

Modification proposal:	Balancing and Settlement Code (BSC): Introduction of a seasonal Zonal Transmission Losses scheme (P350)		
Decision:	The Authority ¹ directs that this modification be made ²		
Target audience:	National Grid Transmission Plc (NGET), Parties to the BSC, the BSC Panel and other interested parties		
Date of publication:	24 March 2017	Implementation date:	1 April 2018

Background

The CMA Energy Market Investigation

This code modification proposal³ was raised as a result of the Competition and Markets Authority (CMA) energy market investigation which, in June 2016, concluded that the absence of locational pricing for transmission losses has an adverse effect on competition. Identified effects include the distortion of competition amongst generators according to location, potential inefficiencies in location of demand, and ultimately higher consumer bills. The CMA found that:

- in the short run, costs are higher than would otherwise be the case, because cross-subsidisation leads to some plants generating when it would be less costly overall for them not to generate, and other plants not generating when it would be more efficient to use them.
- in the long run, the absence of locational pricing may lead to inefficient investment in generation, including inefficient decisions over the extension or closure of plant. This could also contribute to inefficiency in the location of demand.

The CMA's remedy introduces locational charging for transmission losses in Great Britain, applying the solution proposed under a previous modification proposal, P229,⁴ with some amendments. The high-level objective is to help ensure that competitive pressures are brought to bear on the wholesale cost of electricity, reducing the prices paid by electricity customers. The CMA's analysis suggests that over the period 2017 to 2026, the introduction of locational charges for losses will reduce the total costs of meeting the electricity demand of customers in Great Britain by between £130 million and £160 million.

To implement the remedy, the CMA placed an order (the Locational Pricing Order) on NGET as well as making amendments to NGET's licence conditions that require NGET to ensure that, at all times, imbalance charges (and specifically the estimated volumes of imbalance) are calculated such as to be locationally sensitive to transmission losses. The order, and licence provisions introduced under the order, also required NGET to raise a code modification proposal to modify the BSC in line with P229 (subject to minor specified differences to deal with developments since then) and use its best endeavours to ensure that the modification is adopted and implemented by 31 March 2018. In addition, the order also imposed a licence obligation on NGET to set its charges in accordance with the principles in the code modification proposal, notwithstanding the provisions of the BSC, if the modification was not adopted by 31 March 2018.

¹ References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.

² This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

³ The records and reports for P350 can be found at <https://www.elexon.co.uk/mod-proposal/p350/>

⁴ The details of P229 can be found at <https://www.elexon.co.uk/mod-proposal/p229-introduction-of-a-seasonal-zonal-transmission-losses-scheme/>

Previous proposed modifications

Several BSC modification proposals have previously been raised to reform the allocation of transmission losses, ultimately without delivering change. Most recently, P229 'Introduction of a seasonal Zonal Transmission Losses scheme' was raised in 2008, based on modification proposal P203.⁵ The P229 Workgroup developed an Alternative Modification based on P204.⁶ The Authority rejected P229 in 2011.⁷

The modification proposal

NGET raised P350 on 4 July 2016. P350 proposes to introduce a method for calculating a Transmission Loss Factor (TLF) in order to allocate transmission losses on a geographical basis. This TLF will be calculated for each TLF Zone for each BSC Season and will align with the existing Grid Supply Point (GSP) Groups. This change to the TLF impacts on the variable losses element of the Transmission Loss Multiplier (TLM) which is used to adjust network users' metered volumes. The fixed losses element of the TLM remains unchanged by P350.⁸

Since the original progression of P229, there have been material developments in three key areas: the treatment of interconnectors, provisions for HVDC circuits, and Contracts for Difference (CFDs). The CMA asked the P350 Workgroup to consider appropriate modifications to the proposals set out in P229 for P350 to address these developments in the treatment of transmission losses. The Workgroup developed provisions to address these issues and incorporated them into P350. The final version of the CMA's order reflects these provisions.

NGET, the proposer, considers that P350 will better facilitate Applicable BSC Objective (a), the efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence, in particular the new obligation that imbalance charges are calculated to be locationally sensitive to transmission losses.

In the proposer's view, the CMA has also clearly demonstrated in its final report that there are benefits under objectives (b) (the efficient, economic and co-ordinated operation of the National Electricity Transmission System) and (c) (promoting effective competition). Finally, the proposer considers that the proposal is neutral on objective (e) (compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency for the Co-operation of Energy Regulators) as it is not incompatible with the EU Target Model, and implementing this solution would not preclude a move further toward this design at a later point in the future. The proposer did not comment on objective (f) (in relation to contracts for difference and capacity market arrangements), nor on objective (g). The latter was not in place at the time the proposal was submitted.

BSC Panel⁹ recommendation

At the BSC Panel meeting on 9 February 2017, the Panel unanimously considered that on balance, P350 better facilitates the achievement of the Applicable BSC objectives and therefore recommended its approval.

