P229 Consultation Responses

Consultation issued on 2 November 2009

What stage is this document in the process?

01 Initial Written Assessment

02 Definition Procedure

03 Assessment Procedure

04 Report Phase

We received responses from the following Parties

Company	No BSC Parties / Non-Parties Represented	Role of Parties/non-Parties represented
Sembcorp Utilities (UK) Limited	**2/0**	Generator / Supplier
Eggborough Power Limited	**1/0**	Generator
Haven Power Limited	**1/0**	Supplier
SAIC Ltd. (for and on behalf of ScottishPower)	**7/0**	Supplier / Generator / Trader / Consolidator / Exemptible Generator / Distributor
RWE Supply & Trading GmbH	**10/0**	Supplier/Generator/ Trader / Consolidator / Exemptible Generator / Party Agent
Immingham CHP LLP	**2/0**	Generator/trader
Drax Power Limited	**1/0**	Generator
Rio Tinto Alcan (RTA)	**0/1**	Aluminium Smelter
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	**2/0**	Generators & Traders
GDF SUEZ Energy UK	**3/0**	Generator and Supplier
International Power (IPR)	**6/0**	Generator/Trader
Centrica	**10/0**	Supplier/Generator/Trader
EDF Energy	**13/0**	Supplier/Generator/Trader/Consolidator/Exemptible Generator/Party Agent/Distributor
E.ON UK	**6/0**	Supplier / Generator / Trader / Consolidator / Exemptible Generator
Scottish and Southern Energy	**9/0**	Supplier / Generator / Trader / Consolidator / Exemptible Generator / Distributor
National Grid	**1/0**	Transmission Company
Customer Focus[1]	**0/1**	Customer

[1] Please note that the Customer Focus responses are appended to end of the document.

Question 1: Would the Proposed Modification P229 help to achieve the Applicable BSC Objectives?

Summary

Yes	No	Neutral/Other
4	12	-

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	No	We make no comment on Objective (a) On Objective (b) we are not convinced the Proposed Modification promotes efficient operation of the transmission system because owing to the complexity of the modelling approach we are unable to form any view as to whether the resulting TLFs are cost reflective. We note from a cursory glance at the Siemen's load flow modelling report (we do not have the luxury of being able to study this in depth) that: - There is no justification why a DC model is a good representation of an AC system. - The grouping of nodes into zones appears to introduce 'errors' which can be sizeable in some zones. - There appears to be a presumption that historic running patterns are a good guide to future running patterns. In a world of variable fuel prices this is unconvincing. - The results also seem to be very sensitive to interconnector flows. In summary, there are so many variables that it seems highly unlikely that the calculated TLFs will be at all representative of actual losses on the day. This last comparison does not appear to have been made. On Objective (c) we believe the Proposed Modification acts as a barrier to competition in generation and supply (and hence trading of electricity) because of its undue complexity. Complexity in trading arrangements serves to discourage new players from entering the market and puts existing small players at a huge informational disadvantage compared to their larger competitors. By way of example, in responding to this consultation we are being asked to read around 400 pages and interpret 150 figures and 120 tables. Large vertically integrated energy companies can afford to employ large teams of experts to perform complex load flow calculations and hence steal an informational advantage over smaller players. It is no coincidence that this modification was proposed by a company among the former. Note that the Cost Benefit Analysis does not attempt to quantify this effect and so clearly is flawed. The Proposed Modification clearly fails Objective (d) because it introduces yet more complexity and

Respondent	Response	Rationale
		bureaucracy into the balancing and settlement process.
Eggborough Power Limited	No	Eggborough does not believe that Proposed Modification P229 would help to achieve the Applicable BSC Objectives for the following reasons: • The loss factors are not representative of the period to which they apply and risk making the distribution worse rather than better. • The modification fails to take account of other locational signals, such as transmission pricing, that already include an element for losses. • The application of factors is unlikely to have a significant impact of the location of either generation or demand because: a. Existing generators and customers have very large sunk costs tying them to there existing locations b. The signals are not sufficiently stable to have any noticeable effect on investment decisions. • The impact on individual parties is out of all proportion to the purported benefit of the modification • The administrative cost is high for something with uncertain benefits On this basis, Eggborough does not believe that Proposed Modification P229 would help to achieve Applicable BSC Objectives (b), (c) and (d) compared to the current baseline
Haven Power Limited	No	Haven Power does not believe that the Proposed Modification P229 would help achieve the Applicable BSC Objectives for these reasons: The efficient, economic and co-ordinated operation by the Transmission Company of the Transmission Service: • It's clear that this modification will affect Suppliers and their current and potential customers who are unable to respond to this modification and its intentions due to previous decisions on existing locations; • There appears to be a significant conflict between planning to use certain generation technologies where they may be most efficient (e.g. wind in Scotland where it is most windy) and where they would be most cost effective (e.g. in the south where the majority of customers are located). The promotion of 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: • There would be a cross-subsidy for users that still contribute to transmission losses despite being in a more favourable location; • The proposed methodology is very complicated and difficult to understand, especially for small suppliers that have not had the resources to actively partake in the Modification process;

Respondent	Response	Rationale
		• The implementation of the Proposed Modification would be costly and difficult to implement and maintain going forward, especially for a small supplier such as Haven Power. For the above reasons, Haven Power's view is that the Proposed Modification 229 does not achieve Applicable BSC Objectives (b) and (c).
SAIC Ltd. (for and on behalf of ScottishPower)	No	ScottishPower do not believe that a seasonal zonal transmission losses scheme as proposed in P229 would better achieve the Applicable BSC Objectives, when compared with the current baseline. Indeed, we believe that certain fundamental aspects of P229 would jeopardise the achievement of these Objectives. The societal benefits from the enhanced security of supply provided by the National Electricity Transmission System are enjoyed by the whole of GB and therefore the costs of achieving this objective, including the associated transmission losses, should be applied across the whole market. The overriding effect from P229 of transferring of values from one set of parties to the other creates windfall gains and losses would be detrimental to the Objective (c) - promoting competitions, as well as causing higher costs to the industry and end consumers. P229 also removes the consistent basis for trading at the NBP, increases complexity and costs in the trading market and jeopardising the already delicate liquidity in the market creating further barrier to entry for new and small suppliers. ScottishPower believe that P229 would create a far greater cross subsidy than the current situation. We also believe that the current arrangement is simpler and necessary to facilitate the market for trading at the NBP. Furthermore, P229 only improves cost reflectivity in one way but detriments it in another where some parties are credited for losses and the averaging methodology used in P229 means that some parties are disadvantaged further through their particular nodal position. The proposed modification discriminates against certain parties while favouring others through the transfer of windfall values and therefore is detrimental to Objective (a). While one may argue that any losses reduction as suggested by the CBA results would better promote Objective (b) for the efficient, economic and co-ordinated operation of the national transmission system, we believe this is based on assumptions that the market is centrally despatched, perfectly efficient and ideal, and that all parties' costs/contracts are known and consistent. Also, It does not take into account of the potential

Respondent	Response	Rationale
		increase in Balancing Services costs via the wholesale market or the balancing mechanism. This modification does not generate any long term locational signal. The short term signal for despatching remains uncertain in reality. Therefore any reduction in losses and potential efficiency gain are questionable. In fact, the Modification may have a detrimental effect on the availability of flexible plant for the SO to manage the transmission system at times of system stress. This modification will have significant implementation costs and a higher cost of administration compared to the baseline and is detrimental to efficiency Objective (d). Furthermore, ScottishPower do not believe the CBA results give definitive conclusion that P229 Proposed would give significant benefits in view of the effect of distributional impacts on parties, that justify a change. ScottishPower acknowledge that the CBA could only be done based on known information at the time and the Mod Group has to accept the deemed expertise of the CBA consultant. However, we find that the wide range (-£17m to £277m (with SOx and NOx included) or £4m to £98m (excluding SOx and NOx)) of the CBA results makes it difficult to conclude but believe that any benefits are overstated, as in our view, they are based on assumptions that are not representative of the market reality. The exercise also showed the uncertainty of the industry and indicated that any decision on making changes which could have such significant impact to the industry as this modification has without taking into account of Government policy and industry expectation would be premature and inappropriate. This is particularly the case on the issues with Round 3 wind development, and the ENSG 2020 vision of network development especially relating to offshore HVDC links between Scotland and England. The results of the Task 10 as performed by the Load Flow Modeller showed significant differences in TLFs if the expected wind and infrastructure development were realised as indicated by Round 1, 2 & 3 and the ENSG report. ScottishPower are disappointed that the CBA consultant did not take the views of the Mod Group on this in their consideration of scenarios, particularly when Task 10 scenario was developed and discussed at length by the Mod Group and the LF Modeller. We believe such scenario would at the very least be part of the aggressive wind scenario even though one would have also assumed that the 'aggressiveness' of development should also include shortening of timescale for wind farms to be implemented against their existing plan. As with all BSC modifications and procedure to be followed, ScottishPower acknowledge that the Mod Group was under timescale constraint and could only carry out a certain amount of assessment based on the current conditions, we therefore suggest that if the Panel and the Authority were to decide on the modification predominantly based on the benefits from the CBA results, it would need to consider a more realistic scenario.

Respondent	Response	Rationale
RWE Supply & Trading GmbH	Yes	The proposal will better facilitate BSC Objective A relating to the efficient discharge by the licensee (NGC) of the obligations imposed upon it by its licence. A seasonal zonal transmission losses scheme will remove market distortions and the discrimination that exist in the present arrangements. The proposal will better facilitate BSC Objective B by enhancing the efficient, economic and co-ordinated operation by the licensee (NGC) of the licensees' transmission system. Adoption of a seasonal zonal transmission losses scheme will remove cross subsidies which the present uniform charging for transmission losses creates. A seasonal zonal transmission losses scheme will therefore enhance efficiency through more cost reflective charging which could be expected to influence both short term plant despatch and long term business decisions influencing investment in both generation and demand. In addition, the cost benefit work has demonstrated that a seasonal zonal losses scheme is capable of delivering additional efficiency benefits in terms of reduced overall losses when compared to an annual losses scheme. This proposal will also contribute to better achieving the BSC objective C relating to the promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) and the promotion of such competition in the sale and purchase of electricity. In particular: • The proposal will introduce a cost reflective allocation of transmission losses according to the degree to which BMUs in an applicable zone give rise to losses; • The proposal removes the current cross subsidies between customers (north to south) and generators (south to north) that occur through the uniform allocation of transmission losses; • The allocation of losses to zones will enable the costs to be reflected on generation and demand in a manner that does not unduly penalise individual BMUs; • A scheme based on the ex ante calculation of zonal loss factors will enable users of the transmission system to estimate the impact and appropriately reflect the costs; • A seasonal zonal scheme would provide better information to users of the transmission system regarding the implications of siting generation and new load in different parts of the country; and In the longer term seasonal zonal allocation of transmission losses would encourage appropriate investment in generation or new load in areas which currently have limited capacity relative either to generation or demand. This will ultimately bring down the overall costs of losses with benefits for customers and the environment.
Immingham CHP LLP	No	ICHP strongly opposes P229 and believes it does not better facilitate achievement of the applicable BSC objectives for the following reasons.

Respondent	Response	Rationale
		Efficiency (objective b) It is clear from the London Economics analysis that assessed benefits are narrowly confined to short–term despatch effects, which may well not materialise, and the proposal does not create any longer-term locational signalling. The modification group has also drawn attention to inherent inaccuracies in the TLF calculation suggesting many of the gains and losses will be arbitrary in some settlement periods. Further many of the benefits can be expected to arise "organically" from wider system changes and new investment in the south, and which cannot be claimed as attributable to P229. It is also relevant that that net costs arising from operation of the system could increase. Increased costs will be passed through; cost savings will be pocketed by the beneficiary. The effect of this could well be that costs to consumers could increase. The potential impacts of P229 could also confuse existing locational signals in the market place in the form of National Grid's transmission use charges, and the issue of duplication and overlap with locational elements of TNUoS charges needs to be addressed urgently, and should not be ignored by either the modification group or the BSC Panel. These distortions are aggravated by the use of different generation zonal configurations for TNUoS and transmission loss charging purposes. Against this, as with all previous proposals for zonal losses, the cost and complexity of the change is significant, and we believe understated by the London Economics analysis. Understanding, forecasting and managing the variation in locational TLFs will be difficult and impose further transactional costs on the market. These costs would be likely to increase disproportionately for smaller players. We believe the impact of the change measured against objective (b) will be at best neutral, increasing costs overall and with operational gains proving largely illusory. It could also have a negative impact in terms of environmental benefits because of the costs it might impose on low carbon technologies located in the North and Scotland, we think overall the impact will be negative.
		Competition (objective c) P229 would also be inequitable and create windfall gains and losses to existing asset owners and is thus discriminatory. It also creates a disproportionate transfer given the assessed benefits, and in some instances it

Respondent	Response	Rationale
		introduces new cross-subsidies without addressing intra-zone cross-subsidies. Distributional effects could be sufficiently material as to lead to cancellation of some committed schemes and discourage significant new investment at a time when the Government is seeking to stimulate new investment, much of which can be expected to arise in regions most adversely affected by zonal loss factors. These risks are not diversifiable, and the modification introduces a further unmanageable risk for certain types of participant. Extrapolating these arrangements to participants already committed to investment creates a random redistribution of wealth. For businesses such as our own based around CHP in Northern locations, where electricity production tends to be a secondary process tied to heat production, the change simply increases arbitrarily the cost of business. The change therefore can thus be likened to an operational tax. More generally economic signals can only work if market participants are able to respond to them. Many participants, e.g. existing generation, CHP (located to suit demand needs on existing industrial sites) and windpower (located where the wind blows), cannot respond to new locational costs in the market. It is highly undesirable, given the quantum of sunk investment on the system, to create such incentives given the impact the change will inevitably have on perceptions of regulatory risk. It is also relevant that integrated players would tend to have a natural hedge against the effect of the proposed change because of their regional spread, and it can therefore be expected to have a more pronounced impact on non-portfolio players. Further, by increasing market complexity and disadvantaging remaining independent generators in the North and Scotland, it can be expected over time to create further pressures for integration to the detriment of wider competition in the sector. Thus, imposing P229 on a market where there will be skewed ability to respond will lead to market inefficiency through artificially increasing some participants' costs, especially where very large capital investment has already been spent on facilities designed to last 30 years. In turn such change will distort competition. Overall the effect of P229 measured against applicable objective (c) is significantly negative, penalising existing investment decisions and causing a negative impact on competition. Looking forward, as we have noted, the change increases market complexity and risk, and we do not agree this risk is diversifiable, which

Respondent	Response	Rationale
		could reinforce barriers to entry.
		<u>Efficiency in BSC arrangements (objective d)</u> The cost and complexity associated with the proposal lead us to believe that P229 would create a net disbenefit under objective (d).
Drax Power Limited	No	Drax does not believe that Proposed Modification P229 would help to achieve the Applicable BSC Objectives for the following reasons: System Efficiency Considerations: • The ongoing redistribution of volume as a consequence of implementing P229 would be based upon the actions of system users twelve months previous;therefore, in a given settlement period, users would be subject to losses or gains in allocated volume that are based upon a point in time when (a) the load on the system may have been substantially different, and (b) the user may not have been active on the system (i.e. allocated losses based upon the actions of others); • Existing users (particularly suppliers / demand users and independent generators) will not be able to react to the signals that this modification aims to put in place due to historic location decisions and the investments they have already made; • In some zones, the forecast TLFs / TLMs that result from the CBA suggest that the potential longer-term signals produced from P229 are not stable enough to be meaningful when making investment decisions (adding to cost uncertainty); • The proposal does not take into account the existing locational signals that are currently in operation and the relationships that should exist to ensure the correct balance, and overall effect, of such signals; • The resulting investment signals may discourage investment in areas that are more suitable for a given technology (e.g. wind turbines being located in an area where they would be less efficient). Competition Considerations: • The proposal creates a huge redistribution of volume that is disproportionate to the perceived benefits of the proposal; • The Proposed Modification would create a new cross-subsidisation in the opposite direction to the defect currently perceived by the proposer: ○ it must be recognised that all users contribute to the total volume of transmission losses, regardless of location on the system; ○ under the Proposed Modification, a proportion of users would be awarded extra volume for continuing to contribute to total transmission losses, which is not cost reflective; • The proposed system is highly complex, which is a disadvantage to both small and new participants

