

iii. Market based solutions for cross-border power transmission access

According to Peter Styles of the European Federation of Energy Traders (EFET), progress towards further electricity market opening has been rather modest and severe challenges remain to be faced by the European Commission and other governmental institutions, in order to match legislative change with real increased competition and greater efficiency.

The ability of a retail customer ultimately to purchase energy produced across one or more borders will depend on interactions between wholesale markets, TSO services, balancing arrangements and many other factors. Differences in market operation and structure between regions in any of these respects have the potential to produce inefficient patterns of both trade and trading. In this context, wholesale power market distortions, which remain to be dealt with include:

- Transmission access rights and the need to enhance both the (financial) predictability of network access across the EU for market players, and incentives for TSOs to provide such access
- The need to set in place coherent and cost reflective transmission access charges across each region in a manner which properly integrates market based congestion management methods and inter-TSO compensation arrangements
- The further development and integration of intra-day and balancing markets
- Limited cross border co-operation in other respects between TSOs (*inter alia* for the purpose of ensuring security of supply)
- Suggestions that there is a 'regulatory gap': The current framework of sector regulation of unbundled monopoly transmission operators and/or suppliers is designed to apply primarily within national boundaries. Little account is yet being taken of interaction across borders. ▶



Capacity allocation and congestion management

Since 1998, one strand of the EU “Florence” electricity regulatory process has been the management of congestion affecting cross-border trade in power in the EU, particularly across the UCTE member grids of Continental Western Europe. Progress towards commonly accepted principles for allocating constrained cross-border transmission capacity was encouragingly rapid in the years 1999 and 2000. These years also marked the initiation of explicit auctions of cross border transmission capacity on the continent, with the Germany-Jutland interconnection followed by interconnection points between the Netherlands, Germany and Belgium. System users were promised the publication by TSOs of indicative, but objectively justifiable, NTC* and ATC* figures for all borders where there exist high voltage level interconnections.

(NTC stands for net transfer capacity, taken normally as physical load capability of an interconnection point under foreseen simultaneous flow conditions, at the n-1 security level, subject to deductions for TSO system balancing purposes and to adjustments for abnormal national network conditions. ATC stands for available transfer capacity, taken normally as NTC less reservations for legacy import/ export contracts or for other preferred users/ purposes.)*



A number of anti-trust and regulatory decisions, some involving intervention by DG COMP or DG TREN of the European Commission, helped pave the way for agreement by Florence Forum participants at their 6th meeting in November 2000 of quite detailed guidelines on cross border congestion management. Since then, however, progress in implementing these guidelines in relation to further borders, where market based methods had not by that time been adopted, has been very limited.

In the absence of a nodal or zonal organization of allocation of transmission capacity in the European internal electricity market, irrespective of national borders, transmission system users need from TSOs reliable and consistent indications of NTC and ATC. The objective quantification and prompt publication of NTC and ATC per border or per interconnection point over appropriate time intervals is of the utmost importance to wholesale market participants. On the other hand, mere data is insufficient, in the absence of objective verification by TSOs, working in consultation with each other for the benefit of the overall market, of the accuracy of their estimates. A misrepresentation as to truly available physical capacity, especially on the negative side, may cause serious wholesale market distortions and yield windfall income for the TSO or its affiliates. ▶

EFET believes that at nearly all regularly congested borders in the UCTE area potential NTC, and therefore actual ATC, are systematically underestimated. Moreover, deductions from NTC for contractual reservations can be too generous over a given time interval, leading to exacerbated underestimation. Reasons why TSOs may do this include:

- Inaccessibility of accurate information about expected flows in other countries
- Failure to net off predictable counter flows to a dominant flow
- Inaccurate or unduly conservative calculation of expected counter and loop flows
- Lack of co-ordination of nomination and scheduling periods and procedures
- Insufficiently rigorous application to capacity reservations of the use-it-or-lose-it principle
- Non-objective approach to capacity reservations claimed by suppliers for legacy import/export contracts
- Non-provision of appropriate economic incentives (including through regulatory regime) to avoid declaring congestion at borders
- Over-cautious withholding of capacity within a control area on one side of an interconnection, on the pretext of system security or balancing eventualities

- Unwillingness to co-operate for the purpose of coordinating re-dispatch of generation plant, even where this might contribute to a cost efficient elimination or reduction of congestion across a border between their control areas.



