

Minutes

Meeting name	GC0048: Joint GCRP/DCRP Workgroup on National Application of RfG
Meeting number	7
Date of meeting	20 January 2015
Time	10.00 – 16:00
Location	National Grid House, Warwick, CV34 6DA (Room E1)

Attendees

Name	Initials	Company
Rob Wilson	RW	National Grid (Chair)
Sara-Lee Kenney	SLK	National Grid (Technical Secretary)
Alan Creighton	AC	Northern Powergrid
Alastair Frew	AF	Scottish Power
Amir Dahresobh	AD	Nordex
Antony Johnson	AJ	National Grid
Campbell McDonald	CMd	SSE
Celine Reddin	CR	National Grid
Chris Whitworth	CW	AMPS
Ian Taylor	IT	EDP Renewables
John Norbury	JN	RWE
Julian Wayne	JW	Ofgem
Mick Barlow	MB	S&C Electric Europe
Mike Kay	MKa	Electricity North West
Richard Woodward	RJW	National Grid
Sarah Carter	SC	PPA Energy
Steve Davies	SD	DECC
Zoltan Zavody	ZZ	Renewable UK

Apologies

Andy Vaudin	AV	EDF Energy
Chris Allanson	CA	Northern Powergrid
Chris Marsland	CM	(on behalf of) CHPA & AMPS
David Spillett	DS	ENA
Gareth Parker	GP	DONG
Garth Graham	GG	SSE
Guy Phillips	GP	EON
Jawad Al-Tayie	JAT	Cummins Generator Technologies
Joe Duddy	JD	RES
Julian Rudd	JR	DECC
Mick Chowns	MC	RWE
Mustafa Kayikci	MKy	TNEI
Peter Bolitho	PB	Waters Wye Associates
Peter Thomas	PT	Nordex
Philip Jenner	PJ	RWE
Richard Lowe	RL	SSE
Rupika Madhura	RM	Ofgem
Steven Mockford	SM	UK Power Networks
Tony Headley	TH	BEAMA

1 Introductions/Apologies for Absence RW

1. The Chair welcomed the Workgroup and apologies were noted. RW noted that the Joint European Standing Group (JESG) was also taking place on the same day and SLK took an action to check for any future date clashes.

2 Stakeholder Representation RW

2. The Chair noted the Stakeholder Representation as a standing agenda item for this workgroup and noted the workgroup is open to all but may need to be limited to one representative from each organisation should the attendance numbers become too large to facilitate and manage room capacity.
3. AJ welcomed the attendance of Renewable UK at the meeting but it was noted that Renewable UK do not include Solar representatives within their membership. AD and ZZ have now provided contact details for Solar representatives and AJ will liaise with them with regards to attending future workgroup meetings.

3 Review of actions & approval of minutes SLK

4. SLK ran through the Action Log and progress made to date.
5. The following actions were closed at this meeting: Action 14 'Draft task list/project plan', Action 26 'Risk Register' and Action 27 'Project Plan' as these are now a standing agenda items. Action 30 'Consideration of Operational Costs to NGET', Action 35 'DECC/Ofgem Steering Group Terms of Reference circulation', Action 39 'Current GB Banding Rationale', Action 40 'Non-synchronous banding data costs'.
6. The Action Log was approved by the workgroup noting the above changes and other progress noted, and will be updated and circulated with the minutes of the meeting.
7. SLK highlighted the previous meeting minutes have been updated with changes received from Joe Duddy, Julian Wayne, Chris Whitworth and Mike Kay.
8. ZZ asked, following on from the Meeting 6 minutes, for paragraphs 18 and 19 (generators slipping into a lower band) could any information be produced to outline this in more detail. RJW took an action to discuss further with ZZ and to provide further information.
9. The minutes of the previous meeting were approved by the workgroup noting the above comments and will be published in the 'workgroup' section of the Grid Code website¹.

