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Dear Ian,

Transmission Constraint Licence Condition Guidance

Thank you for the opportunity to respond to the above consultation. We recognise the need for a *temporary* and *targeted* licence condition to mitigate potential issues with market power in the balancing mechanism (BM). However, we also believe that the TCLC represents a significant regulatory intervention in dispatching and pricing decisions, and it is crucial that the enforcement of the condition does not create any undue uncertainty for generators.

Judging from the consultation paper, we believe that Ofgem has not fully appreciated the range of difficulties involved in implementing the condition. To monitor compliance with the TCLC, Ofgem will need to estimate the short run marginal costs of generators and the optimal dispatch of the system at particular points in time. This is a very difficult exercise in practice, and there is a real risk that Ofgem will misjudge the profitability of generators, leading to unnecessary inquiries and, potentially, mistaken findings. The resulting uncertainty might deter generators from participating in the BM where they have the option not to. This would eventually *increase* the cost of resolving constraints and defeat the very purpose of the condition.

We would like to suggest some options to mitigate this risk.

– **Firstly, Ofgem should only penalise generators who have engaged in behaviours that are *manifestly* abusive**. Ofgem will be faced with substantial uncertainty when modelling the optimal dispatch of the system (or when deciding whether a bid is reasonable or not). If generators believe that there is a risk of being unduly penalised (or even merely investigated) when they have only engaged in normal competitive conduct, they might decide not to participate in the BM. For this reason, we believe that the standard of evidence required for proving a breach of the condition should be high.

– **Secondly, Ofgem's market-monitoring tools should reflect the realities of the system**. This paper makes a number of suggestions on how to design and calibrate these tools, and we are happy to engage further with Ofgem to ensure that the monitoring methodology is fit for purpose.

– **Thirdly, Ofgem should allow the generators investigated to be represented at the relevant meetings of the Authority**. Any sanctions taken under the TCLC would have very serious implications for the party found in breach of the condition. As such, it is crucial that the generators investigated be able to explain their positions to the Authority.

– **Fourthly, Ofgem should require that National Grid 'flag' constraints to generators**. The generators located behind constraints would then know that the TCLC apply and that their dispatch and pricing decisions need to be compliant with the condition. This would require National Grid to have a clear definition of import and export constraints.

We also believe that the TCLC could have broader repercussions for the design of the GB market. More specifically, we are concerned that the TCLC might suppress locational price signals in the market, insofar as it will prevent generators from arbitrating between the energy market and the BM. In effect, this will prevent generators located in import-constrained areas from capturing the locational value of their capacity in the BM. We are concerned that this will further dampen locational signals in the GB market at a time when Ofgem is already proposing to water down such signals in transmission charges as part of TransmiT. We do not believe that the BM is necessarily the appropriate mechanism for generating locational signals, but we are concerned that the combination of the TCLC and TransmiT could create a gap in market arrangements in this respect. As such, we believe that the introduction of the TCLC makes it all the more necessary to preserve the existing methodology for transmission charging.

I hope that these comments are useful. Do not hesitate to contact me if you have any questions.

Yours sincerely,

By e-mail

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Annexe

Question 1: Do you agree with our interpretation of uneconomic dispatch?

We think that three conditions should be met for Ofgem to consider that circumstance 1 has occurred:

– a generator has made a dispatch decision that is *manifestly* uneconomic;

– this dispatch decision has exacerbated a transmission constraint; and

– the generator has *substantially* benefited from this transmission constraint.

The first of these conditions might be met if the generator has dispatched a plant that is 'out of the money', or if it has withheld a plant that is 'in the money'. We comment on Ofgem's proposed methodology for assessing the short-term profitability of plants below (see our answer to question 3). This assessment involves considerable uncertainty, which is why we think that the threshold for considering that this circumstance has occurred should be quite high.

