

MARKET COUPLING TOWARDS THE UNITED DAY-AHEAD MARKETS OF EUROPE

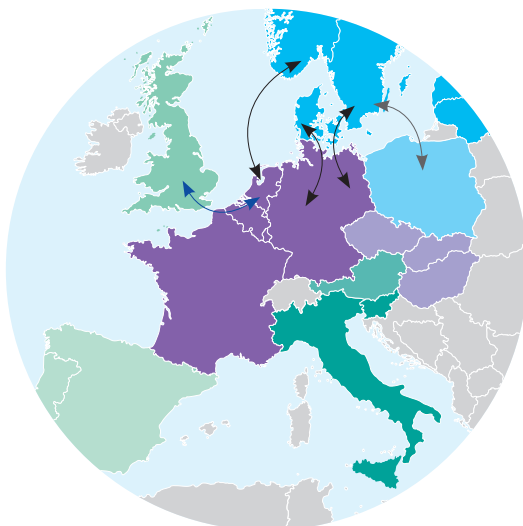
EUROPE'S POWER SECTOR IS ABOUT TO BENEFIT FROM AN UNPRECEDENTED SOLUTION. NATIONAL, ONCE ISOLATED POWER MARKETS ARE BEING COUPLED. THIS INTEGRATION WILL LEAD TO A NETWORK OF INTERDEPENDENT DAY-AHEAD MARKETS. EPEX SPOT FINDS ITSELF AT THE HEART OF THE PROCESS.

The integration of the European power market is a project of prestige and significance. Yet, its first step is somewhat unspectacular: pressing a grey button. Every day at noon, in an office in France or Germany, an EPEX SPOT operator sits in front of two screens, monitors the automated calculation of power market results and then, at 12h40 p.m., clicks this grey button on the screen. This click takes place after a highly complex auction mechanism at the Power Exchanges collecting orders from trading members within Central Western Europe. It might only be a tiny button; yet pushing it has an impact on hundreds of power traders, thousands of people in the European power sector and the lives of millions of Europeans.

Clicking this very button publishes wholesale power prices on German, French and Austrian markets for the following day. These three countries, together with EPEX SPOT's Swiss market calculated one hour sooner, account for more than one third of total European power consumption.

The prices calculated on EPEX SPOT's market provide the orientation and basis for the negotiation of power trading contracts across Europe.

MARKET COUPLING: CURRENT STATUS



Regional implicit auctions

CWE	Price Coupling
Austria	1 AT Power Exchange price coupled to DE (no congestion)
Great Britain	1 GB Power Exchange price coupled to NL via BritNed only
Nordics	Price Coupling (Latvia included as own area in 2013)
Poland	Volume Coupling with Nordics via SwePol
ITVC + NorNed	Volume Coupling CWE-Nordics
Italy-Slovenia	Price Coupling
Spain-Portugal	Price Coupling
Czech Republic-Slovakia-Hungary	Price Coupling

Simultaneously, prices on the German and French markets interact extensively with those in Belgium and the Netherlands, as these four markets are coupled. They were the first power markets in Europe to do so, and they are a blueprint for the whole of Europe: Market Coupling in Central Western Europe, involving Germany, France and the Benelux countries, is the first step of integrating the European power market, to put national, isolated markets together like pieces of a puzzle.

