

EFET Insight into Forward Trading in Wholesale Electricity Markets

What is forward trading?

In order to guarantee the continued supply of electricity to customers at least cost, buyers and sellers of electricity conclude transactions from years before until the last few minutes before a light switch is turned on (“delivery”).

Any electricity transaction concluded more than a day before delivery is considered a “forward” contract.



Figure 1: The forward market refers to transactions from years to weeks ahead of delivery.

Why do we use the forward market?

To insulate producers, suppliers and consumers from sudden price volatility

The forward market allows buyers and sellers of electricity to agree on and lock in a price far in advance of the time when energy is actually produced or consumed. Securing a contract in advance at a price that is beneficial to both the buyer and seller is a key part of the risk coverage (or “risk hedging”) strategy of electricity producers and suppliers.

This hedging activity allows them to:

- Manage the volatility of real-time electricity prices. The graph below shows how long-term prices in the Nordic region are much less volatile than the daily (spot) prices;
- Plan for all eventualities and ensure they can always supply customers; and
- Allow some companies to offer long-term/fixed price contracts to customers.

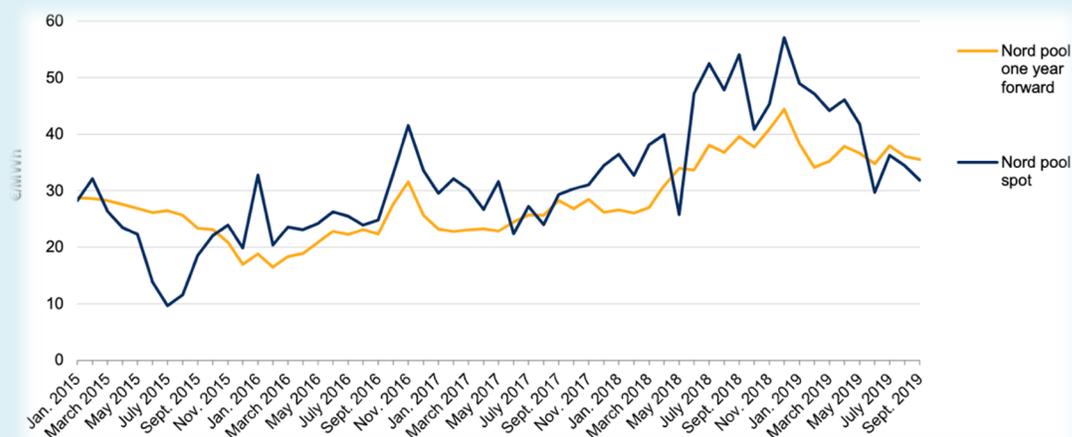


Figure 2: Day-ahead spot prices and year-ahead forward prices in the Nordic countries (Source: Platts).

To aid security of supply

Securing revenues for electricity producers and price expenditures for end-consumer suppliers in advance is key to guaranteeing the short-term financial health of the electricity sector.

Forward contracts are also a means to secure finances in the longer term to direct investment – multi-year PPAs are particularly helpful in that regard. In doing so, they contribute to the overall security of supply of the system.

To reduce the need for financial support to electricity producers

Forward markets form part of a variety of tools that allow electricity producers to forecast and secure revenues for existing installations as well as future investments. While direct subsidies (including for renewable energy) or capacity remuneration mechanisms may be needed for long-term support to electricity producers, forward markets including PPAs contribute to providing investment signals and to reducing the need for financial aid to power generators.

What is bought and sold so far ahead of delivery?

The needs of buyers and sellers of electricity vary widely weeks, months and years ahead of delivery. Hence, there is a wide variety of products bought and sold in the forward timeframe.

Contracts can be physical or financial:

- **Physical contracts:** sellers (or “supply”) and buyers (or “demand”) agree in advance on a price (in EUR) for the seller to deliver a given volume of electricity (in MWh) on a specific date or over a specific period in a given area (or “bidding zone”).
- **Financial contracts:** sellers and buyers agree in advance on a price (in EUR) for the seller to pay off a given amount of money (in EUR) on a specific date or over a specific period.

Whether physical or financial, the contract price on which sellers and buyers agree in advance reflects their expectation of the price of electricity on the specific date or period of physical delivery or financial pay-off.

