

ENA Electricity Networks and Futures Group

DER TECHNICAL FORUM

MINUTES

Monday 27 January 2025

MS Teams Meeting

ATTENDEES

Name	Initials	Company
Aaron Thompson	AT	Innova
Chris Marsland	СМА	Clarke Energy and AMPS
Daren Farr	DF	INFINIS
Dick Allen	DA	Green Highlands, Connections consultants
Edita Butkute	EB	Association of British Ports
Gary Eastwood	GE	Threepwood Consulting
James Hurley	JH	SSE
Jason Kirrage	JK	Solar Edge Technologies
Jeevan Dhaliwal	JD	ENA
Joe Warren	JW	Powervault
Jyh Yeong Chu	JYC	GTC
Lukasz Bochinski	LB	UKPN
Matthew Porter	MP	PS2 Consulting
Mike Kay	МК	ENA
Nataliia Myrhorodska	NM	ENA
Paul Carpenter	PC	Solis Inverters UK
Richard Harrison	RH	Clarke Energy

Registered office Energy Networks Association Limited, 4 More London Riverside, London SE1 2AU t. +44 (0)20 7706 5100 e. info@energynetworks.org energynetworks.org



Rose Wabuti	RW	Northern Powergrid
Sarisha Ojageer	SO	Ricardo
Stephen Sommerville	SS	Aurora Power Consulting
Varvara Alimisi	VA	SSE

APOLOGIES

Name	Initials	Company
Alester Sheara	AS	BU-UK, PowerON
Andy Hood	AH	NGED
Damon Roberts	DR	Harksys
Ian Nicoll	IN	Qmulus Ltd
lan Wassman	IW	Exergy Power Systems and AMPS
Mark Dunk	MD	ENA
Milana Plecas	MP	SPEN
Nick Patterson	NP	ENESCO
Olivia Carpenter-Lomax	OCL	Ricardo
Peter Twomey	PT	Electricity North West
Philip Bale	РВ	Roadnight Taylor

MEETING NOTES AND ACTIONS

1. Welcome	e, Introductions and Acceptance of Agenda	МК
Accompanying meeting slides should be referred to for detail.		
Actions	None	

2. Actions	from previous meeting	МК
None other than on the agenda.		
Actions	None.	

3. Minor Technical changes to G99 - progress		MK
Approval was expected 25/01/2025. However JD noted that this has been extended to 14/02/2025.		
Actions	None.	

4. SAF Update	MK	
The SAF has been updated to reflect changes related to the queue management process. Several amendments were made just prior to Christmas, and the updated SAF has now been published – it can be downloaded from <u>here</u> .		
Refer to slide 7 for the key new requirements. The primary purposes of the changes was to address speculative applications and to implement the Forum's proposal to make the provision of more detailed information mandatory earlier in the process such that DNOs always have sufficient information for interaction with NESO in relation to queue management.		
Discussion:		
 CM questioned whether there is a limit for heads of terms. MK confirmed there is a 1MW threshold for applications. It is in the CUSC, Appendix G, Schedule 2 para 10.3. EB enquired whether the 1MW threshold is being considered for an increase to 5MW. LB clarified that the threshold increase would not affect the minimum information required for SAF submissions. CM requested clarity on the origin of the proposed 5MW threshold and its connection to Type B modules. MK responded that although the CUSC currently includes a hardcoded 1MW limit it is not completely clear whether this is Registered Capacity or export. However it seems to be interpreted that the limit requires DNOs to make forward applications to NESO on receipt of an application for a PGM of 1MW or above. NESO has announced plans to raise this threshold from 1MW to 5MW. The 1MW threshold corresponds to a Type B or above PGM but this will not be meaningful at 5MW. DA highlighted that the threshold in Scotland is lower, at 200kW, differing from the 1MW threshold in England and Wales. 		
Actions Consider if the SAF should be updated if the queue threshold is increased to 5MW.		
Next meeting	MK/DNOs	



