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Dear James,

Application to the Panel regarding a BMU for Barton Hill

Green Frog Power has built a 20MW gas-fuelled power station at Barton Hill in Torquay. It comprises 15 1.4MVA reciprocating engines connected together to function as a single unit. We believe the spirit and the letter of the legislation mean we should treat the whole power station as a single Balancing Mechanism Unit (BMU), rather than each separate engine.

This is an identical configuration to our previous site at Redfield Road, approved for a non-standard BMU at the ISG on 22nd March 2016. We understand there is currently a consultation in progress which may standardise this arrangement, however until such a mod has been successfully approved we will need to seek a non-standard BMU for each of our sites.

Treating each engine as a BMU would be troublesome for National Grid, would reduce system efficiency and cause unreasonable and unnecessary costs to Green Frog Power. The plant will be metered only at the point of grid connection, will always be despatched as a single unit and the engines will work as one, all synchronising together and compensating each other to ensure a constant 20MW output (while there is physically 21MVA of generation installed the generators will be run at less than maximum output to ensure that the connection capacity is not breached, and to provide some level of redundancy).

GFP Trading, which is responsible for the despatch of the plant, would like to refer the configuration of the generation site at Barton Hill to the Panel for determination

as a BMU. We believe our proposed approach best achieves the objectives of paragraph 3.1.2 of Section K of the Balancing and Settlement Code (BSC) as described in paragraph 3.1.6.

The site consists of fifteen 1.4MVA gas fired generators, connected in pairs to 440/33,000V transformers. The pairs of transformers are then connected to the main site busbar. The site busbar is then connected to the local distribution system (WPD South West) at 33kV, and metered at this point (the Defined Metering Point).

Under paragraph 3.1.2(b) a BMU must be the smallest aggregation of Plant and/or Apparatus that can be controlled independently – in the case of Barton Hill each generator can theoretically be controlled individually of the others (although our control system always manages the site as a whole), which is the crux of the reason for consideration as a non-standard BMU.

Under paragraph 3.1.2(c) a BMU must have metering equipment which is installed pursuant to Section L, and from Section L, conforming to the appropriate Code of Practice (in this case COP2). COP2 defines the Defined Metering Point for transfers between a Licensed Distribution System Operator and Generating Plant as the point of connection between the generating station and the LDSO.

We believe that we meet the spirit of the current code in that our proposed approach provides for the smallest aggregation of units that satisfies the conditions of 3.1.2 (a), (b) and (c) *and* has the practical benefit of fewer (completely unnecessary) meters and fewer parts for National Grid to manage.

Our view is that it is reasonable and practical to consider and treat the entire site as a single BMU. The alternative (a dispensation to COP2 to allow metering each generator individually) has several disadvantages

- The site is designed to be despatched as a single unit when operating under National Grid's control in the BM. Fifteen separate BMUs would need to be despatched by the control room in order to bring the site to its full load. At a minimum this would be inconvenient, but there would also be



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costs incurred associated with inefficient dispatch (in effect, the potential for dispatch of less than full load).

- Loss of precision would be introduced to the settlements system as estimates would have to be made of losses in the transformers between the generators and the Defined Metering Point.
- It would be extremely costly to install fifteen sets of settlement metering and the associated metering class CTs and VTs to the individual generators (estimates are around £140,000); this figure includes cost of apparatus and engineering work that needs to be undertaken.
- There are recurring costs associated with maintaining CVA BM Units, these would be fifteen times higher than otherwise necessary if each generator was metered individually (£19,200 vs £2,400 per year), with no identifiable benefit
- Fifteen BMUs instead of one has cost and convenience implications for the central and GFP Trading's settlements systems. This also applies to other areas where the site is represented within control systems, for example the EDT and EDL systems of National Grid.

Kind Regards

Mark Symes
Director, GFP Trading Ltd

Enclosures:

- Electrical single line diagram (3 documents)