Respondent	Response	Rationale
		(generators and suppliers), regardless of where they are located; • Some plant are required to run in specific locations due to the non-power related services they provide (e.g. heat from CHP); • Locating an investment in a less favourable location as a result of inadequate investment signals may result in higher costs for the user (thereby affecting competitiveness). BSC Efficiency Considerations: • The processes and IT infrastructure associated with the Porposed Modification would be costly to implement and maintain. On this basis, Drax does not believe that Proposed Modification P229 would help to achieve Applicable BSC Objectives (b), (c) and (d) compared to the current baseline.
Rio Tinto Alcan (RTA)	No	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	Yes	*Objective (a) the efficient discharge by the licensee of the obligations imposed upon it by this licence* This modification does not help achieve these objectives. *Objective (b) – the efficient, economic and co-ordinated operation of the GB Transmission System* Applying uniform Transmission Losses means that, at present, the costs involved in transmitting any one generator's production to its customers are not reflected in that generator's costs. This lack of a locational price signal means that inefficient despatch of generation, located far from the main sources of demand, will occur. This places additional resource requirements on the network and increases the amount of Transmission Losses that occur on the network. While there are locational signals from transmission charging, further incentivising the location of generation near demand (and vice versa) will minimise both the size of the network and its environmental impact, increasing the efficiency and economy of the network. This modification will therefore further this objective. *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'* A uniform Transmission Loss rate means that generation and demand that incurs the greatest losses (owing to their location) is subsidised by those sites that use the network more efficiently. In order to provide more effective competition and a more efficient energy system we thus support the application of Variable Transmission Losses. We do however note that full cost reflectivity in Transmission Loss rates may not be the optimal solution, as new generating capacity for some renewable energy sources (such as offshore wind) in many instances will have to be placed far from demand centres and in these cases will suffer from high increases in network charges. In order to not to jeopardize the Government's targets for Renewable Energy these technologies should be considered separately to any UK onshore regime. *Objective (d) - Promoting efficiency in the implementation and administration of*

Respondent	Response	Rationale
		balancing and settlement arrangements. Any attempt to improve the accuracy of the cost allocation mechanism used by the BSC with regard to Transmission Losses will inevitably result in additional complexity when compared to the current baseline. The minor increase in cost and complexity caused by this modification will be outweighed by the environmental and competitive benefits that will arise in the longer term.
GDF SUEZ Energy UK	No	The proposal does not meet the BSC objectives. Our assessment of the impact on each is outlined below: With regard to **BSC objective A; "The efficient discharge by the licensee [i.e. the Transmission Company] of the obligations imposed upon it by this licence [i.e. the Transmission Licence]".** The introduction of a seasonal, zonal losses scheme would be inconsistent with National Grid's licence condition relating to cost reflective transmission charging. Transmission charging (TNUoS) currently acts as a clear, single, cost reflective mechanism by which to reflect locational costs on the network. Locational incentives should not be found in other charges. Introducing a locational element to transmission losses would reduce the clarity of transmission charging, making it more difficult to determine whether costs or incentives were being applied in a fair and reflective manner. A key aspect of the original modification is the creation of positive TLMs (generation output) in some zones. This is inaccurate as it does not reflect real transmission losses on the system. It is not physically possible for variable transmission losses to become positive in any zones. This proposal would inflate metered outputs for generators where the TLM becomes >1 This modification would result in an inaccurate losses regime which is not acceptable. Additionally, as stated in their Transmission Company Analysis response, National Grid will be required to establish and maintain an additional Network Mapping Statement. This is likely to require frequent updates and has the potential to introduce scope for error by means of its complexity. With regard to **BSC objective B; " The efficient, economic and co-ordinated operation of the national transmission system"** the proposal would not further this objective. The claim made in the proposal that the introduction of a seasonal zonal transmission losses scheme would increase overall efficiency on the networkdoes not take into account the full impact on efficiency and the environment of the despatch of generation plant under the new regime. Firstly, the cost benefit analysis shows that, even under the most optimistic assessment, potential benefits are very small. In addition, benefits have been calculated using a 3.5% discount rate. We consider that a higher discount rate would be more appropriate. The disadvantages, including the impact on charging clarity, complexity, risks of error, etc. outweigh the potential small benefit. The zonal forecasts for transmission losses contain inaccuracies (for example regarding forecasts for generation in Zone 6) which undermine the calculations and mean that the theoretical benefits may not actually be achieved in practice. Secondly, despatching plant closer to areas of demand does not necessarily result in a more efficient outcome as the plant nearer the areas of demand may have a lower efficiency and displace more efficient plant which is further away. In this case, the marginal benefits from reduced losses would be partially or totally offset by a reduction in overall efficiency. This outcome would also be inconsistent with environmental objectives which seek to minimise CO2 and other emissions from generation plant.

Respondent	Response	Rationale
		This proposal, if implemented would be detrimental to BSC 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 proposal worsens effective competition between companies. The proposal seeks to impose a redistribution of profit between existing market players, introducing windfall gains for some players and increased costs for others as described in section B above. In respect of generation the modification applies to all plant, existing and new, and as such is unduly discriminatory in nature. Existing generation plant cannot respond to locational signals whereas investors in new plant can take this into account in the investment decision. This gives new plant an unfair competitive advantage compared to existing plant and owners of existing plant cannot act to manage this impact. This modification is also completely inconsistent with regulatory predictability which is vital to investor confidence. Therefore, in addition to being unacceptable from a competition point of view, loss of investor confidence in the UK market would have a negative impact on customers and serious consequences for energy policy. It is assumed that the benefits from the new losses regime would be passed through to consumers. However, because the new losses regime would create a small number of winners and a large number of players for whom there is a negative or neutral impact, the competitive pressures do not exist to encourage the players who obtain a net benefit to pass savings through to customers. In addition, wholesale prices are set by the short run costs of the marginal plant. The consequences of a seasonal zonal losses regime are likely to be a redistribution of costs and benefits between plant in the merit order rather than a reduction in the wholesale price itself. A zonal losses regime would penalise those customers in the south of England who may choose to take a more environmentally friendly Green Tariff. The majority of green generation currently on the system is Scottish based onshore wind production which faces greater losses on the generation side. Also, there would be a double impact as under this proposal, southern based customers would face increased losses on the demand side. As stated above, we do not consider that the losses regime should be used as a locational incentive because TNUos already exists for this. However, introducing a locational incentive is also unlikely to have the desired effect. For a large share of priority low-carbon plant in the UK sites are imposed by offshore wind zones and by the sites in the NPS for nuclear plant. For onshore wind, wind speed will be a major factor in siting decisions. Fuel deliveries and access to CCS infrastructure are key siting criteria for new coal plant and cooling is a factor for both CCGT and coal. For these reasons locational incentives are likely to have a negligible impact on siting decisions for generation plant. Increasing the costs associated with some locations will degrade the economics of siting plant in these locations and could result in some investments in low-carbon plant being abandoned. In fact, it is CCGTs which are the least constrained in terms of location and any increase in locational penalties could encourage the development higher CO2 emitting plant in place of low-carbon plant.. The Renewables Obligation Certificate (ROC) acts as a single, clear incentive mechanism designed to encourage the development of new renewable generation. The 2009 iteration of the Renewables Order following the Governments' recent review of renewable financial incentives makes additional provision for

Respondent	Response	Rationale
		increased support for Offshore Wind via a banding increase to 2 ROCs. This additional support is intended to give the proper level of subsidy to encourage new offshore wind investment. It is not envisaged in the Government's response that additional support schemes such as a locational losses scheme is required. Indeed, any additional complexity introduced by such a scheme is likely to serve only to add additional uncertainty to investment decisions. In conclusion, this modification could discourage investment in low-carbon generation which would be contrary to the UK's energy policy. The proposal is detrimental to BSC objective D; "Promoting efficiency in the implementation and administration of the balancing and settlement arrangements". This proposal increases the complexity of the current arrangements with regard to Transmission Losses. Allied to increased complexity there is an associated risk of an increased potential for calculation error relating to losses. It is clear that such complexity has already caused confusion and error within Elexon which has been illustrated by the delay in tracking errors in the TLMs supporting this consultation and hence the corresponding delay in consultation deadlines. It is not clear, if this proposal is implemented how any errors in TLMs or associated settlement data will be addressed or reconciled by Elexon.
International Power (IPR)	No	Having undertaken analysis of the impact of zonal losses on International Power's generation portfolio, we have concluded that on the basis of the limited data provided to assess the impact over 10 years that IPR is relatively indifferent as to whether the baseline is retained or the Proposed or Alternative implemented. With this in mind, we are able to give an impartial view on the merits of zonal losses and have concluded that the windfall gains and losses of circa £300m over ten years are wholly disproportionate to the benefits without SOx and NOx of £48m. If SOx and NOx are taken into account then the benefits almost match the money transfers. However given the sensitivity in the modelling to the assumptions made and the overwhelming influence on the numbers once NOx and SOx are included, we urge caution in basing a decision purely on potentially dubious SOx and NOx benefits. If the trading arrangements were being designed from scratch then we agree that zonal losses should apply. Introducing P229 now will result in an excessive transfer of value (the CBA estimates £31m in 2011 alone) from northern generators to southern generators despite the fact that both create fixed losses on the system. The way these distributional impacts are presented in the CBA underplays the scale of these transfers. We do not understand why distributional data for only one year, 2011, is presented. This makes a comparison between expected distributional impacts and total forecast benefits difficult to make. However, assuming there are similar distributional impacts in each year this sets a transfer from northern to southern generators of over £300m to compare with overall expected benefits of only £48m (which for reasons outlined below we believe is likely to be overstating benefits that would arise in practice) . An example of the scale of the distributional impacts of P229, which must be viewed alongside the expected

Respondent	Response	Rationale
		total benefit, can be provided by Saltend. We have estimated, comparing the Load Flow Modeller's TLM data for 2008 with actual TLMs, that under p299 Saltend would pay ~£5.5m more each year for losses, so the costs to Saltend alone of p229 would exceed the total forecast benefits. Given this and similar analysis we have conducted for other generators, we are also concerned that the distributional impacts within the CBA are considerably understated. We believe the extreme scale of the distributional impact represents a windfall loss for northern generators (and corresponding gain for generators located in the south). We also believe that p229 would effectively discriminate against certain types of plant unable to respond to the 'signal' of locational losses in particular wind, nuclear and CHP (where output linked primarily to heat requirement). It should also be noted that such plant will vital in achieving government's low carbon transitional plans and carbon budgets. It is not just certain type of plant that will be discriminated against in this way, almost all demand, particularly domestic demand, will not be able to respond. This would have a detrimental impact on competition and does not better facilitate objective c. The CBA calculates that the benefits without NOx and SOx amount to £48m over 10 years. In reality the full benefit will not be realised due to the level of vertical integration; generators will be despatching their own plant to meet their contracts rather than 'perfectly' seeking the lowest price in the market. Therefore there is a limit on the extent of redispatch that will be achieved in practice. Since the CBA was undertaken we have seen a significant amount of demand destruction. The CBA for example forecasts system demand for 2012 of 342GWh whereas National Grid's May 2009 SYS is using a 2012/13 forecast of 323GWh. This gap with the CBA analysis only widens further out. The analysis in the CBA is therefore now outdated. Further out there is a great deal of uncertainty over which wind projects will come to fruition, which nuclear plants will close, when and which opted out coal plants will shut down and how they will choose to utilise remaining operational hours, and which coal plant will fit SCR. Any of these if different to the CBA assumptions will alter the results. In addition, there is significant regulatory uncertainty regarding locational charging (outcome of TAR; potential introduction of locational BSUoS). There is inevitably going to be considerable change to elements of charging arrangements which would be likely to materially affect the CBA results. With all these uncertainties, again IPR does not believe that the even the with NOX and SOX benefit is sufficient to give confidence that P229 will better facilitate the efficient, economic operation of the transmission system (objective b).

Respondent	Response	Rationale
Centrica	No	Centrica believes that, in isolation and from a purely theoretical viewpoint, the aim of accurate cost reflective transmission losses is admirable (demonstrated by the positive dispatch benefits identified in the cost benefit analysis commissioned by the Group). However, there are other critical issues to be considered against the BSC objectives which mean that we do not support P229 against the existing baseline. These relate to investment, (including renewable investment), proportionality of the resulting wealth transfer, security of supply, introducing cross subsidies within zones and the degree of load flow model accuracy. It is because of the negative impact on these elements that we believe P229 would, overall, result in a detrimental impact on the efficient, economic and co-ordinated operation of the national transmission system (objective (b)) and promoting effective competition (c). **Investment** Investment in new infrastructure is currently crucial for the industry. This includes significant amounts of new renewable generation to meet government sanctioned renewable targets as well as the need to replace soon to be retired generation due to age or LCPD requirements. In this environment, the UK needs to remain a location conducive to investment and should avoid changes that detract from certainty and predictability or add excessive complexity to the arrangements. Centrica believes that P229: • adds complexity due to the methodology to create the transmission loss factors (TLFs) requiring a load flow model that is complex and expensive to replicate; and • reduces long term predictability of losses allocations. This is due to the fact that the location and timing of market entry and exit adjusts the generation mix and therefore the transmission loss allocation. This means that there would be extreme difficulty to predict the losses allocation for an investment over the life of the project (potentially even more so for small parties). It is Centrica's view that on balance, and compared to the existing, well established baseline, that P229 would, due to the issues outlined above, unfavourably impact investment as well as present a disadvantage to smaller parties. It would therefore be detrimental to competition (objective (c)) and the efficient, economic and coordinated operation of the GB system (objective (b)). **Renewable Generation and Environmental Impact** Centrica is an active developer of offshore wind projects. We have successfully commissioned Lynn and Inner Dowsing windfarms, are joint partners in the 90MW Barrow offshore windfarm and are soon to begin construction of the 250MW Lincs windfarm. Centrica acknowledges that there would be environmental benefits from any reduction in losses that would result in less CO2 emitting generation. The CBA indicates that the reduction in losses would be equivalent to 2112GWh over the 10 years. However, the means to obtain reduced losses should not have an undesirable

Respondent	Response	Rationale
		consequence of delaying, or being a barrier to, renewable investment as that would prove counterproductive. We note that a single 65MW windfarm (with a 40% load factor) might expect to displace an equivalent amount of C02 emitting generation over the 10 year period. We believe that P229 will, on average, be detrimental to investment by increasing the hurdle rate for investment in offshore windfarms due to having to factor in risk associated with the uncertain and unpredictable transmission losses allocation over the life of the asset (as noted in the Investment section above). In addition, P229 presents the potential that the zone an offshore generator is in could change. An offshore windfarm could find itself isolated in its own Panel defined zone with significantly less favourable losses allocation. This risk would also need to be factored in to investment decisions. These factors increase the complexity of getting investment approval. Any detrimental impact on investment in renewable generation or indeed any delay in generation due to uncertainty of losses allocation will mean that some greenhouse gas emitting generation will not be displaced by the renewable generation for that entire period of delay or non-build. To the extent that environmental impacts can be considered under objective (b), Centrica believes that, on balance, P229 would detrimentally impact this objective. **Wealth Transfer** Centrica does not believe it is appropriate to have an abrupt transition from the current socialised mechanism to one which is significantly more targeted as would occur under P229. Existing plant would only be able to react by incorporating the new costs into their dispatch decisions, whilst new generation has the advantage of being able to take the locational signal into consideration (to the degree that it can) when deciding where to locate. This puts existing plant at a disadvantage because they can not react to the signal and would therefore be subject to the wealth transfer that would occur. Centrica believes the magnitude of the wealth transfer (at a NPV of £135m in the base case) is disproportionate to the benefit (a 5.8% reduction in losses equivalent to a NPV of £48m without SOx and NOx) as described in the London Economics/Ventyx cost benefit analysis and this would therefore have a detrimental impact on competition (objective (c)). **Security of Supply** Implementation of P229 would immediately alter the economic life of existing generation, potentially extending or reducing it. This could have impacts for longer term security of supply where the economic life of winter peaking plant is reduced as a result. Centrica recognises that some plant might have its economic life increased but on balance we believe this uncertainty is likely to be detrimental to security of supply in the period where generation is being retired relatively soon and new generation needs to be commissioned. It would therefore be detrimental to objective (b).

