

Assessment Procedure Consultation Responses

P350 'Introduction of a seasonal Zonal Transmission Losses scheme'

This Assessment Procedure Consultation was issued on 3 November 2016, with responses invited by 25 November 2016.



Phase

Initial Written Assessment

Definition Procedure

Assessment Procedure

Report Phase

Implementation

Consultation Respondents

Respondent	No. of Parties/Non-Parties Represented	Role(s) Represented
Electricity North West Limited	1 / 0	Distributor
Power Data Associates Ltd	0 / 1	Other: Interested Party
BUUK Infrastructure	2 / 0	Distributor
The Renewable Energy Company (Ecotricity)	1 / 0	Generator, Supplier
Centrica	10 / 0	Generator, Supplier
DONG Energy	2 / 2	Generator, Supplier / ECVNA, MVRNA
SmartestEnergy	1 / 0	Supplier
RWE Supply and Trading GmbH	2 / 2	Generator, No Physical Trader / ECVNA, MVRNA
Falck Renewables Limited	2 / 0	Generator
EDP Renewables	0 / 2	Other: Prospective generator
ScottishPower	3 / 2	Generator, Supplier, Interconnector User / ECVNA, MVRNA
National Grid Electricity Transmission plc	1 / 0	Transmission Co.
npower	1 / 0	Supplier
LCCC	0 / 1	Other: CFD Counterparty
Uniper	2 / 0	Generator, Non Physical Trader, Interconnector User
Scottish Renewables & Renewable UK	0 / 2	Other
EDF Energy	6 / 2	Generator, Supplier / ECVNA, MVRNA

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Responses

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Respondent	No. of Parties/Non-Parties Represented	Role(s) Represented
Vattenfall	2 / 0	Generator, No Physical Trader
Drax	1 / 0	Generator
Mainstream Renewable Power Limited – see appendix 1 for response	0 / 1	Other

Question 1: Do you agree that P350 would better facilitate the Applicable BSC Objectives compared to the current baseline and so should be approved?

Summary

Yes	No	Neutral/No Comment	Other
11	4	3	1

Responses

Respondent	Response	Rationale
Electricity North West Limited	Yes	Our reading of the proposed P350 suggests that this modification is likely to improve the efficiency of the pricing of transmission system losses into the current system and potentially improve the economic signals associated with the location of generation across the system. We therefore suggest that this represents improvements to both objectives B (the efficient, economic and co-ordinated operation of the GB Transmission System) and C (promoting effective competition in the generation and supply of electricity).
Power Data Associates Ltd	-	-
BUUK Infrastructure	Yes	-
The Renewable Energy Company (Ecotricity)	No	<p>We understand the benefits that this modification could bring to the industry and appreciate the economic rationale for it, but this would not better facilitate the Applicable BSC Objectives.</p> <p>There are other mitigating factors that would prevent this change from creating a more efficient and economic operation of the NTS with increased effective competition.</p> <p>For the intentions of this change to be fulfilled, this modification would lead to planning and commissioning of generation that is nearer demand. However, mitigating factors like the difficulty in obtaining permission to install generation nearer to demand, as well as the impracticality of commissioning generation in high demand cities, means that the intentions of this modification are unlikely to be fulfilled without major changes to planning and development process.</p> <p>This modification would also not promote effective</p>

Respondent	Response	Rationale
		competition as all parties will have to adjust their tariffs by the same amount due to the impacts of this change.
Centrica	Yes	<p>We agree with the Workgroup consensus that P350 would better facilitate BSC Objectives a, b and c. We also agree that it has a neutral impact on BSC Objectives d, e and f.</p> <p>With regard to P350 facilitating BSC Objectives b (efficient operation of the transmission system) and c (promoting effective competition), there may be scope to improve further the design of the seasonal Zonal Transmission Losses scheme once the CMA's requirement for P350 to match P229 falls away.</p>
DONG Energy	Yes	P350 better facilitates applicable objective (a), as locational losses will be a requirement of National Grid Electricity Transmission's licence.
SmartestEnergy	Yes	It cannot be denied that zonal transmission losses will lead to a more economically efficient system and the proposal is therefore in the interests of competition.
RWE Supply and Trading GmbH	Yes	P350 will ensure that National Grid complies with the prospective licence requirement to implement the P229 solution as required under the CMA recommendation. Therefore the modification will better meet Objective (a).
Falck Renewables Limited	Other	<p>We do not agree that P350 will better facilitate BSC objectives. As noted above we don't believe that it will promote effective competition amongst wind farms in Scotland as the existing wind farms do not participate competitively in the wholesale electricity market.</p> <p>Generators in Scotland are already subject to locational signals through TNUoS charges and the added introduction of signals from TLFs for onshore wind is regrettable given that it is unlikely to facilitate the BSC objectives.</p> <p>Another BSC objective is to promote the efficiency of the balancing and settlement arrangements. The introduction of TLFs will reduce the revenues of many embedded wind farms in Scotland but embedded generation does not participate in the balancing and settlement market.</p> <p>We note that one of the issues faced by generators over the last few years has been the volatility and unpredictability of TNUoS charges. From a</p>

Respondent	Response	Rationale
		<p>generators perspective it is therefore undesirable to face the added uncertainty of TLFs varying from year to year.</p> <p>The BSC objectives include for compliance with European Regulations. We understand that P350 raises issues about compliance with the transmission charging cap and policy around treatment of interconnectors.</p>
EDP Renewables	No	<p>Applicable objective c) provides that (c) is "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".</p> <p>The Competition and Markets Authority (CMA) has concluded that the absence of locational pricing for transmission losses gives rise to an adverse effect on competition. Its proposed remedy introduces a zonal transmission loss allocation method that is intended to provide a locational signal which in turn would "remove distortions in competition".</p> <p>It is our view that a locational signal will only facilitate the applicable objective stated above if it is implemented in such a way as to allow market participants to respond to the signal when making project siting and investment decisions. Projects which are significantly advanced in their development or are already operational are unable to respond to a locational signal in the form that is proposed. Therefore we do not agree that P350 will promote effective competition when considering this aspect.</p>
ScottishPower	Yes	-
National Grid Electricity Transmission plc	Yes	<p>Our views and rationale on whether P350 would help to achieve the Applicable BSC Objectives are as set out in the Assessment report. We note that Applicable BSC Objective (g) will not be in effect when the mod is presented to the Panel for its Initial Recommendation but, for the avoidance of doubt, we believe that P350 definitely better facilitates this objective.</p>
npower	Yes	<p>We do agree P350 would in theory provide a better cost reflective signal. Although have we not seen enough analysis that the signal is of strong significance to outweigh implementation costs or other distortions in the market. We note for example that transmission connection costs are not</p>

Respondent	Response	Rationale
		truly reflected in the TNUoS prices Generators pay and we perceive this as a bigger market distortion.
LCCC	-	-
Uniper	Yes	<p>P350 would better facilitate the Applicable BSC Objectives than the baseline by removing the cross-subsidisation inherent in uniform charging for variable transmission losses and the potential for this to incentivise short- and long-term inefficiencies in investment and operation of the GB Transmission System. This would promote both more efficient, economic and co-ordinated operation of the System and more effective competition in generation and supply. The reduction of variable transmission losses and associated emissions expected from P350's introduction would also be beneficial from both environmental and cost perspectives, with up to £14m saved through reduced SOx and NOx emissions, and considerably more through reducing constraint management costs. With material savings calculated by NERA across all scenarios modelled, totalling around £134m-£190m from 2017-2026, potentially rising above £300m to 2035, but implementation costs of a lower order of magnitude, P350 would be a clear improvement on the current baseline.</p> <p>P350 would further Applicable BSC Objectives (a), (b) and (c), plus the new Applicable Objective (g), 'Compliance with the Transmission Losses Principle', when this is introduced in December. Arguably it is neutral or a minor positive for Objective (d), neutral for (e) and (f), albeit with the minor query regarding CfD interaction.</p> <p>Objective (a) is better facilitated as the Transmission Company will be able to discharge its Licence obligations more efficiently without the market distortion of uniform charging for variable transmission losses. The licensee's discharge of its non-discriminatory obligation will be enhanced through removing the disproportionate impact of the current TLM calculation and ensuring that these charges correspond to the extent to which BSC Parties cause them.</p> <p>Objective (b) is fundamentally better facilitated. Locational signals from the introduction of seasonal zonal charging for variable transmission losses can be expected to encourage more efficient and economic short-term and long-term operational and</p>

