Bird & Bird & Corporate PPAs

An international perspective

RE-Source 2019
European platform for corporate renewable energy sourcing
2-3 October Amsterdam

twobirds.com

Contents

Introduction

Large corporations are continuing to set the agenda for the growth of renewable energy across the globe. In 2018, 121 corporations purchased 13.4 GW of clean power directly from generators under a Corporate Renewable Power Purchase Agreement (Corporate PPA). This more than doubles the record of 6.1 GW for 2017. A Corporate PPA allows corporate consumers and generators to take advantage of a range of economic, reputational and sustainability benefits.

Bird & Bird's lawyers advised on some of the earliest Corporate PPAs (in 2007 in the Netherlands and in 2009 in the UK). We have become an experienced advisor on these structures globally.

This paper looks at the main drivers behind the growth of Corporate PPAs, and addresses several structures and comments on the market for them in key jurisdictions across Western and Eastern Europe, the Nordics and Asia-Pac.

The Global Corporate PPA Market

What is a Corporate PPA?

A Corporate PPA allows corporate energy consumers to purchase power on a long term basis directly from renewable energy generators without being co-located. This is an alternative to the traditional model where a utility purchases power from lots of energy generators, transports it on the electricity grid and then on-supplies power to the corporates. Corporate PPAs are long term agreements (typically between 10 - 20 years) and provide price certainty for both the corporate and the generator by using fixed or floor pricing structures. Please see pages 7-8 of this paper for further information on structures. For the purposes of this paper we have excluded discussion about on-site PPAs.

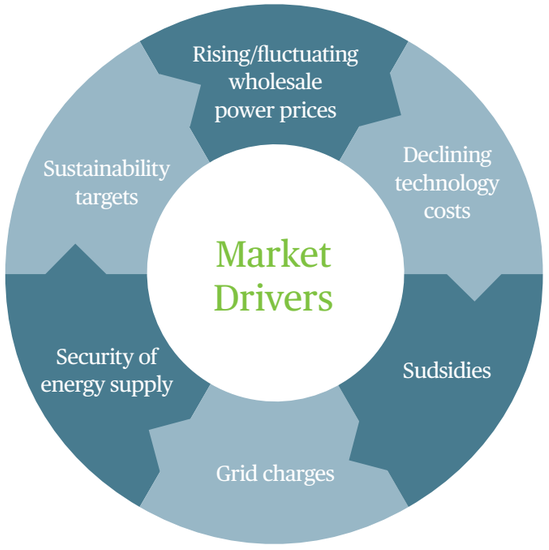
The Global Market

As stated in our introduction, we saw rapid growth in the Corporate PPA market in 2018. 5.7 GW of Corporate PPAs have been signed January - July 2019 with an even split between wind and solar. The largest markets continue to be the USA and the Nordics, accounting for over 80% of Corporate PPAs being concluded.

Within Europe, activity remains particularly strong in Norway and Sweden, where companies are attracted to plentiful wind resources and the Nordpool power market, facilitating the cross-border sale of power between Sweden and Norway. In Denmark, one of the first offshore wind Corporate PPAs was concluded in 2018. Markets in Spain, Italy, Poland and Germany are picking up. Elsewhere, Australia is an exciting market particularly for synthetic and behind the meter PPAs, driven by relatively expensive wholesale power prices and strong renewable resources.

Major players in the global Corporate PPA market to date have been tech companies and data centre owners such as Google, Apple, Amazon and Microsoft. For example, in April 2019 Amazon announced three new Corporate PPAs for a combined total of 229 MW from new wind projects in Ireland, Sweden and California. However, chemical companies have also been active in 2018 through the likes of aluminium manufacturers Norsk Hydro (235 MW onshore wind project in Sweden) and Alcoa (330 MW and 197.4 MW onshore wind projects, both in Norway), both of whom are using sustainability credentials to sell aluminium at a premium in some markets. Telecom companies are now also participating in the market and in November 2018 Exxon Mobil announced its first two Corporate PPAs (250 MW onshore wind project and 250 MW solar PV, both in Texas).

New structures such as the proxy generation PPAs and volume firming agreements are being explored (see further information on page 11). Also, new club structures are enabling smaller corporates to benefit from Corporate PPAs, and this is a concept that continues to be developed further (see further information on page 10). As well as some very large individual Corporate PPA deals, 2018 also saw a real upswing in club deals and the emergence of smaller, first-time corporate buyers, with new market entrants responsible for 31% of the total 2018 Corporate PPA activity in the USA. The future outlook provides for optimism. Global corporates continue to be increasingly conscious



about managing their energy needs and being seen to act sustainably by procuring electricity directly from renewable sources has become a strategic priority.

191 companies are now members of RE100, a group of companies who have pledged to work towards meeting 100% of their energy requirements from renewable sources, and the numbers are continuously increasing. In addition to this, economic drivers such as the continued fall in the levelized cost of electricity/energy (LCOE) with regard to renewables and the phasing out of feed-in-tariff based fiscal incentives in several jurisdictions should continue to push the growth of Corporate PPAs globally in the second half of 2019 and beyond.

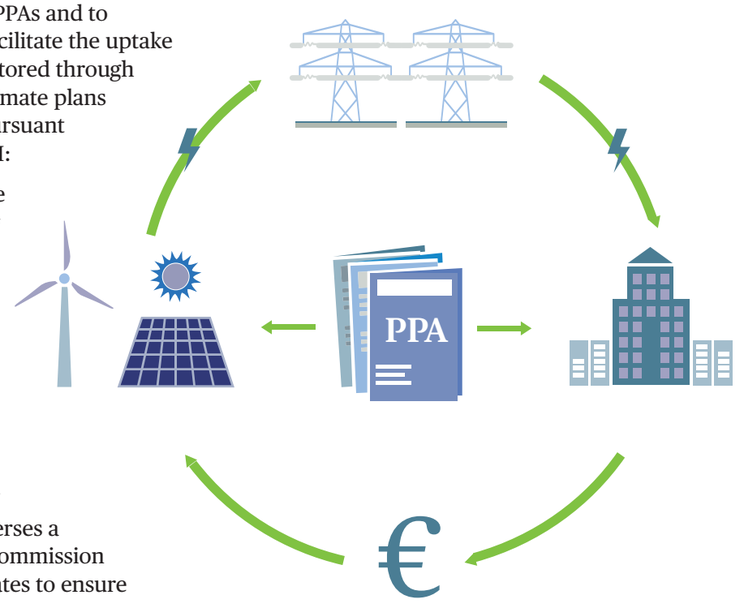
Further cause for optimism can be seen through the EU's adoption of the recast Renewable Energy Directive (RED II) in December 2018. RED II includes ambitious drivers for the uptake of Corporate PPAs in Europe including a binding EU-wide 32% renewables target for 2030 and an enabling framework for the uptake of Corporate PPAs. Importantly, RED II requires Member States to assess the regulatory and administrative barriers to Corporate PPAs and to remove unjustified barriers to, and facilitate the uptake of, Corporate PPAs. This will be monitored through the integrated national energy and climate plans which Member States must submit pursuant to directive. In addition to this, RED II:

a. requires Member States to recognise guarantees of origin (GOs) issued by other Member States in accordance with RED II; and

b. clarifies that Member States may allow the issue and transfer of GOs directly to corporate offtakers pursuant to a Corporate PPA from renewable generators that already receive financial support from a support scheme (e.g. feed in tariffs).

The latter point is important as it reverses a previous proposal by the European Commission that would have required Member States to ensure that GOs from renewable generators that already receive financial support from a support scheme are placed into a central auction, as opposed to allowing them to be transferred directly to offtakers under a Corporate PPA. This would have had a negative effect on Corporate PPAs given that one of the key drivers to a corporate entering into a Corporate PPA is being able to demonstrate through GOs that it has procured power from renewable sources. However, Member States can (still) opt not to allow the issue of GOs in this way for renewable generators that already receive financial support from a support scheme.

Member States must transpose RED II into national legislation by 30 June 2021. While certain aspects will depend on how each Member State transposes the requirements of the directive into national law, the creation of an enabling framework to facilitate the transfer of GOs across borders and to encourage the conclusion of Corporate PPAs can only help to drive growth in this exciting market.



Opportunities and threats

Corporate Consumer

Opportunities

- Fix/floor/cap power price - hedge against rising or fluctuating energy prices in the wholesale markets.
- Achieve sustainability targets and objective to buy 100% of power from renewable sources. This has become as important, if not more important, than economic drivers.
- Smaller corporates can club together to share risk and enhance bargaining power.

Threats

- Board appetite for the deal - economic benefits only stack up if the board trusts the power price forecasts. Board often unwilling to pay more in short-term for lower prices in long term.
- Complexity/costs in negotiating the contracts. Power purchase is not core business. Hurdle for small and medium sized enterprises.
- A utility will still be required to provide power when the generating station is not generating (renewable power is intermittent). Allocation of volume and shaping risk is a key issue - it can affect the level of price certainty that is achieved and means the corporate is buying power at a profile/volume that doesn't match its demand.
- If a project finance lender has financed a project it may require further security from the corporate: e.g. direct agreement or parent company guarantees.
- Change in law risks affecting the commercial balance of the deal and triggering re-negotiation.

Generators

Opportunities

- Generator can achieve a stable price over the long-term as the corporate often has more appetite to hedge against rising/fluctuating power prices. This is particularly attractive for projects financed by listed yieldco funds and project finance.
- The corporate is sometimes willing to pay higher than wholesale prices in the short term (on the expectation that this will pay off in the long-term when prices rise and corporate still has the benefit of the fix).
- The phasing out of renewable subsidies means that Corporate PPAs offer a new route to market for generators.

