**NOTES**

**ENA Electricity Networks and Futures Group**

**DER Technical Forum**

01 OCTOBER 2019, 1030 start

**Attendees in Person:**

|  |  |  |
| --- | --- | --- |
| **Name** | **Initial** | **Company** |
| Andy Hood | AH | WPD |
| David Hill | DH | NIEN |
| Anuj Chhettri | AC | Northern Powergrid |
| Mike Kay | MK | ENA |
| Joseph Nolan | JN | GTC |
| Sue Pilcher | SP | SPEN |
| Vincent Hay | VH | ENA |
| Ian Wassman | IW | IPU |
| Chris Marsland | CM | EuroSite Power |
| Alan Guiver | AG | Agren |
| Graham Bone | GB | Infinis Energy |
| Nick Gall | NG | Solar Trade Association |
| Sarah Carter | SC | Ricardo |
| Paul Johnson | PJ | Infinis |
| Richard Harrison | RH | Clarke Energy |
| Colin Fletcher | CF | Clarke Energy |
| Scott Briance | SB | Man Rollo |

**Attendees by teleconference:**

|  |  |  |
| --- | --- | --- |
| **Name** | **Initial** | **Company** |
| Tony Mason | TMn | Siemens |
| Freddy Alcazar | FA | Jenbacher |
| Claire Enstone | CE | Eco2Solar |
| Steve Somerville | SS | SPE Electrical Ltd |
| Sean Whittaker | SW | Moixa |

**Apologies:**

| **Name** | **Initial** | **Company** |
| --- | --- | --- |
| Dick Allen | DA | BHA |
| Konstantinos Pierros | KP | Enecon |
| Hui Heng | HH | SSEN |
| Peter Twomey | PT | Electricity North West |
| Tim Moore | TMr | UKPN |
| Carwyn Grange | CG | Conrad Energy |
| Martin Davis | MD | Viridor |
| Luis Mayor | LM | PSE2 Consulting |
| Paul Carpenter | PC | Solis |
| John Ruddock | JR | Deepsea |

**ACTIONS LIST**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Detail** | **Leader** | **Date** | **Complete** |
| 1 | Publish previous minutes etc | VH | 07/10 |  |
| 2 | Re-issue updated issues log | MK | 07/10 |  |
| 2.1 | Follow up new issue 87 | MK | 01/11 |  |
| 3.1 | Issue 40 – FRT studies – minimum fault level agreement for type testing still required. | DNOs | 01/11 |  |
| 3.2 | Issue 61 and 79 – form review | VH/SC/MK | Q1 2020 |  |
| 3.3 | Issue 76 and 77 - arrange meeting with NGESO, WPD and Siemens and outline intent in Issues Log. | MK  MK | 01/11  04/10 |  |
| 3.4 | Engage with EN50549 part 10 drafting re testing of families | VH | 01/11 |  |
| 3.5 | Issue 84 - close when confirmation received | MK | 01/11 |  |
| 4 | Discuss zero export connection examples with DNOs to obtain clarity | NG/AH/AC | 01/11 |  |
| 5 | Draft clause for Connection Agreement for second hand gas engines temporary connection whilst demonstrating compliance | MK | 01/11 |  |
| 7 | Discuss PGMD evidence requirements with DNOs | RH/CF/MK | 01/11 |  |
| 7 | MK to review G99 re simulation requirements | MK | 01/11 |  |
| 7 | Progress G99 Amendment 6 | VA/MK | 31/01/20 |  |
| 8 | Update group on V2G once DNO position clear | VH | 01/11 |  |
| 9 | Next meeting - to be arranged | VH | 07/10 |  |

