plant and equipment installed and operated using other people's capital funds. Eight of the member countries of the DSM Implementing Agreement have recently completed a task which looked at ways of improving the techniques available and getting them taken up more widely.

The potential energy savings from performance contracting are enormous, and the Task has identified many projects within member countries where savings of 20–40 per cent have been achieved. Although there are different approaches to EPC, the basic philosophy is the same. A building owner enters into a long-term contract with an Energy Service Company (ESCO), who undertakes to provide a specific level of service for an agreed regular payment. This payment usually represents a reduction in the client's previous outgoings, but contributes to the servicing of the capital costs of energy efficiency investments. These investments are funded by or through the ESCO, rather than the client, and lead to savings in energy costs, which benefit both partners. At the end of the contract, all the savings revert to the client.

Apart from the funding advantages, which are of particular interest to public sector clients, EPC allows building owners to take advantage of the energy expertise and experience offered by the ESCOs. Task X estimates that the market for such contracts in some countries could be up to ten times larger than at present. The participating countries identified a number of opportunities and concrete actions to stimulate greater use of energy performance contracts. The most important of these include raising awareness and credibility, demonstration projects, accreditation of ESCOs, process and procurement guidelines and templates, and performance guarantees.

The Task report summarises the current situation in the participating countries, with descriptions and analysis of the various mechanisms employed. It reviews the barriers to their use and makes recommendations for greater take-up. The report and associated information can be found on the Task website at <http://dsm.iea.org/NewDSM/Work/Tasks/10/task10.asp>.

Achievements

The major accomplishments of the Tasks that were ongoing in 2004 are summarised below. Additional details can be found in Chapter III.

Task I – International Data Base and Evaluation Guidebook

Key accomplishments related to the data base include:

- The international data base on DSM technologies and programmes, INDEEP, has been made available free of charge to the public.
- Updates of program information in the INDEEP database continued. The information included in the 229 programs that are available in the INDEEP multi-language database have been analysed and a new INDEEP Analysis report was published in 2004.

Key accomplishments related to the Evaluation Guidebook include:

- Relevant information from the international literature was compiled for use in the guidebook.
- Case examples were used to complete drafts of the chapters of the guidebook, with emphasis on the evaluation methods currently used and not on evaluation results.
- The draft Guidebook identifies some of the most critical points related to evaluation of specific categories of energy efficiency policy measures, based on experience from the participating countries.

Task XII – Energy Standards and Labelling

This Task continued its phased initiation. Key accomplishments have been made and form a basis for development of more concrete actions and possible collaboration with other IEA-Programmes:

- Increased breadth and amount of funding for APEC-ESIS website from Taiwan, Australia, Canada, New Zealand and USA APEC-ESIS being the information delivery mechanism for outputs to be produced under Task XII.
- Early indications of agreement that standards for commercial generic renewable energy technologies such as Solar House PV Systems (SHS) and Solar thermal Water Heaters (SWH) should be considered in energy standards co-ordination alongside traditional domestic appliances and generic commercial equipment, thus critically widening the scope of energy standards DSM to demand side and generic renewable technologies.

Tasks completed in 2004

Task VII: International Collaboration on Market Transformation

Key accomplishments of this completed Task 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.
- Regular briefings on current practices and latest knowledge of Market Transformation practice.
- Unique cross-cultural market research highlighting consumer attitudes to marketing and branding of energy efficiency.

Task IX – The Role of Municipalities and Energy Efficiency in a Liberalised System

Key accomplishments of this completed Task include:

- Produced a report on the roles and responsibilities of municipalities in the energy field and the participating countries role in promoting energy efficiency.
- Produced a report on different approaches to liberalisation and their impact on energy efficiency activities in participating countries.
- Produced a report on best practice projects to promote energy efficiency which have been introduced by municipalities and actions introduced in response to liberalisation.

- 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.
- Publication of a Web action guide on local authority practice on energy efficiency including specific guidelines and recommendations and illustrated by practical examples.

Task X – Energy Performance Contracting

The key accomplishments of this completed Task include:

- Provided a better understanding of how performance contracts and other ESCO financial options and services can be used and schemes to improve the tendering process.
- Outlined the benefits of performance contracting and their potential to promote energy efficiency and mitigate global climate change.
- Identified and shared information on potential barriers and problems associated with implementing these contracts.
- Identified the market potential in countries that lack a mature performance contracting industry.
- Shared success stories and solutions to problems.
- Outlined the regulatory and legal context for such contracts to function.

Tasks Started in 2004

Task XI – Time of Use Pricing and Energy Use for Demand Management Delivery

Task XI started in February 2004. The key accomplishments include:

- Completed data collection of studies and field trials of end use monitoring and feedback, time of use pricing and Demand Side Bidding.
- Completed draft report on methodologies and processes used to disaggregate energy end use demand and present it to motivate energy savings by smaller customers.
- Collected and analysed information on time of use pricing to determine impact on customers' end uses; draft report in preparation.
- Information on Demand Side Bidding for larger customers has been collected and the potential for using this technique for enabling aggregated demand of smaller customers to participate in generation markets is being quantified, together with application methodologies and processes.

Task XIII – Demand Response Resources

This Task started in February 2004. Key accomplishments include:

- A Market Characterisation Tool Kit was produced for use by Task participants.
- An analytical report of the demand response market was completed.
- A Communication Tool Kit was produced for use by Task participants.
- A web-based Task portal and library was opened to Task participants.
- An economics working group and an operational working group were formed.
- Four Task newsletters were distributed to participants.
- Research to produce a Demand Response Potential Tool Kit was completed.

Task XIV – Market Mechanisms for White Certificates Trading

This Task started in June 2004. Key accomplishments include:

- A kick-off meeting was held during which the Task work plan was refined and plans reviewed for the first Task workshop.
- A MOU was signed between the Task and the Central European University relevant to the Task attendance as observer of a student of this Academia, with full access to the Task outcome for her PhD dissertation.
- The Task web site was opened and relevant information were made available with two access levels (a restricted and an open one)
- The first Task workshop was held in the UK in November 2004.

Task XV – Network-driven DSM

This Task started in October 2004. There were no key accomplishments prior to the end of the year.

Work in preparation

Advanced Lighting

Lighting Programmes have been in focus for DSM activities for a long time. In the climate related work and in the work related to e.g. rural electrification in the third world it has been observed that the DSM-programmes for lighting could serve as models both for new work on lighting and for dissemination of other technologies.

Visibility

Maintaining and increasing visibility of the programme among its key audiences continues to be a major issue. The principal tools available at present are the Annual Report, the Spotlight newsletter, Task flyers, the website and an electronic news mail.

The Annual Report for 2003 was produced and distributed to approximately 300 recipients in January 2004. It pulls together in one substantial document both overviews of the Programme's activities and details of each of the individual Tasks.

Beginning in 2004, the Spotlight is produced in electronic format, designed as a printable newsletter. ExCo members have the option to forward the newsletter to those who used to receive the printed version or to print and distribute hard copies. Two issues were produced in 2004. Articles covered include the new Strategic Plan for the Programme, highlights of the Tasks on demand response, municipalities and white certificates, possible cooperation with the IEA Climate Technology Initiative (CTI) and profiles of two Operating Agents.

At the start of a new Task, a flyer is produced to stimulate interest in participating in the Task. When the work is completed, a flyer is produced highlighting the results and directing the reader to the Task products.

There remains, though, a clear need for a printed document for use in raising awareness of the programme as a whole and in encouraging new participants. The ExCo approved the production of a Programme brochure, which sets out the aims and objectives of the Programme and gives brief outlines of the current and completed Tasks. It will be accompanied by the flyers that describe each Task in more detail and give relevant contact details. This brochure will be completed during 2005.

The website (<http://dsm.iea.org>) continues to serve as a vital window on the programme's activities. Further improvements to its layout and content have been made and a great deal of information can be obtained from this single source. Analysis of visits to the site shows a worldwide readership. Of particular interest to visitors is the 'e-news' page that is regularly updated and also sent out by email every two or three months to over 700 targeted contacts. One area in need of development is a 'shop front' in which the Programme's principal outputs can be displayed. To this end, improvements are in hand in the way final Task reports are presented and made more relevant to non-participants. Each Task has, at least, a basic minimum sub-site within main site, with the complete Task web site either within the DSM website or located elsewhere and linked to the DSM website.

Co-operation with the climate technology initiative

Steps have been taken to have deeper contacts with other IEA Programmes and especially with the Climate Technology Initiative, CTI, based on possibilities for mutual benefit. The CTI has a network and is arranging events that could be useful for DSM-work to be more focused on user needs. The DSM has products and expertise that is useful for CTI in its mission. The co-operation will be organised by:

1. *Identifying the local contact persons* in participating countries and encourage that they seek contact between them. These will be the respective EXCO delegates.
2. *Inviting observers* from each other to the EXCO-meetings. This could preferably be the EXCO-delegate from the country where the meeting is held.
3. *Appointing Programme Liaisons* that will be charged to suggest to the both parties how they could make use of each others contacts and products for improvement of the total output. These liaisons could be the chair, vice chairs, operating agents (in DSM) and activity leaders (in CTI).
4. *Making a report* to each EXCO-meeting on the issues that are of mutual interest
5. *DSM-representatives being invited* to CTI-seminars to present relevant issues.
6. *DSM requesting* CTI for assistance in relevant issues such as finding contacts for the work.

The DSM-Programme gave presentations on two occasions that have been arranged by the CTI during 2004.

Participation in the IEA DSM Programme as of December 2004

COUNTRY	Task I		Task II	Task III	Task IV	Task V	Task VI	Task VII	Task VIII	Task IX	Task X	Task XI	Task XII	Task XIII	Task XIV	Task XV
	Indeep subt. 8	subt. 9	compl.	compl.	compl.	compl.	compl.	compl.	compl.	compl.	compl.					
Australia			✿		✿		✿							✿		✿
Austria					✿					✿	✿					
Belgium	✿	✿					✿									
Canada		✿	✿													
Denmark	✿	✿		✿	✿		✿	✿				✿		✿		
European Commission				✿		✿	✿		✿						✿	
Finland			✿	✿	✿	✿	✿	✿	✿		✿	✿		✿		
France	✿	✿	✿		✿		✿			✿					✿	✿
Greece							✿		✿		✿	✿				
Italy		✿	✿		✿						✿			✿	✿	
Japan	✿		✿		✿		✿				✿			✿		
Korea	✿	✿		✿	✿		✿	✿						✿		
Netherlands	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿		✿	✿	
New Zealand*													✿			
Norway	✿		✿		✿	✿	✿		✿		✿			✿	✿	
Spain			✿	✿	✿	✿	✿		✿	✿		✿		✿		✿
Sweden	✿	✿		✿	✿	✿	✿	✿	✿	✿	✿	✿		✿	✿	
Switzerland*			✿		✿											
United Kingdom			✿	✿	✿		✿	✿	✿			✿			✿	
United States	✿			✿	✿						✿			✿		✿
World Bank/ Tanzania						✿										

* New Zealand – not yet Participants in the Implementing Agreement

■ Operating Agent and participating country

✿ Participating country

■ Completed Tasks

* Withdrawn

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 database.* 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 specialization.* As part of a collaborative effort, countries can specialize 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 standardization.* 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-fertilization 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.

Streamlined Steps For Joining The IEA DSM Implementing Agreement

If you are from a country that is a member of the IEA or that is currently participating in an Implementing Agreement, take these three steps and you can join the IEA DSM Programme:

1. Talk to Us
2. Meet with Us
3. Write to Us

And You Are In!! Details below:

Interested Country	IEA DSM Program
1. <i>Talk to Us</i> – Your country expresses interest in joining IA by contacting an OA, the Chairman or Executive Secretary	ExCo promptly provides information on activities, participation obligations, benefits and the process to join Programme. ExCo also invites country to attend ExCo meeting and Task meetings of interest.
2. <i>Meet with Us</i> - Your country attends ExCo meeting and Task meetings as Observer.	Immediately upon receiving a copy of that letter, the IEA DSM Programme will consider your country to be a participating country
3. <i>Write to Us</i> – If your country is interested in joining Programme, your country’s Minister sends the attached letter to the IEA Executive Director identifying the contracting party, who will sign the Implementing Agreement, the ExCo member from that country, and the Task or Tasks that country will participate it.	

If your country is not a member country of the IEA or not participating in an IEA Programme, after Step 1 the ExCo will forward your country’s expression of interest in joining the DSM Programme to the IEA Secretariat for consideration and approval. Once that approval has been received, the IEA DSM ExCo will vote to invite that country to join the IA. If favourable, the ExCo will invite your country to the next ExCo meeting, leaving Step 3 to complete the process to join.

Chairman

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

Executive Secretary

Ms. Anne Bengtson
 Box 1320
 183 13 Täby, Sweden
 Telephone: (46) 8 510 50830
 Telefax: (46) 8 510 50831
 E-mail: anne.bengtson@telia.com

IEA Secretariat

Mr. Alan Meier
 International Energy Agency
 Office of Energy Conservation
 and Efficiency Division
 9 rue de la Fédération
 75015 Paris Cedex 15, France
 Telephone: (33) 1 40 57 6685
 Telefax: (33) 1 40 57 6749
 E-mail: alan.meier@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 III, the Executive Secretary, Anne Bengtson, the Advisor, Fred Morse, the Newsletter Editor, Sheila Blum, and the Webmaster, Verity Saunders.

CHAPTER II

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

Description

In 2004 two subtasks are operational. One subtask (8) is finalised in 2004 and it is planned that the other subtask (9) will be finalised by mid 2005.

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 participating countries will provide case examples on the evaluation of different type of policy measures.

Task I was originally divided into seven subtasks during the period 1994–2001. These seven subtasks are finalised by 2001. The first Subtask was a pilot project to explore the feasibility and nature 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.

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>

From subtask eight, INDEEP

- INDEEP Analysis Report 2004
- INDEEP Final Report, July 2004

Expected results in 2005 from subtasks nine, Evaluation

- Country reports on national evaluation methods and evaluation studies.
- 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>

<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 which are required 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 being planned with a project to define the scope and contents of co-ordinated trials and bundled services in partner countries in progress. The main criteria for evaluating these technologies is their potential to improve the efficiency of energy resource use and to provide customers with better services at lower cost.

Achieved results

- Report on communications requirements for utility/customer services
- Report on assessment of communications technology for meeting performance criteria in pursuit of demand-side management and customer services
- Report on assessment of harmonised standards for communications technology which would allow system compatibility across Participating countries
- Report on key research development, and demonstration to bring emerging energy management-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 of prototype, customer flexible gateway – hardware and software
- Report on business case assessment for the provision of customer services
- Report on definition of field trial of bundled services

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

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

<http://dsm.iea.org>

<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 per cent and “copiers of the future”, where the energy use has been reduced down to 25 per cent, 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> and www.stem.se/IEAProcure.

<http://dsm.iea.org/NewDSM/Work/Tasks/3/task3.asp>

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>

<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>

<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>

<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

- 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 manufacturers and 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.

Achieved results

- 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.
- Regular briefings on current practices and latest knowledge of Market Transformation practice.
- Unique cross cultural market research highlighting consumer attitudes to marketing and branding of energy efficiency.

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

<http://dsm.iea.org>

<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 was to evaluate and promote demand side bidding (DSB) as a means of improving the efficiency 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 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 can have important environmental and energy efficiency benefits in some situations when it is used as an alternative to conventional generation.

The Task:

- Evaluated and promoted DSB as a means of improving the efficiency of the electricity supply chain and global environment.
- Examined current DSB mechanisms and assessed their strengths and weaknesses.
- Identified the main barriers to DSB and assisted in their removal through the provision of practical guidelines for the development of new schemes and enhancements to existing ones.

Achieved results

- 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.

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

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

<http://dsm.iea.org>

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

Task IX: The Role of Municipalities in a Liberalised System

Description

This Task investigated 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, prepared 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 CO₂ emissions by energy substitution. Local authority activities in this field were assessed for replicability, choice of targets, its 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 provides 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

- Identified municipal roles and practices in DSM activity within the context of their national energy scene and evaluate their effectiveness.
- Evaluated the impact of liberalisation of energy markets and identified how municipalities can respond to this.
- Defined priorities for municipal action on DSM.
- Made recommendations how municipalities can improve their service delivery on DSM both in-house and to third-parties.
- Prepared an action guide relating to DSM at municipal level, presenting common factors and specific features and illustrated with examples.

