

Limiting the impact of network restrictions upon the provision of reactive power



Steven Lam – 14th December 2010

Recap

- CAP169/ Grid Code E/09 prohibited NGET to instruct DNO restricted generators
- “Reactive despatch network restriction” – prevents generator from complying with any reactive despatch instruction to provide Mvar over the Grid Code defined range
- NGET would not be able to instruct any DNO network restricted generator even if they can be despatched to 0Mvar
- Embedded generator may be just short of the Grid Code defined range

Proposed solution

- Amend the definition of a DNO network restriction to include only those generators which cannot be despatched to 0Mvar
- Allows NGET to despatch generators with a reactive range just short of the Grid Code range
- Generators which cannot reach 0Mvar would not be despatched and will receive no payment
- Increases pool of providers for reactive services

Proposed option 1

- Change the Grid Code definition of reactive despatch network restriction:
- “restriction placed upon an **Embedded Generating Unit, Embedded Power Park Module** or **DC Converter** at an **Embedded DC Converter Station** by the **Network Operator** that prevents the **Generator** or **DC Converter Station** owner in question (as applicable) from complying with any **Reactive Despatch Instruction** to provide 0Mvar at the **Commercial Boundary** with respect to that **Generating Unit, Power Park Module** or **DC Converter** at a **DC Converter Station**.”

Proposed option 2

- Insert reactive despatch network restriction into CUSC definitions:
- restriction placed upon an **Embedded Generating Unit, Embedded Power Park Module or DC Converter** at an **Embedded DC Converter Station** by the **Network Operator** that prevents the **Generator or DC Converter Station** owner in question (as applicable) from complying with any **Reactive Despatch Instruction** to provide 0Mvar at the Commercial Boundary with respect to that **Generating Unit, Power Park Module or DC Converter** at a **DC Converter Station**.
- Delete – “As defined in the Grid Code”
- Insert into the Grid Code:
- Where NGET has received notification pursuant to the Grid Code that a Reactive Despatch Network Restriction is in place **as defined in the CUSC** with respect to any Embedded Generating Unit, Embedded Power Park Module or DC Converter at an Embedded DC Converter Station, then NGET will not issue any Reactive Despatch Instruction with respect to that Generating Unit, Power Park Module or
- DC Converter until such time as notification is given to NGET pursuant to the Grid Code that such Reactive Despatch Network Restriction is no longer affecting that Generating Unit, Power Park Module or DC Converter.”

Proposed option 3

- Change the Grid Code Clause BC2.8.5
- “Where **NGET** has received notification pursuant to the **Grid Code** that a **Reactive Despatch Network Restriction** is in place to provide 0Mvar at the **Commercial Boundary** with respect to any **Embedded Generating Unit, Embedded Power Park Module** or **DC Converter** at an **Embedded DC Converter Station**, then **NGET** will not issue any **Reactive Despatch Instruction** with respect to that **Generating Unit, Power Park Module** or **DC Converter** until such time as notification is given to **NGET** pursuant to the **Grid Code** that such **Reactive Despatch Network Restriction** is no longer affecting that **Generating Unit, Power Park Module** or **DC Converter**.”

Proposed Option 3 continued

- This will have a consequential change on the CUSC (Appendix 3) whereby payments will not be made to those embedded generators who cannot provide 0Mvar

- $Y = 1$, except that Y shall be 0 in all **Settlement Periods** from and including that in which the **BM Unit** is affected by a **Reactive Despatch Network Restriction** which prevents the ability to provide zero Mvar until (and including) the **Settlement Period** in which notification is given to **The Company** pursuant to the **Grid Code** that such **Reactive Despatch Network Restriction** is no longer affecting that **BM Unit**