

# The price is right

**Corporate PPAs** | The broader decarbonisation agenda is driving interest from businesses in procuring renewable power, and now a whole host of solutions and market structures are coming forward to accommodate them. Edith Hancock explores the maturation of corporate power purchase agreements.

As the cost of renewable energy falls, a growing cohort of corporations have seen power purchase agreements (PPAs) as an effective way to keep costs down while working towards their climate targets. Not even last year's unprecedented power demand fluctuations due to COVID-19 could put an unmendable dent in the market's growth. Bloomberg-NEF found in January that corporations bought 18% more clean energy last year compared with 2019. Pexapark, a software company that provides data on renewables PPAs, believes more than 10GW of clean power capacity could be contracted in Europe under PPAs this year, up from 8.9GW in 2020 that was driven by a "frenzy" of activity in Spain.

When the coronavirus pandemic reached Europe in early 2020, power pricing was thrown into uncertainty, bringing new PPA deals to a standstill. Some 23 power purchase agreements (PPAs) were signed between January and February 2020, for a total of 2.8 GW, according to the European PPA Market Outlook report from Pexapark. Then, the market came to a near complete standstill from March. Over the next three months, just 14 PPAs were signed in Europe for a total 664MW as industrial demand for energy slowed and companies halted planned investments.

But for all the warnings that were signalled at the start of last year, renewables companies have said that the consequences of COVID-19 restrictions and the power demand fluctuation that came with them won't be as long-lived as previously feared. Indeed, although it shows high volatility throughout last year, Pexapark's European Price Index shows that the average PPA price on the continent has risen from €35.64/MWh (US\$43.07) in April 2020, to €42.14MWh at the time of writing. At the end of last year, the software company's European Outlook Report estimated that Spain



**Budweiser brewer AB InBev is one of a number of large companies to have gone down the solar PPA route to decarbonise business operations in recent years.**

saw the lowest solar-linked pricings at €35.63/MWh, followed by Germany, with prices averaging €41.61/MWh. Those contracted in France and Italy were around €1/MWh higher.

## Beating the pause

Drew Barrett, head of energy markets at Octopus Renewables, says there was a "slight pause" on corporate PPA processes at the start of the pandemic. "Procurement managers were either distracted dealing with the volatility witnessed in near-term prices or waiting for some degree of longer-term certainty to emerge."

But following that initial pause, the energy group saw a rebound in buying appetite, the consequence being that prices for longer-dated PPAs "have remained relatively stable throughout, as

buyers and sellers alike have tried to look beyond the pandemic." "As a result, prices have remained driven by the long-run marginal cost of the assets," he says.

This is reflected in Pexapark's figures in the second half of 2020. 33 new deals were signed between July and the end of the year, with 3.1GW of capacity under contract, and 1.1GW of renewable power PPAs was procured in December alone. Solar energy accounted for almost half (46%) of all capacity in Europe that was contracted under such agreements.

Andrea Grotzke, head of energy solutions at BayWa r.e, agrees that "not that much" has changed when it comes to pricing structures for PPAs, again, due to the typically long contract life.

"Of course the corporates take into consideration," she says, but on the other hand, long-term price expecta-

Credit: AB InBev / BayWa r.e.

tions must be taken into account “in order to calculate the business case from the corporate perspective, and discuss saving potential.”

“If you look at the long-term price structures in corporate PPAs compared to a price development on a forecasting basis, obviously, that still is a quite an interesting business case for the corporates.”

Barrett says that shorter-dated contracts saw “greater volatility” as a result of trends in the forward markets at the start of 2020, but added that, prices have now significantly recovered. “As an example, the Summer 21 baseload contract traded in the low £30s in late March 2020, rising to the mid £50s a year later,” he says.

However, as Pexapark’s co-founder Luca Pedretti notes in his company’s European Market Outlook report, price volatility is still present in the continent’s PPA market. “Price volatility is here to stay,” he says, adding that pricing pressure across European markets will remain high. To manage the challenges imposed by the subsidy-free renewables market, he says, industry players have now started to invest more in building energy risk management capabilities.

### More renewables, more structures

Speaking to our sister publication PV Tech during the Solar Finance & Investment Europe event held by our publisher Solar Media in February 2021, Pedretti said that financial contracts between offtakers and power producers have become more nuanced to account for risk on either side. “Certainly, those structures have become more structured,” he said.

