

## NOTES

### ENA Electricity Networks and Futures Group DER TECHNICAL FORUM

21 MAY 2019, 1030 START

#### Attendees in Person:

Name	Initial	Company
Peter Twomey	PT	Electricity North West
Tim Moore	TM	UKPN
Andy Hood	AH	WPD
Anuj Chhetri	AC	Northern Powergrid
Sarah Carter	SC	Ricardo
Mike Kay	MK	ENA
Sue Pilcher	SP	SPEN
John Ruddock	JR	Deepsea
Vincent Hay	VH	ENA
Ian Wassman	IW	IPU
Tony Mason	TM	Siemens
Hui Heng	HH	SSEN
Luis Mayor	LM	PSE2 Consulting
Lee Chadwick	LC	E2 Solar
Chris Willits	CW	E2 Solar
Luis Mayor	LM	PSE2 Consulting

#### Attendees by teleconference:

Name	Initial	Company
Konstantinos Pierros	KP	Enercon
Dick Allen	DA	BHA

#### Apologies:

Name	Initial	Company
Adam Tinkham	AT	Bosch
Rostand Siewe	RS	Nordex
Alan Guiver	AG	Independent
Tripti Singh	TS	Moixa
Nigel Smith	NS	Sustainable Control Systems
Jason Kirrage	JK	Solar Edge
Simon Hamlyn	SH	BHA

Name	Initial	Company
Steve Mockford	SM	GTC
David Hill	DH	NIE
Peter Rees	PR	Siemens
Nick Gudgen	NG	HV Technical Services
Joseph Nolan	JN	GTC
Chris Thomas	CT	Energy Contour
Freddy Alcazar	FA	Jenbacher
Chris Marsland	CM	

### ACTIONS LIST

No.	Detail	Leader	Date	Complete
1	Publish previous minutes etc	VH	03/07/19	
2	Update issues log	MK	03/07/19	✓
2.1	Add clarification wrt type testing of interface protection to G99 A forms	MK/SC	Next amendment	
2.2	Consider amendments to Type Test register	VH	03/07/19	
2.3	Request more information about Q 73	MK	03/07/19	
2.5	Clarify text in paras C.6.2.5.1.2 and C.6.2.5.2.2 about event recording	MK/SC	Next mod	
2.7	Review Step % and Phase % change used in tables C.6.2 to provide additional clarity	AH	03/07/19	
2.9	All to review the use of * in A2-1, A2-2. .	ALL	03/07/19	
2.10	All to review Q80, Mike to discuss with NG	ALL MK	03/07/19	
2.11	All to review reactive power requirements table	ALL	03/07/19	
2.12	All to consider any further comments on any of the new questions.	ALL	21/5/9	
3.1	Create PGMD Type B and C forms for circulation. All to review the evidence required column and suggest modifications.	SC ALL	22/05/19 03/07/19	
3.2	Review the compliance information that is being provided and send to Mike for summarising into an early leaning / best practice document.	DNOs MK	03/07/19	

3.3	Correct the differences between G98 and G99 in respect of the number of operating tests in next version of G98	SC	30/6/19	
3.4	Create and circulate a table of detailing examples of substantial modification	PT	03/07/19	
3.4	Brief DCRP	VH	06/06/19	
3.5	Continue with Q40 answer	MK	03/07/19	
3.6	Consideration modifying G99 paragraph 11.1.6 to include a requirement for control mode capability	MK	03/07/19	
3.7	Review 12.3.1.1 and 12.3.1.2 . Consider whether the GC0111 mod affects this text.	MK	03/07/19	
4.1 2.8 2.4	Closedown Q's 57, 67,69, 70, 74, 78	MK/VH	03/07/19	
5	Make GC0111 mods after G99 v4 approved	MK		
6.1	MK to circulate question on RoCoF/VS in inverters. Let Mike know of inverter installations using RoCoF or vector shift protection.	MK ALL	24/05/19 03/06/10	

