

DSM Spotlight

The Newsletter of the International Energy Agency Demand-Side Management Programme May 2002



Certificate Trading to Promote Energy Efficiency and DSM

A workshop on Energy Efficiency Certificate Trading was held as part of the April 2002 IEA DSM Executive Committee in Milan, Italy. This topic seemed appropriate for this meeting, as Italy is one of two countries developing an energy efficiency certificate (EEC) trading scheme. The workshop, organized by the IEA DSM Programme, IEA Secretariat and CESI of Italy, provided a forum to discuss the issues, challenges and opportunities of certificate trading as an instrument to promote energy efficiency and DSM as well as an opportunity to share experiences between practitioners engaged in the development and administration of such mechanisms.

The Workshop

The day opened with an overview of certificate trading as a policy mechanism, and the relationships between certificate trading and Kyoto obligations. In addition to covering the theory of certificate trading, this session illustrated the innovation of this policy mechanism and its strengths when compared to other approaches. In general, certificate trading offers a way to achieve a defined goal at the least economic cost, and is compatible with competitive energy markets since the certificates are traded in separate markets from energy markets and lend themselves to risk management techniques. As Mr. Baron of the IEA Energy & Environment Division remarked, "The mechanics of these so-called energy efficiency certificates is simple: suppliers or distributors of electricity (and gas) are required to meet an objective of energy savings in the domestic sector or else. An entity that is unable to meet its objective in full can turn to

another entity to fill the gap, through the purchase of energy efficiency certificates equivalent to that gap. Key in this process is of course the evaluation of saved energy, all the more so as these systems put a monetary value on achieved reductions."

The next workshop session focused on country experiences. It began with presentations from the two countries that are establishing the first energy efficiency certificate trading regimes – Italy and the United Kingdom. The objective of the Italian scheme is to create a certificate trading market as a means for electricity and gas utilities to meet strict 2002–2006 energy efficiency targets. While in the U.K., the trading of Energy Efficient Commitments is a new option being offered electricity suppliers to meet their efficiency targets in a long-standing policy to alleviate fuel poverty and reduce greenhouse gas emissions.

Presentations then were given on two established certificate trading schemes for renewable energy – the RECS (Renewable Energy Certificate Systems) 'platform' in Europe and the MRET (Mandatory Renewable Energy Target) in Australia. RECS is a company driven initiative to work on the harmonization of certificate systems in Europe. More than 150 companies from 14 countries are participating in this process. The role of the certificates is to facilitate the market for renewable energy, such as the voluntary green market, the labelling of electricity, and the import and export of electricity. Under the MRET, Australia has developed a national tradable

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

continued on page 2

renewable energy certificate system to encourage more renewable energy in electricity supplies. Both these schemes, although fairly new, are proving to be successful – they are meeting or exceeding the policy targets set for them, growing in scale and participants, and resolving technical issues at relatively low costs.

In the afternoon, panel sessions were held to discuss in greater detail the key design and implementation issues that must be resolved before creating certificate trading regimes for energy efficiency. The first issue addressed was whether energy efficient certificate trading should be done at all. As Mr. Harrington of the IEA Energy

Efficiency Policy Analysis Division pointed out, "if least-cost greenhouse gas abatement was the sole or main objective, it might be more preferable to use avoided CO₂ as the policy target and traded commodity. At the same time, however, there may be other policy objectives behind an efficiency scheme, such as energy security, promoting social welfare and developing clean energy industries." Participants agreed that although carbon is slowly being priced and traded internationally, there remains a need for other policy instruments to promote energy efficiency, particularly for end-users. Are energy efficiency certificates the answer? It is too early to tell. However, as Mr. Niermeijer, General Secretary of RECS stated, "the only way to see if EECs will work is to learn by doing."

Web sites with more information on topics covered during the workshop:

dsm.iea.org

Workshop documentation & forum

www.ofgem.gov.uk

U.K. certificate trading

www.autorita.energia.it

Italy certificate trading

www.orer.gov.au

www.rec-registry.com

Australia certificate trading

www.recs.org

RECS in Europe

Challenges of EEC

The panel discussions raised many points and challenges of an EEC trading scheme, some of which are noted below.

