European Code Coordination Application Forum (ECCAF) Update



DECC-Ofgem European Stakeholder Group for Electricity

23rd January 2014

Rob Wilson
National Grid

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Items covered at first meeting – 21 November

- Background to ECCAF
- Election of Chair
- Development process and status of ENCs
- Implementation in GB (DECC)
- Requirements for Generators – options for application in GB
- High-level mapping of ENCs to GB Codes
- Future Meetings

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Background to ECCAF

- There are 9 ‘priority’ European Network Codes due to become law during 2014.
- GB will have 18 months – 3 years to demonstrate compliance (varies code-by-code)
- Alignment with GB Codes (and between European codes) will aid application and compliance
- GB Code panels will retain their role to make changes to individual codes – strong feedback from all parties to use existing processes
- **A complex programme with a significant risk, which needs cross GB code coordination**

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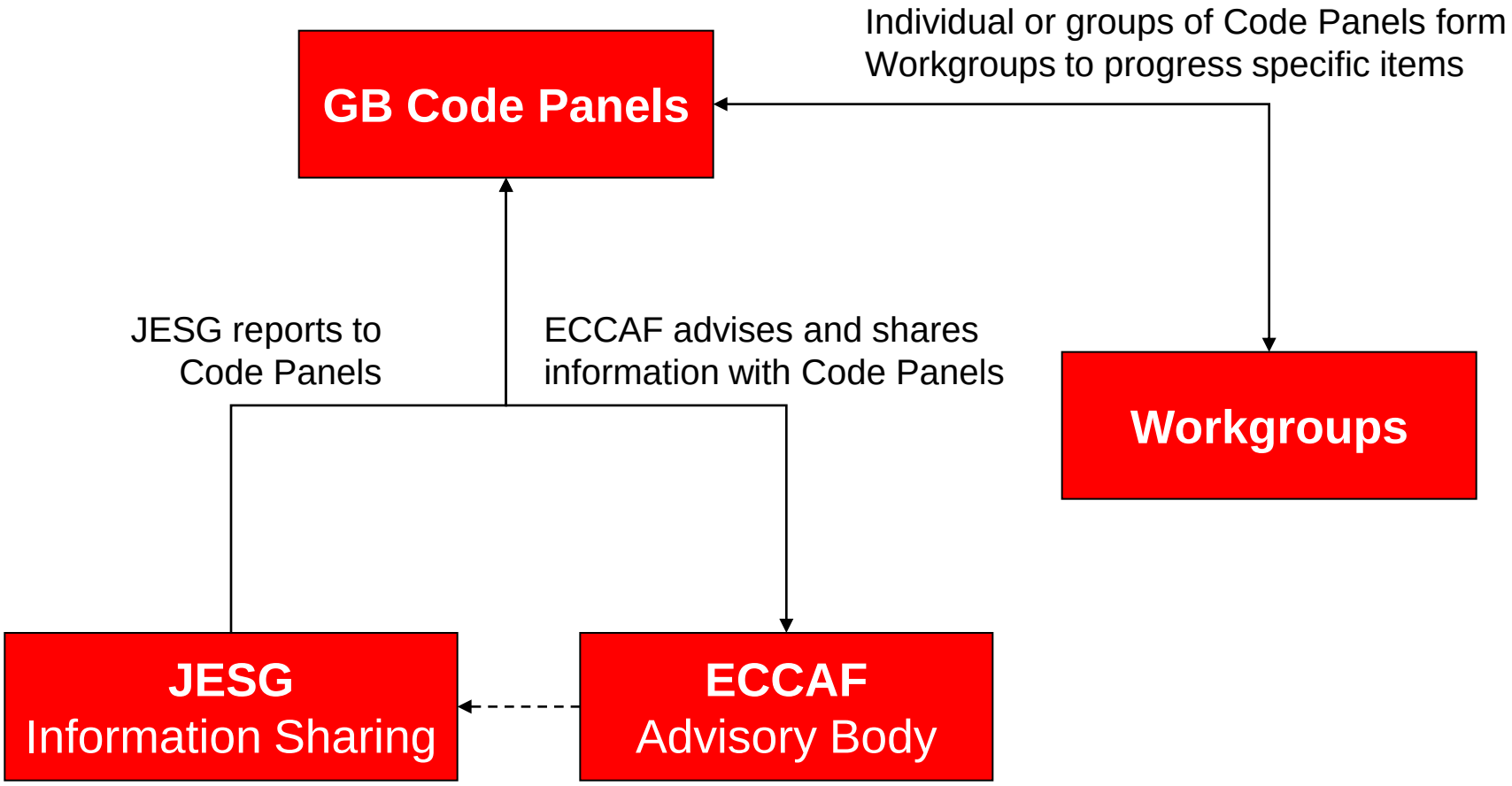
Scope & membership

- **Advises the Code Panels on matters of coordination of application of European Network Codes to GB Codes**
- No firm legal or governance role
- Constituted as a joint standing group of 7 code panels
  - Grid Code, CUSC, BSC, SQSS, STC, D-Code, DCUSA
- Membership:
  - 7 industry members representing Code Panels
  - National Grid, Consumer Futures, DECC, Ofgem
  - Chair appointed by members
  - Technical Secretary / Admin provided by National Grid
  - Other industry parties can attend as observers by notification to the Technical Secretary

