



DSM *spotlight*

November 1997

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

New DSM Initiatives

The IEA DSM Programme is initiating new work on a range of demand-side management and energy efficiency topics. The following is a brief summary of the proposed Tasks (projects) presented at the Programme's September 1997 Executive Committee meeting. Once these initiatives are underway more detailed information will be provided in this newsletter and on the IEA DSM web site.

Demand Side Bidding Into Power Pools

Demand side bidding starts from the proposition that it would be worthwhile paying some customers to shed their electricity load, where the cost of doing so is offset by a consequent reduction in the price of generation. In other words, it is a way to use voluntary non-essential load reduction to reduce electricity demand.

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/>

Under this type of system, energy users agree to be prepared to reduce energy demand and then to actually reduce demand when requested. Although some countries, such as Norway, the UK and Australia, have established power pools there remains considerable uncertainty and debate in many countries regarding the methodologies for bidding, payments and validation so that the correct balance is made between additional generation construction, peak demand reduction and risk.

To help the development and acceptance of demand side bidding concepts, this Task proposes to evaluate the demand side bidding mechanisms potentially available or in use in different countries. The main Task objective is to find ways to make demand side bidding an acceptable mechanism in a competitive market. Task participants will examine and quantify different aspects of demand side bidding, such as types of customers and load, regulatory structures, payment methodologies, and load reduction validation mechanisms, and then conclude the project with a report on the status of demand side bidding and proposed new bidding mechanisms. Organizations that would be interested in this work include regulators, power pool users, energy users and governments.

Strategies for Developing an ESCO Infrastructure in Competitive Energy Markets

Energy service companies (ESCOs) can play a pivotal role in delivering cost-effective energy efficiency products and services in restructured energy markets. By their design, ESCOs create a crossover

between government-driven and business-driven DSM efforts and therefore have the ability to greatly increase the technical and economic potential of DSM.

The objective of this proposed Task is to identify and document the development of ESCOs and related quasi-public agency energy service organizations and to analyze their potential role in delivering DSM and energy efficiency in IEA Member countries. Task work is to focus on the organization and infrastructure building that is necessary to deliver DSM and energy efficiency to end-users by both governmental and regulatory entities. Task participants will review and document the past and current roles of ESCOs and quasi-public agencies, such as the UK's Energy Saving Trust and the Sustainable Energy Development Authority of New South Wales. Participants also will document ESCO experiences and define the factors contributing to their success or failure as well as the possible future roles and benefits of ESCOs in implementing energy efficiency programs. At the conclusion of the Task, a set of resource materials that include guidelines for governments and businesses to facilitate the establishment of ESCOs and an international directory of ESCOs will be developed. Also, a report on government policy issues concerning ESCOs will be published.

The role of DSM and Energy Efficiency in Least-Cost Greenhouse Gas Reduction Strategies and Global Sustainability

Since the Rio Conference in 1992, 165 countries have ratified the Framework

continued on page 4

Communication Technologies Work to Expand

The participants of IEA DSM Task II, Communications Technologies for Demand-Side Management, have proposed to expand the Task's scope of work into two new areas. Building on the data and results attained over the past three and a half years, Task participants will now focus their research on the development of customer gateway specification and strategies for the migration of narrowband to wideband communication media.

Customer Gateway Specification

In many countries, the energy supply sectors have established requirements for DSM, energy efficiency and related functions, but the growth of practical applications of these services has been limited. A major obstacle to the growth of DSM and energy efficiency services in customer markets is the absence of a

standardized, low cost customer gateway. To develop a low cost gateway, however, requires increasing the production volume of related hardware. And in order to increase production the following two issues must be addressed 1) the diversity of possible functions and available technologies and 2) the absence of clearly defined systems or standards for implementation.

DSM Task II experts will attempt to overcome this deadlock between the implementation costs and the production volume by defining preferred packages of functions, communication media and operational protocols. They also will recommend one or more forms of standard customer equipment to use. This work will complement the work being conducted by the international standards organizations.