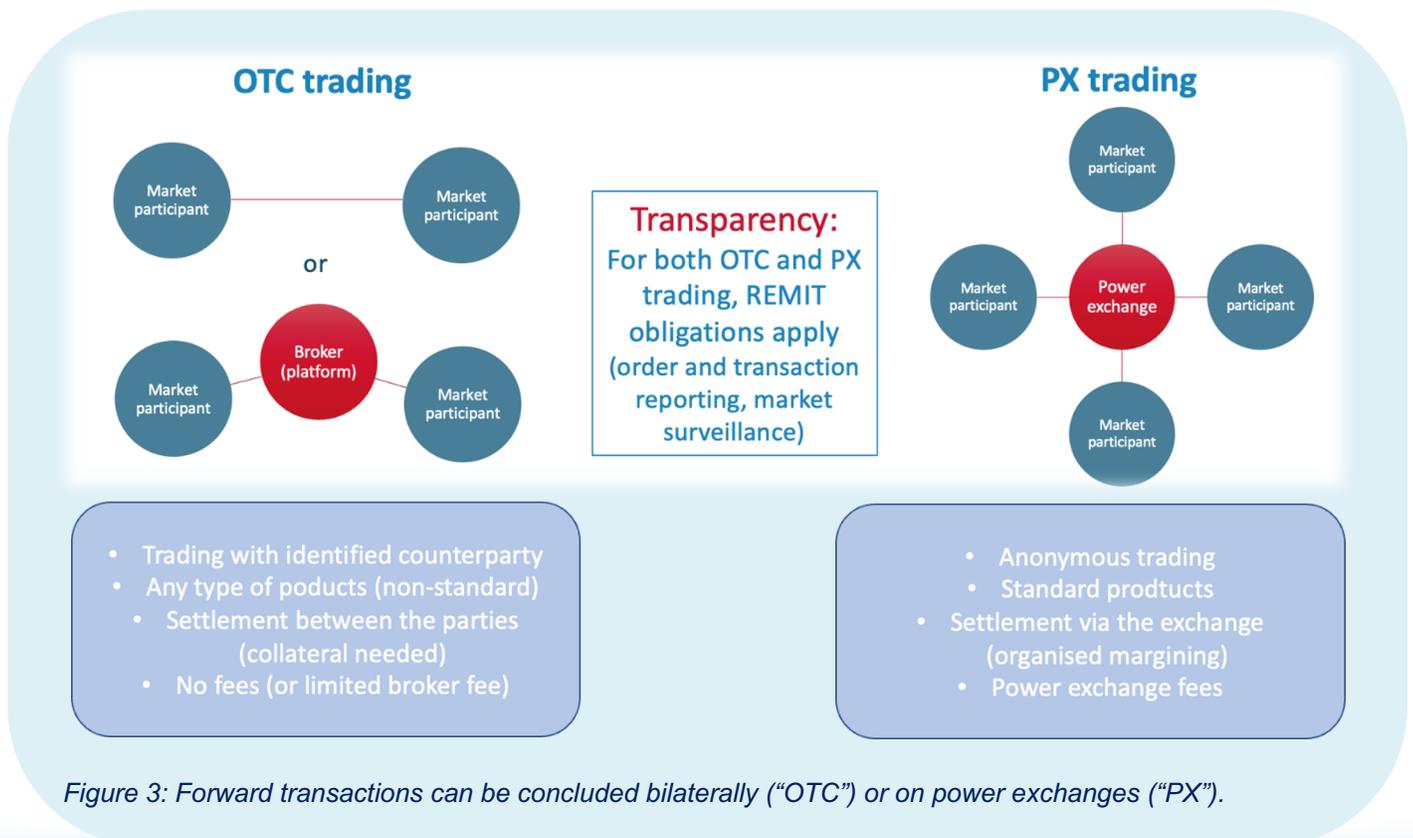
The length of the contracts which are traded varies:

- Power Purchase Agreements (PPAs) – which are long term agreements between a buyer and a seller, can last for between 5 and 20 years.
- Calendar contracts are traded for a year period.
- There are various products for less than a year, including quarterly, monthly and weekly contracts.

How does the forward market work?

Market participants wishing to buy and sell electricity during a specified future time period have different ways of concluding transactions:

- **Bilateral transactions:** in this case the two parties conclude a direct contract with each other – possibly via a broker. This type of transactions are often call Over The Counter (“OTC”).
- **Transactions on a Power Exchange:** in this case, the two parties place their orders on a power exchange (“PX”) which matches their needs. The contract of each party is with the power exchange, and in this case, it is called a “futures contract”.



How do forward markets promote decarbonisation?

Most renewable electricity (RES-E) generators have high up-front investment costs. It can be difficult to secure investment in these projects – because lenders see high initial costs, and revenues only materialise in the longer term.

Power Purchase Agreements, in particular, allow RES-E project developers to secure funds years in advance. With a 5 to 20-year length, PPAs may even be concluded before the installations are commissioned. They therefore show lenders that a project is viable and make it easier to secure funding.