Respondent	Response	Rationale
		Benefits for embedded exemptable generation Currently embedded generation that is licence exempt is allocated the offtake Transmission Loss Multiplier (TLM). With locational TLMs this would result in incentives to site licence exempt embedded generation where it is unattractive to have licensed generation (i.e. in the north) and reduced incentive to do so in the south. It would also introduce perverse incentive to run these plants counter to optimal dispatch undoing some of the re-dispatch benefits outlined in the cost benefit analysis. With the current baseline this is a perverse outcome which would have a detrimental impact on optimal dispatch (objective (b)) as well as competition (objective (c)). **Model accuracy** Centrica also has concern with the accuracy of the methodology used to calculate the TLFs. If it is the goal to achieve more cost reflective allocation of transmission losses, there needs to be an accurate methodology to apply this concept to be able to extract the resulting dispatch benefits. The proposed methodology could have significant allocation errors in estimating the actual losses cost (or benefit) you have on the system in each and every half hour because of the: • degree of averaging across zones and across nodes; • use of a small set of sample settlement periods; • ex-ante nature of the allocation; • use of a DC model as a proxy for an AC system; and • for any such time in the future that internal GB HVDC connections exist, identified issues with modelling DC flows. Centrica appreciates that the key question is whether the proposed methodology results in a better reflection of actual impact on the system than a socialised approach (the baseline). Whilst the CBA indicates that it would on average, we believe that there are instances where significant allocation errors could occur where, for example, an individual BM Unit is modelled to reduce losses but would perversely be allocated a TLM which reduces its credited energy. This would have a detrimental impact on the incentives that are meant to result in improved dispatch and competition. For example, in 5.4 (Task 3) of the load flow modeller report, the modelled average TLM for GSP group N for the 07/08 year under P229 was 1.4% worse off than a socialised regime (0.978 and 0.992 respectively). Within GSP Group N there are some nodes which have a positive TLF which indicates that, despite being modelled as decreasing losses, they would have an even greater allocation of transmission losses under P229 than a socialised regime. Similarly, GSP groups N, E, K and C all have seasonal average Nodal TLFs that are either side of zero (the current socialised value) indicating that some nodes increase losses and some decrease them on average. Such inaccurate allocation for some BM Units (more-so than the current arrangements) could result in inefficient dispatch as well as market entry and exit incentives which would appear unjust and detrimental to objectives (b) and (c).

Respondent	Response	Rationale
		Centrica notes that these inaccuracies, highlighted in 5.4 of the load flow modeller report, occur even with averaging Nodal transmission loss values across the season. Therefore, when considering individual Settlement Periods, these could have much greater accuracy discrepancies. **Socialisation moved to zones** P229 would move from a methodology that socialises amongst all to one which socialises amongst a subgroup (i.e. the zone). Therefore cross subsidies would still exist and for some Parties these might increase. In instances of a new generator (that causes high levels of transmission losses by connecting), the existing generators in that zone would be burdened with that cross subsidy through the averaging effect of the load flow model across nodes within a zone. This is a greater burden than exists currently as that cross subsidy is currently borne by all UK generators and is therefore spread more widely (and therefore more thinly). Centrica does not believe it is appropriate for existing generators in the zone that have no ability to influence, (nor should they have incentive to oppose) new connections to bear this cross subsidy. This localised cross subsidy would be detrimental to competition (objective (c)).
EDF Energy	No	We do not think Proposed Modification P229 would better meet any of the BSC objectives. **Key Points** • **There is considerable uncertainty whether BSC Objective (b) would be better met because the theoretical energy cost savings estimated by the cost benefit analysis are relatively very small and might easily be cancelled or outweighed by participants other responses to the imposition of such a scheme.** • **BSC Objective (c) would not be better met because the impact on competition would be to create short term winners and losers, with potential for large errors in allocation of losses volumes to individual locations.** • **BSC Objective (d) would not be better met because the costs of implementing and administering the proposal are considerable.** **BSC Objective (b)** We are unconvinced that BSC Objective (b), relating to efficient transmission system operation, here also taken to include efficient overall despatch of generation to meet demand, would be better met, for the following reasons. A national welfare benefit is theoretically possible if participants are given the correct signals reflecting their individual impact on the shared cost of losses, and they are reasonably able to respond to those signals so the theoretical benefit materialises.

Respondent	Response	Rationale
		Proposed Modification P229 would allocate an energy volume to every BM Unit which would be uncertain, unavoidable, and beyond the control of its owner, being dependent on the behaviour of other BM Units and the properties of the transmission system, in each half-hour, each season, and in the longer term. The Cost Benefit Analysis (CBA) performed for P229 shows theoretical net benefits arising from an assumed simple response of marginal generators to the proposed volume adjusters. However, in the study reference case, the estimated energy cost savings average £7m/year from an £8.4bn/year total, just 0.08% of total energy costs, equivalent to 0.02 £/MWh reduction in average energy prices. Benefits vary from scenario to scenario, but in all cases the impact on net energy costs is relatively very small, and it is clear that other factors could cancel or outweigh the assumed benefits. For example: • TLF factors would increase the uncertainty in out-turn energy costs faced by generators. Because this uncertainty is essentially unmanageable, it would be passed through to purchasers in a risk premium on the market price of energy set by marginal generators. We assume any correspondence between beneficial TLF factors and marginal cost generators is transitory and uncertain. • TLF factors would increase the uncertainty in out-turn energy costs faced by suppliers, both in the short term in individual half-hours, and in the long term where the factors would not be known. This uncertainty would be passed through to customers in a risk premium. • Both generators and suppliers would need resources to manage the uncertainty and additional complexity associated with a locational transmission losses scheme. We think some parties have underestimated the cost of these resources. • The effective future capacity of generation investments would become less certain. Over the lifetime of most generation and demand investments, a wide range of loss adjustments is possible. This would increase the investment return required by investors, and hence the price to customers. • A significant step change in the value of some assets would arise from introduction of Proposed Modification P229. Regulatory imposition of such a change would increase the perception of regulatory risk with potential consequences for future investment relative to other investment activities. • Approximations in the TLF methodology, for example averaging over zone and season, mean that individual locations could be allocated losses costs which give the wrong signal, and in some cases completely the opposite signal to that which would theoretically give benefits. The P229 Cost Benefit Analysis has allowed for this in estimating generation despatch costs, but we are not convinced the impact on market prices and hence the price actually paid by customers, has been fully considered. Great Britain has a single market price, ultimately dependent on national marginal generation costs, not locational market prices or a weighted locational market price as in the analysis. • Generators operate with complicated physical constraints on behaviour such as start-up, shutdown, load

Respondent	Response	Rationale
		changing, part-loading, interaction between units, which mean that actual despatch may not match assumptions in theoretical despatch. • Generators may operate with commercial constraints such as take-or-pay fuel contracts which may cause actual operation to differ from theoretical despatch. • There is no indication that the introduction of P229 would significantly affect locational siting decisions to the national benefit, since losses are a relatively minor factor in such decisions compared with transmission access costs (which are related to losses), planning, fuel source, social and other factors. The reduction in the net value of losses under P229, as estimated by Cost Benefit Analysis, is due to short term despatch effects and is relatively small and uncertain compared to the value of losses itself and relative to the potentially inaccurate redistribution of losses between BM Units in different zones (see other comments below). • It is possible that in some circumstances those benefiting from the proposal might retain the benefits rather than passing them on to customers in reduced prices. For example, existing marginal generators might have no incentive to pass on benefits, nor suppliers with customers on long term or default contracts. **BSC Objective (c)** We do not think Proposed Modification P229 would better meet BSC Objective (c) relating to competition, for the following reasons. The proposal would create windfall winners and losers at implementation, who would be largely unable to mitigate or hedge the costs and risks created by the proposals. A benefit to competition is theoretically possible if participants are allocated costs ex-ante representing their contribution to the cost of losses. However, on a shared system the costs theoretically attributable to a particular user at a particular location may be strongly dependent on the actions of other users, and could vary considerably, in either direction, over time. New users change the allocation for existing users, and in turn become existing users themselves. For example, a generator might initially connect at a location and sell long term energy on the basis of the prevailing loss allocation, only for another user to connect and significantly increase the loss factor. This uncertainty represents a risk, which carries a cost, which users would reasonably be expected to seek to manage perhaps via some form of risk premium. One method is simply to pool the costs as at present. Another would be to seek firm losses allocations over extended periods of time, with residual losses perhaps targeted by locational loss factors, or perhaps shared, by non-firm users. The existing arrangement provides a natural locational loss uncertainty risk sharing to all users for the lifetime of an installation. If Proposed Modification P229 were implemented at a point in time without any associated hedging mechanism, there would be no incentive to create or join such a scheme for those who stand to gain from the step change. For example, those users with limited life investments who stand to gain for a period of a few years from introduction of the proposed locational scheme (windfall winners).

Respondent	Response	Rationale
		Currently, no locational signal for losses is given. If the simple theoretical argument for a locational loss allocation is accepted, the maximum error currently is the difference between zero and the theoretical locational allocation. In a scheme such as Proposed Modification P229 where the zonal seasonal average allocation can be quite different, even in the opposite direction to the theoretical allocation at a particular location within that zone, the potential error for individual locations is doubled. For example, a location with a theoretical loss factor of +0.02 and a current factor 0.00 could be considered to be losing a positive allocation of 0.02, while under Proposed Modification P229 it could be allocated a seasonal zonal factor of -0.02, and be considered to be losing 0.04, twice as much as at present. The results of the load flow analysis performed for P229 show there are many locations where the nodal TLFs are distributed widely around the average and where this could be an issue for individual locations (see results of PTI-Siemens Task 3, report figures 29-32). Although the averaged factors might theoretically on average give the welfare benefits suggested by the Cost Benefit Analysis (noting our doubts given above), they could introduce significant errors for individual locations, which would have a detrimental effect on competition. Overall, BSC objective (c) relating to competition would not be better met, and this consideration outweighs any potential but uncertain benefit under BSC Objective (b) relating to efficient system operation. **BSC Objective (d)** We think it self-evident that BSC Objective (d) relating to efficient administration of the balancing and settlement arrangements would not be better met, due to the considerable implementation and ongoing operational administration cost of a zonal losses scheme.
E.ON UK	Yes	P229 would better facilitate achievement of the Applicable BSC Objectives compared to the present uniform allocation of transmission losses, which does not accurately focus these costs on the Parties who contribute to them. The existing arrangements fail to provide appropriate locational signals and distort the market through effective cross subsidisation of northern by southern generation and southern by northern demand. Consequently the desirability of locational signals in allocation of transmission losses has long been recognised, from the Pool Executive Committee to Offer, and Ofgem's acknowledgement of the negative consequences of the current cross subsidies, in inefficient generation and investment and higher costs, in responses to previous transmission losses modification proposals. P229 Proposed would better facilitate the achievement of Applicable BSC Objectives (a), (b) and (c). Arguably it is neutral for Objective (d). Objective (a) is better facilitated in two ways. Firstly, the Transmission Company would be able to discharge its obligations more efficiently without the market distortion of uniform charging for variable transmission losses. Secondly, 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 charges for variable transmission losses correspond to the extent to which BSC Parties cause them.

Respondent	Response	Rationale
		Objective (b) is fundamentally better facilitated; over time adoption of a seasonal zonal transmission losses scheme will achieve more efficient system operation. Removal of the cross subsidies inherent in the existing charges and replacement with more cost-reflective charging would lead to more efficient and economic short-term operational and investment decisions by both generation and demand (the sensitivity of demand as well as generation to price signals being demonstrated in e.g. triad avoidance and recent demand reductions in response to prices). It would also give long-term locational signals for both production and consumption. Though variable transmission loss charges alone may not determine decisions on generation or demand siting, they would be a contributory factor encouraging investments that would lead to more efficient, economic and co-ordinated System operation. This may apply more to future investments than existing assets but would still encourage existing generation or demand centres to make efficient decisions on developments such as energy efficiency improvements at existing sites and other investment options. As the cost-benefit analysis demonstrates, under all scenarios the Proposal would achieve a significant reduction in the level of variable transmission losses, so lower costs to the industry and ultimately the end user. Combined with reduced emissions and System congestion under most scenarios, increasing efficiency of the GB Transmission System in this way would clearly support Objective (b), a significant improvement on the uniform charging baseline. Objective (c) is also better facilitated. The current arrangements distort competition, benefiting some Parties while some are unfairly apportioned costs resulting from the actions of others. 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 existing cross-subsidies benefiting northern Generators and southern Suppliers and introducing more cost-reflective charging for variable transmission losses will enhance competition. (While for vertically integrated companies operating across GB, these effects may offset each other to some extent, smaller companies may also be more exposed to these distortions and thus introducing a zonal scheme could further enhance competition). Although as with most modifications, work would be required to make the relevant changes to the BSC, and produce the TLFs, producing these annually and for seasons only as opposed to any shorter periods as suggested in earlier proposals would minimise the administration involved, in accordance with Applicable Objective (d). (Furthermore, the positive market development of implementing seasonal zonal losses through P229 would be the most efficient culmination to the last twenty years' investigation of losses options, and reduce the potential for BSCCo. to have to spend further time and money updating analysis the next time the issue be raised).
Scottish and Southern Energy	No	<u>Introduction</u> We do not believe that Proposed Modification P229 better facilitates the achievement of the Applicable BSC Objectives when compared with the current Code baseline. Whilst P229 must be assessed on its own merits we note that our view, with respect to the introduction of zonal losses, has been consistent for some time (e.g. P75/82 and P198/200/203/204).

Respondent	Response	Rationale
		In coming to this view afresh with respect to P229 we have been mindful, amongst other things, of the initial view of the Modification Group that P229 be rejected. Defect We are not clear that a defect actually exists. For example, the 'Description of Issue or Defect that Modification Proposal [P229] Seeks to Address' indicates that the current (baseline) arrangements:- "….means that customers in the north of GB and generators in the south of England have to pay some of the costs of transmitting electricity to locations miles away from the source of generation. The proposed seasonal zonal scheme will enable the variable costs of transmission losses to be allocated on a cost-reflective basis and reflected on parties that cause them." However, what is proposed with P229 Original is that generators in the south of Britain, for example, would:- 1. Pay none of the "costs of transmitting electricity to locations miles away from the source of generation" that they give rise to even though, demonstrably, the electricity they themselves produce cannot be used in their immediate locality, so must be transmitted across the transmission system (and thus give rise to variable losses – with associated costs - on that system) "to locations miles away from the source of generation". This is illustrated by reference to the proposer's own 3GW power station at Didcot where, presumably, the power is transmitted "to locations miles away from the source of generation" to meet the demand in, say, London and central southern England etc., rather than being used entirely in its immediate locality. Notwithstanding this, if (as some might suggest) generators in the south of England do not require to use the transmission system to transfer their electrical output "miles away from the source of generation" to where the demand is (and thus would not, if this were the case, give rise to increased volumes of variable transmission losses) then why do those same generators require capacity on the transmission system in the form of TEC? 2. Receive a windfall gain (in the form of their settlement account being credited with additional electricity as if they had generated that electricity when, in fact, they had not) for doing nothing. Overall, what this means is that generation in northern Britain not only (i) pay the cost of those variable losses that they give rise to they also (ii) pay for the cost of the variable losses that are caused by generators in southern Britain and (iii) pay the cost of the energy credited to the southern Britain generators.

Respondent	Response	Rationale
		Therefore P229 Original does NOT "enable the variable costs of transmission losses to be allocated on a cost-reflective basis and reflected on parties that cause them" (the defect suggested by the proposer of P229) as those generators in southern Britain not only pay none of costs, for the variable transmission losses that they give rise to, they are actually 'paid' (via the settlement crediting). This is not cost reflective and is also anti-competitive. The 'Description of Issue or Defect that Modification Proposal [P229] Seeks to Address' goes on to state that:- "The current allocation of transmission losses fails to provide potential connectees to the transmission system with appropriate signals regarding the implications of siting in different parts of the country. This may give rise to inefficient decisions regarding the development of new power stations or connection of new industrial loads." Notwithstanding our comments below (regarding the existence of locational signals, such as TNUoS) we can see there may well be some merit in providing "potential connectees to the transmission system with appropriate signals regarding the implications of siting in different parts of the country". However, P229 Original applies to both new and existing connectees. Whilst new connectees can take account of this signal (and thus they can respond to it) this is not the case with existing connectees as they will not move location. This is demonstrably unfair and discriminatory. Detailed Arguments **(i) The combination of TNUoS and zonal losses is not cost-reflective** We believe that the introduction of a seasonal zonal losses signal would conflict with existing pricing signals in the transmission pricing methodology of National Grid, which is already approved by the Authority. In our view, exposure to both P229 seasonal zonal losses and TNUoS would result in an inefficient mechanism, which would overstate the cost of plant locational decisions. This 'double' locational signal would, if P229 was approved, require revisiting of the existing TNUoS charging methodology. Based on current levels of transmission charging, a 1,500 MW power station in northern Scotland pays around £30 M per annum TNUoS. P229 would impose an additional payment of around £14 M per annum (based upon the CBA modelling). This would take its total locational **payment** to nearly £44 M per annum. In contrast, a similarly sized power station in southern England would receive a TNUoS payment of £9 M and be credited a further £7 M through P229 (again based upon CBA modelling). This southerly-located station would, therefore, **receive** a locational payment of £16 M per annum. We do not consider that these

Respondent	Response	Rationale
		locational signals would be either cost-reflective or be conducive to promoting effective competition in generation. **(ii) Inability of existing plant to react to seasonal zonal signals** All large power stations require explicit planning approval before they can be built. This approval, up to now, has been given by the Department of Energy & Climate Change (DECC) (in England and Wales) or the Scottish Government (in Scotland) via a Section 36 consent (which is, in effect, planning permission). In addition, DECC issues all thermal plants with a Section 14 approval. The location and operation of all large power stations in GB has, therefore, been explicitly agreed/approved by central Government. P229, irrespective of any previous approval from Government, would impose a penalty on some power stations located away from areas of demand whilst rewarding other power stations who are, equally, located away from areas of demand. Furthermore, Peterhead power station in northern Scotland could not physically be moved to Petersfield in southern England. Equally, a large industrial user of electricity could not relocate from southern England to northern Scotland. Importantly, even if possible, this behaviour would not deliver an efficient and effective electrical system. System stability is dependent upon generation being located throughout the network. As a consequence, the application of seasonal zonal loses will not result in re-organisation of plant location to produce an 'optimum' network. Instead, the proposals will merely redistribute value between existing generators, producing windfall gains and losses. **(iii) Economic impact of P229 is significant** Taken together, points (i) and (ii) have a significant economic impact on generation plant. For an individual generator in the north, this equates to an incremental annual cost of many millions of pounds. There is, therefore, a risk that such large swings in value could force exiting plant located in the north to close or mothball capacity earlier than is efficient. This would have a negative impact on plant margins and system security at a time when the industry is facing significant challenges in terms of building substantial new capacity. **(iv) Regulatory risk** Approval of P229 would significantly increase the regulatory risk associated with new generation build in GB. This would impose a premium on the cost of capital for both new and existing generators.

