Summary Report and Outcomes:
APEC Conference on Aligning Energy Efficiency Regulations for ICT Products

APEC Sub-committee on Standards and Conformance
APEC Committee on Trade and Investment

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APEC Subcommittee on Standards and Conformance

**APEC CONFERENCE ON ALIGNING ENERGY EFFICIENCY
REGULATIONS FOR ICT PRODUCTS**

REPORT TO THE SCSC
January 27, 2013

BACKGROUND

In their 2011 Declarations, APEC Leaders reaffirmed the need for greater reform and alignment in regulatory approaches and international standards, as necessary steps to prevent unnecessary barriers to trade. This project supports this goal and is in line with the Leader's emphasis on promoting green growth by building upon the principles supported by participants at the 2011 APEC Conference on the Alignment of Energy Efficiency Regulations.

This joint industry-government event focused on specific steps for APEC economies to consider that will advance the alignment of requirements based on minimum energy performance standards (MEPS). Workshop participants were asked to contribute to a plan to establish a harmonized MEPS regime that includes:
- A common standard for test methodology and product categories
- An international program for transportable test results
- A common dataset approach for target setting and conformity assessment

SUMMARY OF CONFERENCE GOALS AND DISCUSSION

The conference was held on July 18, 2012 in Seoul, Korea. 17 member economies participated, and 7 served as speakers.

PROJECT PROPOSAL TARGET OUTPUTS

The information and views gathered under this initiative will increase transparency in energy efficiency requirements and practices in the APEC region and encourage better alignment of these requirements. Outcomes of the conference will be reported and the project will request their endorsement from the APEC Subcommittee on Standards and Conformance. The results will also be shared with other APEC fora, such as the Energy Working Group and Market Access Group. The initiative aims to continue collaboration beyond the conference, and project overseers will discuss how to carry this forward after the workshop.

WELCOME AND WORKSHOP OVERVIEW

Ms. Jennifer Stradtman U.S. Representative, APEC Subcommittee on Standards and Conformance, Office of the U.S. Trade Representative, Mr. Terry Collins, Chair APEC Experts Group on Energy Efficiency and Conservation (EGEEC), Manager Products Program, Energy Efficiency and Conservation Authority, New Zealand, and Mr. Josh Rosenberg, Director, Global Policy, Information Technology Industry Council (ITI), United States, provided opening remarks and a workshop overview.

MORNING SESSIONS

Session 1 - A Common Standard for Test Methods and Product Categorization

Session1 (a): explored the differences and commonalities of current global standard and test methods being referenced in economies energy efficiency programs.

Mr. Terry Collins, Chair APEC Experts Group on Energy Efficiency (EE) and Conservation (EGEEC), Manager Products Program, Energy Efficiency and Conservation Authority, New Zealand, moderated and made several key points: (1) that many APEC economies have or are establishing MEPS; (2) that prices of devices do not always correlate with EE; (3) evidence suggests that many governments do not believe that testing for verification of EE is actually taking place, therefore , there needs to be some verification that EE standards are actually being met, and (4) that there is some divergence in EE standards, but alignment should be achievable for specific products where much work has already been done.

Ms. Vivian Tai, Environmental Affairs, Dell Inc., Asia-Pacific, pointed out that some voluntary standards have become requirements. She stated that it would be preferable for voluntary programs to be in line with Energy Star; and that mandatory MEPS definitions of GPU's should be harmonized with Energy Star 5.0 and ECMA 383 classifications and definition parameters. Ms. Tai also stated that testing and data harmonization should be aligned with Energy Star and that she does not support any mandatory labeling requirements.

Mr. Allan Booth, Assistant Director, Appliance Energy Efficiency Team, Department of Climate Change and Energy Efficiency, Australia, reported that Australia's policy is to use international standards, that it has to justify the use of non-international standards, and that a regulatory impact study must be conducted before any regulations are issued. Australia plans to introduce regulations for computers and computer monitors in April 2013. Australia introduced a Voluntary Code of Conduct for Improving the EE of Set Top boxes that was signed in December 2009 with the first reporting under the Code completed in March, 2011. This Code could be extended to other ICT products.