Respondent	Response	Rationale
		<p>investment decisions, leading to a reduction in transmission losses. (We note that this effect would be amplified in the event of a move to a 100:0 G:D split, but the incentive applies to production and consumption, in particular high-consumption industrial demand). This could influence both the siting of new generation or high demand centres, and efficient decisions on developments such as energy efficiency improvements and other investment options at existing sites. With network costs forming an increasing proportion of customer bills, P350 could thus help limit excessive capital expenditure on the transmission network. NERA's report clearly demonstrates that these developments would aid more efficient and economic system operation, reducing system congestion and under all scenarios achieving a significant reduction in the level of variable transmission losses.</p> <p>Objective (c) is also better facilitated. As identified by the CMA the present uniform allocation of transmission losses lacking a locational element has an adverse effect on competition, distorting the market in a way that benefits some Parties, while some are unfairly apportioned costs resulting from the actions of others. In particular it leads to the effective cross subsidisation of northern by southern generation and southern by northern demand. Such uniform charges are contrary to market principles and hinder the ability of competitive generation and retail businesses to reflect these costs in their tariffs. Removing these cross-subsidies and introducing more cost-reflective charging for variable transmission losses, focused on the Parties who contribute to them, will enhance competition, as already noted driving more efficient investment and operational decision-making that should improve Parties' competitiveness while decreasing variable losses. Implementing P350 would also reassure investors that charges will be more proportionate going forward and give greater certainty than if this modification was not implemented, in which case the issue could be expected to be raised again in the near future.</p> <p>Regarding Objective (d), introducing seasonal zonal TLFs would clearly add a little complexity to arrangements, but this is not significant and clearly justified to improve cost reflectivity. While as for any change some work is also required to make the</p>

Respondent	Response	Rationale
		<p>relevant changes to the BSC (and possibly changes to the Order and Licence depending on resolving the potential anomaly with CfD contracts), the CMA has highlighted that the expected implementation cost of P350 Proposed, less than £10m, is far outweighed by the forecast reduction in costs from 2017-2026 and beyond. The future annual production of TLFs being only down to a seasonal granularity would also minimise the work involved, in accordance with Applicable Objective (d). Furthermore, the positive market development of finally implementing seasonal zonal transmission loss charging through P350 should provide a decisive culmination to the last thirty years' investigation of losses options, and reduce the potential for more time and money to be spent updating analysis the next time the issue be raised.</p>
Scottish Renewables & Renewable UK	No	<p>There is some concern with the limited scope of P350 given that it is based on the previously rejected proposal P229. Ofgem rejected this modification on the grounds that it could not be satisfied that the P229 proposals "would operate in the interests of existing and future consumers³", and there is little evidence to show that this concern has been addressed.</p> <p>In addition, it is our view that P350 cannot be seen to better facilitate the BSC objectives for the following reasons:</p> <ul style="list-style-type: none"> · The capacity of renewable electricity has almost doubled since P229 was proposed in 2011, however the current modification fails to account for the impact of this change on the overall efficiency benefits to the consumer · The proposed change will disproportionately impact generators in Scotland and is therefore not in line with 'promoting effective competition in the generation and supply of electricity': <ul style="list-style-type: none"> o Electricity generators in Scotland are already subject to a significant locational signal through the Transmission Network Use of System Charge which ranges from around £5/kW/year in zone 11 (Lothian and Borders) to £12/kW/year in zone 1 (North Scotland) o The corresponding incentives for generators in the south of the GB network can range from a payment of £1 in zone 27 (West Devon and Cornwall) to a

Respondent	Response	Rationale
		<p>payment of £4.50 in zone 23 (Central)</p> <p>o These charges and payments are determined through the same 'load flow modelling' which could risk Scottish generators facing a double impact from the same physical phenomena.</p>
EDF Energy	Neutral	<p>Against the current regulatory baseline we think there is insufficient evidence to say whether or not the proposal would better meet the current BSC Objectives.</p> <p>If the CMA's draft Transmission Losses Order comes into force, the proposal will better meet BSC objectives (a) concerning the Transmission Company's licence conditions, and new objective (h) specifically concerning Transmission Losses. We assume this will take precedence over BSC Objectives (b), (c) and (d) concerning efficient system operation, competition and efficient administration of the BSC, respectively. There appears to be no interaction currently with BSC Objective (e) concerning EU legislation, and limited impact with BSC Objective (f) concerning administration of the Electricity Market Reform legislation.</p> <p>Absence of thorough cost-benefit analysis means it is not possible to tell whether the proposal would have an overall economic benefit or better meet existing BSC Objectives (b) concerning efficient system operation, (c) concerning competition and (d) concerning efficient administration of the BSC. Previous analyses suggest that theoretical small behavioural changes might deliver more efficient operation and investment in future, but actual market responses to the scheme are uncertain. Industry implementation and operational costs and commercial impacts are real.</p> <p>There appears to be no interaction with BSC objective (e) concerning European Union regulations. This might change in future if EU regulations change.</p> <p>There may be a small impact on BSC objective (f) concerning administration of the Electricity Market Reform Contracts for Difference and Capacity Market Schemes, but we think these are relatively minor.</p>

Respondent	Response	Rationale
		<p>CFD contract holders will be impacted by changes to the Transmission Loss Multipliers applicable to them individually, and may be impacted by changes in average Transmission Loss Multiplier. Suppliers obligation to share net difference payments made or received to CFD holders will be impacted by changes to TLMs applicable to them individually. These impacts should not significantly affect administration of the scheme which was designed with TLMs included, although small changes to the method of determining annual transmission loss adjustments may be necessary.</p> <p>Capacity Market contracts and Supplier Obligations currently apply at the boundary of the transmission system and do not consider individual Transmission Loss Multipliers. There may be an impact in future, but not against the current baseline.</p>
Vattenfall	Yes	<p>P350 implements the relevant Order by the Competition and Markets Authority (CMA) following its Energy Market Investigation which concluded this year and therefore facilitates BSC Applicable Objective A.</p> <p>We agree that the concept of locational losses is a more economically efficient way of accounting for electrical losses than the baseline and as such facilitates BSC Applicable Objective B. However, we do not think the case for facilitation of Applicable BSC Objective C has been definitively made.</p> <p>The move to locational losses is likely to have a significant detriment to generators with sunk assets in the North Scotland, South Scotland, and Northern TLF Zones in particular and this may harm the overall competitive mix of GB electricity generation, particularly those which may have a generation portfolio skewed into a particular regional bias.</p> <p>However, it is our assessment that the BSC Panel has little alternative but to implement this modification regardless of the compatibility with other BSC objectives and the move to location losses, and consequent impact on the supply/demand of electricity in GB, should be kept under review by Ofgem, the CMA, and Government.</p>
Drax	No	<p>Whilst we believe the modification does not facilitate the BSC Objectives, in that it will diminish investment signals for flexible generation in the northern half of the system, it is understood that P350 results from a CMA Order with very limited</p>

Respondent	Response	Rationale
		<p>scope for developing a more appropriate solution.</p> <p>We also question the original policy intent behind the CfD contracts. We believe that CfDs were drafted with the intention of protecting CfD BMUs regarding any movement in transmission losses to protect their rate of return. The LCCC has established that CfD generators will not be protected against the change in locational losses which goes against our, and potentially many other generator's original expectations.</p> <p>As such, we believe further analysis is required to properly assess the impact on these generators, particularly given that this change is yet to be consulted upon by the P350 workgroup and the issue was not consulted upon during the original CMA investigation.</p> <p>In addition, the solution is not complete and requires the BSC Panel to develop a separate process at a later date in order to complete the picture. As such, it is not possible to fully assess the impact of the solution.</p>

Question 2: Do you agree that the proposed redlining in Attachment B delivers the intent of P350?

