



# PV MODULETECH CONFERENCE

23 - 24 October 2018

PENANG, MALAYSIA

The industry-leading event from PV-Tech covering all aspects of module supply and demand, manufacturing assembly and technology trends, testing and quality, bankability and site yield optimization

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# Foreword

The inaugural PV ModuleTech 2017 event created a unique platform to assess the commercial availability and market-readiness of the various PV module technologies being offered from the leading suppliers to the industry.

Presentations were delivered from all the major PV module suppliers, including the dominant Silicon Module Super League (SMSL), alongside many of the other GW-level companies across both c-Si and thin-film technologies.

In addition to supply volumes, PV ModuleTech focused also on the quality, reliability and field performance of modules, with talks and discussions from the key stakeholders involved across the value-chain.

Understanding how modules are tested, inspected, certified, insured and considered to be bankable remains critical to utility-scale selection at both the company and technology level, and these topics dominated the discussions on stage, and during the networking breakout sessions.

PV ModuleTech 2017 provided the opportunity for leading developers, EPCs and project investors to gain a thorough understanding of what can be regarded as mainstream module technologies today, and what the major module suppliers are implementing in production today to enable higher performance levels during 2018 and 2019.

This included, for example, the status of c-Si glass-glass modules, PERC reliability and degradation measurements, and bifacial module performance benefits. The implicit advantages of thin-film panel selection were also covered in detail, and how quality control can be optimized from managing the entire production process under one roof during manufacturing.

The location in Malaysia again proved to be a success, with the country not only being a hub for manufacturing, but also one of the new Southeast Asian markets for utility-scale solar deployment. The proximity to other emerging markets in the region helped stimulate interest from regional developers and investors that were reviewing module suppliers and technology choice for upcoming projects in 2018.

PV ModuleTech 2018 will return to Malaysia on 23-24 October 2018, with the event location moving to Penang this time. The event is set to feature greater representation from independent engineers and technical assessors acting for the leading global investors and banks, reflecting the increased importance of this stakeholder group in identifying which module suppliers and technologies will prevail in the 100GW-plus utility scale market set to unfold annually in the next growth phase of the industry.



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

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# Agenda and Session Topics

## Introduction to PV ModuleTech 2018

Going into its second year, PV ModuleTech 2018 is set to secure its slot in the calendar of PV conferences as the single most important two-day event for all stakeholders involved in the manufacturing, supply, testing, inspection, auditing, installation, financing and operation of PV modules at the utility scale level globally.

In addition to all the topics covered at the inaugural PV ModuleTech in 2017, the 2018 event sees some exciting new subjects added to the agenda, in particular, forecasting of PV module demand for the next 2-3 years.

- How big will annual demand grow to for solar PV modules during 2019 and 2020?
- Which countries will drive the PV industry to the 200 GW of annual demand figure?
- How big will China be in 2019, and going forward?
- Which countries across Europe will stimulate Y/Y growth here, and which countries will be the first to deploy large-scale subsidy-free solar parks as a sustainable business model?

The two days of PV ModuleTech 2018 will focus on eight key sessions featuring the most authoritative and influential stakeholders in the industry today, and covering all key issues in module demand, supply, shipment, installation and operations, as follows:

- Module Landscape for 200 GW Annual Global Demand
- How are Developers and EPCs Choosing Module Suppliers and Technology-Types Today?
- Multi-GW Module Suppliers
- Bankability of PV Modules, Suppliers, and Technologies
- Technology Trends and Design Impacting Module Selection
- Module Assembly Manufacturing and Optimization for Reliable Performance
- Module Performance Optimization
- Conference Interactive Discussion / Round-Table Forum: Key Findings for Module Supply 2019-2020

Speakers at PV ModuleTech 2017 included:



## Day 1: Morning Session 1

### Module Landscape for 200 GW Annual Global Demand

This session will map out the demand landscape for PV module suppliers, and which countries and regions are going to create the demand, in particular outside China, that is key to leading multi-GW suppliers having a truly global footprint.

In addition to identifying the geographic mix in a 200 GW demand world, the session will address the module types, suppliers, and technologies that are expected to be market-leaders at this time. This will include what is to be expected with module pricing and costs, and how modules suppliers can retain acceptable production margins as blended global ASPs move from 30c/W to 20c/W.

