

What rules should govern network tariffs, grid access and market balancing in gas and power, and who should monitor compliance?

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SETTING THE SCENE

The process of defining the rules that should govern network tariffs, grid access and market balancing is an ongoing process. There are several initiatives trying to foster agreement between all market participants in relation to these issues.

EREGG launched a consultation process several months ago. The consensus of the European electricity industry is that the development of framework guidelines, on which the European network codes should be based, will play a key role for the attainment of effective market integration. Therefore, a common understanding of the principles and priorities underpinning the framework guidelines and European network codes is essential.

The first step is to agree on the key priorities for market development: a list of the core priority issues to facilitate the development of a well functioning European market and regional market integration.

PRIORITY ISSUES

The framework guidelines should translate agreed priorities into guiding principles as a basis for the elaboration of network codes. Framework guidelines should define, for each priority, what solutions need to be achieved through the implementation of codes. The priorities for network codes could be grouped as follows:

- Capacity allocation, congestion management, intra-day, balancing and reserve power and transparency
- Security and reliability, grid investment plan with regional perspective and integration of RES
- Grid connection and access rules and data exchange;
- Inter-TSO compensation and tariff harmonisation

These priorities should be consistent with the next steps of the regional initiatives launched by EREGG. In **Chart A opposite**, there is a list of key priority issues, as defined by Eurelectric, concerning the integration of electricity markets in the seven European regions established by EREGG (North, Central West Europe, Central East Europe, French – UK interconnector, Central South Europe, South West Europe, Baltic and South East Europe).

Although the development of relevant codes should start in parallel, it is essential to take into account the logic of market design when the codes are drafted, in other words, the sequence in which they must be developed.

Moreover, in order to ensure implementation, network codes must be legally binding, directly applicable and enforceable.

THE ROLE OF STAKEHOLDERS IN THE PROCESS

Stakeholder involvement is essential to ensure that market development will be driven by market needs. Therefore, the consultation process should be extensive. It should start when guidelines and regulatory documents are first drafted and should end when the codes have been finalised, including periodical revisions and updates.

There must be an effective co-ordination of relevant National Regulatory Authorities (NRA) and consultations (both at regional and national level) under the auspices of the proposed Agency for Co-operation of European Regulators (ACER). During this process, the effective involvement of all relevant market stakeholders must be

Chart A

	North	CWE	CEE	F-U-I	CSE	SWE	Baltic	SEE
Market Coupling	✓	2009	Next Step	2010	2010	2009	Next Step	Next Step
Continuous Intraday Platform	✓	2009	2009	2009	2009	2009	Next Step	Next Step
LT FTR + UIOSI	2009	2009	Next Step	Next Step	Next Step	2009	Next Step	Next Step
Cross-Border Balancing	Next Step	Next Step	Next Step	Next Step	Next Step	Next Step	Next Step	Next Step
Transparency	✓	2009	2009	2009	Next Step	Next Step	Next Step	Next Step
Regional Auction Office	✓	✓	To Start Operation in 2009	Next Step	2009	Next Step	Next Step	Next Step
Regional Grid Planning	2009	Next Step	Next Step	Next Step	Next Step	Next Step	Next Step	Next Step
<i>Specific Comments</i>	Wind intergration with CWE	Transparency further harmonisat needed	Remove exp/import fees and regt. prices Increase liquidity				Implement 2nd pckg. Define auto-plan more XB interconnns.	Attract investment Develop wholesale markets, etc

SOURCE: Eurelectric

guaranteed. Apart from mechanisms normally used to take on board participant opinion (consultations, open-hearing), there are at least two additional mechanisms which should be used: the creation of a standing market panel and the establishment of “ad-hoc” expert groups.

The creation of a standing market panel would provide a balanced and efficient consultation process, since it would deliver market-based solutions and reflect stakeholders’ needs. Nevertheless, setting up such a panel would require a significant amount of effort.

The option of setting up “ad hoc” expert groups to assist ACER would also improve the consultation process. The experts should be authoritative, appointed on the basis of their expertise and experience and not on the basis of their affiliations to particular groups.

“Every relevant stakeholder should have the chance to express its view.”

Finally, it is important to emphasise that neither the creation of expert groups nor the standing market panel should replace consultation arrangements. Every relevant stakeholder should have the chance to express its view.

WHAT IS THE ROLE OF THE TSOs?

The Council of Ministers stated on 9 January 2009, that transmission system operators should have a key role in regional co-operation: to publish an investment plan,

to take investment decisions, to promote the development of energy exchanges...

