BARCLAYS CAPITAL

ERGEG Guidelines of Good Practice for Electricity Balancing Markets Integration

A Response to Consultation from Barclays Capital

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1 Introduction and Summary

Barclays Capital is pleased to respond to the ERGEG's consultation on the "Guidelines of Good Practice for Electricity Balancing Markets Integration". Barclays Capital - the investment banking division of Barclays Bank PLC - is a leading intermediary and liquidity provider in EU power markets, the EU emissions allowances market and the UK gas market.

Barclays Capital fully supports ERGEG's initiative to address the barriers to competition associated with the lack of integration of national electricity markets and the associated balancing regimes. Alongside the twin priorities of information transparency and efficient cross-border capacity allocation and usage, the successful integration of EU markets will rely on extending the markets closer to the point of delivery, removing existing limits on participation in within day-markets and harmonising market timetables and rules. After gate closure, it is also essential to provide efficient, transparent and non-penal balancing arrangements to resolve residual imbalances and system constraints and to send efficient price signals to the short-term forward markets. The vision of common balancing market - and a set of guidelines to facilitate this – therefore provides a useful benchmark for developing national rules that evolve towards a more integrated, harmonised single electricity market.

In section 2 below, we offer some general observations on balancing market integration in the context of the wider scope and priorities for achieving greater market integration. In the subsequent two sections, we then provide some comments on the document and draft guidelines respectively (under the headings provided in the consultation document).

2 Scope and Priorities

We note that the guidelines focus solely on balancing arrangements for manually activated power reserves and that the development of intraday markets, automatically activated power reserves and ancillary services fall outside the scope of these guidelines. While we understand the need to focus the discussion on this topic, it cannot be entirely divorced from consideration of these other issues. For example, the scope of the balancing arrangements depends inextricably on the scope of the wholesale markets and, specifically, the extent to which they extend intra-day. As a result, in some markets, the balancing arrangements are restricted to very short time periods with gate closures as short as an hour before delivery, whereas in others gate closure is effectively day-ahead with the balancing arrangements extending to the whole day. As the experience in Nordpool demonstrates, it is also possible to achieve a geographically integrated market, which extends seamlessly within day (via Elbas), while at the same time accommodating slightly different balancing arrangements. To this end, while a focus on balancing market integration is welcome it should not detract from the priorities of extending the scope for competition between national markets by maximising the scope for effective cross-border competition, providing greater information transparency and extending the scope of the markets within day.

We would also highlight the inherent difficulty in drawing a "bright line" distinction between manually activated power reserves and automatically activated power reserves and "ancillary services". All of these services (including manual activated balancing) are part of a continuum of responses across three separate dimensions:

- **The dynamics (notice and profile) of delivery**, eg, primary frequency response will often be delivered automatically second-by-second, whereas a balancing action may be instructed with notice and sustained for a prolonged period
- **The product being provided**, ie, active versus reactive power, the creation of reserve versus energy etc.
- **The delivery location**, ie, management of thermal constraints and/or local voltage support (eg, by reactive power provision).

However, markets are essentially based on a "plain vanilla" MWh delivered flat across the settlement period (of an hour, half-hour etc) and to be consistent, balancing prices should also – as far as possible –

attempt to strip out the impact of the dimensions described above to identify the marginal cost of a MWh delivered flat across the settlement period. Since many of these services involve or affect the delivery of active energy as a "joint product", it is complex – if not impossible - to distinguish between energy-related actions to meet an imbalance and "system" driven actions (eg, to resolve constraints or manage frequency). For example, if the system operator pays separately for the "ancillary service" of operating reserve, the energy prices associated with the delivery of active power if required in the balancing mechanism may understate the true value (in both capacity and energy terms) of the delivered MWh. Similarly, the acceptance of an offer from a generator in an isolated part of the system to manage a local voltage problem should not set the benchmark imbalance price for the entire market.

In developing efficient balancing arrangements, it is therefore essential to establish criteria and rules that draw a distinction between energy and system actions, to ensure that imbalance prices (based on the cost of balancing actions) send an economic signal to the forward markets on the true marginal cost of balancing energy. This can be done in several ways from ad hoc rules to "tag out" certain actions and to add back other costs into imbalance prices (eg, as under NETA in the UK) or complex optimisation algorithms generating "shadow" prices for reserve, location and reactive power provision.