Market Framework:

- The trading process needs to be transparent and simple with clear rules and obligations. And, it should not be regulated.
- An independent entity should set the policy requirement rules.

- The time horizon should be long so that risks can be lowered.
- As diverse and as many entities as possible should be able to buy and sell certificates. This will encourage market innovation and competition, and reduce economic costs.
- To avoid high administrative costs, market 'intermediaries,' including ESCOs, should be encouraged. Their role would be to search out and aggregate efficiency opportunities into large enough bundles to trade efficiently.
- Banking of certificates should be permitted, but borrowing of certificates should be limited.

Technical Design Issues:

- The metric of measurement should address the policy objective, as the policy is the driver.
- There are techniques for determining the amount of energy efficiency associated with different technologies and applications, such as benchmarks.
- Consider using a fixed baseline perhaps based on a standardized project.
- Explore the possibility of creating an energy efficiency index of a building.
- The end-user ultimately makes the final decision and so should be allowed to obtain certificates.
- Implementation should focus on the design stage to avoid problems down the road.
- The scheme must be designed to create an incentive structure that is consistent with the wider energy market regulations.
- Fungibility: it is possible to make CO₂, renewable energy and energy efficiency certificate schemes work together, but some say why bother.
- Bilateral agreements, 'exchange rates' and 'jewel boxes' (bundled renewable and carbon values) are techniques for trading certificates internationally.
- The impact of existing energy subsidies needs to be addressed.

Implications for DSM

The workshop concluded with an open discussion of the day's topic. A topic that came up throughout the day was what are the implications and opportunities of energy efficiency certificate trading on DSM.

The implication for DSM is that, as Mr. Baron noted, "Demand-side management is motivated by the need to

continued on page 3

overcome market barriers that prevent end-users from being able to both increase their comfort and reduce their electricity and gas bills.

In energy efficiency certificate systems such as the ones implemented in Italy and the U.K., what is important is not so much the tradability of certificates, but the fact that DSM obligations are set, and that they will trigger a host of competing initiatives to achieve them, hopefully with the emergence of energy services companies. However, the regulatory authorities have an interest in finding out how much such programmes cost so as to plan for next steps and evaluate the efficiency of such a measure. The cost would be revealed by transactions of certificates among responsible entities. It is not clear that the systems will trigger much trading – and in fact the U.K. system introduced trading as a secondary flexibility mechanism, by no means central to the scheme. But observers should be careful not to confuse the means with the end.

What matters is that DSM programmes are successful through these measures: trading is only there to help at the margin, if significant cost differences arise between programme options. The competition among ESCOs and other companies to sell effective DSM programmes to distributors and suppliers may already go a long way to smooth these cost differences."

How to respond to this innovative concept is something for countries to not only consider, but also organizations such as the IEA and the IEA DSM Programme. Recognizing the importance of many new market developments as a means to ensure the efficient use of energy, the DSM Programme has structured its work accordingly. The Programme's work has covered policy, technology, and market measures. And, its contribution to certificate trading could be significant as the work of this international programme focuses on gathering and exchanging experiences, analysing key issues, and disseminating findings and results. ●

Evaluation Guidebook to be Produced

IEA DSM Task I, International Database on Demand-Side Management Technologies and Programmes, will turn its focus from the INDEEP database to preparing an evaluation guidebook for governmental and non-governmental energy efficiency programmes and utility run DSM programmes. With countries working to meet their Kyoto targets, it has become important for them to measure their efforts. This guidebook will provide a methodology to help countries evaluate the impact of their DSM and energy efficiency programmes on energy use and greenhouse gases (GHG), particularly CO₂ reductions. By focusing the methodology on the costs related to GHG emission reduction, uniform, or at least harmonized, information on these programmes can be prepared.

Conducting this work through the international framework of the IEA DSM Programme provides several advantages:

- Creation of a more robust basis for cross-country evaluation of national and regional programmes.
- Improved quality of national evaluations at a lower cost.
- Better input for IPPC country reports because they would use a common evaluation framework.

