



# PV MODULETECH CONFERENCE

23 - 24 October 2018

PENANG, MALAYSIA

# Conference Agenda

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## Day 1: 23 October 2018

0800-0900 Registration & Refreshments

0900-0930 **Welcome & Introductions**

### Opening Presentation from the Conference Chair

**Finlay Colville**, Head of Research, **PV-Tech & Solar Media Ltd.**



The opening talk will provide a detailed understanding of how module supply is changing in the PV industry today, with utility markets outside China set to drive the global PV market from 2019 onwards. The talk will outline the forecasted market-share allocations of the leading global suppliers in 2019, and the expected module technologies being shipped outside China. The topics covered will outline the key topics to be presented and discussed over the two days at PV ModuleTech 2018.

0930-1045 **Morning Session I**

### Non-China Global Module Supply for Utility Solar: Understanding the US, India, Japan & Australia Markets

Speakers:

**MJ Shiao**, Global Lead - Renewables & Emerging Technologies, **GTM Research**

**Vinay Rustagi**, Managing Director, **Bridge to India**

**Izumi Kaizuka**, Director/Principal Analyst – Research & Analysis, **RTS Corporation**

**Michelle McCann**, Co-Founder/CEO/Director, **PV-Lab Australia**



The opening session will feature presentations on the four main utility-scale countries for PV demand today (excluding the Chinese market) namely the US, India, Japan and Australia. These four countries have emerged as multi-GW demand regions, with stable policy environments and long-term drivers that ensure they retain priority status for module suppliers.

1045-1100 Morning Refreshments & Networking Break

1100-1200 **Morning Session II**

### Perspectives from Market Leaders: Quality in Module Supply, Materials & Panel Assembly

Speakers:

**Daniel Chang**, Technical Director, **JinkoSolar**

**Oakland Fu**, Technical Manager, **DuPont Photovoltaic & Advanced Materials**

**Mirko Meyer**, Head of Product Management, **Meyer Burger**



This session will hear from three of the leading companies today, impacting module technologies, materials and production equipment used in the supply of quality and reliable products for large-scale utility solar deployment. The companies and speakers will address the key metrics underpinning today's state-of-the-art module assembly and supply, while addressing the next-generation product improvements that will offer improved reliability and higher output yield for EPCs and developers.

1200-1300 **Morning Session III**

### New Markets for Utility Solar: Module Demands & Requirements from Emerging Global Regions & India

Panellists:

**Carlos Gatmaitan**, Chairman, **MRC Allied**

**Nabih Cherradi**, CEO, **Desert Technologies**

**Vinay Kumar**, Managing Director/CEO India Renewable Power, **Brookfield Asset Management**

**Sudeep Tiwari**, Senior Manager Module Technology & Supply Quality, **Mahindra Susten**

**Glenn Lim**, Managing Director, **New Energy Financing and Consulting (NEFIN)**

Other panellists to be confirmed



Various panel discussions will be chaired on-stage during this session, with speakers and panellists chosen from a range of experience local developers, EPCs, O&Ms and Asset Owners active today in Southeast Asia, Middle-East & Africa, and Latin America. These regions comprise a wide range of countries where utility solar is being deployed today, often accompanied by government tenders and auctions. Coupled with the Indian market, there is expected to be a transition during 2019 as these regions see more higher-performing panels deployed, but how well prepared are the module suppliers to guarantee reliable operation over the lifetime of the plants?

1300-1400 **Lunch Break & Extended Networking Session**

1400-1500 **Afternoon Session I**

### **Meeting the Demands of Leading Developers, EPCs & O&Ms**

Speakers:

**Jenya Meydbray**, VP of Solar Technology, **Cypress Creek Renewables**

**Frank Faller**, VP Technology, **8minutenergy Renewables**

**Carmen Morilla**, Head of Solar Operations Services, **TerraForm Global**



This session explores some of the key issues for module selection, operation and optimization at utility solar sites, from initial company/technology selection to maximizing plant asset value at the secondary site sales process – both when undertaking due diligence to acquire build sites or packaging owned sites for selling. Speakers will address the major factors that impact on module quality and reliability, from project development, site construction, site valuation and O&M.

1500-1600 **Afternoon Session II**

### **Bifacial Module Questions: What the Industry Needs to Know Today**

Speakers:

**LONGi Solar** (speaker to be announced)

**Ralph Romero**, Senior Managing Director, **Black & Veatch Management Consulting**

**Tristan Erion-Lorico**, Head of PV Module Business – Laboratory Services, **DNV-GL**



With module supply for utility solar transitioning from 72-cell p-multi to p-mono PERC, the next phase of module technology upgrading will see widespread deployment of bifaciality, with rear-side efficiency gains creating strong upside to site yields. However, despite the obvious advantages in the field, many questions remain to be answered in order to fully understand what can be expected in the field over 20-30 years of operation. This session will hear from both module suppliers and the third-party organizations now offering benchmarking and yield tools to assist developers, EPCs and lenders to accurately predict bifacial site yields and return-on-investment.

