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4th June 2010

Proposed Disposal of Part of NTS for Carbon Capture and Storage – Second Consultation and Initial Impact Assessment

Dear Bogdan

RWE npower welcomes the opportunity to comment on the above consultation. Our response is not confidential and can be posted on Ofgem's website. Please find below our responses to the questions posed in the consultation document.

Given the importance that the role of CCS is expected to play in the future policy of meeting long-term CO₂ targets, we acknowledge the further work that NG Carbon have conducted with regards to this consultation, and in principle are supportive of many of the new proposals put forward. Ofgem's initial impact assessment confirms that there is merit in pursuing this project, subject to further detailed development of the regulatory and commercial framework.

Our responses to the detailed questions are set out in Appendix 1 below, and, in particular we would like to highlight the following points:

- The NTS pipeline being considered for CO₂ transportation will have the potential to favour the Longannet power station for selection in either the current Government CCS competition, or for ultimate selection of the remaining 3 stations required for CCS. The potential effects on competition need to be considered.
- We favour some element of market testing to determine what appetite may exist for a CO₂ transportation business as a means of informing an appropriate transfer value.

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- We question whether a full understanding of the technical issues has been considered by NG Carbon in the analysis and the consequent level of additional operational costs associated with transferring usage of a gas pipeline to one that can transport CO₂.
- With regards to sharing benefits and returning value to gas consumers, we would expect the design of the benefit share mechanism to include sharing arrangements for incremental revenues above the 6Mt/yr cap. We also believe the critical issue to be resolved is the timing of the "dividends".

If you wish to discuss any aspect of the above response, please do not hesitate to contact me.

Yours sincerely,

Jill Brown *
Economic Regulation

* sent by e-mail and therefore unsigned

Chapter 4: Future flows at St Fergus and pipeline capability

Question 1: What is your view of the conclusions drawn about future flows and capability based on the consultants' reports?

We welcome the findings of the consultants' reports and the reassurances they provide with regards to the likely flows at St Fergus, NTS capability, exit capacity and pressure.

Chapter 5: NGG's Revised Proposal

Question 1: What is your view of the structure of the revised proposal overall?

As mentioned in the first consultation response, we believe the proposal is a good idea in principle and are pleased to see revisions that the second consultation is proposing in response to industry concerns.

However, we would like to re-iterate points we made in the first consultation.

The NTS pipeline being considered for CO₂ transportation will, in our view, have the potential to favour the Longannet power station for selection in either the current Government CCS competition, or for ultimate selection of the remaining 3 stations required for the application of CCS technology. Therefore, we believe there is not an open and unbiased market for four CCS demonstration plants in the UK, but rather favouring one at the potential expense of other contenders.

In addition, we still believe that there should not be the assumption that only NG Carbon can manage a carbon transportation business. This was highlighted by a query from the audience at the Industry event on 24th May, which indicated that there were other interested parties for establishing a CO₂ infrastructure in the UK. We believe NG Carbon could be in a much stronger position than other parties to tender for future CO₂ transportation projects. If the NTS pipeline under consideration in this current consultation was competitively tendered for, then we feel this would be a good indication of what appetite there was in the market for a CO₂ transportation business.

Question 2: What is your view of the structure of the treatment of incremental buyback, opex, Compressor Fuel Use and other costs identified?

We acknowledge and consider appropriate that NG Carbon will meet the incremental NTS buyback costs and operating costs, which may arise from removal of the pipeline from the NTS. How these costs are determined should be addressed by consultation with the industry.

Question 3: What is your view of the suggested approaches to asset valuation?

We acknowledge the range of approaches suggested in the consultation, and we favour the second transfer value option, which involves a one-off transfer value plus a share of future revenues which will benefit current and future gas consumers.

Question 4: What is your view of the proposal for sharing the benefits of increased CO₂ throughput?

We recognise that the future utilisation of the CO₂ pipeline is uncertain at this stage and that the proposal caps the benefit share at flows up to 6Mt/yr. This cap has been introduced to reflect NGG's uncertainty about the scale and rate of CCS growth and capex requirements to support flows in excess of 6Mt/yr. Although we accept that uncertainty makes it difficult for NGG to make firm commitments about future benefit share, we would expect the design of the benefit share mechanism to include sharing arrangements for incremental revenues above 6Mt/yr, albeit with reduced sharing factors. The sharing methodology has yet to be developed, but is clearly a key document in deciding whether these proposals deliver benefits to gas consumers. We encourage NGG to bring forward its detailed methodology as soon as practicable, given the overall DECC demonstration Project timetable.

Question 5: What is your view of the suggested mechanism for returning value to gas consumers?

We believe that the critical issue to be resolved is the timing of the "dividends". We agree that the disposal value should be reflected in the RAV in the year following disposal and that there is some merit in smoothing the adjustments that arise as a consequence of low outturn levels of buyback and incremental opex and incremental transportation revenues. Treatment of these adjustments will need to be subject to regulatory oversight and reported publicly.

Question 6: Are there any other considerations which have not been taken into account?

We question whether a full understanding of the technical issues has been considered by NG Carbon and the consequent level of incurred costs, both upfront and ongoing, associated with transferring usage of a gas pipeline to one that can transport CO₂.

For example, CO₂ from a power station may have different potential for corrosion than natural gas, due to moisture content and the level and type of impurities present from the power generation process. It is also possible that the properties of CO₂ could be very different depending on whether it is captured from a pre-combustion process (i.e. under reducing conditions) or a post combustion process (i.e. oxidising conditions). It is unclear what purity the CO₂ should be in for transportation, so has consideration been given to what preparation will be carried out on the captured CO₂ at the power station? Has a preliminary impact assessment on the current state of the pipeline been carried out? Although some moisture will be removed on compression of the CO₂ gas, a degree of drying is likely to be required by other means such as by molecular sieve.

CO₂ can be transported in the gaseous, liquid, two phase or supercritical state. There may even be good reasons for changing the state over time or along the pipeline to match different desired conditions at the point of injection to the store. Has consideration been given to whether the pipeline structure can support the likely temperatures and pressures required throughout the transportation process? This may include higher pressures than required to transport natural gas.

Further examples of the potential knowledge gaps to consider include failure modes, fast propagating ductile fractures, materials compatibility, internal corrosion, effects of contaminants, safety and potential issues related to re-qualification and consenting existing pipelines for transmission of CO₂.

Has consideration been given to how the pipeline will be cleaned (a process called 'pigging')? Supercritical CO₂ may attack the materials in conventionally manufactured pigs, especially "intelligent" pigs. Has the ongoing cost of cleaning been considered and who will pay for this?

If CCS proves to not be a viable technology for capturing carbon from coal or gas powered stations in the UK, has consideration been given to whether the pipeline can be re-used for transporting natural gas? Could any of the technical processes required for preparing the pipeline for CO₂ transportation, prevent its re-use as a transporter of natural gas?

Appendix 2: Initial Impact Assessment

Question 1: Do you agree with our initial assessment of the impacts of the proposal for the disposal of assets?

We believe the scope of the assessment has considered most of the issues.

Question 2: Are there any quantitative benefits or costs that have not been included in our assessment?

There may be costs that have not been considered, such as in our response to Question 6 in Chapter 5 above.

Question 3: Are there any qualitative benefits or costs that have not been included in our assessment?

As detailed in our response to the previous consultation, we believe that by utilising this NTS pipeline for disposal of CO₂ will put NG Carbon in a more favourable position for other related carbon propositions than other potential competitors, hence providing a potential distortion in the market with this favourable position.

Question 4: Are there any other considerations that have not been included in our assessment?

No other comments at this stage.