

# Joint European Standing Group *Meeting 30*



4 November 2014  
Elexon, London

**Elexon Wifi Details:**

# 1. Introductions



Barbara Vest  
JESG Independent Chair

## 2. Review of the Action Log



Tom Selby  
JESG Technical Secretary

# JESG Standing Actions

Action No	Action	Lead Party
S1	Prepare a commentary / comparison document between the Network Code and the existing GB arrangements at appropriate stages in the Code development for each Network Code.	NGET
S2	Engage with DECC and Ofgem to ensure appropriate and timely input can be provided from GB Stakeholders in to the Comitology process.	JESG Chair
S3	Continue to review the membership of the JESG and engage additional industry parties where appropriate.	JESG Chair
S4	Provide update on future Network Codes and incentives being developed as and when appropriate.	NGET/Ofgem/DECC
S5	If required by the Commission, facilitate an industry-wide read-through of the Network Codes once they are released by the Commission . (formerly Open Action 135)	JESG Chair/Ofgem/DECC
S6	Stakeholders are requested to provide specific example of inconsistent or problematic definitions in the Network Codes to Ofgem ( <a href="mailto:reuben.aitken@ofgem.gov.uk">reuben.aitken@ofgem.gov.uk</a> ) and DECC ( <a href="mailto:will.francis@decc.gsi.gov.uk">will.francis@decc.gsi.gov.uk</a> ). (formerly Open Action 140)	All
S7	Consider the need for how to best capture stakeholders' most recent priority issues before and during the Comitology process, in particular for the RFG, DCC and CACM Network Codes as the codes develop in the pre-comitology phase.	DECC

# JESG Actions

Action No	Action	Lead Party	Status	Update
152	Arrange another stakeholder group workshop on RfG Network Code following publication of the next draft.	NGET/ DECC/ Ofgem	Open	Awaiting new RfG draft
157	<p>What are the arrangements for stakeholder engagement in TERRE and/or the Balancing Network Code:</p> <ul style="list-style-type: none"> <li>• Will stakeholders be consulted on Balancing Code amendments?</li> <li>• Will there be a GB TERRE group?</li> </ul> <p>Will CBAs be published to stakeholders?</p>	NGET	Open	Update provided at JESG 15 October /slides.
158	What products and what gate closure time will Project Terre use?	NGET	Open	Update provided at JESG 15 October /slides.
161	Review the issues logs for the Network Codes that are published on the JESG website	JESG Technical Secretary	Open	Material published on the JESG website with regards to the ENC priorities, needs to be reviewed in terms of timings and accuracy.
163	Invite Simon Reid (GB ENTSO-E Balancing Pilot Project Stakeholder Representative) to a future JESG meeting to provide an update on the Balancing Pilot Projects.	NGET	Open	Simon has been invited to JESG, we will look to organise an update at the November meeting.

## JESG Actions (continued 1)

Action No	Action	Lead Party	Status	Update
164	Consider if there should be an obligation to publish the volumes of standard/non-standard balancing products used by the SO.	DECC/ Ofgem	Ongoing	Ofgem and DECC will provide update at November JESG.
167	Schedule a stakeholder workshop on the ER Network Code	NGET	Open	Workshop rescheduled (from 1-2 Dec) to 3-4 November.
168	Update required on when the Tariff Code will enter the development process	Ofgem/ DECC	Open	
169	Update on RfG workgroup progress (following 20 October Meeting) to be provided at the November JESG	NGET (RW)	Open	

## JESG Actions (continued 2)

Action No	Action	Lead Party	Status	Update
170	Stakeholder request of 'who's who' table for ENCs at NGET following Project TERRE/Balancing movements of reps	NGET (BT)	Open	
171	Stakeholder request for a tracked change version or comparison between version 1 and 2 of the ER Network code.	NGET (PC)	Open	
172	Review of Stakeholder representation, information of representation to be collated and discussed at November JESG	JESG Technical Secretary	Open	
173	JESG guide ' <i>Overview of European Network Codes - A guide for GB Industries Parties</i> ' held on the National Grid website to be reviewed. - Look at the possibility for the development organogram to be updated with ENCs at each stage of the development process.	NGET (SLK)	Open	



