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Geoff Randall,
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10th October 2013

Dear Geoff,

Project Transmit: Impact Assessment of industry's proposals (CMP213) to change the electricity transmission charging methodology (Reference 137/13)

Thank you for the opportunity to respond to the Authority's Impact Assessment of industry's proposals (CMP213) to change the electricity transmission charging methodology.

Summary

- We support Authority's CMP213 "minded to" position to implement WACM2 on 1st April 2014.
- We believe that WACM2 is in the interests of existing and future consumers and we think it is important that the Authority give equal weighting to the possibility that there could also be a decrease in consumers' bills in the short term.
- We agree with the Authority's assessment of the appropriateness of implementing WACM2 against the Applicable CUSC (charging) Objectives.
- We agree with the Authority's assessment of the options against their statutory duties.
- We agree with the Authority that Diversity 1 is better than Diversity 2 or Diversity 3 in terms of both better meeting the Applicable CUSC (charging) Objectives and complying with the Authority's statutory duties.
- We agree with the Authority's assessment of the options in terms of the strategic and sustainability impacts associated with CMP213, and WACM2 in particular. We have not identified any additional impacts over and above those identified in the Impact Assessment.

- We consider that the Authority has identified the relevant impacts from the National Grid modelling of the effects/impacts of CMP213 (including WACM2) and interpreted them appropriately.
- We agree with the Authority's assessment that implementation of WACM2 on 1st April 2014 is appropriate. We see no reason to delay implementation beyond this date.
- We believe that there may be a case for socialising some of the costs of HVDC convertor stations due to the wider benefits that this technology could provide, but that this may need to wait until further information is provided to the Authority.
- We have included further evidence which may be of relevance to the Authority during its deliberations on this matter.

Rationale

We welcome the Authority's 'minded to' position to implement WACM2 on 1st April 2014. In our view, this change to the transmission charging methodology makes it more cost reflective, encourages competition and better reflects the development of the transmission businesses than the Status Quo.

We agree with the Authority that WACM2 would promote:-

i) cost-effectiveness by being more cost-reflective as a result of moving away from peak-only charging and better targeting costs driven by generators;

ii) efficient network investment compared to the current 'status quo' arrangements; and

iii) non-discrimination, by charging users based on a more appropriate reflection of the impact they have on system reinforcement through the use of a method that considers the transmission system across the year and peak periods.

We also concur with the Authority's view that the WACM2 option aligns with European policy trends such as for more cost reflective pricing and represents a relatively low risk evolution of the existing approach.

Having considered in detail the information in the consultation document and the associated reports we agree with the Authority that moving away from the current 'Status Quo' position to one based on WACM2 will lead to more cost reflective charging for use of the GB transmission system. This will in turn reduce the cost of deploying sustainable generation technologies, such as intermittent generation, as well as remove barriers to its development and deployment. This is to be welcomed.

We agree that a change away from the current methodology should reduce barriers to entry to plant in northern GB but also to plant across GB as it should reduce the inherent instability and riskiness of the current charging outcome. We do not think

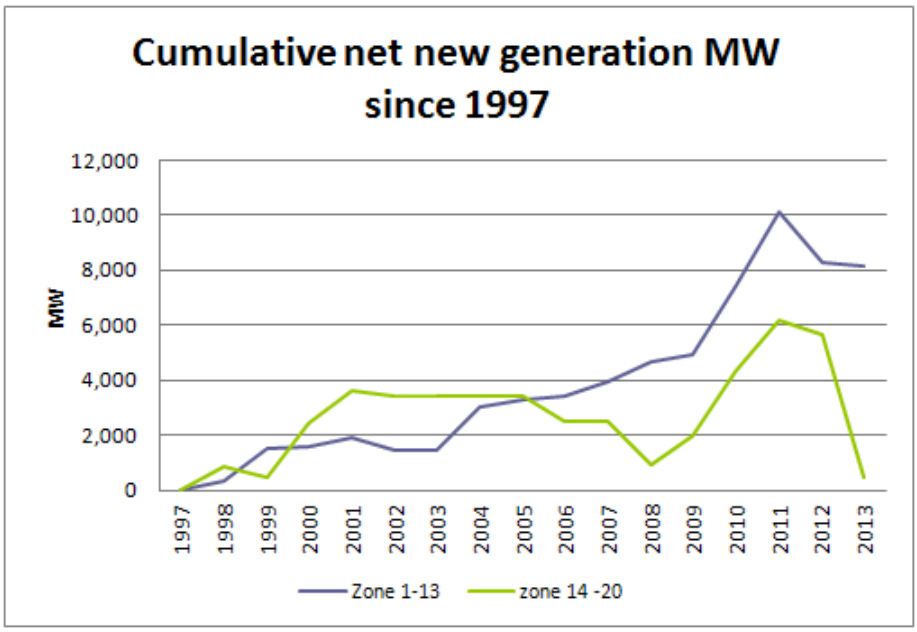
that there will be a net increase in retirement arising from these changes as the negative impact on some generators will be more than matched by the positive impact on other generators and that this is likely to reduce retirals overall.

