



**Asia-Pacific  
Economic Cooperation**

Expert Group on Energy Efficiency And Conservation under the Energy Working Group

# **APEC INTERNATIONAL CONFERENCE**

**Alignment of Standby Power Approaches  
*Moving Towards 1 Watt and Beyond***

**19 to 21 October 2010**

**Shinagawa Prince Hotel, Tokyo, Japan**

## **CONFERENCE PROCEEDINGS - DECEMBER 2010**





**Asia-Pacific  
Economic Cooperation**

APEC International Conference Proceedings - Alignment of Standby Power Approaches

# **CONFERENCE PROCEEDINGS FOR APEC INTERNATIONAL CONFERENCE**

**Alignment of Standby Power Approaches**  
*Moving Towards 1 Watt and Beyond*

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**for Expert Group on Energy Efficiency And Conservation  
under the Energy Working Group December 2010**

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# Asia-Pacific Economic Cooperation

APEC International Conference Proceedings - Alignment of Standby Power Approaches

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## CONFERENCE OVERVIEW

The APEC Standby Power Conference - *Moving Towards 1 Watt and Beyond*, was held from 19-21 October 2010 at the Shinagawa Prince Hotel, Tokyo, Japan. The conference brought together approximately 50 experts on standby power, representing 12 APEC economies, and 10 different manufacturers and suppliers. The purpose of the conference was to bring together both industry and government policy makers to gain an understanding of the possibilities for reducing standby power. The conference covered a wide range of standby related topics, ranging from technologies and components to high level policy and implementation issues.

Conference participants learnt of new technologies that are available now to reduce standby power and advanced and innovative designs for power management and improved user interaction that have already reached the market. Advanced designs that could reduce the energy consumption of many "information based" devices during periods of low utilisation have been used for many years in mobile devices and it was acknowledged that there is a need to encourage their widespread adoption into mains powered (tethered) products. This could result in large energy reductions in all modes (in addition to standby mode). Many APEC economies outlined their efforts to reduce standby power. There has been extensive international cooperation in the area of measurements and test procedures, forming a solid foundation for good policy alignment.

It was acknowledged that networks are an area of growing interest and importance and as such this topic was discussed at length. Increasingly more and more products are connected to networks, so attention needs to be paid to network protocols and product design to ensure that networks are configured to minimise product energy consumption through advanced power management, rather than allowing an increase in overall energy use in all modes. Network products (both products connected to networks and network equipment itself) for the most part are not covered in existing policy frameworks and therefore it is important to develop a path forward to ensure that today's policy is not made redundant with the rapid expansion of network products.

A total of 22 presentations were made over the first two days and each of these presentations is available for download at <http://www.energyrating.gov.au/standby2010-apec-presentations.html>.

The conference concluded with an intensive half day workshop that reviewed all of the issues covered by the previous days' presentations. The workshop helped to identify areas where progress can be made now and where more research and development is needed to achieve a low standby power future. The group concluded that while there are some technologies and policy tools available to be implemented immediately, further research, particularly in the area of networked products, was required. Information sharing and continuation of the goal for policy alignment was seen to be of great importance. The need to identify an organisation(s) to facilitate this long term cooperation was a key element of the discussions. This was also echoed in the sentiment that developments in this area need to include close dialogue between all key stakeholders. The conference acknowledged the global nature of the market place and the advantages for suppliers if the policy approaches could be broadly aligned (noting the wide diversity of approaches currently in use). It was noted that some smaller economies have little ability to influence global product designs and naturally rely on the leadership of the policy developments in bigger and more influential economies. There was also an agreement to set aspirational power targets which, while setting an agreed level of consumption, would allow each economy to use these aspirational limits in ways that are most suited to the individual market, e.g. MEPS (mandatory limits), award levels for endorsement programs, the basis for a dis-endorsement program etc. The key issues discussed in the workshop are listed below.

The key issues arising from the technical workshop included:

Low Standby is Available Now

- Agreement that there are several low power technologies available to the market right now and that there should be encouragement to implement these.
- External smart devices to reduce standby in clusters of legacy equipment (particularly home entertainment and ICT) can be used as an interim measure right now. It was noted that these energy saving devices need an assessment process to evaluate their effectiveness.