## 3. Update on EU Network Codes



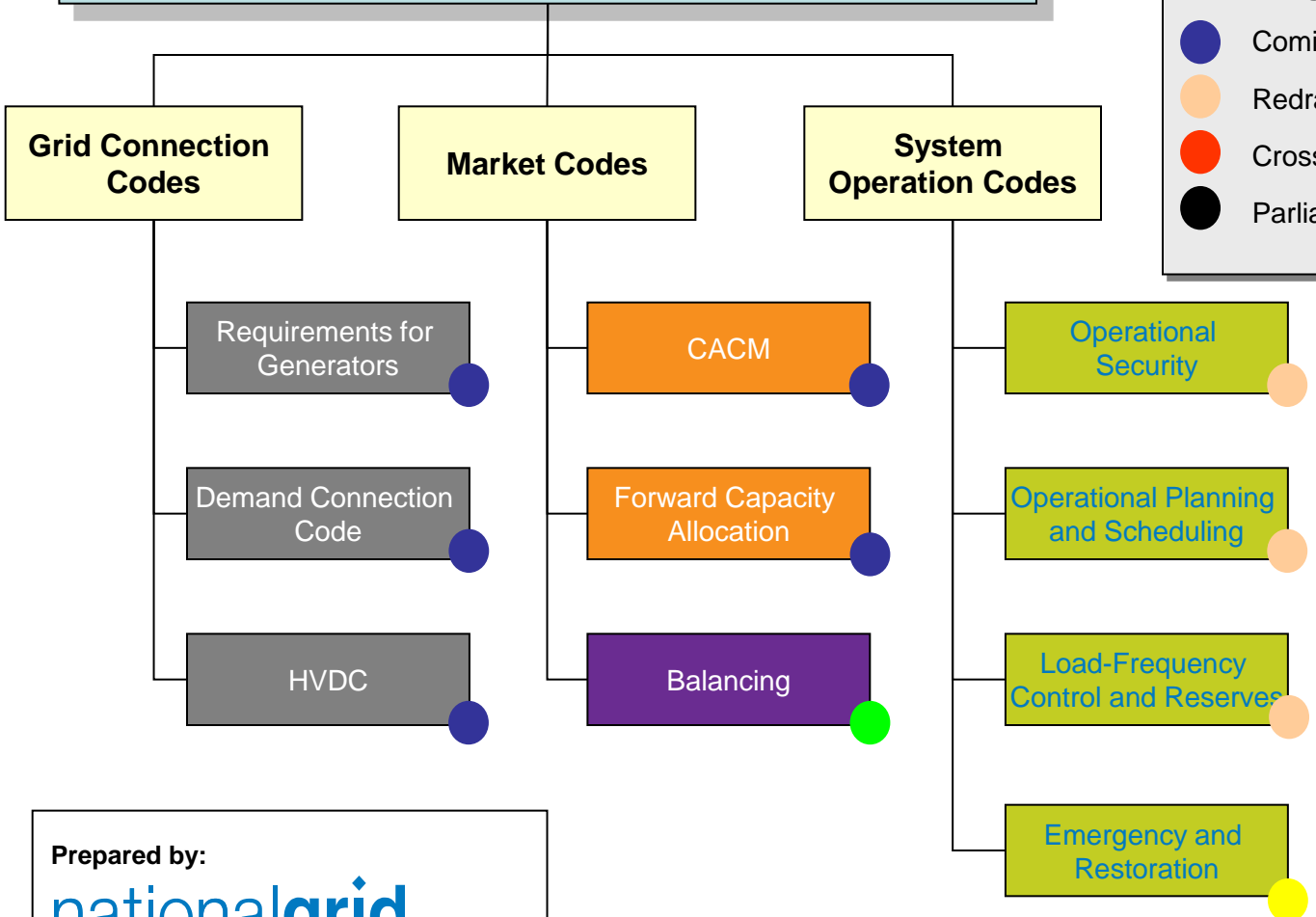
Tom Selby  
JESG Technical Secretary



# European Electricity Codes Development Status

3 November 2014

**Third Energy Package:** Areas for Network Codes and Guidelines detailed in Articles 8(6) & 18(3) of Regulation 714/2009 (EC)



## Drafting / Revisions

- Yellow circle: ENTSO-E Drafting
- Green circle: ACER Review
- Yellow and green striped circle: Revisions following ACER Review

## Comitology / Approval

- Blue circle: Comitology preparations & informal discussion
- Orange circle: Redrafting as required by Commission
- Red circle: Cross-Border Committee Voting
- Black circle: Parliament/Council Approval

## Published in OJEU

Reg (EU) No 543/2013  
Transparency Reg.