Indeed, there is a counter risk whereby not implementing WACM2 could cause closure of marginal generators in the north of GB. Given the relative scale of change in generator TNUoS tariffs from the implementation of WACM2, i.e. a greater decrease in generator tariffs in northern GB than increase in southern GB we think that this counter risk means that moving away from the Status Quo should actually improve Security of Supply as plant in the north of GB is more likely to respond positively by not closing than plant in the south to close.

We believe that the clear move away from the current 'single background' Status Quo transmission charging methodology to a method that recognises the 'dual background' approach adopted for SQSS is better for furthering the objectives outlined at the start of the Project Transmit SCR back in September 2010. On this basis alone we consider that options that include Diversity 3 should be discounted as Diversity 3 does not include a 'dual background'. We provide additional reasons why Diversity 3 should not be approved in our detailed answers to the consultation questions.

It is clear that the current method of transmission charging is no longer appropriate for the change in generation plant that is being installed to meet renewable and climate change targets. The charging methodology is in need of change to reflect this reality and the implementation of WACM2 would do so.

It is also clear that the current methodology has failed to provide a sufficient, robust signal to encourage generation plant to locate in the areas indicated by low or negative TNUoS charges. The graph below illustrates that since 1997, the cumulative new generation build in the northern transmission charging zones has exceeded that built in the southern zones. It is thus questionable that this signal should continue to be the basis for transmission charging going forward.



In our view, WACM2 will maintain a locational signal but it will be one that is more cost reflective and will deliver benefits to GB through reduced power sector costs. This is important at a time when the power sector is facing a very significant investment requirement.

WACM2 also represents an attractive solution for GB customers as we believe it will reduce the cost of low carbon generation whilst not imposing any significant increase in wholesale costs. Significantly, we believe that the negative impact on consumer bills over the period 2011 to 2020 arising from the lower modelled capacity margins should not be considered material as the cost represents less than 1% of the likely wholesale costs, and are anyway subject to significant uncertainty in direction as well as scale.

In principle we consider that the Original or Diversity 1 overall will perform better in furthering the Authority's objectives than either Diversity 2 or Diversity 3.

We agree with the Authority's position that alternatives that feature Diversity 2 and 3 do not appropriately reflect the TOs' investment decisions for year round conditions, and therefore cannot be the most cost reflective options.

Both Diversity 2 and Diversity 3 have significant flaws, namely:

- Diversity 2 applies an arbitrary 50% cap to the level of sharing and assumes that sharing reduces as the concentration levels of either high or low carbon generation increase.

- Diversity 3 does not recognise peak security as a driver of network investment and it does not recognise that plants within a zone drive different constraint costs and investment (they all get the same tariff).

The assumption under Diversity 2 to cap sharing at 50% is spurious, it is not justified by evidence and it is not cost reflective. Diversity 2 would understate sharing and

result in discrimination against generators in transmission charging zones with a mixture of 'low carbon' and 'non-low carbon' generation. Diversity 3 is even more discriminatory than Diversity 2, because it uses the same spurious assumption to cap sharing at 50% as Diversity 2, but it also takes no account of the Peak Security background and takes no account of the operating characteristics of power stations via their load factor. These failings make the Diversity 2, and in particular the Diversity 3 options, not cost-reflective and at odds with the Authority's direction. We agree with the Authority that generators with very low load factors behind a transmission charging boundary with a high concentration of carbon generation are unlikely to have a significant impact on constraint costs and therefore on transmission. Diversity 2 assumes that such a plant would have the same impact on incremental costs as a plant with a very high load factor and as the Authority outline "*There appears to be no reasons as to why this would be and it is not supported by the evidence presented in the FMR*".