Summary

Yes	No	Neutral/No Comment	Other
8	2	8	1

Responses

Respondent	Response	Rationale
Electricity North West Limited	Yes	We have reviewed the redlined version of the modifications for P350. This document reflects our view of the intent of P350.
Power Data Associates Ltd	-	-
BUUK Infrastructure	Yes	-
The Renewable Energy Company (Ecotricity)	No Comment	-
Centrica	Yes	We have reviewed the redlining in the attachment and agree that it delivers the intent of P350. We note that this does not yet include the proposed way forward on avoiding P350 creating an anomalous effect for CFD generators – with the Workgroup planning to engage in further work on this.
DONG Energy	Yes	The legal text looks reasonable – we expect most of the issues would have been handled and resolved by the P229 workgroup
SmartestEnergy	No Comment	-
RWE Supply and Trading GmbH	Yes	-
Falck Renewables Limited	Other	We have not reviewed the redlining.
EDP Renewables	N/A	We have no comment.
ScottishPower	Yes	The draft text in Attachment B appears to deliver the intent of P350.
National Grid Electricity Transmission plc	Yes	We agree that the proposed legal text broadly delivers the intent of P350. However, there are two main areas where we think that changes are

Respondent	Response	Rationale
		<p>potentially required.</p> <p>The first is that in paragraph 9.1 of Annex T-2 (in the section on the "Role and powers of the Transmission Company"), we believe that the wording "Where the Transmission Company has been unable to comply with the Transmission Losses Principle as set out in the Transmission Licence" should be amended to reflect that it might be necessary for NGET to step in ahead of when it is unable to comply with the requirements of the licence (i.e. not only after the event).</p> <p>The second is that, where this same paragraph (9.1 of Annex T-2) uses the wording "it shall be entitled to assume responsibility for the determination of Transmission Loss Factors", we believe that this should be more general to reflect that the requirements of the CMA Order and licence are in relation to the "imbalance charges (and specifically the estimated volumes of imbalance)".</p> <p>We have provided some suggested amendments to this effect in the attached document which also contains some more minor drafting suggestions.</p>
npower	Neutral	We are not clear what the redlining activity is intending to clarify, since there is no documentation outlining the intent in such detail. Please refer to question 7 for our additional comments / questions.
LCCC	-	-
Uniper	Yes	-
Scottish Renewables & Renewable UK	No Comment	-
EDF Energy	No	<p>Broadly, the proposed legal text delivers the intent of P350, but we provide some detailed comments on clarity and accuracy below.</p> <p>Annex T-2:</p> <p>1.3(e) refers to the 'slack node'. A third property (iii) would be useful to clarify that loadflow TLFs are determined relative to the slack node:</p> <p>"(iii) The slack node also acts as the reference node against which the TLFs at other nodes are determined in load flow modelling."</p>

Respondent	Response	Rationale
		<p>2.2(a) says “only electrical losses associated with power flows between adjacent nodes (forming part of the network) (“Load Flow Model power flows”) will be used in determining nodal TLFs;”</p> <p>We suggests adding “AC” before “network”, because the proposal (Option A) will only explicitly model power flows on the AC network, and 2.1 explicitly refers to the AC Transmission System.</p> <p>The proposed approach (Option A) to modelling HVDC links within the transmission system will not explicitly estimate the sensitivity of flow and losses between the relevant nodes to small changes in flow at these or other nodes. Losses between the relevant nodes would instead effectively be an input to the calculation, not considered in determining Nodal TLFs.</p> <p>4.1(a) refers to zones as geographic areas:</p> <p>“(a) a “Zone” is the geographic area:</p> <p>(i) in which the following lie:</p> <p>(1) a GSP Group (there being no more than one GSP Group in any one Zone);</p> <p>(2) any part of an Offshore Transmission System which connects directly to that GSP Group; and/or</p> <p>(3) any part of an Offshore Transmission System which connects to the onshore AC Transmission System at a point within the geographic area of that GSP Group; and”</p> <p>Something should be added in the definition of a zone to capture non-GSP Group connections. Transmission-connected generation and demand and interconnectors are not part part of a GSP Group, and some BM Units connected within a distribution system, such as licensed generators, are not considered part of a GSP Group for most purposes. However, all boundary flows must be allocated to a zone for the purposes of the proposal. For example, (i) could say: “a GSP Group (there being no more than one GSP Group in any one Zone) and any other any transmission or distribution user boundary connections deemed to fall within the same geographical area”.</p>

Respondent	Response	Rationale
		<p>4.3 refers to the Network Mapping Statement.</p> <p>In practice, in trial load flow modelling, the network mapping statement includes mapping of individual nodes to zones, used to map Volume Allocation Units to Zones to support zonal averaging of nodal TLFs. Option (A) for the treatment of HVDC circuits internal to the transmission system will require these nodes and the flow associated with them to be identified too although they are not Volume Allocation Units. Mention of this should sensibly be included in this section.</p> <p>At 4.4(a)(i), prevailing network mapping statement (PNMS) should be plural because there may have been more than one PNMS in effect during the reference year (and the PNMS in effect at the time of determination of the reference network mapping statement (RNMS) may be different again). If retiring volume allocation unit nodes are not removed from the PNMS until after calculations for the reference year have been made, the clause could refer to the reference NMS being the PNMS in effect at the end of the reference year. It could be clarified that the reference network mapping statement is determined each year for the purpose of determining TLFs for the reference year, and the prevailing network mapping statement is determined as required for the purpose of mapping operational BM Units to Zones.</p> <p>Paragraph 5 titled "Transmission Network Data and HVDC Boundary Data" and assumes that assessment option (A) is used to model HVDC circuits. Different words would be required if option (B) were used (eg. "(ii) for each such pair of Nodes, values of the resistance and the reactance between the Nodes, or in the case of HVDC circuit Nodes, the resistance and other information as may be required to include the circuits in the Load Flow Modelling; and").</p> <p>6.1(a) says: "(a) "Distribution Network Data" means the following data showing power flows...". Suggest "identifying" rather than "showing".</p>

Respondent	Response	Rationale
		<p>7.2(c) refers to revisions of certain data by the BSC Panel: "(c) will revise the specification of Load Periods or Sample Settlement Periods (if required) for each BSC Year." Because the identity of working and non-working days changes each year, it seems almost certain that Load Periods and Sample Settlement Periods will be required change from year to year.</p> <p>8.3 says "For each Sample Settlement Period, the TLFA shall determine the Zonal TLF (TLFzj) for each Zone according to the following formula:".</p> <p>It would avoid misunderstanding if the sample Zonal TLFs (of which there are about 155 for each zone and season) were distinguished from the eventual single averaged seasonal Zonal TLF to be used in BSC Settlement, for example by using a subscript (eg. j') or prefix/suffix (eg. "sTLF") here.</p> <p>QM is a defined term in the BSC which is positive or negative, and it would be preferable to identify the use of absolute values of QM in the equation here, eg. by use of modulus symbols.</p> <p>8.3 describes "QMNj is the absolute value of the Nodal power flow, disregarding any power flows to or from an Interconnector or an HVDC Boundary;"</p> <p>We suggest qualifying this to: "...disregarding any power flows to or from an Interconnector or any part of the Transmission System used for the transmission of high voltage direct current insofar as those flows are effectively excluded from the allocation of transmission losses under the BSC". This would avoid the need to amend this section if the treatment of interconnectors and HVDC flows under the BSC were changed in future.</p>
Vattenfall	Neutral	Neither agree nor disagree
Drax	No	It is not possible to determine whether the solution delivers the original intent when part of the solution is to be determined at a later date. In addition, we do not believe the intent of the solution was to erode the rate of return under the CfD, which it will by changing the effect of the TLM adjuster under the CfD contract.

Question 3: Do you agree with the Workgroup's recommended Implementation Date?

