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GC0091 – Demand Connection Code (DCC) Workgroup Meeting 1

20 November 2015

Agenda

- European Network Code intro
- Lessons learnt from ENCs so far
- Application of DCC
- Project Plan
- Future meetings

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European Network Code intro

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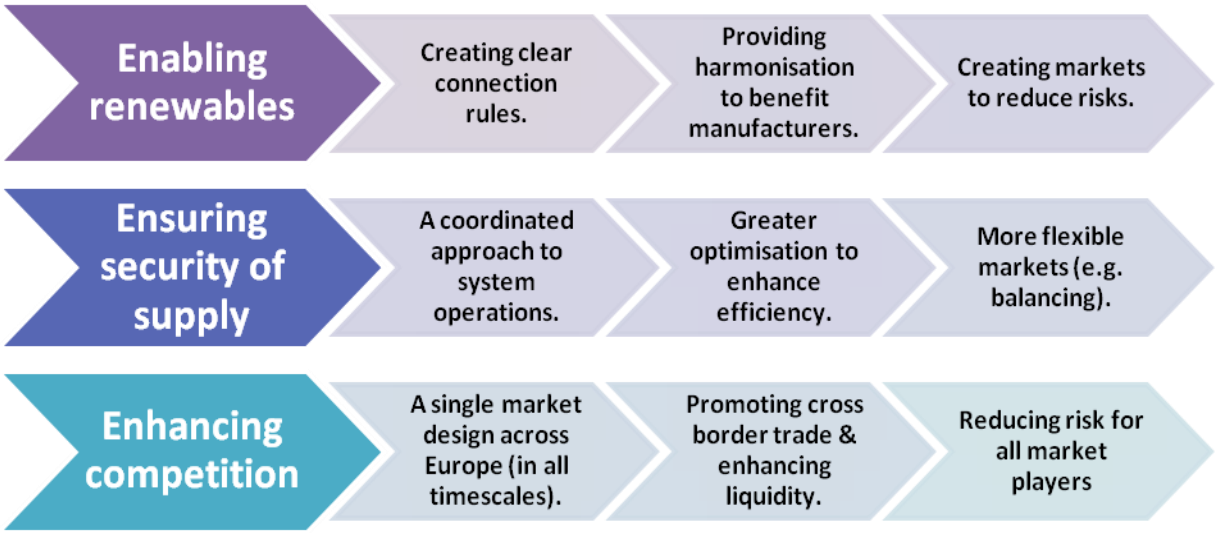
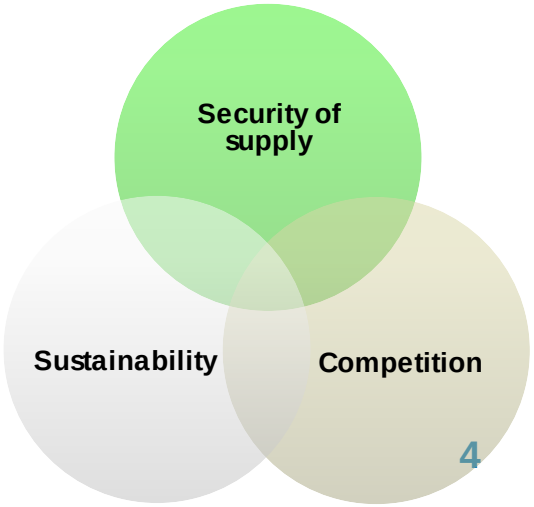
The Third Energy Package

- 3 regulations and 2 directives.
- Adopted July 2009, law since March 2011
  - Key step forward in developing a (more) harmonised European energy market
  - Separation of ownership of monopoly energy transmission activities
  - Formation of European Transmission System bodies - ENTSO-E
  - Formation of ACER – Agency for Cooperation of Energy Regulators