However, it cannot be assumed that it is always, and will always be, the case that "*Low carbon generators' bid prices into the balancing mechanism are higher than those for carbon generators and will therefore trigger a higher level of transmission investment if there are higher concentrations of them*". Hydro bid prices may well result in lower bid costs than carbon generation.

We partially agree with the Authority's consideration that "*the output of low carbon generators (wind in particular) behind a boundary is more likely to be simultaneous (we recognise that might not always be the case, eg for hydro). By contrast, carbon generators are more responsive to levels of demand and will only want to dispatch at the same time when there is an immediate economic incentive to do so. This again suggests to us that high concentrations of carbon generators will not have the same impact on incremental costs as high concentrations of low carbon generators*." However, we believe that this impact is overstated and it ignores the reality that even where a charging zone has only low carbon or carbon generators there will be some sharing at most times. To ignore this discriminates against all types of low load factor generators.

We agree with the Authority's assessment that *"Under Diversity 2, the cap basically means that even if a plant has a very low load factor (eg 1%) in a diverse generation area, it would still be deemed to have almost half the impact on incremental costs as a generator with a 100% load factor. We do not think this is a reasonable approximation of the way that transmission investments are considered and we do not think it is consistent with the relationships between incremental costs and load factors presented to us in the FMR. We think that the approach adopted in the NGET Original and alternatives that feature Diversity 1 are more consistent with transmission investment decisions and the evidence presented to us. We therefore consider Diversity 2 to be less cost reflective that the Diversity 1 options.*"

However, we consider that the achievement of targets arising under Diversity 2 is overstated as Diversity 2 results in a generation mix that has slightly more offshore wind than Diversity 1. This effect is maintained and amplified under Diversity 3 (1.2GW greater than the level observed under NGET's Original and alternatives that feature Diversity 1).

The sustainability benefits of Diversity 2 are less (in our view) than those for Diversity 1 and furthermore these Diversity 2 benefits are substantially outweighed by other drawbacks of Diversity 2 namely, understating the level of sharing, and discrimination against generators in zones with a mixture of low carbon and non-low carbon generation.

Implementation

We welcome in particular the Authority's intention to implement the change on 1st April 2014. The Recommendation by the CUSC Panel left the implementation date to the Authority's discretion. A number of potential implementation dates were discussed as part of the process by the Workgroup, the Panel and industry. These ranged from pre 1st April 2014 to post 1st April 2015. The original date for implementation was anticipated by the Authority as 1st April 2012. Whilst this date was missed, the Authority urged the industry to complete the process in a "*timely manner to ensure benefits are realised as quickly as possible."*

Of these dates, we believe that implementation on 1st April 2014 is entirely feasible and National Grid has confirmed this to be the case - "*an implementation date of April 2014 is achievable*"[1]. This is a view we and others share. There are no intrinsic changes to existing IT systems or procedures arising from CMP213 which would mean that a transition period between approval by the Authority and implementation of greater than 12 months would be warranted. Indeed the information clearly points to these necessary IT system and procedural changes being able to be undertaken in the period prior to 1st April 2014.