## Future ENCs:

indicated as future ENCs, no timescales advised to date

Connection Procedures

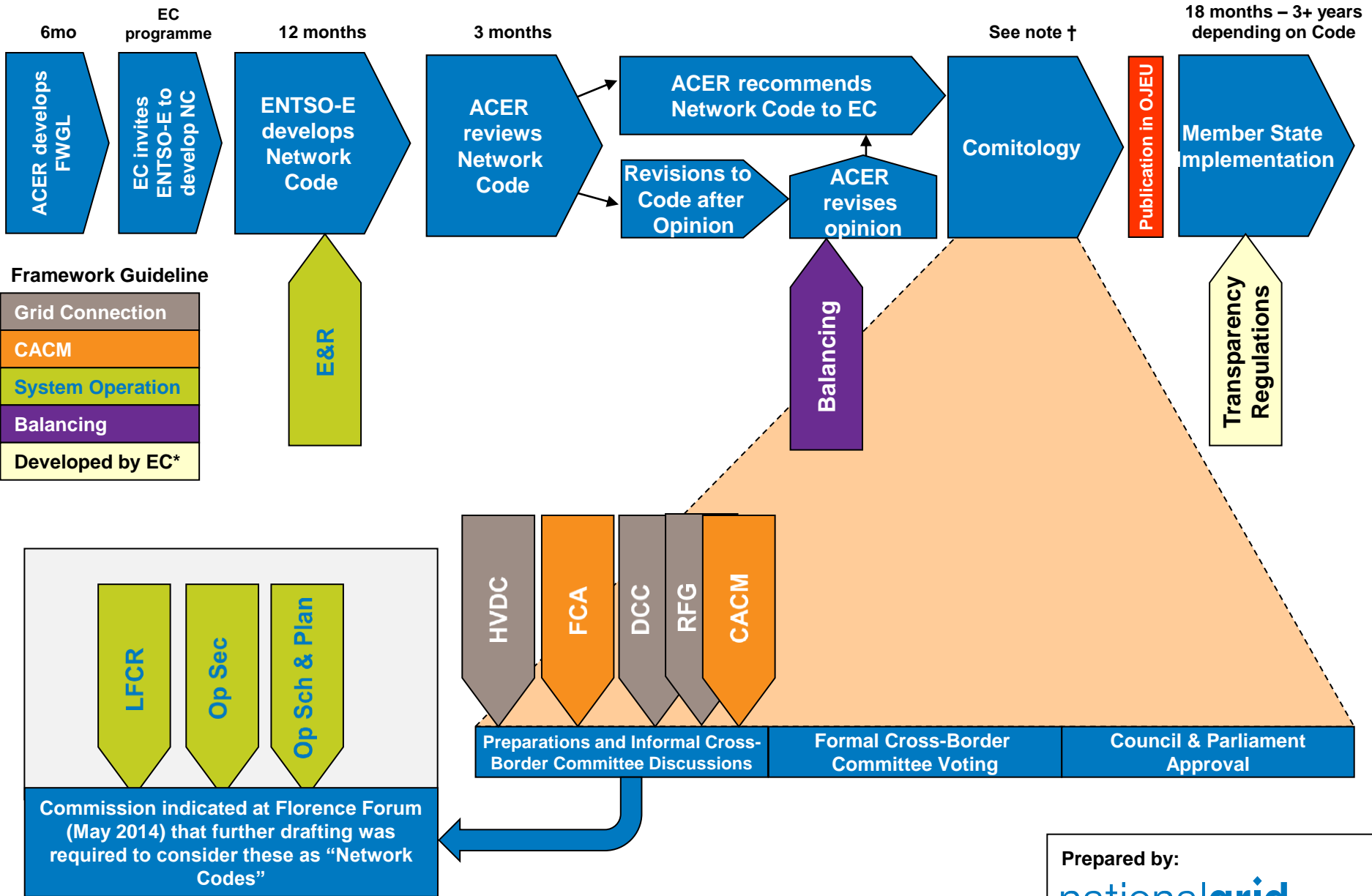
Staff Training and Certification

Prepared by:

**nationalgrid**

[europencodes.electricity@nationalgrid.com](mailto:europencodes.electricity@nationalgrid.com)

# European Electricity Codes Development Status: 9 October 2014



Prepared by:  
**nationalgrid**  
[europeancodes.electricity@nationalgrid.com](mailto:europeancodes.electricity@nationalgrid.com)

\* Areas developed by EC follow a different development process and there are no Framework Guidelines.

† Timescales for the stages of Comitology are not specified and under the Commission control

## 4. Update on RfG Working Group



Rob Wilson  
NGET

# GB Grid Code Requirements for Generators Workgroup



Update for JESG – 4<sup>th</sup> November 2014

## From the ENTSO-E website:

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- ‘The Network Code on Requirements for Generators is seen as one of the main drivers for creating harmonized solutions and products necessary for an efficient pan-European (and global) market in generator technology. The purpose of this network code is to bring forward a set of coherent requirements in order to meet these challenges of the future.’

<https://www.entsoe.eu/major-projects/network-code-development/requirements-for-generators/>

## Joint GCRP/DCRP Workgroup Set-up

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- Terms of Reference approved by GCRP Nov 2013 & DCRP Dec 2013
- Meetings held from Jan 2014 as follows:
  - 28th Jan 2014 – meeting 1
  - 24 March – meeting 2
  - 14th July - cancelled
  - 20th Aug - cancelled
  - 24th Sept – meeting 3
  - 20th Oct – meeting 4
- Further meetings scheduled Nov 2014-June 2015 (1 per month)



# Workgroup Members

Name	Company
Philip Jenner	RWE
John Norbury	RWE
Mick Chowns	RWE
Peter Bolitho	Waters Wye Associates
Alan Mason	Senvion
Julian Wayne	Ofgem
Steven Mockford	UK Power Networks
Peter Thomas	Nordex
John Morris	EDF Energy
Alan Creighton	Northern Powergrid
Mustafa Kayikci	TNEI
Chris Marsland	ENER-G Combined Power Limited
Guy Phillips	EON
Joe Duddy	RES
Alistair Frew	Scottish Power
Mick Barlow	S&C Electric Europe
Campbell McDonald	SSE
Mike Kay	Electricity North West
Gareth Parker	DONG
David Spillet	ENA
Sarah Carter	PPA Energy
Andrew Vaudin	EDF Energy
Chris Allanson	Northern Powergrid
Rupika Madhura	Ofgem
Amir Dahresobh	Nordex
Julian Rudd	DECC
Chris Whitworth	AMPS
Antony Johnson	National Grid
Rob Wilson	National Grid (Chair)
Robyn Jenkins	Tech Sec (National Grid) - meetings 1&2
Sara-Lee Kenney	Tech Sec (National Grid)
Celine Green	National Grid

- Workgroup is open membership within the capacity of the venues
- For this reason, started by specifying one attendee per organisation
- List does not equate to meeting attendance

## RfG Key Progress Milestones

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- RfG was the first of the European codes to be developed (started in 2009) and has provided a pilot for the process
- ENTSO-E drafting finished in June 2012; some additional changes made up to March 2013
- On 27 March 2013, ACER issued a recommendation to the European Commission to adopt the Network Code on “Requirements for Generators” (NC RfG)
- Consultants (DNV KEMA) appointed by Commission to carry out technical impact assessment – broadly supportive report released Sept 2013
- Guidance note on national application published by ENTSO-E Oct 2013
- ‘Informal service level draft’ of code published by the European Commission on 14 January 2014
- Informally, ENTSO-E told RfG is ready for inter-service consultation and legal review (Oct 2014)
- Commission objective for code to enter into force in Q1 2014

# Application of RfG to GB

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- Overriding principles for GB application:
  - Fit for purpose to cover future developments (move to increased non-synchronous & embedded generation)
  - Assumes GB remains as a synchronous area
  - Extensively replicates GB Grid Code requirements – little change for larger generators
- Main points for GB (Jan 2014 Commission draft):
  - ‘Banding’ of generators
  - Applies requirements to smaller, embedded generation (now from 800W rather than 50MW in England & Wales)
  - Operational notification process for all Embedded Plant allocated to Relevant Network Operators
  - Retrospective application?

