Response to Initial Proposals for National Grid Electricity Transmission and National Grid Gas, Ofgem

A submission by Campaign to Protect Rural England, Campaign for National Parks, John Muir Trust and Friends of the Peak District

September 2012

Summary and introduction

1. Our evidence for this consultation response is based on work conducted by an independent consultant[1] which critically examines the willingness to pay (WTP) study produced by Accent for National Grid Electricity Transmission (NGET) and Ofgem's interpretation of the results. Based on this work we believe that there is sufficient and robust information already in the Accent study and comparable work to enable Ofgem to provide for a significantly higher initial allowance at the beginning of the price control period. We believe that the position taken by Ofgem is, therefore, unduly conservative. Accordingly, we would ask Ofgem to explain the reasons for its approach to setting the allowance cap and, if it is unable to do so satisfactorily, increase it significantly.

2. The Campaign to Protect Rural England (CPRE), Campaign for National Parks (CNP), John Muir Trust (JMT) and Friends of the Peak District (FPD) welcome the opportunity to comment on Ofgem's initial proposals for the price control for National Grid Electricity Transmission (NGET) and National Grid Gas (NGGT). As charities with a strong interest in landscapes we are concerned about the visual impact that high voltage (above 132kV) overhead lines have on our countryside, particularly on nationally designated areas of landscape and other areas of high amenity value. We believe that our cherished landscapes have an intrinsic quality which is difficult, and sometimes impossible, to quantify. Maintaining and improving the quality of landscapes should take account of long-term environmental sustainability goals as well as economic considerations. Our comments in this consultation response, therefore, focus on Ofgem's proposals to address the visual amenity impacts of new and existing infrastructure in designated areas.

3. We strongly support Ofgem's decision to make an allowance for mitigating the visual impact of existing high voltage electricity infrastructure in nationally designated areas because:

- It will help ensure that Transmission Operators (TO) meet their duties towards the conservation of National Parks and Areas of Outstanding Natural Beauty (AONBs) under the National Parks and Access to the Countryside Act 1949, the Environment Act 1995 and Countryside and Rights of Way Act 2000;
- It will help ensure Ofgem meets its duties under the Electricity Act 1989, section 3A (5) to carry out its functions in a manner which is best calculated to contribute to the achievement of sustainable development and also have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity.
- It reflects the wider shift in the Government's approach to protecting the landscape highlighted in the National Planning Policy Framework (Section 11), the National Policy Statements on Energy (specifically EN-5 paragraphs 2.8.5-2.8.6 on the Holford Rules), the UK's commitment to the

[1] Dr Richard Cowell, Reader in Environmental Planning and Policy, Cardiff School of Planning and Geography.

European Landscape Convention and recognition in the Government's Natural Environment White Paper of the intrinsic value of nature (which includes landscapes);

- Making provision for amenity improvements is integral to Ofgem's principal objective to protect the interests of existing and *future* consumers, such that future generations may inherit landscape assets less marred by intrusion of infrastructure than the present;
- It takes forward the highly effective and popular initiative for undergrounding of the distribution network in the interest of amenity and applies it, quite rightly, to the electricity transmission system.

4. We recognise that designing an effective allowance for visual amenity improvements is at an early stage and, as with comparable procedures for the distribution system, we expect it will take time to develop. Nevertheless, it is important that the scale and operation of the allowance gets off to the best possible start and develops in such a way as to improve the long-term competitiveness of undergrounding, by driving down costs, as technologies and supply chains develop and improve. We do not believe this has been achieved in the current proposals. There are currently two main aspects of Ofgem's initial proposals which we believe need amendment:

- Ofgem's proposal to set just £100 million as an initial allowance (only 9% of the allowance proposed by NGET); and
- Ofgem's concern that there is not enough information on consumer WTP estimates at this time to robustly set an expenditure cap for the entire RIIO-T1 period (104/12, para 2.50), mainly because the data produced by NGET only provides single point estimates of consumers' average WTP for visual amenity improvements and, particularly, fails to provide a median consumer WTP (104/12, para 2.54).