Respondent	Response	Rationale
		This arises because, as described above, the implementation of seasonal zonal losses will produce significant winners and losers. The operators of such plant could not realistically have expected value shifts of this magnitude and, as a consequence, perceptions of regulatory risk for the sector will, all other things being equal, increase. As has already been stated by DECC, Ofgem and others; indeed National Grid's SO Incentive scheme assumes this; there is a significant quantity (measured in 10's of GW) of new generation capacity due to be built over the period covered by the CBA analysis. It is, therefore, clear that even a modest increase in the cost of capital of a few basis points could offset the potential benefit suggested in the CBA. In this respect, we wish to record that the weighted average cost of capital (WACC) used in the CBA of 6.14% (real post tax) is both grossly unfair and inappropriate. It distorts the effect of P229 by increasing the purported benefits of the proposed introduction of a seasonal zonal losses scheme. The WACC figure is based on the Ofgem Transmission Price Control Review (TCRP) figure of 6.25%. Such a rate may well be appropriate for a regulated transmission business. We note, for example, that Ofgem has included (within the SO Incentive Scheme) an element to, specifically, cover steps that National Grid can take to reduce transmission losses. In that situation a WACC based on the Ofgem TCPR figure is appropriate. However, P229 relates entirely to the way that generators operate rather than how the transmission system is operated by National Grid. This is witnessed by reference to the P229 'Description of Issue or Defect that Modification Proposal Seeks to Address':- "The proposed seasonal zonal scheme will enable the variable costs of transmission losses to be allocated on a cost-reflective basis and reflected on parties that cause them." It must be recognised that the risk/reward profile of a fully regulated TO operation (where revenue, once agreed by Ofgem, is fully secured) is totally different to that of a generator operating in the competitive GB electricity market. As such the WACC is materially different. The use of the TPCR WACC within the CBA completely misrepresents that. We understand that at the time the CBA work was being undertaken (last summer) that this issue was clearly identified by members of the Modification Group.

Respondent	Response	Rationale
		In particular, a table of the WACC as report on Bloomberg[2] (which is generally accepted as a reputable public source of data) for a selection of nine[3] GB generator companies was provided. This table indicated that the nearest GB generator company WACC was 24% higher than the 6.14% WACC figure used (in the CBA) whilst the highest company WACC was 118% higher than the CBA figure. In our view the use of such a low WACC in the CBA means that this work is, in respect of the purported benefits arising from P229 Original (and Alternative) fatally flawed and cannot be relied upon. **(v) Signal is flawed** If P229 was implemented and plants responded to the economic signals and relocated (putting aside the obvious practical difficulties) the following year that economic signal would change and the incentive that instigated the change would reduce or disappear or, as the PTI Siemens modelling suggests, even reverse. It is, therefore, a very uncertain and unreliable signal. A party looking to build, for example, a power station in the south, would be unable to 'bank' on the perceived benefit of its locational decision, as that benefit would disappear as soon as the station was commissioned (and the relevant seasonal zonal loss factors were recalculated). Again, it is important to note that generation needs; for system operational purposes; to be located and operated throughout the GB transmission system. **(vi) DTI Decision on BETTA** In designating the GB BSC for the introduction of BETTA, the Secretary of State excluded provisions relating to zonal losses. The introduction of P229 would, therefore, demonstrably be inconsistent with the intent of the legislation to introduce BETTA. **(vii) Environmental impact** We believe that P229 will impair the achievement of Government's stated renewable generation objectives. It is recognised that most renewable developments will be sited in Scotland, and in particular, in northern

[2] As at 30th June 2009

[3] i) SSE; ii) Drax; iii) RWE; iv) Centrica; v) International Power; vi) Iberdrola; vii) EdF; viii) E.On; and xi) GdF Suez

Respondent	Response	Rationale
		Scotland. Approval of P229 would, therefore, by definition, increase the cost of renewable generation and this could undermine new wind/wave technologies and offshore wind, for which the economics are already challenging. We, therefore, question whether approval of P229 would be consistent with the Authority's duty to have regard to sustainable development. Given the potential substantial impact of P229 on new and existing renewable generators, many of which are located in peripheral parts of the network that would attract a high seasonal zonal loss factor under the proposals, we believe that implementation of P229 could be inconsistent with the Renewables Directive. Given the location of GB plant - 1.3 GW of hydro in northern Scotland, large quantities of environmentally efficient plant such as gas-fired CCGTs and FGD-equipped plant in the north and less environmentally efficient OCGTs and oil-fuelled plant in southern GB, we are not certain that there will be any overall environmental benefit from this proposed change. Indeed there is the potential that generation output from the most benign environmental plant would be reduced, whilst the most environmentally damaging plant would increase their output. We believe this could be in excess of the reduction in emissions from any potential reduction in transmission losses claimed for the original P229. Indeed, noting that new emissions limits will cap operation of more carbon-intensive plant, even if certain plant (opted-out limited hours coal plant) could increase their running, this would simply advance the date of their closure with its consequential effect on security of electricity supply. **(viii) Inconsistency of locational signal** Looking specifically at northern Scotland, slides 37 and 38 of the PTI report[4] clearly shows that the intended 'signal' from the introduction of P229 not only varies between seasons, but also within seasons and, indeed in some cases, within month. This finding is repeated throughout the PTI report and reflected in the CBA report. At certain times of the year, the signal is to locate a power station in northern Scotland. At other times the signal is directly opposite. It is, therefore, difficult to see how either a generator or customer can make a locational decision based upon such an inconsistent signal. It cannot, on any reasonable interpretation, be said to be 'long term'. **(ix) Analysis critique**

[4] 18th June 2009

Respondent	Response	Rationale
		In addition to the flaws in the CBA noted under (iv) above (with respect to the exceeding low WACC level used) we believe that the non inclusion of the Round 3 Offshore wind farm developments within the CBA is a fatal flaw in this work. We details this below under Q6. Applicable Objectives (a) The efficient discharge by the licensee [i.e. the Transmission Company] of the obligations imposed upon it by this licence [i.e. the Transmission Licence]. We believe that P229 Original would not better facilitate the achievement of Objective (a) when compared with the baseline. The reason for this is that P229 Original gives rise to windfall gains and losses between BSC Parties. As such it demonstrably discriminates (without justification) and thus fails to achieve the efficient discharge by the licensee of the obligations imposed upon it by this licence. (b) The efficient, economic and co-ordinated operation of the national transmission system. We believe that P229 Original would not better facilitate the achievement of Objective (b) when compared with the baseline. The reasons for this include:- 1. The combination of TNUoS and zonal losses is not cost-reflective (as set out in (i) above). 2. Inherent inaccuracies in the TLF calculation mean it would not deliver costs reflecting BM Unit impact on losses in every Settlement Period; therefore would not result in more accurate and appropriate allocation; 3. Would discourage investment in wind generation in the North and encourage investment in the South, with a negative overall effect on investment, and therefore a negative environmental impact.

Respondent	Response	Rationale
		(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. We believe that P229 Original would not better facilitate the achievement of Objective (c) when compared with the baseline. The reasons for this include:- 1. The combination of TNUoS and seasonal zonal losses is not cost-reflective (as set out in (i) above). 2. The inability of existing plant to relocate in response to seasonal zonal signals (as set out in (ii) above). 3. The economic impact of P229 Original is significant (as set out in (iii) above). 4. The Regulatory risk it gives rise to (as set out in (iv) above). 5. The signal is flawed (as set out in (v) above). 6. The DTI Decision on BETTA (as set out in (vi) above). 7. The environmental impact (as set out in (vii) above). 8. The inconsistency of locational signal (as set out in (viii) above). 9. It causes distributional transfers between market participants based on type and location which are windfall gains and windfall losses, to the detriment of competition. 10. The transfers are disproportionate to any benefit of P229 Original. 11. It is not cost reflective of the contribution to variable losses because it allocates negative variable losses, whereas all participants on the system cause some volume of variable transmission losses to occur.

Respondent	Response	Rationale
		12. It introduces a new cross-subsidy because some participants benefit from being credited with energy, while others would be penalised by being debited energy. 13. It has a disproportionate impact on classes of participants who can not respond to signals: demand, renewables, combined heat and power (CHP) plant and nuclear generators. 14. There are inherent inaccuracies which mean it does not guarantee more accurate and appropriate allocation, so rather than removing the purported cross subsidy, it would create a new, less transparent, cross subsidy. 15. The socialisation of losses within zones would give inappropriate market entry/exit signals. 16. The negative impact on investment in renewables due to increased cost of investment in unfavourable zones. 17. It discriminates between new and existing generators. (d) Promoting efficiency in the implementation and administration of the balancing and settlement arrangements. We believe that P229 Original would not better facilitate the achievement of Objective (d) when compared with the baseline. The reasons for this include:- 1. There is no defect in the Code (as we set out under 'Defect' above). 2. The high cost of implementation, coupled with the increased cost of administering the balancing and settlement arrangements, compared with the baseline. 3. Adds additional complexity.

Respondent	Response	Rationale
		Therefore, in conclusion, we agree with the Modification Group that P229 Original should be rejected.
National Grid	Yes	National Grid does not believe that the Proposed modification will have a significant impact upon BSC applicable objective (a) efficient discharge by the licensee of the licence obligations. National Grid, in operating in an efficient and economic manner, takes account of transmission losses along with other economic factors when making dispatch decisions for the purposes of system balancing. Should P229 be implemented then participants will be expected to reflect the costs of transmission losses within the prices offered both within the forward market and the Balancing Mechanism. However, regardless of whether National Grid assesses transmission losses or participant's price transmission losses within the Balancing Mechanism, it will not affect National Grid ability to discharge its obligations. We consider that the Proposed modification will better achieve BSC applicable objective (b) efficient, economic and co-ordinated operation of the national electricity transmission system. By altering the costs of variable transmission losses from the current socialised form to a locational form through the Transmission Loss Factor (TLF), the modification will change the cost makeup for industry participants. The modification, in seeking to reflect onto participants the effects on variable transmission losses caused by the location of participants, will provide greater efficiency within the market by appropriately targeting transmission losses. This view was supported by the cost benefit analysis as performed by Ventyx in as much as, a Net Positive Value was shown for the base change case and for nearly all sensitivity scenarios (with the exception of the high gas price sensitivity case). Ventyx showed that under P229 there would be a change in the merit order of generation that would result in less transmission losses than under the current regime, and thereby, savings in production fuel costs. That said it is worth considering the appropriateness of the mechanism employed by P229 to calculate the TLFs. National Grid acknowledges that the mechanism could be viewed as sub optimal in reflecting the actual variable losses caused by participants location. In that using an ex-ante, averaging methodology over TLF zone and BSC season will not completely accurately represent the actual variable transmission losses contribution from each individual participant all of the time. However, this has to be balanced against the difficulty in providing 100% accurate TFLs in a timely manner to used by the market within the pricing of products. Consideration also needs to be given to possible extreme TLF results that could occur were an average method not used. National Grid concludes that the methodology employed by P229 provides the right balance between these conflicting factors. National Grid believes that the Proposed modification could better achieve BSC applicable objective (c) promoting effective competition in generation and supply of electricity. Over the short term, in altering the merit order, we believe this would constitute a change in competitive positions that would not necessarily be detrimental to effective competition. The addition of another locational cost (on top of the many other

Respondent	Response	Rationale
		locational costs participants are exposed to), which should result in improved market efficiency, in itself does not change any of the fundamentals of competition within the Great Britain Wholesale market. Furthermore we believe that the socialised regime currently in existence is a barrier to effective competition due to the undesirable situation of some participants subsidising others. In the long term, the cost benefit analysis concluded that P229 is not expected to significantly alter investment decisions, as other locational costs are the more dominate factors. However, under P229, all factors being equal it is conceivable for an investment decision to be tipped in favour of a location that results in less transmission losses, such occurrences would be beneficial to reducing the costs to end consumers. We acknowledge that given Ventyx assessment this would be a rare occurrence. P229 also needs to be considered in relation to environmental impacts. On one hand through the reduction of transmission losses, P229 has a clear environmental benefit by reducing waste energy and the associated emissions. On the other, P229 could result in higher costs for some renewable parties located at the peripheries of the transmission system. However bearing in mind Ventyx's conclusions stated above, we would not expect renewable investment to be significantly effected by P229. Furthermore, considering ROCs as the existing incentivised mechanism for renewables to generate, National Grid believe that it is ultimately better for end consumers to apply these to a background of reflective charges rather than socialised costs. National Grid believes that the Proposed modification will not better achieve BSC applicable objective (d) promoting efficiency in the implementation and administration of the balancing settlement arrangements. The implementation of this modification will create an additional process within the Balancing Settlement Code, adding further resource requirements, costs and complexity to settlement. However we believe that the detrimental impacts on BSC applicable objective (d) would be significantly outweighed by the benefits gained to BSC applicable objectives (b) and (c).

Question 2: Would the Alternative Modification P229 help to achieve the Applicable BSC Objectives compared to the current baseline?

Summary

Yes	No	Neutral/Other
4	12	

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	No	See answer to Question 1
Eggborough Power Limited	No	Eggborough does not believe that Alternative Modification P229 would help to achieve the Applicable BSC Objectives for the following reasons: • The loss factors are not representative of the period to which they apply and risk making the distribution worse rather than better. • The modification fails to take account of other locational signals, such as transmission pricing, that already include an element for losses. • The application of factors is unlikely to have a significant impact of the location of either generation or demand because: c. Existing generators and customers have very large sunk costs tying them to there existing locations d. The signals are not sufficiently stable to have any noticeable effect on investment decisions. • The administrative cost is high for something with uncertain benefits On this basis, Eggborough does not believe that Proposed Modification P229 would help to achieve Applicable BSC Objectives (b), (c) and (d) compared to the current baseline.
Haven Power Limited	No	Haven Power does not believe that the Alternative Modification P229 would help achieve the Applicable BSC Objectives for these reasons: The efficient, economic and co-ordinated operation by the Transmission Company of the Transmission Service: • It's clear that this modification will affect Suppliers and their current and potential customers who are unable to respond to this modification and its intentions due to previous decisions on existing locations; • There appears to be a significant conflict between planning to use certain generation technologies where they may be most efficient (e.g. wind in Scotland where it is most windy) and where they would be most cost effective (e.g. in the south where the majority of customers are located). The promotion of 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:

Respondent	Response	Rationale
		• There would be a cross-subsidy for users that still contribute to transmission losses despite being in a more favourable location; • The proposed methodology is very complicated and difficult to understand, especially for small suppliers that have not had the resources to actively partake in the Modification process; • The implementation of the Proposed Modification would be costly and difficult to implement and maintain going forward, especially for a small supplier such as Haven Power. For the above reasons, Haven Power's view is that the Alternative Modification 229 does not achieve Applicable BSC Objectives (b) and (c).
SAIC Ltd. (for and on behalf of ScottishPower)	No	While ScottishPower accept P229 Alternative significantly reduces the distributional impacts on parties (when compared with P229 Proposed), we believe as with P229 Proposed the effect of introducing a zonal losses scheme creates windfall gains and losses, which discriminates against certain parties and benefits others; generate no long term locational signal and gives uncertain signal which would give rise to uncertainty and distort competition, and therefore would not better facilitate the achievement of the applicable BSC Objectives when compared with the current baseline. However, ScottishPower believe that, in comparing with P229 Proposed and if a zonal scheme were to be imposed, P229 Alternative would be the more 'reasonable' option.
RWE Supply & Trading GmbH	Yes	We believe that the alternative modification would better facilitate Objective C in relation to competition in that the allocation of losses is more cost reflective than under the current baseline and the proposal would partially remove the cross subsidy inherent in the current allocation of losses.
Immingham CHP LLP	No	The alternative is simply a device—albeit a complex one—to nullify the effect of the proposed change for a transitional period. While it would enable parties disadvantaged by the introduction of zonal loss charging to neutralise the effect, it is a mitigation scheme that should not be required in the first place. Further as the modification group noted it brings additional inherent inaccuracy of arbitrary adjustment of losses to avoid crediting energy to BM units.
Drax Power Limited	No	Drax does not believe that Alternative Modification P229 would help to achieve the Applicable BSC Objectives for the following reasons: System Efficiency Considerations: • The ongoing redistribution of volume as a consequence of implementing P229 would be based upon the actions of system users twelve months previous; therefore, in a given settlement period, users would be subject to losses or gains in allocated volume that are based upon a point in time when (a) the load on the system may have been substantially different, and (b) the user may not have been active on the system (i.e. allocated losses based upon the actions of others); • Existing users (particularly suppliers / demand users and independent generators) will not be able to react to the signals that this modification aims to put in place

Respondent	Response	Rationale
		due to historic location decisions and the investments they have already made; • In some zones, the forecast TLFs / TLMs that result from the CBA suggest that the potential longer-term signals produced from P229 are not stable enough to be meaningful when making investment decisions (adding to cost uncertainty); • The proposal does not take into account the existing locational signals that are currently in operation and the relationships that should exist to ensure the correct balance, and overall effect, of such signals; • The resulting investment signals may discourage investment in areas that are more suitable for a given technology (e.g. wind turbines being located in an area where they would be less efficient). Competition Considerations: • The proposed system is highly complex, which is a disadvantage to small and new participants (generators and suppliers), regardless of where they are located; • Some plant are required to run in specific locations due to the non-power related services they provide (e.g. heat from CHP); • Locating an investment in a less favourable location as a result of inadequate investment signals may result in higher costs for the user (thereby affecting competitiveness). BSC Efficiency Considerations: • The processes and IT infrastructure associated with the Alternative Modification would be costly to implement and maintain. On this basis, Drax does not believe that Proposed Modification P229 would help to achieve Applicable BSC Objectives (b), (c) and (d) compared to the current baseline.
Rio Tinto Alcan (RTA)	No	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	Yes. We believe that the alternative is better that the baseline, but not as good as the original	The Alternate Modification P229 replicates Modification P229, but seeks to ameliorate its impact with a variable scaling factor for each season. This Modification therefore further the relevant objectives in the same way as Modification P229, but to a lesser extent.