**NOTES**

Item	Focus	Leader	Date
1.	<b>Previous minutes and TOR</b> 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	03/07/19
2.	<b>Review of recent Tech Forum Queries</b> Reference should be made to the DER Technical Forum Record of Issues log and the slide pack used during the meeting – 201905121 ENA DER tech forum 190520. Mike to update the Issues log with the output of the meeting – as noted below.	MK	03/07/19
2.1	Q71. Meeting agreed that A2-4 is the preferred form for a standalone interface protection type test. Clarification to be added to forms A2-1, A2-2 and A2-3 in next modification of G99.	MK/SC	Next amendm ent
2.2	Q72. ENA type test database. Proposal that the version of G98 or G99 against which type test is undertaken should be a database field entry. Proposal that the software version for	VH	03/07/19

	which the tests were undertaken should be a database field entry. Vincent to review and discuss with DNO SG		
2.3	Q73. Mike to request more information about the question in respect of where the modification is (eg dc side of the inverter?) to enable further consideration.	MK	03/07/19
2.4	Q74. Answer accepted		
2.5	Q75. Event recording paragraphs C.6.2.5.1.2 and C.6.2.5.2.2 Meeting agreed that a recording device that records for one minute (60s) and captures each 20ms cycle is compliant. Text in G99 to be clarified.	MK/SC	Next mod
2.6	Q76. Section C.6.2.4 states that the internal clock shall be synchronised with UTC via GPS satellite or other functionally similar method. This was discussed and the meeting agreed that the solution needs to be one without latency, hence an NTP server synchronised with UTC via a GPS reference would not be acceptable.		
2.7	Q77. Andy to review and consider a definition of Step % and Phase % change used in the tables in C.6.2. Check if used in IEC/ EN /NG documentation.	AH	03/07/19
2.8	Q78. A correction to answer this has been made in Amendment 4		
2.9	Q79. All to review the use of * in A2-1, A2-2. Suggestion is to delete them and replace with a general statement about demonstration of testing on and off site.	ALL	03/07/19
2.10	<p>Q80. A discussion about the concern of storage to meet the reactive power (leading) requirements identified the following observations / questions:</p> <ol style="list-style-type: none"> <li>1. DNOs connection agreements are in MVA – Maximum export capacity.</li> <li>2. Is the definition of Registered Capacity clear enough / correct as being MW for PPMs?</li> <li>3. If PPMs are sized to meet the reactive power requirements they may be oversized for MW – this has cost implications.</li> <li>4. Are NG also facing this issue?</li> <li>5. It is noted that whilst RfG does not include storage, NG are currently consulting about how to deal with storage. The DCPR will review the outcome of this in respect of storage and distribution documentation.</li> </ol> <p>Mike will discuss with NG, but if anyone has any thoughts about this question please let Mike know. Mike will present a proposal on this at the next meeting.</p>	ALL MK	03/07/19
2.11	Mike presented the Reactive Power requirements summary table, which on first sight seemed to help redress possible confusion. All to review. This can be included in the next G99 mod.	ALL	03/07/19

2.12	It was noted that any further comments on any of the new questions are welcome.	ALL	03/07/19
3	<b>Review of previous Tech Forum Queries</b>		
3.1	Q61. Sarah will create PGMD Type B and C forms for circulation. All to review the evidence required column and suggest modifications.	SC ALL	22/05/19 03/07/19
3.2	DNOs to review the compliance information that is being provided and send to Mike for summarising into an early leaning / best practice document.	DNOs MK	03/07/19
3.3	It was noted that the revised version of G98 will correct the differences between G98 and G99 in respect of the number of operating tests	SC	30/6/19
3.4	The retrospective application of G99 was discussed. It was acknowledged that there is a degree of interpretation in respect of what constitutes a substantial modification. Peter will start a table of examples to assist with this – will be circulated to all for contributions.  Vincent will report back on the discussions to the DCRP	PT  VH	03/07/19  06/06
3.5	Q40. New information from Jenbacher received recently. Mike to review and return to this at the next meeting	MK	03/07/19
3.6	Q53. DNOs to give consideration to modifying G99 paragraph 11.1.6 to include a requirement for control mode capability.	MK	03/07/19
3.7	Q55. Mike to review text in 12.3.1.1 and 12.3.1.2 to consider combining them, although it was noted in the meeting that this text is similar to the NG Grid Code ECC equivalent. Consideration to be given to the GC0111 mod and whether it affects this text.	MK	03/07/19
3.8	Questions to be closed: Q57. Answered by Reactive Power table. Q67. Konstantinos happy with the answer. Q69 & 70. Vincent to check Ok to close.	VH	03/07/19
4	<b>Type Test database</b> – current ENA thinking re compliance review discussed.		
5	<b>Other G99 updates</b> – GC0111 mods to be made once G99 v4 approved.	MK	
6	<b>AOB</b>		
6.1	DC0079 RoCoF mod to existing generators. Please let Mike know of inverter installations using RoCoF or vector shift protection. <i>Post meeting note, Mike will probably be able to circulate a more focussed question or two by email in a day or two.</i>	ALL  MK	-03/06  24/05
7	<b>Next meetings:</b> 3 July 10:30		

	Venue: 4 More London Riverside, London, SE1 2AU		
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