

Industry Study  
February 2021



# Corporate PPA

Green electricity for  
corporate consumers

## Extract

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# 1 Foreword

Ladies and Gentlemen,

2020 was a challenging year due to the Covid-19 pandemic. That includes the energy sector and, in particular, the development of the power purchase agreements (PPA) as well.

The Corona crisis has noticeably affected the PPA market on the supply- and demand-side: energy prices in Europe have partly dropped. Many projects have been delayed or are postponed into the post-pandemic future.

But despite the current challenges, the long-term outlook for PPAs remains optimistic as you will see in our updated study. The trend towards green energy remains consistent and stable. Companies are seeking for renewable energy to cover their electricity demand. Furthermore, they are aiming at optimizing their carbon footprint.

The classic energy mix most likely will not meet the consumer demand and broader mindset in the future. PPAs close the gap between green energy sources, purchasing companies, ESG and expectations of end consumers. Across Europe we are facing the strong political will to integrate green energy into the electricity markets. Thus, we expect PPAs to be an integral part of the European power market in the future.

At the same time, the PPA market requires well-founded expertise on the offtaker, operator and especially on the finance side to evaluate supply obligations and requirements as well as risk positions as these points have a strong impact on the deal structure. Hamburg Commercial Bank has got a substantial track record and deep knowledge in this part of the renewables business. For more than 25 years we have been acting as advisor, sparring partner and door-opener for developers and investors in the renewable energy industry. Especially PPAs have been a main part of our activities in the recent past and from our perspective their fast growing importance unstoppable.

We are delighted if this study finds your interest and we appreciate the dialogue with you about this important instrument for the further market integration of renewables.

Best Regards,

**Dr. Nicolas Blanchard**

Chief Clients and Products Officer  
Hamburg Commercial Bank



**Dr. Nicolas Blanchard**  
Chief Clients and Products Officer  
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## 2 Summary

- 'Going green'- PPA's make it possible!**
- More and more companies are pursuing sustainable strategies and want to procure their entire electricity needs from RE (Renewable Energy) sources. However, in many cases power utility companies are limited in such power supplies. Power Purchase Agreements (PPA) entered into directly with a producer of green electricity can create new possibilities in this regard.
  - When state subsidy schemes for RE are lacking or expected returns based on existing subsidy schemes are too uncertain to permit investments in new wind farm and solar farm projects, corporate PPAs can bridge this gap and enable new RE projects.
- High market growth for corporate PPAs in Europe**
- In 2020 (ytd), corporate PPAs were signed for a volume of approximately 1.8 GW (after 2,5GW (2019) and 2,3GW(2018)) in power production capacity. Solar PV projects dominated the European PPA market for the first time.
  - Up to now, contracts have primarily been signed in Sweden, Norway, the UK, Spain and Finland. In contrast, the existing statutory support systems in the remaining European countries have made PPAs there more or less unnecessary up to now.
  - Covid-19 has affected the PPA market not on the supply side – projects are shifted into the future –, but also the demand side, because electricity prices decreased and offtakers are reserved due to the dynamic development of the pandemic.
- Complicated contractual structures**
- Three main types of contract that are suitable for various supply constellations between the procuring company and the electricity producer have evolved: two forms of 'physical PPAs' and 'synthetic PPAs'.
  - The regulatory needs of certain matters and the related risks in a PPA have made it necessary to have complex, individually tailored PPA contracts. Against this background, mainly large-scale companies have used PPAs up to now.
  - PPA contracts also have to be 'bankable', that is to say acceptable to the banks providing the project financing.
- Great potential**
- The EU's revised regulation known as 'RED II' – that is the new EU Renewable Energy Directive for the promotion and support of renewable energies – should remove any obstacles still remaining to the direct marketing of green electricity via PPAs in all member states from the year 2021 onwards.
  - In the coming years, existing RE power plants that will continue to be operated after their state support period ends will create additional potential for PPAs with short contractual lifetimes.
  - The successive replacement of coal-fired power plants by RE generating capacity will mean that PPAs will be increasingly used by power utility companies too. Perspective, the differentiation between corporate PPAs and utility PPAs will more or less disappear.
  - In the long term, PPAs are also ideal for supplying power from 'Power-to-X' power plants under new major RE projects, including the production of hydrogen (for fuel cells etc.) and for the production of greenhouse gas-neutral synthetic fuels.

