A decorative graphic consisting of a solid blue horizontal bar on the left, which transitions into a white area with a blue, flame-like shape on the right side.

Inclusion and Amendment of Entry Incremental Capacity Release NPV test in UNC

05/09/2018

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Summary



- » South Hook Gas currently has an ongoing PARCA application which is forecast to end October 2018, after which the NPV test will need to be passed in order for the Incremental Capacity (and any unsold required) to be reserved. The timing of this application was submitted to align with the upstream project timescales.

- » South Hook Gas has recently discovered that the Entry Incremental Capacity Release NPV test cannot be passed by signalling only incremental capacity (at Milford Haven and a number of other sites), and requires the reservation of all unsold capacity at the System Entry Point in a number of quarters. This results in;
 - South Hook Gas acquiring more capacity than it can operationally use
 - Signalling of excessive revenues, in region of £280m compared to £70m required for NPV test to pass
 - This could increase to over £1bn when using price steps from 0621 CWD Model
 - Dragon LNG no longer being able to purchase long term capacity in the quarters where unsold capacity is acquired

- » In order to resolve the issues associated with the NPV test this Modification seeks to insert the NPV test into the UNC and also modify it to allow for;
 - A Incremental Capacity Premium (ICP) to be applied
 - Submission of incremental capacity profile ahead of the second NPV test at the end of PARCA Phase 2
 - Recalculation of the ICP at the time of the second NPV test
 - Fix the project value for the duration of the PARCA application at the end of PARCA Phase 1

- » South Hook Gas will be seeking Urgency on this Modification due to;
 - Being linked to an imminent date related event
 - There being a real likelihood of significant commercial impacts upon South Hook Gas

Background to the NPV Test



- » A Net Present Value test is required to be passed in order for Incremental Capacity to be reserved, and allocated, as part of the PARCA process
 - There is an NPV test at the end of Phase 1 (using indicative prices) prior to reservation
 - There is a second NPV test at the end of Phase 2 (using updated indicative prices) prior to allocation

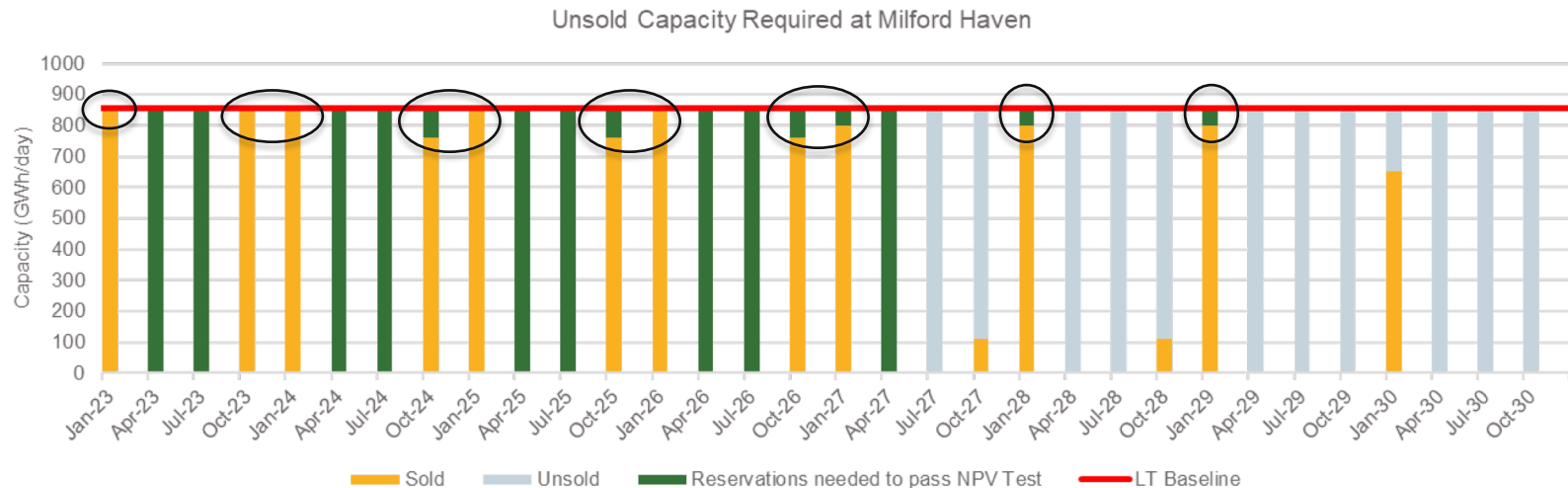
- » In order for the test to be passed 50% of the Estimated Project Value needs to be recovered from the revenues associated with the Incremental Capacity
 - The Price Steps and Estimated Project Value used are calculated through the current LRMC methodology

