

**Union of the Electricity Industry – EURELECTRIC Position Paper
Improving Interconnection Capacity Allocation**

August 2005

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This position paper was drafted by the ad-hoc group on Market-coupling.

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Introduction

EURELECTRIC has contributed to the debate on network congestion management with several position papers in the past years¹. In particular, in a paper published in April 2004, EURELECTRIC clearly stated that implicit and explicit auctions are the only market-based methods for interconnector capacity allocation.

At the 11th Regulatory Forum, congestion management was addressed in detail. A joint ETSO/ Europex proposal on “Flow-based market-coupling”, which aims to ensure day-ahead capacity allocation through implicit auctions, while the long-term capacity could remain allocated through explicit auctions, was discussed. It was also decided to set up seven mini-fora to work out a planned and detailed timetable for the introduction of at least day-ahead coordinated market-based mechanisms.

In their conclusions, some of these mini-fora (including South-Western Europe and Central-Western Europe), favoured a phased implementation of market-coupling, while others (including Central-Eastern Europe and Italy), suggested the use of coordinated explicit auctions.

Against this background and with a view to the upcoming 12th Regulatory Forum, it is the intention of this paper to set out EURELECTRIC’s views on how to improve the allocation of interconnection capacity via market-coupling and/ or coordinated explicit auctions.

I – Market-based solutions for addressing congestion

EURELECTRIC supports the development of any economically sound investment in transmission infrastructure that would eliminate both structural cross-border bottlenecks and internal bottlenecks that affect cross-border capacity. It is crucial that in addition to this expansion of networks for cross-border trade reasons, market-based allocation mechanisms be used everywhere in the European Union to address existing cross-border congestion.

Rapid move needed towards market-based solutions

EURELECTRIC strongly calls for a rapid move to market-based allocation methods on all EU interconnectors as a way to increase efficiency in capacity allocation.

¹ See in particular: Position paper on congestion management (November 2000) and Contribution to the 11th Electricity Regulatory Forum (April 2004).

Market-based methods are a mandatory requirement of Regulation 1228/2003 and EURELECTRIC welcomes the important clarification brought firstly by the 11th Regulatory Forum and subsequently by the draft congestion management guidelines, which define the term “market-based methods for capacity allocation” as being explicit or implicit auctions only. EURELECTRIC fully supports this interpretation.

EURELECTRIC notes with interest the conclusions of the mini-fora, which give clear signals of a generalised move towards market-based allocation methods across the EU. This move is to be encouraged and accelerated.

Terminology

- Explicit and implicit auctions
Explicit and implicit auctions differ in that with explicit auctions, the right to use the interconnection is granted based on a capacity bid, while with implicit auctions, energy and capacity are allocated together.
- Two basic models of implementing implicit auctions
Market splitting corresponds to the situation where one power exchange manages the cross-border power flows of its own area. Market-coupling is the management of cross-border flows by two (or more) power exchanges on the border(s) that they share.

Allocation methods compatible with Regulation 1228/2003 and congestion guidelines

Several proposals emerging from the debate are market-based and can be seen as being compatible with Regulation 1228/2003 and the draft guidelines for congestion management:

- For all time-horizons: joint and coordinated explicit auctions² (see figures in annex)
Joint auctions consist in two TSOs allocating capacity together and mutually recognising the capacity that is allocated on the two sides of the interconnector.
With coordinated explicit auctions, several (more than two) TSOs allocate cross-border capacity in a common way. The allocated capacity takes into account all physical flows, including loop flows. One example, which to a certain extent illustrates the principle is the allocation mechanism between the Czech Republic and Poland on the one hand and the control zone of Vattenfall Europe on the other hand.
A further step in coordination would consist in TSOs commonly allocating capacity among areas that are not adjacent. This would require the simultaneous allocation of capacity on several borders.
- For day-ahead, a number of market-based solutions for handling congestion at the interconnections between markets are feasible:
 - Flow-based market-coupling (FMC) as proposed by ETSO and Europex
In the proposal for flow-based market-coupling, the day-ahead allocation of capacity is done on power exchanges, via implicit auctions. This can co-exist with physical transmission rights assigned for the month or year-ahead. In addition to this, flow factors calculated by the TSOs are used to represent the physical parallel flows that result from the scheduled commercial flows. This modelling allows optimal use of the physical capacities on the interconnectors concerned.

