

Making lasting PPA deals in uncertain times

IN THIS REPORT

Indexation and short-term
strategies

Baseload contracts

Electricity market reform

Price cannibalisation





Foreword

Inflation and energy security needs have accelerated renewable targets and pushed demand for power purchase agreements (PPAs) higher throughout most of Europe.

Part of this demand was filled by virtual and shorter-term PPAs in a market still dominated by large IT multinationals which are used to acquiring it in different jurisdictions. But even as PPA volumes have increased over the past year, market conditions are becoming more and more uncertain.

Following a pandemic, a war in Ukraine and related commodity price inflation, there has been a rush to change which parties bear various risks, and which parties can reasonably help them do so. It may be that all can benefit from preventing any one party from wading too far into dangerous waters alone.

Some market players have noticed the rising use and expansion of force majeure clauses to deal with credit and regulatory risk, and some others have also seen the rise of structures such as the “solar-shaped baseload” PPA and PPA indexation as standard. This movement towards indexation tracks what wind market observers have been seeing with wind turbine supply agreements.

They all have raised the hope that, whatever type of PPA is signed and for whatever tenor, they will see more parties gathered for negotiations in the aim of keeping the new wind farms coming.

In this publication, Tamarindo examines the PPA contracting strategies that players have adopted thus far in the European market.

Contents



www.tamarindo.global
membership@tamarindo.global
+44 (0)20 7100 1616

3rd Floor, Tyndale House,
134 Cowley Road, Oxford, OX4 1JH

05 With energy crisis investors sought short-term PPAs

09 The utility of short-term hedging

11 Who owns the commodity price risk?

14 To baseload or not to baseload?

17 Cannibalisation and market future

Chief Executive Officer: Adam Barber

Managing Director: Ilaria Valtimora

Analyst and Journalist: Cristina Brooks

Account Management & Business

Development: Pip Cull & Joe Tagg

Design: Rachael Moreland





Making lasting PPA deals in uncertain times

Price volatility in energy markets over the past year has been a sword that cuts both ways. Fears of soaring costs are driving corporates in droves to sign PPAs. European PPA volumes bought this year – led by solar – are on track to break records. This surge of demand led to the higher prices seen for PPAs last year.

All of this should be good news for the wind project developers and investors who sell PPAs. But commodity price surges have hurt PPA sellers and buyers alike, with high construction costs quashing developers' new wind farms and throttling buyers' options for new projects. High supply chain costs are creating a "seller's market," according to enterprise software and advisory company Pexapark's COO Luca Pedretti.

The past year saw PPA renegotiations in which buyers were asked to accept higher prices to help shoulder sellers' soaring capex costs. In the US, the growing gap between the PPA price agreed and global supply chain costs meant US offshore wind project Commonwealth Wind was unable to reach its FID, and offshore project SouthCoast Wind will seek to cancel its PPAs. Both projects aim to rebid in the next Massachusetts PPA auction. Meanwhile, last year in Europe "not a single offshore wind farm reached FID" due to regulatory interventions trying to tame power price volatility, says trade body WindEurope.

Some dealmakers in the wind industry described last year as hard. In some cases, a fully merchant structure has been restructured to allow a PPA to be able to adapt and survive "a very bad year." Not only have we just been through a bad year, but they are certain to occur in the future. For example, when offtakers see power prices falling below €10 in the morning, they may begin to request flexibility from parties to their existing PPAs.

Corporate offtakers in Europe are becoming “increasingly nervous” about signing long-term PPAs because of the EU’s promise to de-couple electricity prices from soaring gas prices as part of electricity market reform, which might lead to lower power prices as years pass. “As a result, new sophisticated pricing structures have started to emerge that allow for the re-opening of pricing mechanics if there are significant market movements,” wrote partners at law firm Norton Rose Fulbright in May.

Europe had low availability of wind project PPAs in the past year, not only due to supply chain constraints and capex increases, but also to permitting challenges, according to clean energy platform provider LevelTen Energy. “These are issues that will take time to resolve, however some initiatives have already started in Europe led by the European Commission and some other specific regional authorities,” says LevelTen Energy customer success manager Gabriel Umaña Gómez.

The utility of PPAs as a way to reach greening targets is destined to widen their appeal for corporates, utilities and entities of all sizes. PPAs are currently the gold standard compared with most other forms of corporate energy greening, for example renewable energy certificates. This fact alone should drive PPA markets through the current challenges to emerge stronger than ever in the 2030s.