Achieved results

- Report on the roles and responsibilities of municipalities in the energy field and the participating countries role in promoting energy efficiency.
- Report on different approaches to liberalisation and their impact on energy efficiency activity in participant country, which formed 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 national and local levels regarding the role of municipalities in DSM and how the current restructuring process affects the role that they can play.
- Publication of an action guide on local authority practice on energy efficiency including specific guidelines and recommendations and illustrated by practical examples.

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

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

<http://dsm.iea.org>

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

Task X: Performance Contracting

Description

The objective of this 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.

Achieved 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 have:

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

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

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

<http://dsm.iea.org>

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

Task XI: Time of Use Pricing and Energy Use for Demand Management Delivery

Description

Successful implementation of Demand Side participation in competitive energy markets is an essential process for world energy sustainability. In this regard, a major impact of implementing competitive markets in energy supply and demand management, is to expose energy suppliers and traders to the cost of their own energy and demand imbalance against agreed contracts. In this trading environment, flexible, responsive and low cost demand side participation processes, based on accurate customer consumption data, are very attractive options for reducing imbalance risk and improving system security. Interruptible contracts and Demand Side Bidding (DSB), together with standby and interruption payments, are used by larger customers to take advantage of time of use energy pricing. Many liberalised market structures and operating systems mitigate against Demand Side participation by smaller customers, with profile metering an obvious example. In this case, time of use metering used for larger energy users is replaced by “profile metering” for smaller customers. “Profile metering” offers some of the benefits of time of use metering at lower cost but removes any incentive for customers to modify their energy demand profile through demand management. Verification of demand changes which result from existing DSB implementation requires time of use energy metering. Task XI will investigate “time of use metering” and developed “profile metering” for smaller customers as mechanisms for driving DSB and energy savings.

Feedback of end use energy consumption data to customers and their energy management systems helps in reducing energy use and also in moving elements of demand to lower cost periods. It also allows any significant changes customers make in their energy use pattern to be fed back to them so that they can see the results and value of their efforts. The main benefits of providing this information are to focus customers’ attention on their energy use, its specific impact on the environment and in encouraging savings. It also assists the demand aggregation process for smaller customer DSB.

Task XI addresses the issues of Time of Use Pricing, Energy End Use and Feedback mechanisms and Demand Side Bidding by smaller customers in energy markets.

Expected results

- Report to quantify the impact on energy saving and DSM processes of end use monitoring and feedback for smaller customers.
- Report to quantify the benefits of time of use pricing and its impact on demand response for smaller customers.
- Report to quantify the pricing, control and validation requirements and mechanisms to facilitate DSB for smaller customers.

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

<http://dsm.iea.org>

<http://dsm.iea.org/NewDSM/Work/Tasks/11/task11.asp>

Task XII: Co-operation on Energy Standards

Description

Task XII was formed in early 2003 and is currently gathering funding support for the start of its work. The objective for Task XII is to address the widespread problem of disjointed standards for energy using products and systems in different parts of the world. In an increasingly global market, enhancements are needed to current inadequate systems to facilitate mutual awareness and active co-ordination of different standards and standards setting procedures. The Task focus on energy standards is because energy standards underpin nearly all “hard” energy efficiency delivery programs. In particular, energy standards underpin programs on market transformation, tax incentives, rebates and voluntary endorsement labelling programs. Energy standards also are the core of regulated MEPS and labelling programs on electric and gas appliances and equipment underway in 50 countries - including nearly all developed countries – and applied on a regional basis in Europe and North America.

The Task

- Facilitate the formation of, and active participation in, a global energy standards information network to improve mutual awareness and cooperation.
- Hold meetings, conduct studies and prepare reports on specific opportunities and issues relevant to energy standards and the policies and programs that utilise them.
- Build on past and current regional efforts to promote mutual awareness and co-ordinate energy standards throughout the world.

Expected results

- Development of a global energy standards information system website.
- Active notification of recent and planned energy standards developments.
- Case studies of areas where harmonisation or mutual acceptance of standards are possible.
- International comparisons for tracking progress of energy standards based programs.
- Alignment of energy performance testing regimes for specific product classes.

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

<http://dsm.iea.org>

<http://dsm.iea.org/NewDSM/Work/Tasks/12/task12.asp>

Task XIII – Demand Response Resources

Description

On October 15, 2003, the International Energy Agency Demand Side Management Program Executive Committee approved a new Task called Demand Response Resources. The project includes 11 Member countries including the Australia, Denmark, Finland, Italy, Japan, Korea, Netherlands, Norway, Spain, Sweden, and the United States. The objective of the Task is to deliver the necessary methodology, business processes, infrastructure, tools and implementation plans for the rapid deployment of a demand response program into participating country electricity markets to meet the specific goals and policy objectives of that market.

Financing for the Task has been structured and implemented with the 11 participating countries. Work on the Task began in February 2004 after financing was secured. The Task is organized into three phases over a 26-month project schedule. By the end of 2004 the project had created and delivered a market characterization toolkit, a communications toolkit, a research library, and performed significant work in creating the DR Potential and DR Valuation toolkits.

This Task will

- Define a structured, repeatable process for implementing effective demand response programs in any electricity market.
- Create a toolkit for characterizing existing electricity markets.
- Establish a common methodology for estimating demand response potential.
- Create economic models to determine the impact of demand response programs on market prices, reserve margins, capacity markets and liquidity as well as the value of demand response from a private and public policy standpoint.
- Integrate previous work of the Programme on demand response and create a platform for future work particularly on enabling technologies for demand response.
- Provide an Internet portal networking project participants into a project community of experts and as a platform for delivering intellectual property to the project participants.

Expected results include

- Determine specific objectives each country expects to achieve with their demand response programs.
- Determine demand response best practices from an application and technology standpoint.
- Identify the resources, infrastructure, investment and obstacles for each country in achieving their objectives.
- Provide an implementation plan and “toolkit” for each country to achieve their demand response objectives.
- Deliver the Intellectual Property created to project participants at the conclusion of each phase of the project.

*More information about Task XIII can be found on the web site: <http://dsm.iea.org>
<http://dsm.iea.org/NewDSM/Work/Tasks/13/task13.asp>*

Task XIV: Market Mechanisms for White Certificates Trading

Description

This Task aims to address:

- whether – and how – a scheme involving the issuing and the trading of White Certificates (WhC) provides an effective means of attaining targets of reduction of primary energy consumption and CO₂ emissions
- what is the most suitable format for such a scheme
- what implementation problems are involved, at national and extra-national levels
- how it can interact with other schemes.

Market-based policy instruments, as White Certificates issuing and trading, are increasingly being favoured in a wide range of energy and environment policy fields, due to their economic efficiency, benefits for competition, positive incentives for cost reduction and continuous improvement and ability to minimise and equalise costs of compliance with policy targets. They are particularly applicable where Countries have mandatory quantitative targets for the actors concerned, that must be met in a verifiable way, inside national or extra-national obligation programmes, and within a fixed period. Certificates offer a number of practical benefits, owing to the above reasons, for all parties involved: the regulatory Authorities, the parties obliged to comply with energy efficiency targets, the parties able to create and sell certificates.

The task will be based on regular workshops at four months' intervals, exploring some specific issues, such as expectations and already gained experiences, policy/principle issues, organisation/practical issues and interaction with other trading schemes and with other EE policies.

Expected results

The content of the contributions and of the discussions relevant to each workshop will be processed and synthesised in corresponding *Critical Synthesis (CS) Reports*, which will become official task deliverables. A Final Synthesis Report (FR) will contain a summary and a review of all the activities undertaken and experiences gained during the progress of the Task.

The Task will produce a complete survey on issues such as effectiveness of a scheme involving the issuing and trading of White Certifications (WhC) to attain targets of reduction in primary energy consumption, the most suitable format for such a scheme, problems involved in its implementation and possible interactions with the other schemes. In this context, benefits resulting from the Task will stem from enhanced understanding of:

- various alternative approaches that can be adopted for similar types of problem (policy, practical, etc.)
- experience that may already exist
- ways to deal with interaction/conflict/interchangeability among Green/Black/White Certificates, when this occurs.

More information about Task XIV can be found on the web site: <http://dsm.iea.org>
<http://dsm.iea.org/NewDSM/Work/Tasks/14/task14.asp>

Task XV: Network-driven DSM

Description

The newly-commenced Task XV will identify and develop DSM measures to overcome the types of electricity network problems linked to the 2003 blackouts in Europe and the United States.

Network problems are becoming significant in countries where electricity demand is increasing and network infrastructure ('poles and wires') is ageing. As loads grow and infrastructure reaches the end of its economic life, the potential cost of augmenting networks is increasing exponentially. In many situations, DSM can delay the need for network augmentation. In certain limited situations, DSM may even be able to cost-effectively eliminate the requirement to build a 'poles and wires' solution.

Task XV will identify the most appropriate and cost-effective DSM measures to relieve electricity network constraints. All types of constraint will be addressed, including capacity limitations, voltage fluctuations, reliability issues, etc. The Task will identify and develop a wide range of DSM measures which can be used to relieve network constraints, whether these constraints are time-related (eg occurring at times of the network system peak) or location-related (eg associated with particular lines or substations) or both. Such network-driven DSM measures are often more cost-effective, and may also have lower environmental impacts, than network augmentation (ie building 'poles and wires').

In addition to relieving network constraints, DSM can also provide services for electricity network system operators, achieving peak load reductions with various response times for network operational support. Task XV will also cover DSM activities which provide network operational services.

Expected results

- Report listing and summarising network-driven DSM projects implemented around the world.
- Report listing and summarising successful network-driven DSM measures and the specific network problems they address.
- Report on ways in which network planning processes can be modified to incorporate DSM measures as alternatives to network augmentation.
- Report on 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources.
- Task Newsletter.
- Information databases about network-driven DSM projects and measures.
- Regional workshops about network-driven DSM held in Europe, North America and Asia Pacific.

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

<http://dsm.iea.org>

<http://dsm.iea.org/NewDSM/Work/Tasks/15/task15.asp>

CHAPTER III

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

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

In 2004 two 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. Subtask 8 is finalised in 2004 and subtask 9 will be finalised by mid 2005.

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 general objective for this subtask nine is to improve the common knowledge on evaluation and assist the national and internal evaluation process by an evaluation guidebook. 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.

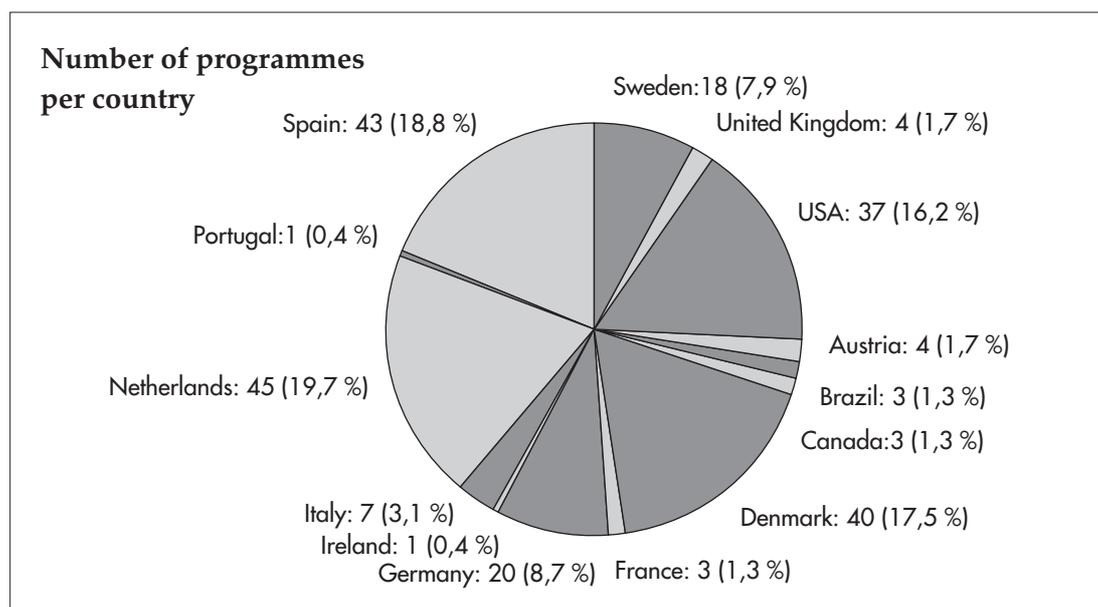
Progress

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: Belgium, Denmark, France, Japan, The Netherlands, Norway, Republic of Korea, and Sweden.

In 2003 and early 2004 updates of programme information in the INDEEP database is continued. Also new programmes are included in the database. This update now including an option in case the (original) contact person is no longer available at the company or in case the company do not exist anymore. The update of the programme information is divided into two steps. By December 2003 the update on the contact information as well as on the programme information is finalised. Early 2004 the data collection on new programmes is finalised. In 2004 the information on the 229

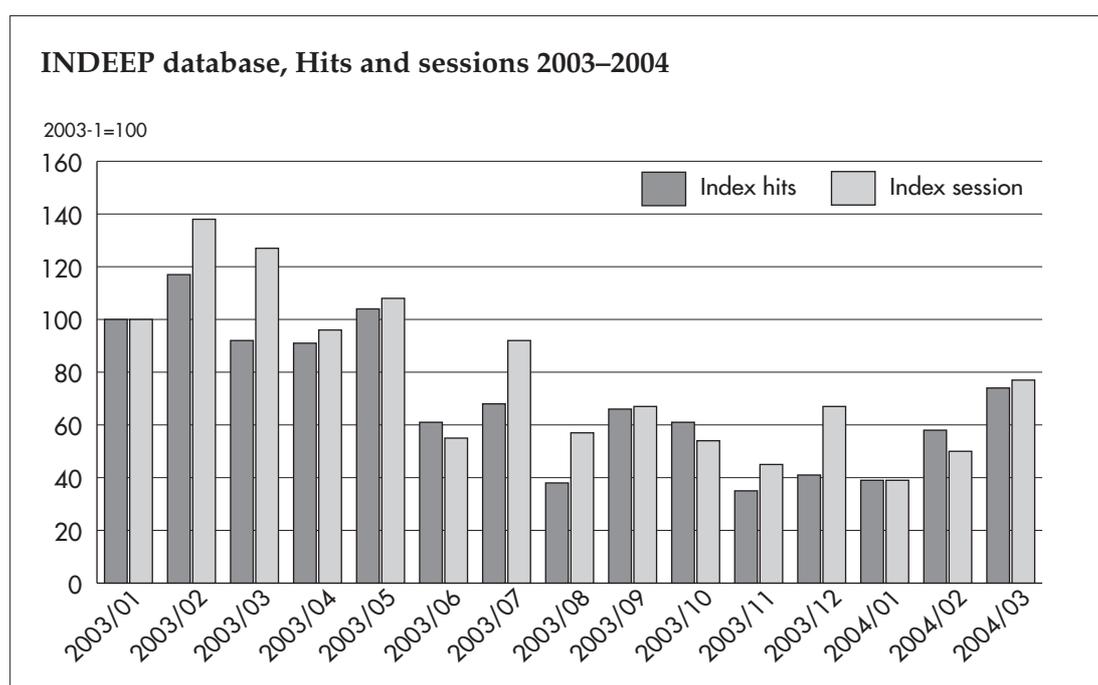
programmes in the INDEEP database is analysed and a new INDEEP Analysis Report (2004) published. This will be the last analysis report, unless an organisation is willing to continue the INDEEP database.



INDEEP is an Internet database, but was till the end of 2002 restricted to the participating countries. Since the database is public (July 2003) the use of the database is researched:

- about 50–170 sessions (i.e. that a person is doing more on the site then just a hit) per month;
- the time a session takes is around 10–15 minutes on average;
- about 1,800–6,000 hits per month.