² EURELECTRIC does not consider unilateral auctions to be an appropriate solution for cross-border allocation, as they do not comply with either Regulation 1228/2003 or the congestion management guidelines.

- Open market-coupling (OMC) as suggested by EEX

The open market-coupling proposal requires the creation of a central auction office to centralise information, assign capacities and perform settlements. All market-based methods for capacity allocation can be used with this model, i.e. explicit auctions, implicit auctions or even FMC.
- Market-splitting as done on Nord Pool

Market-splitting on the Nord Pool regional power exchange is currently applied for the day-ahead allocation of capacity on the borders between Norway, Sweden, Denmark and Finland, where the market rules are uniform throughout the area.
- For intra-day

Intra-day allocation via market-based mechanisms should be considered, provided there is enough liquidity and time before real-time operation. In addition, other methods such as counter-trading or redispatch could also be considered. These are two methods used by TSOs for guaranteeing intra-day allocated capacity. The funds necessary for these methods should be raised preferably from the congestion rents deriving from implicit and/ or explicit auctions.

Counter-trading should not be used as the main congestion management method for structural or severe bottlenecks due to the cost incurred and the inefficiencies it may lead to.

II - Market-coupling, a positive step forward for day-ahead markets

1. A market-based solution

Market-coupling is a market-based solution and, from this point of view, EURELECTRIC sees it as a clearly positive step forward. Its implementation however requires appropriate coordination of the market arrangements between the different price zones concerned.

2. The specific advantages of market-coupling

Besides being market-based, market-coupling also has a number of additional specific advantages:

- a. Simultaneous allocation of energy & capacity: this is one of the most crucial benefits of market-coupling. Contrary to other allocation methods, market-coupling integrates the energy and transmission capacity markets and thus allocates the two “products” together.

As a result, the inefficiencies deriving from inappropriate purchases of transmission capacity - due to situations where transmission markets close before the opening of energy markets – no longer exist with market-coupling. Market-coupling ensures that flows of electricity go in the right direction, i.e. from the low to the high price areas.
- b. Optimal use of interconnector capacity: the automatic netting carried out in market-coupling enables optimal use of interconnector capacity.
- c. Improved liquidity: market-coupling assumes the existence of power exchanges on both sides of the interconnection. This will support liquidity in the markets concerned and should contribute to its development in areas where liquidity is still an issue.

- d. Easier to transfer power on several successive interconnectors: compared to explicit auctions, market-coupling makes it easier from a conceptual point of view to transport electricity on several successive interconnectors, especially as time frames for nomination are not yet harmonised.
- e. Joint and coordinated explicit auctions not ruled out: market-coupling can be used in combination with coordinated, or at least, joint explicit auctions for yearly, monthly, weekly and even day-ahead capacity allocation.

III – Coordinated explicit auctions

1. A market-based solution

Coordinated explicit auctions are a market-based solution.

The use of explicit auctions has been extended continually to more and more congested interconnectors within the EU, including the new EU Member States of Central-Eastern Europe. With improvements in their design, increasingly good results have been achieved with the use of explicit auctions on a number of interconnections. The 11th Regulatory Forum highlighted the need for co-ordination of auctions as a further step towards an internal electricity market.

2. The advantages of coordinated explicit auctions

Co-ordinated explicit auctions are a market-based method and they also have a number of additional advantages, listed below. NB: “a” to “d” are also advantages of market-coupling.