With energy crisis investors sought short-term PPAs

Headquartered in the UK, RES is active in the PPA market, both as a wind and solar developer and as an asset manager. The company regularly negotiates PPAs with utilities, traders and corporates.

Stuart Lunn, commercial director for EMEA at RES, has seen recent interest from investors in shorter-term PPAs, allowing more power price exposure together with balance sheet financing of projects. “The level of volatility we’ve seen in wholesale pricing has been really significant. Everyone’s aware of the electricity pricing increases we’ve seen since 2020, and that has obviously had a very big impact,” he says.

“One thing we have seen is that a lot of asset owners are now seeking a greater degree of merchant exposure across their portfolios,” says Lunn, adding that owners sometimes prefer to initially balance-sheet finance

“One thing we have seen is that a lot of asset owners are now seeking a greater degree of merchant exposure across their portfolios.”

Stuart Lunn, RES

renewable projects, putting in place a 1- to 2-year PPA to take advantage of the relatively high wholesale price and try to refinance with banks under a long-term PPA after a couple of years of operations.

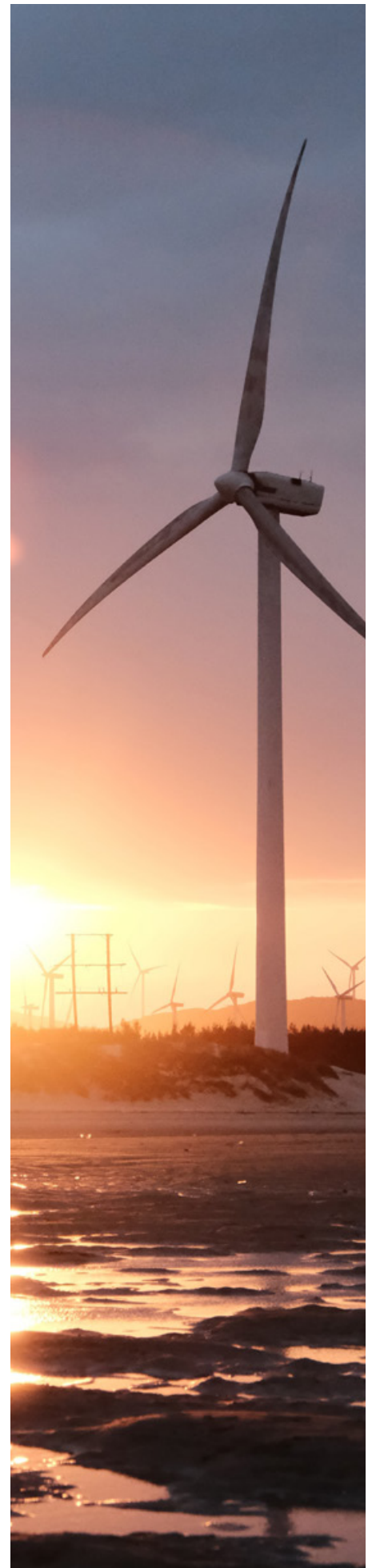
This aligns with what Pexapark found in its European PPA Market Outlook 2023 report. Due to higher PPA pricing, IPPs have started prefinancing renewables on an equity basis, and later refinancing them on the basis of portfolios of assets with long-term revenues to gain positive portfolio effects.

The owner appetite for greater power price exposure means that the traditional 10-year (and occasionally 8-15 year) “fixed price” PPA contract is sometimes preceded by a short-term PPA. Those opting to enter into a short-term PPA won’t necessarily see it as the long-term strategy for the relevant wind project. In some cases, owners will seek to aggregate several operational projects together for a higher volume long-term PPA tender, or bid them jointly into a corporate PPA (CPPA) auction. “There is a benefit to marketing larger volumes in one go,” says Lunn.

“Whereas a long-term PPA might have been an absolute requirement for asset owners in the past, we see a number of them looking across their portfolio as a whole and saying, ‘I’ve got a certain number of projects with fixed pricing in place already, so now I can start adding more merchant exposure across my portfolio. I can have a balance of fixed versus merchant revenue exposure, and I get the benefit on some of those projects from higher pricing.’ That’s really been the feature for the last two years,” Lunn says.