Summary

Yes	No	Neutral/No Comment	Other
11	5	2	1

Responses

Respondent	Response	Rationale
Electricity North West Limited	Yes	The CMA has fixed a deadline for locational losses to be included in the BSC so the work must progress to those timescales. It is important to ensure that all issues are resolved ahead of the implementation including the methodology for calculating the percentage of net energy received by each corresponding Node, of the total energy flowing from the Offshore Transmission Connection Point Node, as an estimated average value for each Reference Year, is carefully defined to ensure that it is consistent across the different networks.
Power Data Associates Ltd	-	-
BUUK Infrastructure	Yes	-
The Renewable Energy Company (Ecotricity)	No	We believe that if this modification were to be implemented, the industry should see a delay of a further year, to 01/04/2019. This is on the basis that parties have already agreed contracts based on a price that doesn't cater for the alterations to pricing that this modification would incur.
Centrica	Yes	We agree with the proposed implementation date of 1 April 2018, which matches the requirements of the CMA remedy and the timetable agreed by the BSC Panel.
DONG Energy	Yes	The CMA has set out that locational losses will need to be implemented by 1 April 2018. While we do not agree with this date, we agree that P350 should be implemented on the 1 April 2018 to meet the CMA's requirements.
SmartestEnergy	Yes	-
RWE Supply and Trading GmbH	Yes	It meets the implementation date as required by the CMA

Respondent	Response	Rationale
Falck Renewables Limited	Other	As detailed above, we anticipate that P350 will cause a significant reduction in revenues for our UK wind portfolio and we would therefore prefer that implementation is delayed as long as possible. We anticipate that there may be unintended consequences of the introduction of P350 given that the impact will predominantly impact onshore wind farms in Scotland, which will not deliver the stated objectives.
EDP Renewables	No	<p>In our response to question 1 we stated our view that projects which are significantly advanced in their development or are already operational are unable to respond to a locational signal. For that reason we consider that any implementation of a location-based transmission loss allocation method should include a grace period such that existing power generation projects which have made significant investment are not subject to an unreasonable adverse impact considering the extent of the investment already made.</p> <p>We consider that a grace period would be consistent with the approach taken for other substantial changes to the regulatory regime, such as for example the implementation of the pan-European Network Code on Requirements for Generators.</p> <p>We also believe that the Workgroup should take into account the risk of undermining investor confidence in the power generation sector through a hastily implemented modification, particularly when considering other factors such as potential changes to connection charging arrangements.</p>
ScottishPower	Yes	The CMA Order will require National Grid to implement zonal transmission losses by 1 April 2018. The proposed implementation of P350 is in accordance with this requirement.
National Grid Electricity Transmission plc	Yes	In order to ensure compliance with the requirements of the CMA Order and Transmission licence, it is vital that P350 is implemented by 1st April 2018.
npower	No	Whilst we recognise the outcome of the CMA report we require 3 years notice from the point of an Ofgem decision to enable contracts, systems and processes to be fully updated accordingly. We are comfortable with P350 implementation forming part of a normal BSC release (Feb / June / Nov).

Respondent	Response	Rationale
LCCC	-	-
Uniper	Yes	It is desirable to implement the solution as soon as possible to remove the current cross-subsidy, allowing new and existing Parties to compete on a more level playing field and best incentivising a swift reduction in variable transmission losses, emissions and their costs. However given the constraints of the modification timetable, need for lead-time and desirability of aligning the change with contract rounds we agree that the 01 April 2018 date mandated by the CMA is appropriate.
Scottish Renewables & Renewable UK	No	<p>The CMA's conclusion in respect to transmission losses is centred on creating a signal to encourage siting decisions of generation and demand. If a locational signal is introduced it is vital that it only apply to projects able to respond to it.</p> <p>We therefore strongly encourage the BSC group to ensure that transitional arrangements (including exemptions) be put in place. This should ensure that operational projects and projects which have already made significant investments are not affected by the introduction of the change and provide industry with reasonable and sufficient certainty in their investment business cases.</p> <p>We would therefore suggest that a grace period be introduced to offer protection for projects that have achieved or are moving towards financial close within 18 months of the change coming into effect.</p>
EDF Energy	Yes	<p>Given the Competition and Markets Authority's final decision and expected Electricity Transmission Losses Order following its Electricity Market Investigation, in which implementation on 1 April 2018 is required, we agree the implementation date.</p> <p>We note that the process of determination of Seasonal Zonal TLFs to be used in BSC Settlement will need to start no later than October 2017, in advance of implementation.</p> <p>We expect the TLFs for the first effective year to be published at least 3 months prior to implementation.</p> <p>EDF Energy is preparing for implementation on 1 April 2018.</p>

Respondent	Response	Rationale
Vattenfall	No	<p>Transmission loss factors are a major change to balancing electricity with significant impacts for industry. This requires detailed consultation in order to consider the details in depth and minimise the risk of unintended consequences.</p> <p>Despite the fact that the concept of transitional losses has been consulted on extensively in the past, the issues highlighted by the working group around the treatment of HVDC assets, interconnector flows, and the inability to enable a forecasting mechanism to be introduced due to time constraints, show that such a strict deadline is unlikely to produce optimum outcomes.</p> <p>However, we appreciate that the Workgroup has very little scope for adjusting this due to the timing requirements of the CMA Order.</p>
Drax	Yes	<p>At least one full charging year should be granted in order for industry participants to make required IT changes and to adjust their wholesale/retail prices accordingly.</p>

Question 4: Do you agree that there are no other potential Alternative Modifications within the scope of P350 that would better facilitate the Applicable BSC Objectives compared to the Proposed Modification?

Summary

Yes	No	Neutral/No Comment	Other
10	3	4	2

Responses

Respondent	Response	Rationale
Electricity North West Limited	No comment	We have no comment on this question.
Power Data Associates Ltd	-	-
BUUK Infrastructure	Yes	-
The Renewable Energy Company (Ecotricity)	No Comment	-
Centrica	Yes	Given the requirements of the CMA order, we do not see any scope for an Alternative Modification.
DONG Energy	Yes	As far as we can tell, the workgroup has already identified potential alternative modifications and appropriately ruled them out.
SmartestEnergy	Yes	-
RWE Supply and Trading GmbH	Yes	The BSC must be modified to reflect the intent of the CMA.
Falck Renewables Limited	Other	It seems that the scope of P350 has been very narrowly drawn. As stated above we do not believe it is meeting the BSC Objectives and it would have been helpful if the Work Group had more latitude.
EDP Renewables	No	We do not consider that the process that has been followed under P350 (which has focussed solely on the methodology proposed under P229) has allowed for alternative modifications to be explored sufficiently, particularly taking into account the magnitude of the change that P350 would introduce. We consider that there are likely to be alternative modifications that would better facilitate the objectives.

Respondent	Response	Rationale
ScottishPower	Yes	We believe that the Workgroup have considered all the possible Alternatives at this stage. Further development may be required in future should offshore generation connect to the GB transmission system using radial HVDC circuits.
National Grid Electricity Transmission plc	Yes	Whilst numerous different possible solutions / approaches were highlighted during the WG discussions, we do not believe that there are any Alternative Modifications within the scope of P350 that would better facilitate the Applicable BSC Objectives compared to the Proposed Modification.
npower	No	<p>The proposed change of zones adds considerable development changes. We would prefer if zones were an extension to existing GSP groupings; rather than a separate grouping definition. Once a connection point has been assigned to a zone it cannot change. This would mean supplier BMUs could not switch zones and save suppliers development costs in this areas. If this approach were adopted it would reduce the magnitude of development required across systems and processes. If a change to GSP / zonal mappings is required in the future due to new GSP builds/boundary disputes appropriate BSC changes should be raised where the definition of reasonable notice of the change can be agreed. We cannot predict what problems may occur in the future and these suggested solutions are for highly theoretical scenarios.</p> <p>This approach will also provide stability with the signals that the zonal transmission losses are sending out which are designed to influence long term investment decisions.</p> <p>If the above is not possible we would like to understand the rationale of why zones are defined to change – see question 7 for supporting question. It would appear that signals sent to one BMU is sacrificed for the stability of the rest.</p>
LCCC	-	-
Uniper	Yes	<p>Yes, given the constraints imposed by the CMA Order; the Proposed P350 Modification should be introduced by April 2018 in its present form.</p> <p>We agree with the Workgroup that it is not</p>

