

## Part 4a

### Synchronous Power Generating Module data: (please complete a separate sheet for each different Synchronous Generating Unit)

Name(s) / identifiers of Generating Unit(s)

Type of Generating Unit (wound rotor, salient pole)

Positive sequence (armature) resistance  
(HV connected generators only)

 per unit

#### Direct axis reactances

Sub-transient ( $X''_d$ ) – unsaturated

 per unit

Sub-transient ( $X''_d$ ) – saturated

 per unit

Transient ( $X'_d$ ) – unsaturated

 per unit

Transient ( $X'_d$ ) – saturated  
(HV connected generators only)

 per unit

Synchronous ( $X_d$ ) – unsaturated

 per unit

Synchronous ( $X_d$ ) – saturated  
(HV connected generators only)

 per unit

#### Time constants (HV connected only):

|   | Open circuit time<br>constant  | Short circuit time<br>constant   |
|---|--|--|
| Direct-axis sub-transient – unsaturated | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s |
| Direct-axis sub-transient – saturated   | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s |
| Direct-axis transient – unsaturated     | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s |
| Direct-axis transient –saturated        | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s | <input style="width: 100px; height: 25px; border: 1px solid orange;" type="text"/> s |

**Generating Unit Voltage Control (to be agreed with the DNO)  
(see Note 10)**

If operating in Power Factor control mode, preferred Power Factor

If operating in voltage control mode, voltage set point  V

If operating in reactive power control mode, reactive power set point  MVA<sub>r</sub>

Generating Unit Performance Chart attached  
If yes, please insert the file name of the attachment here  Yes  No

**HV Connected Type A, Type B, Type C and Type D Power  
Generating Module frequency and excitation (see Note 10)**

Frequency response Droop setting in LFSM-O (All Types, see Note 11)  %

Frequency response Droop setting in LFSM-U (Types C & D only, see Note 11)  %

Governor and prime mover model attached (see Note 12)  
If yes, please insert the file name of the attachment here  Yes  No

Inertia constant (Generating Unit and prime mover) (HV connected generators only)  MWsec/  
MVA

AVR / excitation model attached  
If yes, please insert the file name of the attachment here  Yes  No

**Type C and Type D Power Generating Module additional frequency response  
(see Note 10)**

Frequency response Droop setting in FSM (if applicable)  %

Frequency response mode  FSM  LFSM