



DSM *spotlight*

January 2001

The Newsletter of the International Energy Agency Demand-Side Management Programme

New Technology Puts Home Appliances On-line

The experts of Task II, *Communications Technologies for Demand Side Management*, have successfully developed a new type of 'black box' to act as a gateway for information to flow in and out of our homes. In other words, household appliances can "talk" with energy utilities and equipment manufacturers using a variety of communication media, such as sending data over power lines, radio, telephone and CATV.

The types of services this new technology will be able to provide can only be left to one's imagination. For example,

manufacturers could produce household products with intelligence and communication capacities, such as an intelligent central heating system that would purchase energy at the most advantageous time by checking price information. Or a consumer could purchase a maintenance contract that monitored the performance and condition of the product and when necessary dispatch repair crews. There is even the possibility of automatic shopping, where refrigerators would notify on-line retailers when they needed to be restocked.

Utilities, manufacturers and R&D organizations in five DSM Member countries—Australia, Canada, Finland, the Netherlands and the United Kingdom—have developed this flexible gateway, or "FlexGate." As Richard Formby, the Operating Agent for Task II notes, "the FlexGate represents a major milestone in the drive to provide customers and service providers with a cost effective and future-proof delivery platform."

The main advantage of this gateway is its adaptability. The system's new communication media and application protocols can easily be added to existing installations by adding interface cards thereby allowing new services to be added to meet the demands of a mixed and developing market. In addition, this system can accommodate a complete range of narrowband and some high data rate services.

In order to promote the FlexGate, Task II experts will initiate Field Trials to demonstrate what services can be provided using this flexible gateway technology. The trials also will demonstrate the provision of cost effective bundles of services that the users would pay for. Each of the five participating countries will develop their own trials so that they reflect their national

COUNTRIES PARTICIPATING IN THE IEA DSM PROGRAMME

Australia

Austria

Belgium

Canada

Denmark

European Commission

Finland

France

Greece

Italy

Japan

Korea

Netherlands

Norway

Spain

Sweden

United Kingdom

United States

IEA DSM PROGRAMME MISSION

To promote energy efficiency and DSM for global sustainable development and for business opportunities.

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Energy Efficiency Database Available on the Web

The first comprehensive international database on DSM programs has been completed by the experts of Task I, *International Database on Demand-Side Management Technologies and Programs*. INDEEP, as the database is referred to, is a compilation of 220 DSM programs from 15 countries. The

documented in "INDEEP Analysis Report 2000." Some of the findings are:

- The majority of the programs have energy efficiency as their main objective.
- 90% of the programs have a direct impact on electricity consumption.
- DSM programs are implemented for a wide variety of reasons. The primary reasons are to improve image/service and to address environmental concerns. (see bar graph)



Main menu of the INDEEP database.

INDEEP Energy Efficiency Programme Summary			
Programme Name	Country	Implementing Organisation	
Low Income Household	The Netherlands	ENX/Arco/Arco	
Completed			
Energy Source	Technology		
Electricity	EE		
Cost	€1		

Units	Goals	Units Saved Year	Cost/Unit
1994	2004	1994	1994-2004
2,900	2,900	2,900	2,900
138,900			
54,508			
36,177			
66,480			
1,240,114			
16			
16			
107			
107			
12			
12			
4,290			
4,102			

Example of a 1-page program summary.

programs range from occupancy sensors in schools to commercial and industrial lighting rebate programs to household consumer behavior campaigns and energy efficiency programs for low-income households.

The information in this database is designed to help utilities, government organizations and private consultants to design and evaluate demand-side management programs without having to "reinvent the wheel." Users can compare program goals, costs and results as well as use the contact information to network with the program designers.

