Subsidy-free solar: Europe's search for new allies

Solar economics | Led by a bullish Spain, the industry's free-market revival has dispelled memories of the FiT fallout but also ushered in an era of uncertainty. José Rojo charts players' efforts to master the rules of a new game of tough PPA interactions and merchant risks

Credit: BayWa r.e.

"Contra fortuna no hay arte alguna." The Spanish saying – a warning to those trying to fight an impossible fight against fate – epitomises the tough, recent journey of European solar developers; a forced transition from feed-in tariff (FiT) stability to unpredictable post-subsidy waters.

Spain's rollercoaster flight from boom to bust, and towards a boom again, has been especially dramatic. The country's subsidy clampdown of the early 2010s was hardly unique in Europe but its approach of choice – retroactive FIT scrapping and punishing self-consumption rules – made it typical of solar's harsh fate at the hands of policymakers. The comeback that is now underway is no less noteworthy, particularly given that it is being accomplished without the need for government incentives.

In late January, the mood music at the Solar Finance and Investment conference in London was one of cautious optimism. Attending developers and investors hailed the grid parity progress to date in Spain and elsewhere, but were not blinded to the challenges in a post-subsidy era, not least securing financing and taming merchant risks.

The PPA acronym loomed large over the discussions on- and off-stage. Live polling showed that the lack of quality agreements and willing offtakers is seen as the chief barrier for subsidy-free projects; negotiating these documents was described in panel talks as the must-have skill in the post-incentive world. How to ensure the success of the PPA hunt, do new sources exist for solar to tap into?

The corporates are coming

Alliances, as it turns out, are increasingly being sought not only with utilities but also the corporate camp. Pledges under the RE100 initiative and others helped corporate renewable PPAs more than double worldwide from 6.1GW in 2017 to 13.4GW in 2018, according to the latest BNEF update. Corporate solar PPAs in particular ballooned from 1.21GW to 5.66GW over the same period, greatly narrowing – but not fully closing – the gap with wind PPAs' 6.87GW in 2018.

On the ground, however, scepticism persists on the current spread of European corporate solar PPAs, particularly in Spain. At the conference, Quintas Energy managing director Declan O'Halloran argued they remain so rare they "make unicorns look like cattle". The BNEF data confirms the phenomenon is overwhelmingly a US story, with 4.34GW (77%) of the worldwide 5.66GW signed in the country in 2018. At a more modest 182MW, the UK placed third last year, falling behind Australia's 686MW. Remaining European entries Spain (43MW) and Italy (26MW) were overtaken by Mexico, Chile, Singapore and India, in that order.

The London conference linked Europe's slower embrace of corporate PPAs to a "large gulf" in understanding; the premise is echoed by those approached by *PV Tech Power* in recent weeks. Daniel Pérez, PPA lead and chief legal officer at clean energy firm Holaluz, notes that PPA uptake has naturally thrived in traditionally subsidy-free markets. Spanish players, by contrast, lack familiarity and experience, he says: "Financial backers can be an obstacle. Spanish banks tend to be conservative with PPAs, sometimes demanding risk-mitigation clauses that drive potential offtakers away," Pérez adds.

BayWa r.e.'s Benedikt Ortmann.

Benedikt Ortmann, managing director at developer BayWa r.e. Solar Projects, conveys a similar sentiment. Speaking to *PV Tech Power*, he cites corporates' lack of experience – as well their refusal to take long-term contracts on balance – as the "biggest obstacle" to PPA success. According to him, companies' purchasing departments are sometimes "simply overwhelmed" by the decision-

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Solar volumes (GW)	0	0.17	0.02	0.03	0.05	0.19	0.07	1.18	0.91	1.21	5.66
Wind volumes (GW)	0.16	0.1	0.11	0.17	0.05	0.65	1.82	3.18	2.72	4.32	6.87

Source: BNEF

Chart 1: Corporate PPA volumes for solar PV and wind, 2008 to 2018

making involved in these contracts. Establishing the credit rating of even seemingly solid corporates can also create problems, Ortmann adds: "When a bank comes asking 'is this company good for 20 years', who has the answer?"

PPA interactions: a how-to

Despite audience fears over low-quality PPAs, developers working in Spain told the London event "lots of options" exist on the ground.

Later conversations help sketch out the average corporate solar PPA in Europe. Partner Sophie Dingenen and associate Levent Gürdenli of law firm Bird & Bird say sleeved deals set against a 10- to 15-year time horizon are the rule in the continent. However, the lawyers add, Spain's remuneration rules mean shorter, synthetic PPAs are better suited to everyone's needs.

Multiple or not, the options on offer are not easy, nor cheap, to negotiate; the stories of those who have faced talks for a corporate PPA confirm as much. Speaking at the London event, BayWa r.e.'s Ortmann noted that discussions take on average a minimum of six months to conclude, earning lawyers billable hours at the expense of developers and others.

Contacted later by *PV Tech Power*, he shed some light on how these negotiations play out. According to him, developers sitting across a corporate will find a less-knowledgeable counterparty that may harbour "unrealistic expectations" of what a PPA can accomplish.

