Response from EDF Energy

Consultation on an updated Waste Transfer Pricing Methodology for the disposal of higher activity waste from new nuclear power stations

Please find below a response to the above consultation, which represents the views of NNB Generation Company Limited ("NNB GenCo") and the investors in NNB GenCo, being the EDF group ("EDF") and the Centrica group (excluding Centrica Storage Ltd) ("Centrica"). NNB GenCo is the joint venture company through which EDF and Centrica will undertake the pre-development activities for a planned nuclear new build programme. References to NNB or NNB GenCo are references to NNB GenCo and its investors.

NNB GenCo welcomes the publication of this further consultation paper on the waste transfer pricing methodology. The proposals and the thinking behind them have clearly developed since the March 2010 consultation, and it is helpful that Government is seeking further views to help ensure that the final arrangements support the development of new nuclear in the UK, provide suitable protection to the taxpayer and are practicable to implement.

The broad proposals are, in general, mostly helpful in their intent. However NNB GenCo has a series of concerns which relate in the main to the detail of the implementation of the broad proposals. Given the detailed nature of these points we have structured our response in three sections: direct answers to the specific questions posed in the consultation (Section 1 below); a more detailed section highlighting a range of specific concerns (Section 2 below) and a full mark up of the consultation text identifying where these and other concerns arise (attached mark-up).

This very detailed response is a direct reflection of the importance that NNB GenCo places on this consultation and the proposals that it sets out. Our experience with the practical implementation of the Funded Decommissioning Programme has reinforced our view that it is the detail, rather than the broad principles, which will determine whether practicable arrangements can be developed. It is important to retain flexibility in the mechanism to take account of issues which arise as the final mechanism is implemented in detail. NNB GenCo further notes that the Waste Contract arrangements are one of a number of consultations in this sector ongoing or contemplated, and that this response will need to be considered in the light of those. As always, we would be happy to discuss this response directly with DECC.

Section 1: Questions

Question 1: Do you agree or disagree that the level of the Waste Transfer Price should be subject to a Cap and that in return for setting a Cap the Government should charge a Risk Fee? What are your reasons?

Setting a Cap

Setting an overall Cap on disposal costs, should the repository be significantly delayed, is helpful for project certainty and is welcomed in concept. However NNB GenCo has a number of detailed points of concern / clarification that we believe could collectively reduce the usefulness of the Cap.

NNB GenCo would expect the Cap to be set at a level that is reasonable and proportionate to the potential risk being taken by Government. Unfortunately the methodology for the setting of the Cap and the indicative Cap numbers do not appear to be demonstrably reasonable or proportionate.

The Cap appears to be based on a P99 percentile of a probability curve of the expected costs of a repository. As a concept, in relation to a repository, we can understand the attraction of this approach; however, it relies heavily on an accurate and complete underpinning risk assessment. Without this, the extreme ranges of cost probability distributions are inherently unreliable and lead to significant over- (and at the other end of the scale under-) estimates of costs. Unfortunately the methodology used to develop the P99 value, based on the information in the consultation, does not appear to us to be capable of producing a robust cost probability distribution. We note further that there are a number of alternative bases on which a Cap could be set, to reflect the costs from a delay to the repository programme.

To develop a proper probability curve of costs requires a detailed risk analysis that would look at all aspects of the repository development and determine the probability and consequence (i.e. cost impact) of those risks. This is not straightforward for a project that is still conceptual in nature, but is achievable. A standard risk assessment approach would then take this suite of risks and subject them to a Monte Carlo analysis from which a cost probability curve would be developed. This would allow costs to be generated at P50, P80, P95 etc.

Unfortunately the proposed methodology does not appear to be capable of generating a proper probability curve. The main uplift for risk is not based on a suite of individual risks with probabilities and consequences, but on a single “Optimism Bias” of 66%. A further risk premium is applied, based on a highly subjective addition of estimating contingency. Annex A, paragraph 6 recognises that the methodology does not produce a distribution from which a P95 value can be derived.

The technical basis for the setting of the Cap is therefore questionable. This problem is further exacerbated by the statement at paragraph 3.3.86 that the determination of the Cap is entirely at the discretion of the Secretary of State, who must only “have regard” to the cost estimates derived from modelling. NNB GenCo considers that there should be a transparent and credible methodology for setting the Cap and that this should be open to technical challenge and for agreement within the Waste Contract.

In summary, NNB GenCo's view is that the principle of the Cap is helpful and to be welcomed but that the calculation of the level of the Cap is undermined by a technically flawed estimation process. The level of the Cap will be material to any investment decision and the operator needs to have confidence that it is set at a reasonable and proportionate level.

To provide improved investment certainty NNB GenCo would propose that the Cap be agreed both prior to the signature of the Waste Transfer Contract between the Secretary of State and the Operator and before any investment decision is taken.

At the same time as the agreement of the Cap, NNB GenCo proposes that the default Assumed Disposal Date should also be set, based on a transparent set of technical assumptions and based on disposal at the earliest technically available opportunity. We would not expect this to include consideration of political risk, which should be a matter for Government. A number of other factors will also need to be agreed if the Cap is to provide real certainty, including the form of cost indexation and the principles and dates for establishing the Financing Charge and discount rate.