5. It is our view that there is sufficient and robust information already in the Accent study and comparable work to enable Ofgem to provide for a significantly higher initial allowance at the beginning of the price control period. We believe that the position taken by Ofgem is, therefore, unduly conservative. **Accordingly, we would ask Ofgem to explain the reasons for its approach to setting the allowance cap, and if it is unable to provide a satisfactory explanation, to increase it significantly.** We also set out below our initial views on the creation of a process for prioritising schemes to improve visual amenity.

Specific responses to the consultation questions

Question 1: Do you have any comments on our initial proposals on NEGT's output and incentives?

6. We strongly support the proposal for a baseline allowance to deploy undergrounding technologies that is equivalent to 10% of the new transmission lines proposed for delivery in RIIO-T1. We also support the proposal to introduce a volume driver alongside the baseline 10% allowance.

Question 2: Do you have any views on our Initial Proposals on setting an expenditure cap for the start of RIIO-T1 in relation to addressing the visual amenity impacts of existing infrastructure in designated areas?

<u>Accent's research is robust and duly conservative</u>

7. We have yet to see any credible criticisms of the research conducted by Accent for NGET.[2] Accent is an acknowledged expert in the field of stated preference techniques; indeed, Ofgem commissioned Accent to do similar research to inform the quality of supply allowances (including undergrounding) for DPCR5, which we discuss below.

[2] Accent (2012) *Consumers' Willingness to Pay Research*, final report for National Grid, July, Warwick.

Methodology

8. Accent's research complies with the methodological guidance on WTP research commissioned by Ofgem from London Economics in 2011; a report which concluded that contingent valuation (CV) or choice modelling (CM) experiment techniques were equally valid methods of assessing consumer WTP. WTP studies tend to be used for two purposes. CM should be used when exploring multiple changes in the characteristics of a 'good' (such as ways of addressing the visual impacts of grid infrastructure) and CV is more appropriate when looking at valuing some whole 'good' (such as, 'what is the economic value of protected landscapes?'). On this basis, it is possible to infer that CM is a better methodological fit for the type of issue we face with the visual amenity allowance of RIIO-T1. Moreover, it is widely agreed that many landscapes have an intrinsic value which is difficult, and sometimes impossible, to quantify.[3] On this basis using WTP research to determine a notional value for protected landscapes would be misplaced and justifies Accent's use of CM.

9. A number of steps were taken by Accent to ensure that their research was robust and that the WTP figures they developed were conservative. National Grid Electricity Transmission (NGET) too has been conservative in extrapolating a proposed funding allowance level from the research. For example:

- Accent prepared 95% and 90% cautionary estimates for the 50 miles values but, because of the high accuracy of their estimates, the cautionary estimates are not greatly different (£18.00/customer/year for undergrounding in National Parks and £18.66 for undergrounding in AONBs/NSAs), reaffirming the robustness of the original results.[4]
- Respondents were reminded of personal budget constraints during the survey, which would enable personal concerns about the affordability of electricity bill rises to be considered in responses (see also effects of the wider economic context below).
- Accent recommended a scaling factor of 0.74 be applied to address 'hypothetical bias', which would yield an annual WTP closer to £15.00 for the most highly valued options. In deriving a proposal for an expenditure cap, NGET did apply the 0.74 scaling factor to the WTP figures.
- From the spread of figures, NGET identified a size for the RIIO-T1 visual amenity funding allowance of £1.1billion, on the grounds that it was towards the bottom of the range of WTP values suggested by the Accent research in relation to screening and undergrounding - the most preferred forms of mitigation (NGET 2012)[5]. This can be considered conservative because it is less than half of the expressed WTP for undergrounding in National Parks and AONBs/NSAs, which was scaled at £2.5 billion and £2.6 billion.