GB Code Governance



Membership

Barbara Vest	EnergyUK	Chair
Peter Bolitho	Waters Wye	BSC Panel
Garth Graham	SSE	CUSC Modification Panel
Mike Kay	ENWL	D-Code Review Panel
Peter Waymont	UK Power Networks	DCUSA Panel
Joseph Dunn	SPT	STC Panel
Vacant		SQSS Panel
Carole Hook / Bec Thornton		National Grid
Fiona Navesey		DECC
Abid Sheikh		Ofgem
Paul Wakeley		Technical Secretary

High-level 'natural' mapping of ENCs to GB Codes

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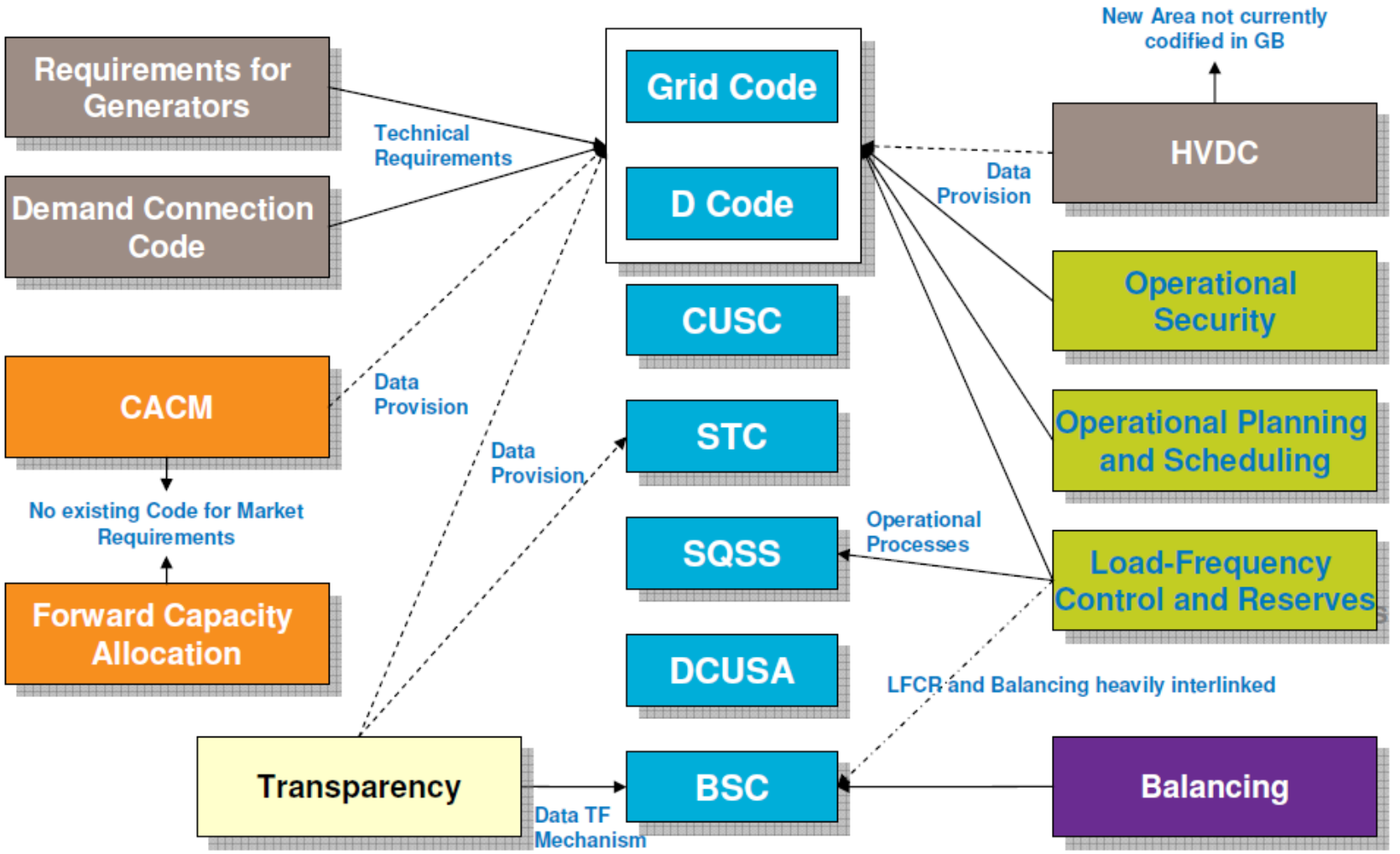

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Future meeting items

- Meetings are expected to be held monthly
- Agenda items for 30th January Meeting:
  - Process for application and engagement (high-level strategy).
  - Ensuring consistency in the application of multiple ENCs to multiple GB Codes.
  - ECCAF Workplan to drive future agenda items, expecting to broadly consider Codes in line with progress through the development / approval process.
  - GB Code Structure discussion & recommendation. Criteria to consider will include:
    - Ease of use
    - Retaining existing structures (codes, contracts) or not?
    - Could application of other ENCs follow the same principles?
    - Achievability in the time available
    - Clarity/ease of implementation and compliance

