Asia-Pacific Economic Cooperation

Developing Qualified Product Lists for High-Quality and High-Efficiency Commercial, Industrial, and Outdoor Lighting Products and Control Systems in the APEC Region

Workshop Summary

Zhuhai, Guangdong, China
12-13 October 2017

APEC Energy Working Group

December 2017

APEC Project: EWG 08 2016A

Produced by

Dr Chad Gallinat/Ms. Elena Thomas-Kerr, Project Overseer
U.S. Department of Energy
1000 Independence Ave, SW
Washington, DC 20585

Mr Jiayang Li, Senior Associate, Program Incubator
CLASP
1401 K Street NW, Suite 1100
Washington, DC 20005

For
Asia-Pacific Economic Cooperation Secretariat
35 Heng Mui Keng Terrace
Singapore 119616
Tel: (65) 68919 600
Fax: (65) 68919 690
Email: info@apec.org
Website: www.apec.org

APEC#217-RE-04.7

Table of Contents

Developing Qualified Product Lists for High-Quality and High-Efficiency Commercial, Industrial, and Outdoor Lighting Products and Control Systems in the APEC Region

Workshop Summary

Zhuhai, Guangdong, China
12-13 October 2017

Participant organizations and economies

- Expert Organizations: Designlights Consortium (DLC), IEA 4E, International Solid State Alliance (ISA), China National Institute of Standardization (CNIS), United Nations Environment, BC Hydro, Metropolitan Area Planning Council (MAPC)
- Representative Economies (10 in total): Canada; Chile; China; Indonesia; Malaysia; Mexico; Philippines; Thailand; USA; and Viet Nam.

**Note: due to a visa issue, Project Overseer (PO), Chad Gallinat, was not able to participate the workshop. Jiayang Li from CLASP represented the PO throughout the workshop. References below to "Project Overseer", or "PO," refer to Jiayang Li on behalf of Chad Gallinat.*

Objectives

The objectives of the workshop were to:

1. Introduce the Qualified Products List (QPL) as a tool for accelerated adoption of high quality LED lighting products in the APEC region;
2. Understand APEC economies' regulatory and programmatic status of LED street lighting; for example, Standard and Labeling programs, bi-lateral and multi-lateral collaboration between economies and/or programs, and bulk/government procurement programs; and
3. Identify the opportunity of using QPL as the tool to facilitate the alignment amongst APEC economies of test methods and quality standards for LED street lighting products.

Workshop Overview

Day 1:

- Local economy host, Dr Li Pengcheng from CNIS, welcomed all participants. He briefly introduced the status of LED street lighting S&L programs and developments in China over the last few years, and shared the Chinese government's plan for promoting quality LED street lighting products and some types of LED outdoor lighting products.

- Project Overseer welcomed participants to the workshop, explained the rationale and objectives of the workshop.

- Tour the table: Economy representatives introduced themselves and described their domestic policies related to LED street lighting products, including lighting standards, monitoring, verification and enforcement (MV&E) activities, public programs, and labeling programs.

- Patrick Blake, with UN Environment, described the Integrated Policy Approach (IPA) and the analysis developed to aid economies in setting energy reduction targets. The QPL program is considered a support mechanism within the IPA.

- Michael Scholand, with CLASP and IEA 4E Solid State Lighting Annex, summarized the global opportunity for LED lighting as an energy savings technology as well as the rapidly growing market for LEDs. He summarized relevant programs that cover LED street lighting, outlined market trends, and shared information on the frontier work in this area, etc.

- The DLC gave two presentations:

    1. The first introduced the overall QPL program (operating in the United States and Canada), the impact, program development and management, funding model, and future plans. The presentation explained what a QPL program could look like in the APEC region, identified key stakeholders and tasks to be considered and implemented. It was very well received by participants.
    2. The second presentation focused on DLC's QPL technical specifications, explaining the aspects that a QPL program regulates and the stringency levels. The presentation explained how to ensure that the quality of LED street lighting products are comprehensively regulated. It also reviewed the development and operations cycle of maintaining a QPL and updated specifications as well as the funding sources.