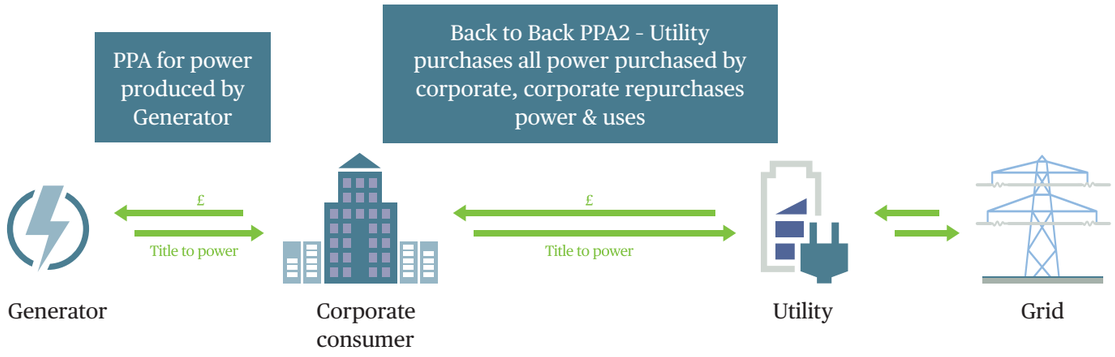
Threats

- Price - the price the corporate is willing to pay / set the floor at may not be sufficient to bank the project.
- Creditworthiness/bankability of offtaker - a bigger issue for unsubsidised projects as the Corporate PPA will represent almost 100% of total project revenues.
- Power offtake not core business for the corporate: if wholesale power prices decline will the corporate default in order to buy their way out of a bad bargain?
- Inconsistencies between regulatory regimes in different member states making it difficult to achieve scale across jurisdictions with one offtaker.
- The deal will need to be bankable. More complex to get a Corporate PPA approved by banks/investors?

Corporate PPA contract structures

The two leading models for Corporate PPAs are (a) the "Sleeved" Corporate PPA; and (b) the "Synthetic" Corporate PPA. The Sleeved Corporate PPA is the contract structure that has mainly been adopted in Europe, whereas the Synthetic Corporate PPA has been the preferred contract structure in the USA.

A) "Sleeved" Corporate PPA



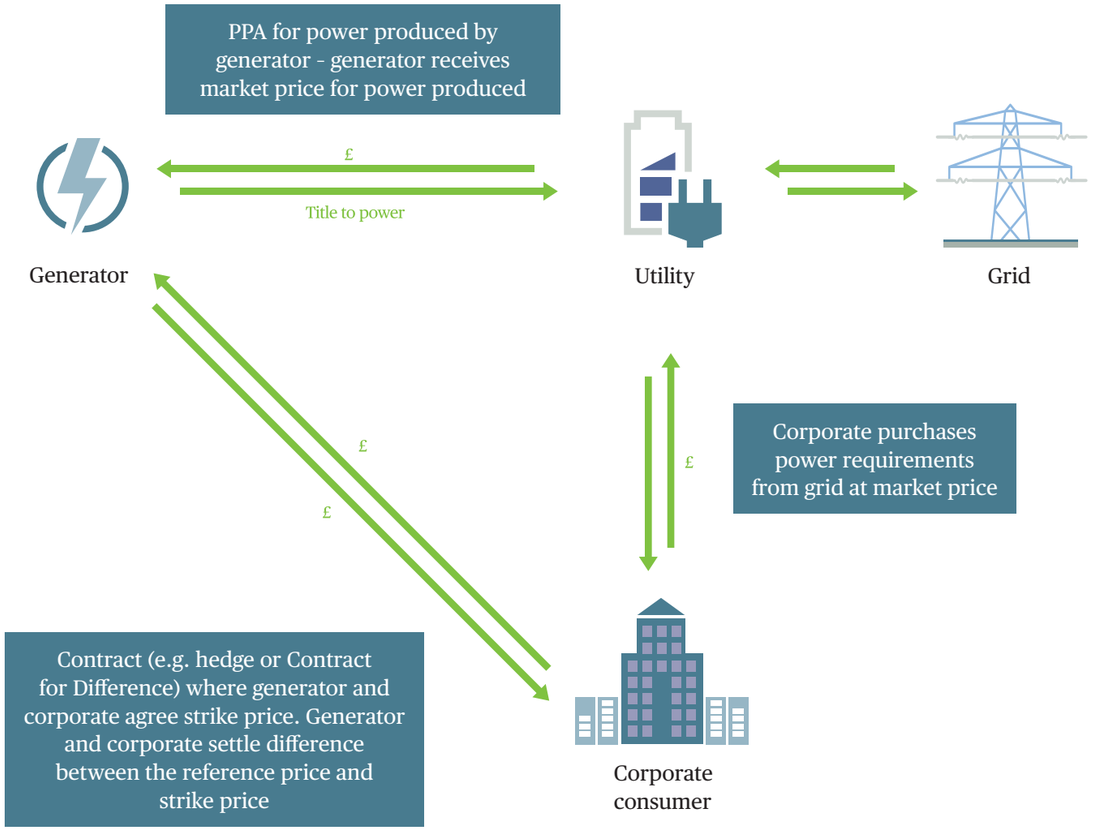
Key features

Generator sells power directly to the corporate and the utility then sleeves the power through the grid and supplies it to the corporate's site (together with top up power as necessary):

1. Generator sells power at the meter point to corporate consumer under PPA1.
2. Corporate consumer immediately on-sells power at the meter point to the utility under PPA2. The utility then "sleeves" the power through the grid and sells power to the corporate consumer at its site. The utility will perform a balancing service under this PPA2 (renewable energy is intermittent) by topping up the renewable electricity with extra if needed (for example when the generator is not generating).
3. Renewable benefits can be sold either from generator to utility or from generator to corporate consumer.
4. Regulatory regimes usually require a licensed utility to be involved to put electricity onto the grid (i.e. transport the power from the generator's site to the corporate consumer's site).
5. The generator can be entirely independent or sometimes the corporate consumer may make an investment into the generator itself to support the project (and open a new revenue stream in potential dividends).
6. Depending on the regulatory regime, the licensed utility and balancing party may be the same entity (as in the UK) or separate entities (as in the Netherlands).

Corporate PPA contract structures

B) "Synthetic" Corporate PPA



Key features

Generator "virtually" sells the power that it produces to the corporate for a strike price.

1. Generator sells renewable electricity to a utility under a standard power purchase agreement at a market price.
2. Utility continues to sell power to the corporate consumer under a standard electricity supply agreement at a market price.
3. In parallel to these conventional contracts the generator and the corporate consumer enter into a contract for difference, option or other financial hedge where they agree a strike price for the renewable electricity produced by the generator.
4. Generator and corporate consumer settle the difference between the strike price and the variable reference price. This reference price is usually based on a wholesale price index. The contract for difference therefore provides a hedge between the strike price and the reference price.

Which model to choose?

Sleeved

Direct contract to purchase power from the generator - easier to show power used is procured from renewable sources.

Corporate and generator must be on the same aggregated grid system (so a sleeved model would not work across e.g.US states or Member States).

Synthetic

Power can be sold "virtually" across separate energy markets (e.g. across US states or in theory across Member States). This has been a strong driver for use of synthetic PPAs in the USA (the USA energy market is disaggregated).

Arguably a simpler structure - it is a contract for difference/financial hedge, rather than two back to back contracts for sale of power.

As it operates as a contract for difference, need to consider whether it is a regulated activity requiring financial services authorisation (for example under MiFID II or European Market Infrastructure Regulation (EMIR)).

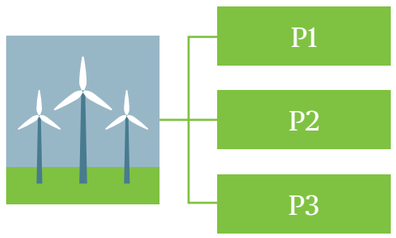
Note: when deciding which model to choose, the corporate's preferred accounting treatment for the Corporate PPA should be considered.

Optimisation of structures

Aggregation models

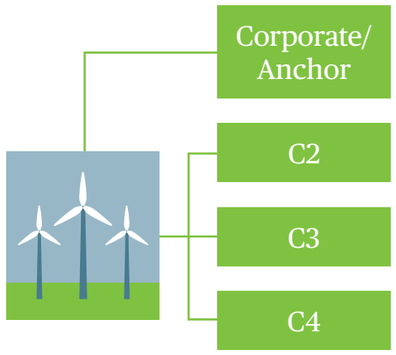
As the volume under a single Corporate PPA is often large with long term commitments, the traditional Corporate PPA structures are predominantly used by large energy consumers such as tech companies and the chemical industry. There is an increased interest from smaller corporates looking to move to renewable energy consumption, however often smaller corporates will find themselves with projects which are too big for their offtake requirements. In that case, one of the following aggregation models might be a solution[1].

Club



Under the club structure, large corporates club together to aggregate their energy offtake. A great example of the club structure is the Dutch wind consortium formed by Google, AkzoNobel, DSM and Philips. The corporates joined forces to optimise the Corporate PPAs they entered into for the offtake of energy produced by two wind farms. The corporates each committed to one quarter of the energy offtake of each project, all on similar terms and conditions. The search for the "ideal partners" and the formation of the club takes a considerable amount of time, however, once clubbed together the corporates can benefit from the economies of scale and power of negotiation. Also, the model can be re-used several times. This club was the first in Europe. In the US, the structure is more commonly used.

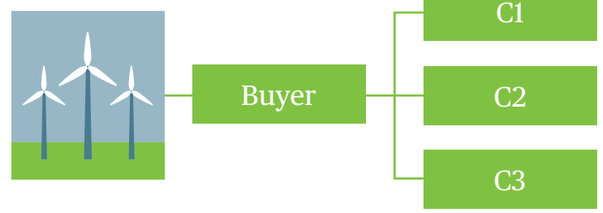
Anchor tenant



Under this structure, a large offtaker commits to the offtake of a large portion of a project, securing the repayment of the debt by the generator. Smaller corporates can tag along to the project and may secure a Corporate PPA for a smaller part of the project and for a shorter term, either with the large offtaker or with the generator itself. However, some generators may be reluctant to be flexible on the contract terms as the smaller corporates are not material in obtaining financing.