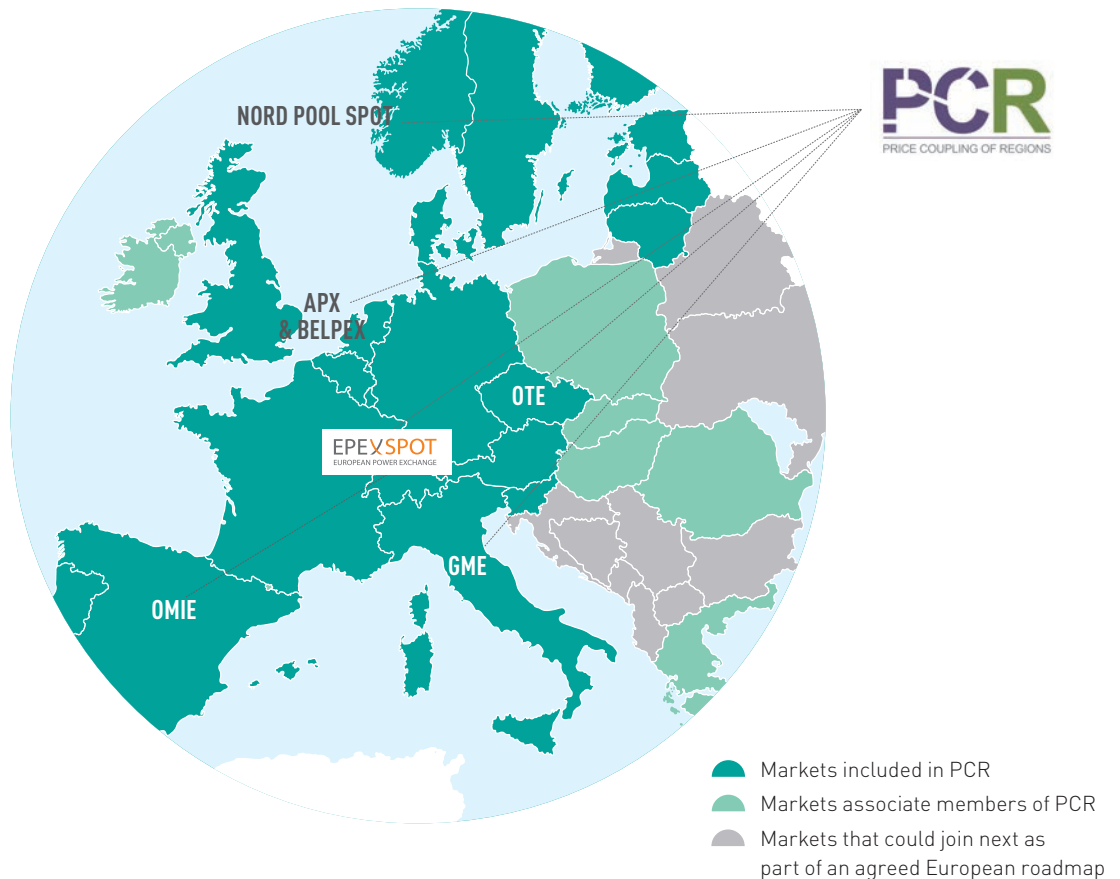
For the time being, most power markets in Europe are organized on national level. They are lone parts of the European puzzle, not yet integrated with their neighboring markets. Offer and demand are limited to capacity and consumption of the country. In tense situations, such as when consumption peaks or when too much power from fluctuating renewables like wind or sun is produced prices can rise quite high or fall below zero. In the latter case, producers have to pay the buyer of energy, instead of getting paid. In such exceptional situations, negative prices are nonetheless a functioning price signal, reflecting market fundamentals.

Market Coupling broadens offer and demand competition by extending it to a vaster territory. In order to achieve this, the available power transfer capacity between countries, a limited resource, is determined by transmission grid operators every morning. This cross-border capacity is then taken into account in the price calculation of the Power Exchange: Generally speaking, power will flow from low-price markets to with higher prices, until cross-border capacity is used a hundred per cent or prices between markets converge.

Buyers and sellers both benefit from this development – we call this the “social welfare”. It consists of the overall sum of gains and losses both parties experience compared to isolated markets – they are always well above zero. In addition, extreme price fluctuations in one market tend to be softened by neighbouring markets as interdependence between markets rises by Market Coupling. For instance, Price peaks in case of a cold spell in thermo-sensitive France can be buffered by high wind input in Germany; vice versa, French nuclear power plants can help out on the German market when the wind is not blowing and the sun isn’t shining.



TOWARDS THE SINGLE EUROPEAN MARKET: NEXT STEPS



Market Coupling in Central Western Europe was launched on 9 November 2010. It has proven to be robust and reliable. Trading participants as well as politics and regulators have approved this unprecedented achievement. In September 2012, EPEX SPOT helped couple the power markets of the Czech Republic, Hungary and Slovakia by making available its state of the art technology, the price coupling solution used for France, Germany and Benelux, a second grey-button being clicked by an EPEX SPOT operator.

The pan-European integration of power markets, however, is a much bigger task. It necessitates a lot of energy, manpower and spirit of cooperation. The European Commission has declared 2014 to be the target date for pan-European Market Coupling. Power Exchanges, transmission system operators and national regulators from each country involved have to find common ground and collaborate closely – across borders, across languages, across sectors, across Europe. Ultimately, this means dozens of parties around the table, lots of discussions and more cumbersome decision-making processes.

The Price Coupling of Regions (PCR) was designed to ease this integration process. Six major Power Exchanges, amongst them EPEX SPOT, teamed up to create a single price coupling

solution which is compatible with the different European markets and respects most of their specific characteristics. After the concept was proven in 2010 and intensive design work was carried out in the last two years, PCR will deliver the technical solution in 2013. They will then be extensively tested and implemented step by step between groups of countries, starting in North Western Europe by the end of 2013.

Several of these so-called regional implementations of PCR, for example in North Western Europe – coupling the Nordic-Baltic countries and Central Western Europe plus Great Britain – or South Western Europe, integrating the Iberian Peninsula with France, are on their way. Some of them, like Price Coupling in North Western Europe, will go live in 2013. EPEX SPOT is involved in every single of these regional implementation projects, as our markets share borders or lie within the regions.

2013 is a decisive year for the integration of the European power market. One year from now, the power trading landscape in Europe will have profoundly changed. The day-ahead integration process enters the final stage. Soon, European integration, today best visible in the common currency and open borders, will have reached the power sector – and the united power markets of Europe will emerge.