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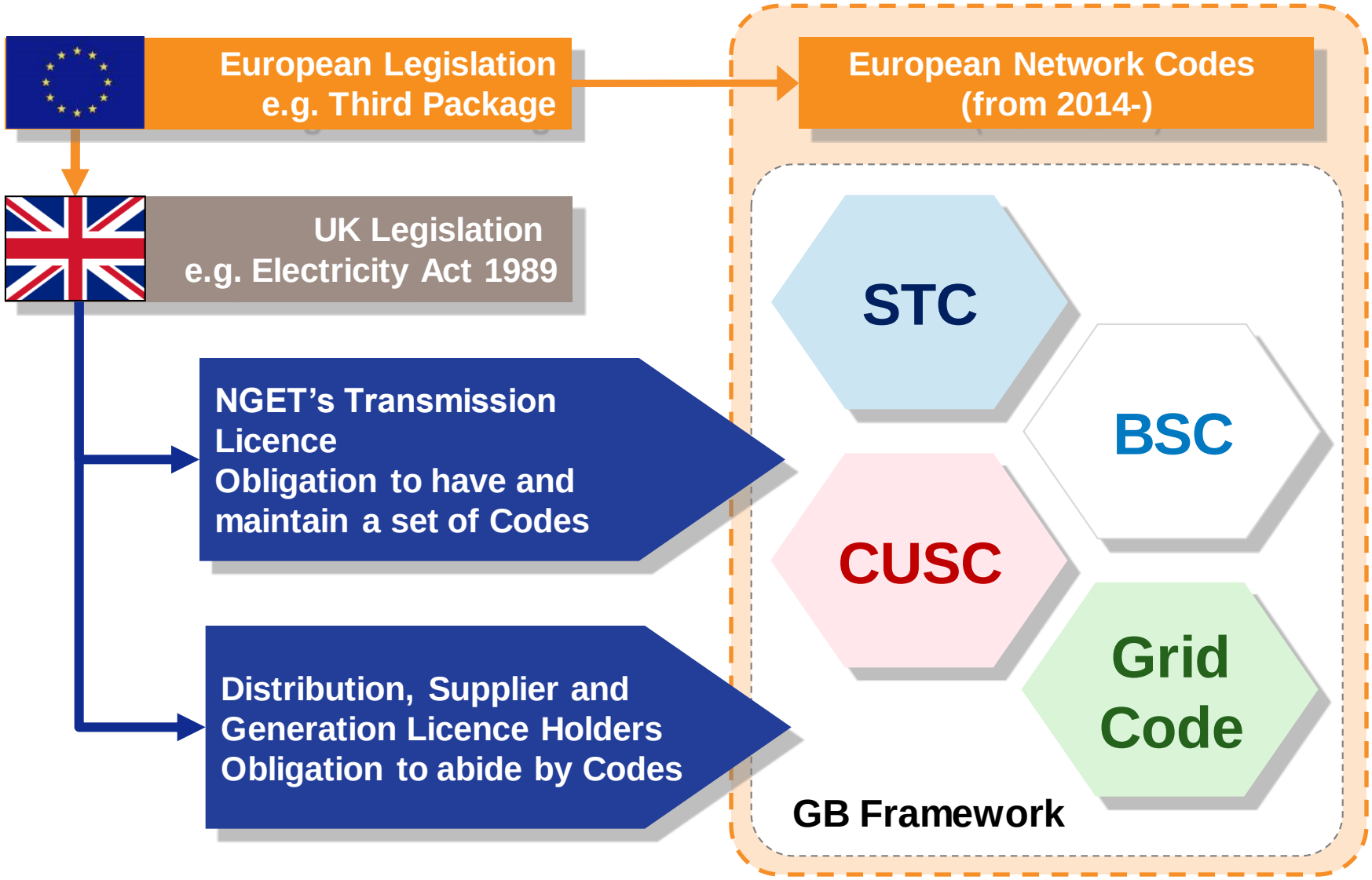
Electricity Codes: The industry's rule book