#### Questions answered will include the following:

- How will the module supplier landscape change in going from 100 GW today to 200 GW in 3-4 years?
- Which countries and regions will drive annual PV demand to the 200 GW level?
- What will the technology mix be in 3-4 years; how much mono and n-type modules will be supplied in volume?
- How do modules move above 400 W and what are the challenges in getting there?
- How will costs trend for module production; when will all-in (silicon and non-silicon) module production costs hit 20c/W and what is needed to move even lower; how can module assembly production costs move below 10c/W and closer to 5c/W?
- What is to be expected with ASPs in the next few years; how low can module ASPs go, while sustaining profitability for suppliers?
- Who will the leading module suppliers be as company annual shipment levels move from 5 GW today to 15-20 GW?

This session will provide key strategic inputs for sales and marketing teams at module suppliers that are already positioned to address global market expansions, or Chinese GW-plus module providers that have concentrated mainly on the domestic Chinese market in the past few years, but now wish to develop overseas revenue streams.

The presentations and discussions will also be invaluable to global developers, EPCs, financiers, site investors, and third-party test and certification bodies, that each need to be fully aware of how global demand is set to evolve in the PV industry going forward.



## Day 1: Morning Session 2

### How are Developers and EPCs Choosing Module Suppliers and Technology-Types Today?

This session will feature leading global developers, EPCs and investors, and what acceptance criteria they are applying when choosing module suppliers and their respective module technologies, for the build-out of utility-scale solar site deployment today.

One of the key themes to emerge from PV ModuleTech 2017 was the need for project developers and EPCs to be connected with module suppliers, and for module suppliers to fully understand what metrics are being used by downstream stakeholders in choosing module companies and their respective technologies. Often selection criteria are not fully understood, with module suppliers pushing the wrong solutions, or not aware of the risks associated with their current product portfolios.

#### Questions answered will include the following:

- How are developers choosing PV modules today for utility-scale solar deployment?
- What are the best-practices being applied today on module selection?
- What are the experiences and problems being seen by EPCs now, with regards module performance and reliability?
- Are module performance levels and reliabilities meeting technical specifications?
- What factors are being used by developers and EPCs to reduce risk for lenders/banks?
- How important are leading third-party testing organizations?
- Which modules are best for different types of installations/climates?
- How are O&M reporting and site monitoring helping developers and EPCs choose the best modules?

This session will offer key findings to module suppliers that are seeking to grow sales volumes, especially in markets that they have struggled to engage with. It will also help guide module suppliers in knowing which module types are best to offer for different applications.

For developers, EPCs and site owners/investors, it will also prove highly informative in benchmarking how some of the leading global EPCs/developers are being successful today, in making sure that site builds are being optimized with the lowest risk profile. It will also lay out some of the best-practices for new entrants at the developer/EPC stages, in particular in countries where auctions have recently taken place, and the deployment of utility-scale solar is a relatively new phenomenon.



## Day 1: Afternoon Session 1

### Multi-GW Module Suppliers

Assessing the financial and technical credibility of module suppliers today, as reliable suppliers to large-scale utility sites globally, is one of the most critical questions for all downstream stakeholders (developers, EPCs, site owners, asset managers, O&Ms, and investors).

The question of “how are the best-selling and most-dependable module providers” continues to be one of the most frequent concerns from EPCs these days, and it is clear that the industry has been struggling to differentiate between module suppliers in the past few years.

While we cannot assume that the biggest manufacturers (by GW volume of shipments) have the highest quality products, it remains a fact that global supply today is still concentrated across about 10-20 companies that have the global footprint and supply volumes to meet growing PV demand.

#### Questions answered will include the following:

- Which module suppliers are leading GW-supply today within a 100 GW market?
- How many module suppliers are serving the non-China utility segment globally; how many multi-GW China-only suppliers are ready to become global supply leaders?
- What type of modules are being used today for utility-scale deployment?
- Where are the modules being made today, and how much is being made in-house, or by third-party contract-based OEMs in Southeast Asia?
- Which new module technologies (PERC, n-type, bifacial, half-cut cells) are starting to be used for solar farm build out, and who are the bankable module suppliers here?
- Which modules suppliers and technologies have a proven track record of increasing efficiency and power levels?
- How can module suppliers convince downstream stakeholders that company insolvency is a low risk proposition?
- How important is sales/marketing resource globally, and which module suppliers today have truly global brand status?

