

# GSR029 workshop 2

## Meeting minutes

### Meeting name

Date:	20/06/2022	Location:	Teams
Start:	1:30PM	End:	3:30PM

### Participants

Attendee	Attend/Regrets	Attendee	Attend/Regrets
Rob Wilson	Attend	Bieshoy Awad	Attend
Can Li	Attend	Le Fu	Attend
Alan Creighton	Attend	Garth Graham	Attend
Mike Lee	Attend	David Lyon	Attend
Cornel Brozio	Attend	Ayman Attya	Attend

### Agenda

#	Topics to be discussed
1.	Flexible demand examples
2.	Storage assessment
3.	Storage definitions
4.	Demand security contribution data submission

### Discussion and details

#### Workshop discussion

##### Flexible demand examples

It was discussed that the DNO may not be aware of the response from flexible demand and this lack of information might cause an error when assessing its contribution to group demand and demand security. It was recommended that it would be useful to provide a few scenarios with different composition of flexible demand and operating scheme

as a guidance for assessment. The knowledge gap could potentially be improved if the customers can provide more information on the details of such contracts to enable the DNO to make appropriate assumptions.

### **Storage assessment**

The key changes in this SQSS modification include the introduction of gross demand as group demand and that small and medium power stations and flexible demand can contribute to demand security in alignment with P2/7. Following the implicit treatment of storage as power station in SQSS, the contribution from storage to group demand and demand security will be assessed by DNOs under the current requirement of P2/7. Therefore, it is possible to not include the definition of storage in the proposed changes on legal text while achieving the same results.

However, it is noted that the treatment of storage remains an issue during the implementation of such requirement as it is still a relatively new asset in the network which makes it hard to predict its behaviour and impact on system operation. Additionally, the potential introduction of locational marginal pricing will further complicate the issue and incur more uncertainties.

### **Storage definition**

The definitions of storage in different codes and standards were presented in the meeting. It was suggested that the wording for storage can follow the unified definition in Grid Code and CUSC while still introducing the storage plant as power station. The legal text could be modified as:

“Electricity storage plant

*A power station which converts electrical energy into a form of energy which can be stored, stores that energy, and subsequently reconverts that energy back into electrical energy.”*

### **Alternative option for network assessment obligation**

It was proposed that instead of having the TOs assess how much capacity DNOs should have at GSPs (based on data submitted by DNOs and the factors in EREP 130), it might be more appropriate for DNOs to declare how much capacity they require at each GSP to maintain the level of security required by P2/7. In a DSO world, this might be a sensible option as e.g. more commercial contracts are used to secure demand. This could be done in terms of maximum demand at local and system peak, but also for the required export capacity. TOs would still be responsible for securing that demand (or demand groups) as presently required by chapter 3, based on the DNO requirements. This would avoid external references (to EREP 130), new defined terms, issues around demand flexibility, storage, commercial contracts, etc.

It was raised that there could be potential risks for TO assets and it would be difficult to assess the risks without detailed data. Additionally, tertiary connections should also be considered in the assessment process of a GSP.

### **BESS diversity analysis**

Northern Powergrid has analysed the behaviour of battery energy storage systems (BESS) on their network to assess the coincidence with the associated Supply Points' underlying demand to determine the increase (or reduction) in the maximum demand caused by large BESS sites. The study shows significantly different output patterns of the BESS sites which are mostly dominated by their contracted positions e.g., frequency response services etc.

This makes it difficult to hypothesise the proportion of the BESS installed capacity that needs to be added to the Supply Point peak. For a large enough number of sites, it could be easier to find generic patterns. However, there could be some sites which are dominated by one single large storage unit and its effect on peak demand would still be hard to predict.

It might be beneficial to contractualise some arrangements such as intertrip schemes with the customer to prevent certain behaviour that will cause stress to the system, although the customer can still insist having firm capacity for both import and export. In this scenario, the network might not be planned in the most economic and efficient manner as the capacity catered for storage may not be required all the time, which could also prevent future connections.

For a new transmission connected BESS, it will be designed to have full export and import capacity under conditions which ought reasonably to be expected to arise in the course of a year of operation. The connection planning assumptions are currently being reviewed by the ESO and three onshore TOs.

It was also discussed that the MWh of BESS can differ significantly and the full export would not be sustained for very long for some sites. This also needs to be considered when analysing these sites.

### **Next steps**

The modification proposal will be formally submitted to the July SQSS panel meeting on 28 June. The proposal will incorporate relevant information from the two workshops and the minutes will also be attached as annexes to cover the broader discussions. The scope of the modification needs to be as clear as possible with defined defects.

There could also be a need for impact assessment for the proposed changes to demonstrate the economic influence on network planning.

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