



Day-Ahead Market Coupling ensuring better market liquidity

In order to improve the integration of their energy markets, the Belgian, German, French, Luxemburg, Dutch, Norwegian, Swedish, Finnish, Danish British, Spanish, Portuguese and Italian transmission system operators and power exchanges have coupled their day-ahead markets. The result is a larger platform where market players' offers and demands can meet, provided that sufficient cross-border capacity is available.

The market coupling mechanism means that Belgian market players have direct access to the other countries' markets. The mechanism leads to price convergence on all markets, for as far as possible. However, price differences may still occur if the capacity available for cross-border trades is insufficient to meet total demand.

I. The market coupling mechanism: principles

The market coupling mechanism is a method for integrating a number of energy markets into a single area for daily energy exchanges. The primary aim of the mechanism is to improve market liquidity and, consequently, to induce lower and more stable electricity prices. The power exchanges Belpex (Belgium), APX (The Netherlands) EPEX Spot (Germany and France), Nord Pool Spot (Norway, Sweden, Finland, Denmark), OMIE (Spain and Portugal) and GME (Italy) are also involved in the Multi-Regional Coupling (MRC).

I.1. Mechanism for daily exchanges

The market coupling mechanism, connecting the MRC markets, is used for hourly energy transfers in day-ahead. These transactions between buyers and sellers can be performed on one of the power exchange platforms of MRC region (Belpex, APX, EPEX Spot, Nord Pool Spot, OMIE or GME). Cross-border capacity is used to eliminate price differences between the different markets.

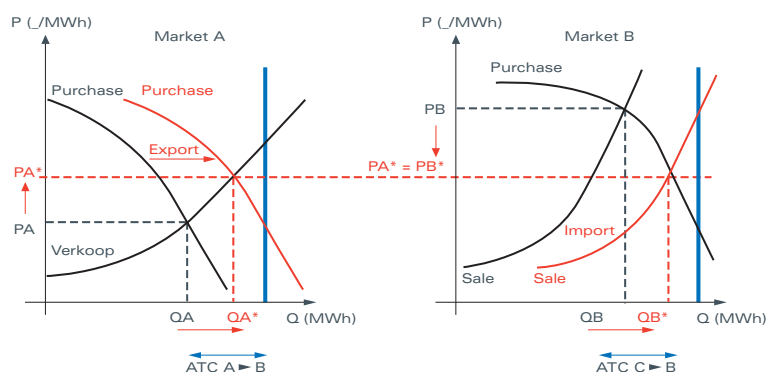
I.2. Implicit allocation of capacity

Unlike for medium and long-term cross-border transactions (see sheet "Yearly and monthly allocations"), market players no longer have to obtain daily capacity at the interconnections before buying or selling energy. A buyer or seller of electricity automatically has access to the capacity available and to the other markets by submitting buy/sell orders on one of the energy exchanges, which is why transactions performed via the market coupling mechanism are known as "implicit capacity allocations".

I.3. Same prices in all three countries

With market coupling, purchase bids in one country are matched up with sales bids in another country, where the price may be lower. The purchase/sales bids made in the different markets are pooled and then matched up by financial merit order. As a result, less expensive energy produced in one country can be used to meet high demand in another country. If there are no cross-border capacity constraints, the market coupling mechanism will promote the emergence of a single price for all markets. The coupling mechanism therefore makes a significant contribution to improving energy market liquidity.

Market Coupling - unconstrained case



PA: price on market A before convergence resulting from market coupling

PB: price on market B before convergence resulting from market coupling

PA* and PB*: equalized prices resulting from market coupling

Q: capacity volumes

- Isolated price Market A < Isolated price Market B
- Market A can export to market B (purchase-and sale curve shift)
- Prices market A and B converge till price market A = price market B

I.4. Optimal use of the available cross-border capacity

The implicit allocation mechanism optimizes the day-ahead economic surplus while respecting the capacity constraints. Indeed, price differences between markets encourage the use of the total capacity available. The market coupling mechanism can only be efficient if there is sufficient cross-border capacity available.

