

What has the Annex Achieved – August 2011

The Standby Power Annex held its first meeting in 2009 with the ambition of running a dynamic and expertly informed programme, aimed at tackling the issues associated with Standby Power. With a broad, international membership, the Annex aimed to facilitate the coordination and alignment of approaches over an agreed 3 year period. With phase one of the Annex drawing to a close, it is important to reflect and evaluate what has been achieved to date and determine if the workings and processes of the Annex have provided a useful mechanism to drive positive change.

Summary of Major Achievements of the Standby Annex 2009-2011

Alignment of data collection methodology – provides policy makers with baseline information and a tool which can assist in the design, monitoring and evaluation of different policy approaches.

Horizontal Policy Framework – provides policy makers with a framework to develop a successful horizontal standby power policy.

Evaluation Framework – provides an instrument to design an evaluation approach which will not only be more transparent but enable different policy approaches to be compared and contrasted.

Network Standby Research – provides a comprehensive overview of what network standby is, the size of the problem, opportunities for reducing wasted energy, and steps required to move towards developing policy options to tackle the issue.

Membership

The Annex membership has grown over time now consisting of nine members: Australia, Austria, Canada, Denmark, Korea, Netherlands, Sweden, Switzerland and the UK. It is a healthy sign that the most recent membership joined in January 2011. The membership has had four face-to-face meetings over the past two years and several teleconferences.

Annex Objectives

The objective of the Annex was: *“To monitor and report the extent of, and changes in, energy consumption by electrical appliances in low-power modes (standby power); and support the development of policies which seek to minimise excessive energy consumption by products in standby power modes.”* The methods by which this has been achieved are detailed below.

Monitor & Report - Achievement Highlights:

- Appliance standby store survey measurement guide
- Standby data excel recording sheet
- Alignment of measurement methodologies with APP and Intelligent Energy Europe Standby and Off-Mode Energy Losses In New Appliances Measured in Shops (SELINA) project
- Data sharing agreement among members and with APP and IEE SELINA project
- Access to data for approximately 10,000 products
- A variety of studies and web links analysing the results and outcomes of these data collections have been made available on the Annex website.
- [Estimating Stock Average Low Power Mode Attributes - Methodology](#)
- [Estimate of the Energy Wasted By Network Connected Equipment](#)

The Annex members approved publication and maintenance of a methodology to undertake standby measurements in the field and agreed on the core list of products to be measured. The Annex was able to work with APP and SELINA to ensure the same methodology was used by all 3 groups and that there was a data sharing agreement in place, enabling the annex to compare and share data from a larger pool. The annex now has access to data for nearly 10,000 products across 21 countries.

The report [Estimating Stock Average Low Power Mode Attributes](#) commissioned by the Annex outlines an approach that accurately estimates low power mode trends and will facilitate inter-country comparisons. The base data and proposed stock model can be used as a common basis and analysis tool for the evaluation of program impacts.

Network standby is becoming a major issue for policy makers. As such the Annex in conjunction with APP commissioned a report to estimate the amount of energy wasted by networked products. This report has estimated energy wasted globally at somewhere between 85 TWh and 275 TWh depending on the energy saving assumptions applied. The estimation provided by this work highlights that while current policy solutions are tackling simple standby, there are plenty of new challenges ahead.

The work the Annex has undertaken in developing tools and collecting data to enable the reporting and monitoring of standby power has significantly improved market knowledge. This work provides individual countries with the ability of to gather, analyse and share market data on standby power. The overall knowledge base has been greatly improved for decision making and enabling valid international comparisons so the rate of improvement or deterioration in standby power use can be qualified within and between countries against the backdrop of the policies employed.

Support Policy Development - Achievement Highlights

Horizontal Policy Approach

[Provision of a Horizontal Policy Approach to Standby Power](#)

Evaluation

- Evaluation Methodology to Assess Standby Power Report
- [Exchange of reports on the Annex website](#)

Network Standby

- Network Standby Experts Workshop Paris
- [Standby Power and Low Energy Networks: Issues and Directions report](#)
- [Estimate of the Energy Wasted by Network Connected Equipment report](#)
- [List of Technical Standards Relevant to Measuring and Establishing Performance Requirements for Equipment Connected to Energy-Using Networks](#)
- [Cutting Edge Technology Feasibility Study](#)
- [Best Practice Examples of Low Energy Product Designs](#)
- [Power Scaling in Proportion to Data Processing](#)
- [Exploration of Network Power Consumption by Mode in Three Targeted Product Types](#)

Common Policy Framework

- [APP/SELINA/4E International Standby Workshop Vienna](#)
- [APEC/4E/APP Standby Power Conference Tokyo](#)

The Annex made a commitment to support the development of policies in the area of standby power. The annex has worked toward this goal across four areas:

Horizontal Policy Approach

The Annex commissioned a report investigating a horizontal policy approach to standby power. The report argues that by “*addressing standby power modes horizontally (across all products) and internationally in a harmonised way, policy makers will find it easier and less costly to establish their policies and manufacturers will find it easier and less costly to design and produce efficient, compliant products.*” The report provides a framework for developing horizontal policy along with steps required to allow the implementation of this approach in a harmonised manner. The recommended approach is “*argued to be most efficient in the long term, although somewhat burdensome to establish in the short term.*” The result of this study is a framework that individual jurisdictions can tap into to assist in the design of a horizontal policy approach, along with a plan that would see greater harmonisation by establishing a set of quantitative values (global functional adders) that policy makers could access.