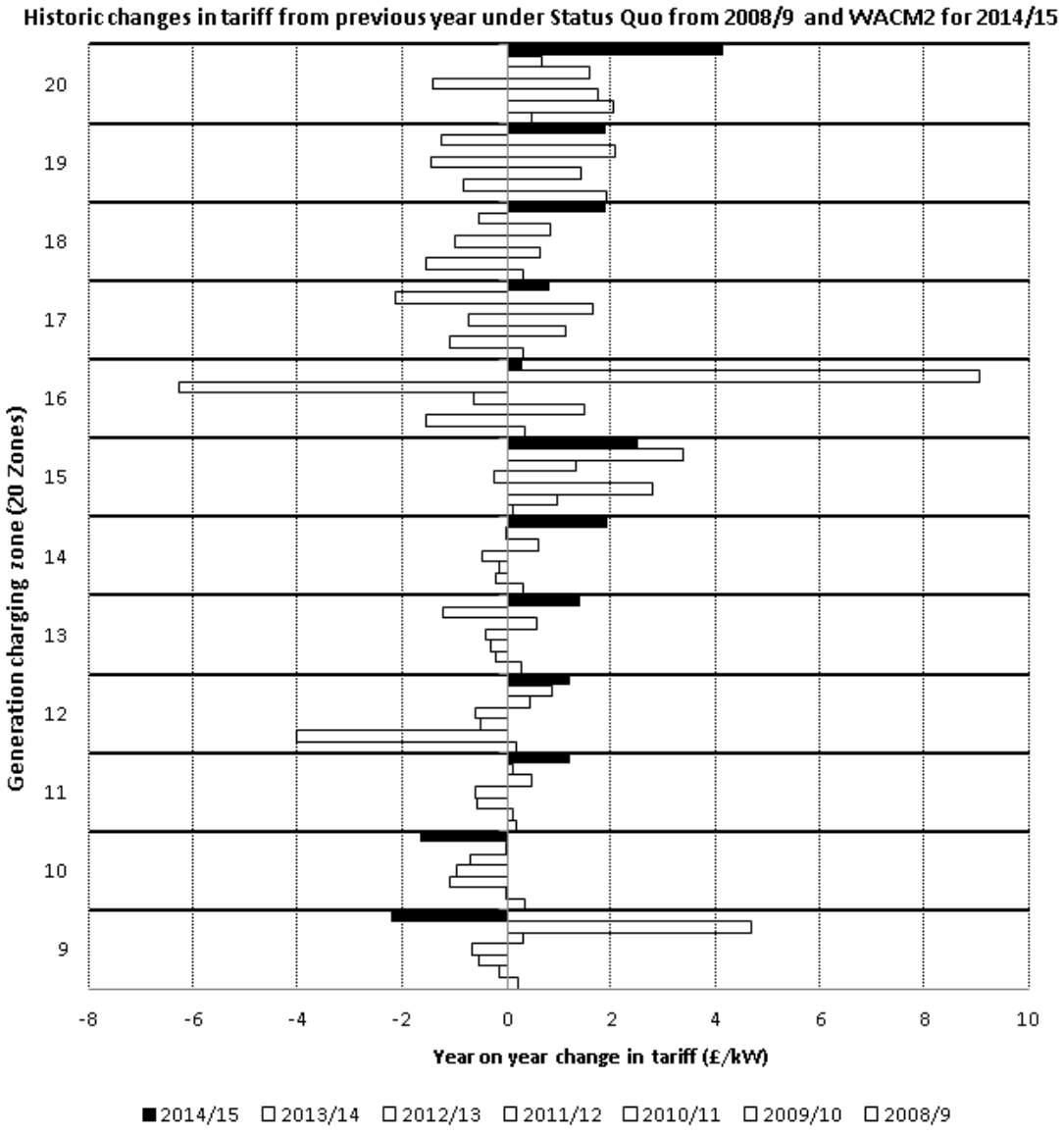
A change to the arrangements has also been clearly signposted for many years. The industry has been aware of the possibility of a change to the basis on which TNUoS tariffs are calculated since September 2010. We believe that it is also the right thing to do as it will ensure that the benefits of a change to the arrangements are indeed realised as quickly as possible.

Clearly some generators will see their charges go up through the introduction of WACM2, particularly those with thermal generation in the south. It has been suggested that a 1st April 2014 date would not give them time to review and change their transmission entry capacity (TEC) requirements. However, with the current year and five days notice required for a change in TEC and charges routinely made available by National Grid in the January for the April, implementation on 1st April 2014 would be no different to the current situation. Indeed, it could be argued that since indicative numbers have been available since Redpoint's original analysis back in December 2011, generators are better informed on what the charges are likely to be under Project TransmiT than they normally are.

It has also been suggested that the new charges will introduce a significant step change in tariffs, to the detriment of those generators. However, as can be seen from the graph below that this is not the case. The anticipated change from the current 2013/14 generation tariffs to the indicative WACM2 generation tariffs for 2014/15 is

[1] Paragraph 1.69, CMP213 FMR http://www.nationalgrid.com/NR/rdonlyres/0E5765AE-2BF5-4B5A-833A-7DFE7AC189F0/61004/FinalReportforAuthority10.pdf

no larger than the year on year changes experienced by southern generators in the past.