[1] Source: Joining the club: Collaborative Offsite PPA Structures for Renewable Energy Buyers, a joint paper written by Schneider Electric and Bird & Bird LLP.

Reselling



This structure is less common as the benefits are limited. Here a large corporate purchases 100% of the offtake of a project and then resells it in predetermined tranches to smaller corporates. There is little to no flexibility for a smaller corporate to negotiate the terms of the contract. This reduces the upside compared to buying on the market.

Proxy Generation PPA & Volume Firming Agreements

Price risk

As there are plenty of hedging and other financial instruments available in the market, price risk (taking on the risk of a fixed/floor/capped price) often sits well with the corporate as its main reason for entering into Corporate PPA is price predictability. Also, this may provide the flexibility a corporate needs from an accounting point of view to avoid the Corporate PPA being classified as a derivative.

Operational risk

Often the negotiations of a Corporate PPA evolve around an appropriate risk allocation. As corporates may not have the in-depth knowledge of the project specifics (as it is not their core business) or the ability to control the operation of the project, it can be argued that the risk associated with the operation of the plant should not sit with the corporates, and should remain with the generator. The generator is the party that selected the turbines or panels, ancillary equipment and arranged the (terms of the) relevant contracts (including performance, maintenance and curtailment clauses), all determining the actual performance or output of a project.

Whereas the traditional PPA is calculated against the actual output of a project, a 'proxy generation PPA' is calculated against the expected output based on the projects specifics and its power curve, shifting such operational risk back to the project. Upon agreeing the terms of a proxy generation PPA, the parties agree on a number which reflects the expected operational performance of that project. If the project performs better than the agreed number, then the upside is for the generator, however if the project lags behind the agreed expectations, the generator will suffer. A calculation service agreement with an independent calculation agent is required to assess the expected output of a project which could make arranging this structure costly.

Microsoft has been very active in developing solutions for the allocation of operational risk. It has also developed, together with its partners, the 'volume firming agreement' protecting corporate buyers against the intermittency that comes with renewable projects. These agreements, which are often concluded with insurers who are comfortable with dealing with weather-related risks, shift the risk relating to the intermittency of a project away from the corporate buyers. The parties taking on such weather risk will resort to storage and balancing solutions.

International Case Studies

United Kingdom

An established contractual model and safe regulatory environment has made the UK an attractive market for Corporate PPAs.

Corporate PPA Market in the UK

Corporate PPAs have been around in the UK for some time. However, it is only in more recent years that they have become more prominent. This is most likely because the availability of fiscal incentives, such as FiTs and ROCs, meant that there was little commercial imperative on generators to explore such arrangements. Instead, they would enter into shorter term utility PPAs with a licensed supplier, often on standard forms, for the offtake of all of their power as the support payments were sufficient to demonstrate the long term fixed/floor income stream to lenders.

More recently, the rise of wind and solar in the UK and the convergence of a number of market conditions has created the perfect storm for the growth of Corporate PPAs. The closure of the ROC scheme to new participants from 31 March 2017 means that utility scale generators are seeking alternative routes to market. A long term PPA with a credit-worthy corporate offtaker could be the difference between a bankable and non-bankable project. In addition, the ever decreasing cost of generating renewable energy means that a project can be viable without subsidy. Furthermore, in very recent months we have seen that Corporate PPA prices can even be lower than wholesale electricity prices. From a corporate perspective, Corporate PPAs are an attractive prospect to companies who increasingly want to be seen to be acting sustainably and who want to protect against highly volatile electricity prices.

As a result, major corporates playing in the UK Corporate PPA market now include Shell, BT, M&S, EE, Unilever, Mars, Ford, Sainsbury's, Nestle, McDonalds, HSBC, Lloyds and Nationwide. In addition to this, many more corporates with operations in the UK (including companies such as Unilever, Tesco, Sky, Mace, Virgin Media and the City of London Corporation) are also members of RE 100, the group of companies who have pledged to work towards meeting 100% of their energy requirements from renewable sources. However, to date only three RE100 members headquartered in the UK have signed Corporate PPAs (M&S, BT and HSBC).

In February 2019 Northumbrian Water announced it had signed the first offshore wind Corporate PPA in the UK, a 10 year deal for Ørsted to deliver 100 GW per year of electricity from Race Bank offshore wind farm.

Despite the UK's established and attractive market for PPAs, 2019 has seen a somewhat slower rate of deals being signed than in recent years. We would attribute this to an uncertain investment environment due to Brexit, and we expect the market to pick up over the next year as corporates continue to focus on green energy buying. A forthcoming Energy White Paper (which was expected to be published in summer 2019) should provide clarity on the UK government's approach to Corporate PPAs, which we see forming a large part of the UK's commitment to net zero by 2050.

United Kingdom

Corporate PPA Structures in the UK

The aggregated nature of the electricity grid and the regulatory framework has meant that the large majority of Corporate PPAs in the United Kingdom have been concluded using the "sleeved" structure. While Marks & Spencer was an early pioneer of the "synthetic" model using a contract for difference type structure across 20 sites, we are not aware of this approach being widely adopted since then.

That said, we are beginning to see a number of new models emerging within the market, or at least being discussed.

These include:

- The "mini-utility" or "supply-lite" model where a corporate sets up an affiliated mini-supply company and becomes the balancing party itself. The generator sells output to the mini-supply company who then sells it to the affiliated corporate under an electricity supply agreement. This model is commonly used in Ireland and is discussed in more detail in the Irish section of this paper. This requires significant investment by the corporate consumer in setting up a licensed supply company and gaining the expertise required to manage its own energy supply or outsource this function.

  However, the benefit to the corporate is to disrupt the energy supply chain, reducing the number of parties needed to negotiate an energy supply deal and take control of its energy procurement strategy for the long term.

- Building on the "mini-utility" model, Octopus Investments, the UKs largest investor in solar farms, has set up its own licensed supply company, Octopus Energy, offering a range of 100% renewable tariffs to business and domestic customers. Octopus Energy may well be able to procure the power from its own generating assets, disrupting the role of the utilities. This will enable asset owners to offer a simple integrated service to corporate customers.

- The "club" or "consortium" model where small or medium sized companies may begin to take advantage of Corporate PPAs by grouping together to share the risks and enhance bargaining power. This approach has been successfully used in the Netherlands. We think this will be attractive for larger deals such as offshore wind projects. Please see further information on this structure on page 10.

Sweden

The Nordic countries, Sweden, Denmark, Norway and Finland are diverse when it comes to energy mix, and also have different support schemes for renewable energy.

Wind power investments in Sweden have been built at record pace and, according to the Swedish Wind Energy Association's (SWEA) prognosis, wind energy production is expected to double from 20 TWh to almost 40 TWh within the next four years, meaning that it would correspond to 25% of the electricity use. Sweden is on track to reach its 2020 renewables target and, according to SWEA, the target of 18 TWh renewable energy by 2030 is expected to be reached in 2021. Sweden has a target to achieve 100 % renewable energy production by 2040 and net zero emissions by 2045.

The joint Swedish and Norwegian support scheme for renewable energy, the Swedish-Norwegian electricity certificate system, is a market based system, and does not guarantee the owner of the renewable installation a specific price for the power generated. As the power generator takes a price risk related to the sale of the electricity from the renewable installation, and as there may be a continued surplus of power production, many financers, such as banks, require that the price risk is hedged. One way to hedge the price risk is to sign a long term Corporate PPA with an off-taker. The PPA may be the enabler of the project and also provides a "green" profile to the corporate buyer. While they are interested in having a predictable price for their energy over a longer time period, many corporates also want to show that they are acting sustainably and are contributing to put additional renewable capacity onto the electricity system. However, there are corporates that claim that recent contracts are driven purely by economic considerations.

As there is an integrated Nordic whole-sale energy market, Nord Pool, this facilitates price visibility and cross-border sale of power between Sweden and the other Nordic countries, and Sweden has had PPAs in place for many years. However, more recently large corporates are entering into Corporate PPAs buying directly from the renewable generator.

In recent years we have seen more long term Corporate PPAs being entered into in the Swedish market. In 2013, Google signed a 10-year Corporate PPA for all the electricity output from a large wind farm, to be used in another Nordic country. Since then there has been a big growth of Corporate PPAs in Sweden and Norway. Other large corporates such as IKEA, Facebook, Norwegian aluminium corporates Alcoa and Norsk Hydro, and Swedish mining corporate Boliden have signed Corporate PPAs, and the trend is increasing. Norsk Hydro, which has long been an active off-taker, signed a groundbreaking 29-year PPA including 1.65 TWh wind power per year with Green Investment Group, one of the world's longest and largest corporate wind PPAs in July 2018. As the support scheme is market based, and as offshore wind is more expensive, so far mainly onshore wind has been developed in Sweden. However, there is now a discussion to enhance the development of offshore wind in Sweden through scrapping the cost for grid connection. Furthermore, we have recently seen some solar PPAs being entered into on the Swedish market. In June 2019 Swedbank announced that it will enter into a Corporate PPA with Eneo Solutions, and be the sole off-taker of what will become Sweden's largest solar PV plant to date, and in July 2019 Swedish bank Sparbanken Skåne entered into a 10-year PPA to purchase one third of the output of a wind farm in Skåne.

Finland

Use of Corporate PPAs has recently increased in Finland and the market is very well suited for them. The new support mechanism being introduced for renewable projects seems to have led to reduced levels of subsidies, meaning that generators have started increasingly to utilize Corporate PPAs in order to hedge against volatile prices and secure a long term fixed price.

