ESIG Special Topic Workshop: Grid-forming IBRs: Introduction / Session 1, Denver, Colorado

Update of GB Grid Forming Best Practice Guide

Presented by Dr. Dechao Kong on 07/06/2022

nationalgridESO

Overview:

A GB Grid Forming Best Practice Guide is being produced by NGESO in collaboration with comprehensive external stakeholders in the GB and wider to ensure a workable standard for all parties can be created to facilitate grid forming applications within GB energy markets.

Drivers:

- To provide necessary guidance on existing GC0137 Legal Texts as much as possible
- To capture any good practices in GB and wider as well as comprehensive valuable thoughts, suggestions for future development of GB Grid Forming where appropriate.
- To identify any future Grid Code changes that may be required in order to facilitate grid forming within GB.

Structure of GBGF BPG Subgroups:

To establish a Expert Group (50+ people) with a good mix of Subject-Matter Experts from GB and wider for their contributions into the following four subgroups:

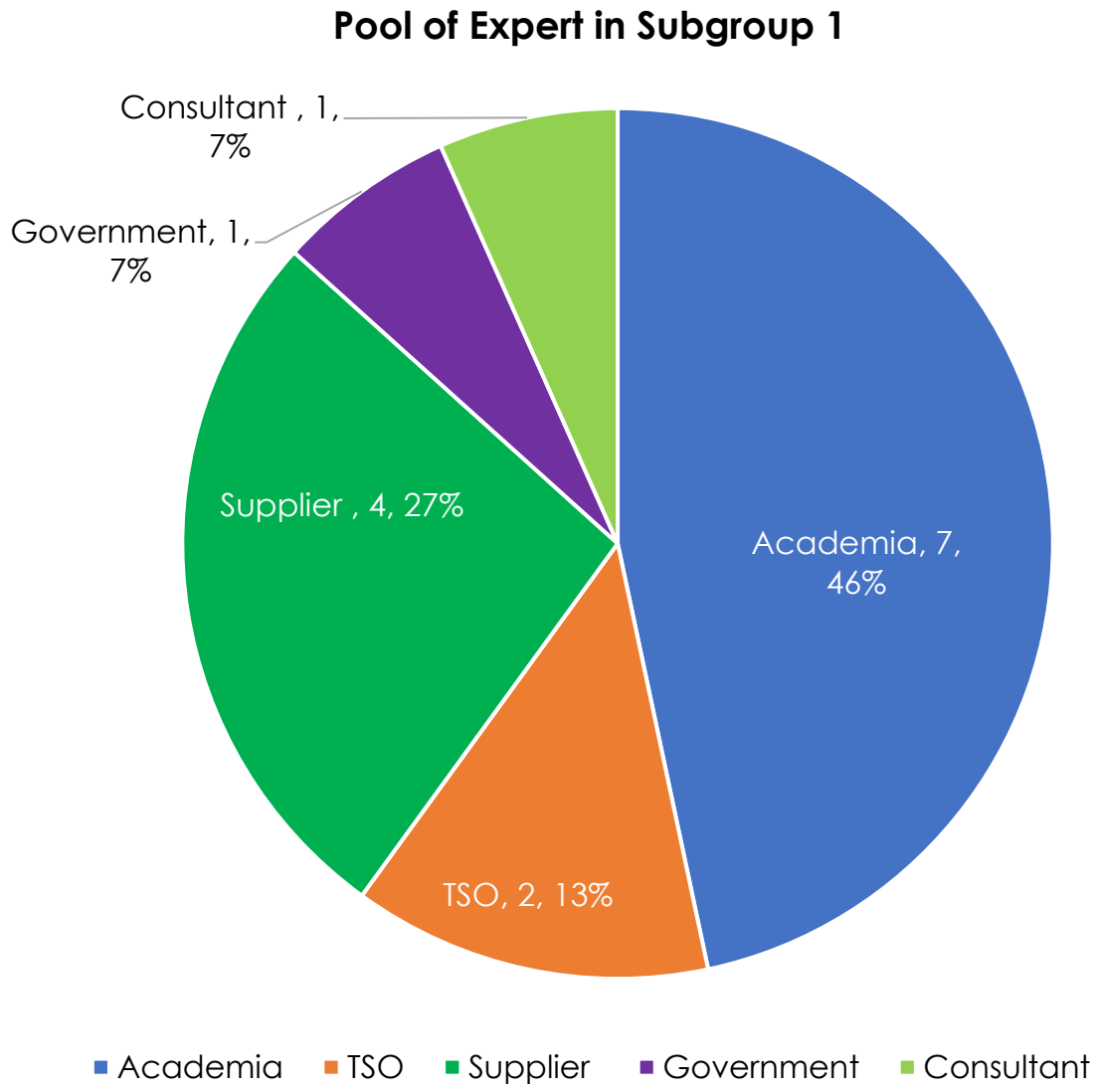
- Subgroup 1: Definition of GB Grid Forming Plant and its functionality
- Subgroup 2: Analysis Methodology
- Subgroup 3: Modelling requirement
- Subgroup 4: Compliance Testing