A 'compromise' position of making the change but delaying implementation to 1st April 2015 is unlikely to appease those wedded to the Status Quo. Indeed, this would be the worst possible outcome and one that no party would be happy with. We would certainly find such a delay unacceptable. A delay would only add further uncertainty to an already uncertain investment climate and would be detrimental to our own investment decisions.

A further delay would run counter to the initial decision made of expediting the industry change process and would need to be clearly justified. It would also bring into question the value of Project TransmiT and the wider Significant Code Review (SCR) process. The whole of the industry, Government and Ofgem have already been heavily involved in the process for three and half years. A further year's delay would

be unacceptable in particular when a fundamental driver of the SCR process was that it was meant to speed up industry change.

We believe that the clear move away from the current 'single background' Status Quo generation transmission charging methodology to a method that recognises the 'dual background' approach adopted for SQSS is better (in principle) for furthering the objectives outlined at the start of the Project Transmit SCR back in September 2010. The National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS) review clearly outlined that the transmission network infrastructure was no longer solely being provided for 'peak' system demand requirements but was also being driven by the need to transport increasing levels of renewable generation which did not dispatch to meet peak system demand. The transmission charging methodology is in need of change to reflect this reality and the implementation of WACM2 would do so.

The graph (shown on page 3) illustrates that since 1997, across GB, the cumulative new generation build in the northern transmission charging zones has exceeded that built in the southern zones.

Finally, with respect to the consultation process itself we are mindful that the Project Transmit process commenced on 22nd September 2010 and concludes on 10th October 2013 (some three years and three weeks later). During this time there has been a total of 59 weeks of consultation. This equates to over 37% of the entire three year period being taken up in formal consultation with stakeholders. There has been a long process of consultation and analysis and the time is now right for implementing this change.

Given the above, we can see no credible reasons to support a delay implementation of WACM2 beyond 1st April 2014.

Modelling

We believe that the modelling supports the transition away from the Status Quo. In coming to this view we have been mindful of the additional reviews undertaken by (Redpoint) Baringa and Lane, Clark & Peacock (LCP). These two reviews are very thorough and helpful to parties as they show that the modelling undertaken by National Grid is credible, comprehensive and reasonable.

Having been involved in the (CUSC) CMP213 Workgroup deliberations we were already comfortable with the process behind National Grid's modelling results whilst being aware of its unavoidable shortcomings.

The simplified approach to the modelling adopted by National Grid and widely supported by stakeholders during the process is, in our view, appropriate and proportionate. In this regard we took comfort from the involvement of CMP213 Workgroup members from both RWE and GdF Suez in the (CMP213) modelling 'sub group'. They were heavily involved in developing the National Grid modelling approach and supporting National Grid during the modelling itself.

We agree with the Authority that the results of modelling can only "*only provide an approximate guide as to the likely 'real world' impacts of the different proposals with a broad sense of the magnitude*." And that "*the qualitative analysis supporting our decision is also important"*. This broad sense as to the magnitude of the change is more than sufficient, in our view and we believe that of other affected stakeholders, to gauge in a meaningful way the quantitative effects of the change.

We recognise that, due to the complexity of the factors involved in the modelling and the risk that modelling results may be based more around assumption differences between scenarios rather than robust consequences of the different charging approaches, that the decision over which option to go forward with should not be based on the modelling alone. Given the small differences in results which may be more to do with assumptions, e.g. the plant margin levels and the renewable penetration levels in different scenarios, the modelling should be used to give assurance that the preferred approach will not have significant negative impact rather than being used to determine the appropriate option to implement.

After over three years of development by Ofgem and the industry, with 10 separate standalone stakeholder consultations where response periods aggregated to nearly 60 weeks together with 10 days of stakeholder workshops plus over 40 days of stakeholder group deliberations we believe that now is the time to finally conclude Project Transmit.

We endorse the the Authority position, as noted in paragraph 4.12, that it is highly unlikely that any other modelling would provide more robust findings than the current National Grid modelling without incurring significant delay to the process, with a corresponding delay in achieving the benefits of better cost reflectivity etc., that WACM2 would achieve.

In our view, the modelling prepared by National Grid, with the oversight of both Baringa and LCP is more than adequate for the Authority to opine on Project Transmit.