Respondent	Response	Rationale
	modification	
GDF SUEZ Energy UK	No	The alternative proposal does not provide a better solution than the existing baseline. The arguments stated under Q1 above remain true for the alternative proposal, except that there is no creation of positive TLMs, which is detrimental to objective (A).
International Power (IPR)	No	The Alternative gives a £12m without SOx and NOx benefit over a ten year study period. The many uncertainties and assumptions listed in Q1 do not provide any confidence that this benefit will be realised. If the benefit is so low and uncertain it must be questioned whether this is a modification worth pursuing. Compared to the current baseline, we do not believe that the Alternative will better facilitate objective b as it will make so little difference in terms of the efficient economic or co-ordinated operation of the system nor will it better promote competition (objective c)
Centrica	No	As the alternative is a diluted version of the proposed modification, the same arguments against the applicable BSC objectives as described in Question 1 apply, although the negative impacts outlined above for investment, the environment, security of supply, wealth transfer, accuracy of the model and socialisation within zone would be likely to be of a lower magnitude. Centrica believes that the arbitrary nature of the scaling factor in the Alternative would be an additional reason for model inaccuracy. However, the overall impact of including this arbitrary scaling, might be to reduce the inaccuracies apparent in the proposed modification. Therefore Centrica does not believe that the Alternative would better facilitate the applicable objectives (b) and (c) when compared to the existing baseline.
EDF Energy	No	Seeking to limit transmission loss adjustments to be positive amounts only (i.e. a charge rather than a credit) is likely to be more widely understood by participants and customers. It reflects the fact that taken in isolation, any individual flow can only cause losses, and real losses cannot be negative. Compared with the current baseline, the Alternative Modification creates a differential exposure to losses between different zones proportional to the impact of flows in that zone to total variable losses, and assessment modelling indicates it has potential to theoretically reduce energy costs. It mitigates the exposure of individual locations and parties to potential misallocations in the Proposed Modification P229 arising from differences between seasonally zonally averaged TLFs based on historic flows and theoretical outturn nodal values, reduces uncertainties in future loss adjustments, and reduces the unpopular transfer of value between zones which would occur under the proposal. The reduction in uncertainty of outturn loss adjustments in the Alternative Proposal would reduce the impact of the factors described in response to question 1 which might prevent the theoretical net energy cost savings indicated by cost benefit analysis from materialising. However, we still consider there is great uncertainty whether benefits would actually be delivered, and therefore whether BSC Objective (b) would be better met. The reduction in uncertainty and in potential error in relation to individual locations in the Alternative Proposal

Respondent	Response	Rationale
		reduces the detrimental impacts on BSC Objective (c) relating to competition, compared with the Proposed Modification. In particular, the large transfer of loss allocation between zones, far exceeding the value of any net energy savings, is much reduced. For example, the CBA suggests a transfer of £31m from generators in some zones to those in other zones in 2011 in the proposal reference case (Table 5-6) compared with £13m in the alternative (Table A1-4). Tables 5-7 and A1-5 suggest higher values in subsequent years. The potential error at particular locations is also reduced according to the scaling factor used. In the hypothetical example described in comments on question 1, a potential error of 0.04 in "true TLF" would be reduced to less than 0.02, similar to the theoretical difference between "true TLF" and current baseline. However, we still consider the likely impact on competition to be negative. The impact on BSC objective (d) would be negative, as for the original proposal. Given these considerations, our net view is that the Alternative Modification would not better meet BSC objectives overall than the current baseline.
E.ON UK	Yes	As a scaled version of the Proposed, implementation of seasonal zonal losses through the Alternative P229 would be a step in the right direction towards achieving BSC objectives (b) and (c), though would have a far weaker impact on transmission losses, emissions and costs, as acknowledged by the estimate of a >70% lower Net Present Benefit than the Proposed. Being less efficient and more complex than the Proposed, the benefits gained under Objectives (b) and (c) would be limited in comparison with the Proposed and somewhat offset by this negative impact under (d). Nevertheless the more significant progress towards (b) and (c) would make implementing the Alternative better than leaving the current cross-subsidies in place.
Scottish and Southern Energy	No	Whilst, when compared with the P229 Original, P229 Alternative has some merits (see Q3 below) we believe, as a stand alone Modification Proposal, that P229 Alternative does not better achieve any of the Applicable Objectives when compared with the current baseline. The reasons for this are similar / identical to those we have listed in Q1 above and, for the sake of brevity, we avoid repeating them in full here – please refer, therefore to Q1 above for further details. <u>Applicable Objectives</u> <u>(a) The efficient discharge by the licensee [i.e. the Transmission Company] of the obligations imposed upon it by this licence [i.e. the Transmission Licence].</u> We believe that P229 Alternative is neutral in terms of better facilitating the achievement of Objective (a) when compared with the baseline.

Respondent	Response	Rationale
		(b) The efficient, economic and co-ordinated operation of the national transmission system. We believe that P229 Alternative would not better facilitate the achievement of Objective (b) when compared with the baseline. The reasons for this include:- 1. The combination of TNUoS and seasonal zonal losses is not cost-reflective (as set out in Q1 (i) above). 2. Inherent inaccuracies in the TLF calculation mean it would not deliver costs reflecting BM Unit impact on losses in every Settlement Period; therefore would not result in more accurate and appropriate allocation; 3. Would discourage investment in wind generation in the North and encourage investment in the South, with a negative overall effect on investment, and therefore a negative environmental impact. (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. We believe that P229 Alternative would not better facilitate the achievement of Objective (c) when compared with the baseline. The reasons for this include:- 1. The combination of TNUoS and seasonal zonal losses is not cost-reflective (as set out in Q1 (i) above). 2. The inability of existing plant to relocate in response to seasonal zonal signals (as set out in Q1 (ii) above). 3. The economic impact of P229 Alternative is significant (as set out in Q1 (iii) above). 4. The regulatory risk it gives rise to (as set out in Q1 (iv) above).

Respondent	Response	Rationale
		5. The signal is flawed (as set out in Q1 (v) above). 6. The DTI Decision on BETTA (as set out in Q1 (vi) above). 7. The environmental impact (as set out in Q1 (vii) above). 8. The inconsistency of locational signal (as set out in Q1 (viii) above). 9. It has a disproportionate impact on classes of participants who can not respond to signals: demand, renewables, combined heat and power (CHP) plant and nuclear generators. 10. The socialisation of losses within zones would give inappropriate market entry/exit signals. 11. The negative impact on investment in renewables due to increased cost of investment in unfavourable zones. 12. It discriminates between new and existing generators. (d) Promoting efficiency in the implementation and administration of the balancing and settlement arrangements. We believe that P229 Alternative would not better facilitate the achievement of Objective (d) when compared with the baseline. The reasons for this include:- 1. There is no defect in the Code (as we set out under Q1 'Defect' above). 2. The high cost of implementation, coupled with the increased cost of administering the balancing and settlement arrangements, compared with the baseline. 3. Adds additional complexity.

Respondent	Response	Rationale
		Therefore, in conclusion, we believe that the P229 Alternative should be rejected.
National Grid	Yes	Considering that the Alternative is identical to the Proposed in all but the use of the β scaling factor (rather than a fixed scaling factor), the principles behind the answers provided for the Proposed remain broadly the same for the Alternative. We believe there to be no difference between the Proposed and the Alternative in regards to BSC applicable objective (a); therefore refer to our answer given in question 1. National Grid considers that the Alternative modification will better achieve BSC applicable objective (b) efficient, economic and co-ordinated operation of the national electricity transmission system. Use of the β scaling factor will result in TLFs that are more representative of actual variable transmission losses caused by the individual participant than the baseline (however less representative than the Proposed) and will subsequently aid efficient, economic market operation. The cost benefit analysis illustrated a Net Positive Value from the Alternative against the base case. Like the Proposed, the mechanism employed by the Alternative to calculate the TLFs could be considered to be a sub optimal methodology, but for the same reasons as outlined for the Proposed we believe the method applied is an appropriate mechanism when considered against the baseline. National Grid believes that the Alternative modification could better achieve BSC applicable objective (c) promoting effective competition in generation and supply of electricity. For the same reasons as specified in question 1. National Grid believes that the Alternative modification will not better achieve BSC applicable objective (d) promoting efficiency in the implementation and administration of the balancing settlement arrangements. For the same reasons as specified in question 1

Question 3: Would the Alternative Modification P229 help to achieve of the Applicable BSC Objectives when compared to the Proposed Modification?

Summary

Yes	No	Neutral/Other
12	4	

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	Yes	The Alternative Modification is a watered down version of the Proposed Modification and so by definition must be less bad.
Eggborough Power Limited	Yes	Eggborough believes that there are advantages to implementing the Alternative Modification over the Proposed Modification with regards to competition: • The Alternative Modification is more cost reflective due to the fact that it recognises that all users contribute to transmission losses, regardless of location; • The Alternative Modification recovers a volume of energy from participants that is closer to volume of losses caused on the system, i.e. it takes steps to avoid the huge redistribution of credited volume that the Proposed Modification would cause. Given that the Alternative Modification seeks to alleviate the defects of the Proposed Modification, Eggborough believes that both options should be presented to the Authority for determination. However, Eggborough believes that neither of the proposals helps to achieve the Applicable BSC Objectives when compared to the current baseline.
Haven Power Limited	Yes	Haven Power believes that the Alternative Modification is preferable to the Proposed Modification as it is more cost reflective and acknowledges that all user contribute to transmission losses irrespective of their location; however, we believe that neither Modification helps achieve the Applicable BSC Objectives.
SAIC Ltd. (for and on behalf of ScottishPower)	Yes	When compared with P229 Proposed, the Alternative significantly reduces the distributional impact on parties while maintaining the perceived short term despatching signal and is therefore better for competition – Objective (c). It is also more cost reflective as physically all parties cause losses and the best one could achieve is zero, not negative (a credit) as in the case with P229 Proposed.
RWE Supply &	No	The alternative modification introduces a new parameter that is designed to simply collar the allocation of losses such that there is no negative allocation of losses. We believe that this is arbitrary and not as cost

Respondent	Response	Rationale
Trading GmbH		reflective as the original modification proposal. We are concerned that the alternative significantly dilutes the effects of the original modification and frustrates the intention to allocate the variable locational element of losses on a cost reflective basis.
Immingham CHP LLP	Yes	This is only because it provides relief against some of the more harmful effects introduced by the P229 Proposal.
Drax Power Limited	Yes	Drax believes that there are advantages to implementing the Alternative Modification over the Proposed Modification with regards to competition: • The Alternative Modification is more cost reflective due to the fact that it recognises that all users contribute to transmission losses, regardless of location; • The Alternative Modification recovers a volume of energy from participants that is closer to the volume of losses caused on the system, i.e. it takes steps to avoid the huge redistribution of credited volume that the Proposed Modification would cause. Given that the Alternative Modification seeks to alleviate the defects of the Proposed Modification, Drax believes that both options should be presented to the Authority for determination. However, Drax believes that neither of the proposals helps to achieve the Applicable BSC Objectives when compared to the current baseline.
Rio Tinto Alcan (RTA)	Yes	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	No	As Ofgem has indicated in its decision letters regarding previous modifications, in order to ensure that the greatest amount of market benefits are realised, it is important that variable Transmission Losses are applied in full to all participants. The Alternate Modification looks to dampen the impact of these variable losses, but in doing so retains part of the unfair cross-subsidy that uniform Transmission Loss allocation creates, as well as reducing the incentive to use the network efficiently. We therefore support the original proposal with a full application of variable transmission losses, except for particular renewable technologies (such as offshore wind) that find it difficult to react to locational signals, and would likely require some protection from increases in transmission loss rates in order for the UK Government to reach its 2020 objectives for renewable energy provision.
GDF SUEZ Energy UK	Yes	Compared to the original, the alternative does not create positive loss factors for any zone and therefore is not as detrimental to objective (A).
International Power (IPR)	Yes	IPR agrees that it is appropriate for all BMUs to be allocated a uniform proportion of fixed losses. This recognises that all generation and demand connected to the transmission system create fixed losses in the transformers regardless of location. The Alternative therefore provides the correct engineering solution to introducing zonal losses. The Alternative also largely avoids the windfall gains and losses that are seen under the proposed. If locational losses are to be implemented, then the Alternative at least provides a more equitable way to achieve this.