# Workgroup Progress



# Main Agenda Items

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- 28th Jan 2014 – meeting 1
  - Purpose of group
  - Main points in RfG for GB parties
  - GB code structure options
- 24 March – meeting 2
  - ECCAF code mapping group (met in March 2014)
  - Feedback from DECC to the Commission on Jan 2014 draft
  - Applicability of code
  - Banding thresholds – background and considerations
- 24th Sept – meeting 3
  - Recap of progress
  - GB code structure proposed solution
  - Main GB considerations
- 20th Oct – meeting 4
  - Implementation approach (DECC)
  - GB parameter setting
  - GB tasklist

## Next Steps – 20 Nov Meeting

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- Implementation of key areas:
  - Retrospectivity
  - New/existing provisions
  - Banding thresholds
- Project planning:
  - Assumptions & key dates
  - Task management
  - ‘Chunking up’ of work into modification proposals



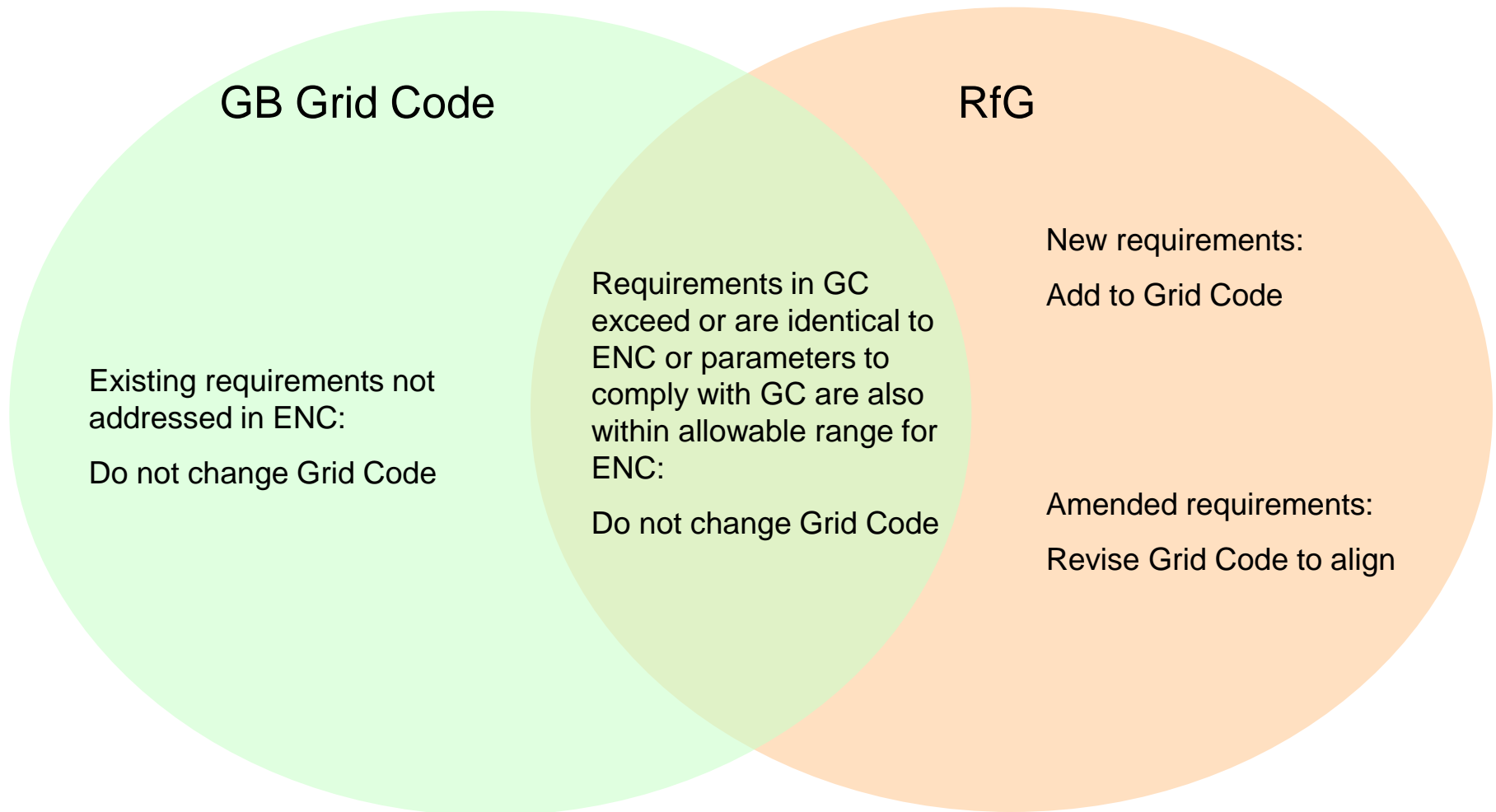
# Structure for mapping RfG to GB Framework