5. New Issues	МК	
P28 & G5 assessment/compliance for generation on IDNO networks		
All connections to licensed distributors' networks must comply with both P28 and G5. Responsibility for compliance therefore lies with the IDNO if the connection is to an IDNO network. Compliance issues, particularly related to harmonics, may require collaboration between the IDNO and DNO.		
Discussion:		
 SS questioned how to address situations where a connection complies with the IDNO requirements but not the DNO's standards. MP responded that there has never been a requirement for a DNO to comply with P28 in relation to its network and assets. For example a large transformer installed by a customer would be subject formally to P28 compliance. If the same transformer was installed by an IDNO at the interface with an upstream IDNO, there is no formal obligation to apply P28. It is also crucial to avoid inconsistencies in compliance obligations between IDNOs and DNOs. 		
 MK noted that for larger/more complex projects the IDNO may need certain information from the DNO to enable the IDNO to complete its assessment 		
MP noted that the question of P28 compliance for IDNOs versus DNOs was raised two years ago, but he did not think that any clear guidance regarding the requirements or responsibilities exists.		
Actions Review the points discussed and see if more clarity can be provided on responsibilities and process.		
Next Meeting N	IK/DNOs	

6. Draft EREP P28 – " Guide to the Application of Engineering Recommendation P28 Issue 2"

GE

Background:

EREP P28 is a new engineering report serving as an application guide for EREC P28. It does not override any requirements in P28 but provides additional guidance. It includes a focus on how P28 applies to BESS. It also addressed the gap between the last revised P28 and the rapid developments in BESS technologies.

The draft was produced by a WG comprising IDNOs, DNOs, and other stakeholders under the DCRP. Stakeholder engagements and feedback have been incorporated in the draft. Findings from NPg's NIA project, titled BESS P28 have informed the report.

The document provides guidance on step voltage change, flicker, rapid voltage change and impacts of reducing system inertia. Key contents include: how to address long, slow ramps and step voltage changes against the 3% limit; application of shape factors; BESS control modes, commissioning guidelines; and ramp rate considerations.

As this is a guidance document it will not be published as a D Code Annex.



Next steps:

- Consultation with an appropriate set of stakeholders, not public consultation.
- Requesting comments from DER TF by 17 February 2025.
- DCRP WG to consider and respond to comments and produce an updated version later in the Spring.

Discussion:

- MP questioned the basis for scenarios involving power swings from full export to full import, as they seem unconceivable within stacked services. Also asked for evidence to substantiate such claims, noting no historical data supports this scenario over the past five years.
- GE explained that during certain stacking of services, batteries could make such swings if not limited. NPg experienced rapid BESS transitions from export to import. Also noted that P28 allows BESS operators to substantiate their ability to limit power swings and provide assurance that they will not exceed the power swing or ramp rate, making these transitions acceptable. The P28 assessment should consider the full power swing from full export to full import.
- MP suggested limiting the rate of change of controller outputs through control schemes. Also highlighted the need to demonstrate that stacked services would not violate operational limits, rather than constraining schemes due to poor design concerns. GE agreed on the importance of giving flexibility to BESS operators while ensuring compliance with operational limits.
- SS highlighted that step voltage changes for BESS are not just related to simple swings but also depend on how the PI/PID controllers are set. Scenarios such as frequency-following operations or trading block transitions could lead to full export/import swings, although relatively unlikely. SS warned of increasing instability in the system, with such transitions potentially occurring simultaneously during trading blocks.
- MP noted that module swings from full export to import due to system frequency are highly unlikely and a more probable cause is loss of a control signal.
- SS noted that relying only on historic data is insufficient and future scenarios should also be considered such as the impacts of Clean Power 2030 reducing system inertia.
- GE questioned whether the TF will provide an overview of comments. MK responded that individual comments will be submitted.

GE requested members to use a proforma when submitting comments.

Actions	Provide comments by mid-February 2025 using proforma	
	17/02/25	All
	GE's slides will be circulated with the minutes.	
	31/01/25	MK/JD



MK

7. Existing Issues update

BESS connections

Ideally these issues should now be address by the material in the scope of the guidance note EREP P28.

<u>Delays associated with DNOs being able to submit Mod Apps to NESO</u> This should now be resolved following the SAF updates.