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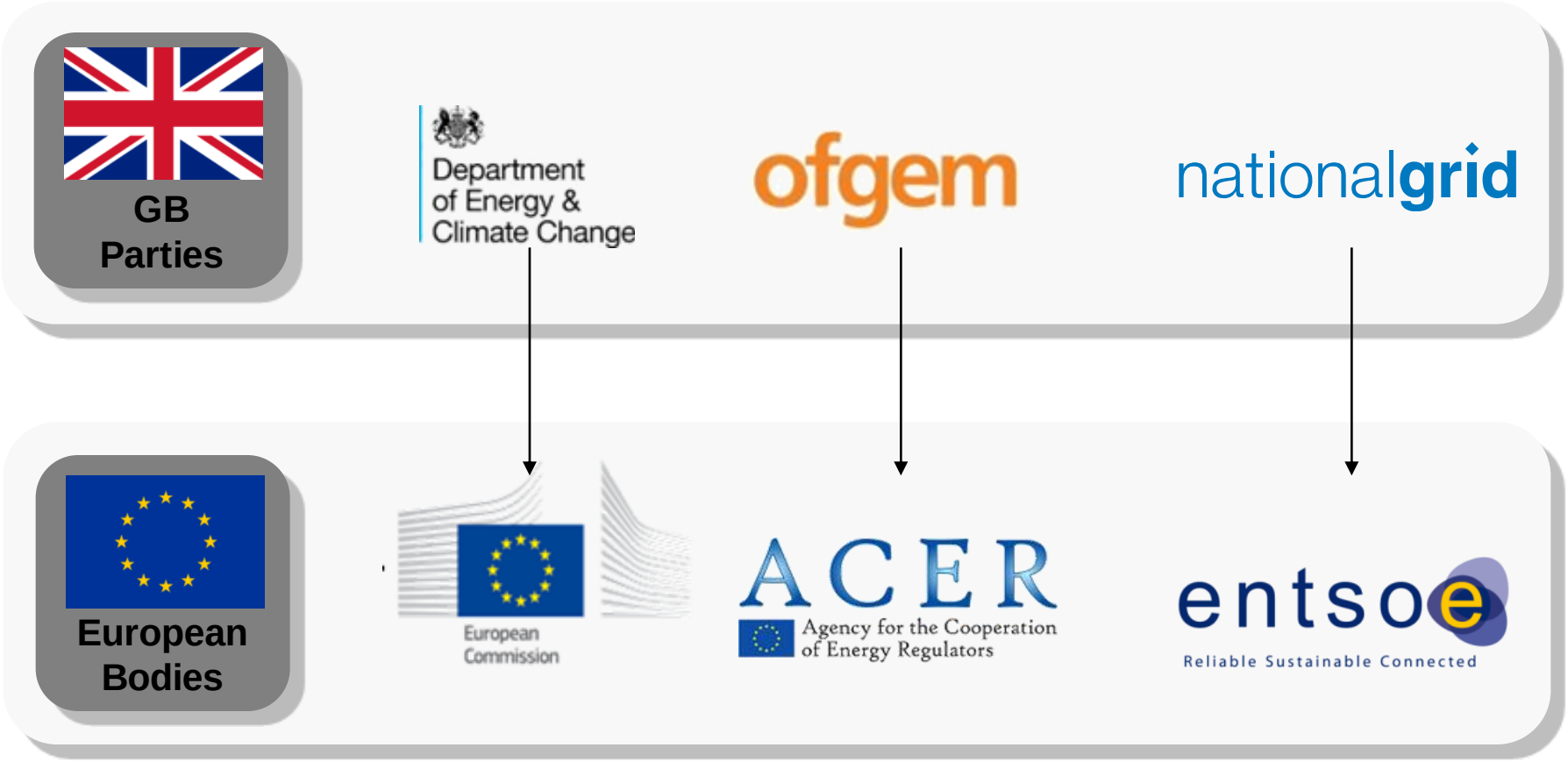
The key players in ENC Development



Note: The following are also members of ENTSO-E
For GB, SHET Plc, SPTL // For UK, SONI

