DSM spotlight
Spring 1997
The Newsletter of the International Energy Agency Demand-Side Management Programme

An Interview with Hans Nilsson

The IEA DSM Programme Chairman

As Chairman of the IEA DSM Programme since its start in 1993, you must have many observations and thoughts on demand-side management (DSM) and how this Programme is addressing the relevant needs of the countries participating in it. The following questions are designed to provide the reader a general overview of DSM and the work of the IEA DSM Programme.

What is demand-side management?

Demand-side management (DSM) can be looked upon either traditionally, as a tool to be used to change the demand for energy or more generally, as a tool for society to better use and distribute scarce resources.

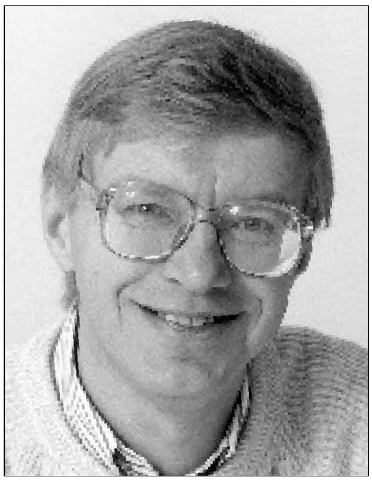
In both cases, at least as far as this Agreement is concerned, the main thrust and reason for DSM activities are due to the necessity to increase energy efficiency and receive better value for the capital invested in the energy system.

What motivated fifteen countries to come together under the framework of the IEA to work collaboratively on demand-side management?

Collaboration between the fifteen participating countries in this Agreement is both natural and challenging. It is natural because many countries are interested in DSM and have experience working in this area. There is a general belief that by focusing an activity on the demand side, more lasting solutions will be achieved than by working only on the supply side. The ongoing restructuring of the utility business in many countries presents another reason for countries to collaborate together. By sharing experiences, countries can learn from one another and replicate the successes while avoiding the mistakes.

What are some major results and impacts that you expect from the IEA DSM Programme?

There will be two kinds of results from the work in this Agreement. First, there are the specific results anticipated from each collaborative activity, or Task. The six DSM Programme Tasks have an ongoing impact by the sharing of knowledge in meetings and workshops. And, many of the Tasks are already producing highly visible results which show that rewards are attainable in this type of collaboration. Descriptions of specific Task results and reports can be found in this quarterly newsletter and on the IEA DSM website. Second, there is the exchange of results between the Tasks which hopefully will show that the sum is greater than the parts. The Programme is now in the process of looking for ways to demonstrate how the results achieved so far can be integrated and made available to help utilities, governments or businesses design new DSM initiatives.



Hans Nilsson, Chairman of the IEA DSM Programme

How might the IEA DSM Programme evolve to respond to the major changes that are occurring in the utility sector?

All the Programme's participating countries face changes in the utility sector, and therefore, the Programme's work is gradually being adjusted to focus on solving tomorrow's problems and not only today's. Deregulation will surely change the rules of the game, but the need to encourage the use of a higher degree of efficient energy use will remain.

The IEA DSM Programme can help to synthesize the global experience so that the present energy systems can be

continued on page 2

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 website at ***http://www.iea.org/dsm-enef***

Access to Worldwide Data

Utilities and other organizations no longer need to reinvent the wheel when developing DSM programs. Information on DSM programs worldwide is being compiled by the experts of the IEA Demand-Side Management Programme's Task I, *International Database on Energy Efficiency Programmes (INDEEP).* This database will help utilities and governments to design DSM programmes which reach more customers and save more energy at a lower cost. Information on more than 200 DSM programs is available, and by early 1999 the database will include at least 400 programs worldwide. The database has been developed by Austria, Denmark, Korea, Spain, the Netherlands, the United States and the European Commission through its Joint Research Centre.

Program designers, managers, evaluators and policy analysts should find this database very useful. INDEEP provides a description and summary information on DSM programs in countries such as, Canada, Denmark, Germany, France, Ireland, Italy, Republic of Korea, Portugal, Spain, Sweden, the Netherlands, and the United States. Each program is characterized by energy objectives (e.g., energy efficiency, load optimization, fuel switching), energy sources affected, technologies, and program type (e.g., general information, education, market transformation, alternative rates). The database also includes information on the target groups, marketing incentives and methods. Qualitative program information is presented in a 'lessons learned' section and contact information is presented so those interested in a particular program can contact the national experts. The database prototype is in English, Dutch, German, Italian and Spanish, and there are plans to include Swedish translations. By the Spring of 1998, Task experts plan to have the INDEEP database produced as a product using ACCESS software.