Research required in some Areas Related to Power Management and Networks

- Investigate power scaling – moving lessons from mobile world (multi-core processors, power islands, voltage and frequency scaling) to be part of the mainstream design of mains powered (tethered) products
- Review of technical standards related to energy and low energy networks to ensure that network standards and products comply with the broad objective of good network design
- Review and development of protocols for open source end user local area networks with full interoperability and interface definition to enable operation with smart meters and the wider smart grid. (IEC TC59, CECED, CENELEC & AHAM have done some work.) IEC, IEEE or EPRI are possible candidates to take the lead role in this area of work, but inputs from energy experts are critical.
- Review of innovative power management options in “non-information” based products (e.g. sensing devices and auto shut down) (primarily traditional appliances and equipment whose main task is not information based).
- Assessment of total energy consumption under different usage conditions (rewarding dynamic, smart power management that can minimize total energy consumption under a wide range of user requirements).
- Estimates of global network related energy in order to assess the current magnitude of the issue
- Measurement projects investigating issues relating to network products in order to assess the practical savings that can be achieved by the best designs
- Technical study on power factor for low power modes – many products with low standby appear to have poor power factor, so there is a need to assess the possible impact on electricity utilities and options to improve these (including the energy costs and solution costs).
- Mapping functions into modes – there are a limited number of possible functions and this study would identify the main permutations and combinations of common functions in common modes

Requires further research and understanding of the issues

- Identify any limitations of putting power scaling into current operating systems (Windows, Linux, OS-X)
- Standard protocols for energy and power reporting under the existing Internet Protocol (using SNMP) for all products connected to networks
- Developing universal protocols to permit coordination of power management amongst products on a network (function and relationship to other devices) using data from standard protocols for energy and power reporting
- Assessing the power required for a wide range of functions (power budget for main function types, power supply configuration influences) in low power modes of common appliances and equipment

The key issues arising from the policy workshop include:

#### State of Play

- A key policy objective should be the broad alignment of approaches (not pure harmonisation) as state of development varies considerably by economy.
- While the role of information and education for reducing standby power in products might be minimal, it is important that the user interface indicates what state a product is in and how energy can be saved (although automatic energy saving needs to be encouraged and rewarded).
- Labelling Options are dependent on market with the main options either endorsement (e.g. Energy Star) or a dis-endorsement label or negative label (e.g. Korea)
- Other approaches available include:
  - Vertical approaches (combining low power modes with active modes to give total energy use)
  - Horizontal approaches or product by product power levels (setting a level for particular modes or combinations of functions in low power modes)
  - Approaches can be mandatory or voluntary, and can be used for MEPS or labelling
- The recent ratification of Energy Efficient Ethernet (IEEE 802.3az) was welcomed and this should be rapidly deployed in new products with an Ethernet connection - as a complementary measure, energy programs should require adherence to this standard in their program specifications
- Widespread adoption of IEC62301 Edition 2 as a measurement method, which has some significant improvements over Edition 1 and should be available in early 2011.
- Use of Common measurement and evaluation approaches to support policy development and implementation:
  - Ongoing measurement of new products (stores, labs, manufacturer data)
  - Information sharing between APEC economies to facilitate policy development and enforcement (where applicable)
  - Measurement of the stock characteristics of products installed (to assess the impacts of stock turnover and replacement as well as the diffusion of new types of products)
  - Longitudinal measurements to obtain information on user interactions and to evaluate more advanced energy management approaches
  - Standardised reporting formats for data to facilitate APEC economies comparisons
  - Clearing house and repository for data and shared resources
  - Agreed approaches to the preparation of energy estimates and energy impacts
  - Shared evaluation approaches and methodologies
- Policy tools can be used to cover services as well as products such as Set top box providers. (E.g. Energy Star now accredits, codes of conducts make service providers pay for energy.)
- Building Codes can be used to increase efficiency for built in equipment. e.g. automatic switches
- Options for facilitation of long term cooperation of policy development include APEC Energy Efficiency and Conservation Committee, APEC ESIS website, 4E Standby Annex for development of selected projects, IEC, IEEE and other technical bodies for development of selected technical standards, Super Efficiency Appliance Deployment (SEAD).

#### Policy Aspirations

- Broad alignment of standby policies will simplify requirements for equipment designers and suppliers and will enable more effective policy implementation in different economies. It will also facilitate international policy cooperation.