Respondent	Response	Rationale
		The reduction in the windfall gains and losses means that the Alternative better facilitates both objective b and c than the proposed. However, given the small benefit and the associated uncertainties with realising this benefit we do not think the Alternative is better than the current baseline. Therefore our order of preference is current baseline, P229A, P229.
Centrica	Yes	Centrica believes that the Alternative would have less detrimental impact on investment (including investment in renewable technologies), security of supply, would result in less wealth transfer, and the model inaccuracies and localised cross subsidies would be less pronounced. Centrica also recognises that the Proposed Modification would be likely to have greater benefits of reducing losses from altered dispatch levels as outlined in the cost benefit analysis. However, on balance, Centrica believes that reducing the detrimental impacts identified above would outweigh any benefit from reducing losses. Therefore, the Alternative would better facilitate objectives (b) and (c) when compared to the Proposed Modification.
EDF Energy	Yes	As described previously: The reduction in uncertainty of outturn loss adjustments in the Alternative Proposal would reduce the impact of the factors described in response to question 1 which might prevent the theoretical net energy cost savings indicated by cost benefit analysis from materialising, so making better achievement of BSC Objective (b) more likely than the Proposed Modification. However, we still consider there is great uncertainty whether benefits would actually be delivered. The reduction in uncertainty and in potential error in relation to individual locations in the Alternative Proposal reduces the detrimental impacts on BSC Objective (c) relating to competition, compared with the Proposed Modification. In particular the large transfer of loss allocation between participants, far exceeding the value of any net energy savings, is much reduced. However, we still consider the likely impact on competition to be negative. The impact on BSC objective (d) would be negative, as for the original proposal. Given these considerations, our view is that the Alternative Modification would meet BSC objectives better than the Proposed Modification.
E.ON UK	No	As per our answer to question 2, scaling would minimise full realisation of the benefits that can be obtained from the introduction of seasonal zonal transmission losses. These have been widely acknowledged thus scaling down their implementation would not make sense. Hence the Alternative would be less effective than the Proposed in achieving BSC Objective (b), its benefits against (b) limited as it would provide weaker financial incentives for Parties in both the short-term and for longer-term investments in more appropriately

Respondent	Response	Rationale
		located plant. GB losses, emissions and costs would not be reduced to the same extent as under the Proposed. The benefits against Objective (c) are also more limited, as no positive incentive, in energy credits, would be provided to Parties whose actions result in a decrease in total system losses. Some have argued that no Parties should benefit from causing any transmission losses but it is reducing overall system losses that will promote Objective (b) so this should be incentivised: particularly in comparison with the present situation where the opposite is true, adversely impacting achievement of both Objectives (b) and (c). It is widely acknowledged that maintaining the current arrangements distorting the market has a negative impact under both of these Objectives. Particularly as this has been recognised for so long, there is no need for a scaled version of P229: if the present arrangements are to be corrected it is desirable to do so properly so that costs are proportionate to each Party's impact on total losses. Complaints from some Parties that implementation would lead to increased costs are unsurprising given the unfair commercial advantage they presently enjoy. However any claims that 'windfall' losses/gains may result also do not hold up when introduction of such a scheme has been on the table for twenty years: competitive businesses will have taken this into account; no companies should rely on such cross-subsidies. In summary, reduction of transmission losses, emissions and their associated costs, promoting efficient, economic and co-ordinated operation of the GB Transmission System and most effective competition in generation, supply, and the sale and purchase of electricity would be better achieved by the Proposed compared to the Alternative P229.
Scottish and Southern Energy	Yes	Whilst we do not support, in principle, a seasonal zonal losses scheme (in either the form proposed with P229 Original or the Alternative) we can see, when compared with the Original, that the Alternative would better achieve the Applicable Objectives. As we have noted in our answer to Q1 above (under 'Defect') P229 Original would see, for example, generators in the south of Britain receiving a windfall gain (in the form of their settlement account being credited with additional electricity as if they had generated that electricity when, in fact, they had not) for doing nothing. However, P229 Alternative removes this windfall gain to southern generation (and the associated loss to northern generation). Previous work in this area has shown that without the scaling (that P229 Alternative introduces) there is a danger that the total amount of funds reallocated (via the P229 Original) will bear little relationship to the actual outturn costs of variable transmission losses that occur from the despatching of generation by National Grid. This would introduce a competitive disadvantage into the market place and run counter to the achievement of the Applicable Objective (c) as well as, by virtue of introducing discrimination, running counter to Applicable Objective (a).

Respondent	Response	Rationale
		It is also clear that any scheme that transfers funds from northern generation to southern generation in excess of the cost of variable transmission losses is, in itself, a cross subsidy. Furthermore, a major anomaly arises with P229 Original in that it creates negative seasonal zonal loss factors. As it is physically impossible to create energy from nothing it is inappropriate to consider a proposal (P229 Original) which has negative seasonal zonal loss factors. With the P229 Alternative this anomaly recedes. Removing this anomaly and the associated windfall gain to southern generation (as the P229 Alternative does) better achieves in particular, Applicable Objective (c); when compared to the Original; by 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. Therefore, in conclusion, we believe that P229 Alternative is better that P229 Original, but not better than baseline.
National Grid	No	National Grid believes that the Proposed is better against the applicable BSC objectives than the Alternative. We believe that the methodology used under the Proposed to represent the impact on variable transmission losses from participant's location to be better than the Alternative. In so far as the Proposed methodology, whilst assessing the impact on the transmission system from a margin power flow model, the methodology also scales back the resultant TLFs to figures that are representative of the variable transmission losses seen on the network. The Alternative by contrast scales back for the purpose of ensuring no party would receive credit from their location which also in turn reduces the signal to the parties causing the greatest transmission losses. Therefore we believe that the Alternative does not accurately reflect the costs of transmission losses on parties as well as the Proposed. The TLFs under the Proposed would likely bring about a greater change in the relative merit order of the GB plant that is more reflective of the effects of transmission losses than under the Alternative. Ultimately this has the effect of the Proposed modification bring greater benefits in terms of efficient and economic operation of the transmission system, BSC applicable objective (b). National Grid believes that the Proposed is better than the Alternative modification as regards to BSC applicable objective (c) promoting effective competition in generation and supply of electricity. In considering the Proposed to better reflect the cost of variable transmission losses, we believe the Proposed will have a greater effect on reducing the socialised barrier to competition identified in question 1. In terms of the environmental impacts given that we believe renewable investment will not be significantly impacted by the Proposed or Alternative, National Grid believes the greater emissions saving under the Proposed means the

Respondent	Response	Rationale
		Proposed is marginally better than the Alternative on BSC applicable objective C. We consider there to be no difference between the Proposed and the Alternative on BSC applicable objectives (a) and (d)

Question 4: Are there alternative solutions that the Modification Group has not identified which they should consider?

Summary

Yes	No	Neutral/Other
1	15	

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	No	The status quo is simple and easy to understand and so promotes competition in generation and supply. The value to be gained (or lost) by enhancing (or restricting) such competition far outweighs the value of reducing transmission losses by a fraction of one per cent.
Eggborough Power Limited	No	No comment.
Haven Power Limited	No	-
SAIC Ltd. (for and on behalf of ScottishPower)	No	While ScottishPower remain convinced that a hedging solution similar to that of P200 would be the best option for implementing a zonal losses scheme, we acknowledge that the potential Alternative probably gives the best compromised solution for all in the industry.
RWE Supply & Trading GmbH	No	-

Respondent	Response	Rationale
Immingham CHP LLP	No	ICHP is disappointed that an SO- or TO-focussed approach to management of transmission losses has not been considered in parallel with the various zonal losses modification proposals. While this style of approach does not necessarily address the defect identified by the proposer by providing a solution within the BSC (and thus we acknowledge is outside the scope of the modification group's remit), it evidently is an option for meeting the intention behind the modification of creating an arrangement that enables optimal management of the cost of transmission losses. Several markets internationally apply downward pressure on the cost of transmission losses through mechanisms administered by the transmission entity, and this type of approach would be very compatible with the existing style of approach to setting transmission incentives in the UK.
Drax Power Limited	No	-
Rio Tinto Alcan (RTA)	No	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	No	-
GDF SUEZ Energy UK	No	When the modification group, BSC Panel and regulator consider this issue it should not be done in isolation. The issue of seasonal, zonal losses should be reviewed in conjunction with other parallel regulatory developments in the UK to ensure consistency of approach. For example, such changes to the BSC should be consistent with other changes to the transmission arrangements, such as Transmission Access and BSUoS.
International Power (IPR)	No	-
Centrica	No	-
EDF Energy	Yes	It seems surprising that the large loadflow differences between peak and offpeak periods and/or working day and non-working days do not merit separate consideration in the same way as seasons. We would have expected consideration of these factors in the assessment process, although such a refinement would be unlikely to change our overall view. Losses arise on real networks from circulating currents due to reactive power effects not modelled by DC loadflow models. Previous studies have shown these can make significant contributions to variable losses and can affect transmission loss factors, but they are particularly sensitive to the prevailing configuration of the network and reactive power control in effect. Although it is arguable whether users should be allocated

Respondent	Response	Rationale
		locational losses costs dependent on the System Operator's prevailing network operation, we would have expected more consideration of the potential materiality in the assessment, although it is unlikely any resulting refinement would change our overall view.
E.ON UK	No	Alternatives have been explored in depth for previous Modification Proposals and spending further time and cost investigating options that may have already been examined is undesirable.
Scottish and Southern Energy	No	We do not believe that there are alternative solutions; which better meet the Applicable Objectives when compared with the baseline; that the Modification Group has not identified which they should consider.
National Grid	No	National Grid at this time has not identified any other alternative options.

Question 5: Do you support the implementation approach described in the consultation document?

Summary

Yes	No	Neutral/Other
11	4	1

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	Yes	While we do not support implementation at all, we agree that a least a year is needed for implementation if the modification goes ahead.
Eggborough Power Limited	Yes	If approved, the implementation approach appears reasonable.
Haven Power Limited	Yes	Whilst we don't support either Modification, if approved the implementation approach seems appropriate.
SAIC Ltd. (for and on behalf	Yes	Implementation must be planned to take account of all required system and process changes. These are the minimum timescales require to ensure as risk free an implementation as possible. While ScottishPower believe

Respondent	Response	Rationale
of ScottishPower)		implementation should be in April in line with contract rounds and Party business planning, we accept that October 2011 is the earliest date possible for implementation.
RWE Supply & Trading GmbH	Yes	Given the lead times the dates suggested are the only practical solutions.
Immingham CHP LLP	No	The proposed timescales may seem sensible but only from a BSC perspective and only if implementation coincides with the beginning of the contract year (that is 1 April). However wider changes concerning transmission access should be taken into account as and when Ofgem carries out its impact assessment. There is also merit in considering implementing the change in parallel to introduction of other changes to transmission arrangements with the implementation of the next transmission price control, as it is likely that this could be coincident with redefinition of generation zones. Based on recent statements from Ofgem the next implementation is likely to be April 2013, not April 2012. In short we think implementation should not occur until April 2013.
Drax Power Limited	Yes	If approved, the implementation approach appears reasonable.
Rio Tinto Alcan (RTA)	No	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	Yes	We agree with an immediate implementation date once the authority decision has been received. Implementing the change as soon as possible will provide certainty to those Parties looking to develop additional generation, (or new demand) on the economics of their project. It will also ensure that the environmental and market benefits are realised as soon as possible.
GDF SUEZ Energy UK	No	GDF SUEZ Energy UK does not support the implementation of the original or the alternative proposal for the reasons given above, i.e. - Locational incentives are provided through TNUoS and should not be included in other charges. - The proposed modification includes positive factors for some zones. It is illogical for transmission losses to be anything other than negative. - Benefits from the new regime are very small. - The costs and complexity of managing the new regime are likely to be high. - The overall impact on efficiency and the environmental impact could be negative. - The impact of the proposal is uncompetitive. - Benefits are unlikely to be passed through to customers.

Respondent	Response	Rationale
		- There is little or no flexibility regarding the siting of most priority low-carbon plant. - Additional locational incentives could result in some new low-carbon plant investments being abandoned. In addition, it should be recognised that some capacity has already been hedged beyond the proposed implementation date of 2011/12. Any change to the charging for losses could render some hedges uneconomical. It is not acceptable for a change to charging to have an impact on commercial decisions which have already been taken.
International Power (IPR)	Yes	-
Centrica	Yes	-
EDF Energy	Yes/No	Noting our reservations about the merits of the proposal, the implementation approach seems reasonable, providing at least one year's notice to participants of a significant change to the BSC arrangements. Given delays in the assessment process to date, it may be prudent to reconsider whether implementation by 1 October 2011 is still practically achievable. The earliest possible date now seems to be April 2012
E.ON UK	Yes	Not incorporating any phased implementation or 'grandfathering' etc. as has been the case in previous proposals is the most administratively efficient way of implementing P229 Proposed or Alternative. It would also minimize the current cross-subsidy and (in the case of the Proposed) incentivise a reduction in transmission losses, emissions and costs as soon as possible.
Scottish and Southern Energy	No	We do not support a within year change in the settlement arrangements, with the associated negative impact on consumers, that would arise if either P229 Original or Alternative were to be implemented in October. Therefore we do not support the first proposed implementation date of 1st October 2011 (if an Authority decision is received by 30th September 2010). As has previously been set out (with both the P75/82 and P198/200/203/204 changes) the TLMs need to be provided in time for the April customer contracting round. Therefore we can only support the second proposed implementation date of 1st April 2012 (if an Authority decision is received by 30th March 2011). The reason for this is that it will allow BSC Parties and customers to take into account the effect of TLFs in their contracts. We note that many industrial and commercial (and increasingly domestic) customers sign one year contracts. Introducing a seasonal zonal transmission losses prior to April 2012 would distort the market place as these customers would find their expected costs being altered. We believe that a more equitable solution would be to set an appropriate implementation date of April 2012. This would allow sufficient lead time for market participants and customers to be aware of them in their pricing decisions. We agree that Seasonal TLFs must be made available to BSC Parties at least 3 months before being used in Settlement. As has been noted, most BSC Parties (including ourselves) require 6-9 months to implement

Respondent	Response	Rationale
		P229. Therefore an implementation lead time of 12 months in total is appropriate to allow participants to complete their own implementation activities prior to receiving the first TLFs. Furthermore, this twelve month implementation timescale for P229 would allow sufficient time for the associated, and wholly necessary, Elexon related activities to be undertaken, such as:- i) TLFA procurement and Load Flow Model Reviewer appointment; ii) establishment and adoption of the Load Flow Model by the TLFA; iii) development of TLFA systems, processes and documentation; iv) calculation of Adjusted Seasonal Zonal TLFs; and v) the publication of Adjusted Seasonal Zonal TLFs to Parties 3 months before they are used in Settlement.
National Grid	Yes	Given the previous work undertaken on transmission losses and the subsequent understanding gained on the impact upon suppliers from such a change, we believe that the implementation approach is appropriate. However, we acknowledge that as the Transmission Company we are largely unaffected by the implementation of this modification and therefore may not be best placed to answer this question.

Question 6: Do you have any views on the analysis undertaken on behalf of the Group or the Group's assessment of P229? For instance with respect to environmental impact, security of supply, offshore wind development (e.g. offshore Round 3) and investment in generation or the Transmission Systems.

Have these views had any impact on your consideration of P229?

Summary

Yes	No	Neutral/Other
9	6	1

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited		It is hard to form any definitive views as I believe it is unreasonable to expect parties to digest the volume of analysis presented. However from a quick skim through the documents we make the following observations: 1. Despite the 10-page discussion of discount rates, the resulting figure of 4.2% seems incredibly low given the high level of uncertainty associated with future savings. A non-regulated market player would never invest in such a risky project on the basis of such a return. 2. The estimate of implementation costs for BSC parties is £1.5. There are 219 BSC parties, which works out at an average implementation cost of under £7,000. This is unrealistically low. I would suggest that many parties have already spent more than this in man hours alone just trying to understand P229. 3. The five pages of analysis on the value of SOx and NOx reductions makes no mention of the NERP cap-and-trade scheme currently operating in the UK (and where the price of SOx and NOx reductions is effectively zero owing to over-supply).
Eggborough Power Limited	No	No Comment
Haven Power Limited	No	Due to the complexity of the Modification and Haven Power's limited resources, we are unfortunately unable to comment. As stated in our answers to questions 1 and 2, this puts smaller suppliers such as Haven Power at a significant competitive disadvantage when compared with larger suppliers.
SAIC Ltd. (for and on behalf of ScottishPower)	Yes	The results of the Task 10 as performed by the Load Flow Modeller showed significant differences in TLFs if the expected wind farms and infrastructure development were realised as indicated by Round 1, 2 &3 and the ENSG report. ScottishPower are disappointed that the CBA consultant did not take the views of the Mod Group on this in their consideration of scenarios, particularly when Task 10 scenario was developed and discussed at length by the Mod Group and the LF Modeller. We believe such scenario would at the very least be part of the aggressive wind scenario even though one would also have assumed that the 'aggressiveness' of development should also include shortening of timescale for wind farms to be implemented against their existing plan. ScottishPower believe the impact in the potential increased costs of balancing services and wholesale market prices could be significant which should be included in the cost benefits evaluation, not to mention the ultimate impact on the end consumers. ScottishPower also disagree with the CBA consultant's view that additional gas transportation costs resulted from redespatching of gas fired station in the South would 'have had a minimal impact on the outcome of the CBA'. We find that the effect of this is transferring one cost in the electricity industry to a different cost in the

Respondent	Response	Rationale
		gas industry and question whether this is appropriate and valid should the Panel and the Authority decides on such an implementation. Furthermore, ScottishPower disagree with the CBA consultant's conclusion that P229 'would not have any discernable impact on renewables'. We believe that while it would not impact on long term locational decision, it will disproportionately impact the business of majority of these generations both in term of operational profitability and financing costs due to perceived higher risk factor.
RWE Supply & Trading GmbH	No	The cost benefit analysis is based on the judgement of the consultants and fulfils the terms of reference in demonstrating the general effects of the modification proposals.
Immingham CHP LLP	No	-
Drax Power Limited	Yes	Drax agrees with the Working Group with regards to the insufficient volume of Round 3 offshore connections included in the CBA modelling. Given the Government's policy on renewable generation, specifically taking into account the potential for significant volumes of new offshore generation to join the system, it would seem logical to take into account: • potential Round 3 connections; • the retirement of plant across the system as a result of such connections; • the volume of back-up generation that would be required on standby; and • the need for strategically placed plant to provide support / balancing services to National Grid. Drax also shares the concerns of the Working Group with regards to the WACC. The CBA consultants have consistently pursued the use of a WACC figure that is more appropriate for regulated businesses; the average WACC figure for non-regulated businesses (i.e. those businesses that would be affected by the Proposed and Alternative Modifications) would be considerably higher than that for regulated businesses. With regards to analysis on the environmental impacts of P229, please see our answer to question 7.
Rio Tinto Alcan (RTA)	Yes	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	No	We believe that the group has done a very good job in identifying scenarios for modelling. We would like to register our thanks to Elexon, the group and their consultants. However, we note that previous losses modifications have not progressed for a variety of reasons. We would urge the group to check that Ofgem is happy with the work undertaken so that they can do a regulatory impact assessment and reach a decision in a timely manner.
GDF SUEZ Energy UK	Yes	There are a number of concerns which have been raised in reviewing the work undertaken to date. The timing of issuing of TLM information by the consultants has not been helpful in undertaking the assessment,