In the first half year that INDEEP was public, the use of the database was the highest. During 2004 the use decrease to about half the number of hits and session of the first 3 months.



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

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

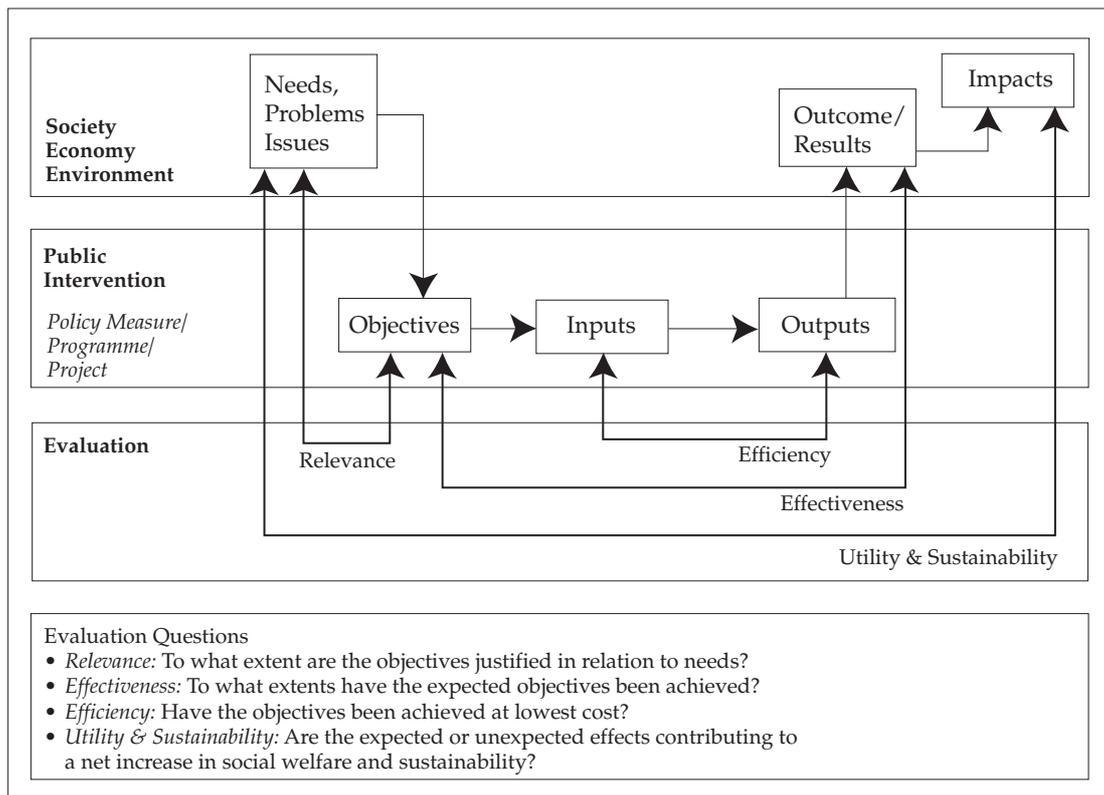
The original work plan for this subtask holds two phases. The first phase is to develop a common framework, to clarify the function of scenarios and measurements for evaluation guidelines, to compile a draft international evaluation guidebook for energy efficiency programmes, focussed on GHG mitigation 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. During the experts meeting at the end of the year 2002 and early 2003 the experts concluded that priority setting in the work was needed and a revised work plan was developed. In April 2003 the Executive Committee approved this. The main approach is to use national and international expertise to collect and judge the information on evaluating EE and DSM project, programmes and policy measures.

Several round-table discussions and knowledge exchange meetings are organised in 2003 in combination with experts' to discuss draft versions of the guidebook. The project is clearly different from previous work in that it will focus on the evaluation *methods* currently used and not on evaluation *results*. Furthermore, it does not aim to present evaluation theory from A–Z. Instead the project will identify some of the most *critical points* related to evaluation of specific categories of EE policy measures, based on experience from the participating countries.

A final expert meeting is organised in May 2004. At that meetings the experts agreed on the outline of the reports and commented draft chapters and case examples. There will be a guidebook in two volumes. One Volume dealing with the key analytic elements in evaluating a type of policy measure and a second volume that holds all case examples the experts collected.

Volume 1 deals with evaluation theory and advises how to conduct evaluation for five types of policy measures. For each type the guidebooks holds an advise to evaluate using the following seven key analytic elements:

1. Statement of policy measure theory
2. Specification of indicators for evaluation
3. Development of baselines for indicators
4. Assessment of output and outcome
5. Assessment of energy savings and emissions reductions and other relevant impacts
6. Calculation of cost, cost-efficiency and cost-effectiveness.
7. Choice of level of evaluation effort



Activities completed in 2004

- The data collection on new programmes is finalised
- The INDEEP database is analysed and the Analysis Report 2004 produced
- The outline and content of the reports for evaluating energy efficiency and DSM programmes are set
- Collection of case examples by the country experts

Activities planned for 2005

INDEEP database maintenance & analysis (subtask 8)

The INDEEP database will be available at the IEA DSM Web site, but no support to users or update of programme information will be conducted, as the work on the subtask 8 is finalised.

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

Experts will comments on the draft chapters and volumes of the evaluation guidebook and the two Volumes will be published and presented at an international conference or workshop.

Relevant documents will be publicised on the web site

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. In the subtasks representatives from energy agencies, energy utilities, universities, research institutes and ministries are involved.

Reports

1. INDEEP Analysis Report 2004
2. INDEEP Final Report, July 2004

Meeting schedule

Meetings held in 2004:

2–3 May 2004 (subtask 9) Copenhagen, Denmark

Meetings planned for 2005:

Summer 2005 (subtask 9) presentation of the guidebook

Activity time schedule

Task I came into force on 1 May 1994 and will be finalised in 2005.

Activity	94	95	96	97	98	99	00	01	02	03	04	05
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								■				
9. Evaluation Guidebook, phase 1									■			

Participants

Subtask 8

Belgium

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

Denmark

Mr. Casper Kofod
Energy Piano
L.F. Cortzensvej 3
KD-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: 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
SenterNovem
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. Heini-Marja Suvilehto
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
SenterNovem
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
Email 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

Mr. Peter Bach
Danish Energy Authority
Amaliegade 44
1256 Copenhagen K
Telephone: (45) 33 92 67 00
Telefax: (45) 33 11 47 43
E-mail: pb@ens.dk

France

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
SenterNovem
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
International Institute for Industrial
Environmental Economics (IIIEE)
Lund University
P.O. Box 196
SE-221 00 Lund
Telephone: (46) 46 222 02 68
Telefax: (46) 46 222 02 30
E-mail: lena.neij@iiiee.lu.se

Operating Agent

Mr. Harry Vreuls
SenterNovem
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 VII: International Collaboration on Market Transformation

Operating Agent: Mr. Verney Ryan, (BRE), United Kingdom

Summary

In 2004 Task VII concentrated efforts in conducting industry meetings and finalising the remaining parts of the Task work plan. The results of the Task VII research are still providing a stimulating level of discussion focussing on the brand approach to energy efficiency. Industry meetings have confirmed many of the conclusions drawn from Task VII work over the last four years as well as providing a stimulating level of discussion and insight into industry views of energy efficiency. The Task continues to encourage interest from a broad array of market actors from appliance manufacturers through to academic organisations.

Background

The IEA DSM Market Transformation Task VII has been supported by government agencies from 7 countries including Denmark, Finland, Netherlands, Norway, Sweden, Korea and the United Kingdom (Norway withdrew from the Task in 2003). Task VII seeks to find a way to encourage a greater market share for the most energy efficient appliances and products in the marketplace.

Task VII seeks to understand why it is that energy efficiency is so low down on the consumer's hierarchy of needs. Why do some retailers and manufacturers shy away from selling the benefits of the energy efficiency of their products? Can we make 'energy efficiency', as a marketing concept, as popular or as strong as the brands of Coca-Cola or Adidas? And how might we do this?

To meet this challenge and to answer some of these burning questions, a variety of different subtasks have been undertaken. These range from the development of a unified policy approach to market transformation through to the development of procurement strategies.

One of the most important products produced by Task VII has been an extensive market research study focusing on the issue of branding energy efficiency in connection with consumers' aspirations and values. The results of this multi-national research indicate that the marketing challenge for the branding of energy efficiency is not a question of spreading knowledge but of establishing image.

This critical marketing data enables Task VII participants and industry to explore new promotional ideas for energy efficiency and to seek solutions that will increase consumers' desire for energy efficient products and services. The results of this market research, in conjunction with a cooperative industry, may provide the key to stimulate a demand for the 'brand' of energy efficiency that could be as strong as the demand for the brand of 'organic food'.

It is hoped that industry will use the information from the market research to develop a 'brand' approach to energy efficiency. This 'brand' approach would focus more strongly on people as brand aware, self-conscious consumers. Thereby lifting promotion of energy efficiency beyond the usual 'save money and the planet' arguments and seeking to identify energy efficiency with the lifestyles, values and attitudes that currently drive consumer purchasing. This has the capacity to transform the chain of market actors, from manufacturing through to the selling and buying of products, as the demand for the most energy efficient products increases.

Utilising the results of the research, Task VII has now completed a series of meetings with a selection of Europe's major electrical product manufacturers. Task VII experts have sought to identify common barriers to the promotion of energy efficient products and, with the help of industry, have explored the possibilities and opportunities open to an awakening market. The industry response has been positive because Task VII shares a common goal with most of the appliance manufacturers – many of them already produce energy efficient products, and we simply want to increase that market share.

Activities completed in 2004

- Organised a series of industry meetings.
- Delivered final summary report.
- Developed support amongst industry for a 'brand approach' to energy efficiency.

Final results and involvement of industry

During 2004 Task VII has concentrated on engaging industry in dialogue about marketing and branding the concept of energy efficiency. To this end a series of meetings were organised between Task VII and leading international manufacturers of energy using products. Initially the focus was on those companies that were producing the best energy efficiency products as part of their product portfolio – although a wide range of views were sort from other appliance manufacturers.

Three in depth meetings were held with major industry leaders at their premises, and a further eight companies were contacted and interviewed more informally through email and telephone dialogue.

The face to face meetings followed an informal but pre-prescribed format where the Task VII operating agent provided a summary of the market research findings from the Task work and used this as the springboard for discussions. Industry was then asked a series of pre-determined questions to facilitate an open discussion. The meetings were guided but focused on developing creative insights into industry's unique view of energy efficiency as a marketing concept.

These results were written up and delivered as a final Task VII summary report in October 2004. In order to retain confidentiality and to protect commercially sensitive information, the responses were provided as a general discussion and comments were not identified to particular companies. The results are available in the report "International Collaboration on Market Transformation - Outcome of Industry Meetings (Final Report Addendum – Results from the Final Phase of Task VII)". A summary of findings is presented below.

What are companies doing regarding the energy efficiency of their product range?

All claimed to be developing and marketing energy efficient products. As an example, one company no longer sells any fridge that has an efficiency below an A rating. One of the companies interviewed claimed that “environment and energy considerations are always considered one of the most important aspects of design” and another desired to be “the best for the consumer and the best for the environment”. It is important to note that these were genuinely held beliefs – and it was evident that real change is occurring at high levels in the more progressive parts of industry.

What drives industry to improve the efficiency of their products?

There were similar responses from most companies regarding motivations for energy efficiency improvements. Legislation is a primary driver – although most companies hoped to be well ahead of the game in terms of upcoming standards. Future minimum standards and best practice drive improvements, although companies varied as to how far into the future they were looking in terms of their levels of efficiency. Voluntary agreements were well regarded by industry as a more friendly solution to the need for greater efficiency – especially when compared to legislation.

One company claimed that improving energy efficiency was simply part of the company philosophy to create ‘a caring and environmentally aware brand’. Another company claimed to have a self driven ambition to provide environmentally friendly products. However, they went on to say that this was more than just idealism – it was also in response to certain mature markets (e.g. Germany) that would support such a stance and provide a niche marketing advantage.

Most companies had a desire to be environmentally competitive, but one company said that they were competing in areas dictated by the developments in areas covered by the EU labelling scheme. As an example this company has been focussing efforts on oven efficiency in line with the introduction of labelling for ovens within the EU. Labelling has obviously been a major driver – particularly in the European market (including the latest introduction of A+ and A++ for refrigeration products within the EU).

The challenge of energy efficiency as a feature of marketing

According to industry, one of the major challenges for energy efficiency is that it is not seen as a differentiator in the marketplace. Most companies have similar levels of efficiency – and it is hard to make a niche out of a shared attribute. Industry prefers to use ‘technology and innovation’ rather than efficiency, as technology provides thousands of differentiating variables. Energy efficiency is just one differentiator, and even then it is not actually visible – as opposed to, for instance, an LCD monitor on the door of a fridge.

One company suggested that a marketing strategy based on energy efficiency would only be worth pursuing if they could guarantee the number one energy efficiency slot – but that this would be too risky to pursue under present conditions due to the competitive nature of the market.

The limits to efficiency

Industry were in agreement that in the majority of product categories the products are reaching limits of what is possible using current technologies cost effectively. What is required now is a step change to deliver true low carbon technologies – but investments

in these are simply too risky for industry - therefore it was suggested that government has a role to play. Procurement exercises were mentioned by one company as useful in terms of delivering guaranteed markets for more efficient products – and hence the ability to put more money into overcoming the current barriers to efficiency.

All companies appeared to be in agreement that price is still the biggest influencing factor in mass consumer choice – even though it may not be a rational deciding factor (in terms of operational costs over the lifetime of a product). As one company put it “How do you sell the fridge with double the efficiency... when it is double the price?”.

What governments can do

Not surprisingly subsidies for product development and marketing, as well as point of sale subsidies were stressed as one of the most important government initiatives. It was interesting to note that industry felt that Government had primarily an educative role to play – and this could be part of a subsidy campaign (in that consumers could be educated through the process of buying a discounted appliance or claiming money back on efficient appliances).

Some companies felt that there should be better education regarding labels and a broadening of support for wider markets for the new A+ and A++ products. Denmark seemed to be leading the way in this, although that could be also put down to higher energy prices highlighting energy as an issue.

Industry appeared to broadly agree with Task VII’s suggestion that consumer demand needs to be raised by government, manufacturers and retailers – in a coordinated approach. Not unusually industry would welcome any action by government that could stimulate demand for their most efficient products and stem continuous price deflation.

What Industry can do?

The companies interviewed by Task VII already feel that they are doing a great deal – both in terms of producing energy efficient products in line with current and upcoming legislation, and in terms of product development. Industry did suggest that they could be more involved in promotion and marketing of energy efficiency and stipulated that they would be open to being part of a coordinated approach.

One company mentioned that they felt they could improve their point of sale information – perhaps through clearly indicating the advantages of spending the increased costs of efficient equipment versus the in use savings over the lifetime of that equipment.

Most companies agreed that it would be beneficial to help to broaden the appeal of energy efficiency – focussing on peoples aspirations and values and many expressed a desire to work collaboratively with other industry/government bodies if further work is carried out.

Task VII market research results

The results of the research conducted under subtask B of task VII generated a significant amount of interest amongst the industry representatives. As a general comment it appeared that the research backed up and reinforced similar market research conducted by the various companies meeting with Task VII. Of particular interest was the multi-national approach to the study and the realisation that a communication or marketing

strategy focussing on the values and aspirations of consumers would be possible for energy efficiency across the range of countries taking part in the research. Several of the companies contacted have requested follow up meetings and continue to show an active interest in the work of Task VII.