- While policy alignment was seen as desirable, the conference agreed that alignment means common approaches within a framework of guiding principles. Levels and timing remain a matter for each economy to consider.
- Power Levels (MEPS or voluntary levels or targets as basis for endorsement label/negative label) (aspirational targets)
  - Short term targets for low power modes (simple products) by 2012
    - 1 watt for modes without a display (comparable to EU Dec 2009 levels)
    - An additional +1 watt adder for display (comparable to EU Dec 2009 levels)
  - Medium terms targets for low power modes (simple products) by 2015 to 2018
    - 0.5 watt for modes without a display (comparable to EU Dec 2012 levels)
    - An additional +0.5 watt adder for display (comparable to EU Dec 2012 levels)
- Implementation of guiding principles for good network design through development of key technical standards and protocols
- CEA annual conference in Las Vegas in Jan 2011 could be used to communicate the importance of networks into the future and possibly adopt the guiding principles for good network design

#### Research Required

- Energy management requirements – how to specify these in policy measures (reward dynamic power management which responds to varied user requirements)
- Power scaling requirements – how to specify these in policy measures (initially levels have to be set empirically)

#### Requires further understanding of the issues

- For more complex products (including networked products) that cannot meet aspirational levels, develop functional adder approach to set power targets.
- Power allowances for light and heavy traffic need to be developed, as well as understanding how much energy will it save in practice (for products with power scaling)
- Standard testing elements for networks – energy and performance – develop a companion document to IEC62301 (initially outside of IEC)
- Extend standby policy (& related test methods) to cover extra low voltage DC systems (micro-grids)
- Adoption of relevant wireless technical standards which enable energy management of wireless links (end use devices and access points)
- Policy framework for low energy networks (includes development of the concept of horizontal functionality).

The outcomes of the workshops will be written up in -depth and be published as two reports: Alignment of Policy measures and Technology Options. Both of these will be available for download from December 2010.





# Asia-Pacific Economic Cooperation

APEC International Conference Proceedings - Alignment of Standby Power Approaches

## PROGRAM

### Day 1. Standby Technologies and Power Management Options

9.00 - 9.30	REGISTRATION		
9:30 - 9:35	Welcome		Chair - Melissa Damnics, Maia Consulting, Australia
9:35 - 10:00	Opening Address		Mr.Makito TAKAMI, METI, Japan
10:00 - 10:30	Key Note Address	International Overview of Standby Developments	Lloyd Harrington, Energy Efficient Strategies, Australia
10:30 - 10:45		Questions	
10:45 -11:15	Break	Morning Tea	
11:15 - 12:30	<b>Session 1</b>	<b>Possibilities in Components</b>	Chair - Bruce Nordman LBNL USA
11:15 - 11:45		Asymptote: Zero – Minimizing standby mode energy waste	Richard Fassler, Power Integrations, Inc. Richard.Fassler@powerint.com
11:45 - 12:30		CPU Power Management Techniques For Next Generation Networked Equipment	Kumaran Siva, ARM kumaran.Siva@arm.com
12:30 -12:45		Questions	
12:45 - 1:45	Lunch	Main Tower Banquet Hall 19F “Kamakura”	
1:45 - 3:45	<b>Session 2</b>	<b>Where Product Development is at?</b>	Chair - Sho Hirayama - Jyukankyo Research Institute Japan
1:45 - 2:15		ECO NAVI (eco-navigation) Technology	Makoto SHIMIZU, Corporate Division for Promoting Energy Solution Business, Panasonic Corporation
2:15 - 2:45		Recent Nationwide R & D Activity for Reducing Standby Power in Korea	Nam Kyun Kim, KERI, Korea nkkim@keri.re.kr
2:45 - 3:15		The opportunity for energy saving devices to address wasteful energy consumption and the challenges ahead.	Domenico Gelonese EMBERTEC, Australia domenico@embertec.com
3:15 - 3:45		Questions	
3:45 -4:15	Break	Afternoon Tea	
4:15 - 5:30	<b>Session 3</b>	<b>From Standby Power to Total Energy</b>	Chair - Totok Sulistiyanto, DEM Indonesia
4:15 - 4:45		Power Scaling in active and low power modes	Chris Calwell Ecos Consulting, USA ccalwell@ecosconsulting.com
4:45 - 5:15		Australian Field Trial Results of Monitoring Standby Power Mode in 20 homes	Paul Ryan paul@energyconsult.com.au
5:15 - 5:30		Questions	
7:00 - 9:00pm	Conference Dinner - Main Tower Banquet Hall 19F “Kamakura”		

### Day 2. Standby Policy Approaches

9.00 - 9.30	REGISTRATION		
9:30 - 10:55	<b>Session 4</b>	<b>The State of Play</b>	Chair - Paul Ryan, EnergyConsult Australia
9:30 - 9:50		International Cooperation and Alignment of measurement practices	Melissa Damnics, Maia Consulting Australia melissa@maiaconsulting.com.au
9:50 - 10:15		IEC62301 - Household electrical appliances - Measurement of standby power	Lloyd Harrington, Energy Efficient Strategies, Australia lloyd@energyefficient.com.au
10:15 - 10:40		Status and Trends of Standby Power Consumption in Japan	Sho Hirayama - Jyukankyo Research Institute Japan hirayama@jyuri.co.jp
10:40 -10:55		Questions	;
10:55 - 11:15	Break	Morning Tea	