This session is expected to be one of the highlights of PV ModuleTech 2018. Knowing which module suppliers and technology offerings are the highest-performers and lowest-risk options is still a tough question to answer for many in the PV industry, especially when there are module suppliers about whom relatively little is known.

In addition to the major global module suppliers that are household names today, the session will seek to highlight some of the new names that have built up GW+ levels of module supply in the past few years, and are potential suppliers with premium performance or lower ASPs on offer.

“ PV ModuleTech provided a valuable opportunity to learn from experts about reducing risks of premature module degradation and how to increase confidence in design life through BOM selection and testing. ”

**Sandy Pulsford, Clean Energy Council**

## Day 1: Afternoon Session 2

### Bankability of PV Modules, Suppliers, and Technologies

'Bankability' is the ultimate assessment-of-risk for module supplier and technology offerings today, for utility-scale solar deployment. For many module suppliers today – especially those with limited global exposure until now – bankability studies effectively present these companies and their respective product offerings to the outside world. Bankability is the only means to truly combine financial and technical strengths of module suppliers and types to the market today.

As the industry has accelerated annual deployment levels significantly in the past 3-5 years, various studies have been conducted for example in Europe that claim module defects have been found in 20-50% of modules used in power plants installed during 2013-2015. Have these trends been observed in other global end-markets? And how do Chinese installations in the past few years compare? The PV industry has been overloaded with different ranking metrics, or customer-satisfaction awards; which of these are of value, and how should they be used today?

#### Questions answered will include the following:

- What are the key factors used to determine bankability for module suppliers today; supplier credibility, certification, BoM's in manufacturing, factory inspection, warranty conditions, reliability testing, warranty insurance, etc.?
- Who are the leading independent engineers within the PV industry today, and what role are they playing in module supply criteria?
- What metrics are independent engineers using to quantify and minimize risks for PV systems/projects performing as expected; do we need to adjust expectation levels as new module technologies move into the mainstream?
- How are module suppliers being benchmarked today, from a risk standpoint?
- What are the best module rankings systems available today, to assist project developers, lenders and investors?
- How are the technical assessors at the lenders/banks making decisions on module choice, and financing?
- How can we use bankability studies to make financing easier, while lowering O&M risks?
- How do bankability studies help to provide finance for new projects using specific module products or technologies?
- What needs to be put in place to help project site stakeholders get comfortable with new technologies on offer?

This session will be invaluable to module suppliers, and all parties connected with equipment and material supply to the assembly sites. It will also greatly help test/inspection/certification companies in knowing what measurable are being used by independent engineers, risk assessors and factory auditors, during their site visits and company/plant evaluation.

Bankability and risk assessment is also essential during secondary site acquisition, in understanding the long-term predicted performance of build assets, in addition to setting correct performance ratios for O&M's and for projecting Rol's.

New module suppliers that have ramped to the GW-level in the past few years, and are now seeking to expand sales activity globally (especially outside China) need to be fully aware of what bankability looks like outside China, and which third-parties are influencing banks and investors in deciding modules used for new utility sites.

## Day 2: Morning Session 1

### Technology Trends and Design Impacting Module Selection

Just a few years ago, when new utility solar sites were being designed, almost all plans were based on 60-cell poly (p-type multi) modules, with dc-power levels (STC) in the range 255-260 Watts. The past few years has seen a major technology shift in the selection of modules, including the widespread availability of 72-cell and 1500V panel designs, and of course, the new p-type mono modules that can bring significant yield gains.

Fast-forward to 2019, and glass/glass and bifacial modules are set to make major inroads into large-scale solar deployment, creating a situation where EPCs and developers need to fully understand this rapidly changing technology landscape.

During 2017 and 2018 however, the main shift has been PERC modules (both on mono and multi) which offer yield benefits (from higher cell efficiencies / module power ratings), but PERC modules need particular attention, especially during initial site operation. Degradation mechanisms are still being understood, and investors of PERC-based solar sites need to be aware of what to expect over the lifetimes of the modules.

Other issues are arising as module powers start to move to 400W and above, levels never seen before on solar farm builds. Again, the key issue here is understanding what needs to be done during site builds, and ensuring that sites are optimized and yield levels are accurately predicted.

