

Corporate PPA

Green electricity for
corporate consumers

Extract

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1 Foreword

Ladies and gentlemen,

Hamburg Commercial Bank and its predecessor institutions have been involved in renewable energy for more than 25 years. When many still considered the expansion of wind energy plants on an industrial scale to be an unrealistic flight of fancy, we had already financed the first wind turbines in Northern Germany. Even then, we were convinced by the opportunities provided by this type of energy generation, from both a business and ecological aspect. Our views have remained unchanged to this day.

This is why we remain closely associated with the strong growth of the sector, which plays a key role in meeting global climate targets. In Europe, we are among the leading providers of finance for renewable energies. We have long ago widened our focus beyond our German home market, which remains important to us, to neighbouring European countries. At the same time, we are also on hand to support projects in other countries – there are promising markets offering steadily high annual growth rates in Asia, in particular.

We regularly use our profound sector knowledge to publish research. This study on Corporate PPAs shows, among other aspects, how project developers can take advantage of such instruments when developing and financing solar energy and wind farm projects.

The financing of projects in the renewables segment is and will remain a growth area for Hamburg Commercial Bank. The potential in this market is still great – as is the need to generate our energy in a sustainable and climate-friendly as possible way.

Enjoy reading!
Warmest regards,

Nils Driemeyer

Global Head Renewable Energy
Hamburg Commercial Bank



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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 2017, corporate PPAs were signed for a record volume of approximately 1.4 GW in power production capacity, mostly for wind farm projects.
 - Up to now, contracts have primarily been signed in Sweden, Norway, the Netherlands and the UK. In contrast, the existing statutory support systems in the remaining European countries have made PPAs there more or less unnecessary up to now.
- 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.
 - When it comes to the preferred type of contractual structure, physical PPAs are likely to dominate in the future, too. However, a certain standardisation in the contractual conditions and some flexibility in terms of contractual lifetime and fixed pricing should also be expected in the longer term.
- Great potential**
- The EU's upcoming 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. In the long-term, 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-sustainable 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 electricity 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.¹ 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, under which in several countries no financial support is granted, if a RE producer sells the generated electricity directly to an end-consumer. Therefore, a RE project operator would have to charge a relatively high power price in order to operate its project profitably.²

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 electricity price by using PPAs to achieve long-term fixed pricing for their European data centres’ electricity needs. 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.

1 When it comes to companies outside the energy sector, up to now it is really only IKEA that has actively invested in having its own wind farms.

2 For example, in Germany currently for 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.

European companies (increasingly in the industrial sector) have likewise been discovering this useful instrument for themselves, as shown by the increasing numbers of such contracts signed by industrial companies as Norsk Hydro, Nestlé, BMW, Phillips, DSM and Akzo. Many of the PPA users are pursuing a policy of sustainability as part of their overall corporate strategy. They aim to cover at least all their electricity needs 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. Nonetheless, in the UK this trend has also made smaller-scale RE projects realisable for small and medium-sized enterprises (SMEs).

In this study, we first 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 are PPAs already established, and where have they been unable to break through yet? What has been the trend in respect of market volume?

Then, 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 such 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.³ An important step in this direction is the upcoming EU Directive 'RED II', which will revise the guidelines for state schemes for RE projects from the year 2021 onwards. This Directive will force the member countries to remove any PPA-related regulatory and administrative obstacles that are still in place. 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 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.⁴

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 electricity 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 electricity 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

⁴ In principle, we only classify electricity 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.

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