## Day 2. Continued..

11:15 - 1:15	<b>Session 5</b>	<b>International Policy Developments</b>	Chair - Kumaran Siva, ARM	
11:15 - 11:45		Negative Label, Positive Step - standby warning label & Korea's 1W policy.	Yungrae Kim, KEMCO, Korea	yrkim@kemco.or.kr
11:45 - 12:15		Energy Star requirements related to networks	Bruce Nordman, LBNL USA	BNordman@lbl.gov
12:15 - 12:45		Current Situation of standby power standards in Thailand.	Asawin Asawutmangkul DEDE Wanchai Ratkijnakorn EGAT	asawin_a@dede.go.th wanchai.rat@egat.co.th
12:45 - 1:00		Questions		
1:00 - 2:00	Lunch	Main Tower Banquet Hall 19F "Kamakura"		
2:00 - 3:35	<b>Session 6</b>	<b>International Policy Developments cont..</b>	Chair - Chris Calwell, Ecos Consulting USA	
2:00 - 2:20		EU initiatives to tackle energy consumption of appliances in standby mode (pre-recorded presentation)	Shailendra Mudgal, Bio Intelligent Service, France	contact@ecostandby.org
2:20 - 2:40		Australia's Policy Plans for 1 Watt Standby and Home Entertainment Products	Paul Ryan, EnergyConsult, Australia	paul@energyconsult.com.au
2:40 - 3:00		U.S. Approaches for Electronics: Policy Experience and New Opportunities	Doug Johnson, CEA USA	djohnson@CE.org
3:00 - 3:20		Preparing Standby Power Regulation for Home Appliances and Other Electronic Devices in Indonesia	Totok Sulistiyanto DEM, Indonesia Ikhwanul Arif Panasonic Indonesia	totok@cybi.net ikhwanul.arif@id.panasonic.com
3:20 - 3:35		Questions		
3:35 - 4:00	Break	Afternoon Tea		
4:00 - 5:30	<b>Session 7</b>	<b>Network Standby - The New Challenge</b>	Chair - Nam Kyun Kim KERI, Korea	
4:00 - 4:40		Technology approaches to Network Standby	Bruce Nordman, LBNL USA	BNordman@lbl.gov
4:40 - 5:20		Policy Frame work Network Standby	Lloyd Harrington, Energy Efficient Strategies, Australia	lloyd@energyefficient.com.au
5:15 - 5:30		Questions		

## Day 3. Alignment of Standby Policy Approaches and Technology Options

9:30 - 10:30	<b>Session 8</b>	<b>Technology Options Workshop</b>	Chair - Lloyd Harrington, Energy Efficient Strategies, Australia Ji Xuan, Jyukankyo Research Institute Inc.	
<p>This workshop will allow participants' to compile information on the latest technological developments and identify issues, products and areas that still need to be addressed through innovation and design. The workshop will also consider options that may assist in future diffusion of advanced product designs and components into the market place. A public report will document these deliberations and proposed approaches in a way that will assist APEC manufacturers tackle the issue of standby power.</p>				
10:30-10:45	Break	Morning Tea		
10:45 - 12:25	<b>Session 9</b>	<b>Policy Approaches Workshop</b>	Chair - Paul Ryan, EnergyConsult, Australia Ji Xuan, Jyukankyo Research Institute Inc.	
<p>This workshop will allow participants' to discuss various policy approaches and issues that need to be resolved in the standby policy area. The outcome will be the production of a public report which can assist APEC economies address the issue of standby power.</p>				
12:25 - 12:30	Thank you and Close	Melissa Damnic, Maia Consulting, Australia		
12:30 - 1:30	Lunch	Main Tower Banquet Hall 19F "Kamakura"		
2:00 - 4:00	Excursion at the Panasonic Center			



# Asia-Pacific Economic Cooperation

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## SPEAKER BIOGRAPHIES

### OPENING SESSION - Chair Melissa Damnics

#### **Mr. Makito TAKAMI**

*Director, Energy Efficiency and Conservation Division, Energy Conservation and Renewable Energy Department, Agency for Natural Resources and Energy (ANRE), Ministry of Economy, Trade and Industry (METI)*

Since graduating in the 1980's in Nuclear Engineering at Kyoto University, Mr Takami has had successive senior positions and over twenty years' experience in Government and University settings focussing in the areas of trade and environmental management. These roles have includes Deputy Director of Chemical management Policy Division and the Director – International Cooperation Office in the Agency for Natural Resources and Energy.