But Lunn observes that, while some owners and developers are still looking to strategically add merchant exposure across their portfolios, long-term PPAs will likely regain prominence as power prices have come down from their highs last year. He predicts certain EU regulations, like additional price caps, could also dampen recent seller interest in shorter-term PPAs.

Also, Lunn adds, volatility itself will drive the buyer argument for the 10-year PPA, and lower power prices expected in Europe, forecasted by certain industry sources, may also mean demand for 10-year utility PPAs and CPPAs rises.



With its origins in 1990s Germany, PNE AG is a wind power owner, developer and operator active in Europe, North America, Asia and Africa. Head of energy supply services and PPA management Nils Kompe agrees, “In markets without feed-in tariffs, longer-term PPAs of 10-plus years are still the standard for the realisation of renewable energy projects.”

Only in European post-subsidy markets has Kompe seen the short-term trend. “However, in markets, as in Germany for example, where the subsidy mechanism includes a step-out option and an increasing number of post-subsidy projects enter the market, we observe a broader range of different PPA – terms ranging from 3-5 years,” he adds.

In Spain where PPA markets are booming but long-term PPA prices are lower, a similar trend is observed with sellers targeting shorter PPAs, but there it may be more of a chance for developers to escape expected price cannibalisation in the long term.

Director, renewable energy project finance at Dutch bank Rabobank Stefan Hogewoning says he is seeing short-term, 3- and 5-year PPAs agreed for solar PV projects with the obligation to either refinance or repay the financing at years four or five from construction completion. This lets projects decrease their cost of funds and possibly negotiate a better PPA price. “We still see reports of PPAs for longer tenors, but we also see, for example in Spain, where the expectation is that the capture rates for solar are decreasing, that parties are structuring PPAs on a shorter tenor to refinance or re-leverage based on new PPAs being signed, and in order to avoid the big price reductions in the later years, so in years seven to nine,” he says.

For example in Spain, the PPA price for a 10-year PPA is significantly lower than for a 4- or 5-year PPA, so the developer could expect that the PPA discount when a short-term tenor expires will be much less than what is currently predicted.



Banks also look favourably on the re-financing of projects in Europe initially financed with short-term PPAs. “If you have a shorter-term tenor, it could be that the debt-sizing itself could be impacted, it may potentially even be slightly higher. It is sort of easier for the bank in case the refinancing doesn’t work. Banks will generally look at how fast after that refinancing moment they could be out of the deal, subject to reasonable electricity prices,” says Hogewoning. “They would take the risk on a shorter-term (initial) PPA, and then sort of roll it over for the next period. From a lender’s perspective, that means that the structures that we’re offering are also different.”

LevelTen’s Gómez noted in Europe there had been a slight decrease in average tenor over the past year, from “developers who have seen that banks financing short-term projects may prefer this because it gives them more flexibility with the different routes to market [such as] merchant, CPPA, auction” and turning away from cheaper long-term PPAs when energy prices increased. In the first quarter of 2023, average wind PPA tenor length (Q1) fell year-on-year to 10.6 years, down from 12.3 years. Solar PPA tenor length dropped slightly less, according to LevelTen.

Pexapark calls the short-term PPA “the risk management play of the decade” in its 2023 Industry Survey, noting that the market is evolving towards a mix of sales strategies that do not involve just one asset, gaining a focus on minimising hedging and liquidity costs through a mix of long- and short-term hedges.

“The ability to be alert, and have the tools to assess dynamic opportunities as they appear, mirrors sales strategies of the incumbent energy players, who have operated on a merchant basis for decades. Adoption of such a practice from renewables is a testament of the sector’s maturity and evolution,” writes the company’s senior insights analyst and content manager Maritina Kanellakopoulou.

“It is sort of easier for the bank in case the refinancing doesn’t work. Banks will generally look at how fast after that refinancing moment they could be out of the deal, subject to reasonable electricity prices.”

**Stefan Hogewoning,
Rabobank**



The utility of short-term hedging

Developers and investors in Europe are not the only ones who are seeing the advantage of a short and sweet PPA in today's dynamic price environment.

Utilities and traders appreciate shorter-term PPAs to help avoid rising hedging costs. "The challenge is usually the cost of hedging," Lunn explains, adding, "Because there's so much price volatility in the markets, as you go further out on your PPA term and you're fixing for longer and longer, the cost of collateral and the cost of hedging becomes very significant and that has an impact on the pricing of PPA contracts."

