

Annual Report 2008

Implementing Agreement for a Co-operative Programme on Efficient Electrical End-Use Equipment (4E)



Chair's Statement

2008 has been an important year for energy efficiency. Not only has the profile of energy efficiency never been higher, but there is growing recognition that for national energy policies to tackle the challenges ahead energy efficiency must play a central role, as noted by G8 Ministers meeting in Japan:

"Promotion of energy efficiency in both energy supply and demand chains in a cost-effective manner is a necessary prerequisite for addressing energy security and climate change while supporting economic growth."



It is no coincidence that 2008 has also seen the 4E Implementing Agreement graduate from a concept first discussed during 2007 to an established body, ready to fill a missing link in international co-operation on energy efficiency policies.

Providing a forum for countries to work together in supporting policy development as well as sharing best practice information, the need for 4E has been evident from the speed in which we are moving forward. Already we have nine participating countries spanning Asia, Australasia, Europe and North America, a working Annex on Motor Systems and several more in the pipeline.

Clearly there are many challenges ahead, not least to demonstrate that 4E provides an effective mechanism to support the policy aspirations of its participants. An important part of this will be to establish linkages with many of the existing players in the energy efficiency arena so that we can add value, rather than duplicate efforts. In addition, during 2009 we will be seeking participants from outside the network of IEA member countries to include those where the majority of electrical appliances are made.

The support that has been shown for 4E to date is highly encouraging, and provides excellent momentum for the tasks ahead. The prospect is exciting and I look forward to working with all participants to ensure that 4E becomes an important and valued contributor to the development of energy efficiency policies for electrical appliances.

Hans-Paul Sedirius

Chairman, 4E

March 2009

Key E4 milestones for 2008

February

Approval of IEA CERT Committee

March

Approval of IEA Governing Board

Formal establishment of 4E

The Netherlands, Denmark join 4E

Australia, Austria, Korea and Switzerland join 4E

April

France and USA joins 4E

Establishment of 4E Website and major communication tool

1st ExCo meeting, Paris

Appointment of Ture Hammer as Interim Chair and Hans-Paul Siderius as Vice-chair

June

Proposed Motor System Annex meeting, Zurich

August

Appointment of 4E Operating Agent, Mark Ellis and Associates

October

Canada, Japan, South Africa and the United Kingdom invited to join 4E

Canada joins 4E

2nd ExCo meeting, Washington

Appointment of Hans-Paul Siderius (Netherlands) as 4E Chair and Shane Holt (Australia) as Vice-chair

ExCo approval of Motor Systems Annex (EMSA)

Conrad Brunner appointed Operating Agent for the EMSA.

The context for 4E

An increasing number of international research studies confirm that energy efficiency presents the largest and one of the lowest-cost options for reducing carbon dioxide (CO₂) emissions. Energy efficiency can also play a major role towards increasing energy security. The IEA's *World Energy Outlook's Alternative Policy Scenario* identifies energy efficiency as contributing 80% of avoided CO₂ emissions globally. Similar conclusions are drawn in *Energy Technology Perspectives 2006*, which identifies energy efficiency gains as 'the first priority for a more sustainable energy future; a message which is echoed in the Stern Review: 'The Economics of Climate Change'¹.

IEA sector-specific studies such as *Cool Appliances: Policy Strategies for Energy Efficient Homes* and more recently *Light's Labour's Lost: Policies for Energy-Efficient Lighting* show that significant reductions can be made in the short-term through the wide-scale adoption of commercially available end-use technologies. Further savings can be realised by improvements to existing technologies, as discussed in *Energy Technology Perspectives 2006*. Optimising the use of appliances provides additional opportunities.

Although the uptake of end-use efficient technologies is currently hampered by the presence of multiple barriers, several countries have implemented policies which have been highly effective in raising the market share of the most efficient equipment and appliances. Better understanding how these policies have worked and the issues surrounding implementation is essential for the development of a more wide-scale policy response.

Currently, end-use Implementing Agreements largely examine new technologies but none of the Implementing Agreements provide a particular focus on appliances and equipment, despite the fact that household appliances contribute 30% of all electricity consumed in OECD countries and produce 21% of all energy-related CO₂ emissions. By 2020 it is estimated that appliance electricity consumption will have grown by 25% compared to current levels (OECD/IEA, 2003).

By addressing power demand in appliances, office and consumer electronics, and lighting, as well as building design and operations, the Task Force strives to significantly improve energy efficiency, especially in the residential and commercial sectors.

Partners will address appliance efficiency by developing harmonized appliance test procedures and promoting consumer awareness and government procurement programs. It will also work to reduce waste standby or "idle" power consumption.