10. There is a particular issue with Ofgem's initial framing of the valuation issue in terms of 'willingness-to-pay' (WTP), rather than 'willingness-to-accept' (WTA). We recognise that WTP has become the conventional means of measuring public value, and that WTP avoids the risk of very high bids that are associated with WTA. However, the decision to adopt WTP makes judgements about presumptive entitlements to landscape quality which could be considered inappropriate in this context. In short, by deciding to measure consumer WTP, the presumption is that the public have no entitlement to a particular level of environmental quality unless they are prepared to pay for it. We believe, however, that the public is entitled to expect that its top quality designated landscapes should be free of visual intrusion and, if that is marred by electricity transmission infrastructure, then the value of that amenity loss is better captured in terms of WTA. That being the case, it would be of net benefit to society if undergrounding or other means of visual mitigation were deployed to a level

[3] For an analysis of valuing the natural environment see Eftec's 2006 report; Valuing Our Natural Environment available from (http://earthmind.net/rivers/docs/ukdefra-eftec-valuing-our-natural-environment.pdf). This report also gives parity of esteem to CV and CM endorsing the value of CM studies where one is interested in WTP for different attributes and qualities of environmental resources.

[4] Accent's WTP estimates for undergrounding from 'at least 5' to 'at least 20' miles of high voltage line in National Parks and other rural areas generated a mean of £13.40/customer/year for eight years, rising to £20.33 for 'at least 50 miles' of undergrounding in AONBs/NSAs.

[5] National Grid Electricity Transmission (2012) *Consumer Willingness to Pay Research*, June.

equivalent to public willingness to accept compensation for the persistent presence of visual intrusions. WTA surveys usually yield higher results for WTP for the same environmental change. We are not suggesting that Ofgem requires the production of WTA analysis instead of WTP. Our point is that if one accepts that, in reality, the public are entitled to enjoy National Parks, NSAs and AONBs free of visual intrusions, and that there is some force in our case for the relevance of WTA measures, then by inference the WTP assessments that have been conducted can again be treated as an under-statement of the benefits to the public that visual amenity improvements would deliver.

Comparison with other studies

11. While we recognise the difficulties in drawing comparisons between different stated preference studies, other research would confirm the broad plausibility of NGET's proposals. London Economics (2011), for example, has highlighted flaws in the methodology of the Brunswick report, but the WTP figures produced by that research are not vastly different to the £5.62/customer/annum derived by NGET from the 2012 Accent study. Brunswick found an average WTP of £7.22 per year, per customer, to underground all existing electricity infrastructure in National Parks and an additional £7.76 for AONBs. Despite the methodological problems, the results were regarded by London Economics as a useful 'rough estimate' of consumers' WTP for undergrounding. Accent's 2008 research to inform DPCR5 found an average WTP of £2.29 over five years to see 1.5% of the overhead distribution system in National Parks and AONBs undergrounded. The lower figure could be logically explained by the smaller-scale of the infrastructure (low voltage lines are smaller than high voltage grid lines per unit length) and small scale of the scenario programme (1.5% of lines). To this extent, existing research adds some validity to the Accent 2012 study and reinforces our view that NGET's proposals are a defensible assessment of the value the public place on amenity improvements in National Parks and AONBs.

The effects of the wider economic context

12. We understand that there is significant public and political pressure to keep consumer's energy bills down. This stress, which is likely to be short-term, needs to be balanced with the long-term duty of improving visual amenity. We believe that the issue of economic context is more than adequately addressed in the work of Accent and NGET. Accent went to great lengths to ensure survey participants acknowledged budget constraints in volunteering WTP responses; NGET considered the economic context in identifying a cap that is less than half of the maximum WTP. Any further conservatism by Ofgem could be seen as double counting for the effects of recession.