RfG - GB Application Structural Options

Application through existing processes

Place all requirements in Grid Code. D Code operates as shell and onwards reference to ERs

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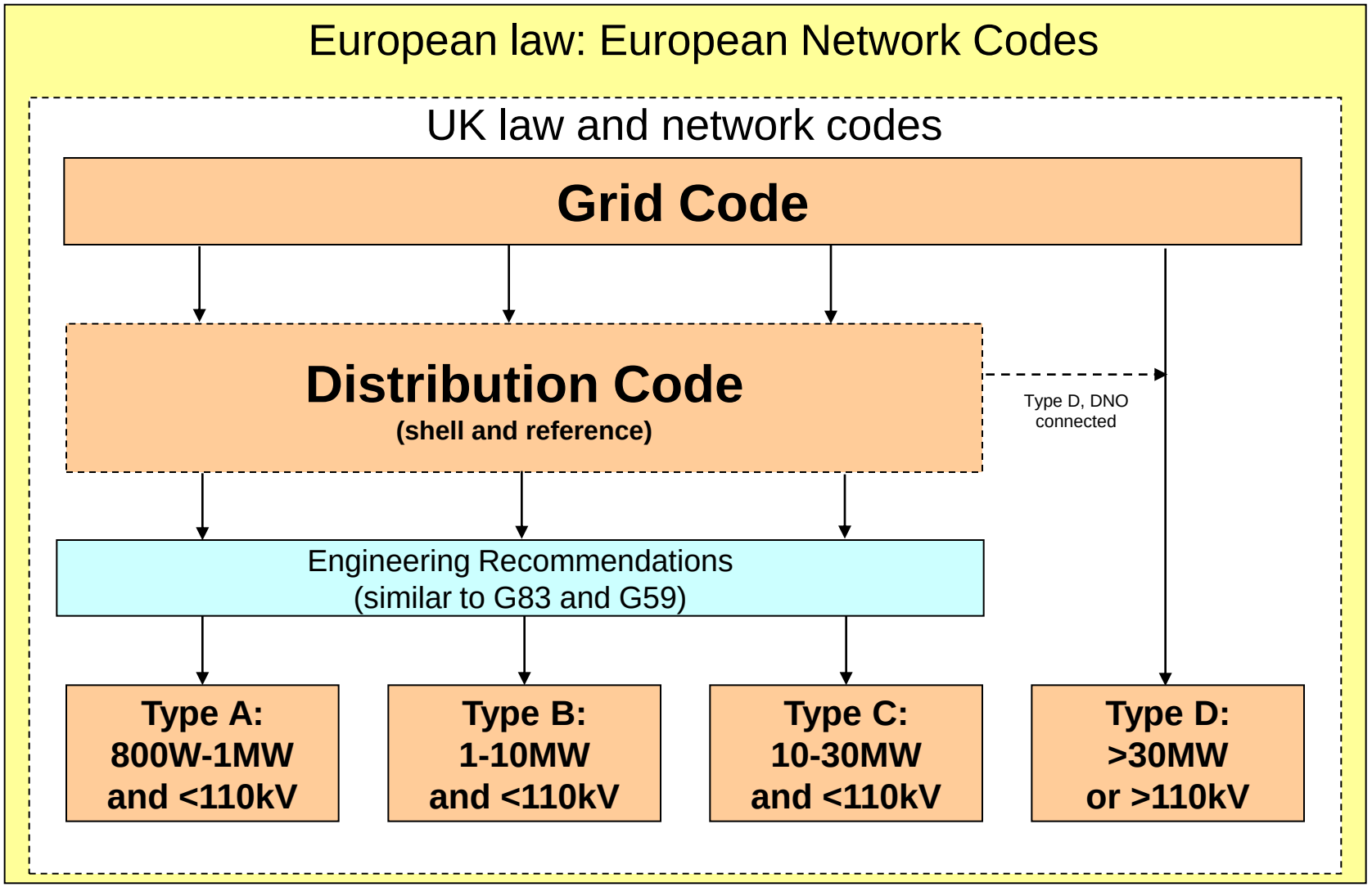

Variations on using existing processes solution:

There are a few ways that this could be achieved, but in essence each requires similar actual work. The vehicles used and degree of replication are different though.