Lunn estimates that short-term PPAs won't remain utilities' default choice and says in some European markets more have been choosing 10-year fixed price PPAs lately. "As volatility decreases, we're hoping that fixed-price contracts from utilities and traders will become longer and more prevalent in the market, and then that can only be a good thing in terms of wider competition versus government auctions versus corporate PPAs," he concludes.

Norway-headquartered assurance and risk management company DNV advises buyers, offering utility PPA and CPPA contract due diligence across Europe, the Middle East and the US, in addition to helping developers find a route to market through PPA tendering.

Jakub Pilc, DNV principal consultant, PPAs, for EMEA sees three main differences in buyers' approaches to tenors. "With the rising popularity of PPAs, many corporate buyers are now thinking in terms of the wider tenor of up to 10-12 years, and they commonly accept this as one of the requirements for corporate PPAs.

"Many corporates would like to consider shorter tenors when available. Shorter contracting is driven by shorter time periods for budgeting requirements, as well as the commitment to sustainability programs with a horizon up to 2030," he adds.

In a final trend on tenors, Pilc sees corporate buyers who are rather risk-averse looking at the 5-year PPA as the first step on the rung of the ladder to a PPA covering the entire demand portfolio.

In terms of utility PPAs, the 10-year tenor is common, but DNV also sees a 3- or 4-year PPA used by utilities seeking price hedging contracts. "When it comes to periods shorter than five years, we're asked what the advantage of PPAs over trading on the exchange is, Pilc explains, continuing, "I think it's easier to mitigate risk on short-period utility PPAs thanks to more price transparency over the tenor of the contract, so the termination amount can be marked to market.

"When we are talking about utility PPAs, pricing mechanisms have become more sophisticated than before. Part of the generation, for example, 70-80 per cent could be hedged at a fixed price, while the remaining volume would be linked to the spot price. Pricing formulas are becoming [more] complex to achieve the capture price as planned," Pilc says.

Global professional services firm EY offers PPA services for both PPA buyers and sellers, including M&A support and offtaker renewables strategy advice, as well as PPA procurement and accounting treatment expertise. It releases a PPA index twice per year highlighting the world's best countries in which to sign CPPAs.

"Many corporates would like to consider shorter tenors when available. Shorter contracting is driven by shorter time periods for budgeting requirements, as well as the commitment to sustainability programs with a horizon up to 2030."

Jakub Pilc, DNV



Phil Dominy, director, energy and infrastructure at EY in EMEA says when wholesale power prices shot up during last year's crisis, he did see "a bit more" appetite for two-year PPAs from utilities to cover the gap in hedging of power costs before the start of a long-term PPA with a newbuild wind farm. EY sees some utility buyers continue to fill this gap with competitively priced PPAs, so-called "bridging PPAs" from operational assets, sometimes with the same developer that is going to offer them the new-build wind farm.

But he notes a more recent move away from shorter tenor PPAs amid a relaxation in power prices. Corporate buyers are back to hedging using monthly or seasonal forward power purchases without a short-term PPA during that two-year period. Dominy explains, "For corporates, they'd rather just hedge short-term as they used to do."

Despite these tenor trends, EY sees that most newbuild wind farms in Europe are still in need of minimum 10-year PPAs. "Roughly, ten years ago almost all PPAs were 15 years or more. Now, they're almost all ten years, so that trend has come down for newbuild projects. If [PPA buyers] are happy to take an existing asset, I've done 5- to 7-year PPAs, but it's very rare to see a developer able to raise debt finance on a new-build project if the PPA tenor is less than ten years and because most corporates want that additionality, they also don't want less than a 10-year PPA tenor," says Dominy.

Who owns the commodity price risk?

While buyers and sellers share the goal of the keeping the PPA in place for the construction of a wind farm, some PPA parties are re-examining the way wind supply chain commodity price risk is allocated between seller and buyer in the PPA agreement.

Tom Buttgenbach, CEO of 8minute Solar Energy, speaking in a Norton Rose Fulbright panel in August on the US market, shared the view that "the commodity price risk needs to be taken by the offtaker" because the developer is specialised in construction while some offtakers, utilities for example, already take a long-term view on commodity prices. "I have found more sympathy for that argument for future projects, which is easy today in a seller's market with available projects in short supply," said Buttgenbach



Michael Rucker, CEO of Scout Clean Energy, also speaking in the Norton Rose Fulbright panel, said he had seen PPA contracts with “reopeners” providing the parties with a chance to meet to discuss how to cover commodity price inflation risk.