13. We also feel that the effects of recession on WTP could be overstated. Although 20% of respondents in the 2012 Accent CM research were reported as unwilling to pay anything, this differs little from the 21% that were unwilling to pay anything in Accent's 2008 study for DPCR5 (page 96), before the current recession took hold. Attention to the proportion of respondents unwilling to pay anything also partially addresses Ofgem's concern that WTP for visual amenity improvements could be relatively skewed (104/12, para 2.56) – in respect of those at the bottom end of the WTP spectrum, it seems no more skewed than for DPCR5. It thus seems unwise to straightforwardly attribute unwillingness to pay anything to the wider state of the economy, or use it as a reason to be unduly conservative about NGET's proposed funding allowance or the study on which it is based. In both 2008 and 2012, 79-80% of respondents were prepared to pay something for amenity improvements.

14. It is a convention of WTP analysis that the scenarios created reflect a 'realistic' market situation, in that participants are invited to express payment levels in relation to the benefits that they, individually, would perceive from visual amenity improvements (such as undergrounding) in relation to their personal budget constraints. Although this is a convention, it becomes problematic when assessing the appropriate treatment of protected landscapes, and similar collective environmental goods. Landscape protection policies are put in place on the grounds that it is right, and in the public interest, to do so, not to the extent that it is allocatively efficient to do so. The principle that certain

landscapes are protected so that society may benefit, rather than just individuals, was clearly recognised by participants in Accent's 2012 study, with more respondents claiming to consider benefits to the future of the country as a whole than to themselves individually. (The fact that the public recognise the civic, collective dimension of landscape protection, rather than just individual preferences, has been picked up by previous research commissioned by Ofgem (32/08 para 3.14)). There was, however, no attempt to capture such values within the WTP assessment itself. Instead, by framing the research in terms of individual benefits, it is likely that the values produced are a conservative estimate of public worth.

15. It is widely acknowledged that the order in which questions are asked of participants can frame subsequent debate and responses. It is likely that starting the qualitative phase of Accent's 2012 research by allowing participants to discuss their financial circumstances, affected their view of subsequent questions on grid infrastructure and visual amenity. The responses on visual amenity might have been even more positive if these topics had been discussed first. The same would apply to the quantitative phase of the research (the survey and choice experiments) as here too issues of affordability were dealt with first. It is likely that this question ordering would tend to make the WTP findings more conservative than if visual amenity impacts had been dealt with first.

<u>The case for a median is unclear</u>

16. We believe that Ofgem's anxieties about the lack of information about the variation of consumer WTP data are unfounded. Ofgem itself has not required distributional or median data in order to set price caps from WTP data in DPCR5. In the methodological guidance on WTP research commissioned by Ofgem from London Economics (2011)[6] they gave equal esteem to contingent valuation and the type of choice modelling conducted by Accent in their 2012 study when identifying best practice models for WTP research. London Economics acknowledge that CM overcomes some of the problems of CV (page 6), and recommended choice experiments as one option for a new WTP survey to avoid the weaknesses of the Brunswick research. Significantly, they state 'our preference would be to use a choice experiment to undertake the analysis' as it 'would be better suited for a survey design testing multiple mitigating options' (2011, p.39). Ofgem too wanted more options than just undergrounding considered. This is exactly what NGET commissioned Accent to do. **Our understanding is that choice experiments do not generate medians, but London Economics gave relatively little consideration to this point in their recommendations. We would like Ofgem to explain why it has now become of such significance.** Moreover, if Ofgem had concerns about the methodology proposed they should have raised and addressed them at an earlier stage in the research process. If Ofgem were dissatisfied with the original Brunswick study the, we believe, the onus is on Ofgem to make it clear what research is needed in order to make robust decisions about the allowance.