Although INDEEP files are not currently accessible to users, free one-page summaries of the documented programs are available. The one-page summaries contain general information (country name, lessons learned, evaluation), market information (target group— customer and non-customer— technology, appliance sales, energy source), and figures on participation rates, energy savings, and costs. In the second half of 1997, these one-page summaries will also be available on the IEA DSM website.

The majority of the programs in the database have been implemented by utilities (88%), followed by national governments (10%) and non-profit organizations (2%). About two-thirds of these programs are associated with one or more technology; 25% of the programs target high-efficiency lighting systems. The average cost of a program that targets high-efficiency lighting systems is in excess of 10 million ECU's, and the average electricity savings is more than 40,000 MWh/year. ■

More information on Task I can be obtained from the Operating Agent, Harry Vreuls, Netherlands Agency for Energy and the Environment (Novem), The Netherlands, e-mail:

from page 1

changed in the most logical ways to systems that are more sustainable. Its experiences will be of great use not only to the countries participating in its work, but also to countries with rapidly growing industrial sectors that must confront all the problems such change might cause to their energy systems.

As the Chairman of the IEA DSM Programme, how do you see the Programme contributing to the development and expansion of DSM programs in IEA countries?

I believe that this Programme will contribute not only to the successful development of new DSM programs, but also to the evolution of the IEA's future commitments. For example, the threats and challenges from environmental impacts, especially climate change, has led to the initiation of the IEA/OECD Climate Technology Initiative. While this initiative focuses on improving technology, I believe that the DSM Programme holds some of the keys needed for successfully undertaking such a large-scale initiative. ■

The Importance of Communication Technologies

If demand-side management programs are to be effective then how customers use electricity must be modified in a way that benefits both the customers and the utilities. Improved methods of communication between the two parties is one means to facilitate this goal. To assess the best available options for applying communications technologies to DSM programs, the IEA DSM Programme initiated Task II, *Communications Technologies for Demand-Side Management.*

Communication technologies can improve DSM programs in many different ways. For example, improved monitoring of customer consumption profiles to target energy-efficiency and DSM activities, improved control over local generation for DSM time of use pricing, and monitoring of customer supply voltage so that voltage regulation can be used as a DSM measure. Regardless of the DSM measure —energy conservation, peak demand reduction, demand relocation, demand control and load growth—its implementation can be improved through better communication between the customers and energy supplier.

And, how might customers and energy suppliers improve communication? One means is through better customer service. These services can include remote metering, itemized end-use energy consumption information, planned and unplanned supply interruption details, energy use optimization and information on supply quality. Once a service has been selected, it is necessary to determine which communication media to use. Presently, information exchange between customers and suppliers is conducted through low capacity communication media and readily available technologies. Current communications media include low power radio, low voltage network signal on the power grid and local telephone exchange lines. Broadcast radio can also be used to provide one way communication from suppliers to customers. And, cable television and satellite communication are other possible communication links. Another option is smart cards. The smart card can be loaded with electricity price information and upload customer consumption patterns. In this scenario the customer acts as the local communication link. High speed networks with two-way communication capability will begin to replace the present communication technologies as they become cost competitive.

With numerous communication technologies available, utilities are faced with deciding how best to implement cost effective services to meet the future needs of customers. As there is no one solution to meet all communication situations, the IEA DSM Task II assessed communications requirements, technology options, communications technology standards and communication system costing algorithms to help in this decision-making process.

The international collaborative work of the Task's participating countries has begun to provide valuable data. For example, the international exchange of information on what customers and utilities require and information on the capabilities phase of different communication media provides a package of information and services for utilities to consider. The final goal of the Task has been to develop a PC version of a customer/utility data needs and communications model for utilities and potential suppliers. This computer model allows the user to evaluate the suitability of communication media and technologies for meeting customer and utility DSM programs and related functions. The robustness of this model was strengthened by international collaboration on the model's specifications. Overall, the work of this Task will help utilities and customer service provides identify their future needs and determine where service gaps exist so they can more effectively manage the pressures of increased competition and/or deregulation. ■

More information on Task II can be obtained from the Operating Agent, Richard Formby, EA Technology Limited, United Kingdom, e-mail: jrf@eatl.co.uk. (See IEA DSM website for address and fax.)

