

Agenda Item 5: Requirements for Generators – Review of banding thresholds 2

RfG Workgroup Meeting 6

17 December 2014

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Agenda

- Update on data gathering
- Generator Compliance (with example)

Update on data gathering

- **‘Large’ generators (transmission connected) –**
Additional data sources to TEC/Embedded Register sought. NGET Customer Services teams confirm it’s the best view that they can possibly provide – **no further action(?)**
- **Embedded Generators –**
Action with Mike Kay (ENWL); Alan Creighton (NPD); Steve Mockford (UKPN);
 - *Alternative/additional data for distributed generation is being acquired. This will allow further analysis on banding threshold proposals, which should be presented at the next meeting in January*

Generator Compliance – Determination of significance

- Banding analysis to date has focused solely on the profile of generating stations as a single unit - not the configuration of any modules below.
- This is an important distinction due to the way the RfG is drafted:
 - RfG (01/14) defines a **Power Generating Module** as either:
 - a **Synchronous Power Generating Module, or a...**
 - **Power Park Module (PPM)**
 - RfG summarises the technical requirements per generator banding based on Power Generating Module capacity and connection voltage

Generator Compliance – Determination of significance

■ Power Park Module (PPM):

- A unit or ensemble of units generating electricity, which is either:
 - connected to the Network **non-synchronously** or through power electronics
 - And also has a single Connection Point to a transmission, distribution or closed distribution Network

Generator Compliance – Determination of significance

A synchronous Power Generating Module

- An indivisible set of installations which can generate electrical energy; either...
 - A single synchronous unit (or *units* with a common Connection Point) generating power within a directly connected Power Generating Facility
 - An ensemble of synchronous units generating power within a directly connected Power Generating Facility that cannot be operated independently from each other (e. g. units in a combined-cycle gas turbine facility), or
 - a directly connected synchronous storage device (or *devices* with a common Connection Point) operating in electricity generation mode

Generator Compliance –

Determination of significance [An example]

- 140MW (x5 PPMs; x3 BMUs) non-synchronous wind station connects to the system **TODAY**
- Is considered 'Large' in both England & Wales and Scotland, and is bound by the Grid Code, CUSC and BSC
- Is a BM Participant; has a Mandatory Services Agreement and must provide operational parameters to the SO for each of its x3 BMUs
- Regardless of the configuration of the wind park, the response provided is consistent across its units

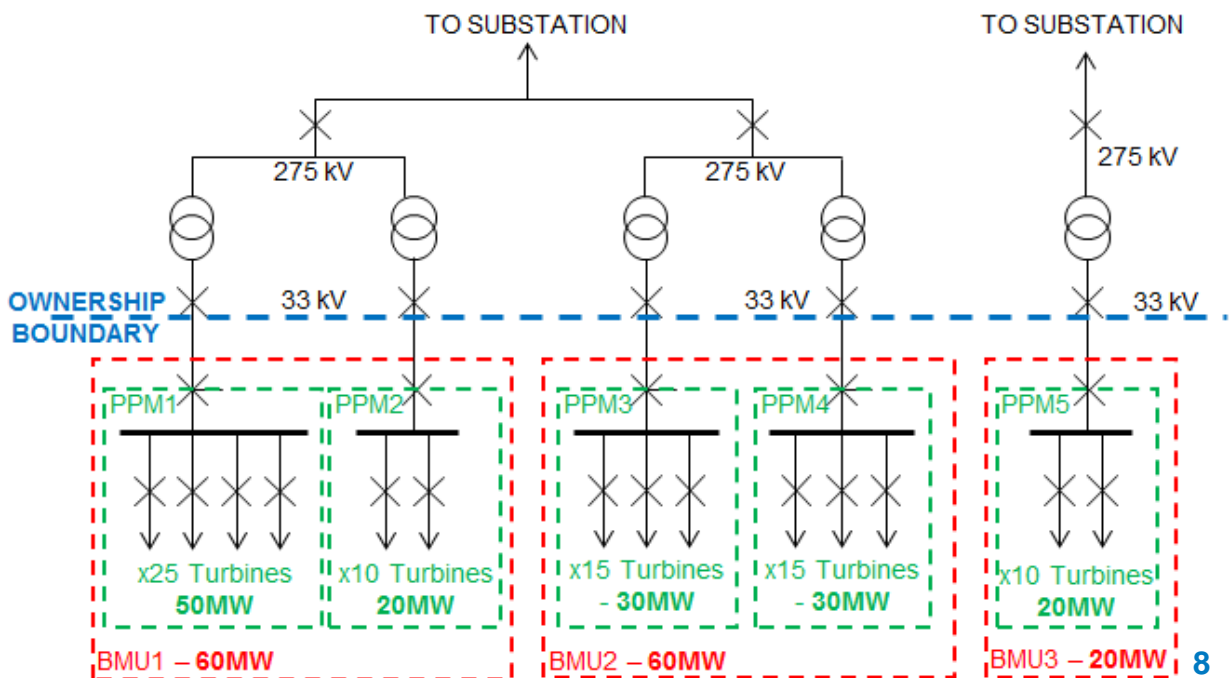
Generator Compliance –

Determination of significance [An example]