Mr Takami is currently the Chief Representative in the NEDO Representative Office in Washington DC, a position he has held since 2007.

#### **Lloyd Harrington**

*Energy Efficient Strategies, Australia*

Lloyd Harrington is a director of Energy Efficient Strategies, a consultancy based near Melbourne, Australia. He has nearly 30 years' experience in energy efficiency and renewable energy technologies.

EES is currently a lead technical consultant to Australian Governments with respect to energy efficiency programs and policies for appliances and equipment.

Lloyd is an international expert on energy labelling, MEPS and test procedures for appliances and equipment. He has been the Australian delegate to ISO and IEC committees for many appliances since 1994. He chairs IEC TC59 MT9 (standby power). In 2009 Lloyd was awarded the prestigious IEC "1906" award for his exceptional effort, negotiating skill and creativity in reaching world wide agreement during the development of IEC62301.

[lloyd@energyefficient.com.au](mailto:lloyd@energyefficient.com.au)

### SESSION ONE - Chair Bruce Nordman

#### **Kumaran Siva**

*Networking Segment Marketing Manager ARM Inc.*

Kumaran Siva has a background in networking semi-conductors and systems and works at ARM in San Jose, California. He manages the networking segment for ARM globally, and works regularly telecom service providers, networking OEMs, and device manufacturers. Prior to ARM, Kumaran was a product line manager at PMC-Sierra, managing a variety of products in PMC's networking, storage, and microprocessor product lines. Kumaran studied electrical engineering at the University Of Waterloo and attended graduate school at Harvard University.

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#### **Richard Fassler**

*Power Integrations, Inc*

Rich Fassler has more than 30 years experience in the technical marketing and sales of power semiconductors, with senior management positions at Power Integrations, IXYS Corporation and the General Electric Company. His work at Power Integrations currently focuses on worldwide energy efficiency standards and specifications affecting power supplies and electronic products. He holds a BSEE from California Polytechnic State University.

[Richard.Fassler@powerint.com](mailto:Richard.Fassler@powerint.com)

## SESSION TWO - Chair Sho Hirayama

### **Makoto Shimizu**

*Chief Engineer, Corporate Division for Promoting Energy Solution Business, Panasonic Corporation*

Makoto Shimizu is a Chief Engineer of Panasonic Corporation. He joined the company in 1989 and has been involved in research and development in various fields.

For ten years, he has been involved in research and development on control methods of devices and equipment which realize both living comfort (heating, air cleanliness) and reducing power consumption. Another decade, he has worked on research and development of energy creating and saving systems for rooms (living room, bedroom, and kitchen) and for the entire house, closely working with housing manufacturers and related companies. Currently Makoto Shimizu plays an important role in both domestic and overseas product planning and development for Energy Solution Business which is one of Panasonic's key businesses.

### **Dr Nam Kyun Kim**

*Korea Electrotechnology Research Institute (KERI), Korea*

Dr. Kim is currently working for Korea Electrotechnology Research Institute (KERI). He earned his Ph. D. in Materials Science from Seoul National University, Korea. He has been working in developing low-loss power

semiconductors after joining KERI. He led the first nationwide standby power survey of Korea in 2003 and also contributed to reducing standby power in Korea as a research engineer and as a consultant for government. He is currently in charge of a nationwide research project for standby power reduction as well as co-leader of Asia-Pacific Partnership standby cooperation project.

### **Domenico Gelonese**

*CEO, Embertec Pty Ltd, Australia*

Domenico Gelonese is the founder and CEO of Embertec Pty Ltd, a company which develops intuitive energy saving technology platforms for residential and commercial application.

He has a Bachelor of Economics from Adelaide University and is currently working with numerous Regional, State and Federal Government departments internationally to assist in their understanding of the emerging energy saving device category. Embertec has been the recipient of one of the largest Australian Federal Government R&D Grants in the area of climate change to further its research and development of energy saving technologies with a mandate to bring its knowledge to the international community.

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## SESSION THREE - Chair Totok Sulistiyanto

### **Chris Calwell**

*Senior Research Fellow and Founder, EOS Consulting, USA*

After working for the Natural Resources Defence Council for 7 years, Chris co-founded Ecos Consulting in 1997. He led its Research & Policy activities through 2009 on behalf of a variety of utility, NGO, and government clients in the U.S. and internationally, and continues to serve as principal investigator on many of the company's research projects. His areas of expertise include residential lighting and consumer electronics. His research, writing, and public speaking currently focus on the interrelated themes of climate change, sufficiency and progressive efficiency.

