# Electricity market: Europe is entering the next phase of single market integration

The Flow Based Market Coupling, a mechanism integrating day-ahead markets in the Core capacity calculation region has been put into operation.

Since 8 June 2022, the borders of Austria, Belgium, Croatia, the Czech Republic, France, the Netherlands, Germany, Hungary, Luxembourg, Poland, Romania, Slovakia and Slovenia have been linked by the Flow Based Market Coupling (FBMC) mechanism as part of the Single Day-Ahead Coupling (SDAC).

The mechanism launched today will enhance the operation security of electricity grids in the context of cross-border trade while enabling the control and coordination of transit flows and capacity calculation for the entire Core region rather than just for specific zones.

This marks an important step in the market coupling process.

Over the years, the number of countries joining the Single Day-Ahead Coupling (SDAC) mechanism has been growing. This makes the process increasingly complex, but at the same time creates the conditions for the free cross-border exchange of electricity. For the single European market to operate properly, capacity has to be calculated at the borders between bidding zones in the most efficient way. A mechanism called Market Coupling is used for this purpose, which is based on an algorithm matching offers and bids for electricity made on exchanges in different countries.

More than seven years after the launch of the FBMC mechanism in the countries of the former Central Western Europe region (Central Western Europe hereafter CWE) and 18 years after the start of the integration of electricity markets in Europe, we are entering the next phase of market coupling.

Under the FBMC, all CCR Core borders will be included in the market coupling process based on the Flow-Based Allocation (FBA) capacity calculation method.

The FBA, unlike previously used methods, most accurately accounts for the technical constraints of the network in the process of calculating and allocating capacity for trading purposes, and reflects the interdependencies between trading transactions at bidding zone borders and capacity flows on the interconnected power supply system. Despite its greater complexity (integrated calculations, use of data provided by multiple TSOs), it uses uniform

datasets as the basis for the calculation, defines common rules according to which the calculation is performed, and takes physical flows (e.g. transit volumes) into account.

The first physical deliveries of electricity contracted in this way will be possible as of 9 June.

History of market integration

The beginning of the integration of electricity markets in Europe dates back to November 2006, when a common Day-Ahead Market for Belgium, the Netherlands and France was established on the Powernext.

The next step was to include all Western European countries in the Market Coupling process in 2014. The process was based on the allocation of Available Transfer Capacity (ATC). Price Coupling covers North Western Europe (countries of the CWE region, the UK, the Nordic and Baltic countries, as well as the Iberian Peninsula countries). In February 2015, Italy and Slovenia joined the mechanism.

On 20 May 2015, the Flow-Based Market Coupling mechanism for Day-Ahead Market cross-border transactions was launched in Central Western Europe (CWE). The next step involved the launch of the Interim Market Coupling project on 17 June 2021, as a result of which Poland become fully integrated. As part of that project, the 4M Market Coupling countries (4M MC, i.e. the Czech Republic, Romania, Slovakia and Hungary) were joined with the Multi-Regional Coupling (MRC, i.e. Austria, Germany, Poland, among others) by introducing capacity allocation based on Net Transfer Capacity (NTC) calculation at six additional borders: Poland-Germany, Poland-Czech Republic, Poland-Slovakia, Czech Republic-Germany, Czech Republic-Austria and Hungary-Austria. This meant the introduction of a single common auction on the power exchanges for market participants in all countries covered by the MRC and 4M MC areas of the SDAC.

The Available Transfer Capacity (ATC) method was used outside the former CWE region to calculate cross-border transmission capacity until yesterday (7 June 2022). In that method, transmission network operators first determined the capacity they could provide, which was followed by auctions held on the power exchanges. The biggest limitation of that method was that it only took into account flows between two zones and disregarded the impact of a given transaction on flows in other areas.

Multiple parties participated in the FBMC implementation process, including the transmission system operators and Nominated Electricity Market Operators (NEMOs) from the CCR Core including the Polish TSO (PSE) as well as NEMOs operating in the Polish bidding zone, i.e. EPEX SPOT, Nord Pool EMCO and Polish Power Exchange (TGE).

The Core region regulators and the Agency for the Cooperation of Energy Regulators (ACER) were also involved in the implementation process.

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The Flow-Based Allocation (FBA) method is based on the determination of transmission capacity taking into account electricity flows and available margins on critical network elements, which means that it allows for technical network constraints to be taken into account in the process of calculating and allocating capacity for exchange trade. This method also takes into account the interdependencies between trading transactions at each bidding zone border and electricity flows within the interconnected power system.

The Net Transfer Capacity (NTC) method is based on bilateral reconciliation of capacity at the respective borders between neighbouring transmission network operators. On the basis of the agreed volumes of available transmission capacity, auctions are held on power exchanges. The method makes it possible to calculate the available capacity based on the maximum amount of electricity that can be transmitted between the two bidding zones without compromising the security of both systems and taking into account technical considerations for the future operation of the network.

The Available Transfer Capacity (ATC) method is based on the principle of estimating and defining *ex ante* the maximum electricity exchange between bordering bidding zones. The ATC is a measure of the capacity remaining available in the physical transmission network for the purposes of further commercial transactions above the volumes already booked: ATC = NTC - AAC. In the case where the allocated capacity (AAC) is zero, ATC is equal to NTC.

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