#### Questions answered will include the following:

- Choosing between multi and mono c-Si modules: what are the key issues in terms of ASP, reliability and site returns?
- 60-cell, 72-cell and 128-cell c-Si modules: what are the key differences in utility-scale performance?
- What are the pertinent issues for 400W+ modules; hot-spots, degeneration, effect of half-cell designs for 72-cell modules, operation in harsh environments and high-temperature climates?
- How do today's best-in-class thin-film panels benchmark against c-Si module supply from the leading global suppliers; what's new in thin-film and what to watch out for in 2019-2020?
- The move to glass/glass and bifaciality: what do developers, investors, EPCs and all stakeholders driven by site performance need to know today?
- How should bifacial modules be designed for optimum plant operations and what yields can realistically be expected; surface issues, height of panels, tilt, tracking, climate, irradiance levels, diffused scattering light, and how should we try to measure these realistically?
- Are established software packages capable today of really simulating bifacial gain correctly?
- Are degradation (including Light and elevated Temperature Induced Degradation, or LeTID) issues in PERC modules fully understood; what do site owners and asset managers need to know?
- Given the wider spectral response of PERC modules (300-1200nm), how are companies testing for blue response (300-400nm) and IR (1100-1200nm), and how does this impact site yield?
- What is the status today for half-cut cell module assembly, or multi-cut/shingled modules; are they mainstream, what risks do they bring, and what value-added features are on offer?
- How is module assembly progressing with advanced multi-busbar (MBB) and smart-wire grid interconnection technologies, as the industry moves on from standard 4-5 busbar designs; how is this impacting on cell-to-module (CTM) losses and silver consumption?
- When will the investments in new n-type module production impact on global module supply; is heterojunction the next high-efficiency module type to enter volume mass production?

- How are temperature coefficients different, from the new module designs, compared to mainstream p-multi supply of a few years ago? And what about low irradiance response?
- What about standardization of processes; are we moving away from assembly standardization with all the new module variants coming on the market?
- Should downstream stakeholder be concerned about the possible reduction in cell thickness (from 180 to less than 160 microns and lower), and possible impact on module performance in the field?

This session will appeal to almost every attendee at PV ModuleTech 2018, as the implications for module technologies changing is paramount for all value-chain stages from panel assembly to O&M reporting.

As a starting point, simply having a forum to air all the potential issues that may drive underperformance from higher-spec modules will be invaluable. This is likely to drive discussion during and after the session, and we expect the output from this session to remain topical for some time to come.

Finally, the session will also try to put into context some of the more speculative technology trends that are realistically not likely to enter mainstream module supply channels for at least 3-4 years at minimum. The solar industry is still prone to be overly optimistic when looking at disruptive technologies coming into mass production; often, this can be misleading for developers and EPCs, and simply knowing which new incremental module technologies are key to stay on top of is far more valuable.

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## Day 2: Morning Session 2

### Module Assembly Manufacturing and Optimization for Reliable Performance

Production equipment and materials selection used in module assembly factories plays a crucial role in the performance and long-term reliability of modules installed in the field.

As the PV industry has moved from producing 10 GW of solar modules per year, to over 100 GW in 2017, module assembly has changed considerably, with a wide variety of standards and processes deployed across a range of countries and regions. Understanding how these module assembly sites operate and are changing tools and processes to adapt to new cells being used is key to understand today and going forward.

Bill-of-materials, reliability testing, inspection and factory auditing are just a few of the parameters that help form a risk-profile of modules being shipped from assembly sites. And in recent years, more automation has been introduced with inline inspection now key to product repeatability.

#### Questions answered will include the following:

- How are turn-key module production lines evolving, for increased throughputs (150MW+ lines), higher panel powers, full-automation, and lower cost-of-ownership/capex/opex?
- When will stringing/tabling become a fully-automated process step in module assembly?
- What lamination processes are best for bifacial and glass/glass modules?
- Is quality control and consistency compromised when relying upon third-party contract OEMs located in different countries/continents to where the cells are made, or the module supplier is headquartered?