Respondent	Response	Rationale
		<p>desirable to progress the option to model HVDC circuits as equivalent AC connections.</p> <p>(In addition, due to the deadline for implementation, any suggestion of an Alternative to delay or phase in the Proposed solution would be inappropriate; time is too short to make any such changes before implementing the solution fully by 01 April 2018. Parties have had forewarning of this modification, with the opportunity to make some preparation for it, since the CMA's findings were published. Indeed as locational charging for losses has been proposed many times in the past it is an issue which competitive businesses should have considered in their business plans. Alternatives have been explored in depth for previous Modification Proposals and spending further time and cost investigating options that may have already been examined would be undesirable and impractical).</p>
Scottish Renewables & Renewable UK	Other	The use of an order to introduce this change based on the previously rejected proposal P229 undermines the scrutiny and governance of the P350 workgroup process and the ability to raise credible and reasonable alternatives that could achieve the principle the Competition and Markets Authority (CMA) has set out.
EDF Energy	No	<p>Currently, locational BM Unit TLFs are zero and shared TLMOs allocate total losses including so-called "variable" heating losses and other or so-called "fixed" losses non-locationally.</p> <p>Having considered the relationship between TLM, TLF and TLMO in more detail, we think TLFs determined in load flow modelling should be adjusted, without affecting final TLMs applicable to individual BM Units in settlement, with the aim of causing adjusted locational TLFs alone to allocate fraction α (45%) of estimated variable losses to BM Units in delivery in aggregate, and fraction $(1-\alpha)$ (55%) to offtake. This would have the effect of causing non-locational delivery and offtake TLMOs alone to share fractions α and $(1-\alpha)$ respectively of other losses and of various errors in locational allocation.</p> <p>Under this alternative proposal, adjusted locational semi-marginal TLFs would, as far as is practical, on their own allocate volumes of variable losses in aggregate, and TLMOs would, as far as is practical, on their own share the other losses, those losses</p>

Respondent	Response	Rationale
		<p>not notionally recovered by locational TLFs. TLMOs would remain symmetrical about zero subject to the current 45/55 split.</p> <p>While semi-marginal TLFs are used, their application to all flow should equal variable losses and there is direct correspondence between variable losses and allocation by TLFs. Under this alternative proposal, TLMOs would experience a step change towards zero compared to now, as they would only be sharing the "other/fixed" losses, not "variable" locational losses (TLMO for delivery would become less negative, and TLMO for offtake less positive). Thereafter, TLMOs should remain relatively stable.</p> <p>If application of TLFs does not equal variable losses, for example due to locational or temporal averaging so that TLFs are not exactly representative of the prevailing flow pattern, or if something other than semi-marginal loss factors were used, the excess energy recovered by TLFs would be "other losses" to be shared in TLMOs.</p> <p>In the original proposal without this adjustment, TLFs can shift up or down from year to year arbitrarily according to the reference "slack" node in load flow modelling, and TLMOs will shift in the opposite direction. Although the resulting TLMs are the same, the quantities that TLFs and TLMOs represent become arbitrary and difficult to understand, and do not represent a useful physical effect. This is observed in the recent analysis initiated by the workgroup, in which TLFs are biased to more positive values due to the chosen location of the reference node, and TLMOs are biased to be more negative as a result.</p>
Vattenfall	Yes	No comment.
Drax	Yes	There are valid alternatives to P350 Original, such as the P229 Alternative. Unfortunately, it appears that the narrow definition of the defect prevents consideration of such alternatives.

Question 5: Do you agree that power flows from or to Interconnectors (and HVDC transmission assets) should be excluded from the calculation of the Zonal Transmission Loss Factor values?

Summary

Yes	No	Neutral/No Comment	Other
8	5	5	1

Responses

Respondent	Response	Rationale
Electricity North West Limited	No	We suggest that the role of Interconnectors must be considered as part of the modelling. Interconnectors have variable flows into and away from the transmission network and will therefore have a variable impact upon locational network losses at different points of the year (depending on the direction of flow). To ensure that efficient prices are signalled through the TLF, the impact of Interconnectors on the network must be taken into account.
Power Data Associates Ltd	-	-
BUUK Infrastructure	-	No Comment.
The Renewable Energy Company (Ecotricity)	No Comment	-
Centrica	Yes	We agree with the majority of the workgroup that excluding the interconnector flows from the Zonal Transmission Loss Factor values is the most appropriate approach. European legislation excluding interconnectors from transmission losses is an EU policy decision and hence the costs arising from that decision should be socialised. It would not be appropriate to target these costs at a specific group of generators, when the interconnector within that zone does not see the signal. Under current conditions, we feel that losses associated with HVDC links should be treated in the same way.
DONG Energy	Yes	We do not have a strong view, but would support the workgroup's initial view that excluding these values is the more appropriate way as it is more in

Respondent	Response	Rationale
		line with the principle of market participants facing a losses charge that reflects their impact.
SmartestEnergy	Yes	-
RWE Supply and Trading GmbH	No	Interconnectors form a node on the GB transmission system for the purpose of calculating transmission losses. Therefore they should be included in the zonal averages. However the losses allocated to interconnector nodes should be treated as an adjustment to fixed losses.
Falck Renewables Limited	Other	<p>With regard to the HVDC transmission assets, we note that the published TLFs which include for the western HVDC link are much lower in Scotland. We understand that this correctly reflects the likely physical power flows and we support the inclusion of these lower TLFs (case 3A &B).</p> <p>With regard to the treatment of interconnectors and given the published TLFs we would note that it will put UK Generators in Scotland and the north of England at a competitive disadvantage with overseas generation if transmission losses are not applied to interconnectors.</p>
EDP Renewables	N/A	We have no comment.
ScottishPower	Yes	Excluding Interconnector power flows from the calculation of Zonal Transmission Loss Factors ensures that parties in zones which include an Interconnector are allocated a Zonal TLF which only includes the Nodal TLFs of those participants to whom it will be applied i.e. it is not "polluted" with nodal Interconnector losses which are not recovered from those Interconnector parties.
National Grid Electricity Transmission plc	Yes	As set out in the Assessment Consultation, our initial view as Proposer is that power flows from or to interconnectors (and HVDC transmission assets) should be excluded from the calculation of the Zonal Transmission Loss Factor values. However, given differing views expressed in the WG, we welcome additional arguments in relation to this question that can be considered before forming the final Proposed solution.
npower	No	<p>We believe including interconnectors in the calculation for zonal t-losses leads to the correct locational signals being given.</p> <p>We are neutral on what is being proposed for HVDC</p>

Respondent	Response	Rationale
		transmission assets.
LCCC	-	-
Uniper	Yes	<p>We note that Siemens' Task 2 modelling of baseline TLFs with Interconnector flows excluded from the Zonal average suggested that including or excluding these flows would not make a very large difference to the Adjusted Seasonal Zonal TLFs (albeit more so in the South Eastern GSP Group/TLF Zone, and a small difference in the TLF still potentially significant to affected Parties). Fundamentally though, assets located in GSP Groups D, J and N (Merseyside and North Wales, South Eastern and South Scotland) where there are interconnectors, should have their TLF calculated in the same way as other GSP Groups/TLF Zones, reflecting only their own Nodal Transmission Loss Factor values. This is consistent with the CMA's express intention that aim of the remedy for the Transmission Losses AEC 'is to improve the accuracy with which the avoidable costs of variable transmission losses are borne by those who cause them'.</p>
Scottish Renewables & Renewable UK	No	<p>While we do not have a position on the treatment of power flows, there is significant concern with the fact that the costs for locational transmission losses do not apply to interconnectors. This creates a clear market distortion which will only become more pronounced as the UK increases its interconnector to 12GW4.</p> <p>With this in mind, we cannot accept the position that such a commercial advantage is in line with the BSC objective of promoting "effective competition in in the generation and supply of electricity".</p>
EDF Energy	Yes	<p>The flows from or to Interconnectors and HVDC transmission assets should be included as inputs to the loadflow calculations, so that an accurate reference state for modelling is represented. However, under the current methods of allocating transmission losses to external boundary flows in the BSC, they should not be used in the determination of zonal average Transmission Loss Factors from nodal values within the zone.</p> <ul style="list-style-type: none"> External Interconnection flows are currently deemed to be internal to the Transmission System (at a European level) and are not subjected to transmission loss adjustments applicable to all other boundary flows under the BSC. Excluding them