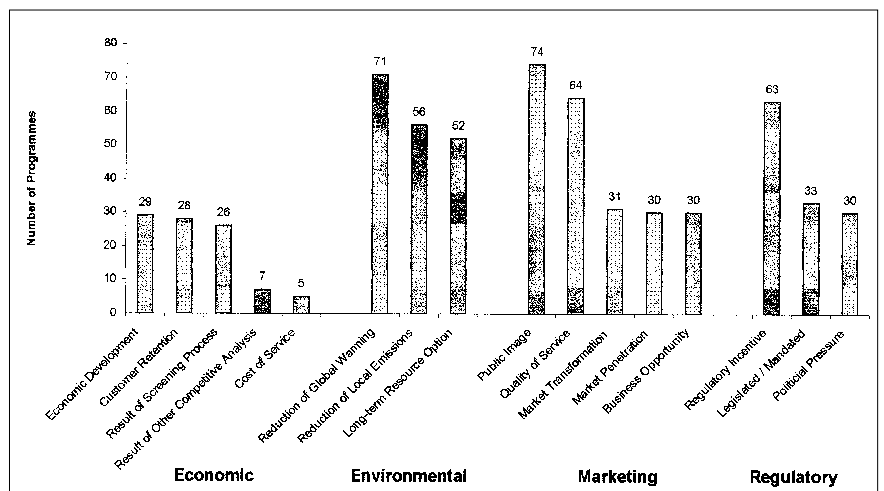
The most recent analysis of the data is

At this time, the complete report is available only in the countries participating in the Task—Denmark, Spain, Sweden and the Netherlands. The report, *How to Use the INDEEP Database*, which describes the database, is available to everyone on the DSM web site.

The data in INDEEP is accessible in six languages—Dutch, English, French, German, Italian and Spanish. It is

structured to allow data searches as well as provide a standard one-page summary of each program. Data searches can be conducted two different ways. An "Advanced Search" option allows you to search the database using the fields—general (e.g., country, contact name), energy related (e.g., energy objective, energy source affected, energy goals and savings), marketing related (e.g., customer group, marketing methods), and other (e.g., program type, technology, cost). And, a "Free Query" option allows you to search the more detailed text fields of the program summary and lessons learned. At this

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Breakdown of reasons for initiating DSM activity.

X

New Work to Begin on Performance Contracting

A new Task is beginning that will focus on how to facilitate the use of performance contracts and other energy service company (ESCO) contracts. Performance contracting is a well-established mechanism used to promote the installation of energy efficient equipment and systems in buildings. For example, building owners and energy service contractors use this method to finance the retrofitting of equipment as a way to save money on building operations. The savings in energy bills resulting from the installation of the more energy efficient equipment is then shared between the facility owner and the ESCO under the terms of their agreement. In this scenario, the ESCO takes on the project's performance risk by guaranteeing a specified level of energy savings. The ESCO's compensation for this risk is directly tied to the savings. The financing for such a project could come from the ESCO, the equipment supplier or a third-party company.

There are many other reasons to enter into performance contracts. For property owners, it could be a financial reason—a owner lacks the money to purchase new equipment. Or 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 ESCOs the reasons are different. The motivation may be that the agreement provides an avenue for the company to connect with customers or it provides the opportunity to initiate a new business relation. For some companies and government organizations, performance contracts are used to inspire innovation and encourage the use of more energy efficient equipment.

In this new DSM Task, the participants will build upon the experiences of those countries familiar with performance contracting, such as Canada, the United States and several European countries. Task activities will work to:

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

For more information contact the Task X Operating Agent, Hans Westling of Promandat AB, Sweden, e-mail: hans.westling@promandat.se and fax: +46 8 660 54 82. (See the IEA DSM web site for Task description and contact address and telephone number.)

Task I

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time, the database is available free of charge in the countries participating in the Task. For individuals not from a participating country, the database can be accessed for the following fees: access to the 1-page summaries for a year is US\$85 per organization; a printout of the 1-page summaries is US\$20; access to the analysis report of database results is

US\$100; and full access to the database and the analysis report is US\$3,000 per organization per year. It also is possible to receive a US\$100 credit to use towards the purchase of reports and 1-page summaries if you provide information on your DSM program to add to the database.