The new competitive bidding system for renewable energy

In November 2017, the Finnish government published a new legislative proposal (Act on Production Aid for Renewable Energy 30.12.2010/1396) to introduce a new competitive auction system for renewable energy projects. This proposal replaced the old feed-in tariff based support scheme and was accepted with moderations in June 2018 and came into force in September the same year.

Accepted changes permitted wind, biogas, firewood, solar or tidal electricity generators to participate in a competitive process to bid for state-offered subsidies ("premiums"). All bids are considered equal in terms of the technology used and the premiums are awarded to the most cost efficient projects as a result of the competitive bidding process.

The competitive bidding process is now organized by the Finnish Energy Authority subject to a specific budget mandate for each year. The government has set the maximum amount of generation capacity to be awarded premiums at 2 TWh, which would be awarded from 2018-2020. Due to the relatively small amount of 2 TWh, it is likely that this quota will be used up rapidly. The auction bidding process is in a form of closed tendering and the premiums awarded is determined based on a generator's bid for the premium it requires when the market price for electricity is less than electricity's reference price (30€/MWh). The premium paid will decrease if electricity's market price exceeds the reference price and will ultimately reach zero during high market prices.

In exchange for being awarded the premium (in addition to the market price for electricity), the successful generators have to produce the amount of electricity they have agreed to in their offer. A failure to do so will result in the generator having to pay the State compensation. A generator's obligations under the premium system will last for a pre-determined time period and the premiums will be paid for a maximum of 12 years.

Corporate PPAs in the context of the Finnish electricity market

Finland is part of the Nordic wholesale electricity market, which includes the Nordic countries as well as the Baltic countries. The power grids in different countries are interconnected. The Finnish system is in direct contact with the system of Sweden, Norway, Estonia and Russia. According to an estimate made by VTT Technical Research Center of Finland in 2017, by utilising the best wind production sites and the latest technologies, Finland could be producing 300 TWh of electricity annually from wind power, which would be three times more than Finland's current demand for electricity. Due to the interconnected systems it is fairly easy to trade electricity from one country to another. For example a large IT-company has concluded a long term Corporate PPA with a Swedish wind farm for its Finland base premises.

The number of PPAs for renewable energy has increased in recent years. It is also expected for PPA contracts to increase in Finland. According to The Finnish Wind Power Association (FWPA), during 2018, production of wind power was 5,857 TWh. For example, Google has recently signed three Corporate PPAs in Finland with leading European renewable energy developers CPC, Neoen and wpd. These Corporate PPAs are the first for Google in Europe which do not involve a government subsidy for renewable energy.

In Finland no license or permit is required for wind power itself. However, a building permit, granted by the Municipal Building Control Services, is always required when planning a new wind power system.

Usually, wind farms do not require environmental permit in Finland. No permits under Water Act are typically required either, unless the planned wind farm concerns offshore wind power. Wind power turbines over 30 meters high and situated near airports or wind power turbines over 60 meters high elsewhere in Finland require a permit granted by the Finnish Transport and Communications Agency (Traficom), and all the wind farms defined as industrial in size require a permit from the Finnish Defence Forces.

The Finnish Energy Authority must be notified in order to construct an electricity generation plant with an expected capacity of over 1 MVA.

Interconnection to the transmission grid is based on the principle of open and non-discriminatory network access. In accordance with the Finnish Electricity Market Act, a network operator is obliged to connect all generation facilities that fulfil the technical requirements and pay the relevant grid fees.

In order to become an electricity supplier in Finland, a generator must acquire a party code and enter into an agreement with a company to act as a balancing party. Alternatively a generator could perform the balancing function itself or enter into agreement with another electricity retailer who has an agreement with a balancing party (the so called "chain of open delivery").

Denmark

There is great interest in Corporate PPAs in Denmark. Despite low wholesale electricity prices parity has been reached; the first local PPAs have been concluded and it is expected the market will be booming in the coming years.

Corporate PPAs are known in Denmark and due to its open economy and the international outlook of Danish businesses many of the Corporate PPAs entered into by Danish parties are related to activities outside Denmark. As a result, some of the biggest and publicly advertised PPAs are physically placed outside of Denmark but with Danish developers or sponsors. Others are foreign data centre owners wanting to operate their data centres with green electricity. However we also see a number of local off-takers entering into Corporate PPAs.

Only a small number of Corporate PPAs have yet been announced officially but we know that there are a number of major Corporate PPAs in the pipeline. One officially announced Corporate PPA is for the offshore wind farm Kreigers Flak, signed between Vattenfall, Novo Nordisk and Novozymes mid-2018.

While there is a lot of interest in Corporate PPAs in Denmark, there are some fundamental issues making the use of them difficult. There are a number of legal issues which are not clarified and hence it is still difficult for financial institutions to provide financing in respect of a Corporate PPA. Work is going on to eliminate or solve these obstructions and it is expected that these uncertainties will be resolved in the near future. That said, the Danish FSA has not yet issued any guidelines when a Corporate PPA may be subject to financial regulation.

The energy policy regarding renewables has changed considerably in recent years. There has never been a stable, long term legislative framework. Instead there have been a number of changes in fundamental and basic factors affecting the investment into renewable assets. Indeed, the Government has recently announced that it will be introducing new legislation. If such legislation follows recommendations from the Energy Commission, we can expect the new legislative framework to be technology neutral and only offer very limited if any subsidies. Despite this, there is a general consensus amongst politicians in Denmark that the amount of renewable energy sources shall continue to grow in the coming years and the climate challenge was a key topic in the 2019 elections. In the 2018 Energy Agreement the ambition to achieve 55% of renewable energy share by 2030, a complete phase-out of coal by 2030 and a fossil fuel free energy supply by 2030 was concluded as a broad political agreement. Wind has dominated the renewable energy generation in Denmark for many years (energy derived from wind accounts for 47% of the total gross electricity consumption in Denmark and is expected to reach around 92% by 2040) but solar projects are increasingly being completed. Biomass has been, and is still, popular. It is certain that solar projects may the most suitable vehicle for Corporate PPAs and there are a number of major companies who are interested in procuring electricity directly from solar plants under a Corporate PPA either for financial reasons or in order to raise their green profile (or both). There is growing pressure on corporates to act sustainably meaning that companies will consider these solutions even though they may not financially be their best investment case.

The Netherlands

Corporate PPAs have shown to be an excellent instrument not only to lower the financing costs of renewable energy development but also to raise the sustainable profile of large corporates and create price predictability.

Dutch regulatory environment

The EU has set targets for renewable energy generation, the reduction of CO2- emissions and measures to halt global warming. These targets are extremely ambitious for the Netherlands. By 2020 it must generate 14% of its energy from renewable sources, increasing to 16% in 2023 as well reducing its total energy consumption by 1.5% on an annual basis. The EU recently agreed to another binding renewable energy target of achieving 35% of renewable energy production in the EU in 2030. The Dutch renewable energy goals have become even more ambitious thanks to a successful liability case brought against the state by Dutch citizens and the Urgenda Foundation. In its ruling, the District Court of The Hague ordered the state to increase its binding target for the reduction of greenhouse gas emissions from 14-17% to 25% by 2020.

The Dutch government has implemented a variety of measures and regulations to support investment in renewable energy projects such as the SDE+ (Stimulation of Sustainable Energy Production) regulation and the EIA (Energy Investment Tax-reduction) however it is far from achieving its sustainability goals. The SDE+ is an operating feed-in-tariff subsidy and is designed to compensate renewable generators the difference between the cost price of generation and the market value of the electricity for each kWh of generated electricity: the so called “non-profitable portion”. From 1 January 2020, the new SDE++ will come into force replacing the current SDE+ system. Subsidies will be calculated against reduced emissions rather than as per the SDE+ system, per generated kWh electricity. In addition to the SDE, companies investing in renewable energy and energy-efficient technology may also be entitled to the EIA, which allows companies to deduct 55% of the investment costs from the fiscal profits, on top of any permitted depreciation.

Despite these regulatory changes and a favourable investment climate, the Netherlands is still lagging behind in achieving its 2020 targets. However, change is on its way as large quantities of PV panels are being installed in dedicated ground-mounted solar parks as well as on rooftops and both onshore and offshore wind parks are underway.

Mandatory unbundling

The Netherlands has implemented EU unbundling requirements in a very restrictive way, prohibiting electricity and gas network operators from being part of a corporate group that includes companies generating, supplying or trading in energy in the Netherlands (the “group prohibition”). The group prohibition has adversely affected the credit worthiness of the traditional offtakers, i.e. utilities, stripping the grids of their balance sheet taking away security for financing. Long-term Corporate PPAs with corporate offtakers with a high(er) credit rating provide an alternative way for generators in attracting cheaper finance and meeting their bankability requirements.

PPAs cornerstone in project finance

Increasing the deployment of renewable generation assets is capital intensive and, as with any project finance structure, large amounts of funds need to be committed before any revenue is generated by the project company. As is typical for project finance structures, the security for the lenders sits in the long term projected cash flows of the project, rather than the company’s assets or balance sheet. The PPA is crucial to this and making a project “bankable”.

Well structured Corporate PPAs certainly help to fill this void. A long term PPA with a credit worthy corporate counterparty that has a stable pre-agreed price formula, ideally containing cap and floor

The Netherlands

mechanisms to mitigate the volatility of the electricity prices, could secure a steady revenue for the project to repay its debt and be the difference between the project being "bankable" or not.