Respondent	Response	Rationale
		<p>from the determination of zonal average TLFs should cause the zonal average calculated to better represent the TLF of the other boundary flows to which the zonal average TLF will be applied.</p> <ul style="list-style-type: none"> • HVDC transmission flows are internal to the GB Transmission System and are not subject to transmission loss adjustments applicable to boundary flows under the BSC. The proposed method of representing them in loadflow modelling will result in apparent boundary flows at either end, with associated nodal TLFs. As for interconnection flows, excluding these apparent boundary flows from calculation of zonal average TLF for the relevant zone(s) will better represent the TLF of the other boundary flows to which the zonal average TLF will be applied.
Vattenfall	No	<p>We understand and appreciate the views of some Workgroup members reported in the consultation that interconnector flows should be excluded on the basis that there is already a market distortion (that interconnectors are exempted from transmission losses by merit of EU legislation) and that generation parties are unable to control the effect interconnectors have on the relevant TLF zone.</p> <p>However, we believe that the impact of interconnectors should be factored into the load flow modelling which informs the TLFs due to the material impact they have on overall losses in the system. It would seem like a 'purer' way of enabling the TLFs to accurately reflect the characteristics of the transmission system. Similarly, we believe that the impact of HVDC transmission assets on losses should also be included in the load flow modelling for TLFs for the same reason. Furthermore, of the options presented, we believe Task 3a (modelling the Western Link as an HVDC asset and not an AC one as in Task 3b) will produce a more accurate result.</p>
Drax	Yes	<p>We believe that this approach will avoid inappropriately 'skewing' flows in relation to non-Interconnector units. Given that Interconnectors (and HVDC transmission assets) do not pay charges to access the GB transmission network, it would not be appropriate for their flows to affect non-Interconnector Users located in the same zone. As such, their flows should be excluded from the calculation of Zonal TLF values.</p>

Respondent	Response	Rationale

Question 6: Do you believe that a Transmission Loss Factor Adjustment value should be introduced to prevent the wording of the CFD contract creating an anomalous effect for CFD generators?

Summary

Yes	No	Neutral/No Comment	Other
5	5	5	4

Responses

Respondent	Response	Rationale
Electricity North West Limited	No comment	We are not best placed to answer this question.
Power Data Associates Ltd	-	-
BUUK Infrastructure	-	No Comment
The Renewable Energy Company (Ecotricity)	No Comment	-
Centrica	Yes	We support the proposed way forward to remove any artificial effect on CFD generators, noting that a) a change to the CMA's Order would be needed to allow the Workgroup to take this forward as part of P350 b) and further dialogue is need with the LCCC and BEIS to ensure a final solution is efficient and reflects CFD policy intentions.
DONG Energy	No	In our view the workgroup is not currently in a position to propose a Transmission Loss Factor Adjustment value. This due to two main points: <ol style="list-style-type: none"> 1. The current drafting of the loss adjustment provisions in the CFDs are unclear, and the workgroup should seek further clarity over how these provisions will be interpreted before making any decisions 2. The workgroup needs to consider the policy intent and design of the CFDs, especially due to the lack of clarity in the CFD drafting, and should not come up with a solution so that the policy intent of the CMA's decision overrides the policy intent of the CFDs. For example, if the CFDs were designed to insulate a generator from any change to the losses they would face, but

Respondent	Response	Rationale
		<p>the drafting does not reflect this, the P350 workgroup should not come up with a solution so that they do face changes to their losses.</p> <p>Our recommendation is that the P350 workgroup seeks further clarity over how the P350 provisions, as currently drafted, will be interpreted through the CFDs, and then reaches a more informed decision over whether a Transmission Loss Factor Adjustment value needs to be introduced.</p> <p>There are several specific areas where we recommend the P350 workgroup seeks additional clarity:</p> <ol style="list-style-type: none"> 1. How should TLM(D) in the FIDeR and CFD contract be interpreted? Are they interpreted consistently? 2. Loss Adjusted Metered Output refers to “the transmission loss multiplier allocated in accordance with the BSC”. Does this definitely mean the TLM (BSC)? Does this mean the drafting under TLM(D) is inconsistent with “Loss Adjusted Metered Output”? 3. The current P350 report states that the LCCC has confirmed that the strike price adjustment is calculated each year based on the average of the transmission losses applied across all generators across the whole of the preceding year. In our view it would be useful if a step by step example could be done showing how the various parameters would change for an example FIDeR/CFD generator once P350 comes into effect. <p>Otherwise, we fully support the P350 workgroup’s steps of engaging with the LCCC and BEIS for clarity, and view that the introduction of the “Adjusted Season Zonal Transmission Loss Factor” may be appropriate, further to additional clarification on the CFDs.</p>
SmartestEnergy	Yes	-
RWE Supply and Trading GmbH	No	Our preference is to amend the terms of the CFD contract rather than the BSC provisions in relation to transmission losses.

Respondent	Response	Rationale
Falck Renewables Limited	Other	<p>We understand that the motivation for introducing a Transmission Loss Factor Adjustment (into the BSC) is to cancel the impact of the mechanism enshrined in the CfD drafting which adjusts the strike price to reflect changes to the Transmission Loss Multiplier (TLM).</p> <p>Within the CfD this is defined as the Transmission Loss Adjustment (TLA) alone, whereas in the BSC the TLM is comprised of both the TLF and the TLA. On this basis the TLM adjustment in the CfD drafting provides protection to CfD generators for changes to the TLA, but does not provide protection for changes to the TLF. We further understand that the motivation to change the BSC is to remove the protection offered by the CfD in regard to TLA.</p> <p>Generators who won CfD contracts in the first round of onshore CfD auctions entered the CfD process in the expectation that they would be protected from changes in transmission losses. This expectation flows from the change in law provisions which protect CfD generators from discriminatory changes in law. The proposed further change to the BSC aimed at adjusting the TLA could potentially be classed as a discriminatory change in law.</p> <p>The aim of EMR was to reduce costs, and there are clear signals that the introduction of CfDs is reducing costs. However, the proposed changes to Transmission Loss Factors cuts across the EMR ambition of lowering prices through CFD auctions as the introduction of TLFs will increase future CFD prices in Scotland where the wind resource is best.</p>
EDP Renewables	Other	<p>We consider that the policy intent needs to be made clear by BEIS and the LCCC before it can be determined whether the adjustment is appropriate.</p>
ScottishPower	No	<p>We do not believe that a Transmission Loss factor Adjustment value should be introduced as part of P350 as there is insufficient detail on page 27 of the Assessment Procedure Consultation to enable Parties to determine the potential impact on their CfD contracts and cash flows. It has not yet been determined whether the CfD contract can be amended, which would be a more appropriate solution. However, if it is determined that such an adjustment value is required this should be addressed through a separate modification where the issue can be given proper consideration.</p>

