



INTERNATIONAL WHITEGOODS WORKSHOP

Melbourne, 16-17 October 2013

MEETING SUMMARY

Overview

E3 and the Department of Industry held an International Whitegoods Forum in Port Melbourne in October 2013 over 2 days. Around 60 participants, representing all stakeholder interests such as industry, consumer groups, test laboratories, efficiency advocates and government officials from Australia and New Zealand attended the workshop over 2 days, which examined a wide range of energy efficiency issues related to major whitegoods. The workshop had significant contributions from a number of renowned international experts in the field of energy efficiency.

The workshop had a strong international theme and explored issues related to energy policy and programs, international comparisons of product performance and options for a long term policy framework. The workshop also explored regulatory proposals for whitegoods, with a particular emphasis on moving Australia and New Zealand onto the use of international test methods and adopting and adapting policy approaches of our major trading partners where applicable. It provided an opportunity for industry to provide input and feedback to government on key issues.

The main themes covered by the workshop were:

- Methodologies for evaluation of energy program impacts and approaches to setting long term energy efficiency targets for whitegoods
- Benchmarking the energy efficiency of Australian products in an international context
- Transition from local test methods to international test methods in the Australia and New Zealand context
- Efforts and success in the development of a new international test method for household refrigerators
- Energy labelling and MEPS changes to be bundled with the test method change
- Updates on a range of policy issues from Europe, USA and Japan.

The conference agenda is included as Attachment A. Most presentations from the meeting are available from the E3 website at www.energyrating.gov.au.

Summary of Discussions

Day 1

Ray Prowse (DOI) commenced proceedings with a brief outline of the day's activities.

Alan Pears (RMIT) provided the audience with a colourful potted history of the development of the Energy Labelling program in Australia since the late 1970s. Alan explained the rationale behind the schemes' introduction, the development process for the label design and the benefits that have flowed from the scheme. Along the way Alan provided some interesting anecdotes and observations related to energy efficiency. Alan concluded with some innovative concepts of how the scheme could (and should) be expanded and improved to capture a much wider range of products, in both the consumer and the commercial markets. Alan also observed a need for more stringent MEPS provisions, R&D to develop "super efficient" products, improved communication efforts by government and enhanced enforcement and border controls.

Alan was followed by Shane Holt (DOI) who gave a brief outline of the current Australian policy settings, emphasising the direction towards the use of international standards and benchmarks. He set the scene for the wide range of presentations that were to follow during the workshop.

Chris Evans of the UK examined the European regulatory system, which covers a wide range of product type and sets both energy labelling and Minimum Energy Performance Standards (MEPS) for all major whitegoods. There is a long term timetable for review and updating of all regulatory requirements. The direction of regulation is generally set by the preparatory study. Following this there are many formal stages in the regulatory process prior to this release of the final delegated regulation. It was noted that there are two stages of the process where government officials can change the program direction (and where some external influence can be applied).

Robert Van Buskirk of the USA provided a thorough overview of the US regulatory system, which is highly structured and somewhat prescriptive in terms of factors to be considered and the approach to assessing and evaluating regulatory proposals. US regulators are obliged to consider a wide range of market, engineering and economic data in their assessments. Key assessment criteria are consumer life cycle cost, manufacturer impacts and employment impacts. Regulatory proposals are resource intensive and typically take 3 years to prepare, with a further 3 to 5 years for implementation.

Lloyd Harrington of Australia provided a brief history of product regulation in Australia. It was noted that generally regulation in Australia is usually done more quickly, is technically competent and there is close collaboration with industry. There has traditionally been a strong verification and enforcement element to the Australian system and many of the approaches adopted draw on international experience. Shortcomings of the local system are that there is sometimes resistance to regulatory proposals from other parts of government and that operating within a less structured system means that progress relies on the work of government officials.

