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Transmission licensees, generators, suppliers, consumer groups and any other party who has an interest in the transmission arrangements

Direct Dial: 020 7901 7046
Email:Thomas.Johns@ofgem.gov.uk
Date: 20 October 2015

Dear Stakeholder,

Consultation on National Grid Electricity Transmission plc's Opening Asset Value for the England-Scotland Interconnector project

The England-Scotland Interconnector project ("the project") is an electricity transmission investment to increase the boundary transfer capability across the England-Scotland border. It has been funded under the conditions of the Transmission Investment for Renewable Generation (TIRG) mechanism. The project has been jointly delivered by National Grid Electricity Transmission plc (NGET) and SP Transmission Limited (SPT) as work was required on both their respective networks. The outputs associated with NGET's part of the works were delivered in 2010-11.

The TIRG conditions[1] require us to determine the post-construction Opening Asset Value (OAV)[2]. The value will determine the revenue that NGET receives for the 5 years following construction. We are consulting on our view that the OAV for NGET's part of the work on the project should remain at the level set out in the licence, £105.983 million[3].

We have reached this provisional view because we consider that the scope of the project and the associated costs have not been subject to any significant or material change. We also think that the five-year post-construction incentive period should begin from 2011-12. This is the year after we consider that the project's outputs were delivered.

Background information on both the funding arrangements of the TIRG mechanism and the England-Scotland Interconnector project can be found in Appendix 1.

We would like to hear your responses to the questions below by 17 November 2015:

1. Do you agree that the OAV should equal the amount specified in the TIRG condition in NGET's licence for the England-Scotland Interconnector, £105.983 million?
2. Do you agree that the post-construction period should start in 2011-12?

[1] Special Condition 3J of National Grid Electricity Transmission's electricity transmission licence
[2] For each TIRG project, the forecast OAV set out in Schedule C of the TIRG condition is referred to as "ETIRGORAV", whilst the OAV that we are determining here after construction is referred to as "SAFTIRG"
[3] All monetary values within this consultation, including the appendices, are shown in 09/10 price basis and are shown to the nearest £1000 in line with the requirements of the TIRG mechanism

Please submit your response by 17 November 2015, preferably by email, to Thomas Johns (thomas.johns@ofgem.gov.uk). We will also accept postal submissions. Please send these to:

Thomas Johns
Electricity Transmission
Ofgem
9 Millbank
London
SW1P 3GE

Responses will be published on our website unless they are marked confidential[4]. If you would like your response to remain confidential, please clearly mark your response to that effect and provide reasons for confidentiality. Subject to your responses, we expect to publish a decision this winter.

Our initial view of the OAV

We have carefully considered all the information before us, including the post-construction expenditure and technical reports submitted by NGET, and other relevant information. We are satisfied that, subject to the responses to this consultation, the required boundary transfer capability has been delivered. We therefore consider that, to the extent to which it could have been expected to, NGET delivered the output measures set out in in 2010/11.

For the reasons set out below, the Authority initially considers that the opening asset value (SAFTIRG) for the project for the five year incentive period should be £105.983 million. This figure represents the value of the final works at the end of construction that was forecast in NGET's licence, £120.755m, less the amount already recovered through depreciation by NGET during construction.

Reasons for our initial view

When determining the OAV, we are required to consider the following criteria:

- Whether an adjustment has been made to the average asset value and / or depreciation value for the transmission investment project during the construction period.
- Whether the final aggregate transmission investment expenditure set out in the post-construction expenditure report has been efficiently incurred.
- The extent to which the licensee has complied with the output measures specified in Annex A of the TIRG condition for the transmission investment project.
- Any other information the Authority considers to be relevant to the determination.

These points are discussed below in relation to our determination on NGET's OAV for the England-Scotland Interconnector project.

[4] Ofgem will respect such requests, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

Efficiency of costs incurred

NGET's final calculation of the full audited costs it incurred on the project is £122.160m. The forecasted cost in the licence for NGET's part of the work was £120.755m. Following our review of the costs incurred by NGET and the technical work delivered, we do not consider that the relatively small overspend reflects a significant and material change in the value or scope of the work delivered. Therefore, our initial view is that the slight divergence from the forecasted cost should not impact on the OAV and it should remain at £105.983m as stated in the licence. This means that the overspend will not be shared with consumers during the post-construction period.

Compliance with project-specific outputs

As well as the overall project output, which was to deliver an increased boundary capacity of 2800MW, a number of more disaggregated project outputs are set out in NGET's licence for the project. NGET has not met all of these outputs. However, we do not consider it appropriate to adjust the project OAV as a result. This is because the boundary transfer capability, which the project was designed to deliver, was delivered on time.

Further detail of NGET's performance against the outputs and our consideration of that performance can be found in Appendix 2 of this letter.