- » The current NPV test was issued within the Entry Capacity Release Methodology in 2002 and has not been comprehensively reviewed since

- » The test was implemented when there was an expectation that capacity would be acquired on a long term basis, however the booking behaviour has moved towards the purchasing of short term products, which are heavily discounted (up to 100% for within day and interruptible products). This has caused significant difficulties signalling Incremental Capacity

- » The principle behind the NPV test should be that if Incremental Capacity is needed, and subsequently signalled, then the test should be able to be passed

Problem with passing the current NPV test



- » There are 11 quarters where Incremental Capacity can be signalled at the Milford Haven ASEP using the amount of capacity applied for
- » Using the price steps from the LRMC methodology does not generate enough revenue for the Incremental Capacity NPV test triggered, and therefore South Hook Gas is required to buy all the unsold capacity in summer quarters (out until April 2027) and signal incremental capacity on top of this;
 - In order for the NPV test to pass South Hook Gas are required to signal **£70m** from the Incremental Capacity
 - Purchasing the unsold results in costs of around **£281m** which is significantly higher than the required signal
 - This cost is also likely to increase when looking at the changes from the Charging Review. When calculated the prices steps in the 0621 CWD model this rises to up to **£1.2bn**
- » It also results;
 - South Hook Gas holding more capacity in the summer quarters than it can operationally utilise
 - Dragon LNG not being able to purchase long term products in those quarters

Proposed Solutions



- » In order to resolve the identified issues our proposal is to;
 - Insert the Entry Incremental Capacity NPV test into UNC to allow for it to be modified timely if any future issues arise
 - A Incremental Capacity Premium to be applied should the estimated reference price not generate sufficient revenues for a positive NPV test outcome.
 - This concept is based on the IP Mandatory Minimum Premium that is part of the Incremental Capacity Release at Interconnection Points within UNC, European Interconnection Document, Section E.
 - The Incremental Capacity Premium is an additional quantity that is added to the applicable payable price, calculated to be the minimum value required to allow the NPV test to be passed in the case where the allocation of all offered incremental capacity at the estimated reference price would not generate sufficient revenues for a positive NPV test outcome.
 - For example, if capacity totalling £50m on a NPV basis is required but only £30m of Incremental Capacity sales are available using the estimated reserve price, then the additional £20m required would be divided by the Incremental Capacity denominator to create the Incremental Capacity Premium in p/kWh/d, which is then applied on top of the reserve price.
 - Submission of incremental capacity profile ahead of the second NPV test at the end of Phase 2, the same as Phase 1 NPV test, of the PARCA process to either avoid unnecessary termination of the PARCA application or excessive revenue being collected.
 - This also provides an opportunity for the Incremental Capacity Premium to be recalculated. The ICP is fixed at this point and paid in addition to any capacity charges as they become due.
 - The project value for the remaining duration of the PARCA application to be fixed at the time of the 1st NPV test (at the end of PARCA Phase 1).



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Appendix 1 – Incremental Capacity Premium Calculation Example



- » A user wants to signal 100GWh/day of capacity incremental capacity over 10 quarters
- » The Estimated Project Value is £100m and therefore £50m signal is required to pass the NPV test
- » The highest price step they can use is 0.0350 p/kWh/day

- » Calculations¹
 - $\text{Incremental Revenue} = (\text{Incremental Capacity} \times \text{Price}) \times \text{Total days in period}$
 - $(100,000,000 \times 0.0350) \times 900 = \text{£}31,500,00$

 - $\text{Incremental Capacity Premium Revenue} = \text{Signal Required} - \text{Incremental Revenue Signalled}$
 - $\text{£}50,000,000 - \text{£}31,500,000 = \text{£}18,500,000$

 - $\text{Incremental Capacity Premium Price} = \frac{\text{Incremental Capacity Premium revenue}}{\text{Sum of Capacity} \times \text{Total days in period}}$
 - $\frac{\text{£}18,500,000}{(100,000,000 \times 900)} = 0.0206 \text{ p/kWh/day}$

 - The 0.0206 p/kWh/day Incremental Capacity Premium would be added to the 0.0350 p/kWh/day reserve price to for all Incremental Capacity

¹For simplicity the calculation uses the following assumptions

- There are 90 days in a quarter and therefore the total duration is 900 days
- There is no discount factor applied