<u>Risk Fee</u>
The purpose of the Risk Fee is far from clear. The consultation paper recognises that the Cap is indicatively likely to be three times the total cost of disposal or five times the incremental cost to the taxpayer (given that the GDF will need to be constructed for Legacy Waste in any case). The taxpayer is therefore already more than adequately protected and the addition of a yet further fee on top, to address what is acknowledged in the consultation to be the political risk of Government failing to develop a repository, seems to us unreasonable. We acknowledge that the amount of the Risk Fee is indicatively small in relation to the other proposed uplifts, but there is no comfort that it will remain so. Our view is therefore that the principle of the Risk Fee is unreasonable and it should be removed.

Question 2: Do you agree or disagree that the Deferral Period should be 30 years after start of electricity generation in order to enable uncertainty over waste disposal costs to be reduced? What are your reasons?
NNB GenCo welcomes the extended Deferral Period. The increase from 10 years (in the previous consultation) to 30 years is helpful, as it should allow significant progress to be made in developing the repository, thereby reducing the uncertainty and therefore the costs of waste disposal.

However we suggest that it would be helpful for there to be some flexibility around the Deferral Period, such that it could be extended where site selection could reasonably be expected within a certain limited period after the end date.

Question 3: Do you have any comments on the updated Waste Transfer Pricing Methodology? Comments are sought in particular on the proposed approach to setting an Expected Price and a Risk Fee.
NNB Genco recognises the difficulty inherent in attempting to cost waste disposal at this early stage in the development of the GDF. Nevertheless we consider that the current methodology, with its combination of Base Costs, arbitrary "optimism bias" subjective risk premium and financing charge is flawed and will significantly inflate

costs by double counting risks. Further, because there appears to be little technical basis for the costs, they are inherently opaque and not amenable to independent scrutiny.

Whilst, for reasons of practicality and in the absence of better risk estimates, it may be necessary to set an initial expected price on this basis, with the assumption that the costing methodology will become more accurate over time, we are disappointed that there is no commitment to improve the methodology before the setting of the Final Price following the Deferral Period. This is difficult to understand. We would expect NDA to be refining its cost estimates for the construction of a GDF as part of its normal governance procedures. We would also expect, in line with NDA's own procedures and good estimating practice, that these cost estimates would have appropriate levels of risk and contingency applied to them. We do not understand why such estimates cannot be used as the basis for revising the estimated costs during the deferral period.

A key potential benefit of the Deferral Period is the ability to adjust the expected waste disposal costs over time as progress on the GDF is made and uncertainty decreases. Without a transparent and technically justified risk and contingency allocation, this will be very difficult. We would propose that the Waste Transfer Pricing Methodology should therefore not be fixed at this time, but should develop to reflect good estimating practice within the nuclear industry and elsewhere. We would expect to see, and be part of, further and detailed development of the pricing methodology (including risk and contingency elements). We would also expect there to be clarity in relation to the derivation of all pricing and for such derivations be subject to operator verification and binding dispute resolution.

The consultation helpfully acknowledges that the Government has the capability to manage the risks around waste disposal costs, as these costs are heavily influenced by the manner in which the Government implements geological disposal. These risks are mainly political in nature and NNB GenCo considers that it should not be asked to bear the costs of such political risks in the setting of the Cap and Final or Expected Price. Unfortunately, because of the opaque nature of the current methodology, it is difficult to separate out political from technical risks.

A key determinant of the overall costs to the operator of waste disposal will be the discount and escalation rates that apply for the period between the Transfer Date and the Assumed Disposal Date. The consultation currently envisages that these will be set close to the Transfer Date. These could lead to a significant increase in the Waste Transfer Price at a time when there is no income from the power stations. To avoid this, we suggest it would be advisable for the principles and parameters by which these rates would be determined should be laid out in the Waste Contract.

The consultation is silent on whether the waste storage costs incurred after the Transfer Date would also be subject to escalation and discounting. We raised this point in our response to the previous consultation and would be grateful for your confirmation that this is intended to be the case.

Section 2: Other points not specifically addressed by the questions

The consultation seeks to exclude application of dispute resolution in a number of circumstances. NNB GenCo considers that dispute resolution (including expert determination where appropriate) should apply across the entirety of the Waste Contract, in particular in relation to all pricing. We would note:

- independent expert verification and determination in technical matters (including those with financial implications) would give the parties to the Waste Contract, and third parties, confidence that the arrangements are robust and fair;

- a general dispute resolution procedure will provide a clear, orderly process by which the parties can manage and resolve issues arising under the Waste Contract. It will save time and cost and is particularly important in a long-term contract.

Given the long-term nature of the Waste Contract and likely technical and actuarial developments, the Waste Contract will need to provide processes for agreeing further detail and revisions to its subject matter (including pricing methodology). To facilitate this, NNB GenCo would also expect a change procedure to be agreed during contract negotiations and included in the Waste Contract. Terms relating to change in law would also need to be discussed.