17. One reason for preferring the median as a measure of the average is obviated by the type of research that Accent conducted for NGET. A median leaves WTP measurements less susceptible to distortion by outliers, be they 'strategic bids' or 'protest bids'. However, the design of Accent's choice experiment already eliminated extremely high WTP figures as the experiments only allowed respondents to express preferences for specific changes to their energy bills from £2 up to £20, with a 'do nothing' option. Extreme bids have thus been designed out. In a typical data distribution, the management or removal of extreme figures leads to the convergence of mean and median figures. This too diminishes the force of Ofgem's concerns about the distribution of WTP being relatively skewed (104/12, para 2.56).

18. **We would like further clarification from Ofgem as to which dimensions of variation in consumer WTP concern them.** We ask this because we would be concerned if it is the geographical

[6] London Economics (2011) *Review of company surveys on consumers' willingness to pay to reduce the impacts of existing transmission infrastructure on visual amenity in designated landscapes*, final report to Ofgem, 30th September.

dimensions of WTP variation discussed at some length by London Economics (2011), as some of these ought to have little direct bearing on the specification of the visual amenity allowance. London Economics discussed variations in average WTP between the regions of England and Wales, and variations between those individuals who regularly see high voltage lines from their home and those who might not. While these patterns of variation are interesting, and helpful in that they support the plausibility of the WTP analysis (i.e. the variations are what one might expect to see), these patterns ought not be turned into weights when determining the appropriate treatment of national landscape assets (National Parks and AONBs) in setting a cap, as these are protected for the nation, rather than regional or local geographical constituencies. In addition, people's WTP may be influenced by the impacts on areas they visit, even only occasionally, or simply because they place existence value on the protection of special places. We do not, therefore, see a case for spatially weighted zoning in the aggregation of WTP data, or for questioning NGET's proposed allowance on the basis that such data might not be available.

How Ofgem's initial allowance has been extrapolated from the WTP research is unclear

19. The £100m Ofgem have specified as an initial allowance pending further information is very significantly below what might be considered a safe deduction from the data. We calculate that it represents just £0.40/customer/year, and is just 9% of the proposed cap put forward by NGET (which was based on £5.62/customer/year). **In the absence of a median figure, therefore, Ofgem should define clearly and transparently the process they went through to determine the level of the allowance.** Regardless of the debate above about the median, it seems inexplicable to suggest an initial allowance that is such a long way below even the most conservative reading of the Accent 2012 data. It is below the lowest figure for the least preferred option in Accent's research - £0.70 for 5-20 miles of rerouting, which was the least popular option. We consider that Ofgem's initial allowance is not giving consumers what they are willing to pay for and thus not protecting their interests, now or in the future. We believe it is wrong to address the interests of consumers purely as consumers of electricity, interested only in price, when the WTP research shows clearly that the public are also interested in environmental quality. Even if we took the position of Fujiwara and Campbell (2011)[7], that respondents to WTP surveys for hypothetical scenarios tend to overstate WTP by a factor or 2 or 3, this would suggest a safe, conservative allowance which is 3-5 times greater than £100 million.

20. We have difficulty equating Ofgem's treatment of the WTP data for RIIO-T1 with Ofgem's treatment of comparable data for specifying undergrounding allowances under distribution price control review, for the following reasons:

- For DPCR5, Ofgem's initial (93/09) and final proposals (145/09) drew on WTP research, 'Expectations of DNO's and willingness to pay for improvements to service: final report', July 2008 (106/08), by Accent. Ofgem felt that this research sufficiently demonstrated the high importance customers attached to visual amenity, and thus justified the retention of the allowance for network undergrounding in National Parks and AONBs that had been set up for DPCR4. The allowance (over 5 years) was to be £60.6 million for DPCR5.
- Ofgem drew their allowance from an average WTP measure of £2.29 over five years to see 1.5% of overhead lines in National Parks and AONBs undergrounded. Importantly, the figure of £2.29 would appear to come straight from the Accent study (p.87), unaffected by additional concerns about the reliability or conservatism of the figure. Steps taken by Accent to ensure that the results were robust (such as scaling measures to eliminate packaging effects) were clearly thought to be sufficient in this case.[8]

[7] Fujiwara, D. and Campbell, R. (2011), *Valuation Techniques for Social Cost‐Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well‐Being Approaches*. A report for HM Treasury and Department for Work and Pensions.

