



APEC Workshop on Ensuring Photovoltaic (PV) Reliability and Durability  
The Howard Plaza Hotel, No. 160 Ren Ai Road, Sec. 3  
Taipei, Chinese Taipei  
October 12-13 2011

Matching funding for this conference is provided by:



**USAID**  
FROM THE AMERICAN PEOPLE

Additional support has been provided by:



Draft Agenda as of September 26, 2011

Speakers that need to be added to the agenda:

Dr. Michio Kondo (AIST, Japan)

Dr. Dhirayut Chenvidhya, (Director, CES Solar Cells Testing Center (CSSC), Thailand)

**Wednesday, October 12, 2011**

8:30 - 9:00 am      Registration

9:00 - 9:10 am      *Introduction and Welcome*  
Vice Minister, Ministry of Economic Affairs, Chinese Taipei

**Mr. Eric MADISON**

Deputy Director, Taipei Office, American Institute in Chinese Taipei,  
United States

9:10 - 9:30 am      *Keynote Address*

**Chern-Lin Chen, Ph.D.**

Deputy General Director, Green Energy and Environment Research Labs,  
Industrial Technology Research Institute

- 9:30 - 10:00 am      *Overview of APEC Activities in Solar Technology*
- Committee on Trade and Investment Environmental Goods and Services  
and Subcommittee on Standards and Conformance*
- Ms. Julia DOHERTY**  
Chair, Subcommittee on Standards and Conformance  
Senior Director, Non-Tariff Measures, Office of the United States Trade  
Representative, United States
- Energy Working Group, Experts Group on New and Renewable  
Technologies (EWG EGNRET)*
- Dr. H. Tom LEE**  
Chair, Experts Group on New and Renewable Technologies  
Division Director, New Energy Technology Division, Green Energy &  
Environment Research Labs, Industrial Technology Research Institute,  
Chinese Taipei
- 10:00 - 10:30 am      *Results of the APEC Solar Technology Standards and Conformance  
Measures Survey*
- Mr. T. Khoi DO**  
Global Government Affairs Specialist, Underwriters Laboratories, Inc.,  
United States
- Outcomes of the Conference on Facilitating Trade of Solar Technologies  
through Standards and Conformity Assessment*
- Ms. Jennifer STRADTMAN**  
International Trade Specialist, U.S. Department of Commerce  
United States
- 10:30 - 10:45 am      Tea Break sponsored by Intertek
- 10:45 - 12:30 pm      **Session 1**  
**Framing the PV Material Reliability Issue**  
*This session will examine the issue of PV materials reliability from a  
number of different perspectives (safety, research and development,  
government policy regulation and standards development, global trade,  
and investment) discussing the macro level implications and areas for  
collaboration within the industry.*

Moderator: **Ms. Julia DOHERTY**  
Chair, APEC Subcommittee on Standards and Conformance, Senior  
Director, Non-Tariff Measures, Office of the United States Trade  
Representative, United States United States

Panelists: *Trade in Solar Technologies and Future Opportunities*  
**Mr. Ryan MULHOLLAND**  
Renewable Energy Trade Specialist, Department of Commerce, United  
States

*PV performance evaluation systems and its traceability in Japan*  
**Mr. Masaaki YAMAMICHI**  
Research Center for PVs, Japanese National Institute of Advanced  
Industrial Science and Technology  
Member, Standards Committee for PVs, Semiconductor Equipment and  
Materials International, Japan

*PV Standard, Testing Technology, Traceability in Chinese Taipei*  
**Mr. Jimmy YEH**  
Deputy Director of Electrical Appliance Test Division, TERTEC, Chinese  
Taipei

Questions and Answers

12:30 - 1:30 pm Luncheon sponsored by Intertek

1:30 – 3:00 pm **Session 2**  
**Technical Studies of PV Material Reliability**  
*This session will explore the technical data, research, and field studies  
behind the issue. The panelists will share research studies, testing  
methods, case studies from the field, and collaborative activity being  
undertaken to identify the appropriate materials and components in  
various applications and environments.*

Moderator: **Dr. Chung-Wen LAN**  
National Taiwan University, Chinese Taipei

Panelists: *Method and System for Shortening Module Light Soaking Test*  
**Mr. Londia HSIANG**

Manager, Research and Development, All Real Technology Co., Ltd,  
Chinese Taipei

*PV Reliability and accelerated tests*

**Mr. Liang Ji**

Senior Researcher of R&D Dept., Underwriters Laboratories, Inc., United States

**Dr. Xiaohong GU**

Materials Research Engineer, Polymeric Materials Group, Materials and Construction Research Division, National Institute of Standards and Technology, United States