Reopeners are not the only way that parties can show more caution. Force majeure clauses related to regulatory changes have been seen since last year’s price caps in Europe. DNV’s Pilc says, “The three most pronounced risks I see are credit risk considering the changing creditworthiness of contracting parties, force majeure risk given the rising risk of pandemics as well as the risks associated with a changing legal framework in the context of the energy transition. These three elements are important to acknowledge to mitigate the risk of defaults,” Pilc says.

Pilc says that buyers often insist on rigid early termination conditions to protect themselves in case of delays in project commissioning by developers. They want to be able to exit a PPA when a delayed wind project, for example, is not complete or is partially complete.

Hogewoning also points to PPAs covering commodity price risk with CPI indexing links. “That started maybe a half-a-year ago and they’re becoming more common. I think that probably has to do with the fact that inflation has become such a big topic. And actually, manufacturers do the same in their supply contracts now.”

Force majeure clauses related to regulatory changes have been seen since last year’s price caps in Europe.

“I think that probably has to do with the fact that inflation has become such a big topic. And actually, manufacturers do the same in their supply contracts now.”

**Stefan Hogewoning,
Rabobank**



“I think we’re seeing most developers willing now to accept non-indexation pricing, but obviously, the corporate will pay a premium price for that.”

Phil Dominy, EY

Dominy observes that indexation has been through “a few cycles.” He says last year, when commodity price inflation was really taking off, a lot of developers started to refuse any non-indexed, flat-priced PPAs because they were worried about their supply chain and O&M costs going up relative to their revenue while CPI indexation in Europe “went crazy”.

“As inflation is already coming down here, there are some developers now who are willing to take a ‘flat nominal’, so non-indexation pricing. As well as ‘flat nominal’ prices and PPAs indexed against CPI, some corporates prefer a fixed escalation of prices per year,” he says.

Now, non-indexed pricing is poised to make a comeback. “I think we’re seeing most developers willing now to accept non-indexation pricing, but obviously, the corporate will pay a premium price for that. But when the corporates are willing to accept indexation, then there may be an agreement for an annual indexation price cap,” says Dominy, explaining that uncapped CPI indexation makes corporates nervous about their budgeting.

To baseload or not to baseload?

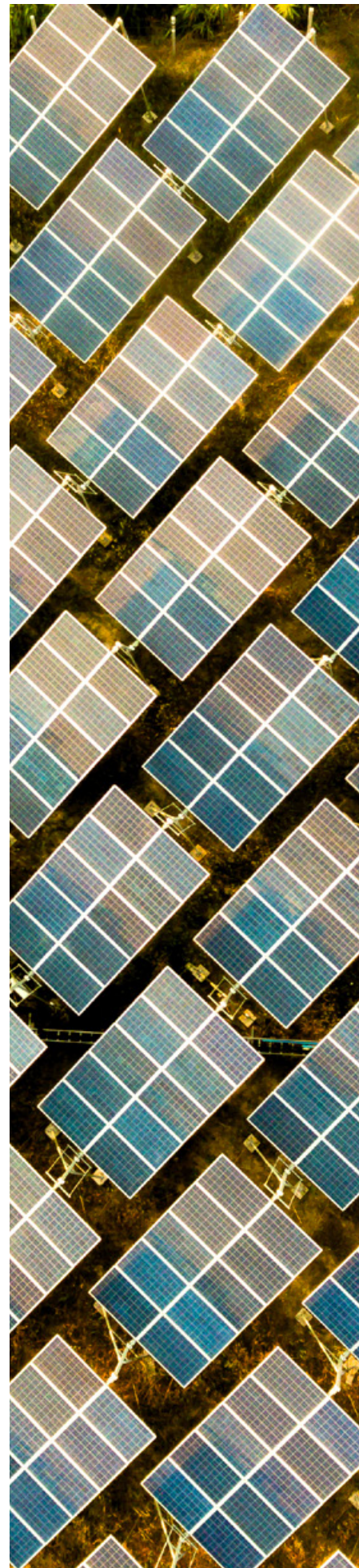
In Europe, sponsors are facing more issues now with baseload contracts in an environment where they have very high prices and intermittent generation from wind and solar, but baseload contracts have not ceased entirely. Pay-as-produced PPAs are rising in popularity.