## 3 Using PPAs to ‘go green’

Many European companies are increasingly considering a climate-friendly energy supply as one component of their strategy to make their business activities environmentally sustainable. In this regard, these companies are looking in particular at energy efficiency, power consumption and the method of power production used. If power from RE sources shall be used, it either has to be selfproduced, bought with guarantees of origin from a power utility or procured from an independent RE power producer. It sounds simple, however, in practice it is not.

How could electricity a company is supplied with be verifiable ‘green’? A relatively easy way is to invest in PV (photovoltaic, i.e. solar) systems on its own premises. This approach is often taken in practice, but the production of electricity by such installations is usually fairly small. In contrast, there have been very few direct investments by companies in the erection and operation of own large scale wind farms with a high generation of green electricity.<sup>1</sup> As a result, if you need large volumes of electricity you normally have to procure it from a third party. However, buying from utility companies often fails to fulfil the goal of ‘going green’, as many of these companies have not been investing in their own RE production capacities for long, which means they are only able to supply limited volumes of green electricity to commercial customers. Another obstacle are the national RE subsidy schemes. In several countries no financial support is granted for the sale of generated electricity directly to the endconsumer. Therefore, a RE project operator would have to charge a relatively high power price in order to operate its project profitably.<sup>2</sup>

However, there are exceptions: in some countries, you can buy RE electricity from a wind farm or solar farm without affecting any financial support the farm receives, by entering into a long-term contract with them. As shown by the increasing number of such signed contracts, when it comes to new wind farm and PV projects in some European markets, such power purchase agreements (PPAs) are becoming increasingly important for large-scale companies who are end-consumers (these contracts then being known as ‘corporate PPAs’). Such contracts have played a decisive role in making RE projects feasible at all. Pioneers of this trend were major US companies, such as Google and Microsoft, with powerintensive business activities in Europe. These companies are capitalising on the historically low energy price by using PPAs to achieve long-term fixed pricing for their European data centres’ energy requirements. In this way, corporate PPAs enable companies to reap the benefits of fixed energy prices over lifetimes that are not available in the wholesale power market. Since it has been common practice to sign such long-term procurement contracts for RE purchase agreements in the US, these companies have gathered plenty of experience with such contracts. Consequently, they can share their established procedures and contractual standards with their European subsidiaries.

European companies (increasingly in the industrial sector) have likewise been discovering this useful instrument for themselves, as shown by the

1 Outside the energy sector, in fact it is so far only Ikea and Amazon being companies actively investing in having their own wind or solar PV projects.

2 In Germany, for example, due to actual economic reasons, it is not feasible to sell EEG-supported electricity directly to end-consumers (EEG = the German Renewable Energy Sources Act). In order to take use of the market premium model the RE project operator is obliged to transfer the guarantee of origin associated to the generated green electricity to the transmission grid operator. The electricity produced is sold on an unlabelled basis at the wholesale market. This makes it impossible to allocate the RE power plant’s subsidised green electricity production to a particular end-consumer and to obtain guarantees of origin about this.

increasing numbers of PPAs signed by industrial companies as Norsk Hydro, Nestlé, BMW, Phillips, DSM and Akzo or technology companies as Amazon and Google. Many of the PPA users are pursuing a policy of sustainability as part of their overall corporate strategy. They aim to meet all their energy requirements from renewable energy sources and have signed up to certain initiatives such as 'RE100' and use such platforms as the 'Business Renewables Center'. In this regard, a PPA is the instrument that is used both by major companies and for larger-scale RE projects.

In this study, first we will look at the background of corporate PPAs. How do these power purchase agreements between the RE producer and the end-consuming company work in practice? What basic contractual variations are there? What are the differences between a corporate PPA and a utility PPA? In which countries PPAs are really established, and where have they been unable to break through yet? What has been the trend in respect of market volume? Additionally, we will analyze the short-term effects of Covid-19 on the European PPA market.

Afterwards, we will also consider PPAs from the perspective of the financing party. What types of risks are associated with PPA contracts and how can they be handled in a way that a RE project with PPA-covered electricity sales becomes 'bankable'? How important are PPAs to project developers and RE producers, and which contractual features are especially important to these parties? To obtain answers to these questions, we have undertaken interviews with well-known market participants and have used their views as input for this study.