“Transmission system operators shall establish regional co-operation within the ENTSO for Electricity to contribute to the activities [...] In particular they shall publish a regional investment plan every two years, and may take investment decisions based on that regional investment plan.”

“Transmission system operators shall promote operational arrangements in order to ensure the optimum management of the network and shall promote the development of energy exchanges, the allocation of cross-border capacity through non-discriminatory market based solutions, paying due attention to the specific merits of implicit auctions for short-term allocations, and the integration of balancing and reserve power mechanisms.”

There are at least two mandates missing from this. First, a 10-year network development plan **focused on market integration** and, second, putting regional socio-economic welfare as an **objective for investment** planning. In this context, the role that ACER should play is fundamental, since it should deliberately favour investment in cross-border transmission networks.

At the moment, the integration process has been approached on a bottom-up basis, starting with domestic actions, decisions and regulations, and afterwards connecting neighbouring systems (countries) after

“some kind” of harmonisation between them. But real integration requires additional efforts and a different vision. It is essential regulators and TSOs start to think in European terms. A top-down perspective, which implies a common framework design, is needed.

THE CONFLICT OF INTEREST BETWEEN SYSTEM OPERATION AND TRANSMISSION AND INCENTIVES FOR TSOs

The main justification for the EU Commission’s preference for the ownership unbundling of TSOs, is the conflict of interest between generation/supply activities and system operation, which usually results in problems regarding third-party access to the network and the insufficient level of network investment.

However, while accepting this argument, we would argue that the Commission does not take into account that even within an unbundled TSO, a different conflict of interest can arise (and in fact it does arise) due to the divergent objectives and different natures of the system operator and the transmission owner. Whereas the goal of the system operator is the security of supply, the goal of the transmission owner is profitability. This conflict is more obvious in the case of private TSOs where the objective is to maximize the return on shareholder investment.¹ Therefore, there is a need for monitoring and supervisory mechanisms, as well as the implementation of an adequate incentives scheme.²

Although ERGEG has started to work on TSO incentives, the main focus of its work so far has been on the management of interconnection capacity, mainly firmness and maximization of capacity. Obviously this is a fundamental issue, but it is not enough to foster market integration. Market participants, regulators, TSOs and Power Exchanges should stop thinking of interconnectors as distinctive parts of the network, and stop treating different price areas as different markets. New incentives should push TSOs in this direction, and should encourage common approaches to efficient operation and integration, affecting the whole network, not just international interconnections.

In this context, maximisation does not mean offering an “infinite” amount of capacity. On the contrary, a balance should be struck in order to deliver the amount of existing capacity that results in optimal social welfare. The operational incentives scheme should set targets that enable TSOs to reach a compromise between security and market integration. TSOs are the best placed entities to manage interconnection risk but, since they cannot bear the full risk, they will have to be remunerated for taking that risk.

NETWORK INVESTMENT INCENTIVES

Another aspect of the incentives scheme is the optimisation of network investment, since the development of the transmission network has not always been in line with the increase in cross-border transactions.

Future network planning faces a challenge not only to increase cross-border trade, but, even more significantly, to accommodate ambitious targets for renewable energy (see below). For these reasons, investment planning should not be a national, but a regional issue.

There are some possible regulatory tools to provide incentives for investment planning such as (i) adding investment costs to the asset base of the TSO involved; (ii) modifying standard accounting to allow accelerated returns; (iii) creating a separate asset base for major regional investments so that more targeted cost recovery is possible; (iv) prioritising regional investment projects based on the increase in European/regional socio-economic welfare.

Looking at the broader picture, the regulatory framework should provide TSOs with effective incentives to actively pursue regional integration, through the establishment of regional system operators whose scope would grow over time. These regional arrangements should include such functions as dispatching, capacity allocation, and short-term security, and extend over time to cover longer-term functions, including the production of binding regional transmission plans.

¹ This conflict of interest could be less relevant in a state-owned TSO.

² There are some examples of conflict of interest. In relation to Investment planning, the transmission network “competes” with the distribution network. Regarding operational decisions (such as maintenance disconnections), they could be taken to optimise the system or to optimise the cost of the transmission owner. In cases of security incidents, the TSO can be in charge of allocating responsibilities but also be one of the potential culprits.



It cannot be assumed that all TSOs will be enthusiastic participants in regional integration, because some TSOs may have incentives to prevent or delay measures aimed at promoting integration. The EU Commission and Regulators should create incentives for TSOs that should be financial in nature,³ and big enough to ensure that TSOs participate quickly and fully.