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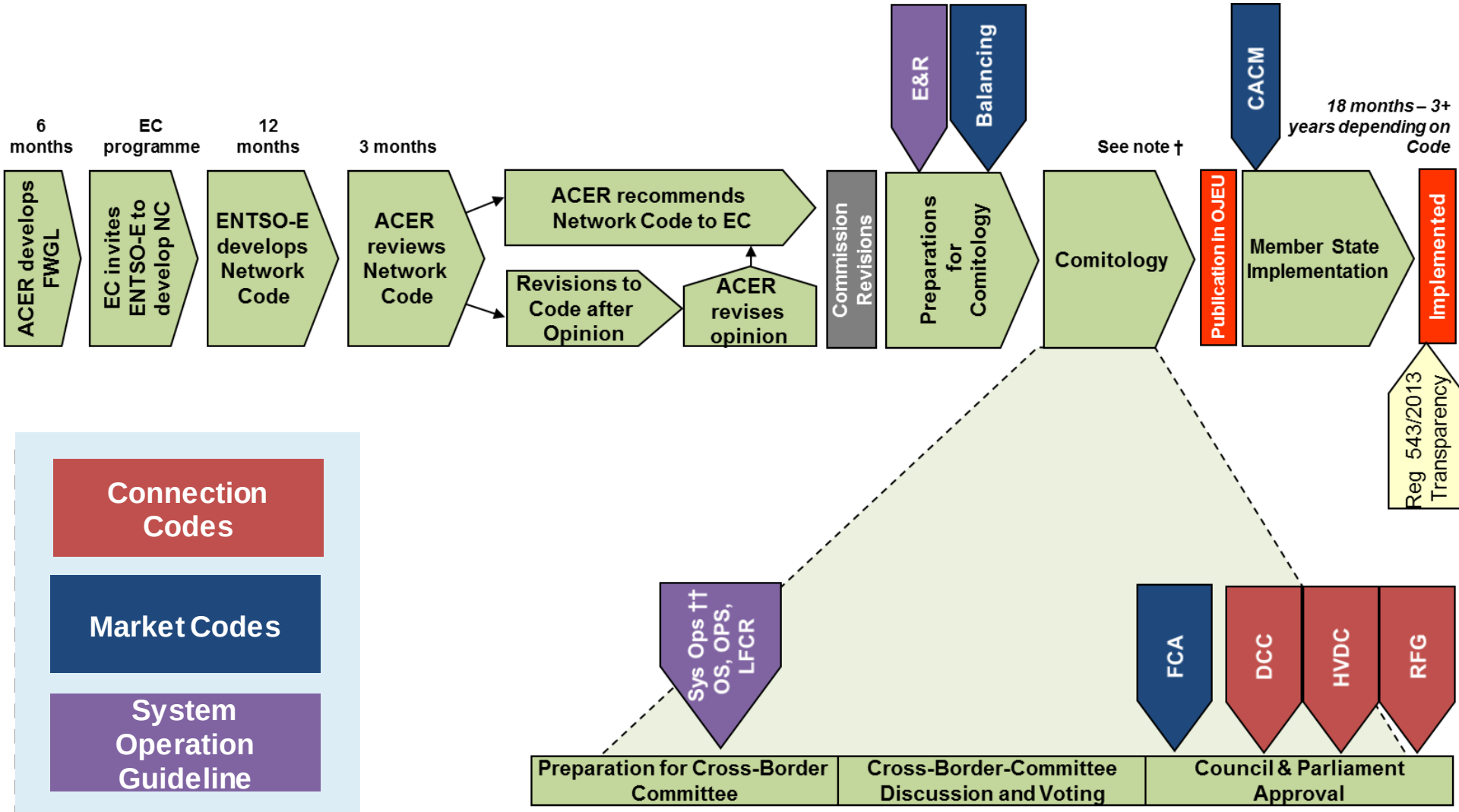
European Electricity Codes Development



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

†† Current indications from the Commission is that OS, OPS and LFCR will be merged in to one single guideline.

Lessons Learnt on ENCs so far

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GB Implementation Approach for Connection Codes

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- Each EU member state needs to decide how to implement the European Network Codes (ENC) locally
- In GB there were three approaches considered:
  1. DECC led legislative approach
  2. Ofgem led Third Package powers to direct changes
  3. Industry-led – via existing Code modification processes
- For the Connections suite of ENC – RfG;DCC;HVDC approach **three** was agreed between DECC/Ofgem and NGET
- This was agreed in Q1 2014 following engagement through the Code Panels and groups like ECCAF

Advantages of Using Existing Codes Processes

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- Familiarity in using code governance routes and their support processes (e.g. modification workgroups/industry consultations etc.)
- Utilises close GB working relationships between DECC/Ofgem/NGET and the wider industry; acknowledging that better representation for smaller-scale generators is necessary
- Wide range of technical experts and regulatory knowledge already engaged in GB code governance, and strong awareness of European codes
- Strong and supportive governance from Code Panels, for oversight of any workgroup/consultation and code implementation work