- a. Greater efficiency for the use of interconnectors: joint auctions by definition do not take loop flows into account. Coordinated auctions tend to allocate a larger amount of capacity than joint auctions.
- b. Better procedures for capacity allocation: coordinated auctions require the standardisation of all procedures related to capacity allocation (gate closure, bid format...) and thus reduce risks for traders.
- c. Greater liquidity: co-ordination brings together more than two control areas, thus enlarging the market-place for physical trade and boosting liquidity.
- d. Creation of larger wholesale markets: coordinated auctions means obtaining access to more than two control areas via a centralised allocation mechanism and this helps markets to grow together.
- e. Usable at an early stage of market maturity: auctions can be used between markets where liquidity is not yet fully developed and do not require the existence or involvement of power exchanges.

EURELECTRIC believes that explicit auctions, when accompanied by the appropriate organisation in time horizons, secondary capacity markets and the “use it or lose it” principle, do not favour dominant players³. For the day-ahead however, the efficiency of explicit auctions would be improved by the existence of an intra-day allocation scheme.

³ See conclusions of EURELECTRIC’s contribution to the 11th Regulatory Forum.

IV - EURELECTRIC's position

EURELECTRIC has since 2000 seen implicit auctions as the ideal solution, in theory, for allocation of interconnection capacity, but took the view that these were not applicable everywhere in the EU at that time. Explicit auctions were therefore EURELECTRIC's preferred solution for the mid/ short term.

The situation has since then evolved. Several interconnectors on which non market-based allocation methods were formerly in use have now switched to market-based (basically explicit auctions) methods.

We therefore believe it is now appropriate to restate our position as regards the preferred solution and the way forward.

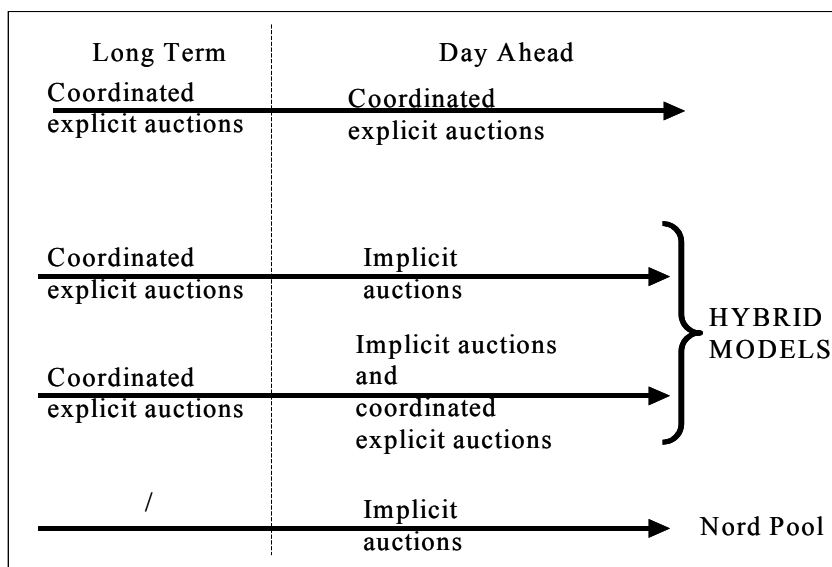
1. The preferred solution: a hybrid of explicit & implicit auctions

EURELECTRIC's preferred solution for the EU is a hybrid allocation mechanism, i.e. explicit auctions (physical or financial) for long-term allocation and implicit auctions/ market-coupling for day-ahead.

This hybrid solution, under discussion by various stakeholders⁴, appears to combine the respective advantages of explicit and implicit auction systems. It is a market-based solution which, thanks to the explicit auction component, allows for physical cross-border trading. This is important in that it ensures that market participants are able to hedge their position for their cross-border operations in the long-term for a price fixed beforehand. In some markets, financial contracts for the price difference across the border are also available through power exchanges.