Asia Pacific Partnership: Executive Summary of Task Force Action Plans

To encourage co-ordination of international policies on labelling, standard setting and testing procedures for energy efficiency appliances, we will:

- (a) promote the application of the IEA's 1 Watt Initiative;*
- (b) ask the IEA to undertake a study to review existing global appliance standards and codes, building on its existing capacity on energy efficiency in appliances;*
- (c) extend the use of clear and consistent labelling to raise consumer awareness of energy consumption of appliances;*
- (d) work nationally and in co-operation with other countries to seek improvements in the efficiency and environmental performance of products in priority sectors;*

and

- (e) explore the potential to co-ordinate standards with other countries, building on the examples provided by existing international bodies.*

Gleneagles Plan of Action, 2005

Many appliances are traded internationally, which provides consumers access to the best goods while providing manufacturers access to a wider market. As a result, most policy makers agree that increasing international alignment will be necessary to continue the growth of new markets for efficient products. This will also help to address concerns

¹ http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

that, as the market share of efficient products increase in some countries, less efficient products may be 'dumped' in countries without strong policies.

A growing understanding of these issues has resulted in increasing international dialogue – through the IEA, the G8, the APP6 initiative and the CSD Marrakech accord. These groups have the potential to encourage the adoption of far reaching energy efficiency policies amongst participating countries on a wide range of

In particular, Europe could be actively engaged in establishing and adopting standards on energy efficiency that can be internationally compatible. A further reason is the contribution energy efficiency can make to economic and social development.

European Commission Green Paper on Energy Efficiency

technologies and applications. While this high-level policy direction is vitally important, ultimately the abilities of countries to develop effective national responses rely upon the regular sharing of information relating to a range of technical as well as policy issues. In this regard, monitoring and sharing information on trends in performance, and establishing benchmarks for "good" products, are important activities which can best be done collectively by a group of countries.

In the light of this, Peter Cunz, Chairman of the IEA End-Use Working Party (EUWP) first proposed a new Implementing Agreement at the end of 2006 to fill the gap in international co-ordinated work on efficient end-use appliances by providing a forum for countries to share expertise, develop their understanding of the technologies and issues involved.

In March 2007, a Definition Workshop was held to discuss the proposal and gauge the level of support from potential participants. The 21 interested parties that took part agreed to proceed with developing a new Implementing Agreement, and in July 2007 an *Interim ExCo* meeting nominated members and elected interim chair persons from Denmark and Netherlands.

A second Interim ExCo meeting held in November 2007 considered the proposed 4E scope of work, and identified the first annexes (research projects) to be undertaken by 4E.

4E Objectives

The countries involved in the formation of 4E have agreed to work together in pursuit of the following objectives:

4E will undertake international efforts to promote adoption of government policies to encourage the use of efficient electrical end-use equipment. 4E will provide a forum for countries and other stakeholders to:

- *share expertise and develop their understanding of end-use equipment and policies; and*
- *facilitate coordination of international approaches in the area of efficient end-use equipment.*

This will be achieved through:

- *collecting and sharing information on end-use equipment technologies and programmes; and*
- *pooling resources for agreed projects and tasks.*

4E Website: www.iea-4e.org

The 4E dedicated website provides a visible face to the work of 4E and platform for communication between participants. Designed by the Danish firm, Spang Media, the site contains is the main 4E portal and provides a gateway to Annex websites.

Other features of the website include:

- Featured front page articles on activities and accomplishments of the 4E IA
- Automatic listing of News & Events from Annex website feeds
- Background information and documents



4E Annexes

The Annexes form the core of 4E activities in advancing energy efficiency, where participants undertake an agreed set of tasks focussed on a particular topic. During 2008, the Annex on Electric Motor Systems (EMSA), led by Switzerland, became the first 4E Annex to gain approval.

Further Annexes are under development, including:

- Mapping and Benchmarking (lead country: United Kingdom)
- Standby Power (lead country: Australia)
- Set-top Boxes (lead country: United States)
- Lighting (lead country: France)

Several of these proposed Annexes are likely to get underway during 2009.

4E - Electric Motor Systems Annex EMSA

Electric motor systems use 40% of global electricity. They drive pumps, fans, compressors and traction systems in industry, infrastructure and buildings. With using best practice energy efficiency can be improved by 20% to 30% on average. Most improvements have a pay back time of one to three 3 years. This means a big potential impact on reduction of global greenhouse gas emissions.

In order to gain fast and efficient access to the large potential of energy efficiency improvements of motor systems the 4E Electric Motor Systems Annex EMSA is organized in eight tasks that will each contribute to a coordinated effort towards rapid transformation of global markets by:

- Spreading good practice,
- New improved technology,
- Positive policy experiences.

The eight tasks include:

- A Implementation support & outreach
- B Technical guide for motor systems
- C Testing centers
- D Instruments for coherent motor policy (start later)
- E Training & capacity building
- F Energy management in industry
- G New motor technologies
- H Total motor systems integration (start later)

Switzerland is the lead country for EMSA with the initial participants comprising Australia, Austria, Denmark, the Netherlands, Switzerland and the United Kingdom.

Although only getting underway in late 2008, EMSA has already begun work:

- At a side event of the *Motor Summit'08*, held in Zurich Switzerland on 24 November 2008, the EMSA Task leaders informed a wider audience on their program starting in 2009.
- The first edition of an *Electric Motor MEPS Guide* has been produced and made available to explain steps towards mandatory energy performance standards.

During 2009, the organisation *Standards for Energy Efficiency of Electric Motor Systems* (SEEEM) will be merged with the 4E Motor Systems Annex.

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