Conclusions

Some useful lessons have been learned and significant achievements made during the progress of Task VII over the past four years. Some relevant conclusions can be drawn from the last phase of Task VII work conducted over the course of the last year. In summary these are as follows:

1. Market Transformation, and the range of tools employed by it such as labelling, procurement, voluntary standards, legislation etc, has played a significant role in raising the efficiency of products across many of the IEA countries and particularly EU countries taking part in the Task work.
2. The limits to efficiency (within cost effective parameters) have been reached in many product areas (or so industry claims). A technological step change is now required to deliver a significant increase in efficiency - and this may require government support in order to deliver low carbon technology in ordinary household products.
3. Industry is not only aware of environmental and energy related issues but they are incorporating them into the highest levels of company policy and are committed to integrating these issues into their product ranges.
4. If the market pull and demand for efficient products can be stimulated sufficiently then manufacturers and retailers will almost certainly respond by improving their point of sale information and will start to highlight efficiency as part of their marketing portfolio – this in turn will stimulate the production of market leading efficient products.
5. As a result of meetings with industry, many of the general conclusions drawn from the Task VII market research have been confirmed. These include that:
 - a. People are aware of the benefits of energy efficiency products – but don't always act in a rational way – they may be more susceptible to aspirational and value driven choices
 - b. The Interesting part of the market, consisting of young, knowledgeable, high-income people are also willing to pay more for brand values. This 'materialist consumerist' target market is highly influential and often leads trends in consumer purchasing. This part of the market has been largely ignored in traditional energy efficiency marketing which focuses on 'cost and environment' arguments.
 - c. An opportunity exists for government to collaborate with industry to develop marketing and branding where the driving force is not the traditional: "saving energy and money and environment", but where the Transformation of the Market is driven by the purchasers' belief that their choices will add value to themselves or their companies in the form of image, prestige, respect.
 - d. Task VII Research results enable multinational manufacturers and retailers to develop a marketing communication platform that will work across several countries. Many appliance manufacturers have expressed an interest in developing such a communication platform.

Since Task VII began the efficiency of appliances, at least on the EU market, has steadily improved. Overall the discussions with industry have provided a positive outlook regarding the future of energy efficient appliances. It seems that many of the market transformation tools employed over the last ten years are reaping rewards in terms of increased efficiency and industry awareness of the issues. However, consumer awareness has some catching up to do – particularly in relation to the creation of market pull demand for energy efficient products.

Market transformation of energy efficiency through branding holds promise as a way to influence parts of the market not yet reached through traditional energy efficiency marketing. Such marketing and communication is obviously not THE answer – but it could, and should, form an important part of the Market Transformation toolkit.

Despite Task VII drawing to a close at the end of 2004, a continued interest in the results and conclusions of the work has been stimulated amongst participating countries and more widely throughout the world. This interest comes not only from Task experts and participating ExCo members, but also now from a growing number of important industry actors who are excited at the prospect of collaborating to achieve a common goal – to sell and promote products that do less harm to the environment and use less energy.

Through the meetings undertaken with industry as part of Task VII's work an opportunity has become apparent to develop a coordinated branding campaign supported by government and industry. It is still unclear who might lead this, or who would support it, but industry has certainly expressed an interest in taking part, and discussions will undoubtedly continue along these lines. So, as they say in the advertising world, "watch this space!"

Reports

Reports produced in 2004

International Collaboration on Market Transformation - Outcome of Industry Meetings (Final Report Addendum – Results from the Final Phase of Task VII)

Meeting schedule

Meetings held in 2004

June, August and September 2004 – Industry Meetings

Activity time schedule

Task VII came into force in January 2000 and will be officially completed at the end of December 2004. This will conclude the main activities for Task VII under the IEA Annex. However, due to the growing interest from industry regarding the results of the Task more work may be suggested in the coming years. There is an opportunity to more fully engage industry with Task VII objectives and results through the development of a brand based marketing campaign for energy efficiency.

Subtask	1999	2000	2001	2002	2003	2004
Subtask A: Developing a unified policy approach to Market Transformation and integration with MTPIF		—————				
Subtask B: Market Transformation Market Research		—————				
Subtask C: Market Transformation Workshop and Forum		—————				
Subtask D: Market Transformation Web site		—————				
Subtask E: Promoting Advanced Products		—————				
Subtask F: Engaging Industry					—————	—————

List of participating countries and organisations

Denmark

Ministry of Environment and Energy
44 Amaliegade
DK-1256 Copenhagen K
Denmark

Finland

Motiva
PO BOX 489
FIN-00101
Helsinki
Finland

Korea

DSM Dept. KEMCO (Korea Energy
Management Corporation)
1157 Pungduckchun, Suji, Yongin
Kyunggi, 449-994, Republic of Korea

Netherlands

SenterNovem B.V.,
Swentiboldstraat 21,
P.O. Box 17,
6130 AA SITTARD,
The Netherlands

Sweden

STEM
PO BOX 310
SE-631 04 Eskilstuna
Sweden

United Kingdom

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

Task IX: Municipalities and Energy Efficiency in a Liberalised System

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

The liberalisation of energy markets has had a major impact on energy efficiency activity and in particular on local authorities. Task IX of the IEA DSM Implementing Agreement investigated the way in which local authority action on energy efficiency is affected by the liberalisation of energy markets, presented a series of case studies on the way local authorities have reacted to the challenges and identified a series of guidelines to help local authorities prepare their policies to deal with this issue. Utilities have little business interest in promoting energy efficiency among small consumers and they have tended to be most interested in large consumers to whom they can also sell energy services. Utility action in this field therefore has largely been guided by the need to meet the regulatory requirements imposed on them.

Five participant countries in the IEA DSM Implementing Agreement participated in this project – four of these partners were led by National, Regional or local energy agencies whose representatives sit on the Executive Committee of the Agreement. Jean-Pierre Tabet of ADEME in France acted as lead participant for the project with STEM in Norway, SenterNovem in The Netherlands and Graz Energy Agency in Austria (financed in each case by Government Ministries) acting as other partners and in addition ICAEN, the Catalan Energy Agency financed Spanish participation. So this Task was public sector led to meet the need to improve public sector policy-making.

The project took longer than initially planned since it is always problematic to get public sector organisations to coordinate their budgets. It started in 2000 and was completed in January 2004, producing four reports and a web site. These publications are still available via national members of the Executive Committee or via the French organisation which acted as Operating Agent: *Energie-Cités*.

One of the key lessons learned is that local authorities can still continue to promote energy efficiency in a liberalised market. Indeed in many ways local authorities are the most appropriate standard bearers of energy efficiency among the small consumers. MEELS summarised the lessons learned in the form of 12 key lessons for local authorities. These lessons also affect Government since the legal framework in which local authorities work very greatly affects their ability to respond to the challenges they face.

The twelve Key LESSONS for local authorities promoting energy efficiency in a liberalised market identified in the project are as follows:-

Lesson 1: Local authorities can promote energy efficiency. Even if the liberalisation of energy markets seems to make it more difficult, it also creates opportunities for the committed local authority to implement and promote energy efficiency measures.

Lesson 2: Knowledge is a key asset. It is vital to have sufficient knowledge on energy use, both in the authority's own stock and in the community. Monitoring is vital. Most local authorities do not have the resources themselves and liberalisation makes it even more vital for local authorities to cooperate via specialist structures.

Lesson 3: The economies of scale work well in a liberalised market. Many examples demonstrate the value of aggregating demand to get a good deal as a client. Many British consortia have aggregated local authority demand via specialist buying services. Local authority structures in Massachusetts and Northern Ohio have aggregated demand on behalf of their residents and obtained favourable power rates for more sustainable power supplies, but this needed special legal provision by State governments.

Lesson 4: Aggregation is also valuable when promoting energy services. Local authorities make excellent motors for promoting energy services at a local level, but specialised structures are desirable as an intermediary. Calls for tender for energy performance contracts for pools of buildings produce economies of scale and better value. Peterborough, Canada, has adopted such an approach at a whole town scale.

Lesson 5: Liberalisation makes it imperative to ensure that the structure responsible for taking decisions to invest in energy efficient equipment also pays the energy bill. The opposite situation can be found with utility-owned public lighting, where the body responsible for investment decisions has no interest in reducing energy use. The municipal client needs to be separated from a utility service provider.

Lesson 6: There is still a role for the municipal utility which is a great asset when planning a programme for sustainable energy. New municipal utilities can still be successfully established, particularly for district heating. However clear dividing lines should be drawn lest the business objectives of the producer and distributor override the public service objectives of planner, regulator and awareness raiser.

Lesson 7: With distributed generation technology the local authority may operate mini-utilities in order to apply sustainable energy policy. These can supply a building or group of buildings and the local authority is no longer always hostage to the behaviour of the network operator. There are legal barriers to this in some countries that might be worth re-examining by their governments.

Lesson 8: The concession is a key tool for delivering sustainable energy policy. Local authorities ignore its possibilities at their peril. It is the cheapest and simplest way for them to deliver benefits and can cost them nothing at all to implement. Conditions attached to the concession can require the provision of a whole array of sustainable energy benefits.

Lesson 9: The local authority role as a planner and regulator is important in the context of liberalised markets. This can operate through routine control of development, the design of new urban communities or the “regeneration” of existing ones.

Lesson 10: When negotiating with other players, a clear strategy is important. Rewards come to those who determine a clear and consistent strategy which promotes energy efficiency and sustainable energy over a long period of time. “Faint heart never won fair maiden”.

Lesson 11: Delivering energy efficiency is a specialised topic which needs long term commitment, as far as possible free from the swings and roundabouts of the political cycle.

Many local authorities have established free standing specialist structures which is a valuable approach. These have to work in cooperation with many partners for effective service delivery. Local authorities are particularly suitable for approaching dispersed small consumers where transaction costs make it difficult to promote energy efficiency on a commercial basis.

Lesson 12: It is important to ensure that public goods resources are administered independently by bodies that do not have a direct interest in their application. Local authorities, among other locally based non-profit making structures, represent suitable bodies through which to channel funds to the smaller consumer. With utilities, there is always the risk of market posturing.

More details of the approaches identified in these key lessons are found in case studies of good practice which can be downloaded from the MEELS website: www.energie-cites.org/meels or www.dsm.iea.org websites. These are not simply restricted to the partner countries of France, The Netherlands, Sweden, Austria and Spain, but also include examples from Europe and North America.

Expert meetings were held two or three times a year and study tours were organised to a number of countries where liberalisation had already had an impact, in particular the UK and California in the US. The results of the project were presented at a final workshop held at the 5th Assises nationales de l'Énergie held at Dunkerque in Northern France on 20th January 2004. The final case studies were presented at this workshop and each one is linked to one of the lessons identified in the guidelines and develop the points made within them. There is something in these case studies for all who work on energy matters both with, or within, local authorities.

Task XI: Time of Use Pricing and Energy Use for Demand Management Delivery

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

Description

Successful implementation of Demand Side participation in competitive energy markets is an essential process for world energy sustainability. In this regard, a major impact of implementing competitive markets in energy supply and demand management, is to expose energy suppliers and traders to the cost of their own energy and demand imbalance against agreed contracts. In this trading environment, flexible, responsive and low cost demand side participation processes, based on accurate customer consumption data, are very attractive options for reducing imbalance risk and improving system security. Interruptible contracts and Demand Side Bidding (DSB), together with standby and interruption payments, are used by larger customers to take advantage of time of use energy pricing. Many liberalised market structures and operating systems mitigate against Demand Side participation by smaller customers, with profile metering an obvious example. In this case, time of use metering used for larger energy users is replaced by “profile metering” for smaller customers. “Profile metering” offers some of the benefits of time of use metering at lower cost but removes any incentive for customers to modify their energy demand profile through demand management. Verification of demand changes which result from existing DSB implementation requires time of use energy metering. Task XI will investigate “time of use metering” and developed “profile metering” for smaller customers as mechanisms for driving DSB and energy savings.

Feedback of end use energy consumption data to customers and their energy management systems helps in reducing energy use and also in moving elements of demand to lower cost periods. It also allows any significant changes customers make in their energy use pattern to be fed back to them so that they can see the results and value of their efforts. The main benefits of providing this information are to focus customers’ attention on their energy use, its specific impact on the environment and in encouraging savings. It also assists the demand aggregation process for smaller customer DSB.

Task XI addresses the issues of Time of Use Pricing, Energy End Use and Feedback mechanisms and Demand Side Bidding by smaller customers in energy markets.

Expected results

- Report to quantify the impact on energy saving and DSM processes of end use monitoring and feedback for smaller customers.
- Report to quantify the benefits of time of use pricing and its impact on demand response for smaller customers.
- Report to quantify the pricing, control and validation requirements and mechanisms to facilitate DSB for smaller customers.

Objectives of Task XI

The overall objective of Task XI is to increase the motivation of smaller customers to save energy through energy end use presentation, modify their energy demand profile through time of use pricing and to provide mechanisms for their bidding demand into competitive energy markets.

The Task will:

1. Quantify mechanisms and technologies to motivate smaller customer, energy reduction through feedback of end use information.
2. Quantify energy end use disaggregation methods and their value for providing feedback to customers to achieve energy savings.
3. Analyse time of use pricing and metering for smaller customers; what has been implemented and results to date in participating countries. Assess the potential impacts of Tariff TOU pricing, Dynamic pricing and Real Time pricing on smaller customer end uses.
4. Estimate costs and benefits of energy time of use pricing and end use monitoring for smaller customers.
5. Define technical, system and smaller customer requirements for bidding aggregated demand and local generation into energy markets. Consider mechanisms for implementing demand changes and providing validation and reward.

Progress

Data collection instruments have been developed and completed by country Experts detailing studies and field trials of End Use Monitoring and Feedback (Subtask 1), Time of Use Pricing (Subtask 2) and Demand Side Bidding (Subtask 3). A draft report has been written on Subtask 1 which considers the various methodologies and processes used to disaggregate energy end use demand and presenting it to motivate energy savings by smaller customers. The value of energy savings delivered using these techniques have been quantified; possible methodologies for continuously motivating customers using these techniques are identified, together with recommended actions.

Information on Time of Use (TOU) pricing has been collected and analysed with the impact of Tariff based TOU, Dynamic pricing and Real Time pricing on customer end uses and embedded generation quantified. A draft report is in preparation.

Information on Demand Side Bidding studies and implementations in participating countries has been collected mainly relating to larger customers. The potential for using this technique for enabling aggregated demand of smaller customers to participate in generation markets is being quantified, together with application methodologies and processes.

Activities planned for 2004

Reports

Reports to be completed

- Report to quantify the impact on energy saving and DSM processes of end use monitoring and feedback for smaller customers.
- Report to quantify the benefits of time of use pricing and its impact on demand response for smaller customers.
- Report to quantify the pricing, control, validation requirements and mechanisms to facilitate Demand Side Bidding for smaller customers.

Meeting schedule

Meetings held in 2004

6–7 April, 2004, Chester, UK

28–29 July, 2004, Helsinki, Finland

25–26 October, 2004, Madrid, Spain

Meetings planned for 2005

7–8 March, 2005, Roermond, Netherlands

Activity time schedule

Task XI was entered into force in October 2003 and will remain active until March 2005.