Corporate PPA structures in the Netherlands

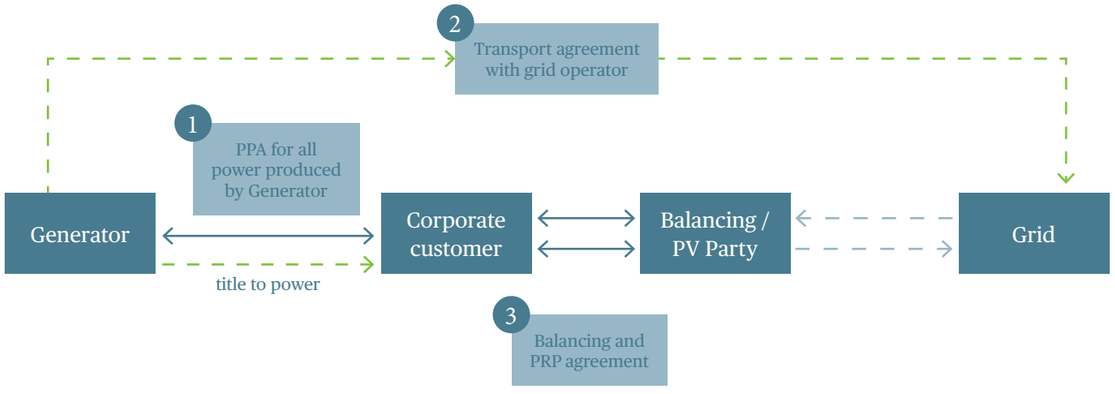
Mandatory unbundling requirements in the Netherlands mean it is possible for a generator and a corporate consumer to enter into a Corporate PPA without needing a utility to enter into a "back-to-back" PPA with the corporate consumer. This is because the "sleeving" of the energy is done by the grid operator, rather than by the utility. Rather than entering into a "back-to-back" PPA with a utility, the corporate consumer can transfer its program responsibility to a trading or balancing party, thereby reducing costs of its energy consumption.

An increasing number of Corporate PPAs are being concluded in the Netherlands. On the one hand they provide corporate consumers with the ability to accurately forecast their cost of energy over a long term and increase their sustainability profiles, while on the other hand, unlocking lower financing costs for renewable generators. A few examples of corporates that are taking the lead in this area are Google, Philips, AkzoNobel, DSM.

In addition to the rise of Corporate PPAs in the Netherlands, there are still also an increasing number of long terms PPAs entered into with utilities focussing on renewable generation equal to the more international structures such as the long term PPA that the Dutch railway entered into for the offtake of the electricity of wind farm Luchterduinen and the PPA that Google entered into for the offtake of the largest solar park in the Netherlands, both enabled by Eneco. These structures provide the utilities with the economic certainty to invest in new renewable energy projects.

Offshore wind parks

The tenders for the Dutch offshore wind farms have been very successful with two of the tenders resulting in subsidy free projects. The winning bids of these tenders are all backed with long term (corporate) PPAs securing the financing of the projects. Once all planned offshore wind farms are being built and become operational, it is expected that the Netherlands will be able to meet its sustainable goals.



Spain

Corporate PPAs could be used successfully in Spain to stimulate the development of new renewable projects. However, certain market barriers have so far prevented their widespread use.

Since 2013, the main support mechanism for renewable generation in Spain entitles generators that export power to the national pool to earn a "reasonable return" which is calculated by reference to the average return in the secondary market of 10-year Spanish government bond. To achieve this they are paid a "specific remuneration" on top of the market price that they receive for the electricity from the CNMC. However, the legislation allows the government to review and amend the specific remuneration every six years. To this end, the Spanish government published a preliminary bill on 28 December 2018 for the purposes of regulating the "reasonable return" that generators are entitled to earn for the next six year period from 2020 - 2025, which is proposed to be reduced from 7.398% to 7.09%. While this provides some added certainty for now, the risk of a project's revenues changing every six years has led to a decrease in the length of financing terms available in the Spanish market for renewables projects, which in turn has had negative impact on the number of new renewable projects being developed in Spain.

The last two auctions held in May and July 2017, which awarded a total capacity of 3,000 MW to generators, have shown that an unsubsidized renewables market is gradually becoming a reality without the need for any additional specific remuneration. While this removes the uncertainty of the level of specific remuneration that a project would receive, it would still leave a project exposed to volatile electricity prices that could go up or down, again negatively affecting the length of financing terms available.

National Integrated Energy and Climate Plan 2021-2030

At the beginning of 2019, the Council of Ministers of the Spanish Government approved the submission to the European Commission of the draft of the Integrated National Energy and Climate Plan 2021-2030 (PNIEC, in its Spanish acronym). This text, to be submitted by all Member States in order the EU can plan the fulfilment of its climate change objectives and targets in line with the Paris Agreement, defines the national targets for reducing greenhouse gas (GHG) emissions, the incorporation of renewable energies and energy efficiency measures, among other issues.

One of the main goals is, together with a 21% reduction in greenhouse gas emissions with respect to the 1990 level or an improvement in employment, to achieve 42% renewable energy over the country's final energy use. In the case of electricity generation, the percentage of renewables in 2030 will be 74%. Thus, for the year 2030, this would require a total installed power in the electrical sector of 157 GW, of which 50 GW will be wind energy and 37 GW solar PV.

A long term Corporate PPA with a fixed price would help to solve both of these issues and allow lenders to offer longer tenures of debt. In addition to this, there are several other factors that would support the growth of Corporate PPAs in Spain. This includes:

- the price on carbon emissions is putting upward pressure on electricity prices meaning consumers may be more willing to enter into a long term fix;
- large corporate (and progressive smaller corporates too) are committing to use renewable electricity;
- there some renewable projects that are no longer entitled to receive specific remuneration as they would have reached the reasonable rate of return established by the government as a condition to receiving; and
- there are renewable generators that are looking for potential alternatives outside the specific remuneration support scheme.

Spain

Recent Corporate PPAs in Spain:

During the last year (2018-2019) in Spain a total of 4 GW PPAs have been entered into. Examples of these are EDPR with Calidad Pascual, Holaluz with EDP Solar, Factor Energía with Grupo Enhol (a 20-year-term agreement, being the longest PPA signed to date in Spain which will allow the development of two wind farms with a total installed power of 90 MW), BBVA with Endesa, Nike with Iberdrola (to supply energy to Nike facilities in Europe from 2020 onwards), X-Elio with Nexus.

However, there are still a number of barriers to overcome in order to unlock the Corporate PPA market in Spain:

- Term of the PPAs. Long term certainty of revenue is vital in order to construct, develop and finance a renewable project. At present corporates are reluctant to sign up to long term PPAs with fixed prices. However, this should change as the rationale behind this thinking is more a matter of inertia and historical practices.
- Price of the energy. While a fixed price under a Corporate PPA provides a generator and a corporate with certainty and a hedge against market volatility, some corporates will be wary to sign up to a long term Corporate PPA if they think there is a possibility that spot power prices will reduce in the future. Traditionally, corporates have preferred to agree power prices year by year and so company boards are not accustomed to assuming the risk of a fixed price over a long term.
- Regulatory burdens. The Spanish Energy Act 24/2013 expressly contemplates renewable generators and corporates entering into Corporate PPAs as an alternative to selling and buying electricity on the spot market. However, in order to do so, the parties to a Corporate PPA would have to comply with certain regulatory requirements to supply information about the contract to the Spanish market operator and the Spanish regulator. This includes notifying the market operator on a daily basis of the electricity supplied and consumed pursuant to the Corporate PPA. This information must be provided to the market operator by a regulated market agent. Generators will typically have to subcontract this service to a professional market agent (usually supply companies provide this type of services) and the fees for such service would have to be built into the Corporate PPA. Additionally, corporates would still have to enter into a contract with the network distribution company in order to pay the necessary grid access charges to take the power from the renewable generator. These additional costs could make a Corporate PPA a less attractive prospect to a corporate (or a generator if the corporate is not willing to pay these additional costs). Finally, the Spanish Energy Act 24/2013 grants the Ministry of Energy power to further regulate bilateral agreements for the sale or purchase of electricity, including Corporate PPAs which may impose additionally regulatory burdens in the future.

Italy

In Italy we are entering a new era where generators and off-takers will soon be able to take advantage of new developments in the PPA legislative and regulatory framework.

Towards the end of the last decade, the Italian renewables market entered into a period of rapid growth and transformation. This was due not only to the country's favourable climate but also, and mainly, to a legal framework known as "Conto Energia" which provided economic support to the renewable energy sector through the "feed-in-tariffs" scheme. This scheme provides a guaranteed payment for electricity generated and exported by PV plants to the grid. Italian legislation grants generators the option to sell electricity, either through a mandatory purchase regime (ritiro dedicato), through bilateral agreements (PPAs) or on the electricity exchange market.

Since 2008, generators have opted more often for the mandatory purchase regime (ritiro dedicato) than for PPAs. The mandatory purchase regime is a simplified purchase and resale arrangement, entered between the generator and Gestore Servizi Energetici (GSE), the Italian national grid operator, whereby GSE purchases and resells the electricity to be exported to the grid (at a zonal price or a minimum guaranteed price) and, on behalf of the generator, transfers the fees for the use of the grid (dispatch and transmission fees) to distributors and to transmission system operators (TSO). However, since the beginning of 2013, the GSE has been charging generators of renewable energy who benefit from the mandatory purchase regime further extra costs, such as imbalance costs ("costi di sbilanciamento"), costs originating from the participation of the GSE in the intra-day market ("mercato infragiornaliero") and other relevant administrative costs for the services it supplies in relation to the mandatory purchase regime. This trend, along with a significant drop in the electricity demand and a sharp decrease in prices, pushed many generators (usually electricity generators on large scale) to explore how to increase their revenues by selling electricity power generated by their plants. PPAs are hence a valid alternative for generators to the mandatory purchase regime.