The work on developing a common framework will begin by studying evaluation reports and concepts in the participating countries, the EU and at least one developing country. Teams of national experts will judge these reports and concepts, and a draft framework will be developed. To stay abreast of current developments, the work within the UNFCCC, the working groups for the Kyoto Protocol and the IPCC will be taken into account. The first draft of the guidebook will be based on the information gathered from the participating countries as well as information from IPCC reports and standards, and flexible mechanisms such as the Joint Implementation and Clean Development Mechanism. The drafts will be discussed with the national experts and at international conferences and workshops. The finalized guidebook will be available for free in 2004. ●

For more information contact the Task I Operating Agent, Harry Vreuls of NOVEM, the Netherlands, e-mail: h.vreuls@novem.nl, fax: +31-46-4528-260, or visit the IEA DSM website.



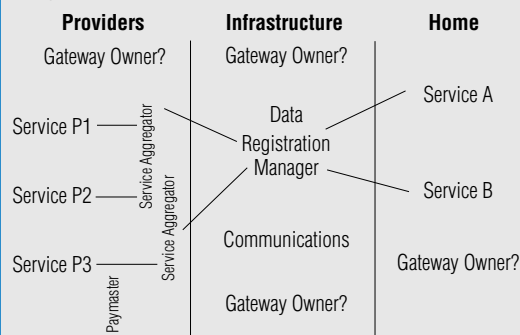
The screenshot shows the IEA DSM website homepage. At the top left is the IEA DSM logo. Below it is a navigation menu with links: Home, Participation, The Work, Links, Awards, Contact, Search, and Newsletter. The main content area features the text: "International Energy Agency Demand-Side Management Programme Promoting Energy Efficiency and Demand-Side Management for Global Sustainable Development and for Economic Prosperity". Below this is a paragraph: "In the context of Energy Efficiency (EE), the International Energy Agency Demand-Side Management Programme (IEA DSM) works to create and provide opportunities for Demand-Side Management (DSM), including load management and strategic investments. The objectives for DSM technologies to apply may include: providing services to meet customer needs efficiently, reducing peak demand, reducing energy system investment for gas and electricity customers, and reducing peak demand." At the bottom of the screenshot is the URL <http://dsm.iea.org> and the text: "Visit the IEA DSM web site for more information on Programme activities, publications and contact names."

Field Trial Work to Begin

The participants of IEA DSM Task II, Communications Technologies for Demand Side Management, have been working for the past eight years to improve the customer end use of energy and to assist with the local introduction of renewables and CHP electrical generation sources by using advances in communications. A business assessment, carried out as part of the Task work, showed that the provision of bundles of services through a common infrastructure was necessary in order to achieve financial viability. To do this, the participants have defined a field trial for bundled services. Now, they will implement these field trials in the U.K. and Finland (other DSM Member countries are welcome to participate).

Business Architectures

Proposed Business Infrastructure for Bundled Services



The objective of this new stage of work is to demonstrate the provision and benefits of bundled services using cost effective communications inside and outside customer premises. The benefits of the different services and communication infrastructures will be evaluated as will the customer gateways and links to individual applications to achieve energy saving goals.

A consortium of partners in the participating countries has been assembled. It includes communication manufacturers, building energy and services providers and

managers, utilities, and research and development organizations. The field trials will demonstrate the implementation, testing and evaluation of optimally bundled services, communication technologies and flexible gateways in real customer buildings. The tests are designed to show the most viable market and services from the perspectives of energy, customers, building owners' acceptance and business viability. It also will evaluate advanced communication technologies, such as satellite, cable, radio and ADSL, and strategies for providing cost-effective services as well as priming the markets through promotions, demonstrations, a website and publicity.

The Operating Agent, Mr. Formby states that this new stage of work is important because, "Provision of energy services using communications assists in reducing energy use and improving efficiency by means of improved costs, provision of information and energy management. These services provide the basis for dynamic, new competitive businesses, particularly via ESCOs. The proposed Field Trial of Bundled Services will demonstrate the energy savings, customer reactions, business viability, technology solutions, and data occur management arrangements. These are critical before wide-scale sell out of bundled sources is carried out." And, the benefits of international collaboration through the IEA DSM Programme include, shared international expertise, development collaboration, larger market understanding, and wider dissemination of results. ●

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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://dsm.iea.org>

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