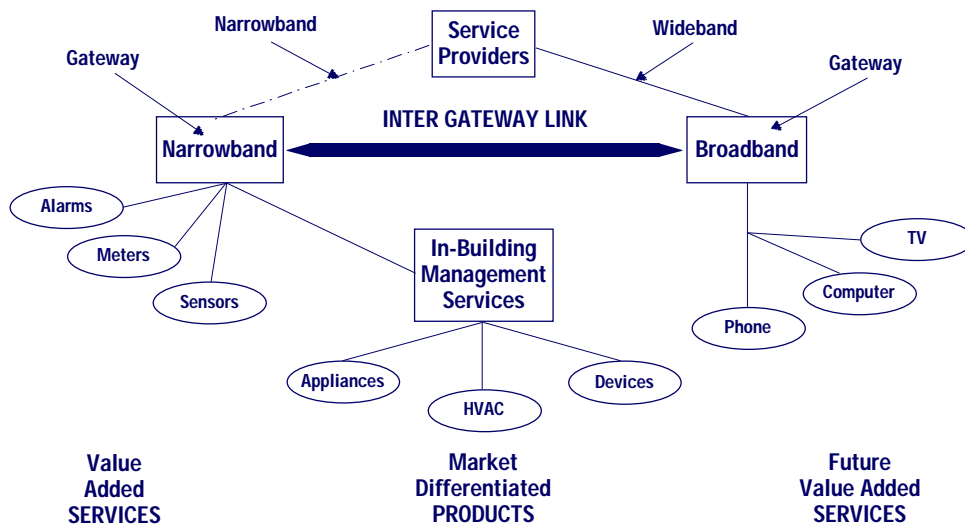
Migration from Narrowband to Wideband Communication Media

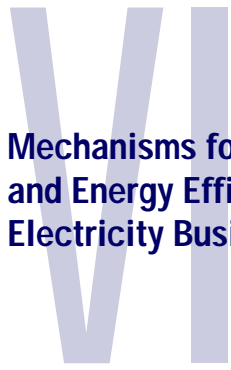
Another aspect to be considered in the transformation of traditional utility services to more customer focused businesses is the choice of communication channels—narrowband vs. wideband. The choice of communication media to meet customer and utility data exchanges for DSM have already been explored in depth in Task II. The studies conducted show that the majority of functions that utilities and customers demand can be met using narrowband communication channels. This includes functions such as Value Added Services—energy management, remote metering and end use energy consumption information on an itemized basis, planned and unplanned supply interruption details, and information on supply quality and availability.

Task II experts will 1) investigate and quantify the technical and financial benefits of both narrowband and wideband communication media applied to customer/utility functions and 2) determine the impact of different migration strategies on communication system design and hardware. Task experts will also evaluate the benefits of installing narrowband with migration to wideband as opposed to initially installing wideband. As this Task work gets underway more information will be available on the IEA DSM web site. ■

For information on this new work contact the Task II Operating Agent, Richard Formby, EA Technology Limited, United Kingdom, e-mail: jrf@eatl.co.uk. (See IEA DSM web site for address, telephone and fax numbers.)

Migration from Narrowband to Wideband Communication





Mechanisms for Promoting DSM and Energy Efficiency in Changing Electricity Businesses

The newest IEA DSM Task, *Mechanisms for Promoting DSM and Energy Efficiency in Changing Electricity Businesses*, focuses on practical mechanisms that electricity business, such as restructured electricity industries and competitive electricity markets, can use to promote the implementation of economically justifiable DSM and energy efficiency. Task experts are compiling and analyzing data on two types of mechanisms 1) policy and regulatory mechanisms implemented by governments and regulators to promote DSM and energy efficiency and 2) commercial return mechanisms implemented by electricity businesses to make a commercial return on DSM and energy efficiency programs.

Task experts have defined mechanisms as the means for facilitating the implementation of DSM and energy efficiency programs. These mechanisms are targeted at the organizations which develop and implement these programs. In contrast, DSM and energy efficiency programs are defined as the actions taken by electricity businesses and others. These programs are targeted at energy end-users and are designed to change the way in which energy is used and as a result achieve commercial outcomes for the program initiator. The following example illustrates the difference between these two terms:

Mechanism: A regulator allows electricity businesses to increase their electricity prices to cover the cost of providing rebates to customers who purchase energy efficient appliances.

Program: An electricity business provides cash rebates to customers who purchase energy efficient appliances.