Options:

- Place all requirements in the Grid Code; for ease of use replicate in Engineering Recommendations / Distribution Code for type A-C generators

  (option as shown and detailed on previous slide)

- Place A-C requirements in Distribution Code, D in Grid Code
- Place all of A-D requirements in a ‘suite’ of Engineering Recommendations / Guidance Notes; G and D codes act as reference shells to these

Copy & Paste 'Omnicode' Solution

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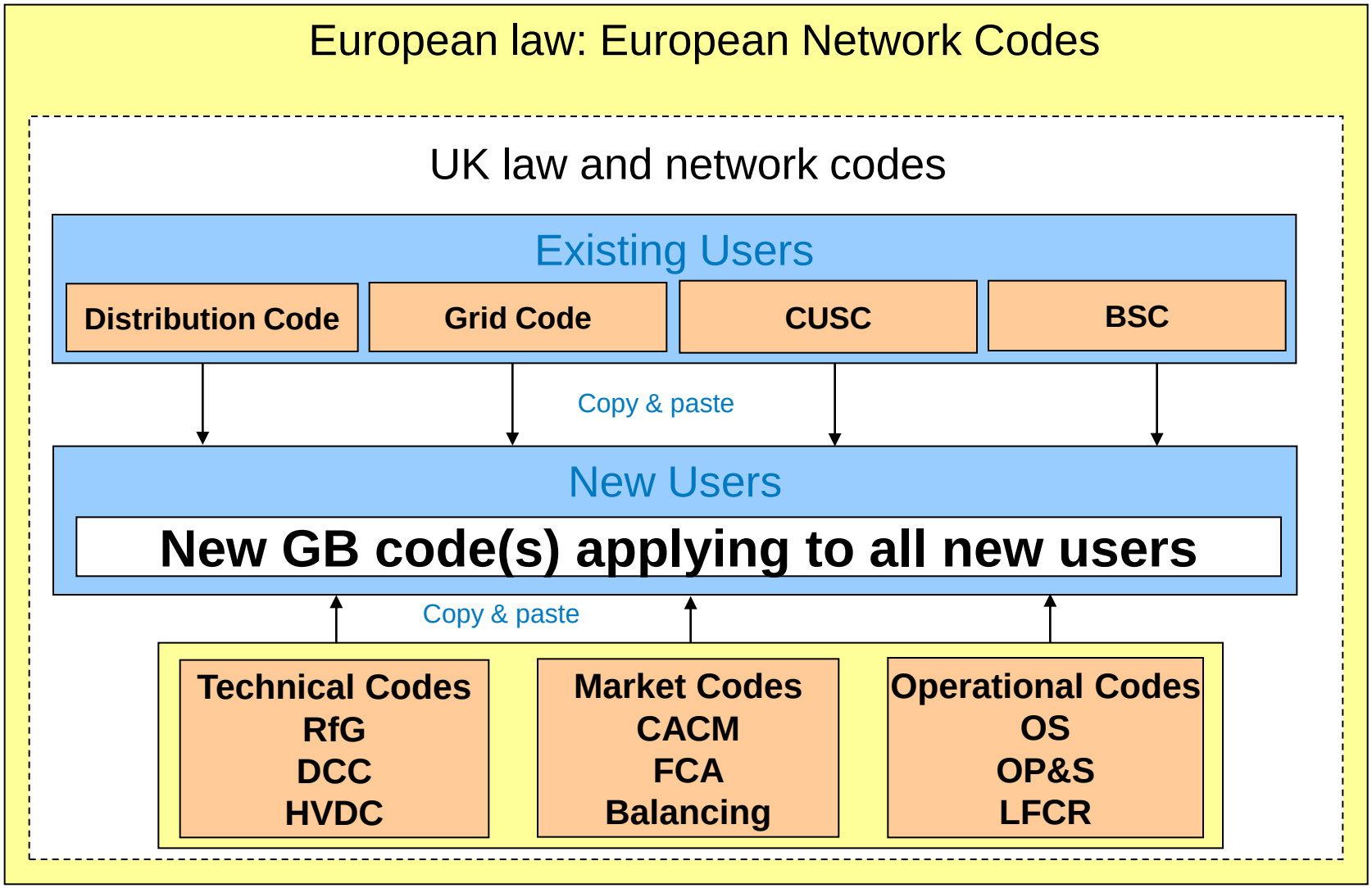
Place all requirements for new users across all GB codes into a minimum number of new codes



Advantages of Using Existing Codes/Processes

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Generally acknowledged:

- Can be easily recognised by all parties as similar to existing processes and with established routes for governance
- Can more easily achieve a timely solution
- Closer structures and processes for existing and new Users. No need for parallel governance
- Will work across the full range of Users
- Reflects Code Governance Reviews (CGR1&2) and history of code modifications

Less clear:

- Can be extended to application across all GB and European codes
- Can be easily tested for the correct or complete mapping of RfG requirements

Advantages of Using Copy & Paste 'Omnicode' Solution to Create New European Code(s)

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Generally acknowledged:

- Neater minimum number of codes solution
- Greater clarity of mapping leading to easier testing of correct enactment

Less clear:

- Substantially different to existing processes
- Two stream structure between new and existing Users will continue indefinitely – and this applies also to Review Panels and governance
- May need licence or legislative changes