Evaluation

An Evaluation Methodology to Assess Standby Power was commissioned by the Annex to provide policy makers with a comprehensive approach to evaluate standby policy impacts. The report lays out a 10 step process, which indicates the value of each step and highlights the challenges faced in evaluating such a complex area. Policy makers can use the report to assess the value of collecting a range of different types of information that can be used to assess policy and sets out the steps to design an appropriate evaluation approach for their individual policy. The promotion of this evaluation methodology will allow for more transparent outcomes and for programmes to be compared and contrasted with each other. It emphasises that policy implementation is a dynamic activity and monitoring progress throughout the implementation phase is very important in terms of fine tuning and optimisation and to ensure that sufficient data is collected for rigorous ex-post evaluation. Routine evaluation will support the development of successful

policies into the future by improving the understanding of which elements of existing policies are successful.

Network Standby

Network standby is a topic that has become of increasing interest and importance over the life of the Annex. In 2009 very little was known or understood about network standby, however the increasing awareness raised by research undertaken by the Annex, and other work, such as the [Networked standby DG ENER Lot 26 study](#), has seen the issue of wasted energy in networked products brought to the fore. The work the annex has undertaken in supporting policy development in this area includes several fact finding studies to understand the issues associated with networked products; the opportunities to make energy savings and what we need to learn in order to develop good policy options.

The *Standby Power and Low Energy Networks: Issues and Directions* report established the key issues surrounding networked products, and mapped out where more work was required if sound policy in this area was to be developed. In collaboration with APP, the Annex was able to organise for new research to be undertaken to fill some of those knowledge gaps. The reports fell into two categories; the first looked at what processes could be established to assist policy makers implement a regulation. These included an investigation into relevant standards that could be referenced as well as looking at the actual practical rules for communication in networks to investigate if the design of those systems could be better organised to manage energy more effectively. A critical element will be to ensure that networks are designed to enable the required functionality to support demand response and energy management initiatives, as a common network system could cover both activities. The second group of reports investigated various technologies both at product and component level to assess what is feasible in terms of what are reasonable expectations of performance in networked products within designs that are present in the market today. These reports found that there is great potential for energy savings in networked products using existing knowledge and technology. In a general sense, the studies found that mobile products generally had very low energy architecture and excellent power management, in order to maximise battery life. Mains powered products were generally much higher energy with only minimal power management for comparable tasks – even though low energy technologies exist, there is no direct incentive or reward for their implementation in mains powered products. This information allows policy makers to be confident that there is scope for considerable improvement in the field of networked products and that the design of appropriate policy will promote the uptake of these more efficient technologies.

Common Policy Framework

To date, the Annex has sought to encourage commitment to and the promotion of common policy goals via international workshops in Vienna and Tokyo. These two events included participants from government, industry and technical experts. Both events developed recommendations for the participants to share within their own jurisdictions. The recommendations encouraged deeper cooperation, including a move toward alignment of policy approaches and encouraged the use of common measurement and evaluation approaches to support policy development and implementation.

Integration and coordination:

- Liaison with APP and IEE SELINA project
- APP/SELINA/4E International Standby Workshop Vienna
- Network Standby Experts Workshop Paris
- APEC/4E/APP Standby Power Conference Tokyo
- Meeting with EC LOT 26 Network Standby Study consultants; Brussels
- Cooperation with the IEA network Standby project and SEAD (Super-Efficient Appliance Deployment)

The Annex has worked hard to build strong relationships both among the member countries and with external organisations. The Annex has been able to work cooperatively and undertake projects collaboratively with groups like the APP, the Asia Pacific Economic Cooperation (APEC), and the European Lot 26 consultants. The Annex has begun establishing a working relationship with the IEA energy efficiency unit's network standby project agreeing to share information and work collaboratively. The Annex has also taken the initial steps to reach out to the newly formed SEAD network standby collaboration group. This cooperation is not only important in terms of information exchange but prevents duplication of projects and tasks avoiding the wasteful allocation of resources. Continuation of the 4E Standby Annex will enable further work to be undertaken while offering to complement and support these new international ventures.