The Task's primary goal is to compile objective factual information on existing DSM and energy efficiency mechanisms and then use this information to develop new mechanisms which will be useful in different electricity industry structures and electricity markets. Task experts, however, will not attempt to tell governments and industry regulators what they should do nor will they make comparisons between countries in relation to their relative success in promoting DSM and energy efficiency.

To date, Task VI work has concentrated on the development of a "mechanisms database" and the compilation of information common to all mechanisms within a country/region and information specific to each mechanism. Task experts are reviewing the mechanisms used in each country participating in the Task, the regulatory and commercial return mechanisms used in Brazil, India, Indonesia and the Phillipines, and the commercial return mechanisms

used by North American utilities. By early September 1997, a total of 27 mechanisms had been entered in the database creating a good starting point for the work in this Task.

Over the next six months, experts will select particular categories of mechanisms for further study and development. Criteria also will be developed for evaluating the effectiveness of the different mechanisms. And over the next two years, Task experts will identify the public policy implications of the mechanisms as well as identify and discuss the transitional issues for existing DSM programs arising from the changing electricity businesses.

To disseminate this important information, annual regional workshops will be held in Europe, North America and Asia Pacific, six workshops in all. Also, an information clearinghouse will be available on implemented DSM and energy efficiency mechanisms in changing electricity businesses and numerous reports and articles will be written.■

More information on Task VI can be obtained from the Operating Agent, David Crossley, Energy Futures Australia, e-mail: crossley@efa.com.au. (See IEA DSM web site for address, telephone and fax numbers.)

from page 1

Convention on Climate Change demonstrating genuine international commitment to reduce greenhouse gas emissions. As IEA member countries adopt greenhouse gas reduction targets and timetables, many countries will face significant challenges in achieving their goals. To help reach these goals, this Task will demonstrate how DSM and energy efficiency can be applied to long-term climate change strategies.

The proposed Task objective is to assess and demonstrate the role and capabilities of DSM and energy efficiency in achieving long-term greenhouse gas reduction and sustainable development outcomes. The Task will focus on efficient and effective electricity-based technologies. Task participants will compile and assess common methodologies (including life-cycle analysis) for analyzing different technologies in the participating countries. Several of the methodologies identified will then be tested in some participating countries. At the end of the Task, a report will be written which details and quantifies cost-effective DSM and energy efficiency opportunities to achieve greenhouse gas reduction targets and to meet longer term sustainable development objectives.

Market Transformation

Energy efficient products are available, but their numbers are limited. To increase product volume and the number of suppliers and buyers, the DSM Programme has proposed a Task focused on making lasting changes in the marketplace for energy efficient products.

The objective of the Task is to exchange experiences and ideas on cost efficient market transformation and market acceptance mechanisms. To achieve this objective, Task participants will coordinate activities for the procurement and promotion of energy efficient products in participating countries. Participants will identify successful mechanisms to 1) encourage consumers and professional buyers to purchase energy efficient products, 2) encourage manufacturers to develop, refine and adapt energy efficient products, 3) encourage retailers to promote energy efficient products, and 4) highlight the other benefits of these products, such as value-added, environmental sensitivity, improved comfort and image. In addition, they will identify products or product areas for joint consumer acceptance programs in participating countries. As this will be an international collaborative effort, the targeted products will have few climate and cultural differences. Products that could possibly be considered are lighting (domestic

or commercial), copiers and household appliances.

Industrial Audits

Energy audits can result in the greater use of energy conservation tools by industries. An audit can help identify approaches to reduce energy use, minimize waste and pollution, and increase productivity. The DSM Programme has proposed work to improve existing auditing programs and develop tools for the optimal design of new programs. The objectives of the Task are to 1) exchange information on audits and audit programs, 2) improve how audits are conducted and reviewed, and 3) improve the effectiveness of audit programs.

Task participants will concentrate their work in four areas. The first Task activity is to review and assess auditing programs to gain a better understanding of current programs and the key issues surrounding them. The second activity is to identify the best auditing models and analyze the different approaches used. The third activity is to develop an auditor's toolbox that would include recommended auditing techniques for plant managers or auditors. And, the last activity is to develop a system for exchanging the information compiled and developed during the Task.

The Newsletter of the IEA Demand-Side Management Programme

No. 3, November 1997

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 Kunz