



Virtual Conference | 25-26 August 2021

Post Event Report



400+

ATTENDEES REGISTERED



19

PRESENTATIONS



14

HOURS OF CONTENT



300+

COMPANIES ATTENDED

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Event overview

Today, the entire PV sector is looking at cell production technologies. From polysilicon producers (needing to understand silicon purity levels) to site investors (having to forecast site returns), the question of p-type or n-type component production and supply has equal significance.

There are many voices claiming to know how the p-type versus n-type question will be resolved in the coming years. Mostly, the outlooks tend to support company strategies and investment decisions, as would be expected. This just serves to emphasise how complex the issue is today.

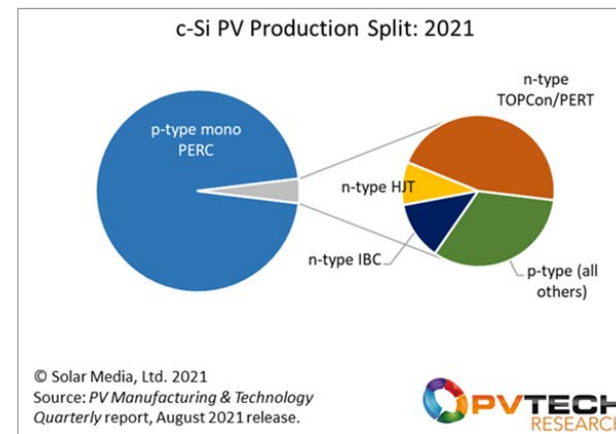
During the past few years, we have focused our flagship PV CellTech conferences towards answering the question of: when does n-type go mainstream, and what n-type variants will prevail? While also looking closely at how p-type (specifically modifications of the current mainstream PERC concept) can keep its efficiency growth moving in the right direction.

We have heard many perspectives on these topics in the past few years.

Update on p-type vs n-type production in 2021

It is worthwhile looking at what the PV manufacturing landscape is this year, in particular how much is coming from p-type and n-type variants.

The graphic below is taken from the most recent release of PV Tech's PV Manufacturing & Technology Quarterly report.



This graphic shows clearly how much p-type mono PERC dominates production levels currently. Production output from the challenging n-type variants is typically dominated by two to three companies in each of the segments shown for n-type. The p-type (all others) refers to legacy p-type multi production or p-type mono (using Al-BSF process flows).

Understanding how this split is set to change in 2022 underpins the questions asked at CellTech 2021 and hopefully sets the scene perfectly for the next PV CellTech event taking place in March 2022.



Finlay Colville
Head of Research, PV Tech

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JOHANNES BERNREUTER
Company Founder
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Key topics covered during event

DAY 1

Mass production status and efficiency limits for leading p-type & n-type cell architectures (Part 1 of 2)

- Opening keynote talks from the leading voices in PV cell technology & manufacturing
- Has p-mono PERC reached its limit for performance?
- Full reality-check on n-type mass-production in 2021
- Understanding the real challenges and opportunities across the different n-type variants seeing investments today
- Must-attend session for PV industry stakeholders to understand exactly what is happening with PV technology today and in the near-term

Production equipment & materials to enable high-throughput & low-cost n-type cell manufacturing at the multi-GW scale

- The role of PV equipment and material suppliers globally to enable an effective transition from p-type to n-type manufacturing
- Hear from the leading global companies that are key to pilot lines and initial GW-scale n-type build-outs
- Roadmap to getting capex and opex to current p-PERC levels over the next 2-3 years
- Understand which Chinese equipment suppliers are viable n-type solution providers today

Cell manufacturing in Europe, the U.S. & Korea; GW mass production from a diversified supply-base

- Mapping out multi-GW growth of high-performance cell manufacturing outside China in the coming years
- Which companies are making the multi-GW of cells for tariff-free global deployment? Which technologies are being used? Are the cells for in-house or third-party sales?
- Will n-type HJT be driven by non-Chinese producers in the first wave of strong market deployment?
- Understand exactly what global cell manufacturing looks like today, and how much this could change during 2021-2025

DAY 2

Mass production status and efficiency limits for leading p-type & n-type cell architectures (Part 2 of 2)

- What are the outstanding issues currently holding back n-type becoming the PV industry mainstream offering?
- Which R&D labs are key to getting new-starts running with n-type variants?
- How important is technology-transfer to existing n-type PERC cell makers, in moving to n-type multi-GW cell production?