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GC0048 RfG workgroup successes to date

- Well attended by industry
- Project Plan for implementation; a GB Risks Register
- Proposed structure for work packages to set national parameters stipulated in RfG
- Preparatory work on items requiring Cost-Benefit Analysis
- Proposals for structural changes to the D-Code, as well as new supporting documents [presentation to follow]

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GC0048 RfG workgroup challenges to date

- Getting continued industry engagement on key issues, particularly from smaller parties (e.g. Solar)
- Ensuring timely completion of stakeholder actions
- Potential for resource stretching for all workgroup parties across multiple work streams
- Resolving difficult topics (e.g. generator banding thresholds) in a timely manner

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Additional benefits of GC0048 approach

- Has filled a vital role in coordinating GB stakeholder engagement on RfG to influence the Commission via ACER
- Progress on code implementation – GB are ahead of all other member states
- Have built a genuinely collaborative approach to finding the best GB solution for all parties

RfG GC0048 Plan – Developed through Code Mapping

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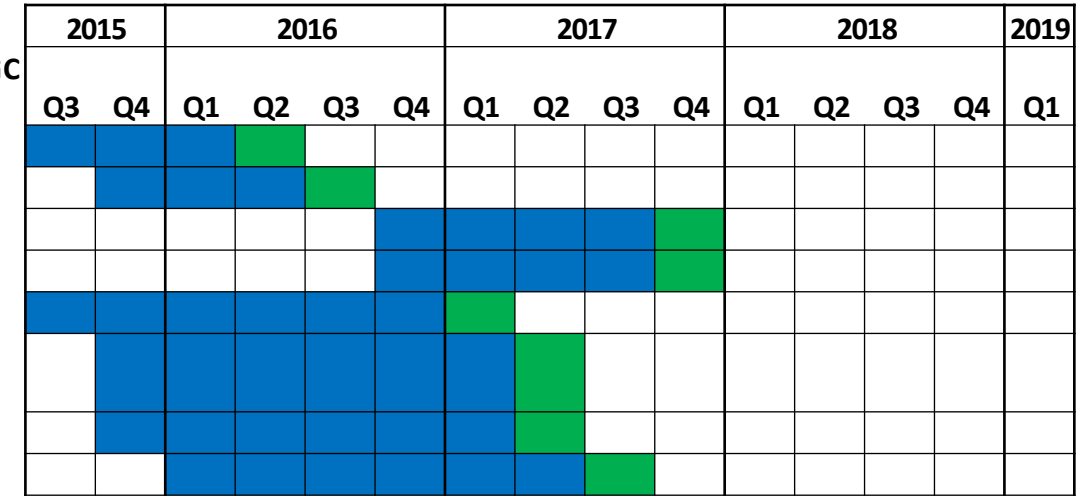
	Implementation Mods	Dependencies	On-going related GC Mods
1	Banding	X	
2A	Compliance	1	
2B	Compliance	1;4-7	
3	General	1	
4	Fault Ride Through	1	GC0062
5	Voltage + Reactive Power	1	
6	Frequency	1	GC0079; GC0087
7	System Management	1;6	



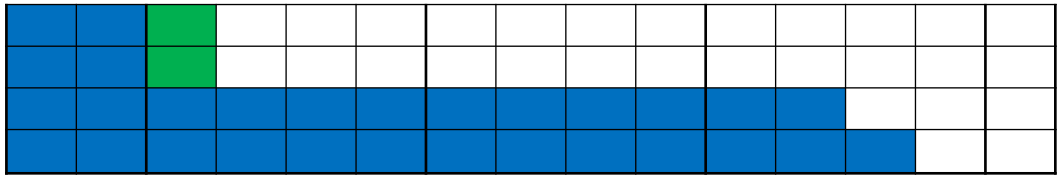
Enabling/Related workstreams

X Ofgem/DECC Member States Decisions

GC0086 - Open Governance

HVDC

DCC



Key

Workgroup Output

NRA Decision

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Application of DCC

Antony Johnson

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Demand Connection Code

- Sets rules and requirements for different classes of Demand facilities / Distribution facilities / systems
- Contributes to system security, facilitate use of renewable generation and allow more efficient use of the network and resources for the benefit of consumers
- Facilitates competition in the European internal electricity market.