Respondent	Response	Rationale
National Grid Electricity Transmission plc	Yes	<p>This adjustment factor should be introduced to the P350 solution to prevent the identified interaction with the detailed provisions of the CfD contract. This is important as the benefits of the modification would be diluted as a result of the unintended consequences with respect to the CfD contract which could also create windfall gains and losses.</p> <p>It is also in line with the modified draft Order published by the CMA.</p>
npower	Neutral	-
LCCC	Yes	<p>There are two mechanisms within Electricity Market Reform Investment Contracts and Contracts for Difference (CFDs) that utilise variants of the Transmission Loss Multiplier (TLM):</p> <ol style="list-style-type: none"> a) The calculation of the difference payment; and b) The annual strike price adjustment calculation. <p>Under a), the new zonal TLM can be simply dropped in to the calculation directly from the BSC and its effect felt by CFD generators through their difference payments as intended.</p> <p>In the case of b), the annual CFD strike price adjustment calculation set out within the CFD Standard Terms 2014 and the Investment Contracts uses the "average annual TLMO+", which is the arithmetic mean of the values in each Settlement Period.</p> <p>Therefore, LCCC supports the introduction of a Transmission Loss Factor Adjustment (TLFA) value that intends to neutralise any unintended consequences of P350 on the strike price adjustment calculations.</p>
Uniper	Other: Maybe	<p>It is important that CfD participants are not protected from the effects of P350 (which could otherwise seem a potential negative under BSC Applicable Objective (f)), and we are reassured by the LCCC's confirmation that the TLM strike price adjustment would not lead to this. However it seems that there are valid concerns regarding the CfD contract standard terms referencing TLMs. If introducing such a 'TLFA' value would resolve the potential anomaly without amending the CfD contract or interfering with implementation of the P350 solution, this should be explored. We note that</p>

Respondent	Response	Rationale
		<p>the numbers involved seem quite small, but are interested in the results of the further exploration on the materiality of this issue as promised for December.</p>
Scottish Renewables & Renewable UK	No	<p>Scottish Renewables objects to the proposed TLF adjustment factor as a means of correcting an 'anomalous' effect for CfD generators.</p> <p>The CfD contains an explicit mechanism which adjusts the Strike Price to reflect changes in the TLM (transmission loss multiplier). Within the CfD this is defined as the TLA (transmission loss adjustment) alone (including any change in the 45:55 weighting).</p> <p>It is essential that LCCC and BEIS clarify the policy intent before the workgroup can consider any adjustment. It is therefore our view that an adjustment factor should not be introduced to counter any changes to the TLA.</p> <p>In addition it is important the BSC group considers the relationship between any potential changes introduced through P350 and the existing 'change in law' provisions within the CfD contract which protect CfD generators from discriminatory changes in law. In particular, it is important to note that a principle of foreseeable change applies, where parties to the CfD should be made whole against changes that they could not foresee that were brought forward after contract signature</p>
EDF Energy	No	<p>We support use of a Transmission Loss Factor Adjustment for Transmission Loss Factors determined from load flow modelling, but think there should be a different objective than reducing impact on CFD settlement as suggested in the assessment report. We think values should be determined so that TLFs and TLMOs used in settlement reflect locational allocation of variable losses and non-locational shared allocation of other losses respectively, in the same manner for delivery and for offtake, as in our response to question 4. This simplifies understanding of TLF and TLMO for both delivery and offtake, and provides a rational basis for future changes to transmission loss allocation. CFD settlement may need to be adjusted to use average TLMO for delivery as intended, rather than TLMO+ which is currently the average but whose nature will change under P350.</p>

Respondent	Response	Rationale
		<p>Potential adjustments to strike price according to changes in transmission losses, BSUoS and RCRC in CFD contracts were intended to allow for changes in certain costs shared by generators which would be expected to affect wholesale price but not cause a corresponding change in a generators net revenue or cost per MWh. For example, a pro-rata share of an increase in transmission loss costs would be expected to increase costs for the marginal generator and increase wholesale price, but would not provide market benefit to generators because there would be a corresponding cost per MWh. Without adjustment to strike price, the increase in wholesale price would reduce (or make negative) any difference payments to the generator. The strike price adjustment seeks to adjust for this, so a CFD generator is hedged against changes in specified shared costs.</p> <p>The standard CFD contract refers to a transmission losses adjustment to contract strike price, which may apply depending on individual contract terms:</p> <p>““TLM(D)” means:</p> <p>(A) the transmission losses adjustment allocated in accordance with the BSC to BM Units belonging to delivering Trading Units and defined as at the Agreement</p> <p>Date in section T of the BSC as TLMO+j; or</p> <p>(B) any new or substitute multiplier or factor which is in the nature of, or similar to, that adjustment;”</p> <p>We think this was intended to allow for changes in transmission loss allocations affecting all BM Units equally, and so likely to alter operating costs and wholesale price per unit volume, in the same way as changes in BSUoS and RCRC, also considered in CFD adjustments. TLMO+j currently represents the only adjustment made to all BM Units in delivering Trading Units, and is thus currently the average for all such units. However, with introduction of non-zero TLFs, it is no longer the only adjustment made, and no longer represents the average allocation of losses for all such units. We think “a new or substitute multiplier or factor which is in the nature of, or similar to, that adjustment” under clause (B) above is justified. A value determined from average</p>

Respondent	Response	Rationale
		<p>Transmission Loss Multiplier minus 1 across all relevant BM Units would be an obvious candidate. Currently $TLM+ - 1 = TLMO+$, but with P350 the relationship will change. Note that TLM is used in calculation of difference amount itself within CFD contracts, not TLMO+.</p>
Vattenfall	Yes	<p>We have found the explanation in the consultation document difficult to follow. However, we note that the concept of factoring transmission losses into CFD payment calculations has been a long-standing policy aim of the CFD contract.</p> <p>We would therefore support any proposal which will facilitate this objective and ensure that there is a level-playing field for all generators in GB with regards to losses (including ensuring that differences regarding treatment of losses between generators who have signed CFD contracts and prospective CFD generators are minimised).</p> <p>In addition, we note that one of the key strengths of the CFD regime is that the contracts are private law contracts and, once signed, cannot be retrospectively amended. This is an important facet of the CFD and we therefore support the modification of the BSC to achieve this aim rather than the CFD contract.</p>
Drax	Other	<p>As noted above, we question the original policy intent behind the CfD contracts. We believe that CfDs were drafted with the intention of protecting CfD BMUs regarding any movement in transmission losses to protect their rate of return. The LCCC has established that CfD generators will not be protected against the change in locational losses which goes against our, and potentially many other generator's original expectations.</p> <p>As such, we believe further analysis is required to properly assess the impact on these generators, particularly given that this change is yet to be consulted upon by the P350 workgroup and the issue was not consulted upon during the original CMA investigation.</p> <p>In addition, the solution is not complete and requires the BSC Panel to develop a separate process at a later date in order to complete the picture. As such, it is not possible to fully assess the impact of the solution.</p>

Respondent	Response	Rationale

Question 7: Do you have any further comments on P350?

Summary

Yes	No
10	9

Responses

Respondent	Response	Comments
Electricity North West Limited	No	-
Power Data Associates Ltd	Yes	<p>The description of Transmission Losses in the section 2 describes the technical losses. On a number of occasions I have highlighted the lack of clarity with the BSC in respect of 'own use' consumption. In this context 'own use' is the consumption used by NG/SP/SSEN/Other transmission network operators own use in operating and running their transmission networks. This consumption should (wherever possible) be metered (or allocated an unmetered consumption) and accounted for within the settlement arrangements, rather than treated as part of losses and smeared across all users. By measuring the energy usage in operating the transmission network (wherever possible) then this consumption can be actively reduced through conventional energy management investment and operational optimisation. When this usage is included within the 'losses' there is no encouragement by the transmission companies reduce this operational energy use.</p> <p>The operational 'own use' may include substation ancillaries – heating, cooling, communications, security, lighting, small power, mess rooms, office accommodation, etc. In some circumstances it may include ventilation fans, cooling, lighting, fire pumps, etc. used in cable tunnels, etc. In some cases substation buildings and associated offices and depots are powered through electricity which is allocated to "losses".</p>
BUUK Infrastructure	Yes	<p>We would like to ask for some clarification as to whether the intention is for the Distribution report obligations to apply to IDNOs or parties with no GSP connections/Offshore transmission connections? At the moment it appears we, as an IDNO, might need to submit a report to say there is zero power flow</p>