Mark Ellis of MEA focussed on work by 4E towards efforts in the field of international standardisation. The potential benefits of aligning such things as product definitions, test methods, efficiency metrics and performance classes were noted but it was explained that Governments are often reluctant to cede elements of national policy to processes they cannot influence. Mark then outlined the priorities of the 4E project:

- Greater presence through strategic/advisory committees
- Development of a 'best practice energy efficiency standard'
- Clarity of government 'messages' for each product
- Co-ordination of representation on technical committees
- Outreach to IEA/ISO (SEAD project)

The talk concluded with a list of product priorities under consideration.

Lloyd Harrington (EES) then detailed the SEAD/IEA-4E/IEA "Community of Practice" (CoP) project which has the objective of developing a fast-track, low-cost route to convey government concerns into energy efficiency standardisation processes. The project objectives are to:

- Develop common positions on specific standardisation test methods, definitions, product categories, efficiency metrics, and performance classes
- Develop a common strategy to promote EE standards, possibly through collaborative standards committee membership

The recent outcomes and communiqués from a workshop conducted in Tokyo were summarised. It was noted that a joint project to develop ideas about an institutional framework for the CoP and how it can best liaise with IEC/ISO is due for completion before the end of this year.

The session was completed by Stuart Jeffcott who took the audience through the latest findings from the 4E mapping and benchmarking project for clothes dryers, dishwashers (not yet publicly released) and clothes washers. For each product type Stuart compared the definitions, test methodologies and policy settings used in each jurisdiction as well as the normalisation process used as a basis to compare results between different country requirements and test methods. Stuart then showed the project results in the form of efficiency trends for each country examined with commentary on the likely sources of differences between countries and the likely drivers for observed trends. This session stimulated much debate in relation to the normalisation process adopted (particularly in relation to clothes washers, which were done some years ago).

The next session after lunch looked at different approaches to setting of minimum efficiency standards with a view to a possible global application. Firstly, Mark Ellis (MEA) gave a presentation on the potential for

innovation in energy efficiency through policy drivers or as he called it “policy driven innovation”. Mark started by looking at the global challenge ahead, then focused on the various policy mechanisms that can drive market transformation through innovation. He then looked at some examples (air-conditioners, domestic refrigerators and LED lighting) where he demonstrated the potential for future efficiency gains through long term policy drivers. Mark also cited the beneficial impact that the 1 watt standby power initiative had on the standby power of televisions over the past decade. Mark concluded with a generalised model for policy driven innovation.

This was followed by Robert Van Buskirk (LBNL), who gave a highly engaging presentation on a modelling methodology based on the rate of energy efficiency achievement and target-setting as used in the US (but could be applied globally). Robert started by explaining the US goal to “cut in half the energy wasted by our homes and businesses over the next twenty years”, noting that the DOEs underlying target is a 3% to 4% improvement in energy efficiency per annum for the foreseeable future. Robert observed through detailed analysis that standards and labelling programs are an important influence in accelerating the adoption of higher levels of efficiency and how efficient product prices can be expected to drop over time (as well as lifecycle costs) as the rate of adoption is sustained. The relationship between operating cost and appliance cost, as well as trends in energy prices, were examined. Finally Robert concluded with an overview of the mathematics underpinning the model (somewhat complicated) and offered the following conclusions:

- The optimum level of energy efficiency increases when energy prices rise and when technology and appliance prices decline
- We can look into history to see what long term trends are present in appliance and technology prices
- We can use historical experience to set achievable long term energy efficiency improvement rates for many years into the future
- We can monitor the market to make sure that price trends continue and improvement targets continue to be met and remain optimised as conditions change.

The final session of the day was presented by Shane Holt (DOI) and Robert Foster (EES). This examined government policy in relation to laundry products and dishwasher and the upcoming migration to IEC test methods, as well as the proposed changes to star rating algorithms for these product categories.

Shane Holt explained the government policy perspective in relation to laundry products and provided the audience a recap on the discussion from an informal meeting of many EL059 members held the previous day.