4 Progress Update JW (on behalf of RM)

10. JW advised Member States are yet to receive a latest draft of RfG from the Commission. JW added that last week, the Commission sent a draft to ENTSO-E and ACER for review and return within 2 days.
11. JW advised the first Cross-Border Committee meeting (where Member States meet to discuss the latest draft and lobby their requirements) is anticipated to take place on the 3/4 February. JW advised in which case, the Commission would need to publish the latest RfG draft text 2 weeks prior to this meeting which would result in text being published today/tomorrow. JW added that the Commission has provisionally booked meetings every 2 weeks following the 3/4 February.
12. **Update post RfG GC0048 Workgroup Meeting: On Thursday 22 January the latest version of the RfG text was released to member states. This has also been included on the Weekly JESG Update emails (please email europencodes.electricity@nationalgrid.com should you wish to be added to the distribution list).**

5 Review of Frequency Response Data AF and RW

¹ <http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Modifications/GC0048/#>

13. AF ran through his presentation on 'Analysis of Current UK Frequency Response'. This includes the data from links sent out by RJW in December to data on National Grid's website. AF noted these links have since been updated with the latest data (not reflected in today's presentation) however AF advised this would have made little difference in terms of the presentation premise.
14. JW asked for clarification on the references to 'Primary', 'Secondary' and 'High'. AF and AJ advised 'Primary' – Is the frequency response provided by a Generating unit or Power Park Module to a frequency change within 10 seconds which must be sustainable for a period of 20 seconds. 'Secondary' response is where a Generating Unit or Power Park Module must provide frequency response within 30 seconds following the frequency fall and being sustainable for 30 minutes. 'High' frequency response is where the Generating Unit or Power Park Module will deload in response to a frequency rise with the deload being achieved within 10 seconds of the frequency rise and being sustainable thereafter until notified by National Grid acting in its role as the System Operator. .
15. ZZ asked AF to clarify if from the wind sector 7-9% of wind capacity is available as Primary Frequency Response, AF clarified this is 9%.
16. AF talked through his analysis and the workgroup discussed firstly the availability of Frequency Response and then what was actually dispatched. AF noted for information there are 4GW of Interconnectors which are not providing Frequency Response Services and Nuclear provides very little. AF advised there doesn't appear to be justification to move the current 50MW limit for providing Frequency Response based on the availability of Frequency Response Services which are not being used. AF discussed an example from his analysis, which showed 700MW of Frequency Response available on a windy day which was not being dispatched. AF added there are large amounts of Frequency Response coming from Pump Storage units and in general there is a lot of Frequency Response available which not being utilised. AJ noted that new HVDC Interconnectors are required to have the capability to provide frequency response although there are commercial complexities. He also noted that the new generation of Nuclear Power Stations will also be required to have a frequency response capability and satisfy the full requirements of the Grid Code.
17. JN asked is there any legal work required as to how plant is categorised in terms of RfG and Frequency Response pointing out that under the current GB framework, some Generators (by virtue of their size) are required to have a frequency response capability but as they are not party to the wholesale market will never be instructed to provide it. JN asked if it would be allowable for National Grid to determine that frequency response capability would not be required at the time of connection but may be required in the future as the rules evolve, therefore a Generator would not need to install the capability upfront but may have to do so in the future when the capability could be utilised. JN advised the need to avoid the risks of stranded investment. RW asked does it actually avoid a stranded investment as you'll still have to procure the capability?
18. CMd suggested it would be useful for a future position of the 'Current GB Frequency Response' figures detailed on slide 9 of the presentation and also for a view on demand side response. RW suggested this could be covered in a presentation to be given by NGET (Adam Sims) which would be covered in Meeting 8. RW took an action to liaise with Adam on this and added that the position is complicated since factors determining the availability of frequency response start with capability but also include what generation is actually running, pricing, and headroom considerations. In determining the bandings the RfG workgroup will establish capability. In conjunction with the Frequency Response workgroup the way in which this is used will also need to be clarified
19. RW mentioned the Power Available Workgroup (GC0063) which had determined that there would be a requirement for future wind generators to provide a Power Available Signal which would aid NGET as System Operator in determining headroom available from renewable generation. ZZ added there's a number of reasons wind has been called on for Frequency Response but large volumes have not been utilised.
20. JW mentioned that Solar PV had not been discussed. Would it be possible to have this view? AD mentioned this would most likely be covered under the System Operability Framework (SOF) presentation which is scheduled for the next RfG GC0048 workgroup meeting.