Respondent	Response	Rationale
		particularly as the information provided has raised concerns over the basis of the analysis. The assessment of certain locations does not appear reflective of the seven year statement nor is it reflective of the likely developments in certain zones. For example the Zone 6 assumption is that there is no generation from January 2015 until 2018, this is despite the fact the there are significant planned developments in this zone. The anomalies identified have raised a general concern over the accuracy of the data provided and makes providing final analysis extremely difficult.
International Power (IPR)	Yes	The environmental benefit amounts to 80% of the overall with NOx and SOx benefit. Any changes to assumptions will lead to a major change in the overall benefit. Given this sensitivity we think Ofgem should be cautious in the weight it gives to this part of the analysis. For example, it would be useful to know the assumptions that have been made on which plant will fit SCR? This affects both coal plant with FGD as well as older (pre 2000) gas plant. We appreciate that it is difficult to predict which opted in coal plant will choose to close or run under a limited hours regime come 2016. However given that over the 10 year study period, the overall benefit amounts to £48m, the modelling could be quite sensitive to which coal plant has SCR installed come 2016. Further, the installation process will affect the duration of outages and running profiles (one can observe the affect of installing FGD across the coal fleet) which will have an effect over the ten year time frame.
Centrica	Yes	Whilst Centrica accepts that the cost benefit analysis assumptions should be those of the CBA consultant's expert view, there are three areas which are curious. Firstly, the amount of offshore wind assumed in both the base case and the aggressive offshore wind scenario (these are 4GW and 7GW respectively by 2020) is at odds with current and previous publications. More recently, the National Grid ODIS document envisages 10GW of offshore generation under a slow progression scenario, 19GW under a gone green scenario and 36GW under a scenario of DECCs Strategic Environmental Assessment (SEA) study of potential offshore wind capacity, all by 2020. This is a substantial difference to have a *slow progression* scenario assumed by National Grid that is 3GWh (almost 50%) *in excess* of the *aggressive wind* scenario in the CBA, and two and a half times larger than the base case assumed by the CBA consultants. The base case is almost 5 times less than under a credible gone green scenario. Centrica therefore believes the CBA to be a significant underestimation of the likely offshore wind penetration. Whilst we note that this ODIS document was not available to the CBA consultants at the time of producing the CBA, there was other credible information in the public domain. It is therefore disappointing that results with this level of penetration were not modelled as it is not necessarily intuitive how such a significantly different scenario might impact the results. Secondly, Centrica shares the concern of some members of the Modification Group that the WACC values are too low and do not represent the hurdle rates for investment faced by a wide section of the industry. A higher WACC would reduce the modelled benefits of the modification.

Respondent	Response	Rationale
		Finally, Centrica believes that the Network Mapping Statement could contain an error with regard to the location of Centrica's 885MW gas fired power station at Langage. It appears that this was modelled as being in GSP Group H which is the Southern GSP Group. However, being located in Plymouth, Devon, Langage should have been allocated to GSP Group L (South Western). Given the date range of the inputs to the load flow model was prior to Langage commissioning this would be unlikely to effect the Load Flow model results. However, it appears that Section 2.2.1.3 of the CBA analysis indicates that this was used by the CBA consultants and it is unclear whether this would have any material impact on the results.
EDF Energy	Yes	See next question for comments on analysis of environmental impact. The "aggressive wind" scenario with 6.9 GW of offshore wind by 2021 compared with 5.8 GW in the reference case does not seem particularly aggressive compared with latest government aspirations, and the aggressive renewables scenario in work conducted by the Electricity Networks Strategy Group (ENSG). The Cost Benefit modelling has not considered potential HVDC links within the GB transmission system which could considerably change the pattern of flows and resulting losses (independently of any locational losses scheme). The modelling has been conducted in relative isolation from the many other industry proposals currently on the table. It has not considered the impact of other potential changes affecting the despatch decisions of generators in particular, including potential constraint management methods, possible locational BSUoS, and changes to transmission access and charging. Specifically nuclear life extensions have not been considered. All of which could have far reaching implications for any locational pricing mechanism.
E.ON UK	Yes	We are reassured by the conclusions that P229 would not have a disproportionate impact upon any type of generation (e.g. renewables or nuclear). However with regard to the environmental impact, as per our answer to question 7, the CO2 prices used by Ventyx seem on the low side. This applies to both the short and longer-term, in comparison with forecasts issued by various other consultants over recent months and the latest recently reported, e.g. Deutsche Bank's forecast for EUAs to rise to €15-16 by mid-year, a figure not reached until 2013-2014 in the forecast utilised for the Cost-Benefit Analysis. With increasing focus on the urgency of emission reductions, greater pressure on prices seems likely and higher CO2e/EUETS prices would increase the financial benefits of implementing P229. The same can be said for SOx and NOx, the prices used being explicitly acknowledged by the consultants to be conservative and not taking the 'social value' of emissions reductions into account.
Scottish and Southern	No	We have some views on the analysis undertaken on behalf of the Group.

Respondent	Response	Rationale
Energy		**(i) Round 3 Offshore wind** In addition to the flaws in the CBA noted under Q1 (iv) above (with respect to the exceedingly low WACC level used within the CBA) we believe that the non inclusion of the Round 3 Offshore wind farm developments within the CBA is a fatal flaw in this work. We understand that the inclusion of the 25GW of Round 3 Offshore wind farm developments within the CBA analysis was identified as early as January 2009. This flaw (in not including this sizable quantity of generation - circa one third of the GB installed generation capacity - within the CBA) was, we understand, highlighted on a number of subsequent occasions as work on the CBA progressed. Looking at the CBA Report tables 6-4 (pg 103) and 6-5 (pg 104) along with the comments in 7.4.1. (pgs 199-201) indicate that not only has all the 25GW of Round 3 Offshore wind farm developments not been modelled within the CBA analysis, neither has 2GW of the (8GW) Round 1 and 2 offshore wind capacity. Instead the CBA modelling has only used a total of circa 6GW, by 2020, of offshore wind generation; whilst the Government, Ofgem, the Crown Estate and National Grid are talking in terms of a total of 33GW of offshore wind being connected to the transmission system by that date (8GW via Rounds 1 & 2 plus 25GW via Round 3). If the difference was relatively minor then it might be understandable as to why it had not been included in the CBA analysis. However, the CBA Report has only modelled circa 20% of what the Government, Ofgem, the Crown Estate, National Grid et al are suggesting will be the quantity of offshore wind farm developments by 2020. See, for example, the DECC press release from January 2009[5] and in particular the quote from the Energy Minister (Similar comments were made by the CEO of Ofgem and the Director of the Marine Estate at the Crown Estate in the same press release) in that statement:- . "An extra 25GW of offshore wind energy could be accommodated around the UK's shores, in addition to the

[5] http://www.decc.gov.uk/en/content/cms/news/pn065/pn065.aspx

Respondent	Response	Rationale
		8GW already built or planned, Energy Minister Lord Hunt announced today." . This means not only will the location of this 'additional' 27GW[6] of offshore wind generation not have been modelled (with the associated impacts - 'good' and 'bad' - on the volume of variable transmission losses) but also neither will the associated (MWh) output. Furthermore, the output of this 'additional' 27GW of offshore wind generation has instead had to be 'replaced' (in the CBA modelling) by other generation (coal? gas? oil? nuclear? etc.,) in other locations across GB (rather than where the Crown Estates / NG said, in their December 2008 report, the offshore wind generation capacity could be) resulting in significantly different volumes of variable transmission losses (to be allocated, via seasonal zonal losses, under P229) and environmental benefits etc., being reported in the CBA. Thus a 'double whammy' occurs. It ***excludes*** from the CBA analysis:- a) what is believed (by the Crown Estates – who allocate the sea bed locations for offshore windfarms – and National Grid – who set out the grid connection sites) to be the location and the associated volume of variable transmission losses (to be allocated, via seasonal zonal losses, under P229) of this 27GW of offshore wind generation; and b) the environmental (CO2, SOx, NOx etc.,) benefits from that output 27GW of offshore wind generation. It ***includes*** in the CBA analysis:- a) non wind generation at various locations across GB, which impacts on the volume of variable transmission losses (to be allocated, via seasonal zonal losses, under P229) whose output is equivalent to that produced by the 27GW of offshore wind generation; and b) the environmental (CO2, SOx, NOx etc.,) disbenefits from that output (which arises from it being non

[6] 6GW modelled in the CBA out of 33GW in total leaving a 27GW shortfall.

Respondent	Response	Rationale
		renewable plant, such as coal, gas, oil, nuclear etc., rather than wind generation). This is a major deficiency in the CBA analysis. As a consequence it has detrimentally hindered our ability to consider the effects of P229. Finally, to put matters into context, the CBA modelling is based on circa 6GW of offshore wind by 2020. The announcement[7] by the Crown Estates on 8th January 2010, with respect to Round 3 Offshore wind farm developments, coupled with their previous announcements means that the Scottish and Southern Energy's share of offshore capacity, in its own right, exceeds this 6GW figure used in the CBA. This was outlined in our announcement to the Stock Market on the 8th January 2010 where we stated that:- "SSE's capacity share of the two proposed [Round 3] wind farm developments totals around 4GW." "During 2009, SSE was awarded exclusive rights from The Crown Estate to develop offshore wind farms at locations in Scottish territorial waters (including two where it is in partnership with other specialist developers) with a total capacity of over 2GW." To this capacity must be added the other offshore wind farm capacity we have (for example, from Rounds 1 & 2) such as our share of the 500MW Greater Gabbard project. **(ii) Disproportionate impact with treatment of 132kV** We have been mindful of the report commissioned by the DTI in June 2003 into "The Impact of Average Zonal Transmission Losses Applied throughout Great Britain" (written for the DTI by Oxera) which states (pg iv) that:- "The high degree of scaling for generation output in the two Scottish regions is reflective of the inclusion of 132 kV lines as part of the transmission network in Scotland* as well as the geographical distribution of generation and demand in Great Britain."

[7] http://www.thecrownestate.co.uk/newscontent/92-r3-developers.htm

Respondent	Response	Rationale
		*"132 kV lines are classified as distribution in England and Wales but as transmission lines in Scotland. Losses in these [132 kV] lines tend to be higher than in higher voltage lines, and will affect TLFs in Scotland but not in England and Wales." We believe that 132 kV should be excluded from the application of seasonal zonal losses if P229 (Original or Alternative) is implemented. This will result in a consistent approach to losses from 132 kV. If this does not happen then we believe that P229 would have a disproportionate impact on certain classes of BSC Parties. **(iii) Security of supply** An efficient and effective electrical transmission system requires that generation is located throughout the network for reasons of (electrical) system stability. If P229 were to be approved then the economics of generation plant located in northern Britain would be adversely affected. This, in turn, could lead to such plants being made uneconomic which would advance the date of their closure with a consequential effect on security of electricity supply. Furthermore, if this were to happen with respect, in particular, to northern Scotland, then National Grid may have to be more reliant on imports which in certain circumstances (such as adverse weather conditions) might seriously jeopardised the security of electricity supplies.
National Grid	Yes	We believe that the analysis provided has given the industry sufficient information with which to assess the modification. We also believe the group has been robust in their assessment of the modification

Question 7: Do you have any views on the Group's assessment of the impact of P229 on the environment and the analysis of environmental impact in the P229 CBA? For instance any other environmental impacts the Group should consider or the analysis of emissions contained in the P229 CBA (i.e. the approach to CO_2, NOx/SOx)

Have these views had any impact on your consideration of P229?

Summary

Yes	No	Neutral/Other
11	4	1

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	Yes	See point 3 in answer to Question 6 above.
Eggborough Power Limited	Yes	It is the view of Eggborough that the monetary valuation of the damage costs of emissions of sulphur dioxide and nitrogen oxides is extremely uncertain and, as a result, the range of plausible values is wide. For this reason we believe that policy development should seek to find cost-effective means for attaining environmental targets, rather than using monetised damage cost-benefit analysis to determine the environmental target level. Given the current state of knowledge, it is not appropriate to directly apply damage cost estimates for sulphur dioxide and nitrogen oxides in the economic assessments of policy decisions. The level of uncertainty is too great and it is misleading to imply that the damage costs are of a comparable status to the other costs and benefits assessed. If the environmental consequences of these emissions are to be considered as part of a policy assessment, then they should be considered in their own terms as potential environmental impacts. These physical outcomes should be evaluated alongside the monetised cost-benefit analysis for other elements of the policy under consideration, when determining the appropriate policy decision.
Haven Power	No	Please see answer to question 6.

Respondent	Response	Rationale
Limited		
SAIC Ltd. (for and on behalf of ScottishPower)	Yes	ScottishPower find the CBA results difficult to conclude when taking into account of SOx and NOx costs. If a high gas scenario occurs, it means that according to the CBA, it would be worse than the current baseline to implement P229. Then, if the Panel and the Authority decides for a P229 implementation, does it means that such a scenario would not occur? ScottishPower believe that 30% increase in gas price is quite a credible situation based on past experience. While the SOx and NOx costs valuation by the CBA consultant seemed plausible, they are not real costs to the industry. They may be more philosophical consideration by the Government, which may already have been included in their decision on renewables expansion as shown by the Round 3 commitment. Also the abatement costs in reality are sunk as parties have already made the investment. ScottishPower also believe that were the full 3 rounds or the Task 10 scenario wind development modelled, the environmental impact from CBA could be significantly different which could have the opposite indication on the cost benefit of P229. Such a potential outcome means that this is a credible scenario which requires to be modelled before a final decision could be made on P229.
RWE Supply & Trading GmbH	Yes	We support the conclusion of the cost benefit analysis in relation to the potential benefits in the case without the SO_2 and NO_x effects. Indeed we believe that the report indicates that there is a strong case for implementation without taking into account the SO_2 and NO_x effects. However, we do not believe it is appropriate to use damage costs of SO_2 and NO_x emissions in the cost-benefit analysis. The monetary valuation of the damage costs of SO_2 and NO_x is extremely uncertain, and it may be misleading to imply that the damage costs are of a comparable status to the other costs and benefits assessed. The majority of the SO_2 and NO_x damage costs are assumed to arise from the impacts of secondary particulates, which are formed through reactions in the atmosphere. However, there is a growing body of evidence and expert opinion that secondary particles from these gases have minimal health impacts. Sulphate and nitrate particles have minimal ability to cause oxidative stress and inflammation. Primary particles from other sources are the most likely cause of the observed health effects. If secondary particles from sulphur dioxide and nitrogen oxides do not have significant impacts on human health, then the damage cost range for these emissions will be very much lower than the current range of published estimates, nearly all of which assume a secondary particle health impact. Thus, given these uncertainties a more appropriate approach is to consider the environmental consequences in their own terms (eg tonnes of emissions and range of environmental consequences) alongside the financial cost-benefit analysis, rather than using uncertain damage estimates.
Immingham	No	-

Respondent	Response	Rationale
CHP LLP		
Drax Power Limited	Yes	It is Drax's view that the monetary valuation of the damage costs of SOx and NOx emissions is extremely uncertain, with the range of plausible values being wide. Given the current state of knowledge regarding the social effects of these emissions, Drax questions whether it is appropriate to consider such cost estimates as a part of an economic CBA assessment. It would seem more appropriate to separately evaluate the potential for the proposals to achieve environmental targets related to SOx and NOx emissions, rather than to use a monetised CBA to determine the effectiveness of the proposals in directly reducing damage costs. Given that the level of uncertainty surrounding the social costs of such emissions is so great, it would be misleading to imply that such costs are of the same comparable status to the other costs and benefits assessed as part of the CBA. Therefore, Drax questions the robustness of costing SOx and NOx savings in the way that they have been presented in the CBA report. It is Drax's view that the environmental consequences of these emissions should be considered in their own terms alongside the CBA results, rather than as a part of the monetised analysis.
Rio Tinto Alcan (RTA)	No	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	No	We believe that the group has correctly identified that the more efficient operation of the market as a whole, via better cost targeting, should reduce emissions over time. The scale of these benefits is difficult to gauge, but we agree that the overall impact of these changes, in a competitive generation market, will be a reduction in the impact of the electricity market on the environment.
GDF SUEZ Energy UK	Yes	See our response to Q1 which addresses the detrimental impacts to objectives B and C, and also the detrimental impacts to wider Government objectives. Additionally, the overall net benefit of around £65M as cited in the London Economics report is questionable. The discount rate used looks very low at 3.5% relative to current market indicators which would suggest a discount rate of around 6-7%. This would significantly reduce the overall net benefit over the 10 year period. Also, even if the £65M was accurate the benefit over such a prolonged period is relatively minor given the magnitude of change this would introduce overall. It is questionable whether any of this benefit would actually manifest itself as a real pass through benefit to consumers rather than simply a benefit to a limited group of shareholders. The environmental impact of potentially incentivising less efficient plant to run or of the risk of rendering some low-carbon generation investments uneconomic has not been taken into account
International Power (IPR)	?	-
Centrica	Yes	Any decisions taken by renewable project developers attributable to P229 that would not realise the full and