NNB GenCo notes that the assumed reactor life is 60 years, as set out in paragraph 2.2.4 (as part of the Government's response to the previous consultation). NNB GenCo would expect the Waste Contract (including the Cap) to apply to all wastes arising from applicable reactors, including from any life extensions.

NNB GenCo welcomes the recognition in the FDP consultation that a fleet approach may be advantageous and would like to discuss the practical application of this approach in relation to waste transfer issues and the Waste Contract.

NNB GenCo welcomes the framework which the consultation provides for developing key aspects of the Waste Contract principles and pricing methodology. There are of course a range of additional areas that will need to be developed and agreed between the parties as part of contract negotiations. We would expect these to include:

- A mechanism to agree the basis of any amounts payable to Government in the event that NNB GenCo elects not to transfer all or part of its waste under the Waste Contract.

- Fixed/Variable Costs allocations: clarity in relation to, and development of methodology for, allocation of costs to fixed and variable categories, and between spent fuel and ILW. NNB GenCo would expect the Waste Contract to set out a process by which the operator would have visibility of the Government's proposals and development of this methodology and the opportunity to comment. NNB GenCo would expect the Government to

commit to progressing this methodology to a more considered and accurate means of allocating this data.

- The Waste Contract price review process (anticipated to be a quinquennial review ("QQR")): figures agreed at a Waste Contract QQR would inform the FDP QQR and vice versa. Therefore, for certainty and in order to avoid delays to the relevant QQR processes, NNB GenCo considers that (i) the target amount for the Fund should be based, at each Fund QQR, on the most recently agreed Expected or Final Price derived under the Waste Contract, and (ii) the review for Estimated or Final Prices would rely on the most recently approved waste volume estimates set out in the FDP DWMP. NNB GenCo would expect the Waste Contract and FDP to deal with how the Waste Contract and FDP QQR review processes should be co-ordinated, including in relation to the Final Price.

- Flexibility in relation to the Deferral Period: for both early and delayed setting of the Final Price;

- Waste acceptance criteria for ILW: NNB GenCo would expect these to be based on established regulatory requirements such as the NDA's Letter of Compliance process.

NNB GenCo would also note the following points which we believe will need to be addressed through the Waste Contract.

- NNB GenCo would expect the Government to optimise the emplacement schedule in order to ensure equality of treatment as between legacy and new build users. NNB GenCo notes that it will be paying its full share of costs and should not be disadvantaged as against legacy waste disposal. We would propose that the contract should seek a Government commitment to treat legacy and new build wastes on an equitable basis, including, where appropriate, optimisation to ensure equality in benefit from encapsulation and repository design. NNB GenCo would welcome the opportunity to consider and discuss ways in which the operators could play a role in contributing to the design and build processes for the repository.

- In relation to LLW, NNB GenCo would expect there to be equality of treatment by Government as between legacy and new build users of the repository, and that there will always be a disposal route provided for LLW to new build users by the Government.

- NNB GenCo notes that the consultation relates to pricing and expects that the pricing mechanism will form part of a Waste Contract which will have a between the Government and the operator, and which will also have to provide certainty to the operator regarding transfer of radioactive waste.

- NNB GenCo would expect the Waste Contract to contain flexibility to adapt in order to allow operators to benefit from changes to Government policy in relation to management of radioactive wastes.

- NNB GenCo would also seek the flexibility within the Waste Contract to defer the waste Transfer Date under certain circumstances.

- NNB GenCo shares the Government's objective of ensuring safe disposal of ILW and spent fuel from new nuclear. We consider that the Waste Contract might usefully set out mechanisms for the parties to work together (including sharing knowledge, experience and information) to assist in identifying ways by which new build waste can be more effectively managed

- NNB GenCo welcomes the new Geological Disposal Implementation Board in relation to the implementation of the repository and would request that operators receive an annual assurance statement from the Government covering progress with repository development.

<u>Equality of treatment of operators:</u>

The broader question arises of equitable treatment between nuclear operators. NNB GenCo notes the proposal to set an individual Cap for each operator. We consider that this may result in inequality of treatment between operators and, consequently, distortion to the electricity market. We believe that there should be a single Cap, set at a reasonable and proportionate level and based on a technically robust calculation methodology. Where a lower level of the Cap, or more favourable terms, are provided to subsequent operators, we consider that these should be made available to all new build nuclear operators covered by the Waste Transfer Contract arrangements.

Similarly, it is possible to foresee a situation in which a first-mover operator could be subject to a default Final Price because progress had not been made on the GDF, whereas a later entrant may receive a Final Price at a lower rate because their Deferral Period expires later. Given the likely significant difference in costs between the default Final Price (likely to be at or near the Cap) and the (non-default) Final Price, this could introduce market distortion. NNB GenCo would propose that where a Final Price is provided to an operator then that price should also be available to operators who had previously had their disposal costs fixed under the Default Pricing Mechanism provisions.