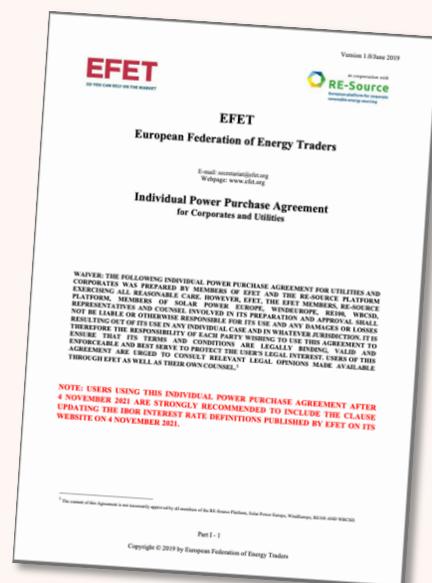


The EFET standard PPA contract

Key features of the EFET standard PPA contract:

- ✓ Developed with consumers (RE-Source platform)
- ✓ Facilitates negotiations between the parties
- ✓ Standardises the conditions of PPAs (quantity, underlying certificate or guarantee of origin, price, settlement, balancing obligation, etc.)
- ✓ Builds confidence of authorities
- ✓ Available in 6 languages already (English, German, French, Italian, Spanish, Polish)

The standard is freely accessible at [our website](#)



As RES-E generation grows, more options will be needed for when the wind doesn't blow or the sun doesn't shine. In addition to traditional electricity generation, new technologies such as electricity storage (including batteries) or alternative energy sources like hydrogen will be used to manage the intermittency of RES-E production. Forward markets, including PPAs, are part of the tools that foster investments in innovative technologies and services as they provide a price signal for the price of electricity long in advance of delivery.

How can we improve forward markets?

Promoting forward market liquidity

Forward markets are efficient when they:

- Provide good opportunities for buyers and sellers to agree on terms and prices that are acceptable for both sides;
- Gather a sufficiently high number of participants;
- See sufficiently low transaction costs (often shown by the so-called bid-ask spread”); and
- Allow producers and suppliers of electricity to end-consumers to optimise their portfolio to supply electricity at lowest cost to customers.

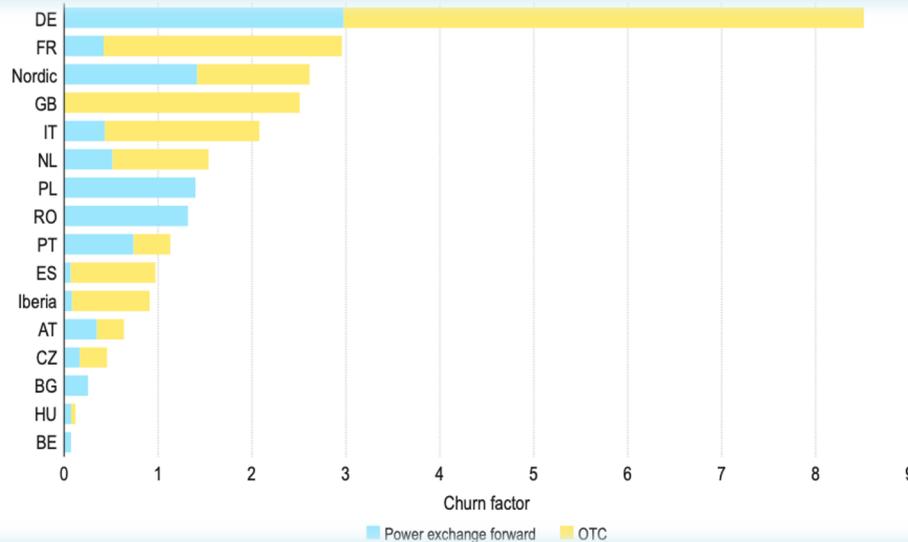


Figure 4: Churn factors of forward European markets (2020, source: ACER)

While the German market features a good level of liquidity, most other forward markets in Europe are not liquid enough (churn factor below 5). **Market-making incentives** are a good instrument which regulators can use to ensure that large electricity generators offer volumes for trade and boost the liquidity of the most illiquid markets.

Making sure forward transmission rights are available at all European borders

The electricity market is European, and the forward market is no exception to this. To ensure that market participants can sell in one country and buy in another far ahead of delivery, they need to be able to appropriately hedge the risk related to scarce cross-border transmission capacity.

Long-term transmission rights (physical or financial) issued by transmission system operators (TSOs) are the most reliable tool to connect national forward markets with each other: they allow buyers and sellers of electricity to secure physical capacity on an interconnector one year to a

few months in advance, and/or to lock in a financial security against the price difference between two price zones (usually countries).