Ofgem seems to imply that dispatch decisions should depend on the *relative* profitability of different plants in a given generator's portfolio. For example Ofgem states that this condition might be breached if a generator dispatches a coal-fired plant in a certain location when it would have been more economic to dispatch a gas-fired plant in a different location.[1] The rationale for this statement is not clear to us. In principle, generators should be expected to despatch all plants that are 'in the money' (and only plants that are in the money) without any consideration of relative profitability.

Question 2: Is the use of 'within-day' fuel and electricity prices to calculate generation profitability the most realistic approach?

Thermal generators tend to make their dispatch decisions based on day-ahead prices, and then re-optimise their dispatch closer to real time if within-day prices depart significantly from day-ahead prices. This is primarily because generators need to optimise their dispatch throughout the day rather than for individual half-hours (to account for ramp-up costs, minimum run time, etc), which is easier to do at the day-ahead stage when they have an overview of prices for various 'blocks' over the day. This is also because the day-ahead market is more liquid than the within-day market.

For these reasons, we are not convinced that within-day prices are the appropriate reference to consider when modelling optimal dispatch decisions. Suppose for example that within-day prices show a sudden spike which was not anticipated at the day-ahead stage; some generators might still decide not to dispatch their plants, for example if they cannot capture this high price due to low liquidity, or if the price spike occurs too suddenly for them to ramp up their plants. Considering this decision as uneconomic would clearly be mistaken.

A sensible approach would be to start by using day-ahead prices to simulate an optimal dispatch. If this initial run indicates uneconomic decisions for certain plants, Ofgem could then test the results using within-day prices.

Question 3: What other costs, if any, should be included in our initial analysis of dispatch decisions?

[1] Ofgem (2011), 'TCLC guidance', paragraph 22.

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We believe that the list of costs proposed by Ofgem overlooks a number of important items that generators take into account when making despatch decisions. As it stands, Ofgem's proposed approach risks overestimating the profitability of plants and, therefore, the number of hours in which they are supposed to run.

We suggest that Ofgem incorporate the following factors in the assessment.

– **Start-up costs**. Start-up costs represent the incremental cost of starting generation at a thermal plant. They primarily depend on physical wear and tear and maintenance costs (for example certain gas turbines are designed to undergo heavy maintenance after a given number of starts). They are normally expressed in pounds per start, although for certain plants generators might use different values for alternative running patterns. They typically amount to several thousands of pounds per start and are a very significant factor in dispatch decisions, especially for plants that are marginal. In economic terms, they represent an 'investment' incurred in starting the plant, which must be recovered over the expected running time.

– **Ramp-up costs**. Ramp-up costs represent the incremental cost of bringing a plant to its desired level of output. For example, if a generator wants to capture a positive spread in block 5, it might have to ramp up the plant progressively over the hours preceding block 5. The ramp-up period for a CCGT is typically 1 to 2 hours if the plant is already operational, and 4 to 5 hours if the plant is 'cold'. During the ramp-up period, the efficiency of the plant will be relatively low, and the revenues from the generated output might not cover the fuel costs. Ramp-up costs also represent an 'investment' incurred when starting the plant that has to be recovered over the expected running time. However, unlike start-up costs they depend on prevailing market conditions during the ramp-up phase, and on the initial state of the plant, which is why they are typically considered separately.

– **Balancing risk**. Once a generator has committed to despatch a plant, it is exposed to the risk that the plant might fail in real time and it has to pay the System Buy Price in the balancing mechanism. This risk will depend on the reliability of plants and the expected cash out price, but it also has to be factored in the dispatch decision.

– **Variable maintenance costs.** Generators may also factor in variable maintenance costs, which vary per plant but are typically under £1 per MWh.

– **Electricity system costs.** Generators also incur system costs that they need to factor into their SRMC: BSUoS charges (generators may have different assumptions about these, but they may amount to several pounds per MWh at certain times); and losses (typically between 1 and 2% of metered output, depending on whether the plant is embedded or not)

– **Gas transmission charges**. Gas-fired plants also pay NTS commodity charges, so that every MWh that leaves the NTS generates an incremental cost. The current exit charge is £0.25 per MWh. Certain gas-fired stations are 'embedded' and therefore attract further distribution charges.