- Are we likely to see more module assembly plants emerge in India, the US, and other emerging end-market regions, in the next few years; what are the risks and opportunities on offer here, and what needs to happen to drive investments here forward?
- What unique features are provided by having all-technology/production, located under-one-roof; which module suppliers are offering this today?
- What benefits are offered through fully-integrated, automated and continuous process flows in single factories; is thin-film the only technology type able to offer this to the market today?
- Why is material selection in module assembly still so important today; and what are the trends in backsheet and EVA availability?
- How can we correlate module quality and materials selection with risk reduction for power plant investors and owners; does this show up during infant, midlife and long-term failure analysis testing?
- What metrics are in place for supply-chain traceability, in terms of materials used and process management, during module production?
- Is there a direct link between BoM and components across all manufacturing operations, and eventual module degradation in the field?
- How much inline monitoring is being done during module assembly; what new tools are available on the market today, and what are the critical issues to understand?
- How much pre-ship inspection is being done today on modules?
- What are the trends for EL, PL imaging/inspection tools, and simulators?
- How should we use IV testing to characterize performance and undertake failure analyses, and predict behaviour of modules under real-world conditions?
- Is it possible to inspect 100% of modules before installation?
- Extended reliability testing; is accelerated aging testing a viable model and how should we use these findings optimally; which methods are being used for outdoor simulation?
- Is there any clear sign that module warranties for extended performance to 25-30 years are moving to standardization; how can we extend module lifetimes for improved RoI's?

The topics covered in this session will offer value for module production companies, their supply-chains and the production and inspection/test equipment/processes that are employed to take incoming cells to fully-qualified modules shipped.

It will also explain to module users the various metrics that need to be understood during module production and testing, and how these may impact module performance and reliability in the field.

The session is also expected to highlight some of the new techniques being introduced in the most advanced module fabs, and how these can be used to model module yields over 25-30 years in the field.



## Day 2: Afternoon Session 1

### Module Performance Optimization

This session addresses the issues most impactful on site under-performance arising from module company/technology selection, directly from the investor/site-owner perspective, and relates them to issues occurring during manufacturing, testing, transportation and site installation.

This will include case-studies, where module performance on-site is correlated directly to site yields, and methods being used to monitor changes in module operations.

#### Questions answered will include the following:

- What metrics are being employed today to reduce risk when choosing companies and technologies for utility-scale module installations?
- How is field performance and reliability being monitored; how are performance ratios being set for optimum energy yield and site revenue generation?
- What techniques are being used to characterize and predict module performance reliability, and preventing underperformance on-site?
- How can we reduce the introduction of defects in modules during manufacturing, transportation and site installation?
- Are EPC's/investors fully aware of year-one degradation issues, in terms of setting performance ratios/contracts with O&M's, and loss of revenues/yields; do the contracts reflect impact for example of PERC regeneration and LID/LeTID, and is there a good understanding of the role of stabilization of modules for reliable performance characterisation?
- How can we reduce the risk of premature module degradation?
- How important are LID and LeTID in setting realistic performance ratios for O&M's, and in forecasting site yields and Rols, in particular in year-one?
- How are site yields and Rol's being adapted to changing module technologies?
- Do balance-of-systems components need to change with new high-power module offerings?
- What role does transportation play in eventual module performance in the field?
- Which firms are providing factory audits today, and what methodologies are being used to rank module suppliers assembly sites/processes?
- How are testing labs playing a key role in mitigating against underperformance?
- What new testing procedures are being employed today for different module types?
- Can we depend purely on standardized tests and certification to ensure quality and reliability; what are the limitations here, and how should module users factor these into risk assessment?

This session be invaluable to site designers and EPCs, with tips in how to eliminate the main factors resulting in module under-performance on completed sites.

## Day 2: Afternoon Session 2

### Conference Interactive Discussion / Round-Table Forum: Key Findings for Module Supply 2019-2020

The final two hours of PV ModuleTech 2018 will provide the ideal platform to fully assess all the information from the two days of presentations given. This interactive platform will include a professionally-moderated environment to determine, assess and discuss the major findings of the event, allowing for conference attendees to easily digest the wealth of information disseminated at PV ModuleTech 2018.

**The session will include:**

- Round-table discussions
- Q&A's with leading stakeholders from across the value-chain in module production/supply/deployment
- Open sessions for attendees to air unanswered questions and concerns regarding module suppliers and technologies
- Ranking of the main issues that upstream and downstream module-based parties need to be most connected on, going into 2019, in order to address outstanding module quality and reliability issues in the field

This session will provide an opportunity to fully explore and discuss any outstanding questions or worries from attendees at PV ModuleTech, regarding module choice. It will also offer a great chance for attendees to summarize the main findings of the two-days, and report back to their companies in a clear and concise manner.