In June 2012 NGET submitted its independent project completion report, authored by Mott MacDonald[5]. Mott Macdonald's review confirms that the overall network performance of the England-Scotland Interconnector project was delivered as intended when setting the output measures. The transfer capability, following completion of the East and West Coast Interconnector works meets the required capacity of 2800MW. As explained in Appendix 2 of this letter, there are three specific detailed outputs that were not delivered. These did not impact on the delivery of boundary transfer capability over the interconnector, and produced no consumer detriment that we can identify. Within NGET's licence, the circuits subject to the work on the East coast are referred to as Line A, B and C. Appendix 1 provides sets out further detail on these three circuits.

1. **Thermal rating of Line A:** Due to the conductor type used on a short section of SPT's work on the project, the line's thermal rating was temporarily reduced until 25 May 2011. Since the thermal limit was not the limiting factor on the circuit, and the listed rating was delivered once the restriction was lifted, we consider the overall output to have been met.

2. **Reactance of Line B:** Due to a calculation error ahead of construction, an incorrect output was derived for this measure. There was no work that NGET could have done to deliver this incorrectly specified output. Given that the overall reactance measure across circuits A-C was met and that the reactance was not the limiting factor on the circuit, we consider the overall output to have been met.

3. **Thermal rating of Line C:** The output specified in NGET's licence was derived on the assumption that an additional local substation would be developed as part of a separate connection project funded independently of the England-Scotland interconnector project. Since the thermal limit was not the limiting factor on the circuit, we consider the overall output to have been met.

[5] A copy of Mott McDonald's report has been published alongside this letter.

Having reviewed the evidence presented by NGET and Mott MacDonald, and for the reasons above, we are minded to accept that NGET has delivered the outputs as fully as it could have been expected to within the circumstances presented. We therefore propose to accept that overall NGET has appropriately complied with the overall output to deliver the additional boundary capability as envisaged by the original funding arrangements.

Asset Value Adjusting Event

No adjustment has been made to the average asset value or to the depreciation value during the construction period.

Any other information the Authority considers to be relevant to the determination

We have reviewed all other relevant information, including the reports submitted to date by NGET in respect of the completion of its works for the project.

We have not considered the value of the revenue allowances after the end of the five-year incentive period.

Next Steps

We welcome views from any interested parties regarding the issues raised in this letter. We will use these to inform our determination of the Opening Asset Value, which we anticipate publishing in early December 2015. If you have any queries regarding this consultation, please contact Thomas Johns (thomas.johns@ofgem.gov.uk)

Yours faithfully,

Geoff Randall
Head of RIIO, Electricity Transmission
For and on behalf of the Authority

Appendix 1 - Background Information

Background to TIRG mechanism

The TIRG mechanism was established in 2004 to fund transmission projects to connect renewable generation outside the price control process. The intention was to minimise investment delays. TIRG gives the three electricity Transmission Owners (TOs), including NGET, expenditure allowances for specific transmission reinforcement projects. Since the design and associated costs of these projects are uncertain, a degree of flexibility was built into the process to allow for the amending of revenue allowances.

Each TIRG project, including the England-Scotland Interconnector, can be broken down into four distinct phases, defined as follows:

Pre-construction	Construction	Post-Construction[6] period	Regulated Asset Value period[7]
Period prior to construction	Period of construction. The length of the construction period is set out in the Licence with an annual revenue allowance set for each year.	Period of 5 years which begins one year after output is delivered	15 year period during which any savings are shared with consumers

During the five-year post-construction period, which starts the year after construction ends, the TOs' project revenues are recovered from consumers based on the original forecast of costs in the licence. This allows TOs to keep any cost savings if they deliver the project for below forecasted cost during the period. Conversely, during this period, where the TOs overspend on a project, this exposure is not shared with consumers. This gives TOs an incentive to deliver projects efficiently. At the end of the post-construction period, in the Regulated Asset Value period, the project revenues reflect the actual costs incurred by the TO.

Background to the England-Scotland Interconnector project

The England-Scotland Interconnector works were designed to increase the capability of the boundary[8] between England and Scotland from 2200MW to 2800MW by upgrading both the West and East coast circuits. The project was also designed to increase stability across the boundary and relieve constraints.

The project outputs listed in Schedule C of special condition 3J of NGET's transmission licence reflect the disaggregated works expected to deliver the overall increase in boundary transfer capability.

The work on the West coast required the upgrading of the line between Harker substation in Cumbria and the Scottish border as well as the installation of a switch capacitor bank.

[6] In the licence this term is referred to as the 'incentive period' and also as 'the TIRG relevant years'
[7] https://www.ofgem.gov.uk/ofgem-publications/48279/glossary.pdf
[8] Boundaries are used to split the transmission system into different areas in order to assess and report on system capability

The work on the East coast covered work on three lines. For this letter they are referred to as Line A, B and C:

- Line A runs from Eccles to Heddon Tee;
- Line B from Stella West to Heddon; and
- Line C from Blyth to Heddon Tee.