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Pros and Cons

Issue	Approach			
	Existing process based			Omnicode solution:
	Place all requirements in the Grid Code; for ease of use replicate in Engineering Recommendations / Distribution Code for type A-C generators	Place A-C requirements in Distribution Code, D in Grid Code	Place all of A-D requirements in a 'suite' of Engineering Recommendations / Guidance Notes; G and D codes act as reference shells to these	Copy & paste all relevant GB/ENC clauses for new users into (probably) 3 new codes for ENCs in technical, operational and market areas
Ease of use				
Ease of use - users	Solution relies on ERs or guidance notes to make it useable for smaller generators but is then straightforward	Clarity of which doc applies to which party will be OK	Probably easiest for users	Likely to need guidance notes for all parties to make manageable
Ease of use - TSO/DNOs	DNOs need to refer to GC	Little change to current	Harder - as multiple docs to maintain and coordinate	Two stream document solution (new vs existing) results and is cumbersome
Number of documents	Replication of requirements will give alignment issues	Small number of users (type D, DNO connected) would need to refer to both DC/GC	Multiple documents but does keep all users in either DC or GC	Very neat minimum number of codes solution potentially across all codes for new users
Guidance notes required	Yes, but no different to existing	Yes, but aligns to existing	Yes, and extension of existing arrangements. Suite of documents required	Probably
Structure				
Retains existing codes structure	Yes, but GC becomes more cumbersome through extension to more users	Yes	No. Fundamental changes and multiple documents	No, radical departure. Would need backing from DECC/Ofgem and possibly licence changes
Retains contractual structure	Increases complexity for D-connected gens	Yes	Makes it simpler in principle	Potentially makes things easier going forwards for new users at least
Could application of other ENCs follow the same principles?	Yes, although multiple changes will be reqd	Yes, close to an as is solution using existing processes	Yes, and can build in more annexes to DC/GC 'shells' fairly simply although number of separate documents is a concern	Yes, and this is one of the main considerations
DNO/SO/TO interactions require examination	Yes - to cover D-connected users	Yes - but requirements should cascade fairly neatly	Interactions probably straightforward and covered in DC/GC 'shells'	Yes - to consider how all of this will work within existing licences
What happens to residual GB code requirements?	Unaffected - stay as they are where no conflict with ENCs	Unaffected - stay as they are where no conflict with ENCs	Unaffected - stay as they are where no conflict with ENCs	Concept is to continue copy&paste principles from GB codes into European code vehicle for new users
Administration & Governance				
Administration	Simple in principle. Becomes led by existing GC processes	Close to existing administration in principle, but complicated due to cumulative requirements across A-D bands	Uncertain how this would be administered and who would own suite of ERs	New governance structure required across GB codes in parallel to existing (although pragmatically mainly the same industry representatives)
Future changes (European code driven)	Existing processes. But likely to add to any mapping problems	Close to existing processes. But likely to add to any mapping problems	A little harder - replication	ACER change process identified. Probably easier to apply.
Future changes (GB driven)	Existing processes. But likely to add to any mapping problems	Close to existing processes. But likely to add to any mapping problems	A little harder - replication	Existing processes. Two stream codes does add some complication
Good governance / open governance or compliance with Ofgem best practice	As GC	As GC	Uncertain, probably as GC	Could be as CUSC
Timescales				
Could application to other GB codes follow the same principles in the time available?	Yes. Not everything happens in the Grid Code obviously, but the same principles of keeping to minimum solutions with existing processes can apply	Yes, close to an as is solution using existing processes	Following this route for other codes as well becomes untenable due to number of documents	Yes. Can easily extend concept across all GB codes/ENCs. Same arguments in cumbersome results but same advantages too
Timescales (can the end result be achieved within the window available?)	ER agreement process may add some time	A little harder given ER agreement process	A little harder given ER agreement process	Probably harder given changes to governance and structure, although at least text is largely to paste
Implementation & Compliance				
Implementation clarity	Mapping to ENCs is not straightforward	Mapping to ENCs is not straightforward	Feels harder as multiple documents, although each is specific to a user	Clarity due to overall 'copy&paste' solution and could also show references
Compliance	As existing GC - and can add clarity in supporting documents. Testing compliance of smaller users will be difficult for DNOs and may need an aggregation/type test approach	As existing GC. Testing compliance of smaller users will be difficult for DNOs and may need an aggregation/type test approach	Feels harder as multiple documents, although each is specific to a user	Can add clarity in supporting documents. Testing compliance of smaller users will be difficult for DNOs and may need an aggregation/type test approach

Colour code:

Red – difficult or increases complexity

Amber – some issues

Green - straightforward

ACER G:D Split Review

Garth Graham

23rd January 2014

Requirement

- COMMISSION REGULATION (EU) No 838/2010 of 23 September 2010 (Part B)

- (3) ....Annual average transmission charges paid by producers [generators] in Ireland, Great Britain and Northern Ireland shall be within a range of 0 to 2,5 EUR/MWh

- (4) The Agency shall monitor the appropriateness of the ranges of allowable transmission charges, taking particular account of their impact on the financing of transmission capacity needed for Member States to achieve their targets under the Directive 2009/28/EC (1) of the European Parliament and of the Council and their impact on system users in general.

- (5) By 1 January 2014 the Agency shall provide its opinion to the Commission as to the appropriate range or ranges of charges for the period after 1 January 2015.

EnergyUK Letter (1)

- EnergyUK wrote to Ofgem on 6th November 2013 seeking a short term consultation to feed GB stakeholder views into Ofgem before the ACER Review concludes.
- “Members have a variety of views on whether the existing annual average electricity transmission charge range paid by GB producers, of between €0 and €2.5, should either remain the same or be amended, and if adjusted whether the upper figure (of €2.5) should be higher or lower.”