Technology Procurement Initiative Improves Product Energy Efficiency

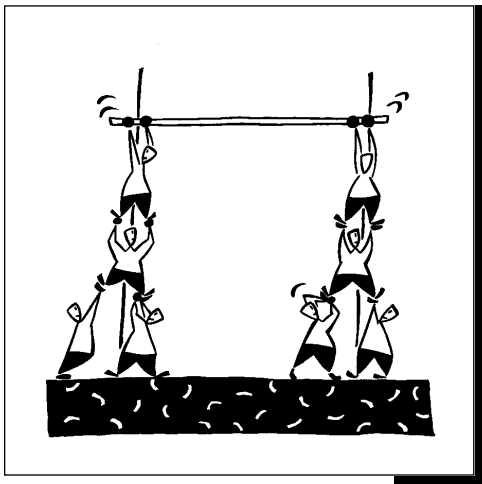
By working together in powerful buyer groups, purchasers of products and systems can influence production choices and steer manufacturers towards improving the energy and/or environmental performance of their products. This type of cooperative procurement of innovative, energy-efficient technologies is the goal of IEA's Demand-Side Management Programme's Task III, *Co-operative Procurement of Innovative Technologies for Demand-Side Management.*

IEA DSM Task III is studying and promoting multinational technology procurement strategies. The objective of these strategies is to bring together the most influential purchasers of a given product category (e.g., clothes washers and dryers, copiers, refrigerators) to form a buyer group. This group then drafts product specifications and places collective orders, thus creating a uniform demand which can stimulate manufacturers to produce a product that meets the group's requirements. In the end, the process is a win win situation, the purchasers get the product they want, and the manufacturer is guaranteed the sale of a certain production volume while creating a new product market.

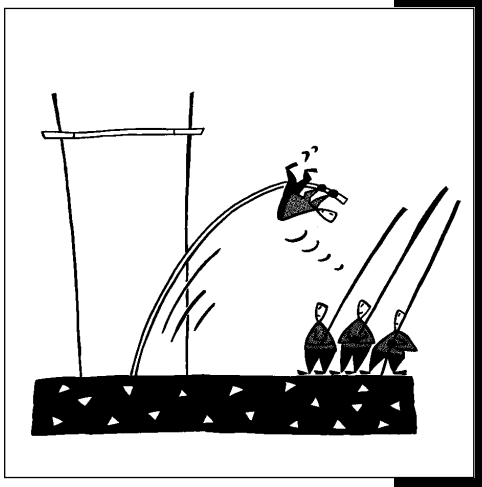
The savings that an improved, more energy-efficient product can offer are significant. For example, the Task has organized a buyer group for more energy-efficient incandescent light bulbs. The aim of the project is to stimulate manufacturers to develop an incandescent light bulb which lasts three times longer than current ones. Although consumers can purchase compact fluorescent bulbs, which are about four times as efficient as today s incandescent bulbs and last for about 10,000 hours, these bulbs do not fit many lamp fixtures and are not economical if used for short periods of time. As a result, a large group of buyers in several European countries have laid out requirements for an improved incandescent bulb and are now seeking to create a strong enough market pull to develop them. Another example is more energy-efficient copiers. The goal of this buyer group is to encourage manufacturers to develop copiers with very low energy use in stand-by mode as many offices today leave their copiers on for extended periods of time. Other requirements include automatic duplex copying, short receiving time and automatic adjustments to user behavior. Other product areas the Task has started to or plans to work in are electric motors, vending machines and clothes dryers.

The main goal of this Task is to stimulate and facilitate international procurement collaboration. Although the Task is selecting products which can be improved with better energy efficiency rates, its primary aim is to gain experience from collaborative procurement and not to identify products which have the highest potential for improved energy-efficiency. ■

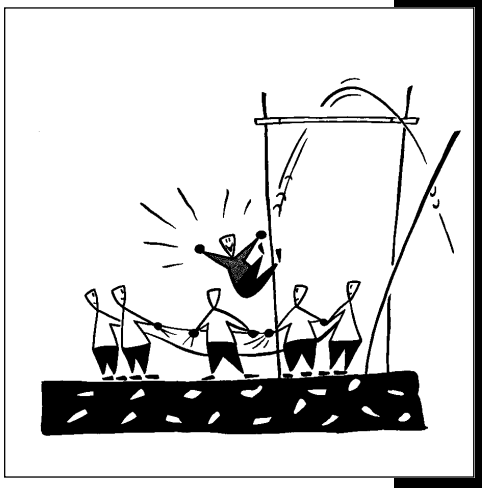
More information on Task III can be obtained from the Operating Agent, Hans Westling, Promandat AB, Sweden, e-mail: hans.westling@ promandat.se. (See IEA DSM website for address and fax.)



Setting Higher Goals
Purchasers and buyers collaborating in innovative buyer groups can create new criteria for energy efficiency.



Selecting Through Competition
Common criteria for environmental performance allows producers to compete for orders and ranking.



Landing Safely
For producers, strong buyer groups means lower investment risks.

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