

## IEA DSM Energy Technology Initiative Benefits and Results

### Benefits - Energy Efficiency & DSM

Energy efficiency is a top energy issue for many world leaders, but unfortunately, old habits are hard to break. To address this, the IEA Demand-Side Management Programme (IEA DSM) is dedicated to showing why energy efficiency and DSM should be the first choice in energy saving measures for...

#### Society

Because the use of DSM and EE reduces greenhouse gases, pollution, and negative health affects caused by burning fossil fuels.

#### Governments

Because they care about energy system reliability, energy security, climate change, and meeting Kyoto and other GHG reduction targets.

#### Utilities and Energy Companies

Because the use of DSM measures can help prevent blackouts, shave peak demands, defer the need for new sources of power – including generating facilities, power purchases, and transmission and distribution capacity additions – and make the electricity systems operate more reliably. It also allows them to offer special services to their customers.

#### Customers

Because DSM measures allow users to save money or receive financial incentives for reducing or deferring energy use and to minimize exposure to rolling blackouts.

### Results - IEA DSM

#### DSM University

Sharing the latest news from EE and DSM experts and from the DSM Programme thru webinars through a collaboration with the European Copper Institute and Leonardo Energy.

#### Databases

##### International Database on DSM

Developed *INDEEP (International Database on Energy Efficiency Programmes)*, a comprehensive international database in four languages, describing over 220 utility DSM programmes in 15 countries.

##### DSM and Climate Change

Developed two case study databases ) *DSM Projects Database*: detailed case studies of 17 DSM projects and 2) *Emission Reduction Projects Database*: description of 13 greenhouse gas emissions reduction projects.

##### Mechanisms for Promoting DSM and EE in Changing Electricity Businesses

Created *two databases* 1) 99 existing mechanisms (policy, regulatory, financial, and commercial) for promoting DSM and EE and 2) 25 new mechanisms for promoting DSM and EE.

##### Behaviour Change in DSM

Created an *Expert Platform*, which has over 225 DSM and behaviour change experts from 21 countries, to share films, presentations, events, reports and information pertaining to DSM Task 24.

#### Handbooks/Guidelines/Best Practices

##### Impact of DSM and EE on Kyoto's GHG Targets

Developed guidelines to help governments evaluate the impact of national and regional DSM and Energy Efficiency programmes for achieving Kyoto greenhouse gas targets.

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

Published a *Guidebook* on approaches and methodologies for analysis and planning of demand-side programmes and integration of DSM options in utility resource planning.

### Demand-Side Bidding

Produced *A Practical Guide to DSB*, which provides practical guidelines for both the electricity industry and customers on the rules for DSB and how to establish and participate in DSB schemes.

### Demand Response Resources

Created a *Guidebook* that provides a roadmap for assessing DR integration into the market. The book includes tools and can be used as a teaching guide for a DR professional certification programme.

### Role of Municipalities in a Liberalised System

Compiled *case studies of "best practices"* to serve as models for municipalities to effectively implement energy efficiency measures in a liberalised market.

### Market Mechanisms for White Certificate Trading

Produced a *Sourcebook* highlighting the experiences gained in the design and/or operation of White Certificate Programmes in France, Great Britain, Italy, Netherlands, and New South Wales, Australia.

### Integrated Resource Planning

Published a *Guidebook for Planners* on effective methods, techniques, and models for incorporating DSM into utility resource planning.

### Energy Portfolio Standards

Published *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* based on the analysis of 19 different energy efficiency obligation schemes implemented around the world.

### Network-Driven DSM

Surveyed network DSM projects around the world and prepared 44 case studies with conclusions on the DSM measures used.

### Smart Grids

Published a *Smart Grid guidance document* that describes a step-by-step approach to implementing Smart Grid initiatives that require action from households and small commercial/industrial businesses.

### Energy Savings Calculations

Published *Guidelines for Harmonised Energy Savings Calculations*, which present common elements to use on approaches, terminology and reporting, and *Roadmaps for Improved Harmonised Energy Savings Calculations*, which is an overview on recent developments.

### Communication Technologies for ESCOs

Defined a variety of innovative energy-related services to implement **change in DSM**.

### Integration of DSM, DG, RE Sources and Energy Storages

Published a *2-volume State-of-the-Art report* covering in detail 7 countries and includes a list of software tools and pilot/case studies.

### Behaviour Change in DSM

Created a list of to do's and not to do's for Behaviour Changers in each phase of a behavioural intervention (design, implementation, evaluation, (re)-iteration and dissemination).

### Market Responses

#### Communication Technologies for ESCOs

Defined a variety of innovative energy-related services to implement through cost-effective communication technologies to help ESCOs provide better services at lower costs. In addition, developed a prototype communications gateway, FlexGate, which overcomes many of the difficulties in providing wide-ranging, diverse services.

#### Cooperative Procurement

Created cooperative procurement buyer groups to help stimulate the development of innovative, energy efficient products. Recipients of the IEA DSM Award of Excellence—AEG clothes dryer that cut energy use in half, two ABB high efficiency electric motors that reduced losses by 20-40%, and copiers from Ricoh and Canon that reduced energy consumption by 70%.

#### Market Transformation

Conducted an international investigation on attitudes, habits, and the use of energy efficient products. Results provided invaluable information needed when talking about "selling" EE with multinational market actors and industry.

#### EE & DSM for Smaller Customers

Initiated nine pilot programmes to test different

marketing strategies. Results helped to better understand the successful marketing of energy efficient products and DSM measures for residential and small commercial/ industrial customers.

#### **Time-of-Use Pricing and Energy Use for Demand Management Delivery**

Developed recommendations on 1) methodologies, benefits and costs of providing disaggregated energy use feedback to smaller customers to motivate energy savings, 2) Time of Use Pricing for smaller customers to motivate demand profile shape change, and 3) demand side bidding for smaller customers.

#### **Competitive Energy Services**

Serving as a research and expert platform for national implementation activities. Holding Energy Service Expert Platform dissemination workshops (locations include Brussels, Helsinki, New Delhi, Deventer, Graz and Vienna).

#### **Smart Grids**

Assessed the impact of markets on customers' willingness to participate in Smart Grids.

#### **Behaviour Change in DSM**

Using "Storytelling" (the concept of shared learning) using new media, social networking and 'matchmaking' Behaviour Changers to delve into how to successfully use storytelling to bridge silos and translate into different Behaviour Changers' jargon.