⁵ <https://www.elexon.co.uk/mod-proposal/p203-introduction-of-a-seasonal-zonal-transmission-losses-scheme/>

⁶ <https://www.elexon.co.uk/mod-proposal/p204-scaled-zonal-transmission-losses/>

⁷ https://www.ofgem.gov.uk/sites/default/files/docs/2011/09/p229-d_0.pdf

⁸ Transmission losses are comprised of two main elements: 'variable' losses which change with current and power flows and the length of the line through which the current flows, and 'fixed' losses which do not vary significantly with power flow and electrical resistance.

⁹ The BSC Panel is established and constituted pursuant to and in accordance with Section B of the BSC and Standard Special Licence Condition C3 of the Electricity Transmission Licence available at: www.epr.ofgem.gov.uk

We received the Panel's Final Modification Report (FMR) on 10 February 2017 for decision.

Impact assessment

The CMA's modelling exercise¹⁰ suggested that over the period 2017 to 2026, the introduction of locational charges for losses will reduce the total costs of meeting the electricity demand of customers in Great Britain by between £130 million and £160 million, as well as producing a modest environmental benefit of between £1 million and £15 million.

The CMA considered that the expected benefits from the remedy – both those they modelled and those they did not – exceed by far the expected implementation costs, which the CMA estimated to be substantially less than £10 million.

Several stakeholders considered that the introduction of the locational pricing of losses would be to the detriment of existing generators in particular regions. The CMA final report acknowledged that introducing locational pricing for losses would have a distributional effect, leading to transfers: from customers in areas of low generation relative to demand to customers in areas of high generation relative to demand; and from generators in areas of high generation relative to demand to generators in areas of low generation relative to demand. This pattern is borne out in the CMA's modelling: customers in the North of Scotland tend to benefit to a greater extent than customers in the South of England, for example.

However, the CMA concluded that introducing locational charging for transmission losses would reduce overall costs and be in the interests of customers.

In the FMR, the P350 Workgroup noted the CMA's cost-benefit analysis as well as similar analysis from previous BSC modifications. All of these pieces of analysis arrived at the same conclusions on the benefits that could be realised. The Workgroup therefore considered that further analysis of its own was unlikely to add significant value to its assessment of P350.

The Authority has a duty to carry out an impact assessment where it appears to the Authority that a proposal is "important". We consider that P350 is important because it will have a significant impact on industry and consumers. However, we have not considered it necessary or appropriate to conduct our own impact assessment in this instance because the CMA already carried out an impact assessment on the substance of the proposal quite recently, in 2016, and no new relevant information has been presented through the P350 process since then.

Our decision

We have considered the issues raised by the modification proposal and the FMR dated 10 February 2017. We have considered and taken into account the responses to the industry consultations.¹¹ We have concluded that:

- implementation of the modification proposal will on balance better facilitate the achievement of the applicable objectives of the BSC;¹² and

¹⁰ The CMA documentation on the electricity transmission losses remedy can be found at <https://www.gov.uk/cma-cases/energy-market-investigation>

¹¹ The consultation responses in relation to P350 can be found at <https://www.elexon.co.uk/mod-proposal/p350/>

- directing that the modification be made is consistent with our principal objective and statutory duties.¹³

Reasons for our decision

We consider that P350 will better facilitate BSC objectives (a), (b), (c) and (g). We consider that this modification proposal has a neutral impact on objective (e) and (f), and a marginally detrimental impact on objective (d).

We consider the small detrimental impact on objective (d) to be significantly outweighed by the positive impacts we have assessed against the other BSC objectives, and that the additional costs and complexity of administering the BSC are warranted in light of the benefits to competition and efficiency in the market.

In our considerations against the individual objectives below, we make reference to the views of consultation respondents, the Workgroup, and the BSC Panel.

It should be noted that the CMA developed and finalised its order and amendments to NGET's licence condition in parallel (and collaboration) with the P350 Workgroup's development of the BSC code modification. The order and licence amendments came into force on 14 December 2016. The P350 Workgroup's consideration of objectives (a) and, to a lesser extent (g), were based on the expectation that the CMA's order would be in place shortly after its last meeting on 5 December, but before the Workgroup's submission of its Assessment Report to the BSC Panel in January. The CMA's order was published on 14 December 2016.

(a) the efficient discharge by the licensee of the obligations imposed upon it by this licence

On 14 December 2016, the CMA placed an order on NGET (the Locational Pricing Order) and made amendments to NGET's licence conditions that require NGET to ensure that, at all times, imbalance charges (and specifically the estimated volumes of imbalance) are calculated such as to be locationally sensitive to transmission losses, and to raise a code modification proposal to modify the BSC in line with P229.

We consider that P350 better facilitates objective (a) on the grounds that it enables NGET meeting these requirements. The Workgroup, the Panel, and several consultation respondents supported this view.

(b) the efficient, economic and co-ordinated operation of the national electricity transmission system

The CMA's aim of introducing locational charging for transmission losses is to improve the accuracy with which the avoidable costs of variable transmission losses are borne by those who cause them, thus reducing waste, reducing the cost of electricity generation, and ultimately reducing total bills to end customers.