[ccalwell@ecosconsulting.com](mailto:ccalwell@ecosconsulting.com)

### **Paul Ryan**

*Director, EnergyConsult, Australia*

Paul Ryan is a director of EnergyConsult Pty Ltd, a consulting company providing research and policy analysis services in the fields of energy efficiency, energy economics and carbon abatement in Australia and Asia. Paul has been researching and providing technical, economic and market advice for over 20 years. He has assisted in the development of standby power measurement programs in Australia, developed the impact assessments for standby power policies and continues to advocate for detailed research into consumer behaviour relating to low power modes.

[Paul@energyconsult.com.au](mailto:Paul@energyconsult.com.au)

## SESSION FOUR - Chair Paul Ryan

### **Melissa Damnics**

*Maia Consulting, Australia*

Melissa Damnics is a social scientist, graduating in Socio-Environmental Assessment & Policy. She is a Partner in Maia Consulting an innovative company which specialises in the provision of social and environmental consulting services. Melissa has been involved in energy management and energy policy research projects for nearly two decades. During the last ten years Melissa has spent much of her time working in the standby power area, conducting on-site measurements of low power modes, recording data and producing analysis for over 7,000 appliances both in Australia and internationally. She has also conducted standby power data collection training workshops in Asia and Europe. Melissa currently acts as the Operating Agent for the IEA 4E Standby Annex and assists the Australian government with the APP Standby Power Project.

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### **Lloyd Harrington**

*Energy Efficient Strategies, Australia*

As we heard yesterday Lloyd Harrington is a director of Energy Efficient Strategies, a consultancy based near Melbourne, Australia. He has nearly 30 years' experience in energy efficiency and renewable energy technologies.

EES is currently a lead technical consultant to Australian Governments with respect to energy efficiency programs and policies for appliances and equipment.

Lloyd is an international expert on energy labelling, MEPS and test procedures for appliances and equipment. He has been the Australian delegate to ISO and IEC committees for many appliances since 1994. He chairs IEC TC59 MT9 (standby power). In 2009 Lloyd was awarded the prestigious IEC "1906" award for his exceptional effort, negotiating skill and creativity in reaching worldwide agreement during the development of IEC62301.

lloyd@energyefficient.com.au

### **Sho Hirayama**

*Jyukankyo Research Institute, Japan*

Sho Hirayama has been working for Jyukankyo Research Institute (JYURI) Inc. as a Researcher. He joined JYURI in 2006, after he gained his master degree with a major in Architectural Environmental Engineering at Tokyo University of Science. Now his main focus is on how households are able to save energy and how effective these behaviors may be in reducing.

## SESSION FIVE - Chair Melissa Damnics

### **Yungrae KIM**

*Team Leader, Energy Efficiency Label and Standard Program (including MEPS) & e-Standby Program Energy Efficiency Standard Department, Korea Energy Management Corporation (KEMCO), Republic of Korea*

Yungrae KIM is a team leader at Korea Energy Management Corporation (KEMCO) in charge of Energy Efficiency Label and Standard Program and e-Standby Program, and is taking the lead of Korea's energy standards and labelling actually. He made a plan for introduction of Energy Boy label and standby warning label that is very well-known throughout the world, and took the lead in institution of e-Standby Program. Korea's 1W plan, Standby Korea 2010 is his great achievements of consequence standing high in estimation internationally. He is IEA 4E Executive Committee member behalf of Korea.

yrkim@kemco.or.kr

### **Bruce Nordman**

*Lawrence Berkeley National Laboratory (LBNL), USA*

Bruce Nordman has degrees in Architecture and Energy & Resources from the University of California, Berkeley. He has been with Lawrence Berkeley National Laboratory since 1986, with a research focusing on electronics and networks, as well as low-power modes, user interfaces, and alternative power delivery. He works with a variety of standards organizations to leverage technology standards for energy savings.

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### **Poolsak Puwavichengchaib**

*Department of Alternative Energy Development and Efficiency Building, Thailand*

Poolsak Puwavichengchaib works for DEDE Thailand. He has been responsible for Energy Conservation in Buildings and the Thai Energy Program. He is currently Director of Energy Efficiency Standards overseeing the energy efficiency standards and label program.

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### **Asawin Asawutmangkul**

*Department of Alternative Energy Development and Efficiency Building, Thailand*

Asawin Asawutmangkul has worked in the Department of Alternative Energy Development and Efficiency (DEDE), Ministry of Energy since 2002 where he has participated in energy efficiency standard committees for electric and non-electric products; a in labelling project for high efficiency products and value Engineering Projects in small and medium enterprises. He is the Economy Contact for ESIS (APEC – Energy Standard Information System).