# European Network Codes:

GB application - overall concept is minimum change

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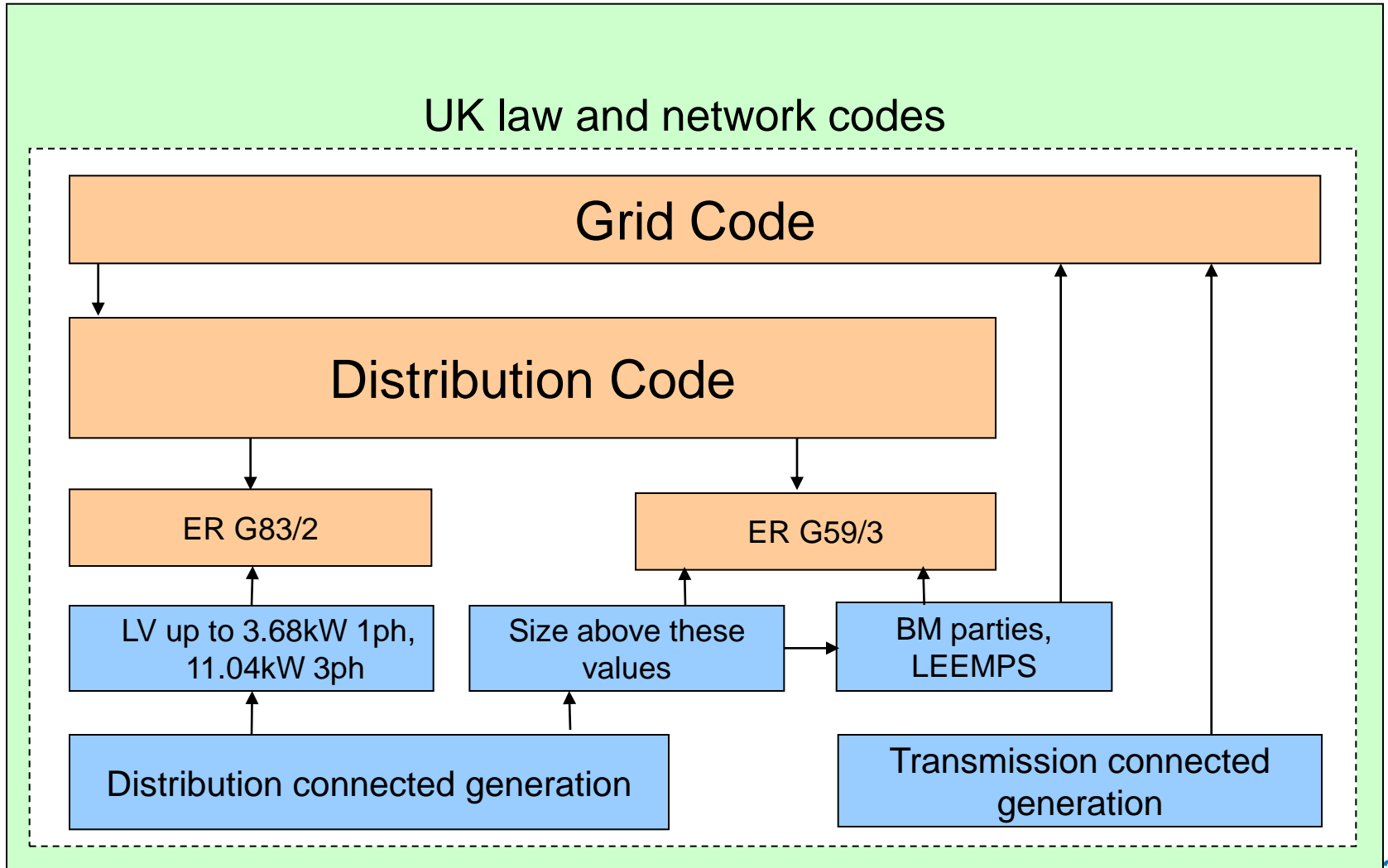


# Purpose

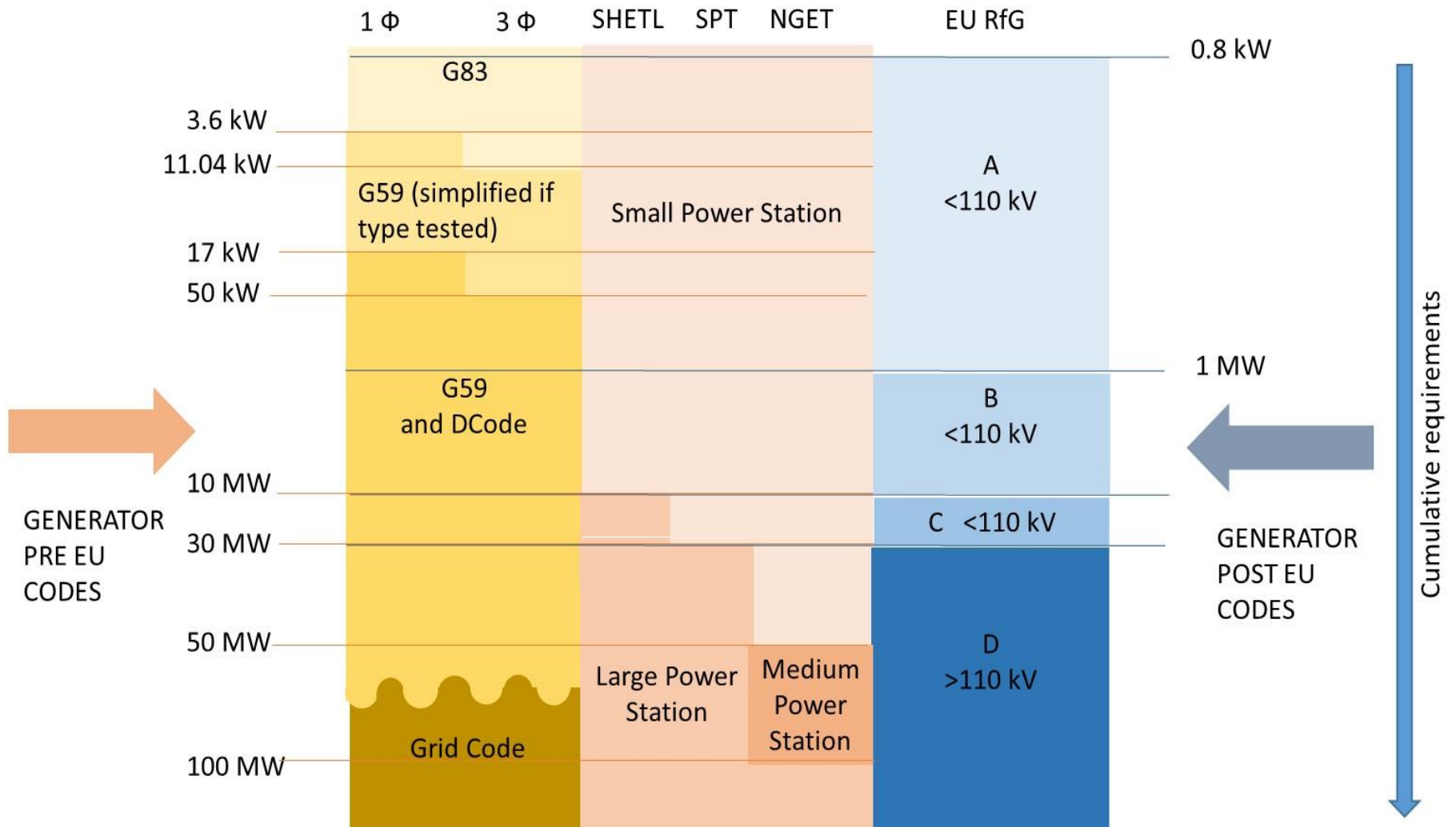
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- Aligning to the GB framework aims to achieve:
  - Clarity for users
  - Clear selection of national parameters
  - Clarity for compliance checking