EnergyUK Letter (2)

- “There are cogent arguments to be made in support of changes to the figure or indeed remaining with the status quo and we are sure our members will express those arguments fully in response to any forthcoming consultation(s) by Ofgem, and ACER.”
- “If it would help we are happy to facilitate a workshop at the association's offices between Ofgem and stakeholders on this matter. ”

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Requirements for Generators (RfG) – new code draft

DECC-Ofgem European Stakeholder Group for Electricity

23rd January 2014

Rob Wilson
National Grid

RfG Key Progress Milestones

- 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 draft’ of code published by the European Commission on 14 January 2014
- Will be informally discussed at Electricity Cross Border Committee meeting on 28 January
- Presumably formal voting will follow at one or more subsequent meetings

Overview of 14 Jan 2014 Commission Informal Draft

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- Changes are not that material in the main
- There are many areas where drafting needs to be improved to clarify meaning, resolve minor inconsistencies etc
- 'Whereas' section – expanded from 8 to 38 clauses.
  - No strong legal basis
  - Generally helpful expansion on roles, responsibilities and application
  - Provided for information and to aid understanding

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Specific points in Commission Informal Draft

Timescales / application once RfG becomes European Law now less clear

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- Compliance period defined in code; was 3 years and is now X years (art 63) **– this is not helpful.**
- Code applies to ‘new generators’; still defined as those that have not let contracts for major plant items by 2 years after the code’s entry into force.

‘Boilerplate’ TSO Roles text not included – important for GB in particular

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- Meant to be included in each network code
- As agreed by ENTSO-E/ACER:

  “*In Member States where more than one transmission system operator exists, this Regulation shall apply to all transmission system operators within that Member State. Where a transmission system operator does not have a function relevant to one or some obligations under this Network Code, Member States may under the national regulatory regime provide that the responsibility to comply with one or some obligations under this Network Code is assigned to one or more different transmission system operators. In case of such assignment, the Network Code shall apply accordingly to the transmission system operator(s) to which responsibilities have been assigned.*”
- Words closest to this added in ‘Whereas’ section:

  (5) The allocation of tasks between Network Operators, as well as the legal framework under which they determine the grid connections requirements, are established in each Member State in accordance with its national legislation. TSOs granted public authority or competence according to national law may adopt decisions when defining requirements under this Network Code while respecting Directive 2009/72/EC.

Article 7 removed

- Covered ability of member states to introduce or maintain legislation exceeding code requirements.
- Removed – no obvious equivalents.
- Still applicable by absence of any statement to the contrary.

Retrospectivity – mainly unchanged but clarification provided

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- Key GB stakeholder concern
- Helpful clarification provided in 'Whereas':

  (14) This Network Code should apply to new Generating facilities. Existing generating facilities and generating facilities already at an advanced stage of planning but not yet completed should continue to be subject to the requirements in force in their Member State at the entry into force of this Network Code. Only in exceptional circumstances and where there is a clear justification for extending the provisions of this network code to existing generating facilities or to generating facilities at an advanced stage of planning should national regulatory authorities approve such a change. This should be based on a detailed cost benefit analysis, taking into account the overall socio-economic impact and the impact on generators.

- Expansion on this and CBA process detailed in Article 3a - Application to New and Existing generators
  - Specific case for retrospective application needs to be made based on system change
  - Public consultation must be undertaken
  - Positive societal CBA required
  - Can be undertaken on a specific proposal only every 3 years

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Generator Banding – remains unchanged

- Replaces current GB Small/Medium/Large classifications with type A-D bandings
- Helpful clarification of intent for each type of generator in 'Whereas (15) – (19)
- TSOs still 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:

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

Fault Ride Through – important drafting errors

- Current GB requirement is 140ms (based on 3-ended protection clearance time). Little point exceeding this for new equipment
- 'Whereas' (5) however states a common range of 150-250ms
- Art 11 3(a) FRT for type D generators doesn't make sense. Suggest define directly rather than by exception.

3. *Type D Power Generating Modules shall fulfil the following requirements referring to robustness of Power Generating Modules:*

   (a) With regard to fault-ride-through capability of Power Generating Modules:

   (1) The Power generating Module shall be capable of operating in accordance with a voltage-against-time-profile shall be defined by the TSO, while respecting the provisions of Article 4(3)).

   The voltage-against-time-profile defined by the TSO shall be set using parameters in figure 3 according to tables 7.1 and 7.2. except for Power Generating Modules connected to the Transmission Network

   The voltage-against-time-profile defined by the TSO shall be set using parameters in figure 3 according to tables 3.1 and 3.2 except for Power Generating Modules connected to the Distribution Network

Offshore DC Connected Power Park Modules – need to be referenced

- RfG applies to AC-connected offshore generation but not to DC-connected (non-synchronous).
- RfG should reference the HVDC code since this provides conditions applicable to DC connected offshore generation.