- 140MW (x5 PPMs; x3 BMUs) non-synchronous wind station connects to the system **post RfG go-live**
- Is considered 'Large' in both England & Wales and Scotland, and is bound by the Grid Code, CUSC and BSC

■ However...

- PPM 1 = **Band C or D**
- PPMs 3-4 = **Band C**
- PPMs 2,5 = **Band B or C**

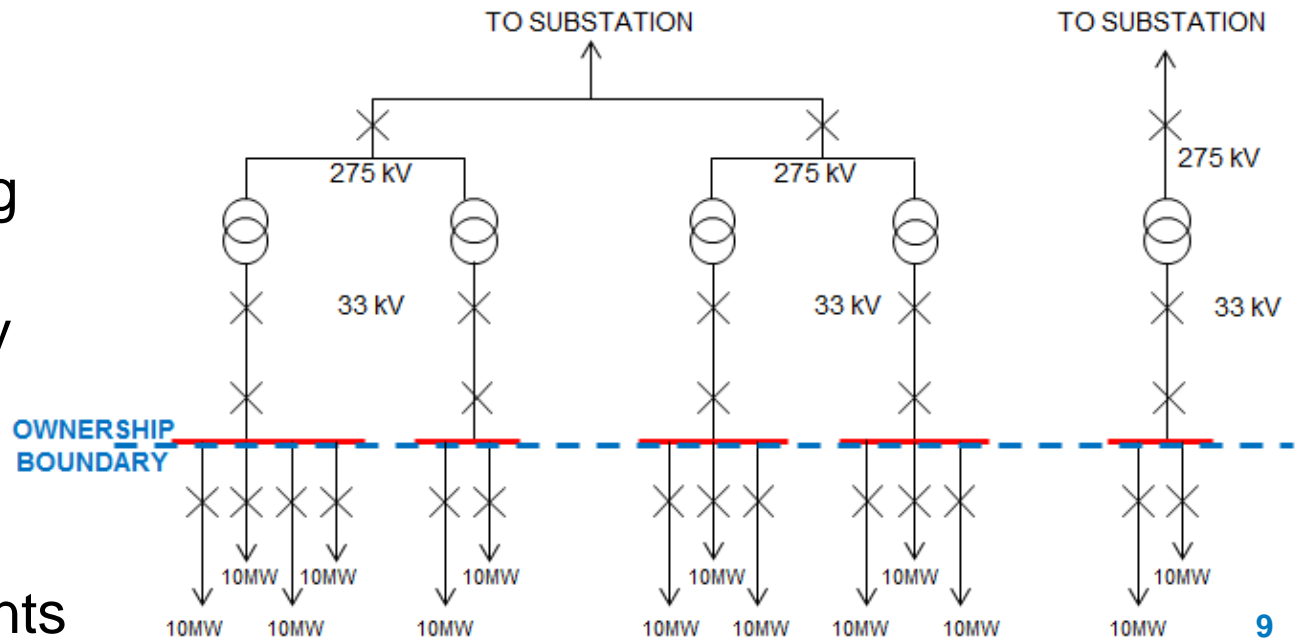


Generator Compliance – nationalgrid Determination of significance [An example]

- 140MW non-synchronous wind station connects in Scotland in 2017
- Is considered 'Large' in both England & Wales and Scotland, and is bound by the Grid Code, CUSC and BSC

- However...

- Each string connects individually = 14 units bound by **Band B** requirements



Generator Compliance – Determination of significance

- Unintended consequence of RfG drafting:
 - PPM granularity used for determining the RfG generator banding (not site level) for non-synchronous
 - Generators who would be bound by Grid Code requirements at site level today could fall into a passive generator services banding instead
 - Heterogeneous capacities of a site's Power Park Modules may lead to multiple RfG band compliance requirements
- Therefore, we believe when it comes to banding *large* should mean *large* (i.e Type D)
- Banding level needs to reflect the justified needs for the SO in managing the system