Beyond PERC at the multi-GW level: driving technology change

- Hear from leading names in the PV industry on how they are driving the p-type to n-type technology change
- Perspectives shared from equipment supplier and cell producer standpoints

Polysilicon & wafer supply: geographic production status & meeting high-efficiency cell purity/quality requirements

- Learn what the polysilicon & wafer supply channels look like for the PV industry today; will Chinese players continue to dominate here if trade issues start to have an impact?
- What is needed from polysilicon purity & wafer quality, to maximize n-type efficiencies?
- Are thinner wafers now going to be accelerated into the industry, to offset polysilicon supply tightness in 2022; where are the challenges here?

The PV technology roadmap for 200-GW-plus cell production in 2022

- Closing session at PV CellTech returns to hear different perspectives on PV technology out to 2030
- How quickly will n-type take over from p-type?
- How close is the industry to the next technology transition; hybrid cells, multi-junction, perovskites?

What our attendees thought...

“ The PV Cell Tech series is unparalleled as the event that is right on top of the evolution of the PV Industry. Focusing not only on what is happening but always digging deeper to why, it does a great job of elucidating the mechanisms at work and to where they will lead the PV industry. Top notch speakers representing the relevant players, often giving a true up to date status of their companies' activities that would be hard to come by elsewhere.

Dick Heslinga

CEA-INES

“ PV Cell technology event's line-up of speakers gave me great insight about the technology progress, challenges in manufacturing as well as the imminent supply chain challenges we may face. As an outcome the information will immensely help me in modelling our decision making framework for future projects.

Ankan Mitra

Shell New Energy

“ PV cell tech is always a reference to get a comprehensive overview about current trends and challenges in the ever dynamic PV industrie with special focus on c-Si cell technology.

Markus Fischer

Hanwha Q Cells

“ Well organised virtual conference, very high value presentations, thanks and look forward to meeting again face to face next year.

Ian James Wilding

Henkel

“ Very good deep understanding about the supply chain behind the solar module world. Good hosted by PV Tech team.

Marc Dalderup

Esdec Solar Group

“ Thanks for organizing the great event where the world's leading researchers and industrialists share their insights about the latest trends and progress in the dynamic PV world. Looking forward to meeting the presenters and participants in a face to face setting in the near future.

Glen Chen

Schmid Group

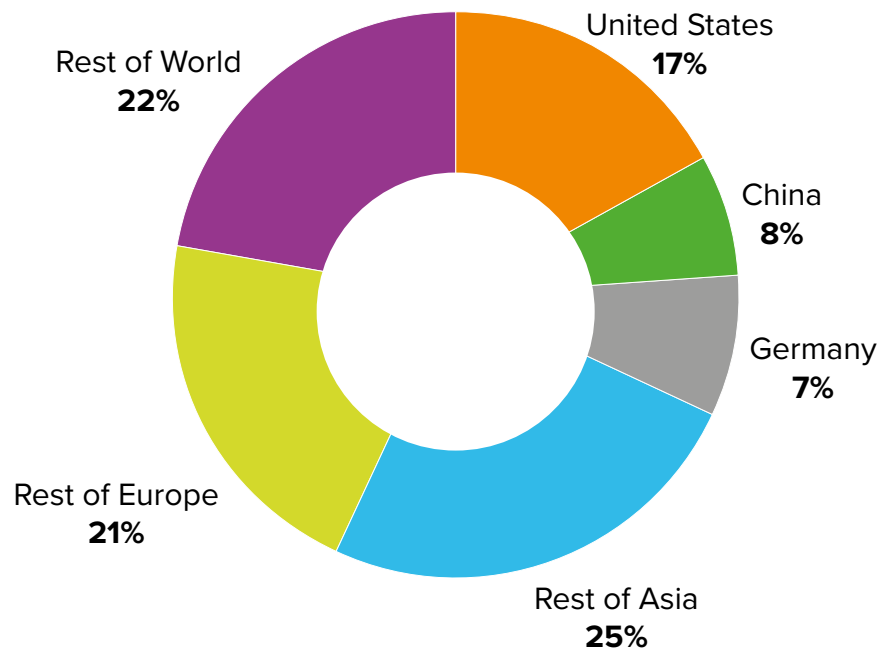
“ PV CellTech Conference has been good platform for discussions and understanding on major technological trends on PV cell technology development. With participation from all major stake holders in industry, audience can gather all the latest development and future trend at once.