Respondent	Response	Rationale
		timely investments in renewable projects that would have occurred under the baseline (potentially due to the need to meet investor hurdle rates) would result in delays to greenhouse gas producing generation being displaced. As noted in our response to question 1 above, in order to retain perspective, we believe that the P229 benefits of reduced losses on displacing C02 emitting plant could be met by one 65MW windfarm. There should therefore be some consideration of the impact (positive and/or negative) on efficient renewable investment. Total offshore wind generation site capacity is 36GW by 2020. A 65MW windfarm would represent just 0.2% of that capacity. In addition, it is unfortunate that the Group can not make an assessment of the CBA with a greater penetration of offshore wind which more closely reflects current government, industry and National Grid expectations.
EDF Energy	Yes	We note the analysis of impacts on CO2, SOx and NOx. The price attributed to theoretically avoided SOx and NOx emissions far exceeds that which we believe appropriate for GB large power station emissions, and their materiality therefore seems hugely exaggerated. We note that the SOx/NOx environmental benefits apparently arise because more polluting generators appear coincidentally to be currently concentrated in locations with disadvantageous transmission loss factors. This suggests a one off short term benefit rather than a long term sustainable environmental benefit. We note the SOx/NOx disbenefits in the high gas price scenario.
E.ON UK	Yes	As per our answer to question 6, the CO2 prices used seem rather low. Higher prices seem likely throughout the period covered by the analysis; these would significantly increase the benefit of implementing P229. Furthermore as the Cost-Benefit consultants have acknowledged, the social impacts (shadow price of carbon) have not been taken into account. Thus the true environmental and social benefits of reduced emissions that would be achieved by implementing seasonal zonal losses under most scenarios have not been demonstrated by this analysis. The SOx figures seem more reasonable although still conservative as Ventyx have stated and there is more uncertainty over these – again if the actual costs were higher the financial and social benefits of P229 would be greater than stated in this analysis. For the industry to make a valuable contribution to reducing GB emissions and associated impacts further adds to the impetus to implement P229.
Scottish and Southern Energy	Yes	For the reasons we have outlined above, we believe that, in particular, there are fatal flaws in the CBA analysis with respect to the environmental impact associated with P229.
National Grid	Yes	The inclusion of NOx/SOx serves as useful additional analysis with which to assess the modification.

Question 8: Do you have any further comments on P229?

Summary

Yes	No	Neutral/Other
7	8	1

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	Yes	P229 appears to be a scheme devised by large incumbents in the industry to make the BSC even more complicated and so make it harder for small players and new entrants to compete.
Eggborough Power Limited	No	No comments
Haven Power Limited	No	-
SAIC Ltd. (for and on behalf of ScottishPower)	Yes	ScottishPower believe that P229 will have a detrimental impact on the applicable BSC Objectives, as detailed in our answer to question 1. It will increase the perceived regulatory risk associated with the electricity supply industry, increasing the costs of both its players and its customers to the overall detriment of economic efficiency. Risks remain for both existing players and new entrants of future changes in TLFs/TLMs. Irrespective of who should manage the risks, any additional risk would increase costs and affect future investment decisions. Such costs would not be insignificant considering the amount of investment capitals (£ billions) required for the expected renewable projects. There are potential impacts on consumers - Parties receiving windfall gains may not pass any savings onto customers. Parties who are windfall losers will have to pass price increases onto customers to cover costs. Increase in wholesale prices would ultimately increase costs to the end consumers. Implementation of P229 will lead to increased costs for several classes of Parties some of whom such as Wind farms, Nuclear stations and CHP plants are unable to respond and change their operational regime readily, and

Respondent	Response	Rationale
		are located historically in the North of the country. ScottishPower are also concerned at the potential conflict between P229 and DECC's ongoing consultation on Improving Grid Access. Introduction of Zonal Losses would discourage the deployment of renewable generation in areas of optimal resource running contrary to the aims of the DECC process to encourage early investment in generation to meet Government targets on renewables and security of supply.
RWE Supply & Trading GmbH	No	-
Immingham CHP LLP	Yes	The process for progressing this modification and consulting BSC parties has been highly unsatisfactory. There have been repeated delays and recurring issues about the quality of the outputs (most notably over the TLMs). We are also concerned that Ofgem intervened in the process inviting the Panel to slow the process down because of possible interactions with the transmission access review, although these interactions were not subsequently explored. Six different approaches to the charging of losses have now been proposed since Neta go-live, and various mitigation schemes have been brought forward taking a substantial amount of time and resource. There have also been two successful judicial reviews. In this context it is relevant that: +DTI ruled against the extension of any zonal losses scheme to Scotland in the run-up to BETTA implementation; and +DECC has, as part of its recent consultation on options for "constrain and manage" in the context of transmission access, made a number of observations on the range of solutions that could be cross-read to the assessment of the current proposal, in particular ruling against disproportionate complexity. It has also implied that it has concerns on the impact of changes to existing access right holders, which seem relevant here too. It is now essential that after the assessment of the current proposal is concluded and taken through report stage to the regulatory impact assessment and the proposal rejected that the matter of change to transmission loss charging is taken off the table.
Drax Power Limited	No	-

Respondent	Response	Rationale
Rio Tinto Alcan (RTA)	No	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	No	As a more general point regarding investment in generation and Transmission Systems, we would like to note that both on and offshore renewable energy has been hampered by physical and administrative constraints in the national grid network, leading to very long lead times for grid access. Whilst some tentative steps are now being taken to resolve this, we think that a far bolder policy is needed. This should be based on identifying where renewable generation investments are likely to be made and then incentivising National Grid to commence and advance work on planning and constructing the necessary network investment needed to connect it. Besides more expedient and effective grid access from the offshore wind farms, we are concerned whether the overall infrastructure of transmission and distribution lines is capable of handling and integrating the expected increase in supply from wind power - and in particular whether build out plans are sufficiently ambitious and specific. We would welcome a roadmap that would spell out the specific plans for stronger transmission lines and a timeline for how to accommodate them.
GDF SUEZ Energy UK	No	It is essential that the regulator performs a Regulatory Impact Assessment following on from this consultation in order to fully assess the impact on affected market participants, customers and Ofgem's wider obligations regarding sustainability. Parties responses to this consultation will understandably be narrowly focussed on the BSC applicable objectives. It is important for the regulator to be cognisant of wider issues in relation to Transmission issues.
International Power (IPR)	-	-
Centrica	Yes	Whilst outside the scope of the BSC, it is worth noting that there are currently locational signals provided by TNUoS and GDUoS. It is not clear whether adding a third, potentially conflicting, locational signal will provide the desired benefits or whether this will simply confuse the signal for generators.
EDF Energy	Yes	P229 would create gross cash/energy flows from some locations and from some parties to others. These seek to imitate the flows which would be expected to occur in an idealised market situation where a party should be willing to pay another party for any benefit created by the action of the other party. However, in reality there is no market for, and no rights to, losses allocations, and imposing such a scheme represents a regulatory charging regime with largely unmanageable risk. We estimate the impact of the Proposed Modification P229 on EDF Energy supply business would be an increase in energy purchase costs of approximately £10m per year. This cost would unavoidably have to be passed on to our customers.

Respondent	Response	Rationale
		We note a significant difference in forecast results for the Alternative Proposal between London Economics/Ventyx Cost Benefit Analysis for P229 and analysis undertaken in 2006 by Oxera for proposals P198/203 (similar to the current proposal) and P204 (similar to the current alternative proposal). Oxera results indicated that the value transfer between different zones under P204 were approximately 20% of those under P203, proportional to the scaling factor used in the alternative relative to the proposal, as would be expected. However, the theoretical potential energy cost savings under P204 were about 50% of those under P203. This would be consistent with the range of different potential marginal generator costs being quite small so that small losses adjusters had a similar effect on theoretical despatch changes as much larger adjusters. In the LE/Ventyx analysis for P229, the theoretical energy cost savings for the alternative show a similar proportion as the transfer between zones, approximately 20% of those under the original proposal. This suggests the assumed individual generator costs were more widely and/or smoothly distributed so that the impact of loss adjusters is directly proportional to their size. We asked Elexon for information to confirm this explanation, but none was readily available, so we draw no conclusion on which might be more accurate, but note the significant difference.
E.ON UK	Yes	The issue of Regulatory Risk has been briefly raised in objection to P229, but not only is this outside the scope of the BSC Applicable Objectives, but as acknowledged in P75-P204 discussions, zonal transmission losses have been a prospect for 20 years, since the days of the Electricity Pool. E.g. Under Schedule 12 of the Pooling Settlement agreement, Oct 1994 was the suggested date for a Works Programme to review and if agreed, implement changes in the arrangements for allocating transmission loss costs to reflect the electrical location of generation and demand. Implementation of P229 would thus be no shock to the market; existing and prospective Parties should have long taken account of the possibility that a form of zonal losses might be introduced in their risk management. As Oxera reported for P198, any risk is both forward-looking and diversifiable, and will not actually have an impact on the cost of capital. Furthermore, following the closure of the previous modification proposals, another being raised in P229 demonstrates that this issue is not going to go away owing to the strength of arguments in favour of improving the current distortion of the uniform losses charging methodology. Implementing P229 would not only reassure investors that charges will be more proportionate going forward but give greater certainty than if this modification was not implemented, in which case the issue may seem likely to be raised again in the near future, prolonging the uncertainty. The iterations of various losses mods from P75 onwards have fully explored the issues and alternatives involved and apportioning costs to those who cause them as P229 facilitates is the most efficient solution.
Scottish and Southern Energy	Yes	We understand that in the Modification Group deliberations that there was some suggestion that the potential introduction of a zonal transmission losses arrangement was identified at the time of privatisation. However, we note that there was no reference in the Scottish Hydro Electric or Scottish Power prospectuses to zonal transmission losses. Accordingly, the argument that the intention to introduce zonal transmission losses

Respondent	Response	Rationale
		has been known for some considerable time would not apply to Scotland.
National Grid	No	-

Question 9: Is there anything further you believe the P229 Group should consider regarding the potential interaction of HVDC with the Load Flow Model in the future?

Summary

Yes	No	Neutral/Other
3	11	2

Responses

Respondent	Response	Rationale
Sembcorp Utilities (UK) Limited	No	
Eggborough Power Limited	No	
Haven Power Limited	No	No comment
SAIC Ltd. (for and on behalf of ScottishPower)	Yes	Acknowledging the uncertainty of the industry and the tight timescale of the BSC modification procedure, ScottishPower accept the Mod Group's decision of and reasons for not to include future HVDC network in the current solution of P229. However, in view of the potential impact of HVDC network on the modelling and evaluation of zonal TLFs, as indicated by the LF Modeller's Task 10 scenario results, and considering that an offshore HVDC network could potentially be implemented by 2015 (as suggested by the ENSG report), we reiterate our earlier view that a CBA scenario including HVDC infrastructure (which should also include Round 3 offshore wind) should be modelled prior to any final decision be made on P229.
RWE Supply &	No	We believe that the potential interaction of HVDC with the load flow model should be considered in a separate modification proposal if and when these networks are given the go ahead.

Respondent	Response	Rationale
Trading GmbH		
Immingham CHP LLP	No	-
Drax Power Limited	No	-
Rio Tinto Alcan (RTA)	-	-
Waters Wye Associates on behalf of DONG Energy Burbo (UK Limited)	No	We agree with the group's recommendation that it is impractical to include the impact of HVDC on Transmission Losses as DC flows are set according to operational requirements and not, unlike AC flows, dependent on the overall flow of energy on the network.
GDF SUEZ Energy UK	No	Some potential HVDC connections resulting from offshore wind do not appear to have been factored into the long term view of TLMs produced by Elexon which support this analysis.
International Power (IPR)	-	-
Centrica	No	-
EDF Energy	Yes	The proposed approach for potential HVDC circuits within the GB transmission system under a locational losses scheme is a pragmatic one. However, if a locational losses scheme were to be approved and implemented, the suggestion to exclude losses on these circuits does not seem consistent with the principle of allocating losses to those considered responsible for creating or (in the case of Proposed Modification P229) avoiding them. The fact that the flow on a parallel DC circuit may be independent of small changes in flow of users on either side of it does not mean those users are not affecting the losses on the circuit, and exclusion of losses on such a circuit because a different method of determining an allocation is required seems a practical solution rather than a principled one. If a locational losses scheme were to be approved and implemented, we would expect further BSC Modifications to be raised in respect of losses on any firmly anticipated HVDC circuits.
E.ON UK	No	As the Group identified there are considerable uncertainties over HVDC and introducing further estimates into the modelling would not be helpful.
Scottish and Southern Energy	Yes	• Recommendation 1 – HVDC circuits should be excluded from the Load Flow Model (because the nature of the power flows on DC systems makes it impractical for the TLFA to calculate them). We do not agree with this recommendation. It is clear from the work that the

Respondent	Response	Rationale
		ENSG (which has the widespread support of industry, Government and Ofgem) and from the front page lead story in the Times[8] that the effect of HVDC will be significant, if not substantial, in terms of the impact on the use of the transmission system which must, therefore impact of the volumes of variable losses to be allocated. Excluding the HVDC circuits from the Load Flow Model is therefore wrong. We note the comments:- "….the flow on a DC circuit is determined by an operational decision. For example, somebody sets the flow to be 975MW. This could be due to system operation reasons or due to trading requirements or due to combination of these. This level of flow can be reset very frequently and even the resetting automated, but still, in principle, the flow is fixed and maintained fixed (until reset)." We further note that the France-England interconnector is also a DC circuit, yet is included in the Load Flow Model. Discriminating between DC circuits in the way that is proposed, with this recommendation, is not justified. Furthermore, going forward, given the increasing use of HVDC circuits (within the GB transmission system) to enter into a new regime (as a result of P229) knowing this on the basis that now (and in the future) such "HVDC circuits should be excluded from the Load Flow Model" is wholly inappropriate. • Recommendation 2 – For the purposes of the Load Flow Model, any flow between the AC system and an HVDC circuit should be treated as an additional power flow (a 'DC Nodal power flow') at the Node on the AC system that represents the connection point. For this recommendation to be taken forward, then a similar approach should be applied to the flows on the France-England interconnector DC circuits to avoid discriminating between flows on DC circuits. • Recommendation 3 – Losses on HVDC circuits will be socialised through the TLMO mechanism (except where the HVDC circuit is serving specific, clearly identifiable users – see Recommendation 4). For this recommendation to be taken forward, then a similar approach should be applied to the flows on the France-England interconnector DC circuits to avoid discriminating between flows on DC circuits.

[8] Times 8th January 2010 "National Grid threat to Scottish renewables".

Respondent	Response	Rationale
		• Recommendation 4 – If an HVDC circuit is specific to one or more users (e.g. a circuit connecting one or more offshore wind farms to shore), then the losses on that HVDC circuit will be incorporated into the Nodal TLF values for that user or users, and hence into the appropriate Zonal TLF. Note that this adjustment of Nodal TLF values will have to be done outside the Load Flow Model proper, using data on the actual measured HVDC losses in each Sample Settlement Period. For this recommendation to be taken forward, then a similar approach should be applied to the flows on the France-England interconnector DC circuits to avoid discriminating between flows on DC circuits. • Recommendation 5 – When averaging Nodal TLF values to derive a Zonal TLF, DC Nodal power flows will be taken into account if they represent genuine demand or generation connected to the HVDC system, but not if they are internal to the Transmission System. For this recommendation to be taken forward, then a similar approach should be applied to the flows on the France-England interconnector DC circuits to avoid discriminating between flows on DC circuits. • Recommendation 6 – In order to implement Recommendations 2 and 4, settlement metering should be installed at each point of connection between the AC Transmission System and the HVDC Transmission System. We agree with the suggestion to install settlement metering at each point of connection between the AC Transmission System and the HVDC Transmission System. • Recommendation 7 – The P229 solution does not need to include drafting for an 'HVDC sandwich' i.e. two separate parts of the AC Transmission Systems joined only by HVDC circuits. We believe that had the Round 3 Offshore wind farm developments been included within the analysis (see our comments under Q6 above) that the effects of the 'HVDC sandwich' could have been taken into effect.
National Grid	No	-