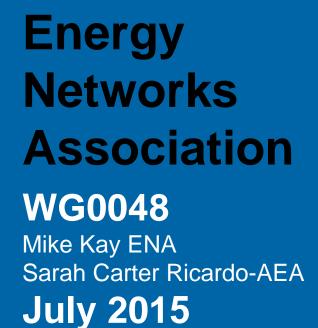
The Voice of the Networks







Update in respect of drafting proposals for the incorporation of the EU Network Code RfG into the GB Distribution Documents

Recap



- Presentations of proposals for drafting structure in March (WG0048) and April (JESG)
- Draft of new document G98 to replace G83 for smallest generation circulated in March 2015.
- Implementation Guidance covering note and document May GC0048
- June 2015 we noted a large amount of the GB content is detailed within European standards which could be used to remove volume from GB documentation

BSEN 50438 Requirements for micro-generating plants to be connected in parallel with public low voltage distribution networks



| | BSEN 50438 comparison with G98 draft |
|--|---|
| Same | Over-current protection, Earthing, Interface protection (GB Annex), Connection and starting to generate electrical power (GB Annex), Response to under-frequencies |
| Generally similar - some missing GB requirements | Power Quality (missing GB req for group testing), Labelling (missing GB req for up to date information display), Maintenance and routine testing (missing user instruction availability), |
| Different | Continuous operating range (Voltage, frequency, over frequency), Reactive power capability, Short circuit contribution, loss of mains Commissioning |
| In BSEN and new to GB | Reactive power control modes, Synchronising (automatic), Safety, Information plate |
| Missing in BSEN | Frequency drift and step change stability test, Active power output, logic interface |

BSEN 50438 Requirements for micro-generating plants to be connected in parallel with public low voltage distribution networks



| | BSEN 50438 Annexes comparison with G98 draft |
|-------------------------|--|
| Same | Annex A (informative) National settings and requirements (will need updating in relation to RfG) Annex C (informative) Example notification sheets Some of Annex D (informative) Compliance type testing Annex F (informative) Commissioning |
| Different | Annex B (informative) Loss of Mains and overall system security Annex E (informative) Example test results sheet |
| New and required by RfG | Some of Annex D (informative) Compliance type testing - Active power feed-in at under-frequency |
| New | Some of Annex D (informative) Compliance type testing - Controllable reactive power; Connection and starting to generate electrical power; Voltage control by active power; Power response to over-frequency |

TS 50549-1&2 Requirements for the connection of generating plant to a distribution system



| | TS 50549 comparison with G98 draft |
|--|--|
| Same | Normal operating range, active response to frequency (more content in TS), Connection and starting to generate electrical power |
| Generally similar - some missing GB requirements | EMC and power quality (GB require group testing) |
| Different | Connection scheme, Switchgear, Immunity to disturbances, DC injection, Interface protection (although GB fits within ranges specified) |
| In TS and new to GB | LVRT, HVRT, Power response to voltage variations, some specifics of interface protection |

TS 50549-1&2 Requirements for the connection of generating plant to a distribution system



| | TS 50549 Annexes comparison with G98 draft |
|--|--|
| Same | (informative) Interconnection requirements (part) |
| Generally similar - some missing GB requirements | |
| Different | (informative) Interconnection requirements (part) (informative) Loss of Mains and overall power system security (informative) Examples of protection strategies (mainly islanding) |
| New and required by RfG | (informative) Frequency stabilising services (part) |
| In TS and new to GB | (informative) Remote information exchange (informative) Frequency stabilising services (part) |

What does this mean for the documents?



- Some text from G98 draft documents can be removed
 - e.g. G83 5.2 Installation Wiring and Isolation is covered by BSEN50438 4.1
 Electrical installation
- Some text will be replaced to reference BSEN50438 with specific GB parameters
 - e.g. Interface protection and control: The Micro-generator shall comply with the GB specific interface protection settings set out in EN50438 however the interface protection settings shall not be field adjustable
- Some text will be replaced to reference BSEN50438 with specific GB parameters
 - e.g. Limited Frequency Sensitive Mode: With regard to the limited frequency sensitive mode overfrequency (LFSM-O), the Micro-generator shall be capable of activating the provision of active power frequency response according to EN50438. The GB specific standard frequency threshold shall be [50.4 Hz]; the droop setting shall be [10 %]
- Type testing Annex in BSEN50438 can be used with some additional clarifications and requirements

Drafting Considerations



- This is an opportunity to align more closely with Europe
- Using BSEN 50438 and TS 50549-1 & 2 will make the documents less immediately accessible and user friendly
- However the DG Connection Guides (a licence requirement) are well established and provide the information required by a User connecting small generation
- The RfG, Dcode, G83, G59 are applicable to manufactures and installers who can access technical documentation
- The DG Guides can be revised to ensure Installer and User requirements are adequately covered

Summary



- Drafting to incorporate BSEN 50438 and TS 50549-1 & 2 as applicable for smaller generators
- Still need to consider larger generators in conjunction with NGET once banding agreed
- Re drafted G98-1 to be available for August WG meeting
- Option as outlined by Martha (on behalf of Garth) in JESG in respect of access to documents – way in logic tree – document created of relevant clauses