Certain types of technologies might face additional constraints.

– **Nuclear plants** might face particular risks due to their inflexibility, which should also be taken into account. In general, nuclear plants tend to be relatively unresponsive to short-term price signals, and therefore we would not recommend applying the same methodology to these plants.

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– **CHP plants** tend to be dispatched to follow their heat load rather than to capture price spreads in the electricity market. Some CHP plants can operate in condensation mode (ie to generate electricity only), but that is usually at poor efficiencies and subject to particular constraints.

The subsidies for renewable generation should include not only Renewable Obligation Certificates (ROCs), but also Levy Exemption Certificates (LECs) and embedded benefits, where relevant.

Question 4: Are there any further important arguments that provide objective justification for uneconomic dispatch?

The factors identified by Ofgem (outages, LCPD effects, and supply chain logistics) are all potentially relevant. However, there might be other factors involved in dispatch decisions (eg compliance testing, commissioning phases, etc) and these will have to be assessed on a case-by-case basis.

Question 5: Are there any objective justifications cited above which should not be considered in our assessment?

No.

Question 6: Do you agree that the indicators outlined above are useful for Ofgem to consider when determining whether the bids are excessive or not?

We agree that Ofgem should consider both avoidable costs and external benchmarks in determining whether a particular bid is excessive or not. In principle, the factors used to estimate avoidable costs should be the same as those used to estimate the SRMC assumption that feeds into the simulation of the optimal dispatch (see our answer to question 3).

We would welcome more guidance on what will be considered a 'reasonable profit'. The traditional economic justification for market prices above SRMC is the recovery of fixed costs and the remuneration of capital. We believe that this justification applies to bids and offers placed in the BM, in the sense that profits from balancing actions will contribute to the recovery of fixed costs for thermal plants. However, from a practical point of view it is not possible to identify the value of capital that is needed specifically to support the generators' participation in the BM. We also think that the profit margin should provide a positive incentive for generators to participate in the BM, and therefore that Ofgem should 'aim high' when setting this figure.

One possible approach would be to estimate the profit margin realised by generators when there are no transmission constraints, or when there are constraints but there is sufficient competition for the provision of balancing services. Ideally, this analysis would be done for each generator separately (or at least for different categories of generators facing comparable technical constraints). There might be specific issues for certain technologies. For example wind farms have to make specific investments to participate in the BM, and there is no track record on the effect of being constrained off on maintenance costs for wind turbines; this might warrant a higher profit margin. For peaking plants, BM revenues might also be needed for fixed cost recovery.

Question 7: Are there other factors or indicators that Ofgem should consider in interpreting this circumstance?

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When estimating avoidable costs for wind generators Ofgem should also consider the following factors (in addition to the items mentioned in the consultation paper).

– **Levy Exemption Certificates (LECs).** LECs are evidence of electricity generated from qualifying renewable sources that is exempt from the Climate Change Levy. They are an additional source of revenue for renewable generators and should therefore be factored in the opportunity cost of being constrained off. They are currently worth £4.85/MWh.

– **Embedded benefits.** Generators connected to the distribution network might receive embedded benefits on a per MWh basis. This value varies over time and for different generators, but it should also be included into the opportunity cost of not generating.

– **Operational risk.** For wind generators there is typically a risk that generation cannot be restarted immediately once the balancing action has been executed. Where this is the case Ofgem's estimate of avoidable costs should also include a probability-weighted estimate of the foregone revenues and costs associated with such events. We anticipate that the uncertainty surrounding this item will be reduced over time as wind generators get more experience on the behaviour of their equipment during balancing actions.

Question 8: Are there any further important arguments that provide objective justification for seemingly high bids?

As mentioned in the consultation, there might be contractual issues that prevent renewable generators from participating in the BM at competitive prices. Nuclear generators face considerable risks in varying their outputs to accommodate transmission constraints, which may justify high bids.

Question 9: Are there any objective justifications cited above which should not be considered in our assessment?

No

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