As stated in Article 35 of the proposed new Third Directive, the regulatory authority should ensure that system operators and system users are granted appropriate incentives, in both the short and the long term, to increase efficiencies in system performance and foster market integration. It would be worth adding “in particular by incentivising transmission system operators to perform system operation tasks in a co-ordinated way at a regional level”.

THE CHALLENGE OF INTEGRATING RENEWABLE GENERATION

The proposed Renewables Directive establishes the 20% mandatory renewable energy share in 2020 across the EU. This challenge must be seen as an opportunity for the electricity sector to re-define and update its operations. The proposed directive mandates priority of access and dispatch for renewable generation and there are good examples (e.g. Spain) which demonstrate that extensive development of renewable energy is compatible with applying the same rules on dispatch and balancing to renewable and conventional generation.

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In relation to grid expansion, renewable energy development will help reinforce networks. This is the time to ensure that both investment and licensing, for renewable installations and grid development, are aligned. Regulators should recognise the need to reinforce networks, authorising investments on a timely basis and allocating the appropriate remuneration (or authorising the necessary grid tariffs) to TSOs and DSOs.

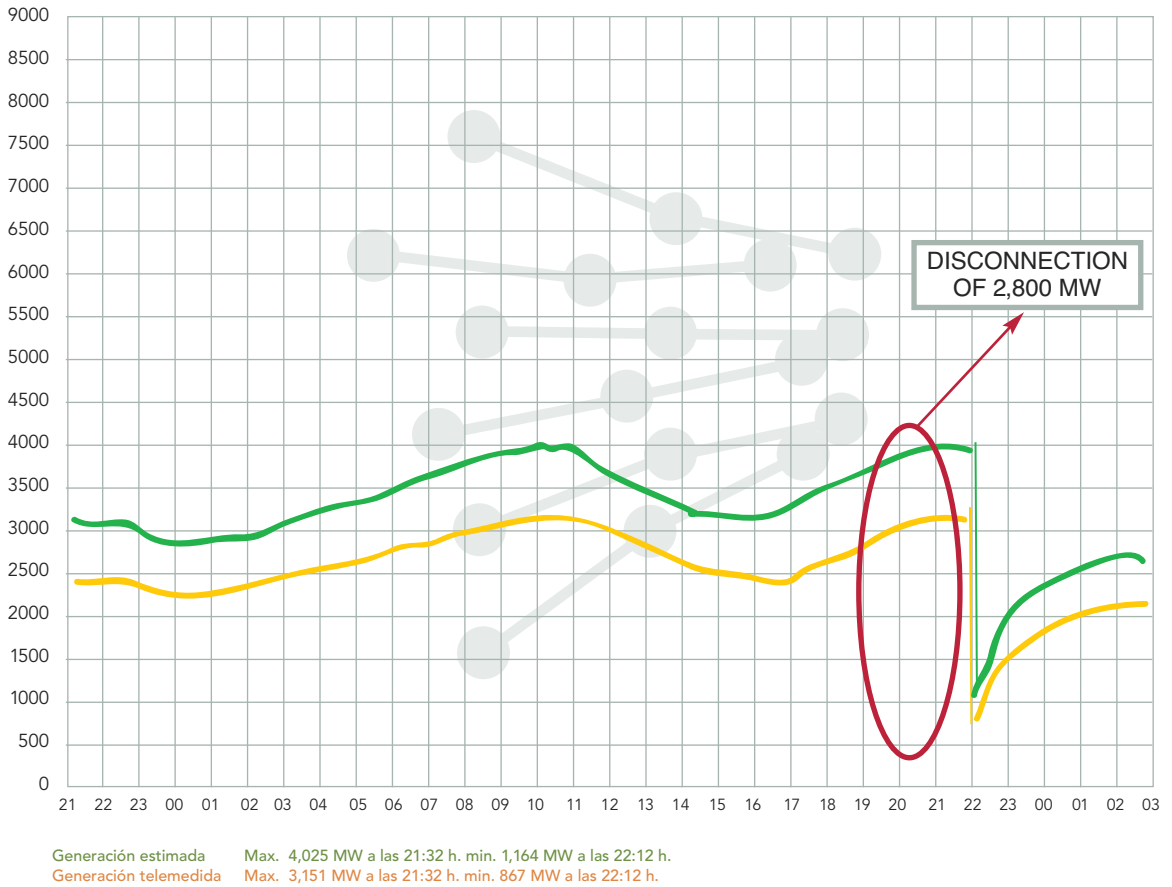
In order to have a level playing field in terms of network access, renewable and other generators should pay their share of network costs. Such costs should be transparent and fairly distributed, and should be computed for all generation technologies using the same criteria. This is independent from the support schemes for renewables, which should take into account these costs.