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### **Wanchai Ratkijnakorn**

*EGAT*

Wanchai Ratkijnakorn graduated with a master's degree in Engineering and is currently Chief of program design at EGAT. He has worked on EGAT's DSM masterplan. His work covers investigations onto Thailand's High Efficiency Label Program, Feasibility and Implementation of Thai's Standby program and Evaluation of DSM program.

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## **SESSION SIX - Chair Chris Calwell**

### **Mr Shailendra Mudgal**

*Executive Director Bio Intelligence Service*

Shailendra Mudgal is Executive Director of BIO Intelligence Service, a leading environmental research and consulting firm. Trained as an environmental engineer/economist in India and France. He has 17 years experience in environmental consulting and his expertise includes energy efficiency, industrial pollution prevention, environmental systems modelling, impact assessment, techno-economic analysis, product policy and eco-design, eco-efficiency, environmental management, and planning for sustainable development. At BIO, he advises various European institutions (Commission, Parliament, Committee of Regions, etc.) including 18 preparatory studies in the context of the Directive on eco-design of energy using products (EuP) for DG ENER and for DG ENTR. Unfortunately Shailendra couldn't be here in person but he has sent a pre-recorded presentation for us.

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### **Paul Ryan**

*Director, EnergyConsult, Australia*

Paul Ryan is a director of EnergyConsult Pty Ltd, a consulting company providing research and policy analysis services in the fields of energy efficiency, energy economics and carbon abatement in Australia and Asia. Paul has been researching and providing technical, economic and market advice for over 20 years. He has assisted in the development of standby power measurement programs in Australia, developed the impact assessments for standby power policies and continues to advocate for detailed research into consumer behaviour relating to low power modes.

Paul@energyconsult.com.au

## **Douglas Johnson**

*Vice President, Technology Policy  
Consumer Electronics Association (CEA)*

Douglas Johnson is vice president of technology policy for the Consumer Electronics Association (CEA). He is responsible for public policy issues that affect product development, operations, sales and marketing in the \$175 billion U.S. consumer electronics industry. Mr. Johnson directs CEA's energy efficiency activities at the local, national and international levels, including initiatives related to public policy, research and analysis, industry standards, consumer education, and partnerships.

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## **Totok Sulistiyanto**

*DEM*

Mr Totok Sulistiyanto is a mechanical, electrical and energy consultant with DEM Indonesia. He is currently Vice President of ASHRAE - Indonesia Chapter. Totok's areas of expertise include HVAC, Green Building Concept, Energy Management and Energy Alternatives.

Totok's experience includes: managing and implementing energy efficiency measures and energy efficient building design options for large buildings; facilitating the development of post-graduate training for architects and engineers in energy conservation and analysing the scope for establishing mandatory energy standards for new large buildings.

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## **Ikhwanul Arif**

*Panasonic Indonesia*

Ikhwanul Arif is the senior engineer for PT Panasonic Manufacturing in Indonesia. His field of expertise is in HVAC, particularly the design and conceptualisation of Air conditioning Products. Ikhwanul has been involved in Air Conditioning Design – performance design and new model design for air conditioning products for Panasonic.

# **SESSION SEVEN - Nam Kyun Kim**

## **Bruce Nordman**

*Lawrence Berkeley National Laboratory (LBNL), USA*

As we heard Earlier, Bruce Nordman has degrees in Architecture and Energy & Resources from the University of California, Berkeley. He has been with Lawrence Berkeley National Laboratory since 1986, with a research focusing on electronics and networks, as well as low-power modes, user interfaces, and alternative power delivery. He works with a variety of standards organizations to leverage technology standards for energy savings.

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## **Lloyd Harrington**

*Energy Efficient Strategies, Australia*

Just to refresh your memories, Lloyd Harrington is a director of Energy Efficient Strategies, a consultancy based near Melbourne, Australia. He has nearly 30 years' experience in energy efficiency and renewable energy technologies. EES is currently a lead technical consultant to Australian Governments with respect to energy efficiency programs and policies for appliances and equipment.