PPAs in Italy are bilateral contracts executed "over-the-counter" at a purchase price directly negotiated with energy traders/wholesalers, which in turn negotiate with the TSO the price deriving from the energy generation. In a limited number of occurrences, where a generator and a corporate can be physically connected through a private network, generators may find it convenient to enter into a Corporate PPA to sell directly to a customer who has a stable need for large volumes of energy. Although no regulatory provisions prevent parties from entering into long-term Corporate PPAs, Corporate PPA structures have not yet been explored in Italy. However, corporates are starting to look at them with increasing interest due to the fact that sustainability and CSR aspects are becoming increasingly important and also because they can provide a direct economic benefit in the background - for instance in terms of access to green bond financing.

We are currently entering a new era where generators and off-takers will soon be able to take advantage of new developments in the legislative and regulatory framework that governs Corporate PPAs which were introduced in August 2019 and are expected to be further supplemented later in 2019. In this respect, the Italian Government, in addition to enacting a public platform to facilitate matching demand and supply of PPAs, is also expected to agree to enact a change in regulations to provide tax relief to corporates buying green energy, and/or to provide a form of guarantee to parties entering into long term PPAs in order to encourage their uptake and drive growth in the market, in line with trends that are being seen across other parts of Europe.

Germany

Corporate PPAs are currently on the rise in Germany. Until now, they have not been widely used due to the historically attractive support scheme. Significant growth is expected in the coming years.

In Germany, Corporate PPAs are widely seen as the next "big thing" in the renewables market. The first PPAs for operational projects were concluded in mid-2018, setting the scene for more PPAs to be entered into.

At the end of 2020, there will be a total of approximately 4.5 GW of onshore wind capacity (and thereafter, an average of 2.5 GW of onshore wind capacity per year) which will no longer be eligible under Germany's support scheme. By 2026, this will apply to approximately 17 GW or one-third of the currently installed onshore wind capacity in Germany.

It is expected that the Corporate PPA development within the next years in Germany will be driven to a large extent by such operational projects phasing out of the support scheme. A good example to illustrate the possible use of PPAs in this context is a PPA deal concluded in Q3/Q4-2018 with a major German car manufacturer. As of 2021, it will source electricity from a clustered sleeved PPA of multiple operational wind parks to supply its manufacturing sites (46 MW, term of 3 to 5 years). These wind parks will all phase out of the support scheme by the end of 2020.

Furthermore, due to the recent major decline in levelized cost of energy (LCOE), the numbers of Corporate PPAs with greenfield projects will also pick up. This trend is demonstrated by the first long-term solar PPA concluded in 2019 (85 MW, term of 15 years).

The fact that Corporate PPAs have not been on the rise in Germany earlier can be attributed to the attractive support scheme for renewable energy that has been in place for a number of years. This support scheme used to pay a so-called "market premium" which was based on a statutory reference price for a 20-year subsidy period.

Under this regime, it was financially more attractive for generators to make use of the German support scheme, since it granted a guaranteed price above market prices. On the other hand, corporates have generally chosen to enter into traditional ("brown") electricity supply agreements that include certificates of origin of other renewable sources (e.g. Norwegian hydro). Using this, corporates have been able to buy "green energy" for a fixed price. In addition, German energy regulation does not allow to issue and sell certificates of origin for renewables benefitting from the support-scheme. Consequently, to enter into PPAs with such projects has not been an option for corporates when sourcing green energy.

However, the scene is now rapidly changing. Amendments to the Federal Renewable Energy Act in 2017 triggered a shift away from the statutory reference prices to reference prices that are set by competitive auctions for wind and solar generators. As in other countries, the auctions have resulted in lower reference prices being awarded. Furthermore, the auctions have put pressure on the supply chain, leading to a major reduction of the LCOE. On the other hand, market prices are expected to rise within the next years. All of this will make long-term Corporate PPAs with a fixed price a far more attractive option for generators as well as for corporates, mostly due to price certainty for both parties and potential cost savings for the corporates.

There are a number of scenarios for how Corporate PPAs can be implemented into the German market:

1. renewable generators that currently receive the statutory or auction-based "market premium" enter into a Corporate PPA;
2. renewable generators that are no longer eligible to benefit from the German support scheme (e.g. after the expiry of the 20-year subsidy period) enter into a Corporate PPA; and
3. renewable generators voluntarily waive their right to participate in the German support scheme and conclude a Corporate PPA instead.

Scenarios (1) and (2) apply to operational projects only, whereas scenario (3) is relevant to both operational and new build projects.

In scenario (1), the renewable generator would not be allowed to sell any certificates of origin that are associated with the renewable power to the corporate because it is not able to do this and claim the market premium in respect of the same electricity. However, it should be clarified that scenario (1) is, in all other aspects, legally permissible. Nonetheless, for most corporates, the lack of certificates of origin may eliminate the reputational benefit of entering into a Corporate PPA. However, a Corporate PPA could still be attractive for corporates that want to hedge their power price risks. Scenario (1) is only an option for off-site sleeved and synthetic Corporate PPAs, but not for on-site Corporate PPAs, as to receive the market premium, the electricity generated must be exported to the grid.

In scenarios (2) and (3), it is possible for renewable generators to enter into a Corporate PPA and to also sell any certificate of origin that are associated with the renewable power to the corporate. As set out above, in light of the reductions in the reference prices awarded to renewable generators at auction and the reduction to the LCOE, the conclusion of a Corporate PPA is expected to become a more attractive option for renewable generators financially. In addition, new build projects in scenario (3) may be more attractive due to the fact that they would be subject to fewer legal hurdles by not taking part in the auction process and not being bound by the statutory annual maximum capacity volumes.

Hungary

The new renewables support scheme may result in an upswing in the application of Corporate PPAs in Hungary.

Corporate PPAs have not yet been widely adopted in Hungary. There are two principal reasons for this.

First, the former RES support scheme (the so-called "KÁT system") required RES generators to sell electricity exclusively to the TSO, and since the KÁT system was quite favourable, nearly all RES generators opted to be included in the system.

Second, companies in Hungary have the option to purchase certificates of origin (whether from generators or from an electricity trader) which attest that the electricity purchased was generated from renewable sources. Companies with an agenda for sustainability and environmental responsibility therefore have the opportunity to purchase certificates of origin without necessarily having to conclude a Corporate PPA with a renewable generator. Renewable generators eligible for either the KÁT or the METÁR system (see below) are also not precluded from, at the same time, registering and selling certificates of origin. This has so far seemed to have had a negative effect on the conclusion of Corporate PPAs in Hungary.

The regulatory landscape has significantly changed as of the beginning of January 2017 with the introduction of the new RES support scheme, METÁR. Support under the METÁR system is granted through a premium paid to renewable generators on top of the market price such generators achieve under PPAs concluded with offtakers. The introduction of the METÁR system will thus require new RES projects above 0.5 MW to go out to market and conclude PPAs with offtakers (or traders), which may in turn lead to a rise in the number of Corporate PPAs. (RES generators with a capacity below 0.5 MW may be eligible for a feed-in-tariff based subsidy similar to the KÁT system.)

The support for RES generators that entered the KÁT system early on will expire in the near future. Such generators will become exposed for the first time to the risk of price volatility and a long-term Corporate PPA may very well be an attractive solution to mitigate this risk.

New RES projects above 1 MW may only receive METÁR subsidies if they win a competitive tender. Corporate PPAs may be an alternative for the bankability of RES projects that do not manage to, or would not want to, qualify for METÁR support.

France

There is strong interest in Corporate PPAs in France. Decreasing tender prices, projects leaving the support mechanisms and growing commitment to green power procurement will boost the market.

France has the second largest wind power potential in Europe and the French onshore wind market is one of the most active and attractive markets in Europe. Generation of electricity from renewable energy sources have initially been promoted - since 2000 - through a legal "Feed-in Tariff" (FIT) mechanism. According to this mechanism, EDF has the obligation to buy the electricity produced by wind farms at a fixed price and for a duration determined by law. This support system has been modified for the respective energy sources during recent years to introduce a direct marketing scheme with Contracts for Difference. Already in place for solar projects, a tender procedure was also set up for onshore windfarms in 2017.

Despite the existing support scheme, low valuation of guarantees of origin and the relative strictness of the regulatory framework, there has not been much interest in PPAs in France in past years. However currently there is a strong interest from all stakeholders in this new commercialization scheme. After some first call for tenders such as Aéroports de Paris procurement notice requesting expressions of interest in supplying electricity through Corporate PPAs from 2020, more and more PPAs are being concluded. Metro Cash and Carry France recently signed a first 3-year contract (wind energy) with Agregio (EDF) with a re-conduction clause.

Longer durations for PPA are now becoming more common, such as the 25-year contracts which Volitalia has signed with French Railways SNCF (solar energy) and Boulanger (solar energy).

Decreasing tender prices, promotion of corporate "renewable" PPAs through the clean energy package and the clear willingness of industrial corporates to secure their procurement on a renewable energy basis is pushing the market forward.

There is a peak to be expected for the period 2022-2025, in particular with respect to repowering projects or projects entering the market which no longer benefit from the support mechanism. This should lead to an upsurge in interest in Corporate PPAs as a new business model for generators and investors seeking to secure investment in power-producing installations, and to redesign the project finance modelling.

Ireland

Following recent developments, the Irish Corporate PPA sector has been the subject of significant interest from both public and private actors in the Irish market.

Matheson

Whilst we don't have Bird & Bird offices in Ireland, we work closely with leading law firm Matheson on renewable energy projects in Ireland. Matheson have the market leading and largest dedicated Energy practice in Ireland and have excellent experience on Corporate PPAs and set out here for us some commentary on the Corporate PPA market in Ireland.

Renewable energy generators in Ireland have historically benefitted from a generous feed-in tariff scheme from the Irish government - the Renewable Energy Feed-in Tariff (REFIT). The availability of REFIT has offered very little incentive for generators to consider Corporate PPAs.

Nonetheless, the first Corporate PPA to complete in the Irish market was in fact a 'REFIT-supported' Corporate PPA between GE and Microsoft in October 2017. This Corporate PPA allowed Microsoft to purchase the energy produced at a 37 MW wind farm in County Kerry.