The resulting underestimation of available capacity is most easily addressed when there is both a fully unbundled TSO and a pro-active, independent regulatory authority on each side of the relevant interconnection. The failures to progress market based mechanisms seem to be attributable to a mixture of well defended vested interests with differences of view about the likely fairness and efficiency of allocation resulting from any auction. What remains clear to EFET, however, is the unfairness and inefficiency of the substituted first-come, first-served or pro-rata reduction methodologies. ▶



The challenge now is for independent TSOs and progressive regulatory authorities, in consultation with system users including traders and power exchanges, to move rapidly beyond the existing patchwork of capacity allocation methods in the UCTE area. Non-market based methods must be replaced. While some doubts remain as to the strict economic efficiency of the outcome of all explicit capacity auctions implemented so far, these auctions have at least represented a move away from arbitrary allocation.



The inception of partial implicit auctioning of capacity, by way so-called *market coupling*, seems feasible in the medium term around some congested borders of continental western Europe. EFET welcomes early consultation on plans by TSOs and power exchanges in the relevant countries, particularly about how any scheme involving market coupling could be implemented without disrupting liquidity in the OTC physical spot market.



As to the design of implicit auctions for market coupling, it is more realistic to envisage these being organized in the UCTE territory initially as between control areas coinciding with national borders. (Their introduction in this manner could ideally, however, act as a prelude to a potential permanent market splitting scheme, based on commodity pricing zones whose boundaries would not necessarily coincide with those of nations, nor even of control areas.) Any market coupling arrangements, even if initially decentralized, must:

- Be based on an expansive estimation of NTC at the relevant borders (or better yet on a complete replacement in the meshed UCTE network of bilateral NTC values by flow-based power transmission distribution factors)
- Command the maximum possible portion of NTC at such borders (preferably the majority, especially if legacy reservations or any non-market based allocations remain)
- Enjoy at least equal priority with respect to firmness and availability of ancillary services with any other allocations remaining at a given border. (This applies also to parallel explicitly-auctioned capacity rights, which can be offered as firm or non-firm, subject to suitable arrangements for compensation upon withdrawal. See overleaf.)

The sale by TSOs of fixed-price transmission rights will facilitate completion of a single EU electricity market

The availability to network users of fixed-price contractual rights to cross-border transmission capacity would benefit the development of the internal EU electricity market. To compete effectively across borders, market participants need the ability to fix the delivered price of electricity in advance. This requires a market means to fix the price of transmission for cross-border deliveries, in addition to an ability to manage electricity commodity price risk within national markets.

Market participants should be able to buy transmission contracts, which allow them to fix the price for transmission in advance. Such contractual rights can either be for physical capacity, entitling the holder to schedule power “deliveries” at borders, or financial (e.g. contracts for differences), and would provide a hedge against variable short-term costs associated with transmission between markets. It is noteworthy that such hedging is needed also under a market coupling arrangement, which is the mechanism ultimately preferred by EFET for day-ahead and intra-day congestion management. And market coupling, if designed suitably, is fully compatible with the parallel existence of a market in transmission rights (previously sold in an explicit auction.)

For prices of cross-border deliveries to be hedged effectively, the transmission rights should be contractually “firm”, so that the holder is fully compensated by the TSO, should the physical right to schedule power across a border be withdrawn. (This compensation is typically automatic in systems based on financial rights.) EFET suggests that system operators should allocate such transmission capacity rights for all borders, over time periods consistent with the periods for which the underlying electricity commodity is traded (e.g. annually, seasonally or monthly). It is recognised that in some countries specific regulatory approval for revised allocation arrangements would be required and the active engagement of the Committee of European Energy Regulators (CEER) in a dialogue about these arrangements is appropriate. ■