Subgroup 1 – GB Grid Forming Definition

Key Points of ToR

To provide guidance on definitions of GB Grid Forming Plant (including GBGF-S & GBGF-I), IVS, and their GF capabilities in line with GC0137 Legal Texts.

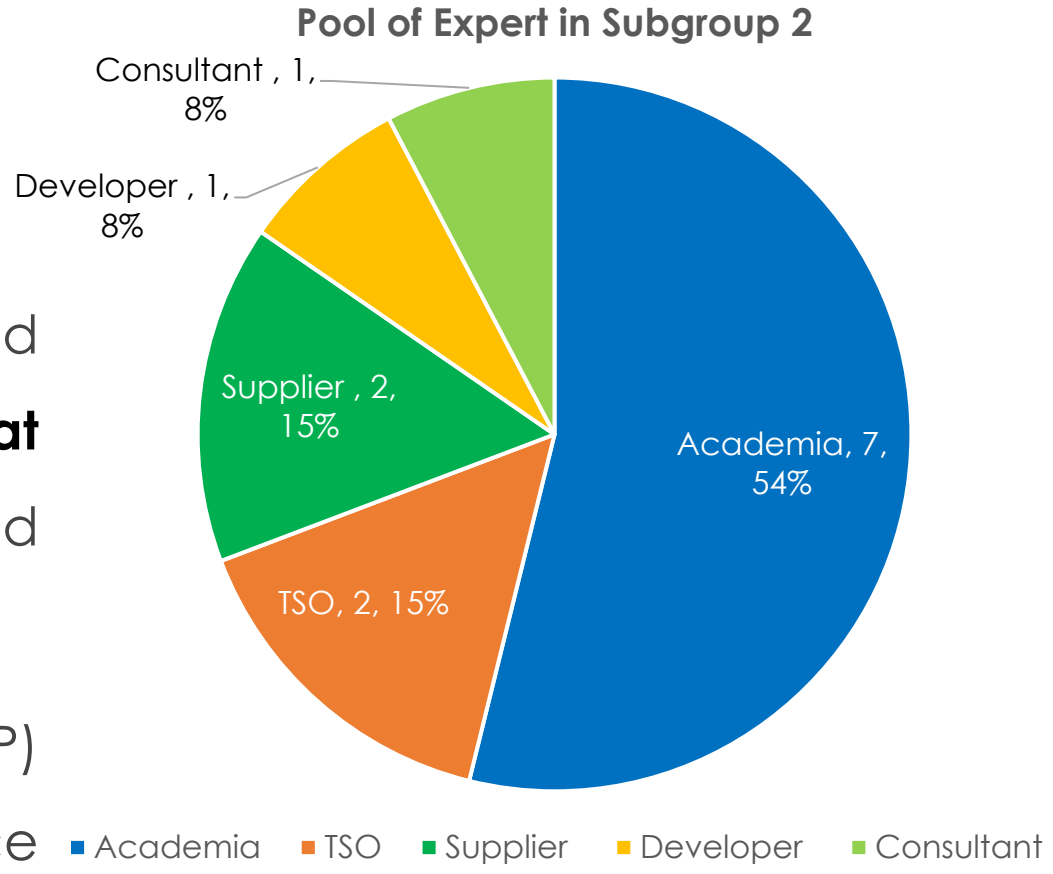
Academia	**7**
TSO	**2**
Supplier	**4**
Government	**1**
Consultant	**1**
Total	**15**