Article 51 Non Binding Guidance, Monitoring, On Implementation And Stakeholder Involvement

- New article
- ENTSO-E is supportive of the formation of a pan-European stakeholder committee as proposed
- ENTSO-E wishes 51(b) to be clarified to indicate that any monitoring role taken on by ENTSO-E is additional to and only complements that undertaken by ACER and NRAs.

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Clerical Issues

- Consistency checking required – particularly between the connection conditions and the compliance sections in the rear of the document
- Definitions need checking against GB – some are the same terms and GB versions are generally better. Code acknowledges consistency work in progress on definitions by ENTSO-E & ACER
- Quality of drafting needs to be improved – there are various minor errors and inconsistencies
- The code would benefit from an index

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Background

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From the ENTSO-E website:

- ‘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/

European Network Code (ENC) Development Process

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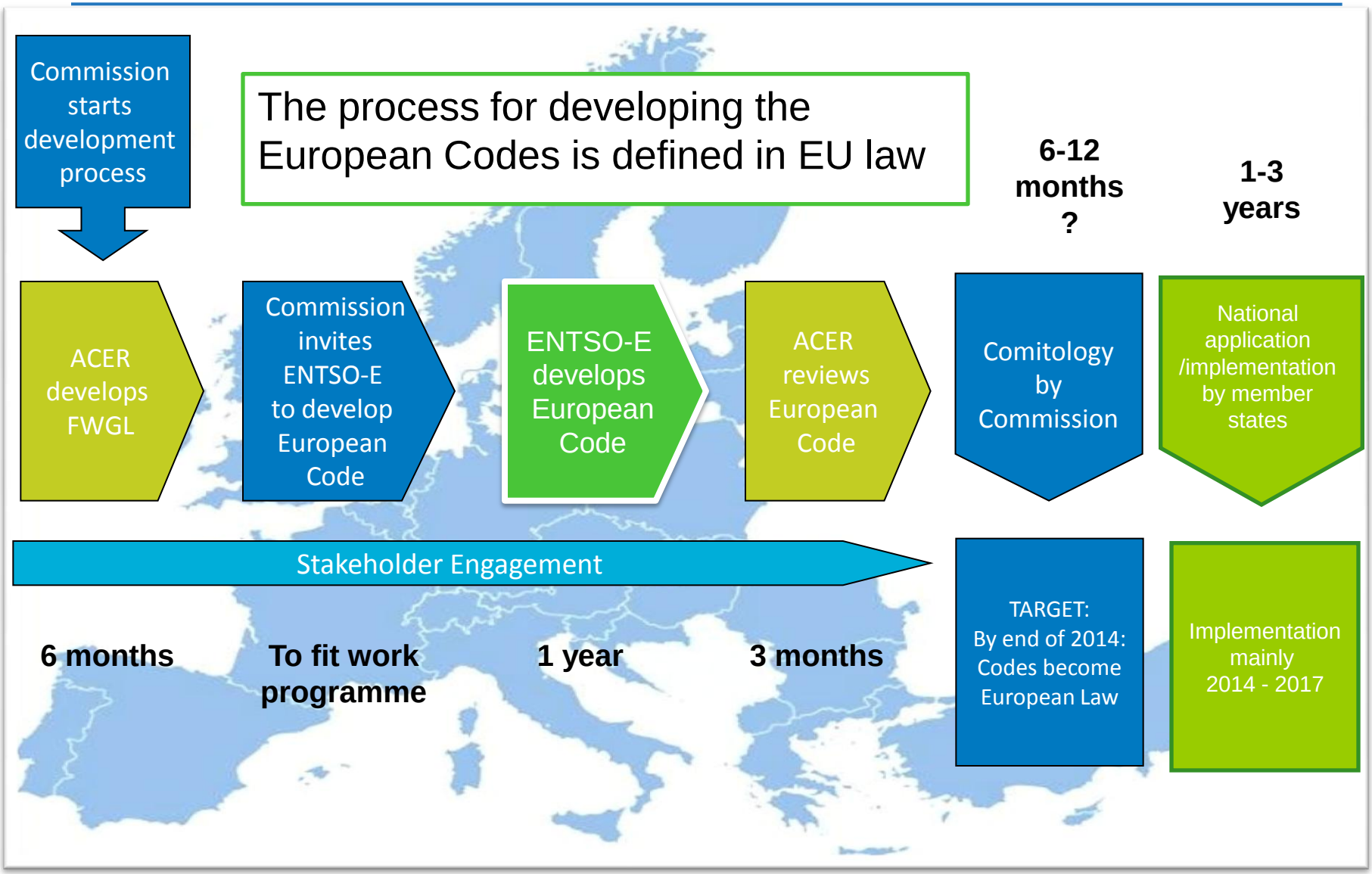


Application of RfG to GB

- Overriding principles for GB application:
  - Fit for purpose to cover future developments (move to increased non-synchronous generation)
  - Assumes GB remains as a synchronous area
  - Extensively replicates GB Grid Code requirements – little change for larger generators
- Main points for GB (March 2013 ENTSO-E draft):
  - 'Banding' of generators changes
  - 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?

