Code Administrator Meeting Summary

GC0146: Solutions for frequency control of Power Park Modules

Date: 21 January 2022

Contact Details

Chair: Ruth Roberts, National Grid ESO ruth.roberts@nationalgrideso.com
Proposer: Nicola Barberis Negra, Orsted nibne@orsted.co.uk

Key areas of discussion

The Workgroup discussions are summarised:

Introductions

- Ruth Roberts introduced herself as the new Chair and Banke John-Okwesa as the Technical Secretary. She also introduced Alexander Aristodemou from Legal.

Recap Proposal and RfG Requirements

- The Proposer reiterated that the proposal seeks to add an option for developers to choose to PPM controllers under the same Balancing Mechanism Unit (BMU) with a single controller.
- In the Proposer's view, the EU regulation - network code on requirements for grid connection of generators (RfG) does not prevent modification of the EU Grid Code such that an EU User could control multiple PPMs with single controllers.

Sample Block Diagram

- BA presented sample diagram and visual descriptions of frequency control at PPM and BMU levels. The Workgroup Members commended the diagrams and designs, but the ESO Rep noted that the arrangement of a single controller may not work for all parties.

The Impact on ESO

- KG delivered a presentation on the ESO's main concerns of the proposed modification and highlighted the following:

- The main technical concern of the ESO is the system security issue for example, a User is required to provide automatic control response where there is a split due to a fault. Under the ECC, there is possibility that Power Generating Module (PGM) on either side of the split could provide different automated frequency response such as 'LFSM-O' or 'LFSM-U'.
- There is no clear definition of BMU in the Grid Code rather, it refers to the definition set out in the Balancing Settlement Code (BSC) and the BSC does not have a single definition. The BSC allows variations to the primary BMU in some cases with the agreement of the ESO.
- The Grid Code defines Power Park Unit and Power Park String and Power Pack Module but size and configuration of each are at the User's discretion. Hence a BMU is decided by the User based on their commercial operation.
- Individual plants should be controlled such that where an issue occurs, they do not affect the rest of the system.
- The proposed solution will impact or would potentially be incompatible with other parts of the Grid Code and BSC and may not work due to lack of definition for BMU.
- There might be legal implication with the RfG legislation
- Note that KG's analysis was done on onshore basis.

Review of legal aspects

- TB gave a short presentation on the RfG definition of the PGM and PPM and noted the following in relation to the proposed solution:
- According to Article 15(2)(a) of the RfG, the PGM should be capable of adjusting an active power setpoint in line with instructions given to the power-generating facility owner by the SO or TSO.
- The Proposal does not specify whether the solution applies to onshore or offshore windfarms or both.
- Some phrases/terms used in the modification proposal needs further clarification and the lack of definition of BMU poses a potential legal issue.
- According to the RfG, a TSO must be able to instruct PPMs individually but, a TSO would not have this ability with a single controller. Thus, this modification potentially places a limit on the TSOs ability to take outages, develop and reconfigure the network and secure the system.

Alternative Proposals

- No alternative proposals raised

Next steps

- Discuss Orsted updates
- Discuss ESO updates

The following actions were noted:

Actions Log

Number	Action	Owner	Status
1	Research findings on the possibility of separating single BMU controllers in future.	Kanan Ganakesevan / Terry Baldwin	Open

2	Amend the proposed solution	Nicola Barberis Negra & Sridhar Sahukari	Open
3	Check on governance as to what extend the proposal can be amending and inform Orsted	Ruth Roberts	Closed

Participants

Attendees	Company	Position
Ruth Roberts	Code Administrator National Grid ESO	Chair
Banke John-Okwesa	Code Administrator National Grid ESO	Technical Secretary
Nicola Barberis Negra	Orsted	Proposer & Workgroup Member
Kanan Ganakesevan	National Grid ESO	ESO Rep
Terry Baldwin	National Grid ESO	ESO Rep
Alexander Aristodemou	National Grid ESO	Legal Rep
Borja Abeccia	SGRE	Workgroup Member
Robert Mitchell	EDF Renewables	Workgroup Member
Arno Harding	SSE Renewables PLC	Workgroup Member
Simon Swaitek	Baywra RE	Workgroup Member
Sridhar Swiatek	Orsted	Workgroup Member

For further information, please contact the Code Administrator.