To guarantee that the database information is updated and maintained, the Executive Committee of the IEA DSM Programme has agreed that Task I should

continue. Several countries have expressed interest in supporting this new work, including Denmark, Japan, Netherlands, Norway and Sweden.

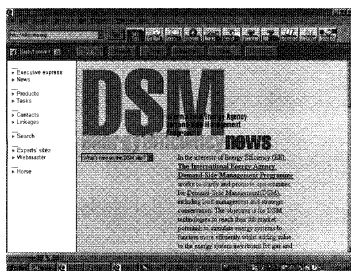
For more information contact the Task I Operating Agent, Harry Vreuls of Novem, the Netherlands, e-mail: h.vreuls@novem.nl and fax: +31 46 452860. (See the IEA DSM web site for Task description and contact address and telephone number.)

Task II

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market—number and types of customers, services to be offered, and methodology and technology to be used. The results of these trials will provide information on customer reactions, potential business opportunities, and technology and service performance. They also will demonstrate the most viable markets and services from the perspectives of energy customers and buildings owners as well as customer acceptance and business viability.

For additional information contact the Task II Operating Agent, Richard Formby of EA Technology, United Kingdom, e-mail: rjf@eatl.co.uk and fax: +44 151 347 2500. (See the IEA DSM web site for Task description and contact address and telephone number.)



<http://dsm.iea.org>

Visit the IEA DSM web site for more information on Programme activities, publications and contact names.

Spanish Experts Share Programme Results

Spanish members of the IEA DSM Programme organized a special session for nearly 200 people, primarily industrial engineers responsible for the electricity consumption in local industries, this past September at the Association of Industrial Engineers meeting in Barcelona. The session, "New Opportunities Offered to the Electricity Consumers in Spain by the Competitive Electricity Market – A View from a Project of the International Energy Agency," focused on two projects of the IEA DSM Programme. The first presentation was on the work of the recently completed Task VI, *DSM and Energy Efficiency in Changing Electricity Businesses*, given by the Task's Spanish participant, Mr. Jese Giraldo. A presentation then followed on the current Task VIII, *Demand Side Bidding in a Competitive Electricity Market*, given by that Task's Spanish participant, Mr. Fernando Manzanares.

Both speakers addressed how the findings of these DSM Tasks apply to the current Spanish electricity market situation. In Spain, electricity generation is fully deregulated and anyone can join the market. To join the market, it is necessary to place a bid to

the Market Operator who then assigns the cheapest generation to cover that demand. As for electricity consumption, deregulation for customers is underway. It is based on a consumption threshold that decreases every year. Customers are allowed to choose a supplier when the customer's demand is above the threshold. Since the end of 2000, all high voltage customers (about 60,000) have been able to choose a supplier. And, on 1 January 2003, all 20 million customers will be able to choose a supplier.

The special session concluded with a round-table discussion. The two DSM Task participants were joined by representatives of the Energy National Commission (the Spanish regulator), the Electricity Market Operator Company, the regional distribution utility, the regional government organization for energy efficiency (ICAEN), and a large electricity consuming industry. Participants took this opportunity to ask questions, many of which focused on the cost of electricity for customers. All the participants considered this unique session to be timely and informative.

The DSM Spotlight is published four times a year to keep readers abreast of recent results of the IEA Demand-Side Management Programme and of related DSM issues. The viewpoints or policies expressed in this newsletter do not necessarily reflect those of the International Energy Agency, the IEA Demand-Side Management Programme member countries, or the participating researchers.

For more information on the Programme, its work and contact addresses, please visit our web site at <http://dsm.iea.org>

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Prepared for the IEA Demand-Side Management Executive Committee
by

Morse Associates, Inc.
1808 Corcoran Street, NW
Washington, DC 20009 U.S.A.

Editor:
Pamela Murphy