“The event was focussed, speakers were great, conference was organised very well and topics were relevant.”

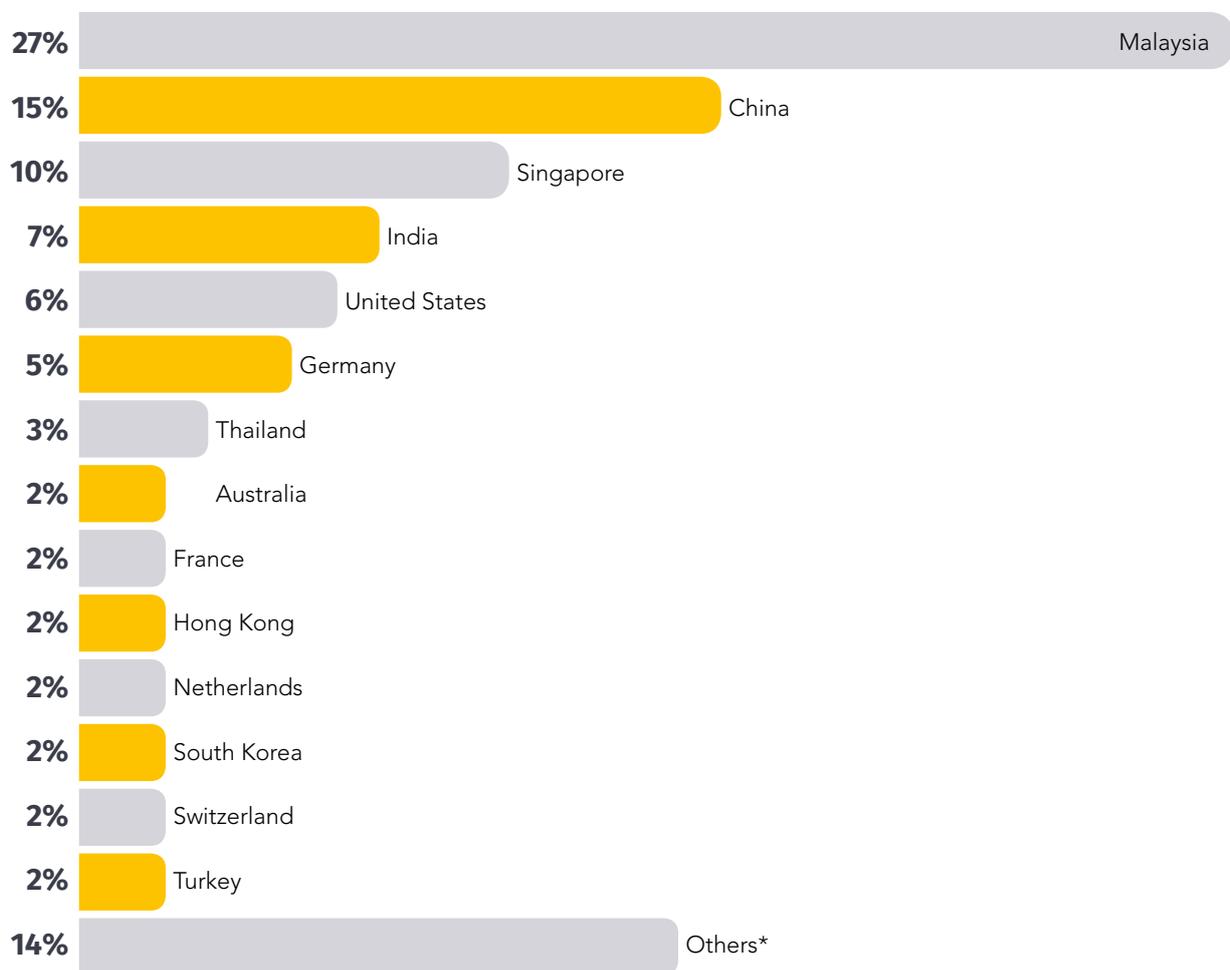
**Nikhil Nahar, SolarSquare Energy**

“Great networking and technology “deep dive” showing the face of future PV.”

