

# Chairman's Report

## DSM turns Energy Efficiency into Big Business

The Stern Review,<sup>1</sup> that was delivered late October 2006, was more than just another report in a long line of evidence delivered on the changing climate that has made decision-makers in politics and industry more aware and more determined to actually take action on the issues. This review was both comprehensive and explicit in painting the full picture. Climate change is already here; it is developing faster than expected; the effects can be reduced but not avoided; no one is spared but some will be more severely hurt and earlier; if we act now and with determination we may with a low cost (1 % of GDP) prevent the enormous losses (more than 20 % of GDP) that will otherwise occur – says the review. And – it continues – those who act early will even be winners in the industrial change that is needed when energy efficiency and renewable energy will turn into BIG business.

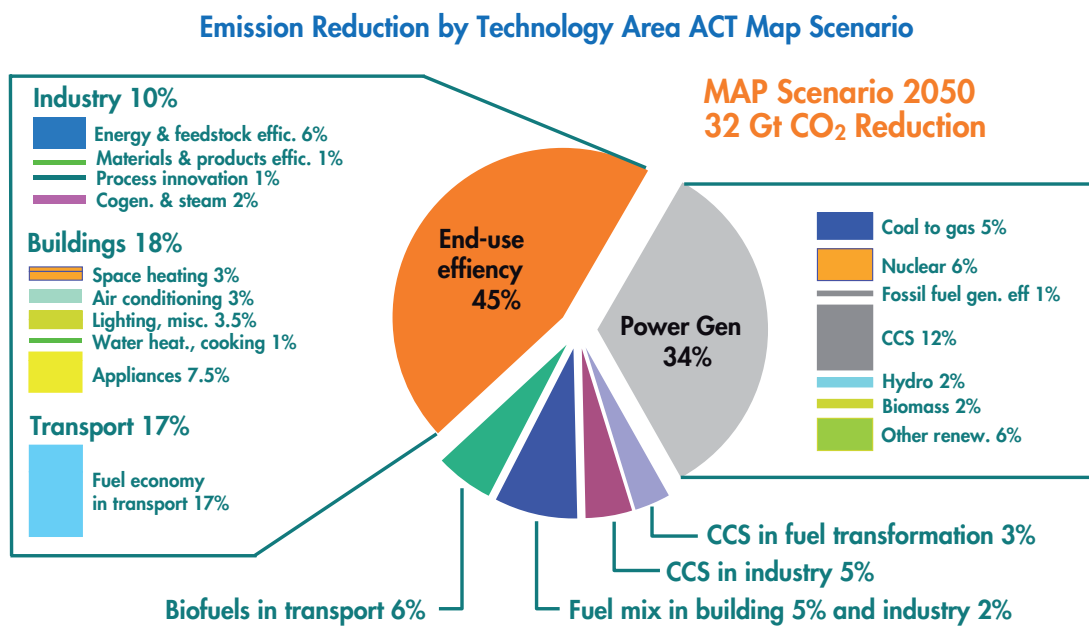
Boosting the markets for Energy Efficiency and Renewable Energy requires Demand Side Management in the broad sense of the word. In particular, delivery of energy efficiency has to be recognised as a branch of business in its own right even if the delivery could be in many different forms like insulation, lighting, heating, cooling, monitoring, services etc. and even if the delivery comes in small packages at different times. Just as renewable energy systems have identities of their own related to the sort of energy or technology they represent (biomass, solar, wind etc.) it is necessary to give a brand and an identity to energy efficiency, an identity that enables this branch to act more consistently. It has to do so because:

- The potential is enormous
- The potential is dispersed in small everyday opportunities that are hard to recognise
- The delivery has to be more organised for the potential to be harvested

The IEA secretariat has delivered reports that underline the opportunities for business. The Energy Technology Perspective, ETP, shows how energy efficiency improvements are the biggest single resource to reduce Greenhouse Gas Emissions, by some 40–50 %, see figure 1, which is far more than any measure on the supply side. The World Energy Outlook, WEO, continues with the statement that investments with 1 dollar in energy efficiency saves 2 dollars in energy supply (generation, transmission and distribution) and at the same time saves the fuel for that generation.

<sup>1</sup> <[http://www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/stern\\_review\\_report.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm)>

Figure 1: The IEA Energy Technology Perspective (ETP) Scenario for reduction of GHG-emissions.