RfG Banding Threshold Setting and System Operator Costs Update - RW

21. RW mentioned the pre-circulated material 'Working Group Report – Regional Differences...' presentation and the 'SO Cost Analysis' spreadsheet. RW advised the presentation had been updated following comments received from previous workgroup meetings and the corresponding excel sheet for supporting background information. RW recapped on the 'assumptions' with regards to the conclusions made in the presentation and mentioned that further consideration needs to be given in understanding the cost to generators which is going to form a vital part of the case that needs to be made to set the thresholds. RW invited the workgroup's comments on this.

Banding Data Sources - RJW

22. RJW ran through the progress made on the banding data sources and a recap of the requirements which followed on from RJW's presentation at the November GC0048 RfG Workgroup meeting. RJW advised this presentation has been revised following a complete set of data from all the DNOs of which the majority are from their ED1 submissions. RJW reminded the workgroup this presentation covered 3 alternative views for the Type B/C thresholds and the requirement for workgroup is to assess where the banding thresholds should sit and assist National Grid as the TSO in putting this case together on the basis of defensible data and analysis.
23. RJW added by way of recap that RfG introduces the concept of generator banding to ensure a proportionate level of response dependent on a station's installed capacity and/or connection voltage. Banding thresholds in each synchronous area need to be agreed via public consultation and are ratified by National Regulatory Authorities (NRA) approval and Generators are required to support this activity. Once the banding thresholds become active, they cannot be adjusted for three years. Any Transmission System Operators (TSOs) seeking to make a change to the final banding thresholds, must follow the same process as agreeing the initial banding thresholds.
24. RJW advised the MW granularity is not involved in the slides/analysis but asked if the workgroup would wish to see this? The Workgroup agreed not for now, although RJW advised this data is available should it be required at a later date.
25. ZZ asked with regards to the DNO data and ED1 submissions, how does this compare with the information provided with the Future Energy Scenarios (FES)? MK advised that the DNOs include within their data the DECC future forecasts in addition to their local area knowledge.
26. RJW discussed the banding threshold 'data assumptions' and the assumption from the slides that 100MW generators (particularly in Scotland) will connect at 33kV rather than 132kV. This is important for determining whether generators at the MW scale of Type B-C will automatically be Type D due to the 110kV minimum. The workgroup DNOs and ZZ discussed how they could assist in profiling project connections of existing plant to confirm this assumption one way or the other ("110kV minimum" set by RfG).
27. ZZ queried the origins of the NGET proposal detailed within RJW's presentation. RJW advised this is a 'straw man' proposal that sits between the GB and Continental European banding as set out in the January 2014 RfG draft but is provided really as an illustration.
28. RJW moved on to discuss the summary for TEC/the Embedded register scheme between 2015-2023 and highlighted that all projects have a Scottish host TO. RJW added that there are no England and Wales developments below 100MW on either register.
29. MK stated it would be interesting to look at the NGET FES scenarios against the DNO scenarios for Solar PV, as both included this information in the DECC forecast. MK added DECC scenarios are for a low carbon future.
30. RJW welcomed further feedback on the slides and how much further data gathering is required to form the analysis.
31. CMD asked will new nuclear plant need to be compliant and should this not be included in the assumptions? AJ advised that future generation including new Nuclear plant would need to be fully Grid Code compliant. AF also suggested looking at predicted demand vs generation profile which SD took an action to look into.

Project Plan Progress and National Parameters Selection

32. CR advised the Project Plan is still based on the January 2014 RfG draft and therefore the assumptions made on timescales still stand (subject to a new RfG draft). CR discussed the 'RfG 1 Year Implementation Plan' presentation showing where the National Parameters would fit into the Project Plan, the critical path and talked through the National Parameter process flow. CR suggested that the National Parameters work would mainly fit into 'Modification 4 - Fault Ride Through', 'Modification 5 - Voltage and Reactive Power' and 'Modification 6 – Frequency'.
33. JW asked if there are any dependencies on other European Network Codes (ENCs)? AJ advised not at this point but noted that RfG is the first of the Technical ENCs and the second overall after CACM. RW also noted that the RfG bandings are quoted in other of the ENCs, particularly the Operational Codes.
34. JW also queried what work would fall into 'Modification 3 - General? AJ advised this is a sweep up of the work items that don't fall into the large modification items. JW asked how many National Parameter selections would need to be made? AJ advised this is outlined in the National Parameters Selection word document (as published on the website for this meeting and also discussed at the last workgroup meeting). AJ discussed this document with the workgroup advising it includes the January 2014 RfG article number, the associated RfG workgroup Modification number and a possible initial starting value for the national parameters but noted these were an initial first estimate and did not include detailed research, industry debate or study work. AJ advised any updates made where marked in blue, any areas marked as red would require further consideration. AJ also advised that he had received comments from JD and MK. He requested that if any workgroup members had any additional comments on the parameter table they should be forwarded on to him.
35. CR and AJ advised the RfG Workgroup Project Plan will be updated as and when a new RfG text is received.