Robert Foster outlined the function of energy labelling algorithms as well as the reasons behind the need to undertake a revision to the current algorithms when the test method is changed. Robert then outlined the key areas for consideration when undertaking an energy labelling algorithm review process. It was observed that a key element will be to provide some incentive in the energy labelling system to reward products that automatically optimise their energy during the expected range of typical use. A draft timetable for both the transition to IEC test methods and a new labelling algorithm was presented and finally Robert noted the formation of a “Whitegoods algorithm review committee” and its key functions. The session was concluded by asking for volunteers for the review committee (in addition to those who had nominated the previous day).

General discussions followed, including an overview of the current label review process and the merits (or otherwise) of focus group testing. CESA concluded the discussions by calling on the Government to prepare a detailed project plan (with milestones) for the transition of laundry products and dishwashers to the IEC test method and associated labelling algorithm changes.

Shane Holt closed the first day of the workshop and invited further comments and discussions on the day’s proceedings.

Day 2

Participants were welcomed back to Day 2 of the workshop by Ray Prowse of the Department of Industry, who outlined the structure of the proceedings for the remaining day.

The first session was opened with a presentation from Stuart Jeffcott from the IEA 4E Mapping & Benchmarking Annex on international benchmarking of refrigerators. The presentation showed the key differences in refrigeration product types by region and the impact that various regulations appear to have on the products available in different markets at different times and their efficiency. Analysis showed that, while most countries use straight lines to define MEPS and reference efficiency, that international comparisons illustrate that a better approach may be to develop curves based on a surface area function (such as the Australia and New

Zealand labelling algorithm). The session concluded that many countries use policy tools for refrigeration, many of the requirements are converging to similar levels and that technological limits to potential energy efficiency improvements have not yet been reached.

In the next session, Robert Van Buskirk presented long term data from 1950 to date on household refrigeration attributes in Australia and the USA. The key messages were that the US traditionally has had larger refrigerators than Australian homes – this is put down to cultural reasons. The energy pathways over time for both countries were also quite similar, showing spectacular decreases in energy since 1980. US base energy was higher in the 1980s due to a larger share of larger frost free products on that market (which were relatively inefficient). Energy is now tracking at a similar level, which is not surprising considering Australia has been following US policies for the past decade. Prices in Australia were higher than the US prior to 1990, due to local tariff protection in Australia and a larger and more competitive market in the USA. Recent increases in electricity prices in Australia will make proposed MEPS levels in 2017 even more cost effective.

Ian Forte of Electrolux gave an outline of the development of the new IEC test method for household refrigeration (IEC62552) and its advantages as a global test method. He described the government initiated round robin of 6 test laboratories using the new method and set out the key objectives. It was noted that 4 products are being tested and the objective is to determine the energy to both AS/NZS4474 and the forthcoming IEC62552 conditions, as well as to a number of specific requirements in the forthcoming regulatory regime. The round robin is providing a solid road test for the new IEC test method and is helping to build capacity and expertise in local test laboratories. The round robin is providing great confidence to all stakeholders that the underpinnings of the new regulatory proposals for MEPS and labelling in 2017 are sound.

Martien Janssen, an international expert on the IEC test method from the Netherlands, gave a wide ranging review of developments in Europe with respect to refrigerator regulation as well as an overview of the technical support he is providing for the local IEC round robin. The history of the ISO test method was outlined and the advantages of the new IEC approach were appraised. Some efforts in Europe are under way to allow the new IEC test method to be used in the next round of regulatory changes for refrigerators after 2015. The results of European testing and investigations were outlined. The balance of the presentation focused on the round robin test results and illustrations on how the round robin data is analysed and compared. The workshop then held a detailed question and answer session on the European situation.

After lunch, Lloyd Harrington presented details of the issues Australia and New Zealand have already submitted on the IEC Committee Draft for Voting for refrigerators (IEC62552). These comments will be considered at the next IEC SC59M meeting in Auckland in December 2013. A range of new issues have been compiled as a result of testing during the round robin and site visits to all of the test laboratories to assess their facilities as part of the round robin. The majority of the comments are of a minor technical nature and are about streamlining and simplifying the IEC testing requirements. Only one significant issue will be raised – uncertainty of measurement of temperature sensors. The round robin has allowed an excellent, in depth practical assessment of the draft IEC test method, which will help fine tune the standard prior to publication.