Session 1 (b): focused on measuring the energy consumption of personal computing products and on IEC62623 as a possible starting point to coalesce the economies towards a common EE measurement (test method) standard.

Mr. Josh Rosenberg, Director, Global Policy, Information Technology Industry Council, United States, moderated the session and directed the discussion towards the benefits of an aligned approach to test methods for EE programs, potential concerns in implementing this approach, and how any challenges to these approaches can be overcome. The IEC Final Draft International Standard 62623 was suggested as a starting point for agreement on a test method standard for personal computers.

Mr. Shahid Sheikh, Director of Global Product Energy Regulations, Intel Corporation, United States, presented an overview of IEC 62623 (incorporating the ECMA 383 standard) which is expected to be released during the 4th quarter of 2012. IEC 62623 is anticipated to be adopted by the EU Commission and during the next revision of Energy Star Computers Version6.0. He pointed out that governments regulating energy consumed by electronic equipment require a standard way to calculate/measure that energy, and that IEC 62623 is a standard that will measure and categorize computer equipment for EE. Criteria not in the standard include pass/fail criteria, product conformity assessment criteria, labeling criteria and product certification and accredited lab criteria.

Mr. Jeremy Dommu, Office of Energy Efficiency and Renewable Energy, Department of Energy, United States, stated that DOE's goal was to maximize EE for covered products – which currently do not include computers. The development of test procedures and rulemaking should include constant engagement with stakeholders as a key element. DOE strives to harmonize with existing international standards and ensure that existing standards continue to meet DOE objectives. He pointed out that test procedures are not static due to rapidly evolving technology and that introduction of new test procedures may uncover flaws. Jeremy provided an overview of the Super-efficient Equipment and Appliance Deployment (SEAD) working group and its current collaboration on data collection to inform the development of standardized product definitions.

Mr. Paul Robinson, Product Standards & Compliance Manager, IBM, Australia, stated that companies should conduct their own tests and self-certification if their labs are accredited for that purpose. He stressed critical elements of a test methodology are an international standards base that is widely used globally with reproducible results between test labs being achievable. Portability of test results between economies are needed with no retesting required - where the intent of the regulations have been met. There needs to be flexibility for a range of product families of models. The Australian standard is mandatory but the Australian/New Zealand standards mirror and track international standards and are technically equivalent. Harmonized test methodology is vital but should also take into account other internationally or regionally harmonized frameworks.

Mr. Osamu Namikawa, National Committee, IEC TC108, WG Environment, Japan provided Japan's view on IEC62623 regarding the measurement of PC EE. There are two approaches for the development of international standards – one for an internationally unified absolute value of measurement conditions and an approach that reflects regional climates and actual usage of users. Japan would like to see EE measurement demonstrated to users based on actual usage and for products that are in the same condition. Because of this, the Typical Electricity Consumption Duty Cycle

under IEC62623 should be investigated further. Japan agrees with international harmonization through adoption of international standards.

Session 1(c): focused on challenges with product categorization under EE requirements and the unintended consequences resulting from dissimilar products falling under the same EE regulations.

Mr. Henry Wong, Senior Staff Technologist, Intel Corporation, United States moderated this session and presented key considerations for product categorization that include functionality and features that change the energy profile of the system, market capability and application requirements such as grouping of devices that provide comparable capabilities to the target market or usage model, scalability within the category to address customization, and establishing categories for highly specialized product that may not be comparable for the energy comparison program being considered. Current categorization methods are included in IEC 62623 for personal computers, Energy Star for computer servers, Japan's Top Runner program for PCs and servers, and the Eco-Design Directive. Challenges to categorization include convergence of categorization methodologies, definitions of specialized groups of products, consumer versus commercial products and how to apply horizontal specifications across varied product categories.

Mr. Liu Hai, Program Manager Corporate Environmental Affairs, IBM, China, provided his perspective on considerations in categorizing or grading server systems. Because servers are scalable with a range of processor, memory, HDD, and graphics GPU configurations, there are resulting classification issues. Therefore, a different approach to classifying and testing servers is needed – machine type or model are possibilities. Energy Star has shown that the number of processor sockets can be a good means to differentiate servers. A one size fits all approach is not appropriate for enterprise ICT equipment due to server system complexity and the wide range of power signatures.