**NOTES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Focus** | **Leader** | **Date** |
| **1.** | **Previous minutes and TOR**  The previous minutes were approved. It was noted that the approved minutes and accompanying issue log at that date and slides for the meeting would be published on the ENA Website. | VH | 07/10/19 |
| **2.** | **Review of recent Tech Forum Queries**  Reference should be made to the DER Technical Forum Record of Issues log and the slide pack used during the meeting – “191001 ENA DER Tech Forum 190930.pptx”.  Mike to update the Issues log with the output of the meeting – as noted below. | MK | 07/10/19 |
| 2.1 | Compliance status of a PGM where it is necessary to include a manufacturer’s gateway to effect the logic port requirement, and where that gateway can be used to set the GB G99 parameters – being discussed with specific manufacturer | MK | 01/11/19 |
| **3** | **Review of previous Tech Forum Queries** |  |  |
| **3.1** | Iss 40 – noted that this is still under discussion. DNOs now believe that a generic simulation for FRT will need an assumed minimum fault level. They are considering the implications of this. It was noted that German standards assume a minimum fault level of 50MVA, or 10x the apparent power of the module if that is >50MVA. Again this solution might work well in GB for the majority of installations. DNOs are still considering this. | DNOs | 01/11/19 |
| **3.2** | Iss 61 and 79 – the intention to review the G99 compliance forms in light of experience was noted | VH/MK SRC | Q1 2020 |
| **3.3** | Iss 76 and 77 – meeting with Siemens, DNO (WPD) and NGESO planned in respect of the timing of measurements and accuracy of reactive power.  MK to update the Issue Log with more detail of proposals. | MK  MK | 01/11/9  04/10/19 |
| **3.4** | Iss 81 – the issues of families of units/modules was discussed. There are various approaches used in Europe with the German technical guidelines considering synchronous generators family rule of 1/√10 of apparent power to √10 of apparent power and other PGUs family rule is 1/√10 of apparent power to 2. The manufacturer or the certification body has to technically justify why the results are transferable. Spain applies the family rule to generating units that are considered similar if some specific conditions are met and the nominal power range is +/- 25% of the similar tested prototype.  Italy (CEI 0-16) considers the family criteria when similar components are used and larger and smaller units have gone through the complete tests.  The ENA will engage with the EN 50549 WG to understand how part 10, testing will address the family issue. In the meantime, the DNOs would be open to receiving justification of type testing along the German family rule. | VH /DNOs | 01/11 |
| **3.5** | Iss 84 awaiting confirmation that can be closed | MK | 01/11/19 |
| **3.6** | Iss 86 – covered in consultation |  |  |
| **4** | **Solar PV** |  |  |
|  | NG presented slides detailing apparent inconsistencies in the treatment of solar PV applications (10 – 100 kW) with export limiting G100 devices. Examples of 3 schemes (2 DNOs) which became unviable economically were cited.  The meeting agreed that apart from circuit capacity voltage rise and fault level could account for the refusal of the application, however this was not clear from the DNO responses.  Reactors and Is limiters were discussed as possible fault current management devices and it was noted that Is limiters must pass risk assessments / safety cases before they can be used where they are controlling fault level on a DNO network. Currently there is an ENA WG looking at Fault Level Management in the HV System.  NG will discuss the specific examples with the relevant DNO DER forum rep with a view to obtaining clarity around the connection of solar PV under zero export conditions and/or with an export limiting device. | NG/AH/AC | 01/11/19 |
| **5** | **Gas Engine issues**  AG provided an update in respect of the Renewable Energy Association, landfill gas working group that is being set up to obtain G99 compliance for second hand gas engines. They intend to undertake testing, develop models and undertake studies. The will commence on the Caterpillar 35/20 engine.  Meeting agreed that it would be helpful for the DNOs to agree a clause to include in the Connection Agreement covering the connection whilst working towards a FON by a certain date after which the PGM would be disconnected if compliance had not been demonstrated. | MK | 1/11/19 |
| **6** | **ENA Database and Compliance**  VH gave an update on the actions being taken by DNOs to identify possible issues of compliance in the information lodged in the database by manufacturers.  VH updated the Forum re the ENA interaction with organisations investigating the provision of Equipment Certificates. |  |  |
| **7** | **Gas engine compliance overview**  FA provided an overview of Jenbacher’s recent experience of obtaining Type B compliance. This has resulted in some suggestions for additions and clarifications to G99 in respect of testing for frequency and voltage operating ranges. It was agreed that the simulations for FRT are site specific using the correct minimum fault level, although the possibility of agreeing a minimum value was discussed – see 3.1.  Discussion was held around the need to model large parts of an existing site for embedded PGMs and it was agreed a pragmatic approach was necessary. MK said that he had not expected it would be generally necessary to model the site, apart from the impedance between the PGM terminals and the connection point - and could use agreed and assumed impedances between the PGM and the connection point if data was not readily available. It was noted that any existing site generation and the system not directly between the PGM and the connection point could be ignored in the studies as a worst case scenario.  DNOs agreed to review the drafting of this requirement in G99 to see if it was inadvertently suggesting more complex modelling than was envisaged by the DNOs.  Concern was expressed about the acceptance of PGMD supporting evidence – recent experience of Clarke Energy where one DNO required more compliance evidence than another DNO. RH/CF to broach this with the individual DNOs and to suggest a discussion with the ENA to see if a common view and guidance as to what is acceptable going forward. | MK  RH/CF/MK | 01/11  01/11 |
| **7** | **G99 updates**  GC0111 (Fast Fault Current Injection) modification sent to Ofgem on 20/06. Waiting Ofgem approval.  G99 amendment 6 currently undergoing public consultation. Expected to be ready for Ofgem late November, and issued early 2020 – although this does depend on the depth of comments that are received (closing date 04/10). | MK/VH | 31/01/20 |
| **8** | **AOB**  V2G connection is being discussed by the DNOs and will be shared with the group once a position has been established. | VH | 01/11 |
| **9** | **Next meetings:**  VH to create a doodle poll for dates in mid-November.  Likely venue: 4 More London Riverside, London, SE1 2AU | VH | 04/10 |