Additionally, renewable generators, as well as conventional units, should pay the cost of local grid connections. The decisions concerning grid connection must be based on security, quality or continuity of supply criteria, and not on the technology.

Furthermore, renewable generation should be considered an integral part of the generation portfolio and should not be treated as residual generation. The development of renewable generation is compatible with ensuring that it is subject to the same rules concerning participation in the market, and dispatch, as conventional generation. In other words, priority dispatch is not necessary and is unsustainable when renewable penetration is large. For this reason, the merit order should always be provided by the market.

³ As draft Art 36(7) of the current Directive proposal already requires.

Chart B Generacion de energia eolica – Sábado, 4 Nov 2006



Regarding balancing, the intermittency of some renewable generation, such as wind power or solar energy, implies that fossil fired generation is often required to operate as “hot reserve.” Higher balancing costs, derived from the need to keep significant amounts of stand-by generators and reserve power are inevitable as a result of large scale intermittent generation. These higher balancing costs must be recognised and should not be seen as a market malfunction.

Furthermore, significant renewable development is compatible with the same balancing and scheduling obligations as conventional plants. These obligations are the only way to introduce adequate market signals to make renewable energy manageable and to facilitate the integration of balancing and intraday markets. The integration of balancing markets is a mechanism for managing these costs, that should be complemented by the appropriate development of storage technologies.

Finally, renewable generation facilities should respect technical requirements in order to avoid risks in system security and to meet qualitative standards of supply (such as voltage, frequency, etc). One of the most notable

examples of these requirements is the resistance to voltage dips or frequency disturbances. These are small disturbances in network voltage or frequency that can appear after an incident (the incident could be, for instance, a short-circuit in a line or the disconnection of a large power station or load). Conventional generators are required and usually prepared to accommodate these disturbances. However, the behaviour of wind generators in such circumstances can be affected by variety of regulatory obligations.

One of the most recent examples of the consequences of inadequate regulatory obligations took place in November 2006, when an incident in the German HV grid caused a temporary frequency fall throughout the European electricity system.

In Spain, this led to the automatic disconnection of 2,800 MW of wind generation, due to inadequate regulatory



requirements at the time, **(See Chart B opposite)**. This lack of regulation resulted in a major power supply failure. Now, in Spain, all new wind generators are required to support voltage and frequency dips.

SOME CONCLUSIONS

The three main messages are the need for a well balanced governance process, the urgency of providing TSOs with effective incentives to actively pursue regional integration and the opportunity of using new renewable energy obligations as the justification to build the power system of the future.

In relation to the first issue, it is vital to find a proper equilibrium between rule making and supervision and to ensure that no entity finds itself in a position of being both judge and jury on any decision. Therefore, clarification of the roles and responsibilities of different entities is essential, as is finding a clear dividing line between ACER and ENTSO. Closer interaction between ACER and ENTSO will have a positive impact on the speed of the decision making process, coherence of the decisions at different levels and clarity of the messages to the market.

Regarding the incentives to TSOs, we should keep in mind that one EU energy market is not “the addition of 27 national energy systems plus cross-border management.” First, regulatory and operational arrangements must allow for the existence of multiple transmission network owners acting under a single system operator at national or (preferably) regional level. Second, it is essential to create the necessary regulations and incentives, harmonised at regional level, to adequately address the conflict of interest within an integrated transmission owner and system operator.

“The System Operator should focus on maintaining the system’s security and a high level of service.”

These incentives and regulations are basically national, but must be harmonised across Europe by ACER. Finally, in the European context, it would be worth considering

whether a System Operator independent from the transmission owner would not be the best solution. In this model, the System Operator should focus on maintaining the system’s security and a high level of service.

Finally, in relation to renewable generation there are basically two options: to consider renewables as an excuse to be conservative and as a consequence underestimate interconnection capacity and distort generation dispatch; or to consider renewables as an excuse to re-design some critical aspects: to develop grid interconnections, to integrate markets and to make the best use of technology, providing major benefits for all power system users. Only the latter approach will ensure that renewable energy can deliver its full benefits.