Speaking at Tamarindo's Financing Wind conference in May, German bank NORD/LB's head of origination energy Europe Niels Jakeman said there could be a way to structure a baseload contract for wind by using different types of assets. "You'd look at it, perhaps in portfolios with a few other assets of different asset types – so solar, wind, storage – and get greater confidence that you would be able to secure that level of baseload price. I think, as a portfolio maybe with some other types of offtakes and on a relatively modest level, it probably could still work, but I'm not aware of any active in the market right now," said Jakeman.

Law firm DLA Piper head of sustainability and ESG Natasha Luther-Jones, speaking at that event, said that some sponsors had successfully renegotiated PPAs taken out right before the war in Ukraine. Some virtual or physical PPAs were able to increase the price, or in the case of a baseload PPA, reduce output to less than 50 per cent of project outputs. She says her firm has seen a lot of renegotiations of signed PPAs, although none of them had contractual rights to renegotiate. Offtakers were generally willing to negotiate because of the need to preserve the project.

Rabobank wrote in a report last year that developers of wind and solar farms were becoming more cautious on hourly baseload PPAs and were taking a step back from fully merchant models. It predicted "an increasing price discount for pay as produced-versus baseload PPAs."

"Next to price cannibalisation, asset owners will likely apply a higher price tag for owning the shape risk. Thus, as more and more wind and solar PV assets are deployed, we will see an increasing price discount for pay-as-produced PPAs compared to baseload PPAs," it said.



EY's Dominy says the pay-as-produced PPA is the most popular structure in Europe, as last year shaping costs went up "hugely" and baseload PPAs cost a lot more. Corporates in Europe's deregulated power markets now rely mostly on pay-as-produced and virtual PPAs. Dominy explains, "Pay-as-produced and virtual PPAs are probably the vanilla now, in most of Europe anyway." He says shaping costs are already coming back down, however, as volatility and power prices decline.

Even so, EY in EMEA has seen major corporate clients like UK telco giant BT Group opt to combine wind virtual PPAs and a solar virtual PPA to obtain the best profile. Assisted by EY, BT has signed PPAs with three UK wind farms in the past two years, targeting net-zero.

EY recommends that large corporates combine solar and wind PPAs to avoid the buyer relying on a utility baseload and incurring a significant aggregator margin. It suggests this as a 'gold standard:' a pseudo 24/7 baseload contract to lower exposure to profile risk as well as being greener, due to reducing the reliance on fossil fuel power to fill the gaps, says Dominy.

But for most major corporates, investing in several PPAs to create a pure 24/7 shape that matches generation perfectly to demand is still hard to justify. This is because it requires a huge load, the kind more likely to be needed by a major tech company. "The 1% of corporates – the Metas, the Amazons, the Microsofts – those that are massive and have so much load – could do multiple different PPAs and have deep enough pockets to manage a 'platinum type' PPA from multiple technologies and assets. It's less relevant for most corporates as they just can't achieve that sort of scale. So when we do a simpler combination of wind and solar, we're not trying to match exactly hour-by-hour 24/7 – we're going for gold rather than platinum," says Dominy.



“The 1% of corporates – the Metas, the Amazons, the Microsofts – those that are massive and have so much load – could do multiple different PPAs and have deep enough pockets to manage a ‘platinum type’ PPA from multiple technologies and assets.”

Phil Dominy, EY

Speaking from the bank perspective, Hogewoning says, “Where we’re doing more financial PPAs instead of more physical PPAs, it might be easier to structure, but that would mean that the developer of that project still needs to arrange the physical sale of the electricity.”

Rabobank has seen the emergence of “solar-shaped baseload” PPAs to combat the PPA-price reduction of the expected profile effect due to cannibalisation in Spain for offtakers in pay-as-produced PPAs. “It’s also definitely an issue which, at the moment, is less of an issue because prices are relatively high, higher than what we’ve seen in the past and that mitigates it, but the risk is definitely very much on the radar and for fixes seen in ‘solar shaped baseload’ PPAs, but are based on the hourly expected production, which remains a challenge for banks.”

RES in Europe finds that shape risk allocation is a rising discussion topic for corporate offtakers. “We do have more and more conversations during CPPA negotiations around allocation of shape and availability risk, much more than we did in the past, but unless [you as the developer are] an owner of a very large portfolio of assets, and have access to a trading partner who can help you shape that risk, it’s more likely in our view that shape and availability risk is better borne on the buyer side of the contract,” says Lunn.