Ms. Yukari Yamashita, Board Member, Director, Energy Data and Modeling Center, the Institute of Energy Economics, Japan, described Japan's Top Runner program, which sets energy efficiency targets for a broad range of products, including computers. The program sets goals of energy efficiency rates for five years, and allows industry to compete to meet the set goals. She said the targets for Top Runner products change every 3-10 years and noted that Japan's Top Runner program aims to raise energy performance higher than the most efficient products currently on the market and therefore anticipates future changes in the market and increases innovation. She also stated that revision of product categories is essential in revising national standards. National standards should be developed based on international standards and should reflect actual usage patterns.

Luncheon Keynote: Mr. Sungil Ahn, Director, Ministry of Knowledge and Economy, Korea. Mr. presented on Energy Efficiency Policies and Labeling Programs in Korea. He highlighted the areas of Energy Consumption, Energy Efficiency Targets & Policy Direction, and Energy Standard and Labeling Programs, as well as discussing Korea's efforts on international cooperation.

Session 2: An International Program for Transportable Results

Session 2 (a): focused on experiences with conformity assessment requirements of economies' EE programs. Speakers addressed challenges, potential benefits and drawbacks, as well as required steps in establishing a program to share test results internationally.

Mr. David Ling, Strategist, Worldwide Technical Regulations, Hewlett-Packard Company moderated this panel and began with a presentation that highlighted the importance of test report transportability between and among economies. He raised the possibility that the IECEE E3 Program might be leveraged to support this ability for economies to share test reports and avoid possibly duplicative test requirements that could create obstacles to trade.

Mr. Yungrae Kim, Director, Korea Energy Management Corporation (KEMCO), Korea discussed several of the challenges from the regulator's perspective associated with aligning domestic programs with those internationally. Some examples of these challenges included: a lack of currently accepted international test procedures for many types of equipment, how to enforce compliance by overseas manufacturers with mandatory requirements, how to ensure overseas test labs are adequate to test, language barriers, and the challenge of overcoming the political desire of economies to protect and not change current domestic energy programs.

Session 2 (b:) explored existing international certification/testing approval schemes that might serve as possible models for energy efficiency.

Mr. Jens Hempel, Senior Specialist, Strategy & Business Development, TUV Rheinland provided details on the IECEE E3 Program, a globally standardized approach to testing and verification for electro-technical devices, based on IEC international standards. He noted that the benefits of this third party conformity assessment service program include preventing duplication of testing, reduction in costs, and support of more efficient global trade. The IECEE E3 program will provide proof of compliance to IEC standards in the field of Energy Efficiency in general and more particular in the fields of energy performance, energy consumption, and levels of noise emission. Hempel pointed out that E3 will support transportability of test reports by referring to relevant IEC standards when possible, including internationally agreed upon methodology and values. In addition, local schemes / standards of target economies / regions are incorporated with deviating test methods and values added, as necessary.

Session 3: Toward a Common Data Set

This session addressed current approaches to data gathering and how data is used in target setting and conformity assessment for MEPS programs. Speakers evaluated the need and possible options for a shared set of data based on actual product performance.

Mr. Shahid Sheikh, Director of Global Product Energy Regulations, Intel Corporation, United States moderated this discussion. He began by emphasizing that data Integrity is the key to robust energy efficiency programs and that APEC economies, rather than being overly focused on domestic or regional models, should take the opportunity to develop a global data strategy. This approach will ensure global applicability of requirements, categories for comparing like products, common methodologies/test procedures, and common data for setting limits and conformity assessment.

Mr. Robert Meyers, Data Center Product Manager, Energy Star, Environmental Protection Agency, United States, provided background on how the ENERGY STAR program in the U.S. gathers and applies data. He also shared his perspective on the challenges related to developing a common data set including the need for transparency, how to ensure integrity and leverage standards and automated tools in the process.