The intention of the project was to upgrade the technical rating[9] of each circuit individually and deliver a combined improvement across the three lines.

Completion of the works

In June 2012 NGET submitted its independent project completion report, authored by Mott MacDonald[10]. The report confirmed that the required project works were completed in 2010-11 and no further works were planned. However, in July 2013 the Authority received an addendum to the report. This highlighted that whilst the output measures were still deemed to have been delivered in 2010-11, NGET had undertaken additional work between 2011-12 and 2012-13 to finalise the project and complete the relevant reinstatement work.

We consider that the majority of these additional works were justified and essential to the TIRG reinforcement works. They mainly relate to the settlement of claims by affected landowners and the upgrading of small sections of supports for the upgraded line[11] which fall within the scope of the TIRG project. The exception was the cost associated with reinforcing the foundation and diverting of a water course on the Heddon Tee – Blyth overhead line route. Documentation provided by NGET, and reviewed by Mott MacDonald, suggests that the works were necessitated by long-term deterioration of the foundations which would have required remedial measures even if the TIRG works had not been undertaken.

The final figure for NGET's project works, £122.160m, includes the cost of additional works after 2010-11 we think were justified but excludes the elements that we do not consider necessary for the delivery of the TIRG project.

[9] The technical ratings in the project outputs refer to the line thermal rating, which cover the amount of capacity that can be transmitted without the line getting too hot, and impedance, which covers the level of restriction on current flowing through the line.
[10] Published alongside this letter
[11] An overview of these costs can be found in the post-construction technical report.

Appendix 2 – Performance against disaggregated project outputs

As well as the overall project output, which was to deliver an increased boundary capacity of 1.8GW, a number of more disaggregated project outputs are set out in NGET's licence for the project.

The project outputs on the East coast Interconnector require Lines A, B and C to meet specific requirements relating to their thermal rating and circuit impedance. Each individual line is required to meet a specific level of circuit impedance, with a combined impedance level to be maintained across the three lines.

The project completion report measured the compliance of the work delivered against each circuit's agreed thermal and impedance output requirements.

Line A

The report concludes that data provided by NGET in 2011 indicated that Line A (Eccles – Heddon Tee) had not yet fully met the thermal rating specified in the TIRG output measure. This was due to a different 'Gap' conductor being installed on a short section of SP Transmission's element of the project than NGET had envisaged. This type of conductor operates at a high temperature. Combined with the fact that brand new conductor is expected to be less effective at conducting heat than aged conductor, it is customary to apply a temporary 7% thermal de-rating to this type of conductor for six months. This meant that the thermal capacity of Line A was temporarily below the required threshold. A fresh review in 2012 indicated that the thermal rating was by then in line with the TIRG output measure. Information from NGET indicates that the restrictions on the two circuits that make up Line A were lifted in March and May of 2011. It also indicated that, in any case, the rating of the conductor was not the limiting factor on the circuit, meaning that the de-rating did not impact on the circuit's overall performance.

With regards the reactance of the Eccles – Heddon Tee branch, impedance data provided by NGET suggests that it achieved a better reactance for than specified in the TIRG output measure. Therefore, we conclude that NGET's output measures for this line were achieved in 2010-11.

Line B

Mott MacDonald's review highlights that the Stella West to Heddon Tee (Line B) circuits meet the thermal rating specified in the output measure. However, NGET data suggests that the reactance on this line does not comply fully with the output measure and in fact exceeds the desired value by 10%. NGET argue that this discrepancy was due to an error in the original calculations resulting from the position of the tee point being incorrectly identified. We consider that since the wider combined impedance across the Stella West – Heddon Tee branch and the NGET part of the Heddon Tee – Eccles branch is in line with the overall reactance improvement required across the whole project, this initial error should not materially impact on our determination of whether the overall project outputs have been achieved. This is supported by Mott MacDonald's report.

Line C

Finally, the report indicates that the thermal rating for Line C (Blyth to Heddon Tee) does not fully meet the rating specified in the output measure. This is because the original project outputs envisaged the separate development, outside of the TIRG mechanism, of a new 400kV substation at Blyth. This new substation at Blyth was originally required for the separate connection work to connect a new clean coal power station. This connection agreement was terminated in 2009, meaning that the substation work has been deferred. The work has since been rescheduled to 2017 to allow the connection of the interconnector in development to Norway. The work at Blyth was not funded through the TIRG mechanism and did not impact on the delivery of the transfer capability increase

across the interconnector. We consider that the decision to defer investment on the site until it is needed was an efficient approach that has ultimately not impacted on the delivery of increased boundary capability. For this reason we do not consider that the delay in delivering a new substation at Blyth constitutes NGET not meeting its output requirements for this project.