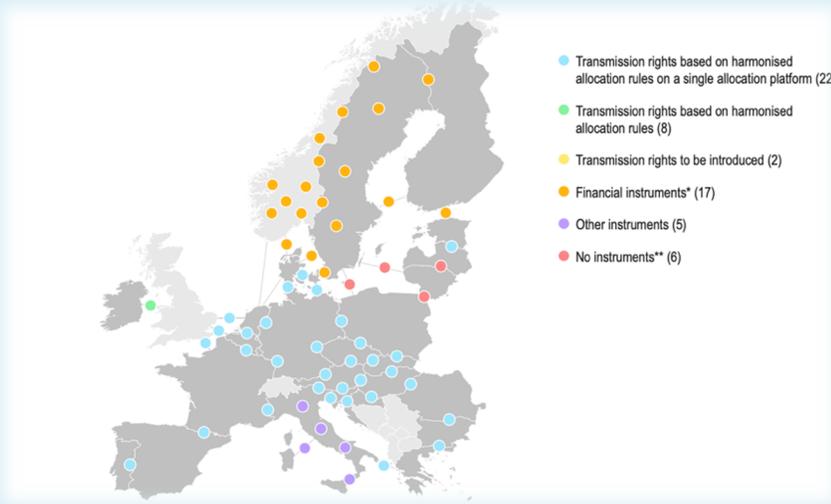


Figure 5: Long-term transmission rights (in blue and green) only exist at certain European borders.

The **issuance of forward transmission rights by all TSOs at all European borders** should become mandatory, without exception. This will ensure that transmission capacity is made available to the market to underpin cross-border transactions sufficiently in advance of delivery and help hedge short-term price risks across borders for the benefit of end-consumers.

Extending the horizon of forward markets, within and across borders

The longer the time horizon forward markets cover, the more efficient they will be at smoothing short-term price fluctuation for end-consumers and at providing investment signals for investors. The rapid uptake of long-term PPAs is a sign of the great appetite of market participants for multi-year contracts over the past few years.

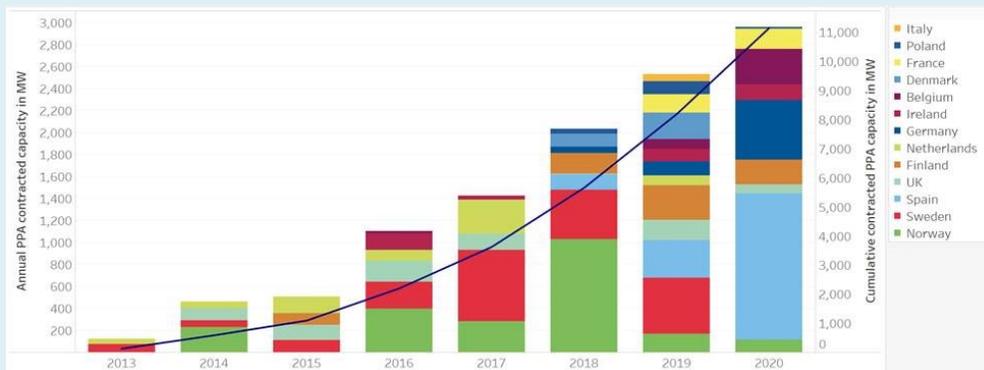


Figure 6: Uptake of PPAs in renewable electricity in Europe (Source: RE-Source).

Member States can help promote PPAs by **removing any local barriers to multi-year contracting**, by **endorsing the EFET standard PPA contract**, and by ensuring that **TSOs issue forward transmission rights up to 5 years ahead** to start matching the contract duration of at least the shortest PPAs.



In summary

Forward markets are an essential part element of our electricity system, representing the vast majority of electricity transactions volumes (88%). They help protect consumers against sudden price volatility, contribute to security of supply and help stabilise revenues for electricity producers.

They are also a key element of the energy transition, as they can provide stable sources of funding for renewable electricity installations, particularly thanks to PPAs. While direct subsidies (including for renewable energy) or capacity remuneration mechanisms may be needed for long-term support to electricity producers, forward markets including PPAs contribute to providing investment signals and to reducing the need for financial aid to power generators. They also provide useful long-term signals for investment in innovative technologies such as electricity storage (including batteries) or alternative energy sources like hydrogen.

Member States and European institutions have a role to play in reinforcing the role of forward markets and expand their reach. **We recommend the following actions be taken:**

- Promoting forward market liquidity by introducing market-making incentives in illiquid markets
- Mandating the issuance of forward transmission rights by TSOs at all European borders
- Removing any barriers to and providing incentives for the conclusion of multi-year contracts like PPAs as market-based solutions for long-term hedging
- Endorsing the EFET standard PPA contract
- Developing 5-year-ahead forward transmission rights to start matching the contract duration of PPAs

For more information, feel free to contact us at secretariat@efet.org