"Developers should check the credit rating of companies early on as that can be a quick showstopper," he says. "If the corporate in question doesn't have any experience I'd strongly recommend to get them to hire external commercial and legal advisers."

By contrast, Ortmann adds, utilities understand a developer's language but are, in turn, more price-sensitive. The energy trading nature of their business will see them push for short-term agreements in ways a corporate, which typically wants the energy for its own use, may not.

The financing conundrum

Listen to solar insiders and it soon becomes clear that the subsidy-free story cannot be written without banks and investors. As the London event noted, financing remains solar's last obstacle to market-economics after years of plummeting technology costs.

Financiers' hesitations are two-fold, as speakers pointed out. On the one hand,

> "Everything is up in the air and that's why nobody is building plants, because nobody knows what tomorrow holds – if you do know, you'll get finance"

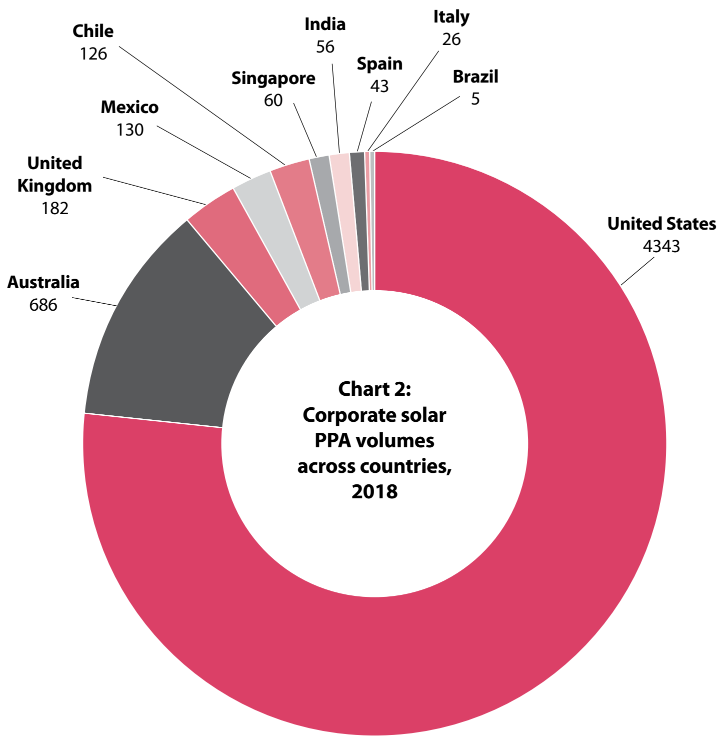
risks from merchant-heavy projects will make many – particularly debt providers – hold back. On the other, those eyeing safer ventures may find the investment returns on offer fall short of expectations.

Could corporate PPAs help win over risk-averse sceptics? Bird & Bird's Dingenen believes so, noting that banks feel "very comfortable" with the steady revenues a strong corporate will bring to a PPA. "In the case of the Netherlands, mandatory unbundling rules for utilities mean banks can actually prefer PPAs involving a corporate with good credit rating."

Foresight's Carlos Rey

Carlos Rey, director at Foresight Group, agrees PPAs are today preferable for those keen to derisk from regulatory support. His own firm, investing in solar through retail, listed and unlisted funds, completely steers clear of auctions in Spain. "What's beautiful about projects today is the regulator risks have left the picture," he tells *PV Tech Power*.

Positive or otherwise, corporate PPAs can prove elusive in a country where credit-worthy Google-type offtakers are scarce. Even those keen on a PPA deal may seek conditions that are hard to stomach, according to Rey: "In Spain, it is not corporate responsibility that drives companies to PPAs but a price that, often, can be at odds with what developers and investors need."



Biggest corporate solar buyers in Europe were, in descending order: Anheuser Busch InBev, Anglian Water, Uvesco, Amazon, Kutxabank, Euskaltel.

Source: BNEF

There are things Spanish policymakers could do to energise the corporate PPA scene, Rey believes. "Rather than only prioritising auctions, they could help provide long-term certainty in the revenues of us equity players through, for instance, tax advantages for corporates signing renewable PPAs," he says.

Bubble fears bite back

Only time will tell whether Google (see table below) and others are but among the first of a new breed of large-scale corporate solar PPAs. Their ultimate success will not be dictated by their first few steps under the PPA today, but a mixture of complex factors – value of the installation, the corporate's own financial health – measured in 10, 15 years' time; the shorter, lower-price PPAs brought about by the current buyer's market mean the value created after contracts expire matters more than ever.

Whether Spain in particular is sleepwalking into another bubble is a question panellists had to field. Some conceded the competition was overheating but many felt that bubble fears were, for the time being, unwarranted. Solarcentury BD director Peer Piske said the banks, offtakers and equity shops he speaks to are all looking for projects. "There might be a lot of press releases but that doesn't mean we've got all the supply," he argued. Everwood Capital partner Alfredo Fernández spoke of the "Spanish hole", commenting: "In order to get to a bubble, we first have to get to normal."