Respondent	Response	Comments
		on our networks between these two points. This would appear to be a bit of a waste of time and not cost effective for those parties affected.
The Renewable Energy Company (Ecotricity)	No	-
Centrica	No	We have no further comments.
DONG Energy	Yes	<p>The workgroup's view was that an open load flow model tool would be outside the scope of P350. We understand the workgroup's view as the tool is not part of the CMA's order.</p> <p>We do however fully support the development of such a tool – similar to the transport model used for TNUoS charges, there should be a public tool so that parties can estimate their exposure to losses. Failing that, we view there should be long term forecasts so that parties can gain some understanding of the potential losses they may face as the system develops.</p>
SmartestEnergy	No	-
RWE Supply and Trading GmbH	No	-
Falck Renewables Limited	Yes	Has the impact of P350 on the fledgling electricity storage market been considered? It would seem that P350 will have a negative impact on electricity storage in Scotland.
EDP Renewables	Yes	<p>Extending our response to question 1 above:</p> <p>In our response to question 1 we stated our view that projects which are significantly advanced in their development or are already operational are unable to respond to a locational signal. The proposed methodology will result in the TLF (and therefore TLM) that applies to each Zone changing on an annual basis as a result of changes to power flows. This effectively exposes participants to changes in the TLF that applies to them as a result of investment decisions made by others, e.g. due to the siting of other large generation projects in the same Zone. We do not consider that this promotes effective competition as it exposes large generation projects that are based on a long-term business cases to changes that are outwith their control and impossible to predict.</p>

Respondent	Response	Comments
ScottishPower	No	n/a
National Grid Electricity Transmission plc	No	n/a
npower	Yes	<p>We noted that our previous P350 consultation questions were not addressed; therefore we have outlined them again and would like some resolution. These form the first 3 questions below.</p> <p>1) How will directly connected sites be managed as part of P350?</p> <p>2) Why did the CMA change from their original intention of applying zonal t-losses only to generation since we do not believe demand customers can be incentivised in any way with this signal?</p> <p>3) Further clarification of calculations required of both the Zonal TLF's and the Seasonal average TLF's. For example, clarification on whether since the final losses are to apportioned according to the constant factor alpha would the TLF effectively be split TLF+ and TLF- to simulate the effect of this term? In the same way that the TLMO will be split in terms of TLMO+ and TLMO.</p> <p>4) Please could you provide a worked example of how the set of final data published in January will be used with final outturn volumes to generate a set of final t-losses to be applied to each BM unit? Please see point 7 below for additional workings.</p> <p>5) We would like a view of the documents 'Network Mapping Statement', and 'Load Flow Model Specification document' as already used for the test P350 Load Flow Modelling so we can understand the process better. We recognise the published documents won't be available until October 2017.</p> <p>6) A major concern for us is BM units switching to different zones. We would like clarifications including whether supplier BM units can be switched to different zones or is it only DC sites can move GSP zones? If a BM unit moves how this will managed in terms of importing / exporting periods? Will there be only ever by 1 GSP per zone? (See question 4 above) From Attachment B (P350_AC_B-Draft Legal Text v0.3) Section 4.1.b relates to zones</p>

Respondent	Response	Comments
		<p>being based off GSPs and being subject to change</p> <p>7) There is allowance for Under- or over-recovery of variable losses through a pre-determined semi-marginal Transmission Loss Factor values to be recovered from the non-locational Transmission Losses Adjustment values. This will impact the future transmission losses, making them less predictable and more volatile. Because of this, we would like more details of how this would work retrospectively and all components of the transmission losses for 15/16, and the timings involved; including when could we expect to get the Transmission Losses Adjustment values, in the first instance for the year 18/19.</p> <p>8) In each worked example from point 4 and 7 please could you include the significant dates e.g. when sets of data is published, reference year and applicable seasons. We have produced an example calendar showing some significant dates, please can something more formal be introduced into the process. The calendar will help demonstrate the practical application of the data as it becomes available. Please refer to appendix 1 for supporting information.</p> <p>9) From Attachment B (P350_AC_B- Draft Legal Text v0.3) Section 4.1.a (i) and (ii), are these mutually exclusive as this is not clear?</p>
LCCC	No	-
Uniper	No	-
Scottish Renewables & Renewable UK	Yes	<p>Scottish Renewables is the representative body for the renewable energy industry in Scotland. We provide a united voice for around 270 member organisations working across the full range of technologies to deliver a low-carbon energy system integrating renewable electricity, heat and transport. RenewableUK represents over 440 members from the wind, wave and tidal energy industries; our technologies will provide the majority of the renewable electricity needed to meet renewable and carbon reduction targets out to 2030.</p> <p>It is our view that the Competition and Markets Authority's decision "to require that variable transmission losses are priced on the basis of location" is based on insufficient evidence and is contrary to the direction of travel for UK and EU</p>

Respondent	Response	Comments
		<p>energy policy.¹</p> <p>The Committee on Climate Change has highlighted that the installed capacity of renewable electricity will need to double if we are to remain on track to meet our 2050 climate targets². There is significant concern that the changes proposed through BSC modification P350 would have a significant and disproportionate impact on renewable electricity generators in Scotland and would serve to undermine investor confidence and constrain output from clean energy generators.</p> <p>Renewables generation by its very nature must locate where the resource is strongest; often far from consumers and at the edges of the electricity network. It is important to note that a strong locational economic signal is already in place through Transmission Network Use of System (TNUoS) charges. We therefore see it as unnecessary to implement an additional locational signal with the same zonal arrangement to augment the TNUoS driver.</p> <p>Changes to introduce locational signals through transmission losses will therefore only serve to undermine investor confidence and threaten the future development of the sector. For this reason, we object to the introduction of BSC modification P350.</p>
EDF Energy	Yes	<p>It would be preferable for HV DC circuit metered flows input to settlement processes to use registered settlement meters and data collection processes. This would also allow the considerable losses on the expected circuits to be accurately and independently monitored. Using ad-hoc procedures to collect and process transmission company operational data as proposed will reduce accuracy and transparency.</p> <p>A better description of “fixed losses” as described in the assessment report would be “other losses which don’t vary simply according to circuit power flow and electrical resistance”. There are various sources of other losses, including those described in the report, and they are generally less sensitive to levels of power flow than the more easily modelled “variable losses”.</p>

Respondent	Response	Comments
Vattenfall	Yes	<p>We note comments in the consultation document with regards to producing a tool and/or official estimates/forecasts of future Line Loss Factors. We believe that such a tool or forecast is of critical importance to the success of P350 implementation. It will allow investors to assess the business case for new generation investment in various TLF Zones across GB and therefore facilitate improved economic use of the transmission system.</p> <p>By making such a tool or forecast publically available to all parties it will also facilitate competition and ensure that smaller players are not at a competitive disadvantage to larger players if they lack the resource to develop their own models. Within this context we note that National Grid produces five-year forecasts for TNUoS tariffs. We therefore encourage the BSC Panel to define the production of a forecast as an objective of the Transmission Loss Factor Agent.</p> <p>If this cannot be completed within the tight timescales of the CMA Order then we believe it should be progressed in parallel, either through a subsequent modification or another means, for implementation at the earliest possible opportunity.</p>
Drax	Yes	<p>The signal that P350 creates seeks to incentivise a shift in generation from north to south, i.e. closer to the centre of demand. This negatively impacts generation located in the north that has already invested in the region and has no way of responding to the signal.</p> <p>Whilst not in scope for this modification, we encourage National Grid and Ofgem to consider the impact on investment signals for flexible generation situated in the northern half of the system. As the signals currently stand, there is little incentive to site flexible generation in the north and P350 will further discourage investment.</p> <p>A holistic review of incentives is required in order to ensure the correct investment signals are created to enable reliable flexible generation to locate where the System Operator (SO) requires it. Efficient siting of flexible generation that can provide ancillary services, as required to meet the needs of the SO, will result in more efficient management of the system at a lower overall cost to consumers.</p>

Appendix 1: Additional Responses

Mainstream Renewable Power

As a member of Scottish Renewables we have contributed to, agree with and fully support and endorse, the response submitted by them to this consultation. We therefore ask you to note that our views and position on this consultation are consistent with those submitted by Scottish Renewables on behalf of its members.