**Improved end-use energy efficiency is the most important contributor to reduced emissions**

The prescription that the Stern Review gives to the world deals with three measures:

- Carbon Pricing that provides incentives to invest in low-carbon technologies
- Development of a range of low-carbon technologies
- Removal of barriers for a behavioural change to encourage take-up of opportunities for energy efficiency

*“Greater International co-operation is necessary to accelerate technological innovation and diffusion that reduce the cost of mitigation”, says the Review.*

## The Efficiency Business and the IEA DSM Programme

All these aspects are indeed familiar to the DSM-Programme that has worked on both measures and technologies to make incentives work, and on how the technologies can be adapted to appeal to the user’s way of acting.

The Review therefore carries a strong signal that the activities in the IEA DSM-Programme are exactly the right ones and that it is now up to us, with the other members of the IEA-family, to intensify our efforts and make our products useful and used.

The recent contacts we have had with new countries interested in joining the IEA DSM Programme are therefore important and crucial. South Africa and India have both important experiences of their own from DSM in a context of fast-growing economies with vulnerable systems where DSM, as a fast-deployed resource, is very interesting opportunity. The discussions we have with many other new countries, among them China, could also develop in a way that might be more useful than only the short-term tasks indicate. The Stern Review anticipates that the economies that are first to embrace the technological change will get an advantage. And the countries that are on the threshold to join the DSM-Programme are exactly such – fast-growing and innovative!

The work in the DSM-Programme has focused both on the *load-shape issues*, to adapt the load to the capacity of the systems, and on the *load-level issues*, to adapt the systems to the environmental requirements. During the years of existence of the programme there has been a shift in focus from level-issues to shape-issues and that now seems to shift back because of the climate concerns.

## **The DSM experiences and challenges**

The load-shape tasks in the DSM-Programme deal with the technologies, the user behaviour and the governance of the systems. All over the world there have been system black-outs and close calls that could have been prevented or at least alleviated by a more deliberate use of DSM-measures. Unfortunately much of the attention to these issues has been focused on partial problems such as the need to reinforce transmission and/or to build more generation. Even on the demand side the focus has been simplistic, for example advocating smart meters or pricing systems to give incentives. But the answer to the problems is not that simple.

No doubt more transmission and more generation could solve the capacity problems but it would just create new problems in term of land-use, waste and emissions. If the basic problem is that the gap between the capacity and the load is too narrow, it can be solved also by reduction of the load at least in times of constraint. For this reason, as is stated in the Programme's strategy, the DSM-option should be the first concern for decision makers when they consider how they should arrive at a secure and sustainable energy system

The load-level tasks were more dominant in the past but need to make a comeback taking into account that the incentive systems have changed or are changing in most countries of the world. The introduction of international incentives within the framework of the Kyoto agreement gives new opportunities and new challenges. It has been recorded that only a minor part of the CDM-projects deal with energy efficiency and that the lion's share deal with supply of renewable energy. Or, put differently, many climate-related projects feed an inflated demand with a scarce resource. A more consistent DSM-approach would have avoided such problems.

The two cases mentioned show how DSM-measures provide a framework to enable companies and governments to capture the huge potentials there are for energy efficiency improvement. The new European Union directive on Energy Services is based on this way of thinking big, i.e. think DSM. It is a pity that the acronym is still shunned, but on the other hand it does not matter if the cat is black or white or what name it has as long as it catches the rat.

DSM does not only have the inherent characteristic to be useful to reduce the effects of climate change. It also has the opportunity to assist countries in their development of standards of living and of the industry for the future – the energy efficiency industry!

The IEA DSM Programme provides tools and information on a wide range of energy efficiency and demand reduction issues. Key areas are:

- Integrating DSM and EE into restructured electricity industries
- Giving utilities and ESCOs the necessary tools to utilize DSM
- Marketing DSM technology to large and small customers
- Innovative approaches to DSM
- Utilizing DSM to shave peak power demand
- Creating data bases on national DSM programs and various DSM mechanisms
- Practical guidelines for demand-side bidding

To better serve stakeholders, the IEA DSM Programme work is divided into two clusters:

**Load shape cluster** – This cluster includes projects (Tasks) that seek to impact the shape of the energy load curve over periods of minutes to months. The load curve is flattened by activities or incentives that encourage users to shift or defer energy use during periods of peak demand or in an emergency.

Load shaping activities are of greatest interest to market operators, system operators, distribution network operators, policy-makers and regulators, traders/suppliers, and customers who have an economic benefit from participating in DSM programs.

**Load level cluster** – This cluster includes Tasks that seek to shift the load curve to lower demand levels or shift loads from one energy source to another. This is accomplished by using energy-efficient products and various energy-reduction efforts.

Load-leveling activities are of greatest interest to governments, energy agencies, Energy Service Companies (ESCOs), and regulators, as well as to customers when an economic benefit is offered.