This is because the utility or corporate offtaker can more efficiently trade volume imbalances.



Cannibalisation and market future

Despite the many emerging risks for parties, demand for PPAs will stay strong amid rising renewable targets over the next decade, players predict, but markets will still face volatility. Last year Rabobank predicted that as renewable penetration rises, “[power] prices are expected to decrease on average while simultaneously becoming more volatile.”

Lunn points out that the certainty of electrification in Europe gives reason to hope that price cannibalisation is a temporary market distortion. “I think the market will, to some extent, correct for it. If you imagine that you’re going to have large amounts of wind generating at a given time and the pricing is coming down, given the amount of electrification for the heating industry and use of green hydrogen, those elements will ramp up significantly in response to those lower prices, and it will mitigate the impact of that cannibalisation,” he says.

In the medium-term, wind and solar price cannibalisation means the need for PPA parties to negotiate is far from over. “If the market continues to come down and become cannibalised, the PPA prices will need to come down as well. Otherwise, there will be no economic traction for a corporate entering one. So, I think that there will be a challenge for developers coming out with new projects — they’ll need to see how they can trim their supply chain costs to keep the PPA price competitive against falling wholesale markets,” says Dominy.

Another fundamental change for PPA pricing on the horizon is EU electricity market reform. EU reforms foresee the decoupling of renewable and fossil fuel power markets as well as a move towards sub-national, or nodal, power pricing. Dominy predicts, “[Nodal pricing] will certainly change PPA economics because the market will change once you go regional. So rather than country-wide pricing, we’ll begin to see more nodal or regional price pricing that will incentivise generation closer to where it’s consumed.”



“If the market continues to come down and become cannibalised, the PPA prices will need to come down as well.”

Phil Dominy, EY



Commenting on a leaked draft of the proposed reform in March, LevelTen's senior manager in analytics Plácido Ostosi said it supports fixed-price PPAs as a way of bringing down energy prices, for example by allowing developers to bid into CfD auctions for projects that already have a PPA. Ostosi called this "an exciting step, as it provides additional flexibility and routes to market for developers." But he added PPA players were pleased that the EU apparently scrapped a proposal by Spain requiring developers to gain CfDs for all new wind and solar farms, noting that it would discourage CPPAs.

Overall, Ostosi recommended the EU do four things to help avoid price cannibalisation: enact financial instruments that reduce the risks to PPA offtakers, provide financial support, remove limits on cross-border and cross-zonal transmission and increase the use of PPAs for SMEs, for example through preferred treatment in auctions.

Hogewoning believes that EU electricity market reform will be positive for PPA project development, with CfDs supporting revenues and with governments potentially being able to guarantee the credit risk of the smaller offtakers. That added liquidity from smaller offtakers would help to get more wind and solar projects linked to PPAs moving. Gómez at LevelTen Energy also noted in Europe smaller offtakers were interested in all types of PPAs, but he did not say he had seen aggregated PPA transactions being carried forward.

To spur the popularity of PPA contracts, Pilc also believes the EU must fast-track permitting process to increase renewable projects in the pipeline, build flexibility markets to bring more variety to PPA contracts and add more PPA pricing resources to better manage pricing and market risk. Pilc also strongly supports the development of PPA indices to build better contracting standards and help the market advance, noting PPA contracts traded on exchanges would help players make better investment decisions.



“Until we have widely implemented battery storage or hydrogen infrastructure to store sufficient renewable energy, there is a good chance we will see cannibalisation progressing and impacting investment decisions.”

Jakub Pilc, DNV

On flexibility, Pilc cautions, “Until we have widely implemented battery storage or hydrogen infrastructure to store sufficient renewable energy, there is a good chance we will see cannibalisation progressing and impacting investment decisions.”

Pexapark’s COO Pedretti, speaking in a March interview with S&P Global, agreed with the concept that batteries were an answer to increase capture rates, predicting the rise of so-called “hybrid PPAs.”

European PPA market observers are mostly rooting for the reforms ahead, watching and waiting to see what comes to the fore in shaping PPA markets over the next couple of years.

Get in touch

hello@tamarindo.global

+44 (0)20 7100 1616

tamarindo.global