

GC0106 SOGL
WACM2

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Background

- Original Proposal – adopt current Grid Code approach
- WACM2 – Parity of treatment for Generators in GB - All SGU's of 10MW or greater (ie Type C Power Generating Modules and above) to be included in Grid Code and Distribution Code provisions
- This presentation will focus on WACM2

Principle elements requiring Grid Code nationalgrid / D Code Amendments

- There are several ways in which this could be addressed in the codes
 - Investigate the possibility of changing the concept of Large, Medium and Small Power Stations – overlap with GC0117
 - Add specific updates to the Grid Code to address these deficiencies though it is acknowledged that any solution would not necessarily be that efficient on the basis of the parallel work under GC0117
 - In adopting a solution for this then it is deemed that something similar to that adopted for Licence Exempt Embedded Medium Power Stations (LEEMPS) would be one method of facilitating the change whilst recognising that it is probably not the most efficient
 - Alternatively the thresholds in Scotland could be aligned to those in England and Wales – (ie reduce the volume of data provision required) – More complex due to the original desire of the Scottish TO's to have regional thresholds, the difference in topology between Scotland and England and Wales and the growth of Smaller Generating Units and System Security issues
- Real Time Data (Operational metering – Grid Code CC.6.4.4/CC.6.5.6)
- Scheduled Data (Grid Code - OC2 / BC1 and BC2)
- Structural Data (Grid Code Planning Code)

Options

- If GC0106 WACM2 is discounted an alternative and probably more efficient solution would be through GC0117 as GC0106 only relates to data not some of the wider issues such as the connection process. GC0117 could address both issues.
- The concept of Medium Power Stations are removed and the same thresholds are adopted as in the North of Scotland for the whole of GB
 - A large Power Station would be any Power Station of 10MW or above comprising of any Type A, B, C or D Power Generating Module, and would have a CUSC contract with all other arrangements as applicable to Large Power Stations
 - A Small Power Station would be less than 10MW
 - Medium Power Stations (applicable to England and Wales only) would be removed) and LEEMPS no longer be required
- Alternatively the thresholds in England and Wales are applied to Scotland but this does present a number of issues for the Scottish TO's, raises concerns over system security issues and does not reflect the trend of Small Generating Units.
- This could be complex from a retrospective perspective but going forward it does make it much simpler for new entrants and ensures equal treatment across the whole of GB.

Real Time Data (Operational Metering)

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- Grid Code ECC.6.4.4 / ECC.6.5.6 (and CC.6.4.4 and CC.6.5.6)
 - An approach similar to the LEEMPS approach could be adopted where a new paragraph could be added to CC.6.4.4 and ECC.6.4.4
 - Reference would need to be made to Generators in respect of Type C and Type D Power Generating Modules which form part of a Small Power Station but which do not have a CUSC contract. This would ensure NGET receive Type C and Type D real time data which are part of an Embedded Small Power Station. Anything which is directly connected or with a CUSC contract or a LEEMPS would be already available
 - Under this case the Generator would provide the operational metering signals (eg Active Power, Reactive Power, Breaker Status etc) to the DNO which the DNO then pass to NGET via the data link.
 - The data link would effectively be an ICCP link or equivalent and similar to the approach adopted between NGET and the Scottish Transmission Licensees as detailed in STCP 04-2 (Real Time Datalink Management)
 - It would increase costs for National Grid, DNO's and Generators to provide this data particularly if refresh rates greater than 10 minutes are required. Alternatively if the England and Wales thresholds were adopted in Scotland it could reduce costs but does present system security issues
 - Skeleton draft legal text prepared

The RfG Landscape against Regional Differences

Transmission Area	Small	Medium	Large
England and Wales	Less than 50MW (forming any component of a Type A, B or C Power Generating Module)	50 – 100MW (forming any component of a Type A, B, C or D Power Generating Module)	100MW plus (forming any component of a Type A, B, C or D Power Generating Module)
SPT	Less than 30MW (forming any component of a Type A, B or C Power Generating Module)	N/A	30MW plus (forming any component of a Type A, B, C or D Power Generating Module)
SHET	Less than 10MW (forming any component of a Type A or B Power Generating Module)	N/A	10MW plus plus (forming any component of a Type A, B, C or D Power Generating Module)
Offshore	Less than 10MW (forming any component of a Type A or B Power Generating Module)	N/A	10MW plus plus (forming any component of a Type A, B, C or D Power Generating Module)