Activity Time Schedule	2004	2005
Subtask 1: Quantify the Impact of End Use Monitoring and Feedback on Energy Saving and DSM Processes for Smaller Customers	_____	
Subtask 2: Quantify the Impact on Demand Response of Time of Use Pricing for Smaller Customers	_____	
Subtask 3: Quantify the pricing, control and validation requirements and mechanisms to facilitate Demand Side Bidding for smaller customers	_____	

Participants

Denmark

Mr. Henrik Weldingh
DEFU
Rosenorns Alle 9
DK 1970 Frederiksberg C
Telephone: (45) 25 30 07 04
Telefax: (45) 35 30 07 71
E-mail: hw@defu.dk

Finland

Ms. Hannu Pihala
VTT Technical Research Centre of
Finland
VTT Processes
Tekniikantie 4C
P O Box 1606
FIN-02044 Espoo
Telephone: (358) 9 456 6454
Telefax: (358) 9 456 6538
E-mail: hannu.pihala@vtt.fi

Mr. Seppo Karkkainen
VTT Technical Research Centre of
Finland
VTT Processes
Tekniikantie 4C
P O Box 1606
FIN-02044 Espoo
Telephone: (358) 9 456 6406
Mobile: (358) 50 5551207
Telefax: (358) 9 456 6538
E-mail: seppo.karkkainen@vtt.fi

Greece

Mr. George Damaskos
Dipl.Electrical Engineer & Economist
Head, Development and Tariff Section
Retail Department
Public Power Corporation
Patision 27
10432 Athens
Telephone: (30) 210 523 8194
Telefax: (30) 210 523 9692
E-mail: g.damaskos@ppc.gr

Netherlands

Mr. Jan Griffioen
Innomet bv
Koningshof 76
2641 GV Pinacker
Telephone: (31) 15 369 4268
Mobile: (31) 6 4415 8851
E-mail: jan.griffioen@hetnet.nl

Mr. Arnold Sijben
SenterNovem
P O Box 17,
6130 AA Sittard
Send mail to:
Belenbroeklaan 18
6093 BT Heythuysen
Telephone: (31) 464 202 300
Telefax: (31) 464 528 260
E-mail: a.sijben@senternovem.nl

Spain

Mr. Javier Soto
Red Electrica de Espana
Plaza de los Gaitanes 177
La Moraleja 28109
Madrid
Telephone: (34) 91 659 9119 ext. 2328
Telefax: (34) 91 650 4542/7677
E-mail: fjsoto@ree.es

Ms. Carmen Rodriguez
Red Electrica de Espana
Plaza de los Gaitanes 177
La Moraleja 28109
Madrid
Telephone: (34) 91 650 8500/2012
Mobile: (34) 609 15 15 91
Telefax: (34) 91 650 4542/7677
E-mail: carmenrodri@ree.es

Sweden

Ms. Margareta Bergstrom
STEM
Energy Policy Analysis
P O Box 310
SE 631 04 Eskilstuna
Telephone: (46) 16 544 2148
Telefax: (46) 16 42 12 17
Mobile: (46) 70 584 2404
E-mail: margareta.bergstrom@stem.se

United Kingdom

Ms. Linda Hull
EA Technology
Capenhurst Technology Park
Capenhurst
Chester
CH1 6ES
Telephone: (44) 151 347 2345
Telefax: (44) 151 347 2411
E-mail: linda.hull@eatechnology.com

Operating Agent

Mr. Richard Formby
EA 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

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 XII: Co-operation on Energy Standards

Operating Agent: Mr. Frank Pool, New Zealand

Task XII is still gathering funding support for the formal start of its work programme. In particular it is still working to attract a lead sponsor since the promised support from the Australian Greenhouse Office did not materialise in practice. Task XII is currently working closely with the developing APEC-ESIS interactive website development project as it has always been envisaged that Task XII and APEC-ESIS would be strongly complementary activities. In the meantime, the APEC-ESIS website is being more fully populated with relevant information, the pro-active energy standards notification system is being implemented, site programming is being updated, the site hosting has shifted to Taiwan from Bangkok given the ongoing strong Taiwan institutional support, and funding support for APEC-ESIS has been obtained from Taiwan, Australia, Canada, New Zealand and the USA – the latter in particular having assisted with the co-hosting of the complementary CLASP website. The Task XII Operating Agent (Frank Pool) has held promising discussions with the Chair of the APEC Expert Group on New and Renewable Energy Technology (EGNRET) and the Team Leader of the ADB Renewable Energy and energy Efficiency for the Pacific (REEP) project to include standards for commercial generic renewable energy technologies such as Solar House PV Systems (SHS) and Solar thermal Water Heaters (SWH) in APEC-ESIS. This extension to generic renewable technologies and applications is also highly relevant to the work of the IEA DSM IA as the distinction between supply and demand side is broadened in the new Tasks XIII (DRR) and XV (Network DSM).

The objective for Task XII remains to address the widespread problem of disjointed standards for energy using products and systems in different parts of the world. Task XII is now even more relevant in a world where energy efficiency delivery programs will be valued to provide “hard” greenhouse gas abatement in all countries either for domestic commitments or as part of funded Kyoto flexibility mechanisms – as well as contributing to growing energy security and electricity reliability concerns.

The Task focus on energy standards because they underpin all programs on market transformation, tax incentives, rebates and voluntary endorsement labelling programs. Energy standards are also at the core of the regulated MEPS and labeling programs on appliances and equipment that are underway in 50 countries – including nearly all developed countries – and applied on a regional basis in Europe and North America, with other initiatives underway for Asia under ASEAN as well as other regions. In an increasingly global market, current inadequate systems to facilitate active co-ordination and mutual awareness of different standards and standards setting procedures are an increasing barriers to global, regional and national energy efficiency gains.

Task XIII: Demand Response Resources

Operating Agent: Mr. Ross Malme, RETX Energy Services, USA

Objectives

The project made considerable progress during the past reporting period and continues to work toward the original objectives specified in the Annex document approved by the Executive Committee. The following summary provides a quick, current view of status of each objective.

1. Identify and develop the country-specific information needed to establish the potential for demand response
 - Status: Initial market overview surveys have been completed by most countries and results are being compiled and analysed
2. Perform the market and institutional assessment needed to set realistic goals for the contribution of DRR to sector objectives.
 - Status: Many of the participating countries are working on the resource inventory matrix supporting initial assessment of potential. The Economic Working Group is creating an assessment framework to aid in identifying DR potential in each market.
3. Mobilise technical and analytic resources needed to support the implementation of DRR programs and track their performance.
 - Status: Task XIII is creating an actionable guidebook to be used by each country to develop its own business case for introducing DR into their individual, unique electricity markets.

Progress

Overall the project is making excellent progress with active involvement by most of the participating countries.

The project currently has 11 countries officially participating (Australia, Denmark, Finland, Italy, Japan, Korea, The Netherlands, Norway, Spain, Sweden, and the US) with two other countries pending (Canada and Mexico). The current round of participation for Task XIII is now closed to additional participants. There are a number of countries interested in joining the project in a second round including China, India, South Africa, Kenya, Tanzania, Zambia, and Thailand. The Operating Agent seeks authorisation from the Executive Committee with organising another round of work with a formal proposal to be presented at the Spring Executive Committee meeting.

The project continues to be organised into 8 subtasks as previously defined, but a revised project plan is being proposed that recognises the need to run some subtasks concurrent with others as opposed to the serial schedule defined previously. The revised plan re-organises a number of tasks involving collaboration and communication into subtask 7 in order to make the true cost of developing intellectual property in the other subtasks more transparent. There have also been some minor adjustments to the

level of work required to meet the goals of each subtask including the shift of some work from subtask 3 to subtask 4. In general, the level of work and cost detail in the project plan has been improved and refined as the project matures, but the overall objectives and budgeted cost remain intact.

The project is currently running 28 per cent under budget due to funding constraints and the work is approximately 10 per cent behind schedule. Of the 11 countries participating in the project, 6 have paid the 2004 commitment in full, the US has partially paid, and 4 other countries have not paid as of September 15, 2004. Getting all participating countries current will enable the project to make up lost ground and remain on schedule for the duration of the project. The next invoice for the 2005 portion of the committed funds will be issued in November 2004 with a due date of January 2005.

Activities completed in 2004

During the performance period, the following milestones and deliverables were accomplished:

- The Market Characterisation Toolkit was created with most countries completing a Marketplace Overview survey and many started on building a proxy model of their marketplace in preparation for examining potential Demand Response Resources.
- Project Guidebooks were created for each country to facilitate the creation of country specific analysis and plans which will lead to a fully developed business case for demand response at the conclusion of the project.
- The project portal was significantly expanded to include a research library, collaboration areas for working groups and stakeholder groups, and early drafts of the intellectual property being developed by the project.
- The Economic Working Group was formed to focus on the development of DRR Potential and Valuation Toolkits in subtasks 3 and 4 of the project and held its first meeting in Copenhagen, Denmark. The charter and working documents of this working group may be found on the Task XIII Portal.
- The Operational Working group was formed to focus on the work of subtask 6 and will collect critical information from existing DR programs to formulate strategies for overcoming a variety of barriers in implementing DR programs. The charter and working documents of this working group may be found on the Task XIII Portal.
- The State of the Practice Working Group was formed to focus on the work of subtask 5 and will perform research and catalog the current and future technology options available to support and enable DR programs. The charter and working documents of this working group may be found on the Task XIII Portal.
- Overall work plan and budget were revised and improved based on experience to date and feedback from two additional experts meetings since the last status report.
- The first Experts Workshop for Task XIII was held in Valencia, Spain on 10 and 11 May, 2004 with all participating countries invited to attend. The second Experts Workshop was held in Milan, Italy on 20–21 September.

Activities planned for 2005

During the next reporting period between the Fall 2004 ExCo meeting and the Spring 2005 ExCo meeting, the following deliverables are scheduled for completion:

- 3 working groups fully operational and producing deliverables
- Monthly Task XIII webcast for program status and participant interaction
- March 2005 regional Nordic workshop on Task XIII participation
- Development of DR Potential Toolkit and Reports
- Delivery of Communications Toolkit
- Catalog of current DR programs including attributes for comparison and recommendations
- First draft of technology catalog

Involvement of industry and other organisations

Publications

- Demand Response Resources Newsletter
 - 3 issues published, next production 10/31/04
- Country Workbooks
 - Distributed at last Experts Meeting
- IEA Publications
 - Open Newsletter, Spotlight Newsletter
- Press Releases
 - DRR Project Announcement (USA), FERC/DOE DRR Announcement (USA), Valencia Experts Meeting (Spain), Melbourne Workshop (Australia)

Presentations

- USA – PLMA Spring and Fall Meetings (2004), NARUC Winter Meetings, IEE (October 04), MetCogen (October 04), DistribuTECH (2004 & 2005), US DRCC (October 04)
- Europe – metering International, Berlin (October 04), Critical Infrastructure, Paris (October 04), Renewable Resources, Brussels (December 04)
- Asia – APEC, Australia (June 04), Korea DRR Project workshop (June 04)

Demand Response Resources Portal

An important aspect of the IEA DRR Task XIII project is the sharing of knowledge and best practices in planning and deploying effective, reliable demand response resources within the participants' markets. The challenge to this goal is the fact that the participating countries are spread around the globe in different time zones and different methods of communicating and sharing information. Today's internet technology provides an exciting and effective approach to overcoming this challenge – a web-based project portal has been created to serve as a virtual center of knowledge for all participating countries. All you need is an internet browser, a user ID, and a password to access all the latest news, information, research, tools, meeting information, presentations, newsletters, and all the other valuable information being gathered and created to support the deployment of demand response resources around the world.

The portal is very easy to use and navigate and is located at <http://www.demandresponseresources.com>. The cascading menu system located at the top of the page provides quick access to any and all sections available to the user logged in to the system.



Deliverables produced in 2004

List of products produced

- Marketplace Characterisation Toolkit
- Marketplace Characterisation Report
- Communications Toolkit
- DRR Potential Toolkit Draft
- Task XIII Project Portal
- Task XIII Project Guidebook
- Task XIII Newsletters
- Task XIII Presentations and Whitepapers

Deliverables planned for 2005

List of products planned

- DRR Potential Toolkit Final
- DRR Potential Report with definition and analysis of case studies used to produce the toolkit
- DR Valuation Toolkit (Part 1)
- DR Valuation Toolkit (Part 2)
- DR Valuation Report with definition and analysis of case studies and modeling tools used to produce the toolkit

- DR Technology Catalog
- DR Technology Report with background and discussion of appropriate technologies and systems to use in various DR programs
- Task XIII Project Portal
- Task XIII Project Guidebook updates
- Task XIII Newsletters
- Task XIII Presentations and Whitepapers

Meeting schedule

- The first Experts Workshop for Task XIII was scheduled in Valencia, Spain on May 10 and 11 and focused on objectives, market characterisation and the formation of stakeholder groups.
- The second Experts Workshop for Task XIII was scheduled in Milan, Italy on September 20 and 21 and focused on completion of market characterisation, the work of the Economic Working Group, the portal and research library, communications, and introduction of the Project Guidebooks.
- The third Experts Workshop for Task XIII is tentatively scheduled in San Diego, California the first week of February and will focus on delivery of the DR Potential Toolkit, the Communications Toolkit, and preparation for DR Valuation work in the first half of 2005.

Activity time schedule

The Task came into force in February 2004 and will end in June 2006.

Activity	2004	2005	2006
Phase 1 Subtask 1 – Project Objectives	—		
Subtask 2 – Country Objectives Market Characterisation	—		
Phase 2 Subtask 3 – Market Potential of DRR	—		
Subtask 4 – DRR Valuation	—		
Subtask 5 – Role and Value of Technologies	—		
Subtask 6 – Business Plan Development		—	
Phase 3 Subtask 7 – Communication, Collaboration and Workshops	—	—	—
Subtask 8 – Implementation			—
Education, Management and Administration	—	—	—
Executive Relations, Education and Evangelising	—	—	—
Project Management and Administration	—	—	—

Participants

Australia

Dr. Harry Schaap
Australia's National Generators Forum
7 Wanbrow Avenue
Balwyn North Vic 3104
Telephone: (61) 3 9857 5583
E-mail: harry.schaap@tpg.com.au

Denmark

Mr. Sören Varming
ECON Analysis
Nansensgade 19, 6
DK-1366 Copenhagen K
Telephone: (45) 6020 9412
Telefax: (45) 33 91 4046
E-mail: soren.varming@econdenmark.dk

Finland

Mr. Seppo Kärkkäinen
VTT Technical Research
Centre of Finland
P.O. Box 1606
FIN-02044 Espoo
Telephone: (358) 9 456 6404
Telefax: (358) 9 456 6538
E-mail: seppo.karkkainen@vtt.fi

Italy

Mr. Walter Grattieri
CESI
Via Rubattino, 54
201 34 Milano
Telephone: (39) 02 2125 5714
Telefax: (39) 02 2125 5626
E-mail: grattieri@cesi.it

Japan

Mr. Naoya Sugai
Tokyo Electric Power Company
Energy Efficiency Group
1-3 Uchisaiwai-cho, 1-Chome,
Chiyoda-ku, Tokyo 100-8560
Telephone: (81) 3 4216 1111
Telefax: (81) 3 4216 5244
E-mail: sugai.n@tepcoco.jp

Mr. Toru Matsumura
Tokyo Electric Power Company
Energy Efficiency Group
1-3 Uchisaiwai-cho, 1-Chome
Chiyoda-ku, Tokyo 100-8560
Telephone: (81) 3 4216 6064
Telefax: (81) 3 4216 5244
E-mail: matsumura.toru@tepcoco.jp

Korea

Mr. Sangkug Im
KEMCO The Korean Energy
Management Corporation
1157, Pungdukchun, Suji,
Yongin, Kyunggi, 449-994
Telephone: (82) 31 260 4454
Telefax: (82) 31 260 4459
E-mail: skimmr@kemco.or.kr

Netherlands

Dr. René (I.G.) Kamphuis
Energy Reserach Center of
The Netherlands
Renewable Energy in the Built
Environment/IT & Energy
Westerduinweg 3
Box 1, 1755 ZG Petten
Telephone: (31) 224 564 544
Telefax: (31) 224 568 966
E-mail: kamphuis@ecnl

Norway

Mr. Ove S. Grande
SINTEF Energy Research
Energy Systems
N-7465 Trondheim
Telephone: (47) 7359 7086
Telefax: (47) 7359 7250
E-mail: ove.s.grande@sintef.no

Spain

Dr. Carlos Alvarez
Catedratico de Universidad
Universidad Politécnica de Valencia
Department of Electrical Eng.
46022 Camino de Vera s/n, Valencia
Telephone: (34) 61 617 3788
Telefax: (34) 96 387 7272
E-mail: calvarez@die.upv.es

Ms. Carmen Rodriguez Villagarcia
Red Electrica
DSM Department Manager
Calle Condo de los Gaitanes 171
Alcobendas, Madrid
Telephone: (34) 91 630 2012
Telefax: (34) 91 650 4542
E-mail: carmenrodri@ree.es

Sweden

Mr. Hans Nilsson
Chairman
DSM Programme
Grubbensringen 11
SE-112 96 Stockholm
Telephone: (46) 8 650 6733
E-mail: nosslinh@telia.com

Mr. Egil Öfverholm
Swedish Energy Administration
(STEM)
Box 310
S-613 04 Eskilstuna
Telephone: (46) 16 544 2000
Telefax: (46) 16 544 2099
E-mail: egil.ofverholm@stem.se

United States

Mr. Dan Delurey
Wedgemere Group/US Demand
Response Coordinating Committee
President/Chairperson
P.O. Box 957
Winchester, MA 01890
Telephone: (1) 781 756 1127
Telefax: (1) 781 756 8008
E-mail: dan.delurey@wedgemere.com

Mr. Larry Mansueti
US Department of Energy
Office of Electric Transmission &
Distribution
1000 Independence Avenue, SW
Washington, DC 20585
Telephone: (1) 202 586 2588
Telefax: (1) 202 586 5860
E-mail: lawrence.mansueti@hq.doe.gov

Mr. Pete Scarpelli
RETX
Vice President
165 N. Canal Street, Suite 1429
Chicago, IL 60606
Telephone: (1) 312 559 0756
Telefax: (1) 770 390 8501
E-mail: pscarpelli@retx.com

Dr. Dan Violette
Summit Blue Consulting
Principal & CEO
801 Iris Blvd.
Boulder, CO 80304
Telephone: (1) 720 564 1130
Telefax: (1) 720 564 1145
E-mail: dviolette@summitblue.com

Operating Agent

Mr. Ross Malme
President and Executive Officer
RETX
Technology Park/Atlanta
230 Scientific Drive, Suite 150
Norcross GA 30092
United States
Telephone: (1) 770 390 8500
Telefax: (1) 770 390 8501
E-mail: malme@retx.com

Chief Information Officer

Mr. Mark Wright
RETX
Technology Park/Atlanta
230 Scientific Drive, Suite 150
Norcross, GA 30092
United States
Telephone: (1) 770 390 8521
Telefax: (1) 770 390 8501
E-mail: mwright@retx.com

Task XIV: Market Mechanisms for White Certificates Trading

Operating Agent: Mr. Antonio Capozza, CESI S.p.A. , Italy

Objectives

This project (“Task”) aims to address:

- whether – and how – a scheme involving the issuing and the trading of White Certificates provides an effective means of attaining targets of reduction of:
 1. primary energy consumption (main concern)
 2. CO₂ emissions (secondarily)
- what is the most suitable format for such a scheme
- what implementation problems are involved, at national and extra-national levels
- how it can interact with other schemes.