[8] The figures for U/G were 'scaled' by 52% to address the packaging effect – see page 63-64.

- Importantly, in relation to the methodological debate above, the Accent 2008 study used stated preference methods and adopted a discrete choice experiment, as they did for NGET in 2012, which generates mean (average) rather than medians. Ofgem seemed to have no problem using this measure to set the cap for DPCR5, and it is difficult to see what might have changed between then and RIIO-T1.

Initial ideas on how to design a scheme selection methodology

21. We support Ofgem's proposal that TOs should develop a policy for delivering visual amenity outputs in designated areas. We agree that the such a policy should meet various principles including involving stakeholder engagement and input, delivering long term value for money for existing and future consumers and contributing to sustainable development. Defining clearly what a visual amenity output is will be important in ensuring TOs develop an overarching rationale for how it is going to be delivered. In order to facilitate the development of this process we have outlined a series of factors which, we believe, will be important in determining priority schemes:

- During the initial phase of the allowance there needs to be a focus on ensuring maximum amenity gain: maximum number of miles undergrounded per £million spent;
- Priority should be given to schemes which are close to, or in need of, refurbishment;
- The mechanism for allocating the money should be simple and effective;
- Relevant designated landscape bodies and other relevant parities should be consulted. This could include engaging existing regional steering groups convened for the DNO allowance which have already developed methods such as templates to aids prioritisation of schemes or draw on Local Plans as a method of identifying which schemes are a priority for local people;
- Attention needs to be paid to *other* environmental factors (e.g. archaeology) that may rule out otherwise technically, economically and environmentally desirable schemes.

22. We would also urge Ofgem to ensure that the allowance provide a 10% tolerance to enable lines that cross boundaries and continue outside of designated areas to be addressed. This would model the current, and highly successful, DNO allowance which recognised that infrastructure outside the boundaries of designated areas may still impact the setting of designated landscapes. In practical terms also, network operators need the flexibility to place sealing end compounds (where underground cables re-join overhead lines) in a appropriate location, not necessarily right on the edge of designated areas.

Conclusion

23. Unless adjusted, Ofgem's proposals leave the treatment of our finest landscapes in an untenable position. There is robust, positive public WTP for amenity improvements, which remains substantially undiminished even given the difficult economic circumstances. Ofgem, too, clearly understand the importance of addressing the inherited landscape problems created by grid development in the past, and the centrality of such actions to the discharging of key environmental duties. Yet by proposing an initial allowance that is significantly below even the most conservative interpretation of the WTP evidence, Ofgem risk creating an allowance that will provide little in the way of useful benefits.

24. Looking at the likely outputs, depending on the costs per mile of undergrounding, £100 million will only achieve between four and (at best) eight miles of undergrounding. Although this could help to realise some benefits, it certainly greatly circumscribes the schemes that could be selected and, by prefiguring the outcome in this way, undermines Ofgem's desire for a selection process in which there is a high degree of stakeholder engagement and consensus. Should the size of the initial proposal lead to no visual amenity schemes being identified for the RIIO-T1 period (because most of the undergrounding schemes prioritised by stakeholder cost more than this), then we will have a situation in which demonstrable public preferences will have gone unmet, because of Ofgem's questionable conservative interpretation of where their interests lie.

25. We believe that the Accent study already provides sufficient and robust information and comparable work to enable Ofgem to provide for a higher initial allowance at the beginning of the price control period, and that the position taken by Ofgem is, therefore, unduly conservative. **Accordingly, we would ask Ofgem to explain the reasons for its conservative approach to setting the allowance cap and, if it is unable to provide a satisfactory explanation, to increase it significantly.**

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