It is clear that this Corporate PPA helped to catalyse interest in the Irish Corporate PPA market. In particular with REFIT now closed to new applicants, generators are increasingly looking for alternative routes to market such as Corporate PPAs.

A significant milestone was achieved in April 2019 with the announcement of the first unsubsidised Corporate PPA in the Irish market between Amazon and an independent renewable developer in relation to a proposed 91MW wind farm in County Donegal. This was closely followed by an announcement by Amazon in early August that it has entered into a further unsubsidised Corporate PPA in relation to a proposed 23MW wind farm in County Cork.

As expected, the Corporate PPA market in Ireland has to date adopted the "supplier-lite" model (successfully used in Ireland for over ten years on REFIT projects). This model involves a corporate setting up a licensed supply company. Under a supplier-lite Corporate PPA, the generator sells the power (and transfers the renewable accreditations - GOOs) to the corporate supply company who in turn sells it to the end-user corporate under an electricity supply agreement. In this structure, the corporate is likely to outsource the balancing and trading functions to a third party service provider.

Recently, we have also seen interest in other Corporate PPA structures - including:

- "Sleeved PPA" structures where power is sold by the generator to the corporate consumer via PPAs entered into by both parties with a third party "utility"; and
- "Synthetic PPA" structures where the generator and corporate enter into a contract for difference (CfD) under which the parties lock in the fixed strike price for the sale/purchase of power.

Looking forward, it remains to be seen what impact the upcoming Renewable Electricity Support Scheme (RESS) will have on the Irish Corporate PPA market. The first RESS auctions are anticipated to take place in 2020.

It is very significant we think that the Irish Government's recently published "Climate Action Plan" sets a target of 15% of all electricity demand being met by Corporate PPAs by 2030. The Government will have to consider and implement policies to achieve this ambitious target and it will be interesting to see what form these policies take.

Poland

The topic of corporate PPAs is becoming increasingly popular among RES companies. It also seems that corporate PPAs are inevitably the future direction of RES sector development in Poland.

The current support regime for renewables in Poland contains certain fundamental elements that in principle allow for the implementation of corporate PPAs. At the same time, however, there are uncertainties regarding the actual usability of such corporate PPA structures on the Polish market. Despite these uncertainties, first corporate PPAs have been already executed in Poland.

Considering the fact that the contract for difference support system for RES is likely to be eventually discontinued within the next couple or few years, corporate PPAs seem like a favorable alternative for RES producers. What is important is that corporate off-takers are increasingly interested in such PPAs too, so if structured in a proper manner, all interested parties could benefit from the rise of corporate PPAs in Poland.

It should be noted that the unclear provisions of the law imposing the obligation to sell 100% of energy produced in renewable installations on the power exchange have been repealed by an amendment of the Renewable Energy Sources Act, which also leaves an open gate to future growth of corporate PPA structures in Poland.

Still, it needs to be emphasized that Poland is yet to actually establish mature corporate PPA structures and concepts of such structures are being evaluated by various market participants. This includes the banking sector, which quite evidently is in the process of contemplating which variation of corporate PPAs may be deemed bankable in Poland. To that end, it seems that the biggest problem faced by both energy producers and financing institutions will be the exact method of determining the price formula in such long-term corporate PPA structures.

Czech Republic

Corporate PPAs are an opportunity for existing and new generators in the context of an ever more stringent and less favourable subsidy policy.

The subsidy scheme in the Czech Republic for electricity generators from renewable energy sources is built on two main types of subsidies: (1) the one-off investment subsidy and (2) the operating subsidy.

Operating subsidies are either in the form of green bonuses or the feed-in tariff. Generators can only opt for one from of operating subsidy, they cannot be combined. In the case of green bonuses the generator collects a fixed green bonus from the market operator (OTE, a.s.) as well as the amount received from on-selling its produced electricity at market price. In the case of the feed-in tariff, the generator earns the feed-in tariff from the "mandatory" buyer.

Now, we are about to see material changes of the Czech subsidy system. The Ministry of Industry and Trade of the Czech Republic has prepared a draft of an amendment to the Act no. 165/2012 Coll., on supported energy resources ("Amendment"). The Amendment introduces auctions as a new type of renewables support mechanism which is a market orientated principle of subsidy. The main advantage of such a support mechanism is the possibility to set the upper limit of the capacity and to define the available amount of subsidy. Furthermore, given the competitive nature of auctions, this mechanism is considered to be a cost-effective way of promoting renewable energy resources and further eliminates overcompensation. On the other hand, auctions impose certain costs and risks for bidders, which in turn may lead (and will most probably lead) to a lower level of participation in auctions and subsequently may result in more expensive offers. The proposed auction-based regime corresponds to the current integrated national energy and climate plan ("National Plan") in the field of renewable energy resources, under which the government seeks to cut the subsidies currently flowing into renewable energy resources and further to promote the development of the renewable technologies independent of government funding.

In the context of potential significant cuts to subsidy policies and the rising electricity prices, Corporate PPAs represent new business opportunities for both existing and new energy generators. As regards to new generators using e.g. solar energy, they can play a crucial role if the projects are to be viable and "bankable". For the existing generators, Corporate PPAs may represent an extra source of revenue. In turn, the interest in Corporate PPAs from corporate end-users is often driven by economic and environmental considerations. Provided that the Corporate PPAs have the right pricing structure, corporates are able to reduce their exposure to rising electricity costs. As regard the environmental consideration, Corporate PPAs assist corporates to deliver their sustainability commitments.

Despite the presence of relevant market stakeholders on energy market who may clearly benefit from the scheme, Corporate PPAs have not yet been widely used in the Czech Republic. At present, the draft of the National Plan does not specifically address any regulatory issues of Corporate PPAs, despite the fact that the inclusion of the Corporate PPAs in the National Plan would encourage the use of Corporate PPAs in the Czech Republic. However, especially in the context of rising electricity prices and uncertainty surrounding future development in the subsidy policy, it can be expected that Corporate PPAs may find wider application on the Czech energy market in the future.

Slovakia

Market liberalisation and general support of more free market mechanisms have been declared to be a clear path for renewable energy sources in Slovakia.

Since 2009, the electricity from renewable energy sources (RES) in Slovakia has been promoted to RES producers through a system of feed-in tariff ("FIT") state subsidy. The FIT consisted of two parts: (1) fixed tariff for electricity and (2) surcharge. The fixed tariff for electricity has been stipulated on an annual basis by the Slovak Regulatory Office and the level of surcharge has been stipulated by means of Price decision for the each specific RES producer according to a Decree of Slovak Regulatory Office.

For several years, Slovak RES producers have been selling the electricity to the distribution system operator, and the option of direct sell to the specific electricity buyer using a Corporate PPA has not been widely used in practice. However, new legislative changes are expected in future. Recently, there have been some legislative changes to the Act on RES in January 2019. This did not cover Corporate PPAs specifically, but has been considered a positive change to the strictly regulated RES environment in Slovakia aiming to make it more free-market oriented.

Beside shifting more powers from local distribution system operator to one centralised Short-term Electricity Market Operator - OKTE, a.s. in the course of providing the FIT to RES producers, the major advance of the amendment for larger renewable sources is the change of sale of electricity from the system of feed-in tariff (FIT) to a feed-in premium (FIP) upon a success in an auction. This way, the state would principally provide the FIP subsidy to those RES producers which were chosen in the new auction system, i.e. these producers would receive a premium on top of the market price of their electricity production. The smaller RES producers under 500kw would be still receiving subsidy under the previous system of FIT.

Additionally, the amendment to the RES Act promises to establish a new option for businesses to operate their own "local RES" under 500kw for their own use, which would be free of (often demanding) fees, e.g. fee for the grid connection, etc. The system of non-subsidy RES projects and the Corporate PPA option itself is not a widely discussed topic in Slovakia at the moment. However, liberalisation and general support of more free market mechanisms have been declared to be a clear path for the RES in Slovakia. Therefore, we are of the view that Corporate PPAs will be very likely supported and legally implemented in the next couple of years.

Australia

The Corporate PPA market in Australia is maturing with a good number of deals transacted. A disrupted energy market forecast for years to come presents significant opportunity for corporate buyers.

Investment in Australia's renewable and storage industry has boomed in recent years, achieving $20bn in 2018, largely driven by the Renewable Energy Target ("RET"). The RET is the Commonwealth Government scheme to increase the proportion of electricity generated from renewable sources and reduce greenhouse gas emissions from electricity generation. The RET legislated for large-scale generation of 33,000 GWh by 2020, meaning that by 2020 approximately 20% of Australia's electricity generation will be from renewable sources. It incentivised participants, particularly retailers, to enter into PPAs to receive green benefits known as LGCs (or large-scale generation certificates).

Although the RET has largely been achieved, it is important to highlight that in the absence of an extension of the RET (or similar national climate or energy policy), State governments have been active in setting increased targets for renewable energy generation to drive investment in the sector, drive down power costs and achieve a greater reduction of emissions.

Market participants in the energy sector will need to remain cognisant of the transformation taking place in relation to the way in which Australia generates and distributes energy. With the number of renewable energy assets increasing at a substantial rate, together with the proposed closure of a significant number of coal fired power stations, the natural consequence is a move towards a decentralised market with energy production and consumption being accessed on a local level rather than from large utilities. This shift may encourage corporate energy consumers to procure energy directly from local renewable energy assets through the mechanism of a Corporate PPA.

In Australia, there are compelling reasons for corporates to consider procuring energy directly from clean and renewable energy assets. The first and most persuasive being the falling cost of energy production from renewable energy assets when compared to the cost of energy procured from more customary sources, a gap that is projected to increase in Australia due to Australia's ageing coal-power infrastructure. From a corporate energy consumer perspective, Corporate PPAs allow for price certainty, management of price fluctuations, reduced energy bills and emissions, and have corporate social responsibility and public relations benefits.