The new, more sophisticated structures include baseload pricing, further options, and in some cases, shorter contracts. Lee Moscovitch, partner at UK-based asset manager Greencoat Capital, told panellists at the same event that the UK market in particular is starting to see prospective offtakers asking for shorter PPA lengths with more sophisticated pricing structures to mitigate the risk associated with price volatility in the energy market.

“What we’re starting to see more creeping in is either shorter term PPAs with fixed price, people asking you to price [a] month ahead, or baseload pricing, looking at shaping cost ahead and who takes that risk,” he said, adding



HeidelbergCement has entered into a 10-year PPA for power generated at the Witnica solar park in Poland (pictured)

there has also been work in “pricing in floors and discounts to market”.

This change in structure comes as a result of projected decreases in PPA prices over the coming years as solar energy gets cheaper, and as more corporations come into the fold. What was once a space dominated by utilities and tech giants has now started to include other household names, but smaller businesses with different electricity needs will also require slightly different financial models.

“I definitely believe this is going to take off,” says BayWa r.e.’s Andrea Grotzke, adding: “but I think there are a couple of challenges here”. Large corporates, she says, have facilities all over the world with large power demands and are far more likely to have “done their homework” with respect to how and where they find it.

But there are also a lot of smaller companies with high energy demands, she says. “So it’s still interesting for them to enter into these kind of decision making processes... However, they have to prepare, and then they have to really also take an entire team on board in order to make that happen.”

Identifying a developer partner to work with, and finding the best approach, is crucial for entities with less room for manoeuvre. For a power generator to be comfortable with an offtaker, they have to perform a certain level of due diligence to “confirm that they expect that counterparty to be trading at that point in time”, says Ricardo Piñeiro, head of UK Solar at investor Foresight Group. “That’s why it’s so important to work with a blue chip entity that ticks a lot of boxes. It makes the process extremely simple compared to an SME,” he adds.

But James Armstrong, founder and

managing partner of investment group Bluefield Solar Income Fund, believes the corporate market, particularly where direct-wire installations are concerned, is “very underexploited”, and “should be a very big area of growth in the future”.

At Octopus, one of the key trends Barrett has noticed is “a wave of US companies with European operations looking to decarbonise their energy demand via virtual PPAs,” but this is also happening beyond Europe. Facebook, for example, signed a novel agreement with developer Sunseap, establishing a virtual PPA for a 5MWp floating solar installation in Singapore. All renewable energy credits from the project will be transferred to the social media giant, while power from the project will be used to support Facebook’s operations in the city-state.

Proxy generation PPAs, which unlike other kinds of contracts don’t settle on energy metered generation but instead use an hourly index that specifies the energy a solar project would have produced based on being operated under best practice standards, is also an option. Earlier this year, Lightsource BP and Allianz Global signed a proxy generation PPA for a 152MW solar project near Dallas, Texas, which is due to come online later this year. Lightsource BP has also recently secured a virtual PPA agreement with US aerospace and defence firm L3Harris Technologies for 100MW of capacity at the developer’s Elm Branch solar project, also in Texas. Over in Europe, Budweiser maker AB InBev inked a 10-year virtual power purchase agreement (VPPA) with BayWa r.e. last year to fully transition its European business to renewable energy, supporting the development two solar plants in Spain in the process. BayWa r.e.’s Grotzke says that virtual arrangements



are better suited to companies that have less load in one country, but instead have several facilities across a region which need renewable power.

"It's a hell of a financial product... it's not a physical delivery of power anymore... if a company is ready to do that, and to just buy the financial derivative, and thereby neutralise its CO2 footprint, then this is also an instrument which is interesting," she says.

Virtual PPAs, Barrett says, have remained popular among US corporates for two reasons. "Firstly, existing supply agreements can be left untouched and therefore avoid some contractual complexity. Secondly, virtual PPAs enable corporates to procure significant volumes through one transaction which can be attractive where operations are spread across disparate jurisdictions." With pricing and structures evidently maturing and changing rapidly, the future of PPAs is emerging as an exciting space for solar to feature.

### The future of PPAs

As well as baseloading structures and offering virtual PPAs to offtakers with distributed business operations, working with different companies in new markets has also led to changes in how power producers navigate the subsidy-free solar landscape.

