

Investment Signals from Finite Rights - Scenario Analysis

Overview

The aim of this paper is to examine the impact of a CAP165-style signal that existing generation is to rescind its long-term transmission access rights on future planned transmission investments and to facilitate new connections to the GB Transmission System.

At a high level this paper hypothesises that one or more existing Power Stations signal their intent to rescind its long-term access rights at a fixed date in the future. The potential impact of that decision on the programme of transmission investment works and hence the impact on new Power Stations that can only otherwise connect once those works are completed is then assessed. Note that due to the timescales in which this work has been carried out, this assessment is based on a best engineering judgement premise and not with recourse to detailed transmission study work.

It should also be noted that although the transmission reinforcement works and their re-programming together with the new projects due to come on line in future years are based in fact, the hypothesised rescission of long-term rights is firmly a theoretical exercise and no such rescission signals have in fact been indicated or received by the owners of such Power Stations. The purpose of this note therefore is to illustrate the order of magnitude of the cost savings that could be achieved where closure signals exactly dovetail with investment plans such that infrastructure build can be delayed or potentially avoided. That the closure signal(s) would in fact dovetail so precisely is far from certain however and this should be borne in mind when reading this note.

The details of all of the Power Stations contained in this version of the paper have been made anonymous. All TEC figures have been rounded to the nearest 500MW.

Scenario 1: Area 1; Power Station A Closure

In this scenario the impact of the hypothetical rescission of long-term rights in 2011 of Power Station A is appraised against the background of new generation projects with offers to connect in the Area 1. The currently contracted projects and their contingent reinforcements are:

Power Station	Approx MW	Completion Date
Power Station B	~1000MW	2012
Power Station C	~500MW	2015
Power Station D	~1000MW	2014
Power Station E	~1500MW	2014

In the hypothetical scenario where Power Station A has signalled a rescission of its long-term rights in 2011 then there may be an approximate saving of £35million in the above programme of works to facilitate the TEC of Power Station C. This saving is associated with the belief that the works to upgrade the voltage of local transmission system circuits would not be necessary in the absence of Power Station A generation, and so these would drop away from Power Station C's construction agreement. This would also likely allow the TEC of Power Station C to be released from 2012.

Summary of Potential Benefits Subject to Confirmation through Detailed Transmission System Study Work:

1. Potential £35.2million of capital expenditure saved.
2. Allows Power Station C to generate up to its requested TEC from 2012.

Scenario 2: Area 2; Power Station α & Power Station β signalled closure

The following contracted projects are the key new projects that are potentially impacted by a signal that Power Station α and Power Station β are to rescind their long-term rights.

Power Station	Approx MW	Completion Date
Power Station γ	~500MW	2013
Power Station δ	~1500MW	2016
Power Station ϵ	~1500MW	2016
Power Station ζ	~1500MW	2016
Power Station η	~1000MW	2019 (~500MW) and 2022 (~500MW)
Power Station θ	~1000MW	2023

For the projects above, should both Power Station α and Power Station β signal a rescission of their long term rights at approximately the same time then a number of improvements might be made to the capital plan associated with the above projects.

The first potential saving is that the projected £23million spend associated with the thermal uprating of local transmission circuits may no longer be necessary. However this does not appear to alter the timescales for connection of any of the projects due to connect from 2013 onwards.

The second major impact appears to be on the programme of capital works for Power Station η and Power Station θ . Here without either Power Station β or Power Station α holding long-term access rights, significant improvements might be achievable. The first potential benefit is that the work to construct a new 400kV substation extension and its associated circuits may no longer be required which if it were to be confirmed through detailed study work would result in a £360million saving. It would also appear at first inspection to have the benefit of bringing Power Station η and Power Station θ forward to an approximate connection date of 2016-2018 rather than the current dates out to 2023. The scope of transmission construction works to connect Power Station θ may also be able to be significantly reduced with the projected capital spend potentially reducing from circa £515million down to circa £60million due to the fact that certain transmission reinforcement works might no longer be required.

Summary of Potential Benefits Subject to Confirmation through Detailed Transmission System Study Work:

- Potential for total capital spend savings of up to £838million
- Potential advancement in connection dates for Power Station η and Power Station θ to 2016-2018 (from dates in the range 2019-2023)