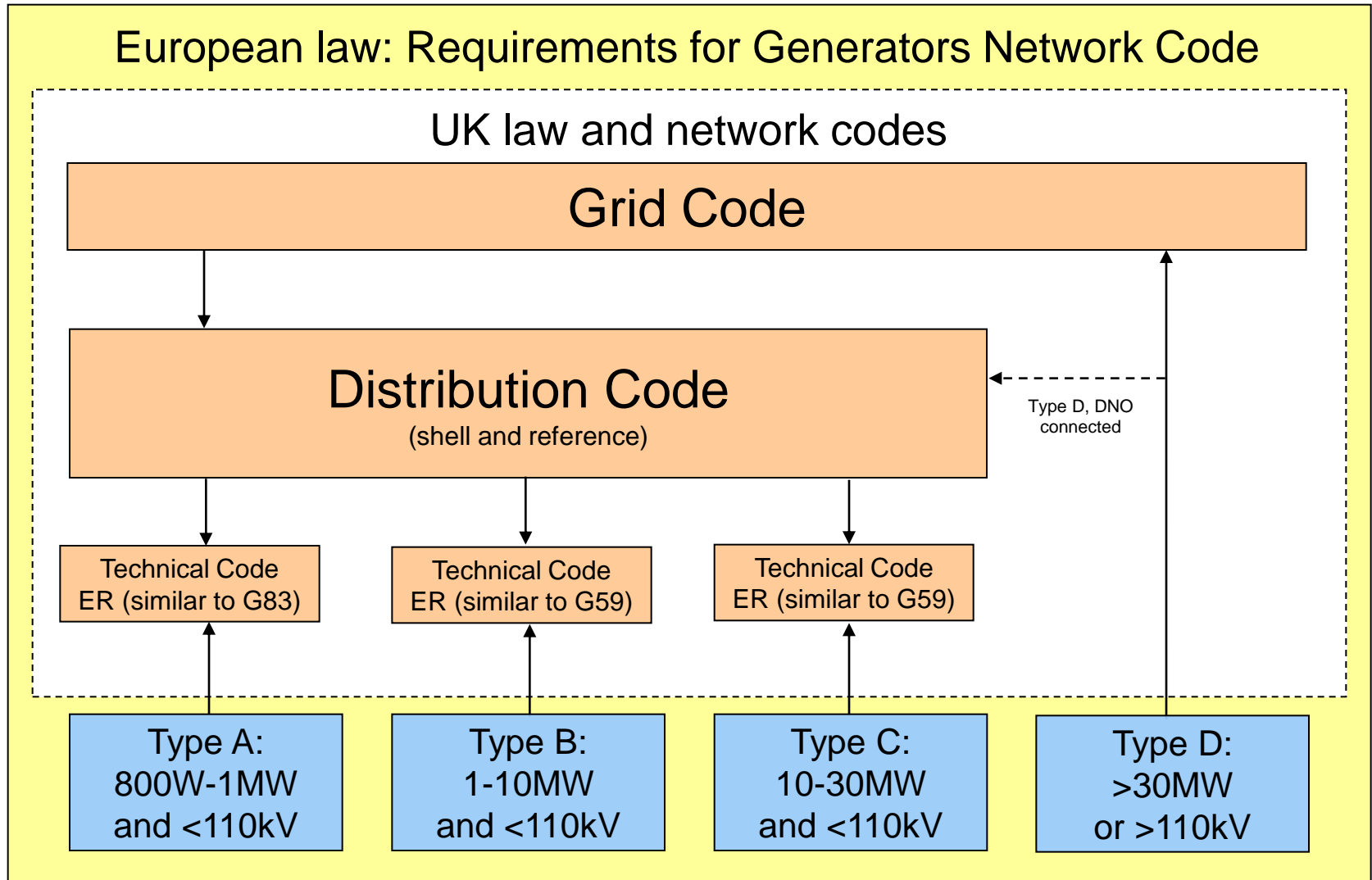
# Existing GB Codes



# Integrating EU Network Codes



# Proposed Solution: Application through existing GB Codes





# Banding Thresholds



## Reminder: RfG Banding Proposals

- Supplements current GB Small/Medium/Large classifications with type A-D bandings
- Helpful clarification of intent for each type of generator in 'Whereas' section of code
- Any generation connected at 110kV or above is categorised as Band D independent of its size
- TSOs need to define thresholds – but may not be above levels set out in code

Current Grid Code banding:

Generator Size	Direct Connection to:		
	SHET	SPT	NGET
Small	<10MW	<30MW	<50MW
Medium			50-100MW
Large	10MW+	30MW+	100MW+

RfG banding – Jan 2014 draft:

RfG Type	Generator Capacity	Connection Voltage
A	800W-1MW	<110kV
B	1-10MW	<110kV
C	10-30MW	<110kV
D	≥30MW	>110kV

## ‘Whereas’ Extract (Jan 2014)

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- Requirements applicable to Type A Power Generating Modules are the basic level requirements, necessary to ensure capability of generation over operational ranges with limited automated response and minimal system operator control of generation. They ensure there is no wide scale loss of generation over system operational ranges, thereby minimizing critical events, and include requirements necessary for wide spread intervention during system critical events
- Requirements applicable to Type B Power Generating Modules provide a wider level of automated dynamic response with higher resilience to more specific operational events to ensure use of this higher dynamic response and a higher level system operator control and information to utilize these capabilities. They ensure automated response to alleviate and maximize dynamic generation response to system events, greater Power Generating Module resilience of these events to ensure this dynamic response and better communication and control to leverage these capabilities
- Requirements applicable to Type C Power Generating Modules provide refined, stable and highly controllable (real time) dynamic response to provide principle ancillary services to ensure security of supply. These requirements cover all operational Network states with consequential detailed specification of interactions of requirements, functions, control and information to utilize these capabilities. They ensure real time system response necessary to avoid, manage and respond to system events. These requirements provide sufficient generation functionality to respond to both intact and system disturbed situations, and the need for information and control necessary to utilise this generation over this diversity of situations.
- Requirements applicable to Type D Power Generating Modules are in particular specific for higher Voltage connected generation with impact on entire system control and operation. They ensure stable operation of the interconnected Network, allowing the use of ancillary services from generation Europe wide.