**Mr. Allen ZIELNIK**

Senior Consultant, Weathering Science, Atlas Material Testing Technology LLC, United States

Questions and Answers

3:00 - 3:30 pm      Tea Break sponsored by Intertek

3:30 - 5:00 pm

**Session 3**

**Implications of PV Materials Reliability for the Investment Community**

*Various stakeholders from the investment community will discuss the PV module reliability, the investment model for projects, and practices they have installed to fight reliability issues. Project developers will address equipment and project evaluation and project lifetime, venture capitalists will discuss investment recuperation and mechanisms for project assurance, and insurance companies will outline the identification of variables for specific projects and how they are used for developing comprehensive policies. Having information on reliability would help government invest in solar.*

Moderator:      OPEN

Panelists:      **Mr. Kevin STEVENS**  
Vice President, Asia Pacific Zone Clean Tech and Technology Insurance  
Specialty Manager, Chubb Insurance Company of Australia Ltd/Chubb  
Group, Australia

**Mr. Lin WAN**

Vice Director, China General Certification Center, China

Questions and Answers

5:00 - 5:15 pm

Day One Recap and Adjournment

6:00 –8:00 pm

Welcome Dinner (Howard Plaza Hotel Taipei)  
sponsored by BSMI

**Thursday, October 13, 2011**

8:30 - 9:00 am      Registration

9:00 - 9:10 am      *Introduction and Welcome*

**Ms. Julia DOHERTY**

Chair, APEC Subcommittee on Standards and Conformance, Senior  
Director, Non-Tariff Measures, Office of the United States Trade  
Representative, United States United States

9:10 - 10:30 am

**Session 4**

**Best Practices for PV Supply Chain**

*This session will focus on the best practices being implemented by the  
supply chain to assure quality materials are being used in PV modules and  
related components. End manufacturers, testing laboratories, and  
component manufacturers will discuss the tools and mechanisms they  
have implemented in their process and with their suppliers to maintain  
quality, reliability, and safety.*

Moderator:

**Dr. Joeng-Shein CHEN**

Chairman of TeraSolar Energy Materials Co., Ltd., Chinese Taipei

Panelists:

**Dr. Oakland FU**

Technical Service Leader, PV Fluoromaterials, DuPont PV Solutions, China

**Mr. Paxon LEE**

Chinese Taipei Office, Semiconductor Equipment and Materials  
International, Chinese Taipei

*Installation Standards and Training*

**Ms. Shay BRAZIER**

Southern Perspectives, Inc., New Zealand

**Mr. MATSUKI**

Japan Electrical Safety and Environment Technology Laboratories (JET), Japan

Questions and Answers

10:15 - 10:30 am

Tea Break sponsored by BSMI

10:30 - 11:30 am

**Session 5**

**Solutions for PV Materials Reliability**

Stakeholders will discuss various solutions to the safety, reliability, and durability of PV materials and systems at-large. Panelists will introduce tiered certification processes, more stringent standards development, quality management systems, or new investment models in the face of downward cost pressures and technology innovation.

Moderator:

**Mr. Lin WAN (invited to moderate)**

Vice Director, China General Certification Center, China

Panelists:

**Mr. Edwin YANG**

Senior Research Scientist, Corporate Research, Underwriters Laboratories Inc., United States

*Global PV Material Reliability Standards and Programs*

**Dr. Paul F. ROBUSTO**

Business Development Manager, Photovoltaic Services, Intertek, United States

*Inline and Off-line Inspections for Quality Control in Module Production*

**Mr. Jay LIN**

Director of Research & Development Division  
a2peak power Co. Ltd., Chinese Taipei

**Mr. Seong-ho LEE**

Executive Vice President, Korea Photovoltaic Industry Association (KOPIA), Korea

Questions and Answers

11:30 -12:30 pm

**Closing Session**

Outcomes and Next Steps

This final panel will discuss the outcomes of the workshop and next steps for collaboration amongst public and private sector.

**Laboratory Tour of TERTEC**

1:00pm – 2:00pm	Board Bus to Taiwan Electrical Research and Testing Center (TERTEC) No. 6-6 Ronggong S. Road, Guayin Township, Taoyuan County 328, Chinese Taipei
2:00pm - 3:00pm	<b>Tour of Taiwan Electrical Research and Testing Center</b>
3:00pm - 4:00pm	Board Bus to National Palace Museum
4:00pm - 5:30pm	<b>Tour of National Palace Museum</b>
5:30pm - 7:30pm	<b>Reception</b> Location: Silks Palace at National Palace Museum Sponsored by Underwriters Laboratories Taiwan  Board Bus to return to the Howard Plaza Hotel