The modelling results indicate that Diversity 2 and 3 are not in the consumers' interests.

- Diversity 2 has the smallest decrease in power sector costs and the largest increase in consumer bills.
- Diversity 2 is observed to have an increase in power sector costs and the lowest decrease in consumer bills.
- Diversity options 2 and 3 (and their variants) are closer to the Status Quo power sector costs results overall.
- Both Diversity 3 options show a large increase in generation costs.

Consumer Costs

We consider that a reduction in consumer bills arising from a reduction in wholesale electricity prices is as likely as the projected increase in the period up to 2020. It is equally likely that the implementation of a change to charging would result in a drop in wholesale prices as less plant in the north of GB retires than would be the case under Status Quo. As outlined in paragraphs 4.10 to 4.13 of the Impact Assessment, the accuracy of the National Grid model is insufficient to allow the extra consumer cost identified for the period to 2020, for options including WACM2, to be taken as a firm conclusion.

Baringa[2] outline how this is "*mainly the result of different capacity margins, with tighter margins leading to an uplift in power price.*" Baringa also indicate overall the consumer bill impact "*represents a very small transfer from consumers to producers during the period 2011-2020 (an increase of about 0.5% in the net present value of consumer bills over the period).*" We therefore do not think that the impact on consumer bills presents a robust basis upon which to compare charging options.

We believe that the consumer bill aspect of the modelling is misrepresentative as it is based upon a feed-through from Transmission charging to system margins to wholesale prices to customer bills which is not very robust. The plant margin figures that are shown (page 38 of the Impact Assessment) as outputs from the modelling are very sensitive to input assumptions. Ofgem have explained (at a meeting in London 6th September 2013) that the timing of new build and retirement would not necessarily match the actual changes to plant margins modelled. The differences in wholesale costs between proposed methodologies and the Status Quo which arise from differences in plant margins may be considered to be within the margin of error of the modelling methodology.

In addition, we believe that the link between the charging model and wholesale prices is not as robust as is presented. Capacity margins are affected by many factors with transmission costs being one of the least significant. We note that the Authority recognise that "*while the transmission charges themselves may change the overall profitability for all generators, the changes in these tariffs cause limited differences in retirement decisions.*", i.e. limited differences to margins. The introduction of a capacity mechanism in 2018 will also have a far more significant impact on the system margin resulting and, hence, the level of wholesale prices than the Transmission charging regime. We therefore consider that the impact on wholesale prices, especially in the 2011-2020 period, is not considered as a significant factor in determining which option to implement.

It is also important to recognise the relative scale of the impacts measured compared to the overall costs (£1.7Bn compared to the NPV of the wholesale cost of the whole market which we estimate amounts to in excess of £200Bn over the period 2011 to 2020) or less than 1% of the total wholesale cost over this period. Given the market composition, the numerous variables, together with the changing nature of demand for energy and its method of productions it is distinctly possible that the wholesale cost could vary by greater than 1% even under the Status Quo arrangements. This clearly

[2] Baringa (2013), CMP 213 modelling: Review of CMP213 Impact Assessment Modelling for Ofgem.

indicates that the impact on consumer bills through increasing wholesale prices arising from the implementation of WACM2 (or the other CMP213 options) should not be considered as a major determining factor regarding the Authority's decision to approve this change.

It is clear that TNUoS charging is not designed as a policy tool for managing capacity margins. Capacity margins will be managed by security of supply concerns including measures such as the proposed GB Capacity Mechanism, Ofgem's Capacity Adequacy Assessments and potentially Ofgem's Electricity Balancing SCR. We therefore consider that Capacity Margin and consequent wholesale price impacts are inappropriate yardsticks by which transmission charging methodologies should be compared and selected.

The inappropriateness of relying too much on modelling of impact of Improved ICRP on consumer costs is brought out by Oxera in their assessment of the report by NERA/Imperial College[3] on 'Modelling the Impact of 'Improved incremental cost-related pricing' that was submitted[4] by RWE npower, that *"It would therefore not appear possible to conclude from the NERA/Imperial report that under Improved ICRP, the extent to which an increase in the costs of a price-setting new entrant relative to the existing arrangements would result in longer-term price rises."*

We also agree with the Authority's conclusion with regard to vulnerable customers that "*recognising the issues with the modelling discussed above which might result in the short term costs being overestimated*", that the CMP213 options will not "*have any material specific impact on vulnerable customers*".