Secondly, with Australian generators and investors finding it challenging to find medium to long term PPAs from a "retailer" or state government backed reverse auctions or schemes, there is a gap in the market that corporates can help to address. If such corporates enter into Corporate PPAs directly with renewable energy generating projects, it provides these projects with contractual price certainty on the price of both the electricity they intend to export and the value of the associated large scale renewable energy certificates. This will assist projects in meeting bankability requirements, allow them to gain access to different types of senior debt and stimulate further investment in the sector as institutional investors see key project risks around pricing being alleviated.

It is key to acknowledge that the US and European experiences in relation to Corporate PPAs have allowed the Australian market to develop from a rather unique standpoint. Australian corporates can take comfort from such international experience and seek to adopt a best practice approach to selecting which contractual models it will deploy in the market.

There are a good number of examples of Corporate PPA style transactions that have either reached financial close or are currently being procured in Australia:

- University of NSW, 93 GWh p.a. 10 year PPA;
- Telstra, 70 MW, 8 year PPA;
- Nectar Farms, 196 MW, undisclosed term;
- Melbourne Renewable Energy Buying Group, 88 GWh, 10 year PPA;
- Sun Metals, 116 MW, undisclosed term;
- Coles, up to 250 GWh, 7-13 year PPA;
- Kleenheat, 30 MW, 10 year PPA;
- Mars, undisclosed MW, 20 year PPA;
- AB InDev / Carlton & United Breweries, 80 GWh p.a. 10-15 year PPA;
- Sydney Airport, undisclosed MW, 8 year PPA;
- University of Technology, 27 GWh p.a. 10-15 years PPA; and
- Westpac, undisclosed MW, 10 year PPA.

The majority of the Corporate PPAs listed above are either behind-the-meter PPAs or "synthetic" PPAs (i.e. financial hedges or contracts for difference).

Singapore

Being situated near the equator, Singapore receives a healthy dose of sunshine, so it is not surprising that most of the Corporate PPAs in Singapore involve solar energy.

Solar-leasing is the predominant PPA model adopted by solar energy solutions providers based in Singapore. There are mainly two types of solar-leasing: on-site and off-site.

On-site PPA solar-leasing involves the installation of solar PV systems on the rooftop of the consumer's building. The consumer is only required to pay for the solar energy generated and consumed at a fixed agreed price or a variable rate based on a fixed discount to prevailing electricity prices. Solar PPAs typically last for a period ranging from 20 to 25 years. Such a model is especially suitable in dense urban cities like Singapore, as it requires minimal land use.

The Housing and Development Board ("HDB") entered into a solar leasing contract with Sembcorp Solar Singapore, under which Sembcorp Solar Singapore will install solar PV panels on the rooftops of 848 HDB blocks in West Coast and Choa Chu Kang, and 27 government sites by the second quarter of 2020.

Other notable on-site PPA projects include Sunseap securing a $50 million loan to fund a 50MW portfolio of rooftop solar projects across Singapore. Such rooftop projects will range from about 100 kilowatts to 5 MW in size and will benefit from long term power purchase agreements with more than 20 companies.

On the other hand, off-site solar-leasing does not involve the installation of solar PV systems on the rooftops of the consumer's buildings. Instead, solar energy is harnessed from rooftop farms that the energy provider owns in other parts of Singapore or from floating solar panel systems in ponds, lakes or reservoirs. An off-site solar-leasing arrangement is suitable for consumers who are unwilling or unable to install solar systems on their own rooftops.

Sembcorp Industries entered into a 20 year contract to support Facebook's 170, 000 sq m data centre in Singapore by installing close to 900 offsite solar panels in Singapore between 2018 to 2020. This project will generate 50 MWp of renewable energy and will enable Facebook's data centre and local offices to use 100% renewable energy.

Other notable projects include Sunseap Group's floating PV system and Jurong Town Corporation's ("JTC") SolarRoof project. Sunseap Group's floating PV system is of about 5 hectres on the sea near Singapore's northern shores and it is anticipated that it will generate 6,388 MWh of renewable energy annually. JTC entered into the SolarRoof contract with Sun Electric in 2017 to supply, install and maintain solar panels on the rooftops of JTC's buildings. The SolarRoof project enables the direct export of solar energy that is generated from the rooftops of JTC buildings to the national grid. Electricity that is generated by such solar panels is currently available for purchase by commercial entities.

South East Asia

Elsewhere in South East Asia, the majority of PPAs involve off-takers (purchasers of energy) that are state-owned energy utilities. Corporate off-takers are few and far between.

The few Corporate PPAs that are executed in South-East Asia are concentrated within Vietnam and the Malaysian State of Sarawak, more recently, in Merchang, Jasin, Gurun and Pahang. State government initiatives have resulted in an increased inflow of investments and projects in Sarawak, which has in turn driven up the demand for energy. As such, Sarawak Energy ("SE"), an electrical utility wholly-owned by the State of Sarawak, has been entering into PPAs with various corporations for the supply of renewable energy.

In April 2018, Tenaga Nasional Bhd, the Malaysian electricity utility, signed a power purchase agreement for a period of 21 years for a 30 MW solar project in Mukim Bebar, Daerah Pekan, Pahang.

In April 2019, Ayala-led AC Energy, Inc. launched a 330-MW solar power plant in Vietnam in partnership with Vietnam's BIM Group and its site is exceeds 300 hectares of land. It is anticipated that this project will generate more than 545 million kilowatt-hours of renewable energy annually.

Other deals involving SE include the supply and sale of 140MW of power to Tokuyama Corporation, a Japanese manufacturer of chemicals, over a period of 10 years. Also, SE concluded a Corporate PPA in 2014 with Press Metal Bhd, a Malaysian-based aluminium company, to provide 500MW of electricity over 25 years.

Our Energy & Utilities Group

Bird & Bird LLP is an international law firm. We combine exceptional legal expertise with deep industry knowledge and refreshingly creative thinking. We have over 1300 lawyers in 30 offices across Europe, the Middle East and Asia-Pac, as well as close ties with firms in other parts of the world.

Our Energy and Utilities team of over 150 lawyers spread across our network advise on energy and utilities matters across all of our practice areas. As an international team, our sector approach is not broken down by offices but into sub-groups that focus around particular aspects of the Energy and Utilities sector. A key focus area for us is renewable energy, covering solar, wind, biomass, anaerobic digestion, energy from waste and energy efficiency.

We believe we have one of the leading international renewable energy practices in the world, and have been ranked as the most active legal advisers on renewable energy M&A deals globally, second year in a row.

We are a cohesive and expert team who understand how to work together to complete renewables projects to international investor standards.

This industry experience has meant we have closely tracked the emergence of Corporate PPAs, where global multinational corporations are buying electricity directly from wind and solar generators. This completely revolutionises the market for renewable power from subsidy and utility driven to market demand driven. We consider we are at the forefront of this market, having developed and negotiated innovative contract and business PPA structures, from physical PPAs to synthetic/virtual PPAs.

Number 1 law firm
in renewable energy M&A deals globally by volume second year running

Source: Clean Energy Pipeline 2018

Key Contacts

Elizabeth Reid
Co-head of International Renewables Group, UK

Tel: +44 207 905 6226
elizabeth.reid@twobirds.com

Sophie Dingenen
Co-head of International Renewables Group, The Netherlands

Tel: +31 703 538 800
sophie.dingenen@twobirds.com

Jenni Sainthouse
Senior Associate, UK

Tel: +44 207 415 6799
jenni.sainthouse@twobirds.com

Lars Kyrberg
Partner, Germany

Tel: +49 4046 063 6000
lars.kyrberg@twobirds.com

Sibylle Weiler
Partner, France

Tel: +331426860 16
sibylle.weiler@twobirds.com

Hermenegildo Altozano
Partner, Spain & Cuba

Tel: +34 917 903 202
hermenegildo.altozano@twobirds.com

Juan de Navasques
Counsel, Spain

Tel: +34917903228
juan.denavasques@twobirds.com

Philip Graff
Partner, Denmark

Tel: +45 391 416 10
philip.graff@twobirds.com

Pierpaolo Mastromarini
Partner, Italy

Tel: +390669667040
pierpaolo.mastromarini@twobirds.com

Simone Cadeddu
Partner, Italy

Tel: +39 066 966 7007
simone.cadeddu@twobirds.com

Patricia Bendlin Spuer
Associate, Germany

Tel: +49 893 581 6000
patricia.bendlinspuer@twobirds.com

Mikko Ahonen
Partner, Finland

Tel: +358962266735
mikko.ahonen@twobirds.com

James Durnall
Co-head of International Energy Management, Australia

Tel: +61 292 269 888
james.durnall@twobirds.com

Kristina Forsbacka
Senior Counsel, Sweden

Tel: +46850632033
kristina.forsbacka@twobirds.com

Ken Cheung
Partner, Singapore

Tel: +6564289893
ken.cheung@twobirds.com

Dániel Arányi
Associate, Hungary

Tel: +361 301 8920
daniel.Aranyi@twobirds.com

Andrzej Nentwig
Counsel, Poland

Tel: +48225837948
andrzej.nentwig@twobirds.com

Garret Farrelly
Partner at Matheson, Ireland

Tel: +353 1 232 2074
garret.farrelly@matheson.com

Ivan Sagal
Partner, Czech Rep

Tel: +420226030509
ivan.sagal@twobirds.com

twobirds.com

Abu Dhabi & Amsterdam & Beijing & Berlin & Bratislava & Brussels & Budapest & Copenhagen & Dubai & Dusseldorf & Frankfurt & The Hague & Hamburg & Helsinki & Hong Kong & London & Luxembourg & Lyon & Madrid & Milan & Munich & Paris & Prague & Rome & San Francisco & Shanghai & Singapore & Stockholm & Sydney & Warsaw