I.5. Various potential market situations

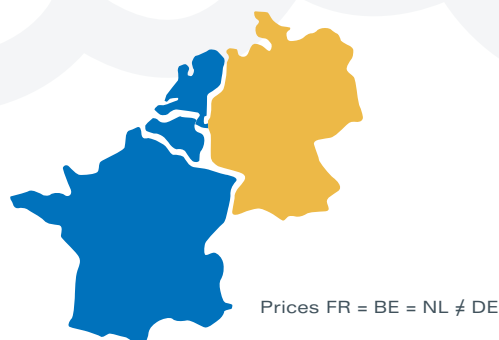
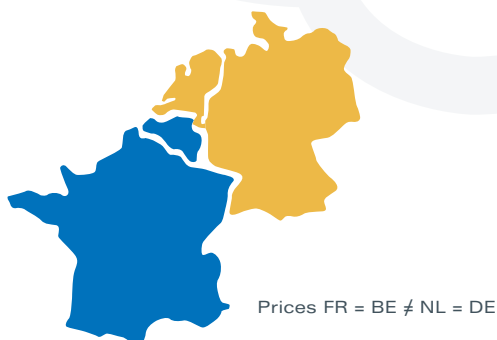
The current MRC market coupling mechanism couples several markets through interconnections: Belgium-France, Belgium-The Netherlands, The Netherlands-Germany, Germany-France, The Netherlands-Norway, Germany-Denmark, Germany-Sweden, The Netherlands-Great Britain, France-Great Britain, Norway-Sweden, Sweden-Finland, Denmark-Sweden, Norway-Finland, Denmark-Norway, France-Spain, Spain-Portugal and France-Italy. The use of the total available capacity on one interconnection in the MRC area will lead to a congestion situation. In this case market prices on both sides of the congested interconnection will differ.

See below an explanation of three market outcomes within the CWE area (Central West Europe). Please note that other cases may exist:

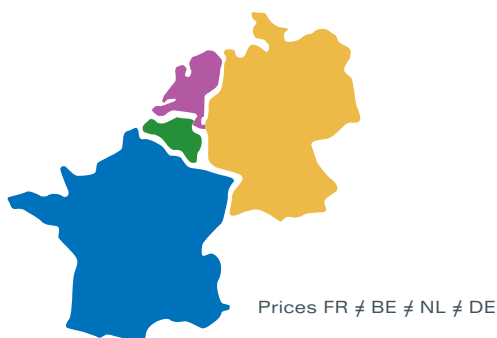
- Case 1: If sufficient capacity is available at all interconnections to match up the most economical buy and sell orders on the four markets then the energy price is the same in all markets. In this case the four markets operate as though they were a single entity.



- Case 2: If the capacity is insufficient at some borders (but not all) of the CWE area, the markets are split in different zones depending on the congested interconnections. The countries which share the border where the capacity available is sufficient operate as a single market (i.e. orange and blue area). The price of energy in two markets (in the example below) will probably be different. Other combinations are possible.



- If the capacity is insufficient at all CWE borders, the prices applied in each of the countries will probably be different.



I.6. Fallback of market coupling

In case of unavailability of the MRC market coupling, explicit daily auctions (shadow auctions) will be organized by a joint auction office to allocate the cross-border capacity. Participants have the possibility to submit default bids (volume & prices) in advance for one or more MRC borders or relevant interconnectors. Default bids are valid for every day and they can be updated till the launch of the shadow auctions.

II. Benefits of the market coupling mechanism

The market coupling mechanism gives the following advantages to the market:

- buyers and sellers that are active in the market coupling mechanism may carry out cross-border exchanges without having to acquire transmission capacity rights. Since the transaction is performed in a single operation, market players are no longer exposed to the risk involved in acquiring transmission rights before their actual value – as determined by the energy market is known;
- market players in the coupling area do not necessarily need to have sites in a number of countries in order to perform cross-border transactions. Instead, all that a market player has to do is submit an order via its country's power exchange in order to respond to purchase/sales bids from the other countries;
- market coupling optimizes the management of daily cross-border capacity available. In addition, if there are no cross-border constraints, the mechanism will improve market liquidity and level out prices in the coupled markets.

III. Legal and contractual basis

In order to perform transactions via the market coupling mechanism, market players must have signed an ARP contract with Elia or must have designated an ARP responsible for sending the Day-ahead HUB nominations. Market players must also have signed a participation agreement with a power exchange.

Moreover, if market parties want to participate to the fallback mechanism (shadow auctions) they must sign a participation agreement with the joint auction office (see Auctions Rules).

IV. Future developments

The TSOs of the MRC region have the intention to further harmonize the day-ahead market coupling with the rest of Europe.

Market coupling in 5 key points

- Together, MRC transmission system operators, in association with the respective power exchanges, have created a market coupling mechanism.
- The market coupling mechanism allows energy buy and sell orders from the MRC area to be pooled and then matched up by financial merit order. For instance, a buy order with a high price in one country can be matched up with a sell order at a lower price in another country.
- Energy transfers via the market coupling mechanism are carried out in a single operation: there is no need for prior reservation of cross-border capacity (implicit allocation).
- Transactions via the market coupling mechanism must factor in the limits on daily MRC cross-border available capacities. In the absence of constraints related to capacity limits, the price will be the same in all markets.
- The market coupling mechanism helps to improve market liquidity and to optimize management of the available cross-border capacity.