# Threshold Setting Process

TSOs are required to set the thresholds within the maximum bandings allowed by synchronous area. This work will:

- a) be based on accurate data, and in this context Power Generating Facility Owners shall assist and contribute to this the determination of the threshold and provide the relevant data as requested by the Relevant TSO.
- b) be coordinated with adjacent TSOs and DSOs
- c) follow public consultation by the Relevant TSO
- d) be subject to the approval of the National Regulatory Authority respecting the provisions of Article 4(3).

Synchronous Area	RfG Jan 2014 Thresholds			
	A	B	C	D
Continental Europe	800W-1MW	1MW-50MW	50MW-75MW	75MW+
Nordic	800W-1.5MW	1MW-10MW	10MW-30MW	30MW+
Great Britain	800W-1MW	1MW-10MW	10MW-30MW	30MW+
Ireland	800W-0.1MW	1MW-5MW	5MW-10MW	10MW+
Baltic	800W-0.5MW	1MW-10MW	10MW-15MW	15MW+
Possible GB alternative (NGET proposal)	800W-1MW	1MW-30MW	30MW-50MW	50MW+

# Project Planning



# GB Task List (high level)

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- Retrospectivity process (3.a.3)
  - Process for consideration of plant as new/existing (3.a.4)
  - TSO setting of banding thresholds (3.b.2-4)
  - Specific technical requirements: (some of main areas being)
    - Frequency response
    - Frequency stability
    - Restoration (B-D)
    - Black Start (C-D)
    - Pole slipping protection (C-D)
    - Dynamic system monitoring (C-D)
    - Fault Ride Through. Type B especially – which is not under FRT workgroup as this only covers large synchronous plant
    - Reactive power capability (C-D synchronous & PPMs)
  - GB parameter setting
  - Processes for: (may require alignment or extension to D-code)
    - Operational notification
    - Compliance
  - Derogation process
  - Reflection of RfG requirements into BCAs
- } Priority



# GB Parameters

Article	Provision	GB Parameter Setting Requirement
8.1(a)-(d)	Frequency ranges	GB parameters already consistent
8.2	RoCoF	Set value and include in GC/DC. At present set in BCAs.
8.3.a.1	LFSM-O threshold:	50.4Hz is within range. BC3.7.2
8.3.a.2	LFSM-O droop	10% is within range. BC 3.7.2
8.4	The Power Generating Module shall be capable of maintaining constant output at its target Active Power value regardless of changes in Frequency:	Already consistent with CC6.2.3
8.5	Admissible Active Power reduction from maximum output with falling Frequency	GB values are within allowable range. CC6.3.3
9.3	Type B Fault ride through	Not under FRT workgroup as this only covers large synchronous plant. GB parameters need setting
10.2.b	Type C LFSM-U settings	New requirement to codify in CC 6.3.7 and parameters to be selected (range, droop, trigger points etc).
10.2.c	Frequency Sensitive Mode (FSM) settings	Broadly the same as GB Grid Code CC6.3.7. Parameters fall within range. Set Freq Response Insensitivity range – GB doesn't have this but does have freq response deadband
10.2.c.5	Active Power Frequency Response details and period of provision	Existing GB values within range (primary/secondary response timescales). But some new requirements (max delays).
11.3.a	Type D Fault ride through (Add-on to type B but with different parameters).	Requirements need to be transposed and GB parameters need to be set and checked. Some of this is being progressed through GC WG
12.3	Robustness and post fault Active Power recovery after fault-ride-through.	Select active power recovery parameters. Otherwise consistent with current GB Grid Code wording
13.2.a	Reactive power capability	New text to be included
13.2.b-c	Reactive Power capability at and below Maximum Capacity	Code changes and parameter settings necessary. Specified in a very different way in current GB codes
14.2.a-b	Voltage stability	Parameters and settings of the Voltage control system and excitation system. Agreement through BCAs currently. Excitation spec already in GB Grid Code under CC6.3.8 & CCA.6. Needs consistency checks
15.2.b	Fast Fault Current	New requirement. Loosely covered in GB Grid Code but needs text changes & expansion of FRT requirements. Plus GB parameter setting
16.3.b-c	Reactive power capability at and below maximum capacity	Code changes and parameter settings necessary. Specified in a very different way in current GB codes
16.3.e	Active Power contribution or Reactive Power contribution priority during faults	Defined by TSO. New text. Parameters and decisions required. Linked to fast current injection for PPMs
20	Offshore PPMs Voltage stability requirements	New text and parameters required. Parameters depend on configuration

## 5. JESG & ECCAF 2015 Meeting Dates



Tom Selby  
JESG Technical Secretary

# Provisional JESG Dates 2015

Date	Details
Tuesday 20 January	
Tuesday 17 February	<i>DECC/Ofgem Stakeholder Group proposed for 18 February; suitability of 17/2 tbc</i>
Tuesday 17 March	
Tuesday 28 April	<i>DECC/Ofgem Stakeholder Group proposed</i>
Thursday 21 May	(Avoiding Energy UK Board meeting on Tuesday 19 <sup>th</sup> )
Tuesday 16 June	
Wednesday 29 July	<i>DECC/Ofgem Stakeholder Group proposed</i>
<i>August – Date TBC</i>	<i>Edinburgh JESG</i>
Thursday 17 September	
Tuesday 20 October	<i>DECC/Ofgem Stakeholder Group proposed</i>
Tuesday 17 November	
Wednesday 2 December	

