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Ian Marlee
Partner, Trading Arrangements
Ofgem
9 Millbank
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20th November 2009

Dear Ian,

Project Discovery: Energy Market Scenarios

Drax Power Limited ("Drax") is the operating subsidiary of Drax Group plc and the owner and operator of Drax Power Station in North Yorkshire. In March 2009, Drax acquired a small electricity supply business, Haven Power Limited ("Haven"); Haven supplies some 23,000 small and medium sized business customers and provides an alternative route to market for some of Drax's power output.

Drax welcomes Ofgem's consultation regarding the market scenarios identified and analysed as a part of the Project Discovery work-stream. A response to the questions raised in the consultation can be found in Appendix 1; however, Drax would like to highlight the following points:

- There appears to be some confusion in the consultation document over the term "renewable generation"; in some areas of the consultation document, there appears to be the suggestion that each renewable technology may have similar attributes, with wind technology appearing to be the dominant renewable technology;

- Each renewable technology type will have a different effect on the system in terms of predictability, reliability and associated system costs; it is important to distinguish between those renewable generation technologies that are intermittent and those that are not;

- Investment behaviour should be a function of the spreads (i.e. for CCGTs, the Spark Green Spread) and not the underlying wholesale power price;

- If new CCGTs are to be built, the Spark Green Spread would need to reflect the need for new capacity; in our opinion, none of the scenarios result in adequate signals for new CCGT investment;

- Finally, the level of balancing costs associated with a greater use of intermittent generation are unclear for each of the scenarios; it is expected that such costs would feed into wholesale power prices, therefore greater clarification of these costs and how they were factored into prices would be useful.

We look forward to viewing both Ofgem's and industry participants' responses to this consultation. In the meantime, if you would like to discuss any of the views expressed in this response, please feel free to contact me.

Yours sincerely,

By email

Stuart Cotten

Regulation
Drax Power Limited

Appendix 1: Drax Response to Consultation Questions

Chapter 2: Approach and Assumptions

Question 1: Please provide comments on our approach of using scenarios and stress tests to explore future uncertainty, and as a basis for evaluating policy alternatives.

It is appropriate to use a mixture of differing scenarios and sensitivity tests when performing analysis for prolonged time period. The use of scenarios ensures that a higher number of probabilistic outcomes are covered by such analysis.

Question 2: Are there other techniques for analysing uncertainty that we should consider?

Drax believes that a scenario based approach is sufficient for this analysis.

Question 3: Do you agree with how we measure the impacts of our scenarios and stress tests?

One issue that Drax would like to highlight is that there appears to be some confusion in the consultation document over the term "renewable generation". Box 1 on page 11 refers to the de-rated capacity in the peak periods taking into account, amongst other issues, the "variability of renewable generation output". It is important to distinguish between those renewable generation technologies that are intermittent (i.e. wind) and those that are not (i.e. biomass).

In order to ensure security of supply in the long-term, it will be imperative that an adequate mixture of generation technologies is employed to meet electricity demand. It is important that the attributes of such technologies (intermittent or otherwise) are identified and modelled.

Question 4: Do you agree with our key scenario drivers and choice of scenarios?

The choice of scenarios and their drivers appear reasonable, although we have some concerns over a number of the assumptions used (these are addressed in answer to later questions).

Question 5: Do you believe our scenarios sufficiently cover the range of uncertainty facing the market, and hence cover the areas where future policy responses may be required?

Drax believes that the range of scenarios for this analysis is sufficient, although we would question how "renewable generation" is handled across each of the scenarios; this is particularly important when Government considers changes to renewable generation policy.

One particular issue is that the consultation document suggests that each renewable technology may have similar attributes. Throughout the analysis, wind technology appears to be the dominant renewable technology; however, each renewable technology type will have a different effect on the system in terms of predictability, reliability and associated system costs.

Whilst it could be argued that wind generation has a detrimental effect on security of supply (in terms of its intermittency and the requirement for backup generation), biomass, on the other hand, provides predictable generation that works in a similar way to conventional fossil fuels. It may be more prudent to split renewable generation into their respective technology types, such as wind, biomass, tidal, wave, etc, or at least into *"intermittent renewables"* and *"non-intermittent renewables"*. The differing attributes of each technology, and the associated effects, are not currently tested and assessed as part of the analysis.

Question 6: Do you have any specific comments on scenario assumptions, and their internal consistency?

The modelling appears to assume that assets are retired when they are no longer profitable and that the market will respond adequately to market signals. As such, in each of the scenarios the only CCGTs that remain online are those with a high efficiency rating (circa 55%); less efficient CCGTs are expected to close. However, only in one scenario (Slow Growth) is the Spark Green Spread sufficient enough to provide the required investment signal to build new gas powered plant, and even in this scenario the investment signal provided to investors in new CCGTs remains marginal.

Investment behaviour should be a function of the spreads (i.e. for CCGTs, the Spark Green Spread) and not the underlying wholesale power price. If new CCGTs are to be built, the Spark Green Spread would need to reflect the need for new capacity; in our opinion, none of the scenarios result in adequate signals for new CCGT investment.

Question 7: Do you agree with our methodology for modelling gas and electricity supply/demand balances?