A Possible Option

Transmission Area	Small	Large
GB	Less than 10MW (forming any component of a Type A, B or D Power Generating Module)	10MW plus (forming any component of a Type A, B, C or D Power Generating Module)

Treatment and References

Power Stn	Real Time		Scheduled		Structural	
	Existing	New	Existing	New	Existing	New
E&W<10MW						
SSE<10MW						
SHETL<10MW						
10MW<E&W<30MW						
10MW<SSE<30MW						
10MW<SHETL<30MW						
30MW<E&W<50MW						
30MW<SSE<50MW						
30MW<SHETL<50MW						
50MW<E&W<100MW						
50MW<SSE<100MW						
50MW<SHETL<100MW						

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- Data submitted by Generators to indicate their scheduled output, running regime and outage data
 - Principle sections of the Grid Code affected Operating Code 2 (OC2) and Balancing Code 1 and 2 (BC1/2)
 - BC1 and BC2 are applicable to BM Parties and Large Power Stations under BELLA Agreements who are obliged to meet the requirements of BC1 and BC2
 - Retrospective application of these obligations (particularly BC1 and BC2) could have quite significant implications and costs for Smaller players – for new Generators this would be more limited where the obligations are known prior to connection
 - If the England and Wales values were however applied in Scotland costs would be reduced
 - OC2 will require careful consideration in respect of implementation and drafting

- If Scheduled data was introduced to 10MW plus plant then the DNO would have to place obligations on the Embedded Generator to meet the applicable and amended requirements of OC2 and BC1/BC2.
- BC1 and BC2 becomes more of a challenge as it introduces additional requirements for the Generator in having to meet requirements under the CC's and ECC's in respect of electronic data communication facilities etc
- OC2 is easier from an obligation perspective but potentially quite complex to draft and implement
- This approach – particularly the interaction with BC1 and BC2 has quite far reaching implications and probably best dealt with under GC0117. There could be TERRE implications though it is understood that TERRE is not mandatory for Generation of this size
- It would give more control and flexibility to the System Operator but is a complex method of achieving it when GC0117 may be a more eloquent solution
- Costs may be reduced if the England and Wales thresholds were applied in Scotland but it does present System security issues
- No draft legal text prepared – discussion required with Workgroup

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- Structural data contains basic parameters associated with the Generators plant.
 - This again could be achieved by changes to the Planning Code(PC3.3) and related clauses which would specifically apply to Generators in respect of Embedded Small Power Stations comprising Type C and Type D Power Generating Modules without a CUSC Contract.
 - This concept is not believed to be too challenging but again requires further thought to ensure there is no risk of any unintended consequences

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- **Real Time Data**
 - ICCP Links for each DNO (approx £250 – 300k per DNO but requires confirmation)
 - Retrospective Generator Data Provision (variable dependent upon facilities)
 - Database updates
 - Additional costs for NGET and DNO's for receiving and processing
 - **Scheduled Data**
 - OC 2 Updates – Minor but ongoing cost to DNO's and Generators to provide data
 - BC1 and BC2 – Far more wide reaching particularly for existing Generators who currently fall outside the BM
 - Requirements for additional data communication facilities
 - Additional costs for NGET receiving and processing
 - **Structural Data**
 - Minor Grid Code / D Code change but still an administrative cost
 - Ongoing data provision cost
 - In view of the original proposal being broadly cost neutral this does seem a complex option if SOGL is sufficiently flexible that such data does not need to be provided
 - Equally if the England and Wales thresholds are adopted in Scotland costs might reduce but it does raise System Security issues

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- If the Scottish Thresholds are adopted in England and Wales the implications of WACM2 will result in requirements very similar to that of current BELLA agreements in Scotland
 - It would probably be more efficient to consider these changes under GC0117 rather than a separate modification under GC0106 WACM2
 - That said it could be made to work but could be expensive if the Scottish thresholds were applied in England and Wales. Conversely costs may fall if the England and Wales thresholds were applied in Scotland.
 - National Grid does not support this alternative seeking rather to adopt the original proposal and address the Large, Medium and Small issue via GC0117
 - National Grid is also concerned about the timescales for implementation of this work
 - In view of the original proposal being similar to the current GB drafting, this does seem a complex option if SOGL is sufficiently flexible that such data does not need to be provided
 - National Grid welcomes workgroups views on these slides and ways forward