8 Risk Register

RJW

36. RJW ran through the Risk Register with the workgroup and associated action owners which will be circulated to the workgroup.
37. MK discussed a list of existing legal and licence changes associated with the implementation of the European Network Codes and believed this was produced by the JESG or ECCAF. SLK took an action to liaise with the Secretariats of each group to provide a copy of this document.
38. JW took an action to check the position on new nuclear Grid Code compliance.

9 DECC/Ofgem Steering Group Reporting

RM/All

39. The workgroup discussed items to be progressed to the DECC/Ofgem Steering group and put forward;
- i. The continued application of national codes for which the workgroup require the Steering Group to consider a direction and advise on how to progress.
 - ii. RfG Project Plan (February Deadline).

10 Agree Actions

SLK

40. JW to circulate the outcome of Stakeholder discussions from today's Joint European Standing Group (JESG) in relation to the ENC Programme structure and the placement of the DECC/Ofgem Steering Group. SLK to add this into existing Action 42 as any Organogram will be pending these discussions.
41. SLK to check there are no future meeting date clashes with the RfG GC0048 workgroup and JESG and advise the workgroup accordingly.

42. Workgroup members to draft potential questions for Adam Sims on future Frequency Response Capability ahead of inviting Adam to the next RfG workgroup meeting.
43. Further to the above action, RW to also discuss with Adam Simms and NGET SOF Team the suggestion for a future position on the 'current GB Frequency Response' figures and for this to include demand side response.
44. AJ and RJW to go through distinction of Power Park Module and Power Generating Module under RfG to determine compliance.
45. MK, AC, SM and ZZ to assist RJW in profiling project connections of existing plant to confirm assumption one way or the other and to consider if there is an overwhelming rule of thumb regarding voltage/size that can be employed.
46. RJW to reconcile banding data against FES NGET predictions.
47. MK, DNOs (AC, SM) to look at banding data and see if there are any 'uncertainties' in their forecast.
48. AJ to contact Solar Trade Association for potential attendance at future workgroup meetings
49. SD to look at predicted demand vs generation profile and update the workgroup.
50. CR to update project plan presentation for next workgroup.
51. Workgroup to review National Parameter information and provide by comments to AJ ahead of the next workgroup meeting
52. SLK to check with JESG and ECCAF Secretariat for any documents which cover the existing list of legal and licence changes associated with the ENC implementation and a list of the existing RfG GB issues (Risk 14).
53. JW to look into new nuclear Grid Code compliance.
54. RW to circulate to the workgroup an update on the Emergency & Restoration European Network Code and its interactions with RfG.
55. RW to circulate to the workgroup an update from David Spillet (Energy Networks Association) with regards to a Summary of standards IEC62786 and TS50549.

12 AOB / Next Meeting

SLK

AOB:

56. RW advised he will circulate to the workgroup and update on the Emergency & Restoration European Network Code interaction with RfG.
57. RW advised of an update from David Spillet (Energy Networks Association) with regards to a Summary of standards IEC62786 and TS50549 which RW will circulate to the workgroup
58. CW asked if anyone else had been asked or was aware of the 'Revised low voltage directive' MK suggested seeking help from BEEMA.

Next Meeting:

The next RfG Workgroup meeting will take place on **Tuesday 17 February 2015 at National Grid House**. Please also find attached below all future dates, arranged for this workgroup until June 2015:

(calendar invites have been sent out for these dates, please contact Sara-Lee if you have not received them)

- **19 March – Novotel, Birmingham Airport**

- 21 April
- 19 May
- 16 June