**Irma Pienaar, Scatec Solar**

# Delegate profile: PV ModuleTech 2017

## Breakdown by country



*\*Finland, Indonesia, Ireland, Ireland, Italy, Japan, Korea, Mexico, Poland, Saudi Arabia, South Africa, Spain, Taiwan, United Kingdom, Vietnam*

“ PV ModuleTech events helps to understand the market situation in a short period of time, getting insights of technology trends and doing efficient networking. ”

**Frank Genonceau, Meyer Burger**

# 2017 ATTENDEES

8minutenergy	Fortum India Private Limited	Prime Road Group
Ablestik, A Henkel Company	GCL SI	Protasco Bhd
Adani Solar	Guangzhou Bothleader Electrical Materials Co., Ltd	PT Adaro Power
Adaro Power	Hanwha Q Cells	PV Lighthouse
Alfanar Energy	Hasilwan (M) Sdn Bhd	Pv. Hi. Tech. Solar sdn bhd
Applied Materials Italia	Helios Photovoltaic	REC Silicon
Artha capital	Henkel Electronics	REC SOLAR
Bitexco Power Corporation	Heraeus Deutschland GmbH & Co. KG	RISEN ENERGY CO., LTD
Black & Veatch	HUAWEI	Roleva Energy
BNRG Renewables Limited	ib vogt GmbH	Samaiden Sdn Bhd
BT Imaging	Icon Energy Solutions Sdn Bhd	Scatec Solar
Canadian Solar Inc.,	IMI Industries Co.,Ltd.	SEDA Malaysia
CEA	INDOSOLAR LIMITED	Shinsung E&G
CEA-INES	ISC Konstanz	Singapore Solar Exchange
China Construction KIDE Corporation	JA Solar	Smart Energy Group / Smart Solar TECH
Chubb Insurance	Jakson Engineers Ltd	Solar Energy Research Institute of Singapore (NUS)
Ciel & Terre ASEAN & Oceania	Jinko Solar	Solar Energy Systems Sp.z o.o
Clean Energy Council	Kuasa Nusajaya Sdn. Bhd.	Solar Media
Cleantech Solar	Kyocera	Solarpack Corporacion Tecnologica RO
CLSA	L&T Construction	SOLARPACK REGIONAL OFFICE
Conergy Asia & ME Pte Ltd	Leader Energy Limited	SolarSquare Energy
Coveme	LG Electronics	SOLARVEST ENERGY SDN BHD
CSEM	LONGI KUCHING	Spire Solar
Cypark Resources Berhad	Luvata Malaysia Sdn Bhd	Thai MM Limited
Cypress Creek Renewables	M+W Group	The Quartz Corp
Demir Group	Malaysian Solar Resources Sdn Bhd	TNB Engineering Corporation Sdn Bhd
DKEM	Maqo Engineering	TopRank Solar Energy Sdn Bhd
DNV GL	Meyer Burger	Total Power Solutions Sdn Bhd
Dow Corning	Mondragon Assembly S. Coop.	Trinasolar
DSM ADVANCED SOLAR	Munich Re	TT Vision Technologies Sdn Bhd
DuPont	NEFIN Leasing Technologies Limited	TUV Rheinland
ECN	Oxford PV Germany GmbH	Tuv Sud (M) Sdn Bhd
EDF Renewable Energy	Panasonic Energy Malaysia	UL International Singapore Pte Ltd
Edra Solar Sdn Bhd	Park Green Energy	UTG Solar Sdn Bhd
Endeas Oy	Pensolar Sdn Bhd	Yana Industries Pvt Ltd
Endustriyel Elektrik Elektronik	Photovoltaic Foundry Pte. Ltd	Zhangjiagang GCL System Integration Technology Co.,Ltd
Energetix Pte Ltd	PI Photovoltaik-Institut Berlin AG	
Enerray Spa	Plus Solar Systems Sdn Bhd	
ERS Energy Sdn Bhd		
First Solar		

# Visitor feedback

**100%**



Said opportunities for networking with other delegates was Exceptional or Very Good

**100%**



Rated the agenda as Exceptional, Very Good or Good

**94%**



Would/would likely attend PV Moduletech again

**100%**



Would/would likely recommend PV Moduletech to colleagues

“ I found PV ModuleTech to be a solid conference, excellently organised conference on PV modules. Definitely a must-attend conference in Asia. ”

**Bart Lucarelli, AWR Lloyd**

“ Well organised, thought provoking and directional for the future. ”

**Dr D.N Singh, IndoSolar**



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