P28 initial assessments for generation tripping and/or load rejection

DNOs agree that P28 assessments for generation tripping and/or load rejection need to be conducted early in the connection process to avoid delays.

IONs for Type B and type C

This has been included in the proposed revisions to G99 and can probably be closed.

Various issues from BPA

This can now be closed.

G100 Issues from 07/10 DER TF

- This originated from the Harksys query.
- Need for improvements related to the terminology for HV-connected sites. A guidance document
 has been drafted to address interpretation issues, with plans to create a new guidance note in the
 near future (ie Spring 2025).
- If G100 is applied to an HV site, backup protection becomes mandatory. DNOs are still considering if this requirement for backup protection needs to apply in all cases.
- PC and JW requested clarification on the issues that were raised and MK outlined the key issues were clarification of what an HV connection was; whether solutions designed for LV connected sites would work at HV and some misunderstanding on the state 2 limits. Harksys's presentation of the issues is in the <u>slide pack for the DER TF</u> meeting held on 07 October 2024.
- PC questioned whether G100 required per-phase limiting. MK clarified that G100 is based on current at nominal voltage.
- MP noted that backup protection no longer required a separate physical device, as multifunction relays are now common. Backup protection should be considered acceptable if it can be demonstrated that it operates effectively. MK agreed and confirmed that DNOs are considering this in their review of the requirements for HV connections.

PC noted that there have been instances where installers have wired meters incorrectly which could cause an export or import that is not intended as well as poor level of control. There needs to be



measures in place to detect if the installation is done correctly. MK believed this should be identified as part of commissioning the equipment.

Registered Capacity

- RC is defined at the extremes of the PF range, allowing for potentially higher output at unity PF.
- The Connection Agreements of most DNOs are generally specified in kVA terms rather than kW, with one exception to this. DNOs whose approach differs from this will consider how to standardise with others.
- SS emphasised the need for clear guidance to ensure generators understand their operational limits.

Fault current interrupters

- Some DNOs are exploring the use of fault current interrupters but face a dilemma, particularly on the transmission side. DNOs are open to considering the use of fault current limiters provided that fault ride through capabilities are still operational.
- Potential updates to G99 may be required to address this issue.

CM noted that the issue remains unresolved although the individuals who raised the issue with him have not followed up.

	Consider if the SAF could be modified to help remove confusion between Registered Capacity and Maximum Export Capacity.	
Actions	Next Meeting	MK/DNOs
	Update the Forum Issues Log	
	31/01/2025	MK

8. GC0117

This involves the alignment of large, medium, small power station definitions across GB. The modification proposing this, GC0117, is still with Ofgem, who have indicated that they will conduct a public consultation

proposing this, GC0117, is still with Ofgem, who have indicated that they will conduct a public consultation on the issues arising from the proposal. The consultation is expected to be broad in scope, and is imminent.

SS thought the proposal to lower the Large threshold to 10MW would create lots of problems for commissioning as there are already resource constraints and this would further increase the volume of work, particularly for NESO. MK noted that the resource constraint issue has been raised for consideration.

SS noted that there will also be cost implication. As the cost of G99 projects is relatively small, while the costs are significantly higher to demonstrate full Grid Code compliance.

Actions N

None

MK



9. EU Upda	te	МК
Development of Connection Code 2.0 has slowed . The European Commission plans to include additional requirements for heat pumps and EVs. However the underlying technical requirements are unlikely to change.		
ENA is opening discussions with NESO to consider the implications for GB.		
Actions	None	

10. AOB		МК
SS raised con compliance s feedback esp example whe	ncerns about delays in receiving comments from DNOs on submitted delivera tudies. SS suggested establishing an agreement or standard approach for pro pecially for compliance studies. MP emphasises that the delays have worsene re comments on a G99 study were received one year after the original submi	bles such as oviding timely d and shared an ssion.
Actions	DNOs to consider comments raised. Next Meeting	MK/DNOs

11. Next Meeting		МК
End of April /first week in May 2025		
Actions	JD to schedule next meeting 07/02/24	JD