Drax is not best placed to comment on demand modelling; this may be an area for input from National Grid.

Question 8: Do you agree that LNG is the likely medium-long term source of "swing gas" for the European market.

Drax is not best placed to comment on this subject.

Chapter 3: Scenario Analysis

Question 1: Do you have any observations or comments on the scenario results?

Drax's observations are as follows:

- In each of the scenarios, it is difficult to see how CCGTs that do not have a high efficiency rating (circa 55%) remain operational, given the associated Baseload Spark Green Spreads; it may be that peak power prices in times of extreme demand are sufficient to keep such stations open, although this is not obvious from the results and further clarification would be useful;

- It is unclear whether or not the analysis has correctly modelled reserve capacity availability as there is currently no price signal in the UK market to encourage the provision of a reserve margin, either by sustained maintenance of less efficient plant or by the build of new plant;

- The level of balancing costs associated with a greater use of intermittent generation are unclear for each of the scenarios; it is expected that such costs would feed into wholesale power prices, therefore greater clarification of these costs and how they were factored into prices would be useful; and

- It is unclear as to whether the plant closures in 2012 are due to the introduction of the LCPD and assumptions on plant specific utilisation of derogated hours; further clarification on such assumptions would be appreciated.

Question 2: Do you agree with our assessment of what the key messages of the scenario analysis are?

Drax would question the outcome and key messages of the analysis if the majority of existing CCGTs were to close and the Spark Green Spreads appeared inadequate to promote new build. Drax believes

that further details are / analysis is required to identify where the signal to build new gas generation occurs; please refer to our answer to Question 1.

Question 3: Are there other issues relating to secure and sustainable energy supplies that our scenarios are not showing?

Further to our previous comments, the scenarios do not appear to highlight the volume of back up capacity that would be required to support intermittent generation technologies (such as wind) and the associated costs. Further clarification would be appreciated.

Question 4: To what extent do you believe that innovations on the demand side could increase the scope for voluntary demand side response in the future?

Drax is not best placed to comment on this subject, although we do expect demand side response to play a useful part in future years. This may be an area for input from National Grid.

Chapter 4: Stress Tests

Question 1: Do you agree that our stress tests are representative of the types of risks facing the GB energy sector over the next decade?

Drax does not believe that the reversal of interconnectors should be used as a Stress Test; this is *normal* operation as the direction of flow across interconnectors is dependent upon the prices in each respective market. Similarly, low availability of wind capacity should not be used as a Stress Test; the intermittency of wind generation (including longer periods of time with low / no wind) is an expected risk and should be factored into each scenario.

Drax believes that the Stress Tests regarding gas availability appear reasonable; however, gas availability / outages should be generalised to any import point into the NBP, i.e. not just Ukraine / Russia gas disputes, but also interruptions to flows from Norway (via Easington), interconnector flows, LNG import capacity issues and interruptions in offshore flows to UK gas processing terminals (such as St. Fergus).

Question 2: Are there further stress tests that you think should be considered?

Additional stress tests that should be considered are:

- Delays in new wind build due to increased global demand for wind turbines;
- Delays in the arrival of a new nuclear plant;
- The possibility of plant type faults in new nuclear technology (as experienced with the current generation of nuclear plant); and
- A loss of GB gas storage capability, i.e. a long-term Rough outage.

Question 3: Do you agree with the assumptions behind our stress tests?

There are a number of issues with the assumptions that we would like to highlight:

- Re-direction of LNG Supplies:
    - In a scenario where the European gas market is tight, and there is competition between the UK and the continent for supplies, we would expect the direction of flow on the

interconnector to be dependent upon prices and *not* just assumed to be at annual average rates;

- In order to understand potential deliveries of LNG and the direction of flows on a given interconnector, there needs to be a degree of global (LNG) and continental (interconnector) market modelling; assumptions on deliveries and flows cannot be made without a view on external market prices;

- Russian-Ukraine Dispute:
  - Any assumptions for future years based upon flows that occurred in January 2009 are questionable due to the fact that the UK, and other European countries, were entering into a recession at that time;
  - Once again, it should be noted that flows across interconnectors and between European markets will be dependent upon price; a view must be taken on the fall in supply from the UK Continental Shelf and the increasing reliance on gas imports in order to determine the direction of gas flow into / out of the UK and consequential market prices;

- Bacton Outage:
  - We would question the use of the Bacton terminal for this Stress Test and suggest the test be based upon the Easington terminal; using the Easington terminal for such a test would demonstrate the issues associated with a loss of flows from Norway (via the Langeled pipeline) and test the ability to import redirected Norwegian flows (via Europe) through an interconnector (i.e. testing UK interconnector capacity adequacy);

- Low Availability of Wind Capacity:
  - It is reasonable to assume that if the UK is experiencing low temperatures, continental Europe could also be experiencing similar weather conditions; as a result, it cannot be assumed that the interconnector is importing into the UK, as the direction of flow will depend upon the market price on each side of the interconnector.

Question 4: Do you have any views on the probabilities of these stress tests occurring?

The probabilities of occurrence used as part of the analysis appear reasonable.

Question 5: Do you agree with how we have modelled demand curtailment in response to constrained supply?

Drax is not best placed to comment on demand modelling; this may be an area for input from National Grid.