Furthermore, with the implicit auctions element, the hybrid solution ensures that interconnector capacity is utilised in an optimal way and that flows always go in the right direction from a market viewpoint.

THE HYBRID MODEL IN ITS TWO ALTERNATIVE FORMS



⁴ See: draft guidelines on congestion management; Frontier/ Consentec study of June 2004 "Analysis of cross-border congestion management methods for the EU Internal Electricity Market".

2. The pragmatic way forward

The hybrid solution requires the existence of sufficiently coordinated exchanges in terms of design (gate closure, bid format, market clearing procedure etc.). This is not a reality all over the EU at present and EURELECTRIC strongly calls for harmonisation on these issues.

As a result of this situation, EURELECTRIC recommends at the present time the development of pilot projects which could engender further confidence in market participants regarding the benefits of the hybrid solution. Accordingly, EURELECTRIC is carefully monitoring the Belpex project.

Until these pilot projects have developed further, EURELECTRIC believes that coordinated or at least joint explicit auctions remain a reasonable solution. Use should however be made of the market-coupling model/ hybrid model on interconnectors where it is proven that the existing allocation method is not efficient (i.e. that flows should go from the low to the high price area).

For the mid/ short-term horizon, it is essential that considerable care be taken to ensure compatibility of the solutions put in place in adjacent markets so that they can develop properly when market-coupling extends throughout the EU. As an example, flow-based market-coupling should be able to exist smoothly with open market-coupling. In addition, it is also key that the different models of implicit auctions (FMC, OMC, Nord Pool) remain simple and transparent so that their impact on the market can be easily identified.

When the hybrid solution is in place, according to demand from market players and under the supervision of Regulators, TSOs will be able to offer a dedicated part of the available capacity as long-term physical rights. The proportion of long-term and short-term rights may change over time according to the liquidity on each side of the congested interconnector.

Another key issue is to also ensure that, as power exchanges are with the market coupling model being granted a de facto monopoly right for the day-ahead allocation of capacity, they do not unduly benefit from the additional revenues generated.

Finally, it is important that markets are not constrained from developing innovative solutions for solving congestion. The guidelines on congestion management should therefore for the future remain open enough to avoid hindering the development of more efficient solutions.

3. Other steps to envisage for the future

For the further development and integration of markets, important advantages could well result from the introduction of cross-border intra-day market platforms and capacity allocation, as this would reduce the residual balancing energy supplied by the local balancing market. To make this work, standardisation of the timescales for market trading should be pursued.

Efforts could also be made to reduce the barriers to trade that are caused by differences in legal frameworks between different jurisdictions.

Conclusions

These conclusions offer a short summary of the position paper.

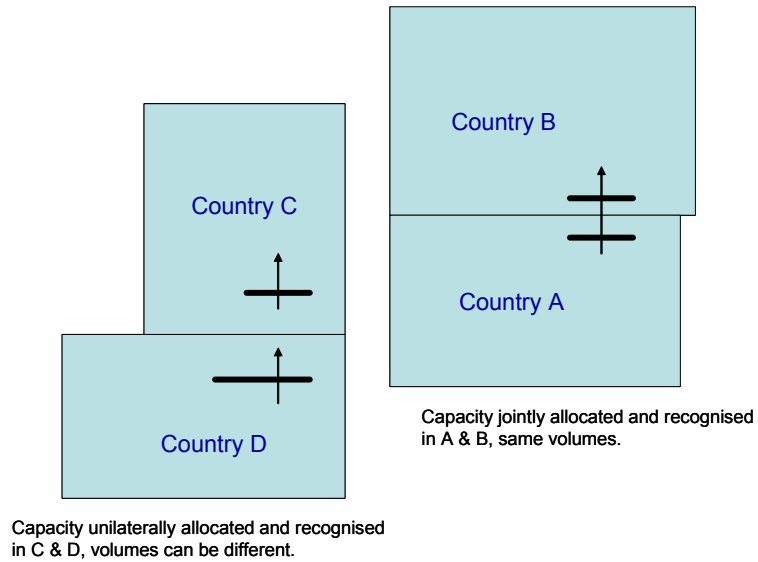
EURELECTRIC takes the view that in order to improve interconnection capacity allocation:

- **market-based allocation mechanisms must rapidly become the only methods in use on all EU interconnectors.** This means either coordinated (or at least joint) explicit auctions or implicit auctions. Counter-trading and/or redispatch may however also be used for non structural bottlenecks and close to real time;
- **the preferred solution for congestion management is a hybrid mechanism**, whereby cross-border capacity is allocated via implicit auctions/ market-coupling for the day-ahead and via explicit auctions for the year, month & week-ahead. This hybrid solution would allow more efficient capacity allocation while maintaining the possibility for physical trade (and thus for market participants to hedge their position in the long term for a price fixed beforehand);
- this hybrid solution requires the existence of sufficiently coordinated power exchanges in terms of design (gate closure, bid format, market clearing procedure etc.). As this is not a reality all over the EU at present, **EURELECTRIC strongly calls for harmonisation on these issues and recommends the development of pilot projects** (such as Belpex and possible projects based on the Open Market Coupling model) **as a way forward**;
- **until these pilot projects have further developed, coordinated, or at least joint explicit auctions remain a reasonable solution.** For the day-ahead however, the efficiency of explicit auctions would be improved by the existence of an intra-day allocation scheme and use should be made of the market-coupling/ hybrid model on interconnectors where it is proven that the existing allocation method is not efficient;
- **it is also important to ensure compatibility between the various regional solutions put in place and not to give power exchanges undue benefit** from the additional revenues generated by market-coupling as a result of their monopoly situation for the day-ahead allocation of capacity;
- **for the future, other measures could be envisaged to further improve markets.** This is in particular the case of the reintroduction of intra-day markets, which would reduce the need for residual balancing energy supplied by balancing markets. This requires the standardisation of the timescales for market trading.

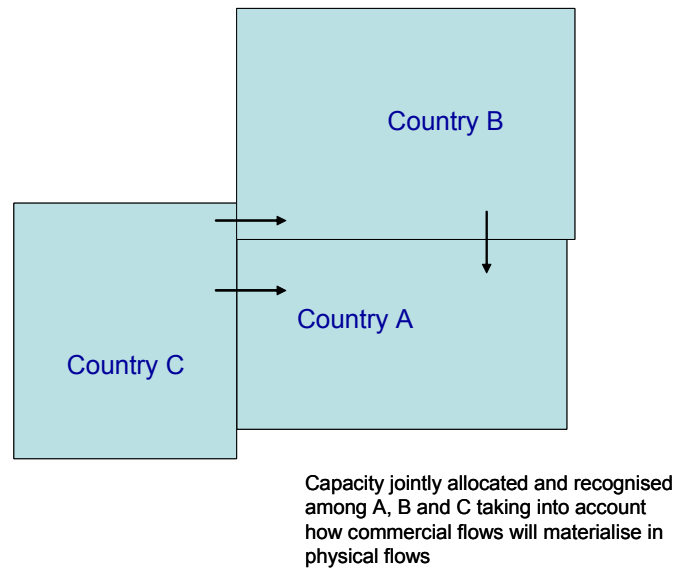
Additionally, in order to increase the available transmission capacity, **EURELECTRIC supports the development of economically-sound investment projects in transmission infrastructure that would eliminate both structural cross-border bottlenecks and internal bottlenecks affecting cross-border capacity.**

ANNEX

JOINT EXPLICIT AUCTIONS between A & B versus UNILATERAL EXPLICIT AUCTIONS between C & D



COORDINATED EXPLICIT AUCTIONS



COORDINATED EXPLICIT AUCTIONS: a further step