Additional Information

In addition to responding in detail to the seven questions posed in the Impact Assessment we have also commissioned some additional analysis from (i) Oxera: a 'Review of the NERA/Imperial College London report on the impact of Improved incremental cost related pricing'; (ii) Phil Baker of Exeter University into (a) the University of Bath report "Year-round System Congestion Costs – Key Drivers and Key driving Conditions and (b) 'the qualitative assessment of the three CMP213 Diversity options and of the potential for sharing in situations where more than one renewable technology is present'; and, (iii) Redpoint a 'Review of 'Project TransmiT: Impact of Uniform Generation TNUoS prepared for RWE npower'. This additional analysis is referenced in our answers to the seven questions and is also contained in our attachments.

[3] NERA and Imperial College London (12th October 2012), 'Project TransmiT: Modelling the impact of 'Improved ICRP', http://www.nera.com/nera-files/pub_transmit_1012_full_report.pdf
[4] 15th January 2013, CMP213 FMR, Volume 3, page 110 http://www.nationalgrid.com/NR/rdonlyres/48D10E02-5CB5-422E-8515-98E0171E1A2A/61006/FinalReportVolume3v10FinalReport.pdf

Timescale and Process

Finally, with respect to the consultation process itself we are mindful that the Authority's Project Transmit process commenced on 22nd September 2010 and concludes on 10th October 2013 (some three years and three weeks later). During this time there has been over 59 weeks of stakeholder consultation.

Future Modifications

Whilst we fully support the implementation of WACM2 on 1st April 2014, we believe that it may be appropriate in the future to consider further modifications to take account of i) the potential to socialise some of the costs of HVDC convertor stations and ii) to re-assess the approach to the definition of 'carbon' and 'low carbon' plant.

With respect to HVDC, we recognise that the evidence provided to the Authority prior to this consultation was not persuasive enough for the Authority to be minded to approve WACM7 – hence the Authority's WACM2 'minded to' position. With respect to the definition of 'carbon' and 'low carbon', we believe that there is a case to be made for re-visiting the definition, as is noted by Baker[5], who carried out an analysis of wind and hydro generation characteristics and concluded that: "*If generation is to be categorised, then that categorisation should be based on operating characteristics. In this respect, analysis suggests that hydro generation that has some element of storage capacity will behave more like conventional capacity than wind, and should therefore be categorised as such."*

In due course, as new evidence on HVDC convertor station costs etc., emerges there may well be a case for a new Modification looking specifically at this issue to be raised and it may also be appropriate to re-visit the definition of 'carbon' and 'low carbon'.

Conclusions

In conclusion we support the Authority's 'minded to' position to approve WACM2 and to implement the change at the earliest practical opportunity, namely 1st April 2014, for the detailed reasons set out in this letter and in our comprehensive answers to the consultation questions.

[5] Philip Baker report B op. cit. section 3.6.

I hope you find our comments in this letter, our response to the consultation questions, and material provided in our appendices helpful. Please do not hesitate to contact me or my colleague Dr Angus MacRae, Electricity Economics Manager should there be anything you would like to discuss with us.

Yours sincerely

Garth Graham,
Electricity Market Development Manager

Attachments

SSE Consultation response to Questions posed

Appendices

1 Report from Oxera: "Review of the NERA / Imperial College London report on the impact of 'Improved incremental cost-related pricing'" prepared for SSE, 16th July 2013.

2, Part A Report from Phil Baker: "University of Bath report "Year-round System Congestion Costs – Key Drivers and Key Driving Conditions": an alternate view", prepared for SSE, October 2013.

2, Part B Report from Phil Baker: "Further analysis to provide a qualitative assessment of the three CMP213 Diversity options and of the potential for sharing in situations where more than one renewable technology is present" prepared for SSE, October 2013. [Please note: this Part B of the response is confidential and will be sent under separate cover to Ofgem.]

3 Further information in support of our response to Question 7 as regards the 'consultation period'.

4 Further information in support of our response to Question 1 as regards 'ongoing change'.

5 Report from Redpoint: "A Review of 'Project TransmiT: Impact of Uniform Generation TNUoS prepared for RWE npower", prepared for SSE, June 2011