Finally, we briefly look into the future. PPAs will become a standard instrument in Europe for the buying and selling of RE electricity. They come into play when RE projects that can be run on commercial terms but require the exposure to price risks in the electricity market to be neutralised. The basic preconditions for using PPAs are that Levelised Cost of Energy ('LCoE') of new RE projects become competitive in the long term in the wholesale power market and that state financial support programmes no longer compensate for the project's power marketing price risk. An alternative scenario is possible in which state RE support remains available but is no longer linked to the wholesale price for electricity.<sup>3</sup> An important step in this direction is the agreed EU Renewable Energy Directive 'RED II', which revised the guidelines for state support schemes for RE projects from the year 2021 onwards. Article 15 (8) of the Directive forces the member countries to remove any PPA-related regulatory and administrative obstacles that are still in place.<sup>4</sup> PPAs are also a very suitable instrument when the sold electricity is generated by older RE power plants that have reached the end of their state support period but still can be operated on a commercial basis.

3 For instance, the RE support could be uncoupled from the sale of electricity by switching over to support in the form of investment allowances or in the form of the type of certificates used in Sweden or the type of tax credits used in the US.

4 In December 2018, the revised renewable energy directive 2018/2001/EU entered into force.

## 4 An overview of PPA

In the broader sense of the term, a PPA is a long-term power procurement contract between a power producing company and a power purchasing company. Primarily, PPAs in a narrower sense should merely be seen as power supply contracts from those RE plants that are operated by independent power producers (IPP). We are simply excluding from this narrower definition those RE power plants that are either fully owned or majority-owned by a utility company and which – as part of the latter's power plant portfolio – serve the latter's own power generation and whose electricity output is sold to end-consumers accordingly.<sup>5</sup>

The power purchaser ('offtaker') in a PPA can be either a company that consumes the power, a utility company or an energy trader. PPAs entered into with end-consuming companies are known as '**corporate PPAs**', whereas power purchasing agreements entered into with utility companies or energy traders are known as '**utility PPAs**'.

PPAs have developed as the energy markets have been liberalised, which means there has been a legal unbundling of utility companies' business activities into power producing, power grid operating, and power distribution companies, along with the creation of a wholesale power market and regulations that ensure there is discrimination-free grid access for IPPs, electricity traders and independent distributors. In order to invest in a RE project, developers need to have a reliable basis for calculating their electricity sales. Whenever this is not guaranteed by state support regimes – in other words, the power producer himself is responsible for marketing the RE electricity he produces – the power producer is exposed to the market price risk. This is the case for systems in which RE quotas have to be fulfilled by power market participants, for instance via Renewables Obligation (RO) schemes, tradable RE certificates, or in markets without state support. In these situations, long-term PPAs are a suitable solution.

As long as the contractual partner in a PPA is sufficiently creditworthy, for the RE producer it is of secondary interest whether his long-term fixed-price power production is sold to an end-consuming company or to a utility company. Up to now, however, utility companies have primarily acted as direct marketing partner to RE plant operators under a state-supported RE production programme via FiT (Feed-in Tariff) or FiP (Feed-in Premium) schemes. In their function as resellers of the contracted power production volume, utilities can usually only enter into PPAs that have comparatively short-term initial fixed-price agreements, because their own customers usually prefer to have competitive tariffs with short-term price agreements. In other words, if long-term fixed pricing is the goal then at the current time the only possible option is to enter into a corporate PPA. If on the other hand a PPA is agreed for a RE project that is subsidised by way of a FiP scheme, meaning that no long-term fixed pricing is needed, then the preferred option is usually a utility PPA.

<sup>5</sup> In principle, we only classify power supply contracts from RE plants that are owned by utility companies as PPAs in the narrower sense if these are both 'enabling' for the project in question and fixing the price of electricity for a period of at least 10 years.

Depending on the regulatory parameters in the electricity market, two basic contractual variations of corporate PPAs have been established, namely the 'physical' PPA and the 'synthetic' PPA.

**End of Extract.**

**Publisher**

Hamburg Commercial Bank AG

3rd revised new edition, February 2021

1st edition published by HSH Nordbank, June 2018

**Hamburg**

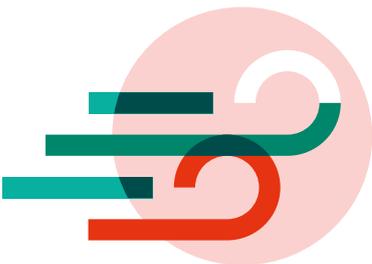
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