Hongbin Fang

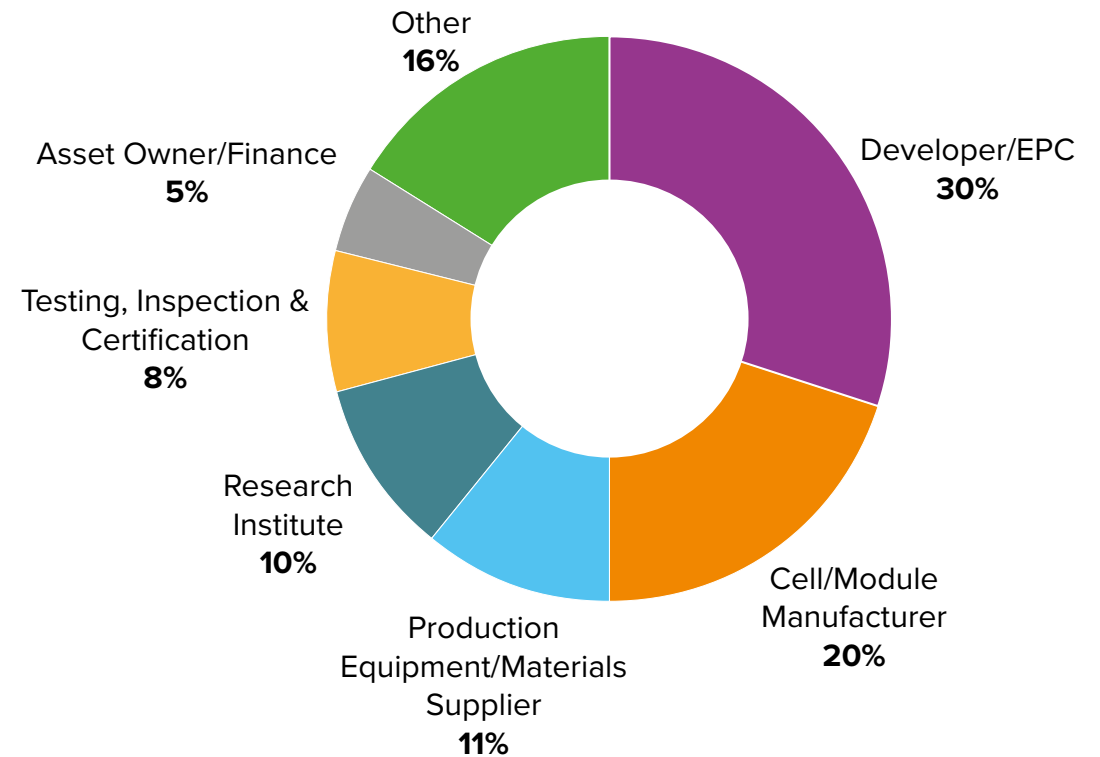
LONGi Solar

Attendee Overview

Attendees by Country



Attendees by Company Activity



Contact us at: pvcelltech@solarmedia.co.uk 



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