Mr. Sangguk Jung, Senior manager, Telecommunications Technology Association, Korea, discussed the relationship between testing standards and data. He noted that acquiring reliable data is a prerequisite for global data sharing, as standards provide minimum requirements that can be interpreted differently. Test specifications based on these standards are also required for harmonized test methods with testing conducted in qualified labs. Mr. Jung also emphasized the need for a testing quality assurance system and the need to consider data confidentiality.

Mr. Henry Lo, Center for Measurement Standards, Industrial Technology Research Institute, Chinese Taipei, presented background on how data was used to establish energy efficiency levels for Chinese Taipei's voluntary labeling program. Mr. Lo also suggested that global labeling programs should be considered when trying to align computer energy efficiency test methods in terms of the timing to revise their program regulations. He proposed that regulators can learn from the US ENERGY STAR program in the alignment process, such as ENERGY STAR's moving away from modal levels, moving toward total energy consumption and giving different device power allowances. Since the ENERGY STAR Ed. 5.2 is the most widely adopted scheme for computer test methods EE management, he supported further alignment based on these requirements.

Session 4: Workshop Review and Next Steps

Ms. Robin Gaines, The Office of Technology and Electronic Commerce (OTEC), Department of Commerce, United States, began the last session by helping to put the day's discussion in the larger context of ICT trade within the Asia-Pacific region. She highlighted APEC's commitment to reducing technical barriers to trade, a goal that was supported by further alignment of good regulatory practices among the APEC economies in areas including energy efficiency.

During the final panel of the day, organizers outlined a summary of key points from the workshop with open participation from all participants. It was established where there were points of agreement and which areas required further discussion. The group also

identified other organizations (NGOs, standards develop organizations, etc.) for outreach and coordination of future work.

There was general consensus on the following workshop outcomes:

Participants supported the idea of pursuing a common (MEPS) test methodology standard for PCs.

- There is support for alignment with Energy Star test methods which are the most widely followed among APEC economies. It was noted that ENERGY STAR is planning to adopt ECMA383 / IEC62623, which is due to be finalized by Q4 of this year.
- There is interest in having the IEC Final Draft Standard IEC62623 serve as the basis and reference for this common standard for PCs.
- Regulators in each economy were asked to review the draft standard IEC 62623 to determine its suitability for adoption and to identify steps that will help to overcome differences and other domestic and international obstacles to achieve this goal.

There is interest in a common standards-based approach for additional ICT equipment including servers, monitors, and printers. However, these requirements should not be based on the same critical elements / limits as those for PCs. These requirements should be developed according to the respective equipment's performance data, function, etc.

Economies will participate in coordinated market impact research studies to establish usage models and standardized categorization of systems

In order to maximize the benefits from alignment of test methods and product categorization, there is interest in further exploring the adoption or development of an international program for transportable test results.

The IECEE E3 program is being considered as a means of delivering transportable results and a low cost, common data set. The APEC EG EE&C will invite the IECEE to provide information and act as a forum to answer questions from APEC members. APEC members are asked to provide assistance as needed. In preparation for this, economies should identify areas where E3 may not apply. In addition, economies should bring the topic of a common data set and applicability of E3 to this discussion.

Both effective target limits and conformity assessment for energy efficiency requirements should be founded on as much actual data of energy performances as possible.

Having a common reference data set for economies to leverage can help regulators to set appropriate limits.

It is critical to get agreement on parameters, tools, instructions, and automation for data collection, sharing, etc. as well as requirements for labs.

To pursue APEC channels for capacity building including related education, outreach and training.

- Any plan for alignment should be coordinated among all APEC groups including the SCSC, EGEE&C. Efforts should also be made to coordinate with external organizations including SEAD and CAST to maximize effectiveness and avoid duplicative work.

Next Steps:

The conference's key outcomes should be forwarded for consideration and endorsement by the SCSC.

If SCSC endorsement is received, conference participants shall work with their respective economies and industry groups to determine whether or not they wish to participate in a newly established APEC SCSC forum.

All economies would be invited to participate in this forum, which will be formalized in 2013 and begin by creating a formal plan that includes goals, timeline and other critical elements (based on agreed upon outcomes above). The forum will be led by regulators with participation from industry.