



Jamie Black and Andreas Flamm

GB Markets

Ofgem

9 Millbank

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Dear Jamie and Andreas,

On behalf of Wärtsilä Corporation, we welcome the launch of the Significant Code Review (SCR) on Electricity Balancing arrangements, and the opportunity both to participate in the stakeholder workshops and to provide our response to the Initial Consultation. As providers of innovative flexible power generation technologies, we are particularly interested in the arrangements affecting the demand for and provision of efficient and flexible generation capacity. The GB system faces a significant challenge to efficiently integrate increasing levels of intermittent generation in the next decade and beyond, and we see flexible supply side resources as an important part of the mix. We note that the SCR comes at a time of significant change under EMR, and there are close interactions with the Capacity Mechanism in particular. Given that the Capacity Mechanism is focused on capacity adequacy, it is crucial that the SCR has a strong focus on ensuring that the required flexibility can be brought forward at least cost to consumers.

We are pleased to see that Ofgem is undertaking a more holistic review of the GB electricity balancing arrangements instead of focusing on addressing the issues with cash-out alone. In particular, we consider the procurement and pricing of reserve services to be too large an interaction to be omitted from the review, and therefore we welcome inclusion of a day-ahead reserve market within scope. While we broadly agree with Ofgem's objectives for the review, we consider that an explicit objective of the SCR should be to enable the efficient integration of new intermittent sources of generation given that increasing intermittency will present a key flexibility challenge in future. Further, we note Ofgem's objective to comply with the final European Framework

Guideline on Electricity Balancing (EBFG), and we would advise against pursuing any options which may need to be changed at a later date.

We support the general direction of travel towards more 'market-based' and cost reflective electricity balancing arrangements, as it will encourage the required flexibility to come forward. Having market-based balancing arrangements in place will be critical in terms of providing accurate signals of the value of flexibility in future.

We have engaged Redpoint Energy and Imperial College to undertake modelling of the GB system out to 2030, to gain an understanding of the value of flexibility across a number of scenarios, as well as the potential impact of the current cash-out arrangements on total system costs. We analysed savings in reserve cost in BSUoS with flexible supply side capacity, by replacing 4.8 GW of CCGT capacity with 4.8 GW of Smart Power Generation (SPG). We estimate that the introduction of SPG could reduce the reserve costs in BSUoS by £381mn in 2020 in a Base Wind scenario, and by £545mn under a High Wind scenario. Further, we find that there is a real cost to the so-called 'free' headroom that is partly a symptom of the current cash-out arrangements. A summary of the assumptions, methodology and results is contained in the Modelling Annex, which we attach to this response.

In our view, the fundamental question of whether a narrow or wide approach should be adopted as part of the SCR still needs to be resolved. We have considered from the bottom-up whether more market based balancing arrangements can be delivered using a 'narrow' approach with the current Balancing Mechanism, or whether the practical difficulties are such that achievement of the SCR objectives may be undermined. Our observations are that:

- Fully marginal cash-out (PAR 1) may not be practically feasible given the residual uncertainty in system action flagging and reserve cost allocation. This may not meet the twin objectives of incentivising an efficient level of security of supply and increasing the efficiency of balancing.
- It does not appear that a pay-as-cleared pricing methodology could be adopted under the current BM (given that procurement takes place on a continuous bilateral basis rather than via an auction), and pay-as-bid for balancing energy would not be compliant with the current EBFG.
- More generally, we are not convinced that even a 'best case package' of reforms under a narrow approach could produce a set of balancing arrangements that would remain fit-for-purpose in the future with increasing intermittent generation on the system.

In our view the SCR objectives could be better achieved if Ofgem were to depart from the narrow approach and instead pursue new approaches to balancing. We have put forward a coherent package of reforms that attempts to overcome some of the practical difficulties under the narrow approach, as well as delivering more fit-for-purpose arrangements in future and in accordance with the EBFG. The key elements of our proposed package are as follows:

- Market splitting to price the most material transmission constraints, so as to reduce the scope for system actions to distort the cash-out price
- A Balancing Energy Market held at gate closure to resolve a forecast Net Imbalance Volume based on a single marginal clearing price
- A Day-Ahead Reserve Market to allow the SO to procure its dynamic daily reserve requirement
- An information imbalance charge to target the costs of post gate closure actions

While we have not undertaken a thorough review of every design possibility, we have considered the detailed design issues raised as part of the consultation and developed what we consider to be a workable 'strawman'. We consider that this package of wider reforms better facilitates achievement of the SCR objectives. Fully marginal cash-out based on the BEM would meet the objectives of incentivising an efficient level of security of supply and increasing the efficiency of balancing. This package would be fully compliant with the EBF, both in terms of the firm requirements as well as the general direction of travel. It would incentivise investments in the flexibility required in future with increased intermittent generation on the system, and could create the conditions for a more competitive, transparent and liquid market.

We would welcome the opportunity to explain any aspect of this submission, or discuss the merits of other options further at your request.

Yours sincerely,



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