Not everyone was equally upbeat, however. "There is a bubble," said Abid Kazim, managing director of NextEnergy Capital. "Most Spanish assets are uninvestible, they're not being built because if 36GW came into the system, it would collapse." The unease over grid availability in Spain – its limited capacity and high interconnection costs – was echoed elsewhere in the panel discussions, with a speaker wondering how developers will sell if interconnections don't improve.

Question marks were also raised over stability in Spain; a country which, in the words of Quintas' O'Halloran, cannot disassociate its regulatory past from its post-subsidy future. The current administration, O'Halloran told attendees, appears supportive but this may not hold in the longer term. According to him, factors including an unclear tax framework and expected grid legislation changes could all impact a PPA's fortunes. "We haven't seen the commitment to stability from politicians that we wanted," O'Halloran remarked.

> "Corporate solar PPAs…remain so rare they 'make unicorns look like cattle'"

Uncertainty is here to stay

How much further can the current corporate PPA boom go? At the conference, Solarcentury's Piske reported witnessing a "growing demand" from both corporate buyers and in this, he appears to be supported by BNEF analysts.

According to their estimates, companies will need to snap up 190TWh in clean power by 2030 to meet RE100 targets. If the gap is plugged with offsite PPAs alone, BNEF believes, 102GW of wind and solar capacity would have to be built worldwide, 48GW of it solar.

Developers treating the forecast as an opportunity know it comes with an equally significant challenge. Turning soaring PPA demand into a subsidy-free success will require investor backing, as well as long-term planning to ensure projects remain money-making despite aggressive PPA terms.

From sound O&M practices to data analytics and co-location with storage or wind, all potential allies in solar's value-creation journey were explored at the London conference. Many felt, however, that nothing will ultimately save firms from the tough PPA negotiations ahead; an interaction where, until standardisation becomes a reality, rules and references will be few and far between.

As argued by Ricardo Folgado, structured finance director at Lightsource BP, the difficulties partly stem from the fact that value is no longer what it was when subsidies ruled. "Developers' returns have been squeezed a lot," he told attendees. "The previous supply chain had elements to make sure there was some value for everyone, but the aggregated model we're moving to now means value is condensed around a single point."

Unsurprisingly, these efforts by PPA counterparties to attract most of that condensed value are only mirrored by their will to push risks onto others: Solarcentury's Piske described "tough" negotiations with an offtaker for a Spanish project, with neither party keen to take on full-profile risk. Elsewhere in the panel discussions, speakers stressed that banks and investors won't be happy either to take on excessive merchant risks.

However, perhaps the conference's key takeaway is that uncertainty, the vulnerability to future fortune twists, is a reality subsidy-free players will need to live with.

"Demand, opportunity, grid parity; they're all in place. Why are we not building, then?", came the question from NextEnergy's Kazim. "We're no longer living in an era of energy certainty. The world is different from last year…and in the transition, the way we understand the grid will go away – consumer demand will change, technology will change.

"Everything is up in the air and that's why nobody is building plants, because nobody knows what tomorrow holds – if you do know, you'll get finance," Kazim continued. "So how to create certainty in this world for investors to invest? That's going to be the interesting conversation." ■

Solar PPAs in action – case studies

Our selection of European solar PPAs of recent years shows that, however much Spain may hoard the subsidy-free spotlight, consequential corporate deals have also been signed in less-sunny reaches.

Don Rodrigo – 175MW built and run by BayWa r.e. near Seville (Spain)
The solar park features a 15-year physical PPA with Norwegian energy group Statkraft as the utility offtaker. The deal spans a five-year fixed-price period and a subsequent 10-year discount-to-market phase. German bank NORD/LB supplied a €100m construction bridge financing facility.

AB InBev UK – 100MW built and run by Lightsource BP in South Wales and Lancashire (UK)
The Lightsource-Budweiser deal, billed last December as the UK's largest unsubsidised project to date, comes with a 15-year corporate PPA.

SunPort Delfzijl – 30MW built by Wirsol, run by Eneco at Delfzijl (the Netherlands)
Similarly pitched as its country's largest solar farm – unsubsidised or otherwise – the project first announced in mid-2017 will see Google's data centre powered through a 10-year PPA.

Weesow-Willmersdorf – 175MW built by EnBW near Werneuchen (Germany)
Germany's contribution to the subsidy-free scene is also, at the time of writing, reportedly the country's biggest planned park to date. EnBW, which bought the project from Procon Solar GmbH last year, declined to comment on PV Tech's questions on PPA arrangements.

Solara4, Ourika and others – 708MW built and run by WElink in Spain and Portugal
The most recent addition to the list will see Spanish utility Audax Renovables purchase, through a 20-year PPA, the power generated by a solar portfolio WElink is currently building. According to media reports, the solar farms will be acquired by Allianz Capital Partners once WElink wraps up construction.