We consider that the P350 proposal improves cost reflectivity and therefore allocates costs more appropriately than the current arrangements. Greater cost reflectivity is generally likely to lead to more efficient, economic and co-ordinated system operation. This should result in more efficient despatch, production cost savings, reduced losses and reduced emissions. We therefore consider that P350 facilitates objective (b). We also

¹² As set out in Standard Condition C3(3) of NGET's Transmission Licence: <https://epr.ofgem.gov.uk>

¹³ The Authority's statutory duties are wider than matters which the Panel must take into consideration and are detailed mainly in the Electricity Act 1989.

note that P350 makes appropriate provision for the treatment of losses taking account of developments since P229.

We note that the majority of the Workgroup as well as the Panel identified benefits to this objective.

(c) promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity

The CMA concluded in its energy market investigation that the current system of uniform charging for transmission losses creates a system of cross-subsidisation that distorts competition between generators and is likely to have both short- and long-run effects on generation and demand. This argument is central to the modification proposal which aims to address the distortion to competition by introducing locational losses pricing signals.

The majority of Workgroup members and the Panel believed that P350 better facilitates objective (c). The remaining views were split between neutral and negative impacts.

One respondent to the Assessment Procedure consultation considered that P350 did not promote competition amongst windfarms in Scotland as they did not participate competitively in the wholesale market, and that they were disproportionately impacted. The respondent considered that this could harm the overall competitive mix of GB electricity generation.

A small number of respondents highlighted that existing plants and those at an advanced stage of development were unable to respond to the locational pricing signal. Regarding new projects, another respondent considered that major changes to the planning process were required if the intent of the remedy of more efficient siting decisions was to be met.

We recognise that the ability or willingness to respond to network cost signals varies according to users' specific circumstances. However, we agree with the CMA's conclusion that in aggregate, addressing the distortion of competition between generators will result in net benefits. We therefore consider that P350 better facilitates objective (c).

A majority of Workgroup members were neutral on objectives (d), (e) and (f), and the Panel were unanimously neutral on all three.

(d) promoting efficiency in the implementation and administration of the balancing and settlement arrangements

P350 will result in some implementation and administration costs to Elexon, National Grid and DSOs as well as generators and suppliers. These are set out in the Workgroup's Industry Impact Assessment and its consultation responses, and the FMR.¹⁴ While not all of these impacts were quantified, the estimates appear to be consistent with the CMA's view that the expected implementation costs look set to be substantially less in total than £10 million, allowing expected benefits to far exceed these costs.

We consider that there will be a marginally detrimental effect on applicable objective (d) because P350 would add some cost and a modest level of additional complexity to the arrangements.

¹⁴ Published on the Elexon website.

(e) compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency

We consider the impact of P350 on objective (e) to be neutral.

(f) implementing and administering the arrangements for the operation of contracts for difference and arrangements that facilitate the operation of a capacity market pursuant to EMR legislation

In the course of assessing interactions of P350 with CFDs, the Workgroup discovered an anomaly in the drafting of the standard CFD Terms & Conditions which, if not addressed, would result in unintended arbitrary adjustments to CFD generators' strike prices which are used when calculating CFD generators' "difference payments".

The P350 Workgroup developed an approach to address this issue by creating an adjustment value, to be calculated annually, which neutralises the unintended effect. This solution is set out in the legal text for P350 and is also mandated in the CMA's order.

In addition, the CMA's order makes provision for it to direct NGET, by 23 November 2017 at the latest, to "switch off" the default approach, should the alternative solution of directly amending CFD contracts prove possible by that date. The Workgroup agreed that the P350 legal text should mirror the order and the proposer has therefore included this provision in the proposed modification.

As a result of the provisions, we consider the impact of P350 on objective (f) to be neutral.

(g) compliance with the Transmission Losses Principle

Objective (g) was created as part of the CMA's remedy to ensure that current and future changes to the BSC meet the CMA's objectives with regard to locational pricing of transmission losses,¹⁵ and continue to do so once the CMA's order ceases to have effect following the implementation of P350 on 1 April 2018.

The Panel unanimously believed that P350 better facilitates objective (g), and we too consider that this objective is met by the code modification.

Next steps

As set out in our CMA remedies implementation plan,¹⁶ we propose to monitor progress towards an implementation date of April 2018.

As part of its remedy, the CMA issued a recommendation to Ofgem and to industry to assess alternative solutions to the remedy as implemented based on full marginal pricing and, if and when appropriate, consider whether to develop and implement a further code modification based on the most effective solution. We propose to take this recommendation forward as part of our evaluation of the CMA remedies starting in 2019.

¹⁵ As the order didn't come into force until after the last Workgroup meeting, the Workgroup was not required to assess P350 against objective (g), though some stakeholders did make reference to it in anticipation of the order.

¹⁶ At https://www.ofgem.gov.uk/system/files/docs/2016/11/cma_remedies_implementation_plan.pdf

Following the decision to approve P350, we plan to engage with Elexon on the design of the evaluation.

Decision notice

In accordance with Standard Condition C3 of NGET's Transmission Licence, the Authority hereby directs that modification proposal BSC P350: "Introduction of a seasonal Zonal Transmission Losses scheme" be made.

Frances Warburton
Partner – Energy Systems

Signed on behalf of the Authority and authorised for that purpose