1600-1630 **Afternoon Refreshments & Networking Break**

1630-1730 **Afternoon Session III**

### **New Module Technologies for Enhanced Site Performance: Why 2019 Represents a Breakthrough Year for Global Utility Solar Deployment**

Speakers:

**Finlay Colville**, Head of Research, **PV-Tech & Solar Media Ltd.**

**Lou Trippel**, Vice-President Product Management, **First Solar**



Closing out the first day of PV ModuleTech 2018, this session will feature talks explaining some of the new products that are set to impact the global utility solar segment in 2019. First, an overview will be provided by PV-Tech's Finlay Colville, revealing the full range of PV module technologies that are available today, including n-type and thin-film offerings that have a strong track-record in the industry going back more than ten years. This will be followed by First Solar, outlining some of the key features that make its Series 6 introduction one of the most significant and successful new product roll-outs yet seen within the PV industry.

1800-2000 **Evening Networking**

## Day 2: 24 October 2018

0830-0900 Refreshments

### 0900-1000 Morning Session I

#### Enhancing Module Site Performance through Material Optimization & Light Capturing

Moderator:

**Tatiana Kozlova**, Research Scientist – New Energies Research & Technology, **Shell Global Solutions International**

Speakers:

**James Ma**, Senior Scientist – Renewables Solutions Laboratory, **3M Electrical Market Division**

**Yang Li**, Postdoctoral Research Fellow, **University of New South Wales**

**Wayne Ma**, Application Technology Leader, **Dow Chemical**



The use of new and advanced materials and films during the module assembly process is known to be critical to increase power levels and site yields over the lifetime of products. In addition to outlining the latest material innovations, this session will see strong focus on the use of light capturing films and related module performance, including how to model enhancement levels and supporting data from test and validation, and third-party agencies.

### 1000-1100 Morning Session II

#### Defining Reliability Metrics for Utility-Scale Module Deployment

Speaker:

**Gabriela Bunea**, Vice President of Research & Development, **SunPower**

Panellists:

**Terje Melaa**, Senior VP Technology Solutions, **Scatec Solar**

Other panellists to be confirmed, including **DuPont Photovoltaic & Advanced Materials**, **Meyer Burger** & **3M Electrical Market Division**



This session will focus on module reliability in the field, starting with an invited keynote presentation from SunPower, as one of the leading suppliers of modules to utility-scale solar over the past 20 years. The following panel discussion will then hear perspectives from various module stakeholders through the value-chain, supporting the need to make purchasing decisions based on maximising LCOE with minimal risk.

1100-1145 Morning Refreshments & Extended Networking Break

### 1145-1300 Morning Session III

#### Learning from Established Multi-GW Global Module Suppliers

Speakers:

**Trina Solar** (speaker to be announced)

**Philip Ecker**, Regional Sales Director, **Talesun**

Other speakers/companies to be confirmed



With only a small group of PV module suppliers having been serving the global utility market consistently over the past 10 years, these companies have accumulated significant knowledge on how to specify modules and design solar sites to maximize yield and returns. Two of these companies – Trina Solar and Talesun – have also been heavily involved in project development and as lead-contractor during EPC activities, often packaging portfolios of sites for to sell on to institutional investors. This session will hear from Trina Solar, Talesun and others on how these learnings will be impacting module availability and project development during 2019 and beyond.

1300-1400 Lunch Break & Extended Networking Session

1400-1530 **Afternoon Session I**

**Testing, Auditing, Insurance, Warranty & Bankability of PV Modules: What Developers & EPCs Need to Know Today**

Moderator:

**George Touloupas**, Director of Technology & Quality, *Clean Energy Associates*

Speakers:

**Alexandre Minuzzo**, President, *STS Certified*

**Kyumin Lee**, Chief Engineer, *CFV Solar Test Laboratory*

**Lawrence McIntosh**, Research Consultant, *PV-Lab Australia*

**Ronald Sastrawan**, Senior Risk Analyst, *Munich Re*



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Selecting module suppliers, their technologies, and point-of-manufacture remains one of the biggest challenges to global developers, EPCs and lenders, with a wide range of third-party agencies operating both globally, regionally and at the country-specific level. This session will hear from some of the leading companies filling this need in the industry, providing key data-points for those specifying, using and owning utility-scale sites in the future.

1530-1600 Afternoon Refreshments & Networking Break

1600-1700 **Closing Session Roundtables on PV ModuleTech 2019 Conclusions**

Moderator:

**Finlay Colville**, Head of Research, *PV-Tech & Solar Media Ltd.*



The final session of PV ModuleTech 2018 will provide an ideal platform for conference attendees to piece together all the information and learnings from the two days. Configured as an ideal 'tool' for attendees mandated to feedback takeaways to company teams members or to report to corporate internally, the two sessions below will seek to provide conclusions, answers, and outstanding questions fundamental to module selection, performance and quality going into 2019.

**Closing Roundtable I:**

**Leading Global Chinese Module Suppliers Talk 2019 Module Supply**

*Panellists from*



**Closing Roundtable II:**

**How Prepared are Third-Party Agencies, Developers & EPCs for 2019 Module Offerings**

*Panellists to be revealed shortly*

1700 Conference End



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