

Digitalisation, drones and data – Intersolar 2017 rolls into town

Intersolar preview | The need for ongoing innovation is one of the few givens in the unpredictable solar business. Ben Willis speaks to two of the lead organisers of Intersolar Europe about the likely big topics on the show floor this year and what those tell us about industry's continuing evolution

MARKUS ELSAESSER, CEO, Solar Promotion, organiser of Intersolar



PV Tech Power: What will be the big topics under discussion at this year's event?

Markus Elsaesser: At the moment everyone is looking at what they can expect throughout 2017 regarding PV installations around the globe, and especially cost developments. As you know we saw last year an increase in installations of 50%, to 75-76GW; for this year we have seen forecasts around the same number or some that are a little bit higher than last year. So everybody expects that we will see a slight growing market, but some of the big markets have question marks, like China going from 35GW to below 20, and the US probably staying flat; Japan will decline. So everyone is asking: how can other markets absorb the production of China, for example, of those additional 15GW which we probably will not see this year installed in China. There are a lot of expectations that prices will again be under pressure, that prices will go down especially for large power plants. So this is a big question and discussion topic: what we will see this year in terms of capacity and price development.

How will that feed through into the products and services companies will be

showing this year?

We will probably see this year many new innovative products to reduce costs for operations and maintenance – software solutions or even sensors to measure the conditions of the power plant, or drones and robots.

Also what we definitely will see more and more are solutions for the integration of large amounts of variable renewable energy into the market. So we are talking about the digitalisation of the energy sector. This is all needed if you have high shares of solar and wind energy in your grid, and if you think about decarbonisation and the Paris [climate change] agreement, we really need to think about solutions for the whole energy system: how can renewables integrate into this modern structure. And we will see a lot of products, a lot of contributions, presentations and speakers focusing on these topics: communication technologies, the integration of storage, integration of charging infrastructure for EVs [electric vehicles] and all of those topics which will be very important for years to come.

How are you adapting the show to better reflect the evolving nature of the renewable energy business that you describe there?

We've already introduced the storage part – EES Europe [co-located with Intersolar] is now the largest storage event in Europe. And we have several forums on the show floor such as the Smart Renewable Energy Forum, where we and our exhibitors present new developments. It's all about how to integrate intelligently renewable energies into the system, into buildings, the transportation sector and so on. We will also have a special exhibition called Energy Lab showing new approaches to integrating diverse technologies. It's a test facility for generating renewable electricity, for storing, power-to-gas, power-to-fuel and power-to-heat.

Storage is clearly only growing in importance for the industry. What are we likely to see at this year's show where storage is concerned?

In last three years, since 2015, we've seen a growing number of companies investing into storage systems. What we can observe this year is that there have been a lot of positive innovative developments in terms of energy density, of capacity and of long-term performance guarantees – warranties. A lot of companies now give you 10 years' guaranteed output or at least a certain percentage of guaranteed output. There are also a lot of advances in performance, in quality and security of installations; this was a topic two years back when we saw difficulties with installations and even some systems which went on fire. Even since last year there's been a big improvement in security and performance and guaranteed output.

You highlight the fact that Intersolar Europe is an international show, but what about Europe itself? What will be the talking points about markets closer to home?

We will probably see the German market come back; we together with the German solar associations observe that a business climate index [for solar] is at a seven-year high, which gives us hope that the market after several years will come back. And we also see interesting developments not only in Germany but to drive the market [elsewhere]: sector-coupling, EVs and charging infrastructure. And we will also see soon a tenant electricity power programme, so residents in apartment buildings can achieve savings through [shared] PV systems, maybe combined with small storage applications. So we'll see support schemes for this segment in Germany and in other countries. And I think this self-consumption, the optimisation of self-consumption systems, will be a driver together with tenant power and sector-coupling.

**PIERRE-JEAN ALET, chairman,
Intersolar conference committee**



PV Tech Power: This is your first year as chairman of the conference. What are the big themes you're expecting will be discussed?

Pierre-Jean Alet: We will continue to have the classical PV technology sessions on cell/module technology; that's what's underpinning the progress of the sector and there's still potential here to reduce costs and improve the competitiveness of PV. There are also all the things that will be discussed related to using PV electricity that I would term the 'value' of PV electricity; that covers energy management, digitalisation of energy, coupling between different energy sectors, forecasting as well, which is a very important topic for market integration.

This concept of value – can you explain a bit more about what you mean there and how that will be reflected in the conference?

One achievement that has been reached

by the industry is that if we look just in terms of generation cost, PV is on par in some parts of world with other sources of generation. So that's a milestone, but still we see that's not enough to guarantee that we can displace other sorts of generation. And in a world where subsidies are decreasing quite fast, we need to think more and more about increasing the value for customers. And in particular, if we take the case of Europe, there is a big role for 'prosumers' – individuals and businesses generating and using their own electricity. So for them we really need to make sure that this [PV] electricity we can now generate for low cost meets their needs for energy.

You mentioned digitalisation and big data in this context – what are the main ideas here?

Digitalisation is a big word that can entail lots of different things. One is about the idea that you can trade energy services in a local way with a form of traceability, so prosumers can get remunerated for services they provide to the local grid to ensure it's stable and power quality is maintained. But then we need to find ways to enable that, to have platforms that make this trading and traceability easy. And that's one part of the things we will discuss in the conference.

The other side of digitalisation is about the use of data. And that in my view is more for larger scale systems and management of the grid. One session we'll have is on forecasting, where the more data you have the more accurate you can be; that's also a key enabler to integrate PV into the electricity market and to help energy suppliers and network

operators manage the system. It also has implications in terms of O&M of PV plants – especially for the larger ones. And we see there are players who centralise this operation data and apply techniques to this data to be able to do predictive maintenance and identify faults in a remote way.

You mentioned that 'traditional' topics around cell and module technology would continue to be a key feature of the conference. What do you expect the main discussion points to be here?

The big topic of interest at the moment is bifaciality. There is a lot of activity, a lot of products coming out, also discussions on progress in terms of characterisation and standardisation, and also in terms of modelling so that we can move from the outlandish claims that we may have seen in recent past about the extra power that you can get from bifacial systems to something that is more verifiable.

In terms of cell technology, we can see PERC is really forging ahead at the moment. I think there will be discussion on the role heterojunction technology can play; for a long time [PERC and HJ] have been in competition, with the idea that PERC was more suitable for upgrading existing lines and heterojunction was for new entrants. So I think there will be a discussion on the long-term perspective for both technologies: is PERC the end of what you can do with conventional cell architectures or is there still room for improvements in that direction; or whether we really need to move to a completely new cell architecture to continue the progress on efficiency and costs? ■



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