Subgroup 2 – Analysis Methodology

Key Points of ToR

- To provide guidance on **when** time-domain and frequency-domain analysis is required and **what** are the most appropriate time domain and frequency domain methods to be adopted;
- To develop **Network Frequency Perturbation** (NFP) Plot(s) (or equivalents/alternatives e.g. impedance scan).

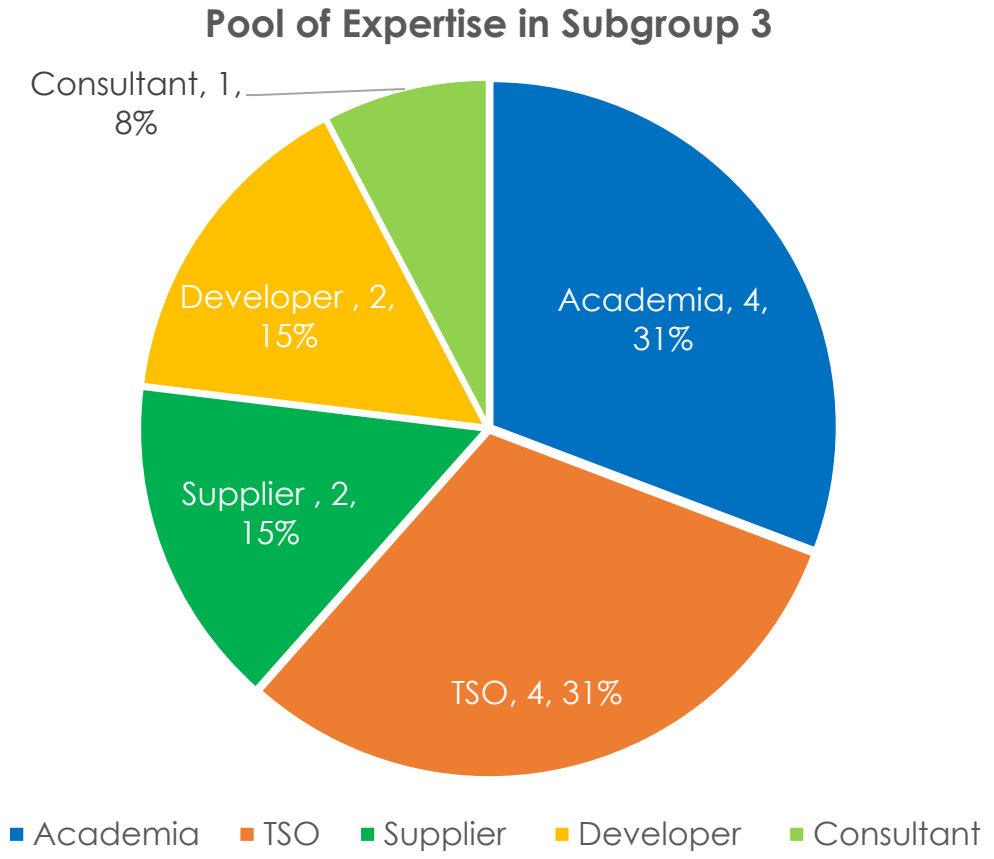


Academia	**7**
TSO	**2**
Supplier	**2**
Developer	**1**
Consultant	**1**
Total	**13**

Subgroup 3 – Modelling Requirement

Key Points of ToR

- To provide further guidance on GC0137 Clauses as relevant to Model Requirement.
- To capture any good practices from Subgroup 3 Contributors (report, testing system if possible and allowed, etc.)
- To identify any unique modelling requirements for GBGF-I plants in comparison with GC0141.