Market-based policy instruments are increasingly being favoured in a wide range of energy and environment policy fields, due to their economic efficiency, benefits for competition, positive incentives for cost reduction and continuous improvement and ability to minimise and equalise costs of compliance with policy targets. They are particularly applicable where Countries have mandatory quantitative targets for the actors concerned, that must be met in a verifiable way, inside national or extra-national obligation programmes, and within a fixed period.

Examples of this policy approach include:

- White Certificates: Energy Efficiency trading schemes – end-use energy efficiency programmes;
- Black Certificates: Carbon trading schemes – programmes for reducing CO₂ emissions;
- Green Certificates: Renewable Energy Commitment trading schemes - increased use of renewable energy sources in power generation.

The focus of the present Task will be on White Certificates, but it will consider the operation of their trading in an economic environment where Green and Black Certificates trading also occur.

Certificates offer a number of practical benefits for all parties involved. For regulatory Authorities, they can be an easily-verifiable way to track compliance with policy targets. For parties obliged to comply with targets, they offer a means to achieve compliance at least cost, and also offer the flexibility to comply either through ‘in-house’ action, by contracting with other parties for their supply, or simply by purchasing certificates in a third-party marketplace. For those able to create and sell certificates, they offer an additional revenue stream which is independent of their other business activities, thus offering hedging and risk-management benefits in addition to direct financial rewards.

Progress

The key concerns to be considered are subdivided into issues of “principle” and “practical” issues.

Principle (Policy) issues

1. Specificity and effectiveness of a certificate trading mechanism to promote energy efficiency projects
2. Obligation-bound actors
3. Who can buy and who can sell
4. Targeted sectors and energy efficiency programmes
5. How to create demand for White Certificates trading
6. Possible cost recovery mechanisms
7. Competition issues
8. Interactions with other policy tools for the promotion of energy efficiency
9. Interactions with other trading schemes
10. Prospects for an enlarged extra-national market for tradable certificates

Practical (Operational) issues

1. Criteria for design and development of projects for energy efficiency in end-use
2. Valuation issues
3. Monitoring mechanism and non-compliance regime
4. Trading mechanisms
5. Rebound effects

The Task is based on regular workshops to be held in the participating Countries at four months' intervals. Each workshop will explore a set of issues coming under one of the following main headings:

1. Expectations and already gained experiences
2. Policy/principle issues
3. Organisation/practical issues
4. Interaction with other trading schemes and with other EE policies

No subdivision into subtasks is planned.

The Task XIV was started up in June 2004 in a kick-off meeting and the first workshop was held in November 2004. All the other workshops will be held in 2005. The Task will be concluded in 2005 with the issuing of a Final Report.

Activities completed in 2004

The Task activities began on 1/6/04. A **kick-off meeting** was organised in CESI - Milan on June 7th and 8th, 2004. All the participating Countries sent at least one expert. Present operation of Green Certificates Market handled by the Italian Market Operator (GME) was described in detail.

The **Task organisation** was better defined, tuned and finalised in the kick-off meeting and by means of further discussions. The calendar of the Task events and their content was agreed. A Memorandum of Understanding between IEA-DSM and Central European University about the presence of their observer during all the events, with access to the produced documents, was fostered and signed. The Task website was successfully set up in fruitful collaboration with the IEA-DSM Webmaster. A list was set up of about 13 contact persons as “experts” and about 30 contacts as “guests” (Academia, institutions, industry, utilities); these contact people are kept informed, with a level of information depending on the above qualifications, of the Task initiatives and documents. Synergies with EC running (SAVE “White and Green”) or starting up (EIE “EuroWhiteCert”) projects were considered and established. Interactions were launched with a CEN-CENELEC international groups as well, devoted to definition of EU-wide standards on White Certificates.

The **first workshop** of the Task was organised in London on Nov. 8th 2004, in collaboration with the UK national expert and his Organisation (DEFRA). The present state of implementation in UK of the Energy Efficiency Commitment, its implication with energy efficiency trading or other EE policies and the planned developments in the medium term were presented with detail by experts belonging to DEFRA, Ofgem and other institutional Bodies. Italy had also the chance to present and discuss his national scheme being implemented on White Certificates. The workshop was followed the day after by a Task experts meeting, where the EE policies adopted at present in France and in Sweden were considered as well.

Activities planned for 2005

France offered to host the **second workshop**. The second week of April 2005 was established, in order to allow for the widest audience of the Task Experts and of IEA-DSM ExCo members. The workshop will mainly focus principle (policy) issues of the White Certificates mechanisms. A former session of the workshop will be particularly devoted to the local stakeholders and will deal with French EE policies and plans about White Certificates scheme. The latter session will host the Task Expert’s contributions on national EE policies in Italy, Norway, Sweden and UK, with special focus on needs, historical background and rationale which primed the development and the adoption of White Certificates schemes or any other market-based policy in these Countries.

Sweden offered to host the **third workshop** in the second half of June 2005 at Lund University. The workshop will mainly focus operational (practical) issues of the White Certificates mechanisms, will take profit of the deeper insight that UK, Italy and France will have been able to ripen in implementing their energy efficiency policies. The workshop will also give a Swedish national group (established recently on this subject) the chance to present and discuss their gained experiences to that date. The **fourth (and last) workshop** will be held in Norway, in November–December 2005; it will mainly deal with interactions of White Certificates schemes with other schemes (REC, ET) or other EE policies. Moreover, some conclusions following from the performed studies and the gained experiences will be outlined.

Involvement of industry and other organisations

Three national Energy Agencies (ADEME for France, Enova for Norway and STEM for Sweden), a National Environmental Department (DEFRA for UK) and a Research Centre in the energy sector (CESI for Italy) are participating to the Task. Besides, the following further involvements are under way,

- *Italy:*
 - AEEG, the Italian Authority for Electricity and Gas, with a regulatory role in the fields of Energy Efficiency and White Certificates issuing and trading
 - GME, the national Electricity Market Operator, who is in charge of handling the market of White, Green and CO2 Certificates
- *France*
 - EdF – DER – Power Systems Technology and Economics Department
 - EdF – Corporate Strategy Division
- *Sweden*
 - University of Lund, also present EC SAVE and EIE projects
 - Elforsk, a centre for industrial R&D
 - Swedenergy, the trading organisation of the Swedish power producers, distribution companies and electricity traders, managing CEN-CENELEC groups for standards issuing on REC, ET and White Certificates
 - The National reference group on White Certificates (including STEM, University of Lund, Elforsk, Swedenergy)
- *EU*
 - Co-ordinators of SAVE “White&Green” and EIE “EuroWhiteCert” projects

Many of these involved organisations granted in the past and will ensure in the future the presence of their experts during the workshops and/or the task experts meeting.

Reports

The content of the contributions and of the discussions relevant to the four Task workshops will be processed and synthesised in corresponding *Critical Synthesis* under the responsibility of the Operating Agent (OA). After approval, each of the four CS reports will become an official Task deliverable.

Reports produced in 2004

- Critical Synthesis Report relevant to the first London workshop

Reports planned for 2005

- Critical Synthesis Report relevant to France workshop
- Critical Synthesis Report relevant to Sweden workshop
- Critical Synthesis Report relevant to Norway workshop
- Final Synthesis Report (FR), containing a summary and a review of all the activities undertaken and experiences gained during the progress of the Task.
- Final Management Report

Meeting schedule

Meetings held in 2004

7–8 June, 2004 – CESI, Milano, Italy – 1st kick-off Experts meeting

8 November, 2004 – DEFRA, London, UK – 1st national open workshop

9 November, 2004 – DEFRA, London, UK – 2nd Task Experts meeting

Meetings planned for 2005

14 April, 2005 – ADEME, Paris, France – 2nd national open workshop

15 April, 2005 – ADEME, Paris, France – 3rd Task Experts meeting

16 June, 2005 – Lund University, Lund, Sweden – 3rd national open workshop

17 June, 2005 – Lund University, Lund, Sweden – 4th Task Experts meeting

Nov.–Dec, 2005 – Enova, Trondheim, Norway – 4th national open workshop

Nov.–Dec, 2005 – Enova, Trondheim, Norway – 5th Task Experts meeting

Activity time schedule

Task XIV came into force 1 June, 2004 and will continue until 31 December 2005.

Activity Time Schedule	2004	2005
Task organisation – preparation of 1 st workshop	————	
Report 1 st workshop – preparation of 2 nd workshop		———
Report 2 nd workshop – preparation of 3 rd workshop		———
Report 3 rd workshop – preparation of 4 th workshop		————
Report 4 th t workshop – Synthesis of the work		———

Participants

France

Mrs Stephanie Monjon
ADEME - Department Economics
27, Rue Louis Vicat
75737 Paris cedex 15
Telephone: (33) 1 47652205
Telefax: (33) 1 40957453
E-mail: stephanie.monjon@ademe.fr

Mr Emmanuel Branche
Edf - Corporate Strategy Division
22 - 30 avenue de Wagram
5ème étage
75008 PARIS
Telephone: (33) 1 40 42 32 96
Telefax: (33) 1 40 42 73 66
E-mail: emmanuel.branche@edf.fr

Mr Paul Baudry
Edf - DER - Power Systems Technology
and Economics Department
1 Avenue du Général de Gaulle,
BP 408,
92141 Clamart cedex
Telephone: (33) 1 4765 3925
Telefax: (33) 1 4765 3734
E-mail: paul.baudry@edf.fr

Italy

Mr Walter Grattieri
CESI - T&D Networks
Via Rubattino, 54
20125 Milano
Telephone: (39) 02 2125 5714
Telefax: (39) 02 2125 5843
E-mail: grattieri@cesi.it

Mr Stefano Alaimo
GME -Electricity Market Operator
Non electric markets
Viale Maresciallo Pilsudski, 92
00197 Roma
Telephone: (39) 06 8012.1
Telefax: (39) 06 8012.4102
E-mail:
alaimo.stefano@mercatoelettrico.org

Mr Mario De Renzio
FIRE
Telephone: (39) 02 473553
Telefax: (39) 02. 473553
E-mail: derenzio.firemi@iol.it

Mrs Marcella Pavan
AEEG- Autorità per l'energia elettrica e
il gas
Piazza Cavour 5
20121 Milano
Telephone: (39) 02 65565274
Telefax: (39) 02 29014219
E-mail: mpavan@autorita.energia.it

Norway

Mr Andreas Kruger Enge
Enova - Dept. Energy policy and
analysis
Abelsgate 5
NO-7027 Trondheim
Telephone: (47) 73 19 04 40
Telefax: (47) 73 190431
E-mail: andreas.k.enge@enova.no

Sweden

Mrs Therése Karlsson
STEM - Swedish Energy Agency
P.O. Box 310
SE-631 04 Eskilstuna
Telephone: (46) 16 5442275
Telefax: (46) 16 5442262
E-mail: therese.karlsson@stem.se

Mrs Monika Adsten
ELFORSK
Olof Palmes gata 31
101 53 Stockholm
Telephone: (46) 8 677 27 35
Telefax: +46 (8) 677 25 35
e-mail: monika.adsten@elforsk.se

Mrs Lena Neij
Lund University -International
Institute for Industrial Environmental
Economics (IIIEE)
P.O. BOX 196
22100 Lund
Telephone: (46) 46 2220268
Telefax: (46) 46 2220230
E-mail: Lena.Neij@iiiee.lu.se

Mr Luis Mundaca
Lund University - International
Institute for Industrial Environmental
Economics (IIIEE)
P.O. BOX 196
22100 Lund
Telephone: (46) 46 2220257
Telefax: (46) 46 2220240
E-mail: Luis.Mundaca@iiiee.lu.se

United Kingdom

Mr Martin Devine
DEFRA
Sustainable Energy Policy
(International)
Zone 6/H11 - Ashdown House
123 Victoria Street
London SW1E 6DE
Telephone: (44) 207 082 8718
Telefax: (44) 207 082 8698
E-mail: martin.devine@defra.gsi.gov.uk

Central European University

Mrs Silvia Rezessy
Central European University
Environmental Sciences & Policy Dept.
Nador u. 9,
Budapest 1051, Hungary
Telephone: (36) 1 327-3890
Telefax: (36) 1 327-3031
E-mail: ephlas01@phd.ceu.hu

Operating Agent

Mr Antonio Capozza
CESI - T&D Networks
Via Rubattino, 54
20125 Milano
Italy
Telephone: (39) 02 2125 5016
Telefax: (39) 02 2125 5843
E-mail: capozza@cesi.it

Task XV: Network-driven DSM

Operating Agent: Dr. David J Crossley, Energy Futures Australia Pty Ltd, Australia

Task XV is a new Task. The initiation of Task XV and the appointment of David Crossley as the Operating Agent were approved by the Executive Committee in April 2004. In October 2004, the Executive Committee declared Task XV to be “in force” from 18 October 2004. The Task will be completed by April 2006.

Why Network-driven DSM?

Task XV will identify the most appropriate and cost-effective DSM measures to relieve electricity network constraints. All types of constraint will be addressed, including capacity limitations, voltage fluctuations, reliability issues, etc. The Task will identify and develop a wide range of DSM measures which can be used to relieve network constraints, whether these constraints are time-related (eg occurring at times of the network system peak) or location-related (eg associated with particular lines or substations) or both. Such network-driven DSM measures are often more cost-effective, and may also have lower environmental impacts, than network augmentation (ie building ‘poles and wires’).

In addition to relieving network constraints, DSM can also provide services for electricity network system operators, achieving peak load reductions with various response times for network operational support. Task XV will also cover DSM activities which provide network operational services.

Network-driven DSM measures include:

- distributed generation, including standby generation and cogeneration;
- energy efficiency;
- fuel substitution;
- load management, including interruptible loads, direct load control, and demand response;
- power factor correction;
- pricing initiatives, including time of use and demand-based tariffs.