Robert Van Buskirk then provided an overview of the US Department of Energy proposals for so called miscellaneous refrigeration products, especially with respect to coverage of different product types. The DOE may cover a wide range of wine storage cabinets and other miscellaneous beverage storage devices in the forthcoming rule making. It is also possible that thermo-electric devices (such as Peltier or piezo-electric devices) may be included by DOE as well as DC products. It was noted that Canada and California already regulate wine storage cabinets for MEPS. The rule making was scheduled for release in 2014 (to come into effect in 2017) but this may be slightly delayed. This information is important as Australia is likely to follow this regulatory lead a few years after US requirements come into force.

The last formal session of the day was a recap of the Australian and New Zealand government proposals to follow US regulation on refrigerator MEPS by 2017. The history of the US regulatory proposal was outlined and it was noted that E3 announced its intent to follow these requirements as early as October 2011 (at a previous whitegoods forum). The presentation mapped out the release of all reports and documents to date and noted that there have been a significant number of documents for comment and public forums. Industry groups have made submissions at several points in the process to date, which have been carefully considered by government. It was noted that regulatory impact statements and determinations are in preparation.

Following further discussions on international issues related to policies for refrigerators and freezers, an impromptu presentation was given by Mr Jun Nakamura of Japan Electrical Manufacturers' Association on

developments in Japan. A history of test methods used in Japan was provided. It was noted that there was poor correspondence between the energy measured under the previous ISO test method (when used in Japan from 1993 to 1999) and typical use in the home. Japan, through METI and JEMA, has collected energy data for refrigerators in some 300 homes. It was noted that the Japanese government has a strong commitment to adopt the new global IEC standard and this should occur in 2015 (pending the publication of the IEC standard in 2014). It was noted that there has been an intensive training program for test laboratories in ASEAN countries and India as part of the international development program to support the adoption of new IEC refrigerator test method. There was also discussion on the issue of volume measurement in the IEC standard and the issue of usable volume for consumers.

Following a range of intensive discussions on these points, Shane Holt of the Department of Industry proposed several possible projects of interest to workshop participants:

1. Regarding the issue of adjusted volume, he proposed that discussions and dialogue with government officials in SEAD and 4E would be best way to formalise this issue once it had been considered by the IEC;
2. Following the completion of round robin of test laboratories in Australia and New Zealand, Mr Holt offered several of the test units to test laboratories in the Asia Pacific that are participating in the JEMA training work. This kind offer will be considered.
3. The issue of how Japan is proposing to adapt the use of the new IEC test method to closely match typical use in Japan is of great interest to both government and consumer groups in Australia. With further development, this may be suitable for consideration as a SEAD, APEC or 4E analysis project.

This concluded the formal events of the workshop. Mr Shane Holt thanked VIPAC for providing excellent conference facilities and for organising the catering throughout the event. He also thanked all the participants for their active involvement in the workshop and their great contributions to the discussion, which were very informative. He particularly thanked the speakers for providing stimulating and informative presentations, with particular thanks to the esteemed international speakers that were able to attend the workshop and provide excellent inputs. Finally Mr Holt thanked Mr Ray Prowse (DOI) for chairing the meeting and Dianne Glass and other EES staff for their organisation of the event.