Academia	**4**
TSO	**4**
Supplier	**2**
Developer	**2**
Consultant	**1**
Total	**13**

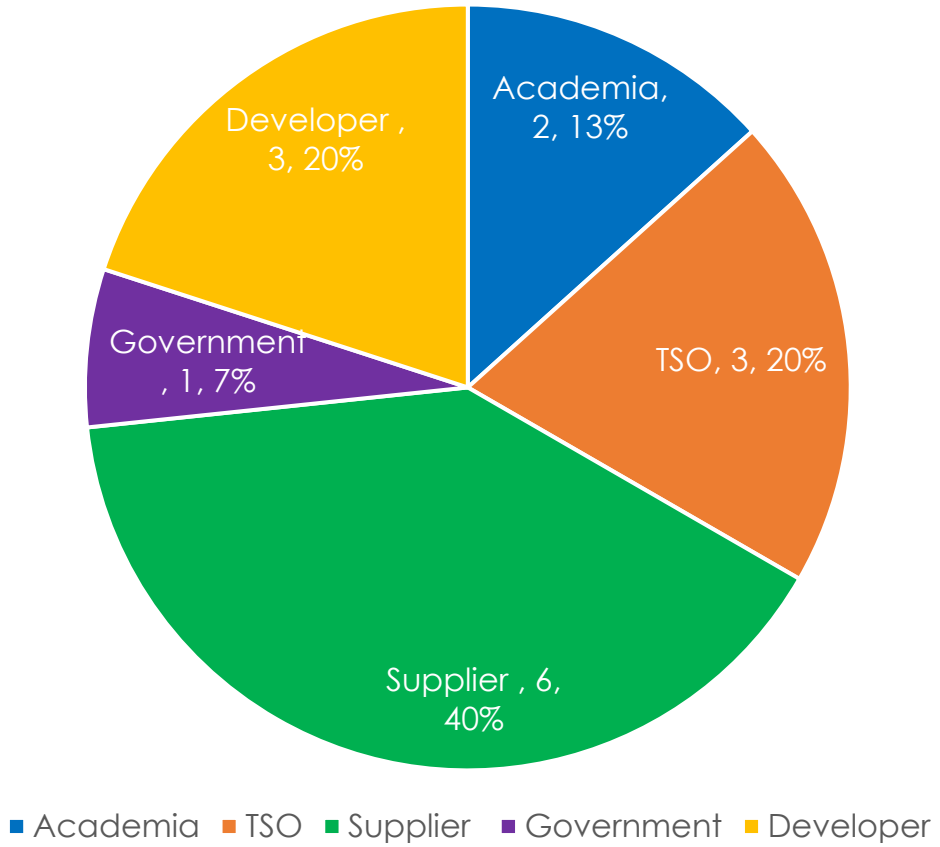
Note: GC0141 "Compliance Processes and Modelling amendments following 9th August Power Disruption"

Subgroup 4 – Compliance Testing

Key Points of ToR

- To provide further guidance on GC0137 Clauses as relevant to Compliance Testing.
- To capture any good practices from Subgroup 4 Contributors (report, testing system if possible and allowed, etc.)
- To identify any unique compliance requirements for GBGF-I plants e.g. Phase Jump.

Pool of Expertise in Subgroup 4



Academia	**2**
TSO	**3**
Supplier	**6**
Developer	**3**
Government	**1**
Total	**15**

Q&A

Thanks for your attention!

Any Question?