    Two presentations from current users of DLC's QPL program described how the QPL is used, why it is needed, and how users benefit from it. These two presentations provided evidence that QPL programs are/should be established where there is a need for quality LED street lighting products, and other related products as well.

- *During Q&A session, some challenges were discussed:* Participants described efficiency standards that were very low and outdated for the evolving, high performance technology. A growing demand for LED lighting combined with the availability of low quality, cheap products was also a concern for many economies. For economies that did have a QPL, managing the testing of the products presented a capacity challenge.

- Project Overseer concluded Day 1, and raised a question for participants to ponder in order to prepare for the discussions on Day 2: consider if and how a QPL could be useful for the individual economies, and the need for regional alignment.

Day 2:

- **Presentations:** Day 2 started with presentations from three economies: China, Indonesia and Thailand. Speakers reviewed their domestic policies and programs in detail.

    1. China has made great progress on lighting standards, a labeling program, and is working on developing a "green product" standard for LED lighting products that would look at their environmental impact from a comprehensive series of aspects.

    2. Indonesia introduced a series of retrofit programs that have taken place in various cities. Indonesia has now identified a need for smart connectivity, i.e. wireless and smart control of street lighting.

    3. Thailand has a labeling program which splits LED products into 1-5 performance tiers. They conduct market surveillance activities through randomly sampled products and testing at independent labs. They are updating the labeling program, which was first implemented in 2013.

    Common challenges identified included quality control, keeping up with technology, and growing the domestic industry while maintaining high standards. Variations in standards across economies was both a point of interest and a challenge for the smaller economies, who found they needed to respond to industry working in the region. Stakeholder engagement and management was an activity most of the economies facilitated and encouraged.

- **Panel discussions:**

    Panel Discussion #1: Managing a QPL program

    Panelist discussed topics including:
    1. how QPL programs can move the market toward higher efficiency and quality: standards, testing, verification;
    2. commonly seen obstacles/challenges: market surveillance, warranty issues, voluntary vs. mandatory policies, global trade/communication, fast development of technology;
    3. future trends: smart products.

Panel Discussion #2: QPL program and users

Panelist discussed topics including:

1. potential users of QPL programs;
2. how QPL programs should/could serve different types of users, both manufacturers and buyers;
3. how QPL programs deal with complaints of different types.

- **Breakout group discussions** focused on 3 topics: Standards, Developing and Managing a QPL and Using a QPL. All participants were invited and encouraged to speak up, share, listen and learn.

1. **Developing and Managing the QPL -** Developing a QPL is dependent on domestic standards, however, a regional QPL could act as a central portal while still allowing for some variations among sub-regional users.

    - Managing the QPL is a concerted and iterative activity that requires changes to the standards to remain relevant. A robust IT platform is needed and can be designed once the standards and requirements are established.

2. **Harmonizing standards –** Participants agreed that this activity could be implemented through the ASEAN SHINE program. Discussion of the consistencies between the IES and IEC standards could be a next step towards greater harmonization and consistency. This consistency could also enable and stimulate the industry to work globally. Stakeholder engagement is a key component to establishing voluntary standards that will be adopted by industry.

3. **Using the QPL –** Participants discussed in detail the reality of action and challenges in participating economies. The inconsistency of standards and warranty expectations was commonly shared. Also, some current efforts are either at very early stages or cover very few products. Lastly, users all desire the ability to provide preferences for their domestic manufacturers which could present a challenge. Sharing and collaboration was considered important, and the thought of a regional QPL, with local influence, was of interest.

Conclusion

Workshop participants were enthusiastic about the concept of a regional QPL, understanding the benefits to advancing quality products. The resource requirements are significant enough to challenge individual economies and the IT needs are substantial for a sustaining model.

Logical next steps could include:

1) A follow up meeting, perhaps hosted by APEC, to build on the information gained and potential for collaborative development,
2) Efforts to harmonize standards, beginning with discussion with ASEAN SHINE,
3) Consider first level concept for an APEC Regional QPL once standards are harmonized, and
4) Develop a funding plan.