HVDC Network Code
GB Stakeholder Issues

Garth Graham

23rd January 2013

JESG Technical Workshop

- Held 11th-12th December 2013, following on from ENTSOe workshop on 4th December
- Attendees included representatives of GB offshore power park developers, merchant interconnectors, the Crown Estate, Ofgem and National Grid
- 17 main GB issues raised at the JESG Workshop
- ENTSOe public consultation closed 7th January 2014

GB Issues (1)

- Significance*
- Definitions
- Structure of the Network Code
- NRA Approval
- Discrimination – HVDC Interconnectors vs generation
- Discrimination - AC vs DC connected generators

* [these are common issues across many Network Codes]

GB Issues (2)

- Discrimination - Relevant TSO owned assets
- Existing Plant – Applicability
- Existing Plant – Modernisation
- Existing Plant – Timescales
- Existing Plant – Main Plant

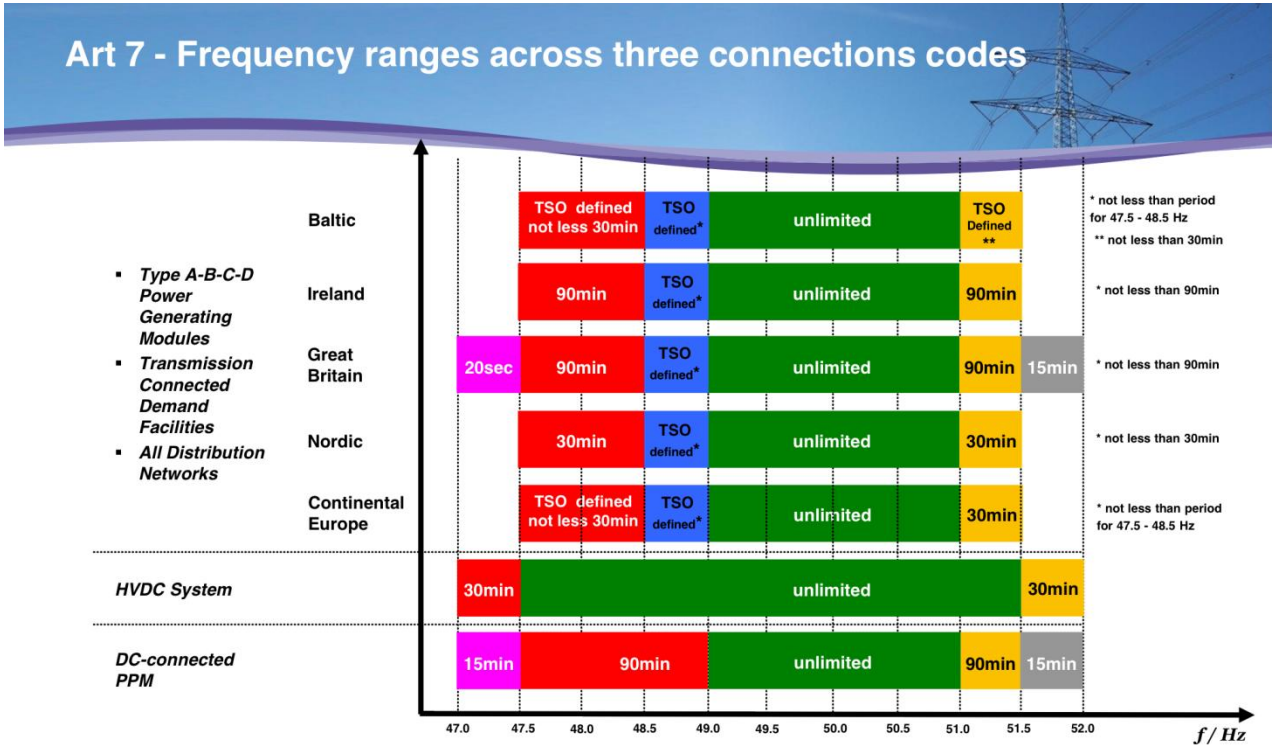
GB Issues (3)

- Scope – Offshore Grids
- Scope – Remote End Converter Stations
- Technology neutral
- Relevant TSO
- Dispute resolution
- Mandatory vs Non-Mandatory

GB Issues (4)

- Further details on what each of these 17 issues are can be found in the JESG “HVDC Issues Log” at:-
- https://www.nationalgrid.com/NR/rdonlyres/EBF7916B-3194-4EBF-BA49-EE45281F7479/63344/HVDCIssuesLogv12.pdf

Example of an Issue



- **NC HVDC ranges ensures that the network is more resilient to disturbances than generation or demand**

Potential consequences (1)

- Pan European stakeholders meeting with ENTSOe drafting team last week (15th January)
- Potential consequences identified, from the perspective of a GB offshore power park developer, of the HVDC Network Code

Potential consequences (2)

Low end

- increased cost of energy!
- prevention of natural development of new technologies
- increased commercial risk and uncertainty
- discrimination of existing and foreseeable technologies
- discrimination of DC connected PPMs
- unnecessary additional anticipatory investments required (financial risk)

High end

- prevention of natural development of new (renewable energy) technologies
- **withdrawal from the investments/projects (not unlikely as it stands!)**