In moving towards the ultimate integration of balancing mechanisms, there will therefore be a need to move beyond the proposed Guidelines on high-level principles and the steps required for integration, to very detailed analysis, discussion and guidance on the specific rules and procedures that will ensure efficient balancing mechanism design.

3 Principles and Benefits of Efficient Balancing Markets

3.1 Fundamental Features

The description of the fundamental features of balancing "markets" effectively compounds two separate - but equally fundamental – functions that they fulfil:

- Operational security, ie, the need for a **Balancing Mechanism** to coordinate short-term plant dispatch to balance supply and demand; and
- **Imbalance settlement**, ie, the requirement for a centralised system for reconciling differences between market participants' offtakes and deliveries to the transmission system.

The second factor is an equally fundamental and essential requirement of all electricity systems to prevent participants from free-riding on the network by taking more or delivering less than they have contracted for (since electricity is delivered "automatically" via the grid, unlike other commodities). Moreover, the price for imbalance settlement has a fundamental economic role in electricity markets, since the imbalance price represents the opportunity cost of contracting for power in advance of delivery, ie, a failure to contract will incur the imbalance cash-out price.

It would therefore be useful to identify these two separate functions explicitly in the discussion of the "fundamental features" of balancing markets generically and to maintain a clear distinction between the two concepts in the rest of the document. This will avoid potential confusion in some places, for example:

- the first paragraph of the section on "balancing mechanisms" seems more focused on imbalance settlement;
- the third paragraph of the balancing mechanisms section, seems to be referring to the mandatory nature of imbalance settlement (which is essential) rather than an obligation to participate in the "balancing mechanism" by making bids and offers (which is usually voluntary).
- the governance procedures should apply both to the balancing mechanism and imbalance settlement rules and allow all market participants (and potentially other stakeholders) to propose modifications rather than "parties to the balancing market" (which could be construed narrowly as balancing mechanism participants)

3.2 Balancing Mechanisms and Imbalance Arrangements

As discussed in the previous section, imbalance prices play a crucial role in providing market participants with appropriate incentives to contract in forward markets. The basis on which imbalances prices are set is therefore a crucial determinant in the overall efficiency of the market. The overriding objective is to ensure that imbalance prices send an efficient balancing signal to ensure that market participant have an efficient incentive to avoid being out of balance while accepting that imbalances are naturally likely to arise within any electricity system. By contrast, many existing balancing arrangements either impose an absolute obligation on participants to balance and/or penalise market participants at non-market based rates for being out of balance. While these mechanisms can apparently minimise the costs to the system operator, they can also lead to significant inefficiencies elsewhere in the system. For example, although setting imbalance prices for shortages at €1 million/MWh would certainly minimise any residual shortfall faced by the system operator, it would do so at the cost of market participants going into imbalance settlement massively long as they over-contract to avoid any possibility of being short (and/or invest in expensive and unnecessary control systems). This would clearly be hugely inefficient, environmentally damaging (as the volume of part-loaded plant increases) and unpopular with customers (who would face massively increased prices).

To preserve economic efficiency, and to promote effective competition, imbalance prices should therefore be based on the opportunity (ie, marginal) cost to the system operator of buying additional electricity to meet a shortfall (or selling electricity back to market participants to dispose of a surplus) to provide market participants with the correct balancing signals. Any price above or below marginal cost will, by definition, be less efficient since it would incentivise participants to pay more (less) in the forward market than the cost of resolving the imbalance which would ultimately lead to inefficient dispatch.

These observations have several consequences for the description of balancing mechanisms in the guidelines, eg:

- Balancing markets should be designed to ensure that market participants have the correct incentives to manage their imbalance exposure rather than to "minimize their contribution to the overall costs of the balancing mechanism";
- Minimising the "amount of balancing energy needed" does not necessarily minimise "the overall balancing costs" (taken more broadly to include the costs market participants incur in avoiding imbalance exposure); and
- Although the cost of resolving a generator (or supplier) shortage might at times "be relatively high compared to the price which the generator might receive for production" at other times it might be relatively low.

For similar reasons, it would be highly inefficient to deal with the cost of imbalances "by distributing them across all users" (as described in the imbalance arrangements section). The overriding objective is to maintain the integrity and efficiency of the imbalance incentive rather than "allocating the costs" incurred by the system operator.