## Provisional ECCAF Dates 2015

Date	Description
Tuesday 6 January	
Tuesday 3 February	
Tuesday 3 March	
Tuesday 14 April	<b>(Avoiding half term 30 March – 10 April)</b>
Tuesday 5 May	
Tuesday 2 June	
Wednesday 1 July	
<b>August - TBC</b>	
Tuesday 1 September	
Thursday 1 October	
Tuesday 3 November	
Tuesday 1 December	

## 6. Forthcoming Events



Tom Selby  
JESG Technical Secretary

## Forthcoming Events – ENTSO-E

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- Emergency & Restoration Network Code: Stakeholder Workshop

- Wednesday 12 November, Brussels

- ENTSO-E Conference

- Wednesday 19 November, Brussels

[www.entsoe.eu/news-events/events](http://www.entsoe.eu/news-events/events)

## Forthcoming Events – ACER

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- ACER REMIT Stakeholder Technical Implementation Roundtable Meeting
  - Wednesday 26 November, ACER Offices, Ljubljana

<http://www.acer.europa.eu/Events/>

## Forthcoming Events - JESG

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- Next Scheduled JESG: Wednesday 3 December

<http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Standing-groups/Joint-European-standing-group/>



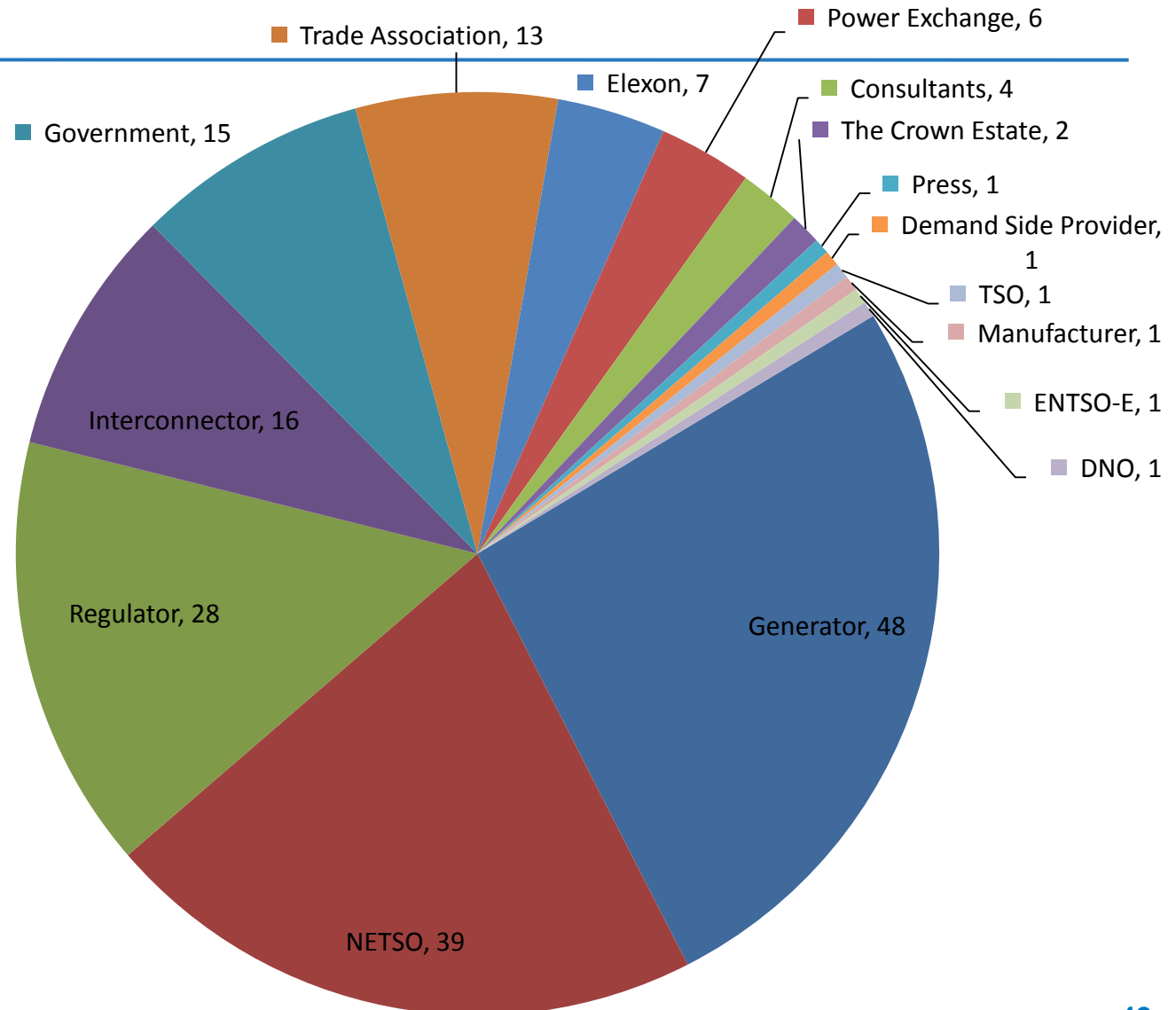
## 7. Review of Stakeholder Representation



Barbara Vest  
JESG Independent Chair

# JESG 2013-14 Attendees by Organisation

- 7 meetings held over the past 12 months
- An average of 26 attendees at each meeting
- 184 attendees overall



## Summary of JESG distribution list

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- The JESG weekly email is received by 612 individuals in 273 companies (based on the domain name of the email address)
- Some of the email address are themselves distribution lists within other companies

## 8. Any Other Business



Barbara Vest  
JESG Independent Chair

## 9. Lunch



# Afternoon Session



Emergency & Restoration Network Code Technical Workshop