BayWa r.e. kicked off 2021 by securing what it claims is Poland's first PPA with construction materials company HeidelbergCement. At 10 years, it is on the slightly shorter end of contracts prevalent in the market today. While a PPA may have typically run for between 15 and 20 years, a steady flow of shorter contracts has emerged in recent years. PV developer Solaria signed a 10-year deal with Shell Energy Europe at the start of the year for six solar plants in Spain with a combined capacity of 300MW, shortly after Danish renewables group Better Energy secured a seven-year PPA with pharmaceutical company Lundbeck.

Earlier this year Anna Chmielewska, associate director of the European Bank for Reconstruction and Development, joined a panel of industry players to discuss Poland's emerging solar market at Solar Finance & Investment Europe, and told the audience that the sector "cannot hope for 15 years corporate PPAs" in such an emerging market.

Others involved in the execution of PPAs noted that shorter contracts could

be more appealing to the increasingly wide variety of corporations. Fernando de Juan Astray, head of origination, structured and long-term products for Axpo Iberia, said at the event that there is something of an "oversupply" of power for potential offtakers, nothing this was occurring "particularly in hot countries... That's where we have seen structures tend to be shorter term, perhaps five years instead of 10, 12, 15 which they were before."

Asked how the solar industry could bring more SMEs into the fold, Bluefield's Armstrong says they will be "looking to try and lock (themselves) into a contract for the shortest duration possible", which makes contracts, particularly direct-wire agreements, more complicated.

UK utility Thames Water, for example, has worked with Bluefield to install dozens of solar arrays across its network. Armstrong says it's easier in some ways for a utility like Thames Water to enter into a long-term PPA because how their site ownership is structured. "They have long-term leases or ownership of their land and they know that their infrastructure is going to be there for longer than the certifiers. But if you're an SME, and you have maybe a five-year lease on the

*"There's still the question of how many years will it take to get to the pre-pandemic levels. I don't think anybody has the answer at this point in time unfortunately."*

building, you're not going to be able to enter into something which is longer. Therein lies the tension," he says.

Armstrong says that although shorter power agreements are not ideal for all developers, PPA providers will need to be more flexible in how they can cater for a customer's needs, and shorter agreements can be one such route to pursue. Pedretti, however, believes it may be a while before PPAs become significantly shorter. "According to our data, it's still a marginal aspect. I think that's something for the next two, three, four years, as this is developing. The standard way is still this long-term PPA approach," he says.

Barrett meanwhile is of the opinion that a "blended approach" of long-term price certainty with flexible shorter-term contracts is "likely to provide the best

risk-adjusted returns", particularly when a portfolio is spread across multiple jurisdictions or there are different technological demands. "Across Octopus Renewables we take advantage of the feedback loop between our Investment team identifying new opportunities, who then engage with the Energy Markets Team to define an investment strategy, alongside a PPA and hedging strategy," Barrett says.

The possibility of opening up far more flexible approaches to PPAs could be exciting to budding SMEs looking for sustainable investment, but Grotzke warns that this is a difficult avenue to pursue when additionality is still a priority in the renewables market. "For new projects, it's still the case that the developers seek long-term structures," she says, and if the corporate buyer, like so many that are aiming for strict net-zero targets, need additionality to reach them, "then it's going to be difficult".

"However, there are also companies that don't have that strict target on origination." She refers to examples of subsidised wind farms in Germany which have been commissioned under 20-year tariffs. "Now the first wind projects will run out of the tariff, and there are opportunities to procure power from those projects because they are written off if they don't engage in repowering. It could be a match between those projects and between the corporates who don't have the strict targets on additionality."

At Foresight group, Ricardo Piñeiro concludes that there have been few fundamental changes in how offtakers agree energy contracts, but the rise of the corporate PPA has led to the market becoming more liquid and has opened up the possibility for things like financial hedges, baseloading structures and simply providing a wider range of options to an equally widening customer base. However, with much of Europe still struggling with waxing and waning lockdowns, he warns that there is still much uncertainty over the power pricing and investment.

"It seems that it's stabilising", he says, adding that there has been a marked improvement compared to the second quarter of last year. "But there's still an element of uncertainty. There's still the question of how many years will it take to get to the pre-pandemic levels. I don't think anybody has the answer at this point in time unfortunately." ■