4 Comments on the Guidelines

4.1 General Comment: Expanded Treatment of Imbalance Settlement

As discussed above, the guidelines and explanatory document should maintain a clear distinction between balancing mechanisms and imbalance settlement arrangements. Although the explanatory document largely focuses on imbalance settlement, by contrast the Guidelines themselves focus almost exclusively on balancing mechanism operation. ERGEG should therefore expand the Guidelines to include a new section on the integration of imbalance settlement arrangements. While some of the issues

covered (eg, settlement period) should be common to the balancing mechanism, there are other principles, eg, the basis for calculating the imbalance price that should be drawn out explicitly in a separate section. As described above, these fundamental principles for imbalance prices should include:

- There should not be absolute obligations to be balanced (often enforced by the threat of removing a market participant's status as a balance responsible entity);
- Imbalance prices should not be penal;
- Imbalance prices should send an efficient economic signal based on the opportunity cost incurred by the system operator in balancing the system;
- Imbalance prices should be set on a consistent basis to the forward market trading periods and account clearly and transparently for the different dimensions associated with delivery dynamics, associated products (including reactive power) and the impact of location.

4.2 General Principles: Non-Discrimination

We agree that balancing markets should be non-discriminatory and, to this end, it is important that traders as well as physical players can participate fully in the balancing mechanism and/or imbalance cash-out.

Many markets currently exclude traders from the balancing arrangements on the basis that they are not "physical" players. In practice, this distinction is questionable. Traders may have purchased physical options from generators and consumers to deliver additional power and/or to reduce consumption or may have acquired a long power position (ultimately backed by actual generation) in previous markets. Any trader failing to deliver the balancing power would also face the strong incentive of having to make good on the deficit at the prevailing imbalance price. In practice, this is no different to a generator failing to deliver on a sale of balancing power and being responsible for making good the shortfall at the imbalance price.

Allowing traders to participate in the balancing mechanism can significantly improve the efficiency of the market. This has been demonstrated by recent events in Spain where regulatory constraints on supply utilities, which limit the costs that they can recover from customers, have led Iberdrola to under-schedule load in the day-ahead market by bidding at the price that they are allowed to recover (which is significantly below the clearing prices). The consequence is that significant volumes of power instead flow through the balancing arrangements (where the purchase costs can be recovered). This significantly distorts the day-ahead market (where prices are unduly low) and balancing markets (where prices are unduly high). This also threatens to jeopardise security of supply due to the increased difficulty of scheduling large volumes of generation in short-term markets.

Allowing traders to participate in the balancing market would allow this distortion to be corrected by efficient arbitrage between the day-ahead and balancing markets. Indeed, when a similar situation arose in California in 2000 (due to essentially similar regulatory constraints), the system operator actively encouraged traders to fulfil this role to protect security of supply. Although the Spanish and Californian examples represent extreme distortions caused by regulatory constraints, the inability of traders to deliver into the balancing mechanism and/or penal imbalance settlement arrangements in many other markets prevents the efficient arbitrage between forward and balancing markets. In addition to removing systematic pricing distortions between forward and balancing markets, allowing traders to participate in the balancing mechanisms on the same basis as generators and suppliers also offers the following benefits:

- Increased **security of supply** by ensuring that forward prices (and hence scheduled generation) is efficient relative to the balancing actions required;
- Increased **competition** in the balancing mechanism, thereby limiting market power;
- Increased **forward market liquidity** as traders become more willing to trade in short-term markets because of the fallback option to take any open positions into the balancing mechanism

or imbalance settlement (rather than being forced to close out positions in, often illiquid, short-term forward markets).

For these reasons, we would like the Guidelines to incorporate the principle that non-discrimination requires that traders (and other market participants) should be allowed to participate on exactly the same basis as generators (and suppliers).

4.3 Balancing Mechanisms

4.3.1 Acquisition of transmission capacity for balancing purposes

As we have argued elsewhere[1], effective cross-border competition depends crucially on TSOs allocating the maximum amount of available transmission capacity to the market in advance of delivery in order that participants can efficiently hedge their forward cross-border purchases and sales, thereby promoting effective competition. To this end, we would strongly disagree with the notion of that "a certain amount of capacity can be reserved for balancing purposes by the TSOs". We already have strong concerns about the current practices of TSOs in retaining excessive contingency margins in the calculation and allocation of cross-border capacity and believe that Regulators need to investigate TSOs practices in this regard further. Specifically, we are concerned that TSOs use the withholding of capacity as a "free option" which lets them avoid the cost of procuring spinning reserve from generators. (Indeed the ability to reserve capacity for balancing is tantamount to the system operator having the right to requisition a portion of a generator's capacity for balancing purposes at zero cost.) Consequently, the TSOs should not only allocate 100 per cent of capacity forward, but in balancing the system they should be required to treat offers from interconnector users in entirely the same way as they would a generator, for example:

- If the interconnector (or generating unit) is fully committed in advance, then the availability of balancing would be limited to downward regulation (ie, with the users or generator "buying back" surplus power from the system);
- If the system operator wants to hold operating reserve on an interconnector (or generating unit) which is fully committed in advance, then they would be required to accept a bid from the user (or generator) to buy back electricity to create the "headroom" to accept a subsequent offer should it be required in real-time; and
- If the interconnector (or generating unit) were not fully committed in advance, the system operator would have the opportunity to accept offers up to the relevant capacity (with the "spare" interconnector capacity being made available to potential participants in advance or concurrently with the acceptance of the offer).

For similar reasons, we are concerned by the comment on page 10 that "whether the interconnection capacity should be reserved for balancing purposes in advance must be determined within the competitive market framework". As described above, we cannot envisage a circumstance under which capacity needs to be explicitly ring-fenced for balancing purposes.

At the same time, TSOs should also be given the flexibility to use the secondary capacity market as an alternative to balancing actions, eg, to manage constraints. For example, in the UK, NGT will occasionally make purchases from interconnector users to back down exports to France as an alternative to buy balancing power from high priced generators in the south of England to manage transmission constraints. This is both efficient and increases competition for "balancing" (although the purchases take place before gate closure).

[1] "Competition in EU Electricity Market", Submission by Barclays Capital to DG Energy and Transport, 29 July 2005.

4.3.2 Efficiency and Competition

As with the detailed rules for setting the imbalance price, we agree that it will be essential to harmonise the payment arrangements for balancing actions. To this end, market-clearing prices should be a strong preference (subject to appropriate rules to strip out the impact of non-energy components associated with location, dynamics and reactive power provision). Pay-as-bid systems will generally only be as efficient as market clearing prices if generators have perfect information on the likely balancing clearing price in real-time. In the (likely) absence of this information, there is a risk of inefficiency if relatively expensive generators underestimate the clearing price and are run in preference to cheaper generators that have overestimated the clearing price.

In harmonising the imbalance pricing structure, there should also be a strong preference for a single imbalance price, which captures both the price of energy and capacity. This ensures that forward markets receive a consistent signal on the value of capacity that is factored into the prices received by all plants. This is essential for long-term system security because of the risk of accelerated closure or insufficient build of infra-marginal plants, if only the most-expensive (ie, least efficient) plants can capture a separate capacity value for providing reserve. It also helps to avoid the (not inconsiderable) difficulties associated with verifying the availability of capacity separately from the provision of energy and in setting an appropriate price for capacity shortfalls should plant being paid for capacity not be available to supply energy when called to do so.

4.4 Transparency and Information Management

We fully support ERGEG's ongoing commitment to ensure the availability of crucial market information. As we have argued elsewhere[2], disaggregated information on production at the level of individual generating units is essential to understanding the evolution of market prices. This principle extends equally to the balancing arrangements. To understand the evolution of imbalance cash-out prices – and their consequent impact on short-term forward prices - it is essential to have prompt (ie, real-time) information on balancing mechanism acceptances on a unit-by-unit basis. This allows market participants to promptly calculate – and if necessary respond to – the evolution of the imbalance prices and/or the prices paid by the SO for balancing actions (in a pay-as-bid system). To this end, the table should be amended to specify that the "volumes of bids and offers used" is to be provided real-time on a unit-by-unit basis for each balancing mechanism time unit rather than in aggregate.[3]

This detailed level of transparency is also essential to ensuring that "transparency of operations in the market by players will enable other players and the regulators to expose and therefore discourage any anti-competitive behaviour" (page 6). This will not be possible if data on balancing mechanism acceptances is only provided in aggregate form.

4.5 Options for the Integration of Balancing Markets

In respect of the options for achieving integration, the third option must be the ultimate goal (although the second option may provide a transitional route).

[2] "ERGEG Guidelines for Good Practice on Information Management and Transparency in Electricity Markets", A Response to Consultation from Barclays Capital.

[3] This feature is included within the NETA arrangements in the UK.