To date, the IEA DSM Programme has not undertaken any work on the potential for DSM to cost-effectively relieve electricity network constraints or to provide network operational services. Network constraints are becoming a significant problem in countries where electricity demand is increasing and network infrastructure (‘poles and wires’) is ageing. As loads grow and infrastructure reaches the end of its economic life, the potential cost of augmenting networks is increasing exponentially. In many situations, network-driven DSM can delay the need for network augmentation. In certain limited situations, network-driven DSM may be able to cost-effectively eliminate the requirement to build a ‘poles and wires’ solution.

Therefore, member countries of the IEA DSM Programme have agreed to initiate Task XV as a new multinational research project to investigate network-driven DSM measures.

Benefits to participating countries

Participating in Task XV will enable country representatives to:

- understand the advantages and disadvantages of network-driven DSM measures as alternatives to network augmentation and for providing network operational services;
- gain information about network-driven DSM measures currently in use in other countries and about the relative effectiveness of these measures;
- understand the factors which lead to a network-driven DSM measure being effective;
- participate in further developing the identified DSM measures so that they will be successful in achieving network-related objectives;
- identify modifications which can be made to existing network planning processes to incorporate network-driven DSM measures as alternatives to network augmentation;
- understand the interaction between network-driven DSM and the operation of competitive electricity markets;
- participate in developing business models, rules and procedures to achieve the successful implementation of network-DSM measures under different electricity market structures and regulatory regimes.

Objectives

The objectives of Task XV, as approved at the October 2004 Executive Committee meeting, are as follows:

- to identify a wide range of DSM measures which can be used to relieve electricity network constraints and/or provide network operational services;
- to further develop the identified network-driven measures so that they will be successful in cost-effectively achieving network-related objectives;
- to investigate how existing network planning processes can be modified to incorporate the development and operation of DSM measures over the medium and long term;
- to develop “best practice” principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources; and
- to communicate and disseminate information about network-driven DSM to relevant audiences.

Work Plan

The Work Plan for Task XV comprises five Subtasks.

- Subtask 1: Worldwide Survey of Network-Driven DSM Projects.
- Subtask 2: Assessment and Development of Network-Driven DSM Measures.
- Subtask 3: Incorporation of DSM Measures into Network Planning.
- Subtask 4: Evaluation and Acquisition of Network-Driven DSM Resources.
- Subtask 5: Communication of Information About Network-Driven DSM.

Subtask 1: Worldwide Survey of Network-Driven DSM Projects

Subtask Objective

To identify a wide range of DSM measures which can be used to relieve electricity network constraints and/or provide network operational services.

Subtask Deliverable

A report listing and summarising network-driven DSM projects implemented around the world.

Subtask 2: Assessment and Development of Network-Driven DSM Measures

Subtask Objective

To further develop the identified network-driven DSM measures so that they will be successful in cost effectively achieving network-related objectives.

Subtask Deliverable

A report listing and summarising successful network-driven DSM measures and the specific network problems they address.

Subtask 3: Incorporation of DSM Measures into Network Planning

Subtask Objective

To investigate how existing network planning processes can be modified to incorporate the development and operation of DSM measures over the medium and long term.

Subtask Deliverable

A report on ways in which network planning processes can be modified to incorporate DSM measures as alternatives to network augmentation.

Subtask 4: Evaluation and Acquisition of Network-Driven DSM Resources

Subtask Objective

To develop 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources.

Subtask Deliverable

A report on 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources.

Subtask 5: Communication of Information About Network-Driven DSM

Subtask Objective

To communicate and disseminate information about network-driven DSM to relevant audiences, including representatives of electricity network businesses, government agencies and electricity end-users.

Subtask Deliverables

- A Task Newsletter.
- Information databases about network-driven DSM projects and measures.
- Regional workshops about network-driven DSM held in Europe, North America and Asia Pacific.

Timetable

The timetable for Task XV is shown in the Appendix. The Task will be completed over a period of 18 months, commencing on 18 October 2004, and finishing on 30 April 2006. Subtask 1 will take eight months, Subtask 2 six months, Subtask 3 eight months, and Subtask 4 four months to complete. Subtask 5 will commence approximately two months after the commencement of the Task and will then continue throughout the Task.

Activities during 2004

Task XV activities during 2004 comprised mainly development work, including developing and refining the Concept Paper and Work Plan and recruiting participating countries. Definitive work commenced following the Task being declared “in force” from 18 October 2004.

At the time of writing, a Task XV website has been established, comprising a public site plus an Experts secure site. The internet address of the public site is: <http://dsm.iea.org/NewDSM/Work/Tasks/15/task15.asp>.

A draft of the data collection form for Subtask 1 has also been completed.

Participation

The following countries have confirmed their participation in Task XV:

- Australia;
- France;
- Spain;
- USA.

Task XV is still open for participation and other countries are encouraged to consider participating in Task XV.

Participating organisations within countries

At the time of writing, participating organisations within countries comprise the following:

Australia

Eight electricity network businesses at both the transmission and distribution level, including: The Australian Gas Light Company, Country Energy, Energex, Energy Australia, Ergon Energy, Powerlink Queensland, TransGrid and TXU Networks (now SPI Networks).

France

Agence de l'Environnement et de la Maîtrise de l'Énergie and Réseau de Transport d'Électricité.

Spain

Red Eléctrica de Espana.

USA

Oak Ridge National Laboratory.

Experts Meeting

The first Task XV Experts meeting was held on 11th and 12th October 2004 in Atlanta, Georgia, USA.

Activity time schedule

Task XV came into force in October, 2004 and will be completed by April, 2006.

Subtasks	2004	2005	2006
1. Worldwide Survey of Network-Driven DSM Projects			
2. Assessment and Development of Network-Driven DSM Measures			
3. Incorporation of DSM Measures into Network Planning			
4. Evaluation and Acquisition of Network-Driven DSM Resources			
5. Communication of Information about Network-Driven DSM			

State of DSM and EE in the World

The outlook for DSM and EE in several IEA member countries

The policy and market context in which Demand Side Management (DSM) and Energy Efficiency (EE) programmes and measures must operate is constantly changing. The energy sector in many of the IEA countries is unbundled and liberalized with various degrees of competition and with growing use of spot and futures markets. And new energy policies are common in all of the responding countries.

In order to be sure that the future work of IEA DSM Programme reflects these changes, a special session was organized during the Executive Committee meeting held in Atlanta, Georgia, USA in October 2004. Executive Committee members were asked to summarize (1) their countries' top energy concerns, (2) new trends in the energy market sector and (3) new policies that will impact DSM and EE in their country. The countries that participated in this session were:

Australia	Japan
Austria	Norway
Belgium	Spain
Finland	Sweden
France (by email)	United Kingdom
Italy	United States
Korea	

This chapter summarizes their responses and provides an overview of the environment in which DSM and EE will need to operate in the next five years.

Top Energy Concerns

The top energy concerns for all the responding countries include:

- security and reliability of energy supply
- environmental protection,
- market efficiency.

Environmental protection encompasses meeting greenhouse gas emission targets and national, regional and local regulations including increased energy efficiency. Important energy supply and reliability concerns specific to some countries include ageing infrastructure (Australia and United Kingdom), avoidance of blackouts (Italy and Sweden), growing base load (Finland and Norway), growing peak load (Australia, Finland, Korea and Spain), lack of adequate transmission or transmission system reliability (Austria, Spain, Sweden, United Kingdom and the United States), volatile and increasing energy prices (Austria, Finland and the United States), uncertainty with direction of the energy market (United States) and lack of resources to enforce regulations (Belgium).

New Market Trends

The use of *tradable white certificates* in Italy and France seems to be a trend that is expected to spread to other countries as they set energy efficiency targets. *Energy efficiency in the building sector* is viewed as an important component in meeting Kyoto Protocol targets in Austria and Norway and, while not mentioned specifically, in most of the other countries participating in the IEA DSM Programme. The regulated grid operator is responsible for security of electricity supply in many countries and therefore is interested in balancing supply and demand and hence in DSM. *Interest in demand response* is growing many countries, notably the US. There is a *growing presence of renewables* in the market, e.g. wind power in Spain and the US, mandated renewable energy targets in Australia, green certificates in Belgium and Sweden and renewable energy portfolio standards in a large and growing number of states in the US.

There is also a growing presence of *distributed generation*, notably in Austria and Finland and in the form of co-generation in Belgium. And there is growing expectation in some sectors for *new coal and nuclear power plants* in Finland and the US, while *nuclear power continues to be phased out* in others such as Belgium and Sweden.

New DSM and EE Related Policies

A large number of new policies related to DSM and EE were reported. They may be categorized as financial, targets and trading, standards and labels, information and R&D.

- Financial Policies

Policies related to financial matters include the use tax deductions for businesses to promote EE as in Belgium and tax incentives in Korea to promote greater use of EE products. Belgium has instituted an innovative new tax on energy that increases only when international energy prices decrease. The UK imposes a climate change tax based on fuel use and offers a tax credit to businesses for EE investments. There are a growing number of clean energy funds, such as those in various states in the US and those in Belgium, where regional energy taxes go into an energy fund based on electricity consumption.

- Targets and Trading

A growing number of policies pertain to carbon targets and emissions trading. Carbon reduction targets were tightened in the UK and emissions trading expanded. National energy saving targets were set for distribution companies and energy service companies in Italy and white certificate trading systems are being implemented in Italy and France. Mandatory energy savings targets have been set in Belgium (Flanders region), France and Italy. Voluntary agreements are used in Korea.

- Standards/Labels and Information Programmes

Standards and labeling policies exist in most reporting countries. Some policies are driven by the new EU Directive on Building Performance. Korea and Australia are using standards, labels and voluntary programmes to promote EE products and the US uses national voluntary standards for many energy products. Energy audits, common in most countries, and information programmes often support these policies, such as the highly effective local information programmes in France, Sweden and Norway.

- R&D

While not mentioned by all reporting countries, R&D is important policy tool. France has an R&D strategy to reduce greenhouse gas emissions by a factor of four by 2050. While R&D and commercialization are considered to be very important tools for climate change technologies in a number of countries including Australia, Finland and the United States, in contrast, Sweden has reduced its R&D budget.

Country Report Highlights

Australia

The energy market in Australia is *unbundled* and essentially *fully competitive* in most states, and moving towards it in more remote Western Australia. A major energy market review in 2002 recommended further changes in the energy market, focusing mainly on *greater demand side involvement* and competitive transmission to address constraints. The 2004 Federal Government Energy White Paper linked energy market reform, EE and DSM and greenhouse gas emission reduction and focused on future oil imports, zero or low carbon emission technologies, and improved minimum energy performance standards (MEPS).

Key energy sector concerns include the rapid growth of summer *peak demand* due to domestic air-conditioning load; an *ageing infrastructure* and, in particular, distribution networks; lack of market-based baseload investment due to low power prices in the electricity pool; and potential lack of overall investment in the energy sector as a result of privatization of public assets and market pressures.

New market trends include a strong push in some states to *time-of-use pricing* and associated interval metering; maintenance of the current pool market with refinement of ancillary services through greater competition; growing focus on *greater demand side participation* for all customer classes; and streamlining of the complex electricity code and market rules through the creation of two new national agencies.

The new DSM and EE policies include mandating *energy audits* for all businesses using more than 0.5 PJ/year; enhanced MEPS and appliance *labeling* requirements; and making demand side participation in energy markets a greater reality.

Austria

In the second half of the 1990's there were many DSM programmes and activities and a major integrated resource planning project with the Association of Utilities. Subsequently, the energy market in Austria was *liberalized* and is now completely open for electricity and natural gas. This change and the falling energy prices caused interest in DSM to drop significantly, and only climate change and environmental issues continue to drive DSM. Recent rising *energy prices* and growing *transmission constraints* are both causing the government, but not industry, to once again consider EE and DSM.

The main energy sector concerns are environmental, namely *Kyoto targets* and the impact of the building sector on greenhouse gas emissions. Building regulations and subsidy programmes are adjusted according to those goals. A climate protection action programme has been launched with sub-programmes focusing on EE and DSM.

Kyoto and CO₂ reduction also drives the greater use of renewable energy in Austria, reflected in the target of 7 % non-hydro renewables by 2010. The energy market is seeing more decentralized generation using innovative technologies, such as Stirling engines and biomass pellet fired boilers. Another drivers are the EU Building Directive and the planned EU Directive on EE and Energy Services. There exists a well developed market for performance contracting in Austria. Performance contracts in the building sector are yielding 20 % and more energy savings but with payback periods that are still very long when including building related measures.

Belgium

The new trend in the energy market is that the three regional governments are responsible for designing and implementing policies for EE, renewable energy, non-nuclear energy R&D and market regulation for the supply and distribution of electricity and natural gas networks. Market *liberalization continues to advance* and nuclear energy continues to be phased out. Energy prices are rising.

One of the main objectives of energy policy in Belgium is *security of supply*. A new national climate change plan has been established and is being implemented. Belgium has instituted an *innovative new tax* on energy that increases only when international energy prices decrease. New policies in EE and DSM at the federal level and in each of the regions have been instituted that place growing emphasis on EE. These primarily impact the industrial sector by providing grants for *energy audits* and *tax deductions* for investments in EE. There is a growing use of energy service agreements and bench marking as the cornerstone of EE in the industrial sector. There is a national green certificate requirement and two regions have introduced certificate markets to support co-generation. While there are targets set for each sector, the lack of human resources to enforce regulations limits their impact. The potential for EE improvement in Belgium was recently the subject of a comprehensive study which showed that demand could be reduced by 5 % by 2020 as a result of benchmarking, similar to that in the EU directive on EE and energy services.

To insure that energy service companies would continue to support EE and DSM in a liberalized market, the government of Flanders imposed *mandatory energy saving* targets on the electricity distribution network companies and required them to inform their customers on energy saving strategies.

Finland

Finland has an *unbundled, fully competitive* market with one regulated system operator for the country. The Scandinavian Nord pool market that Finland participates in defines market prices for electricity. Generation in Finland in 2003 was 27 % nuclear, 12 % hydro and 36 % from industrial and district heating combined heat and power (CHP) plants and the rest 25 % from conventional thermal power plants. The share of the conventional thermal power was higher than normally due to dry season in Scandinavia. Finland is experiencing *peak loads* in the winter due to the cold climate. The daily load curve is quite smooth because the water heaters are switched on only during night time to take advantage of low time-of-use tariffs. The new nuclear power plant will help reach the Kyoto targets but that will not be enough.

The key concerns in the energy sector are lack of *generation capacity* in Finland, future *energy prices* and the impact of emissions trading on those prices and bottlenecks in the *transmission system*.

The new market trends include some changes in the regulations for network companies, discussion on possible greater cooperation between the Nordic transmission system operators and the formation of a new Association of Finish Energy Industries to replace the four existing organizations.

While the current programme of energy audits, voluntary agreements, and information campaigns and support for investments in EE and DSM continues, the voluntary energy savings agreements are being evaluated. *R&D* continues to be important. A new *R&D* programme is being started to develop new climate technology businesses and the *R&D* on distributed generation continues.

France

Following extensive debate, the Energy Orientation Law, which has several elements related to DSM, will be definitively voted on and come into force in early 2005. Energy providers will be required to realize specific *energy savings targets*. *Tradable white certificates* will be used to track these savings. *Energy audits* will be required for renovation of buildings and labels showing the energy performance will be required on the sale of all buildings.

To fulfill France's Kyoto requirements, a new national climate change plan was approved in July 2004. This plan identifies measures and policies that could avoid 72 Mton CO₂ as compared to "business as usual." This plan also presents an *R&D* strategy to reduce greenhouse gas emissions by a factor of four by 2050. In 2004, ADEME launched a three-year campaign to instill in the French public a feeling that energy management and climate change are causes for public concern.

A network of local energy *information* centers was set up by ADEME in 2001. They were created to provide energy-related information and advice. The network now consists of 155 local centers with 275 advisors. The impact of these information centers was evaluated in 2004. The large number of visits, both face-to-face and on the Internet, and the number of information packets distributed were documented. A qualitative evaluation based on 600 interviews was performed. The degree of satisfaction was very high, ranging from 92 % for professionals to 78 % for individuals. One-quarter of the clients acted on the advice within the following 6 months, investing an average of 7,700 euros for each project and saving an average of 0.63 toe and 1.1 tons CO₂.