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# Asia-Pacific Economic Cooperation

APEC International Conference Proceedings - Alignment of Standby Power Approaches

## PRESENTATIONS

Click on each thumbnail below to view full presentation

### DAY 1 - Standby Technologies and Power Management Options

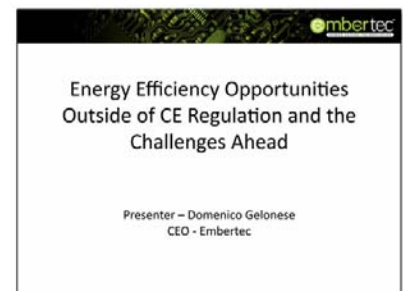
#### Welcome



### Session 1 - Possibilities in Components

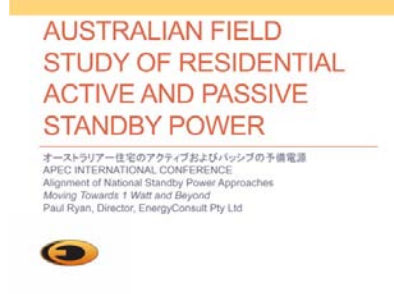


### Session 2 - Where Product Development is At



Click on each thumbnail below to view full presentation

### Session 3 - From Standby Power to Total Energy



### DAY 2 - Standby Policy Approaches

#### Session 4 - The State of Play

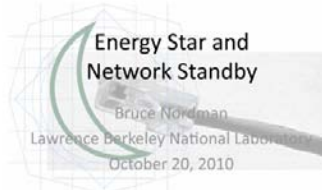


### Session 5 - International Policy Developments

#### Negative Label, Positive Step Standby Warning Label and Korea's 1W Policy

20 October 2010

Yungrae KIM  
Korea Energy Management Corporation



Click on each thumbnail below to view full presentation

## Session 6 - International Policy Developments cont/d

### EU initiatives to tackle energy consumption of appliances in standby mode

APEC Standby Power Conference  
October 2010



**Fraunhofer IZM**  
Environmental Engineering  
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### AUSTRALIA'S POLICY PLANS FOR HOME ENTERTAINMENT PRODUCTS AND 1 WATT STANDBY

APEC INTERNATIONAL CONFERENCE  
Alignment of National Standby Power Approaches  
*Moving Towards 1 Watt and Beyond*  
Paul Ryan, Director, EnergyConsult Pty Ltd



**U.S. Approaches for Electronics: Policy Experience and New Opportunities**  
家電製品に対する米国の取り組み: 政策による経験および新しい機会

APEC Standby Power Conference 2010  
19-21 October 2010 - Tokyo  
2010年アジア太平洋経済協力会議(APEC)による待機電力に関する会議  
2010年10月19-21日 - 東京

### Preparing Standby Power Regulation for Home Appliances and Other Electronic Devices in Indonesia

Totok Solediyanto  
Danish Energy Management  
DANIDA-BSP 2 - Indonesia

Ikhwanul Ardi  
PT. Panasonic Manufacturing  
Indonesia

19 to 21 October 2010, Tokyo

## Session 7 - Network Standby - The New Challenge

### Technical approaches to network standby

Bruce Nordman  
Lawrence Berkeley National Laboratory  
October 20, 2010

### Low Energy Networks: Policy Directions within a Standby Framework

Presentation by Lloyd Harrington, EES to  
APEC Standby Conference  
Tokyo, Japan, October 2010





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## LIST OF ORGANISATIONS PRESENT

AD POWER CO., LTD, Korea  
ARM Inc., USA  
Asia Pacific Energy Research Centre, Japan  
Canon, Japan  
Central Research Institute of Electric Power Industry, Japan  
Consumer Electronics Association (CEA)  
Danish Energy Management - DANIDA ESP 2 - Indonesia  
Department of Alternative Energy Development and Efficiency, Thailand  
Ecos, USA  
Electrical & Mechanical Services Department Hong Kong  
Electrical and Electronics Institute, Thailand  
Electricity Authority Generating of Thailand  
Embortec Pty Ltd Australia  
Energy Conservation Center, Japan  
Energy Efficient Strategies Australia  
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KTR (Korea Testing & Research Institute)  
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Panasonic Corporation Japan  
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PT. Panasonic Manufacturing Indonesia  
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Sony Corporation, Japan  
Sony Computer Entertainment Inc., Japan  
SUSTENTANK, Chile  
The Institute of Energy Economics, Japan  
The Japan Electrical Manufacturers' Association (JEMA)



# Asia-Pacific Economic Cooperation

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## LIST OF DOCUMENTS

The following documents detailing the accomplishments and outcomes of the conference are available from the conference website <http://www.energyrating.gov.au/standbydata/apecstandby2010.html>

- Conference Program
- Conference Presentations
- APEC International Standby Conference Summary Document
- APEC International Conference, Alignment of Standby Power Approaches, Moving Towards 1 Watt and Beyond, Conference Proceedings
- Technology Report
- Policy Report

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