

SQSS Review Panel – Modification Proposal
Review of Generation Scaling Factors and Modelling of Embedded Generation in MITS studies

REF: GSR016

Date Raised: 22 JUL 2013

A Review Panel Paper

Summary

Following proposals from the GSR009 review of the SQSS methodology to determine required transmission capabilities, the SQSS was amended in March 2012. This version of the SQSS, currently in force, specifies two sets of criteria for MITS Security and Economic compliance. A number of areas have been identified that need further addressing to resolve emerging challenges due to the application of the economy criteria of Section 4 of the SQSS as well as the growing levels of embedded generation on the GB system.

- A. Impact of Small and Medium embedded generation on Planning criteria:
- Embedded generation which is not classified as 'large' power stations is not explicitly modelled in MITS studies of SQSS Chapter 4. There is also a requirement to provide clarity on how the impact of Small and Medium embedded generation should be taken into account for Chapter 2 studies. In both Chapter 2 and Chapter 4, the effect of Small and Medium embedded generation is presently netted off gross demand. It is recognised that this approach may no longer be suitable as the penetration of embedded generation increases, potentially resulting in significant under estimation in the determination of the required transmission capability in Chapter 2 and Chapter 4 studies.
- B. Application of economy criteria as per GSR009 (SQSS Chapter 4)
- The use of Investment Planning Assumptions (STCP 16-1) results in significantly different network reinforcement requirements from those determined from use of Construction Planning Assumptions (STCP 18-1), especially for future years with significant wind penetration.

Users Impacted

Transmission Owners and System Operator
(High)

Description & Background

- The Contacted Generation and Investment Generation Backgrounds are mainly used for assessment of connection applications (STCP 18-1) and investment studies (STCP 16-1) both of which use criteria specified in the MITS (Chapter 4) of the SQSS.
 - The planning assumptions for variably scaled generation need to be reviewed in order to avoid inconsistent reinforcement solutions under above generation backgrounds
 - The application of economy method of Section 4 also needs to be reviewed to ensure that feasible generation dispatches can be achieved

for the potential generation mixes in the planning scenarios.

- The Small and Medium Power Stations are not explicitly modelled while performing boundary transfer calculations. The net demand is supplied to transmission companies as part of week 24 Data submission from DNOs. Due to high level of embedded generation growth, the planning assumptions with regard to considering small and medium power stations need to be more explicitly defined within SQSS.

Proposed Solution

A The purpose of the group is to:

- a) determine more realistic dispatch levels of generation for setting up a network model to undertake the Chapter 2 and Chapter 4 capability studies as specified in the SQSS with appropriate treatment of Small and Medium embedded generation.
- b) Review the application of economy criteria of GSR009, and the extent of challenge in terms of planning with regard to Investment Planning Assumptions used (STCP 16-1), and (STCP 18-1) and make necessary recommendations to STC Panel.

For the avoidance of doubt, the working group is not reviewing the scaling factors used as per GSR009.

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Assessment against SQSS Objectives

(i) facilitate the planning, development and maintenance of an efficient, coordinated and economical system of electricity transmission, and the operation of that system in an efficient, economic and coordinated manner;

The proposals will determine more realistic dispatch levels of generation for setting up a network model to undertake the MITS capability studies as specified in Chapter 4 of the SQSS.

(ii) ensure an appropriate level of security and quality of supply and safe operation of the National Electricity Transmission System;

(iii) facilitate effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the distribution of electricity; and

The efficient determination of MITS requirements facilitates competition in the generation market by mainly reducing congestion cost

(iv) facilitate electricity Transmission Licensees to comply with their obligations under EU law.

N/A

Impact & Assessment

Impact on the SQSS

SQSS Section 2& 4 – with regard to inclusion of Embedded Generation
Application of MITS Economy Criteria

Impact on the National Electricity Transmission System (NETS)

Planning Background for Generation Connection, and Planning MITS

Impact on Greenhouse Gas Emissions

N/A

Impact on relevant computer systems

N/A

Impact on core industry documents

STC

Impact on other industry documents

N/A

Supporting Documentation

Have you attached any supporting documentation [NO]

If Yes, please provide the title of the attachment:

Recommendation

The SQSS Review Panel is invited to:

Progress this issue to a Workgroup for further analysis and discussion

Document Guidance

This document is used to raise a Modification Proposal at the SQSS Review Panel. Incomplete forms will not be processed and the Proposer may be asked to clarify any information that is not clear.

Guidance has been provided in square brackets within the document but please contact the SQSS Review Panel Secretary James Cooper (james.cooper3@nationalgrid.com) if you have any queries.