Italy

Italy has an *unbundled market with limited competition*, with about 40 private independent generation companies and almost 15 distribution companies, some private and some municipal. Italy is divided into zones and the price of electricity is negotiated for each zone. The electricity market has been running a transient test phase since 1 April 2004, while facing the producers on one side and the so-called "single buyer" (representing the totality of residential customers) on the other side. Based on the experiences to date, the minimum prices are generally unchanged while the maximum prices tend to fluctuate.

National *energy savings targets* to be attained by distributors of electricity and natural gas or ESCOs were defined by Ministerial decrees in 2001. The rules for the resulting projects are governed by the Authority for Electricity and Gas and include tradable white certificates. In 2004, the savings targets were smoothed and shifted forward by two years and greater flexibility was allowed in implementing the process. The management of the *white certificate* market was given to the electricity market operator. New eligible classes of projects were identified, including systems involving tri-generation, fuel cells, biomass heating systems, solar cooling using absorption systems, and energy recovery in systems for re-gasification of LNG. The first group of white certificates are scheduled to be traded in July 2005. The white certificate market will use the same trading platform and paradigm as for green certificates. Penalties for non-compliance are still to be announced.

Korea

The energy sector in Korea was restructured in 1999. The restructuring of the electricity sector was to proceed in three steps. The first step, completed in 2001, *unbundled* six generation companies from KEPCO. The next step was to introduce *wholesale competition* by unbundling six distribution companies from KEPCO. The final step, yet to be taken, will open the retail market to competition.

Top concerns are *energy security, environmental protection* and *market efficiency* and they are all related to *sustainable development*.

Energy efficiency policies can be grouped into three types: energy conservation in the industrial sector; energy efficiency in the residential sector, and DSM and regional energy programmes. Three approaches are used in the industrial sector – *voluntary agreements, ESCOs* and *financial support*. Almost 700 companies have entered into voluntary agreements with the government to reduce energy consumption. ESCOs have invested \$116 million in 2002 in EE measures. The government gives \$416 million per year in financial support and 7 % tax credits to industrial companies to support EE activities. In the residential and commercial sector, *energy standards* are used at the first stage of construction and to promote the use of high efficiency equipment. The DSM programme is focused on load reduction, with a target of 1,184 MW, and on improved energy efficiency. Regional programmes are used to support this target.

Japan

Energy policy in Japan is based on *security of supply* and protection of the *environment*, both based on the use of neutral market mechanisms. In terms of market mechanisms, Japan is in the process of introducing fair competition but keeping vertical integration to assure security of supply. Competition in the retail market began in 2000 with customers using 2000 kW/month or more and by April 2005, 64 % of the retail market will be engaged in the liberalized market. In 2007 or after it will be decided if the domestic market will be liberalized or not.

The top energy concerns in Japan are security of energy supply and protecting the environment. Energy supply security will be accomplished by developing and diversifying energy sources, especially nuclear power. Protecting the environment will be done by promoting EE to reduce CO₂ and other emissions. High-efficiency equipment, such as thermal storage systems and heat pumps, will be developed and introduced into the market.

Norway

The top energy concern in Norway is the *increasing demand* in the building sector. Demand is increasing at about 1.2 % per year which requires additional capacity. As new hydro seems unlikely, and there is opposition to gas-fired plants, increased DSM and EE as well as renewable energy, specifically wind power and biomass, are of interest.

ENOVA places special attention on the *energy use in buildings* where demand has been growing but where there is great potential for energy savings. Current activities are concentrated on *information* campaigns.

Spain

The market in Spain is *unbundled and entirely liberalized* with a spot and futures market as well as several markets for system services such as secondary and tertiary regulation, fiscal balance, etc. Demand hardly participates in the spot market and it can not access the other markets.

The top energy concerns in Spain are the *scarcity of electric energy supplies* in response to an anticipated 15 % growth in the next four years and the growing *peak demand* in the residential sector. Another major concern is the *transmission systems* that must move electricity from the generation sites to the four major load centers in the country. These systems will need to be expanded by 25 % by 2010 that will be challenging. New capacity has come from CHP that is price dependent on imported oil or natural gas and wind power. The expected growth of wind power, from the current 6,000 MW to 18,000 MW in the next 6 years, create a strong need of network and system services growth. The consumption and transmission of reactive power is also a concern in Spain.

The current market in Spain is not hospitable for demand because of the general lack of price signals to the customers. Two hundred large industrial consumers with a capacity of 3000 MW are connected to the ISO control room that can quickly and flexibly activate a reduction of up to 2000 MW when needed under specific conditions for a fixed price. A new instrument has been created for the 200 largest customers, and there are plans to expand this to smaller customers.

Sweden

Sweden has an *unbundled market with full competition*. The top concerns are *blackouts, grid reliability* and *security of supply* with a goal of self-sufficiency. The market trend is continued emphasis on *green certificates* as a way to support greater use of renewable energy. Several new policies relate to DSM and EE. The first is the intention to shut down the Barseback 2 nuclear power plant in 2005, which will provide some motivation for greater use of EE and DSM. The second is the continued use of *technology procurements* but with the relatively new requirement of 50 % co-financing. The third is continued information programmes at the local level. While the *R&D* budget will be significantly decreased, the impact on DSM and EE activities will be small as they only get a small portion of that support.

United Kingdom

The UK has three top energy concerns. The first is *climate change* where the UK must reduce its greenhouse gas emissions by 60 % by 2050. The second is *security of energy supply* as the country shift from a net energy exporter to a net importer. The third is the need to update and expand the electricity and gas *transmission infrastructure* and to increase the use of renewables to 10 % of all electricity by 2010 and 20 % by 2020.

The Energy White paper issued in 2003 and supplemented in 2004 by an action plan for energy efficiency defines the energy policy context for the United Kingdom. It is important to point out that while energy efficiency is a priority in the UK and driven by government, DSM, traditionally done by utilities and industry, is not.

The policy goals for the UK are to make significant progress in CO₂ emission reductions by 2020, to maintain the reliability of energy supplies, to promote competitive markets in the UK and beyond, and to ensure that every home is adequately and affordably heated. These goals will be met by existing energy policies and new policies. Market policies in place include the first phase of an *emissions trading system*, the requirement that utilities promote EE to their customers, a *climate change tax* based on fuel use and tax credits for businesses for EE investments. These policies will soon be joined by the new *EU Directive* on Energy Performance in Buildings. The new policies include tighter *carbon reduction targets*, expanded *emissions trading*, *grants* for fuel poverty, improved infrastructure and regulation in the UK and liberalization in the EU energy markets and increased use of EE. The new EE action plan will use tighter *building standards* with increased emphasis on existing buildings, expanding emissions trading to 50 % of the UK emissions, continued incentives, public sector leadership, standards for energy using products, and support for low-carbon technologies.

The grid or system network operators in the UK are regulated and are under regulatory pressure to reduce costs, to address supply security, to bring on new renewable sources and to integrate those sources into their systems. The need to reduce costs has motivated the grid operators to take more account of the demand side. The energy suppliers have an interest in DSM because they must go to the spot market if they cannot meet their contracted demand. To attract and keep customers they must provide the energy services that those customers want, and often they include more efficient use of energy.

United States

There are several top energy concerns of the United States. The first is the *increasing energy prices*, led by dramatic increases in natural gas and, to a lesser degree, coal. Domestic oil and natural gas resources have peaked and are declining, and no new oil refineries have been built in the past 30 years. Siting new energy *infrastructure* is difficult, especially new transmission lines and liquefied natural gas terminals. The ageing electricity grid has not kept pace with economic growth and, thus, demand. Perhaps the top concern is the *infrastructure investment gridlock* in the US caused by the structural and regulatory uncertainty in the energy sector.

The new trends in the energy market in the US are early signs that coal gasification plants will soon enter the market. And the nuclear industry is optimistic that the political winds are blowing in a favorable direction for them. Eighteen states have Renewable Energy Portfolio Standards that are opening the market, primarily for wind power. There is increasing policy interest in *demand response* and awareness that demand reduction is the best near-term response to rising natural gas prices.

New policies pertaining to DSM and EE include the availability of *state funds*, called system benefit charges, to fund traditional DSM activities, growing political advocacy at the state level for more DSM and EE, and growing impact of voluntary standard like “Energy Star”.

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
Telefax: (46) 8 650 6733
E-mail: nosslinh@telia.com

Vice Chairman

Dr. Paul Davidson
Director Sustainable Energy Centre
BRE - Energy Division
Building Research Establishment
Garston
Watford WD2 7JR
Telephone: (44) 1923 664437
Telefax: (44) 1923 664087
E-mail: davidsonp@bre.co.uk

Vice Chairman

Dr. Harry Schaap
Principal Consultant
Energy and Environmental
Management Services
7 Wanbrow Avenue
Balwyn North Victoria 3104
Australia
Telephone: (61) 3 9857 5583
Cell phone: (61) 413 623 043
E-mail: harry.schaap@tpg.com.au

Vice Chairman

Mr. Arnold J.W. Sijben
SenterNovem
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

Australia

Dr. Harry Schaap
Principal Consultant
Energy and Environmental
Management Services
7 Wanbrow Avenue
Balwyn North Victoria 3104
Australia
Telephone: (61) 3 9857 5583
Cell phone: (61) 413 623 043
E-mail: harry.schaap@tpg.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@nrcan.gc.ca

Ms. Malikka Nanduri
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: mnanduri@nrcan.gc.ca

Commission of the European Communities

Mr. Randall Bowie
European Commission
DG TREN/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 H. Laustsen
Ministry of Economic and Business
Affairs
Danish Energy Agency
Amaliegade 44
1256 Copenhagen K
Telephone: (45) 33 926700
Telefax: (45) 33 114743
E-mail: jhl@ens.dk

Mr. Michael Iven
Association of Danish Energy
Companies
Rosenørns Allé 9
DK 1970 Frederiksberg C
Telephone: (45) 35 300 400
E-mail: miv@danskenergi.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
VTT Technical Research Centre of
Finland
VTT Processes
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
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
Ministry of Development
Directorate General for Energy
Messogion Av. 119
GR-101 92 Athens
Telephone: (30) 210 696 9444
Telefax: (30) 310 696 9448
E-mail: NomidisD@ypan.gr

Italy

Mr. Walter Bruno Grattieri
CESI
Industry, End Uses and Renewables Unit
Via Rubattino, 54
20125 Milano
Telephone: (390) 02 2125 5714
Telefax: (390) 02 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) 02 2125 5016
Telefax: (390) 02 2125 5843
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 103-0014
Telephone: (81) 3 5643 2401
Telefax: (81) 3 5641 4501
E-mail: yoda@hptcj.or.jp

Mr. Fuminori Horiya
Director
Heat Pump and Thermal Storage
Technology Centre of Japan
1-28-5 Nihonbashi Kakigaracho
Chuo-ku, Tokyo 103-0014
Telephone: (81) 3 5643 2401
Telefax: (81) 3 5641 4501
E-mail: horiya.f@hptcj.or.jp

Republic of Korea

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

Mr. An Keun Young
Ministry of Commerce,
Industry & Energy
1 Joongang-dong, Gwacheon-si
Gyunggi-do 427-723
Telephone: (82) 2 110 5421-5
Telefax: (82) 2 504 5001
E-mail: mrdotan@mocie.go.kr

Mr. Kyung Huh
Ministry of Commerce,
Industry & Energy
1, Joongang-dong, Gwacheon-si
Gyunggi-do, 427-723
Telephone: (82) 2 2110 5421
Telefax: (82) 2 504 5001
E-mail: nice@mocie.go.kr

Netherlands

Mr. Arnold J.W. Sijben
SenterNovem
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 190439
Telefax: (47) 73 190431
E-mail: anite.eide@enova.no
www.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

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

Sweden

Mr. Egil Öfverholm
Energimyndigheten (STEM)
Box 310
S-631 04 Eskilstuna
Telephone: (46) 16 544 2000
Telefax: (46) 16 544 2260
E-mail: egil.ofverholm@stem.se

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

United Kingdom

Mr. Tom Bastin
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:
tom.bastin@defra.gsi.gov.uk

Dr. Paul Davidson
Director Sustainable Energy Centre
BRE - Energy Division
Building Research Establishment
Garston, Watford WD2 7JR
Telephone: (44) 1923 664437
Telefax: (44) 1923 664087
E-mail: davidsonp@bre.co.uk

United States

Mr. Larry Mansueti
U.S. Department of Energy
1000 Independence Ave. SW
Washington D.C. 20585
Telephone: (1) 202 586 2588
Telefax: (1) 202 586 5860
E-mail:
lawrence.mansueti@hq.doe.gov

Consultant to Exco

Dr. Frederick Morse
Morse Associates, Inc.
2012 O Street, NW, Suite 24
Washington D.C. 20036
United States
Telephone: (1) 202 223 1996
Telefax: (1) 202 223 1995
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

Mr. Alan Meier
Head Energy Efficiency Policy
Analysis Division
International Energy Agency
Office of Energy Conservation
and Efficiency Division
9 rue de la Fédération
75739 Paris Cedex 15
Telephone: (33) 1-40 57 6685
Telefax: (33) 1-40 57 6749
E-mail: alan.meier@iea.org

Spotlight/Newsletter Editor

Ms. Sheila Blum
Morse Associates Inc.
2012 O Street, NW, Suite 24
Washington D.C. 20036
United States
Telephone: (1) 202 223 1996
Telefax: (1) 202 223 1995
E-mail: sblum807@aol.com

**Chairman and
Executive Committee Secretary**

Ms. Anne Bengtson
Box 1320
S-183 13 Täby
Sweden
Telephone: (46) 8 510 50830
Telefax: (46) 8 510 50831
E-mail: anne.bengtson@telia.com

CHAPTER VI

Operating Agents IEA DSM Technologies and Programmes

TASK I

International Data Base on Demand-Side Management Technologies and Programmes

Operating Agent

Mr. Harry Vreuls
SenterNovem
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. Richard Formby
Technology Group Manager
E.A. Technology Ltd.
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) 8 667 8082
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
Chester CH1 6ES
United Kingdom
Telephone: (44) 151 347 2336
Telefax: (44) 151 347 2411
E-mail:
linda.hull@eatechnology.com

TASK IX

The Role of Municipalities and Energy Efficiency in a Liberalised System

Operating Agent

Dr. Martin Cahn
ul. Sikorskiego 8
32-400 MYSLENICE
Poland
Telephone: (48) 12 272 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) 8 667 8082
E-mail:
hans.westling@promandat.se

TASK XI

Time of Use Pricing and Energy Use for Demand Management Delivery

Operating Agent

Mr. J.R. Formby
Technology Group Manager
E.A. Technology
Capenhurst, Chester CH1 6ES
United Kingdom
Telephone: (44) 151 347 2318
(44) 151 339 4181
Telefax: (44) 151 347 2411
E-mail:
richard.formby@eatechnology.com

Task XII

Energy Standards

Operating Agent

Mr. Frank Pool
Frank Pool Consulting
1 Nevay Rd. Miramar
Wellington 6003
New Zealand
Telephone: (64) 4 934 5421
Telefax: (64) 21 291 7786
Mobile: (64) 21 457 786
E-mail: frank.pool@paradise.net.nz

Task XIII

Demand Response Resources

Operating Agent

Mr. Ross Malme
President and Executive Officer
RETX
Technology Park/Atlanta
230 Scientific Drive, Suite 150
Norcross GA 30092
United States
Telephone: (1) 770 390 8500
Telefax: (1) 770 390 8501
E-mail: malme@retx.com

Task XIV

Market Mechanisms for White Certificates Trading

Operating Agent

Dr. Antonio Capozza
CESI/SFR
Industry, End Uses and Renewables Unit
Via Rubattino, 54
201 34 Milano
Italy
Telephone: (390) 02 2125 5016
Telefax: (390) 02 2125 5843
E-mail: capozza@cesi.it

Task XV

Network-driven DSM

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) 411 467 982
E-mail: crossley@efa.com.au