Attachment A: Agenda

INTERNATIONAL WHITEGOODS WORKSHOP PROGRAM

Melbourne, 16th and 17th October 2013

VIPAC OFFICES, 279 Normanby Road, Port Melbourne

Day 1: Wednesday 16 October 2013			
Time	Topic		Speaker
9:00 – 9:10	Introduction	Organisational introduction	Ray Prowse
9:10 – 9:40	Why Australia started a national Standards & Labelling program		Alan Pears
9:40 – 9:50	Current Australian policy settings		Shane Holt
9:50 – 10:30	International alternatives	Compare and contrast EU/USA/AU processes for setting equipment regulations	Chris Evans, Robert van Buskirk, Lloyd Harrington Shane Holt MC
10:30-11:00	Morning Tea		
11:00 – 11:30	Panel presentation; 5 minutes from each presenter followed by 15 minutes questions.	Engaging ISO ⁱ and IEC ⁱⁱ standards – the community of practice involving 4E ⁱⁱⁱ , SEAD ^{iv} and the Australian Government about global standardisation projects	Mark Ellis Lloyd Harrington Shane Holt
11:30 – 11:50	Where does Australia rank	4E Mapping & Benchmarking - clothes dryers	Stuart Jeffcott
11:50 – 12:10	Where does Australia rank	4E Mapping & Benchmarking - dishwashers	Stuart Jeffcott
12:10 – 12:30	Where does Australia rank	4E Mapping & Benchmarking - clothes washers	Stuart Jeffcott
12:30 – 1:30	Lunch		
1:30 – 2:00	Possible global standard setting processes	4E Policy Driven Innovation	Mark Ellis
2:00 – 2:30	Possible global standard setting processes	Innovation curve predictor model	Rob Van Buskirk
2:30 – 3:00	Facilitated Q&A		Shane Holt MC
3:00 – 3:30	Afternoon Tea		
3:30 – 3:45	Government policy on Laundry – migrate to the IEC test method	Report on EL59 ^v discussion outcome	Ray Prowse
3:45 – 4:00	Government plans for laundry performance requirements	Map the consultancy work	Shane Holt
4:00 – 4:15	Government proposal for star rating algorithm changes	Map timeline for change	Robert Foster
4:15 – 4:45	Stakeholder commentary	Audience to question presenters	Ray Prowse MC
4:45	Close		

Day 2: Thursday 17 October 2013			
Time	Topic		Speaker
9:00 – 9:05	Introduction	Organisational introduction	Ray Prowse
9:05 – 9:35	Where does Australia rank	4E Mapping & Benchmarking - fridges and freezers	Stuart Jeffcott
9:35 – 10:05	How does Australia compare with the USA	Bi-lateral comparison on fridges and freezers, US and AU	Rob Van Buskirk & Lloyd Harrington
10:05 – 10:30	Stakeholder responses	Q&A of both analyses	Ray Prowse MC
10:30 – 11:00	Morning Tea		
11:00 – 11:30	How the round robin was conceived to compare AS/NZS and IEC	Contribution to IEC	Lloyd Harrington, Ian Forte & Lindsey Roke
11:30 – 12:00	Round Robin ^{vi} findings	Report on the analysis to date	Martien Janssen
12:00 – 12:30	Round Robin Participant Views	Panel discussion where lab participants report on their impressions, ideas for the future, respond to questioning	Martien Janssen MC
12:30 – 1:30	Lunch		
1:30 – 1:45	What will be reported to IEC about the Round Robin	In Auckland in December	Lloyd Harrington, Ian Forte & Lindsey Roke
1:45 – 2:00	US fridge standards in 2014	Current US thinking about products in and out	Rob Van Buskirk
2:00 – 2:15	Australian efforts at copying US position		Lloyd Harrington
2:15 – 2:30	Government plans on refrigeration	IEC test method and following the US MEPS with a lag (in accord with EL60 ^{vii} plus discussions)	Ray Prowse
2:30 – 3:00	Stakeholder commentary	Audience to question presenters	Shane Holt MC
3:00	Close and Afternoon Tea		

i ISO: International Organisation for Standardisation

ii IEC: International Electrotechnical Commission

iii 4E: Efficient Electrical End-use Equipment

iv SEAD: Super-efficient Equipment and Appliance Deployment

v EL59: Standards Australia committee responsible for standards relevant to wet whitegoods (dishwashers, clothes washers, clothes driers)

vi Round Robin: Testing of refrigerators to the IEC test method to support adaptation to US MEPS in 2017. Manufacturers involved: Fisher & Paykel, Electrolux. Test laboratories involved: SGS, SAI Global, Choice, VIPAC

vii EL60: Standards Australia committee responsible for standards relevant to refrigerators and freezers

Attachment B : Conference Speakers

Name	Organisation	Area of Expertise
Shane Holt Ray Prowse	Department of Industry	Shane is the DOI Director managing a team with responsibility for whitegoods in Australia related to the E3 Program. Ray Prowse is a deputy director responsible for whitegoods policy and programs.
Lloyd Harrington Robert Foster	Energy Efficient Strategies (EES)	Energy policy and planning, international energy issues, test methods for whitegoods
Mark Ellis	Mark Ellis and Associates	Energy policy and planning, international energy issues
Prof Alan Pears	RMIT University	Energy efficiency advocate and academic
Dr Robert Van Buskirk	Laurence Berkeley National Laboratory (USA)	International policy development and evaluation
Stuart Jeffcott	IEA 4E Mapping and Benchmarking Annex	International appliance comparisons, international energy policy
Chris Evans	Consumer Research Associates (UK)	Energy policies in Europe, test methods for appliances, consumer related issues
Martien Janssen	Re/genT BV (Netherlands)	Refrigerator energy testing, IEC refrigerator test method
Jun Nakamura	Japan Electrical Manufacturers' Association (JEMA)	Energy consumption of refrigerators, test methods for refrigerators, international harmonisation

Lindsey Roke (Fisher & Paykel) and Ian Forte (Electrolux Home Appliances) also co-authored some presentations at the workshop.

Attachment C : Persons who nominated to attend the conference

First Name	Last Name	Organisation
Roman	Berwald	Electrolux Home Products
Dora	Bettridge	Vipac Engineers & Scientists
Richard	Bollard	Fisher & Paykel Appliances
Gavin	Bust	Brand Group Distribution
Peter	Carlin	Andi-Co Australia Pty Ltd
Terry	Collins	EECA
Almedina	Cordic	SAI Global Ltd.
Pat	Cugnetto	Whirlpool Australia
Andrew	Curless	Electrolux Home Products Pty Ltd
Vipin	Dube	SGS Australia Pty Ltd
Paul	Fan	Electrolux Home Products Pty Ltd
Anthony	Favero	Think Appliances (Baumatic Australia)
Terence	Fonseca	SGS Australia Pty Ltd
Ian	Forte	Electrolux Home Products Pty Ltd
Martin	Garwood	Austest Laboratories
Dianne	Glass	Energy Efficient Strategies
Michael	Grubert	Energy Safe Victoria
Allan	Hall	Electrolux Home Products
Corinna	Horrigan	Choice (Australian Consumers' Association)
Malcolm	Hutchinson	Smeg Australia Pty Ltd
Ansari	Kassim	Comtest Laboratories Pty Ltd
Dong An	Kim	LG Electronics Inc
Dilek	Kozan	DM Kozan
Chris	La	Austest Laboratories
Mark	Lanagan	BSH Home Appliances
Rafael	Lino de Lima	Intersource Solutions
Theo	Michael	VIPAC
Jun	Nakamura	Panasonic Corporation
Stuart	Parker	LG Electronics
Alan	Pears	Sustainable Solutions/RMIT University
Polly	Plowman	Consumers' Federation of Australia
Chris	Poole	Creer Corporation
Zhimou	Qin	Austest Laboratories
Shahram	Raissi	SAI Global
Phillip	Robinson	CESA
Lindsey	Roke	fisher & Paykel appliances Ltd
Fadi	Roumieh	Vipac Engineers & Scientists

First Name	Last Name	Organisation
Jose	Salles	Bridge Product Management Pty Ltd
Matt	Slater	The Australian Gas Association
George	Sokol	Asko Appliances (Australia) Pty Ltd
Billy	Tabourlos	The Australian Gas Association
John	Taylor	Mitsubishi Electric Australia Pty Ltd
Minoru	Temmyo	Toshiba Home Appliance Corporation
Philip	Templeton	Beko Australia And New Zealand
Jo	Townsend	WELS
Chris	Wealthy	The Australian Gas Association
Les	Winton	Winton Sustainable Research Strategies
Jonathan	Wong	Woolworths Limited
Robert	Wooley	Sharp Corporation of Australia Pty Ltd
Kentaro	Yamaki	Creer Corporation