Scope of ENTSO-DCC

- Article 3 – Scope (ie who the Regulation applies to):-
  - New transmission – connected demand facilities
  - New transmission – connected distribution facilities
  - New distribution systems including closed distribution systems
  - New demand units used by a demand facility or a closed distribution system to provide demand response services relevant to system operators and relevant TSO's.
- It does not extend to the above demand / distribution facilities which are not operated synchronously with one of the European defined Synchronous Areas (eg GB, Continental Europe, Ireland, Nordic etc)
- Storage devices are not covered other than Pumped Storage (see - Article 5(2)).
- Aggregation rules apply to demand units, within a demand facility if they cannot be operated independently

Application to Existing Demand Facilities / Distribution Facilities

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- Article 4 - Existing Demand Facilities / Distribution Facilities are not subject to these requirements except:-
  - It is above 1000V and has been substantially modified
  - The Regulatory Authority or Member State decides to make an existing demand facility / distribution facility to all or some of the requirements in accordance with Article 4 Paragraphs 3 – 5
- An existing Demand / Distribution Facility is classed as:-
  - One which is already connected on the date of Entry into Force
  - One which has signed a final and binding contract for main plant within 2 years of entry into Force of this Regulation
  - A Member State under specified circumstances may determine if the Demand / Distribution Facility is new or existing
- Where the requirements are deemed to apply to an existing Demand Facility / Distribution Facility they must be subject to a full and transparent cost benefit analysis
- The relevant TSO may assess the application of some or all of the provisions of this Regulation to existing demand / distribution facilities every three years subject to Articles 3 – 5.

Pumped Storage Pant

- The Regulation does not apply to Pumped Storage Plant with both generating and pumping modes of operation
- Any pumping module within a pumped storage station that only provides pumping shall be treated as a Demand facility and will have to comply with the requirements of the Code
- For industrial sites, with an Embedded Power Generating Module may agree with the TSO on conditions for disconnection of critical loads

The Requirements at a High Level (1)

- Articles 6 – 11
  - Regulatory Aspects, Multiple TSO's, Recovery of Costs, Public Consultation, Stakeholder Involvement, Confidentiality obligations
- Title II – Requirements for Transmission Connected Demand Facilities, Transmission Connected Distribution Facilities and Distribution Systems
  - Chapter 2 – Operational Notification Procedure
- Title III – Requirements of Demand Units / facilities to provide demand response services to the System Operator
  - Chapter 2 – Operational Notification Procedure (demand response)
- Title IV – Compliance
  - Chapter 2 – Compliance Testing
  - Chapter 3 – Compliance Simulation
  - Chapter 4 – Compliance Monitoring
- Title V – Applications and Derogations
  - Chapter 1 – - Cost Benefit Analysis

The Requirements at a High Level (2)

- Title IV – Compliance
  - Chapter 2 – Compliance Testing
  - Chapter 3 – Compliance Simulation
  - Chapter 4 – Compliance Monitoring
- Title V – Applications and Derogations
  - Chapter 1 – Cost Benefit Analysis
  - Chapter 2 - Derogations
- Title VI – Non Binding Guidance and Monitoring of Implementation
- Title VII – Final Provisions

Title II – Technical Requirements Transmission Connected Distribution Facilities / Distribution System

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- Frequency Range (Annex I)
- Voltage Ranges (Annex II)
- Short Circuit Requirements
- Reactive Power Requirements
- Protection Requirements
- Control Requirements
- Information Exchange (eg operational metering)
- Demand Disconnection and Reconnection
  - Low Frequency Demand Disconnection
  - Low Voltage Demand Disconnection
- Power Quality
- Simulation Models

Title III – Demand Response Services provided to System Operators

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- Remotely Controlled (Article 28)
  - Demand response active power control
  - Demand response reactive power control
  - Demand response transmission constraint management
- Autonomously controlled
  - Demand response system frequency control (Article 29)
  - Demand response very fast active power control (Article 30)

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Next Steps

- Consider the detail of the technical requirements
- Consider how the requirements will implemented into the GB Code
- Note interactions with other European Network Codes

DCC Project Plan

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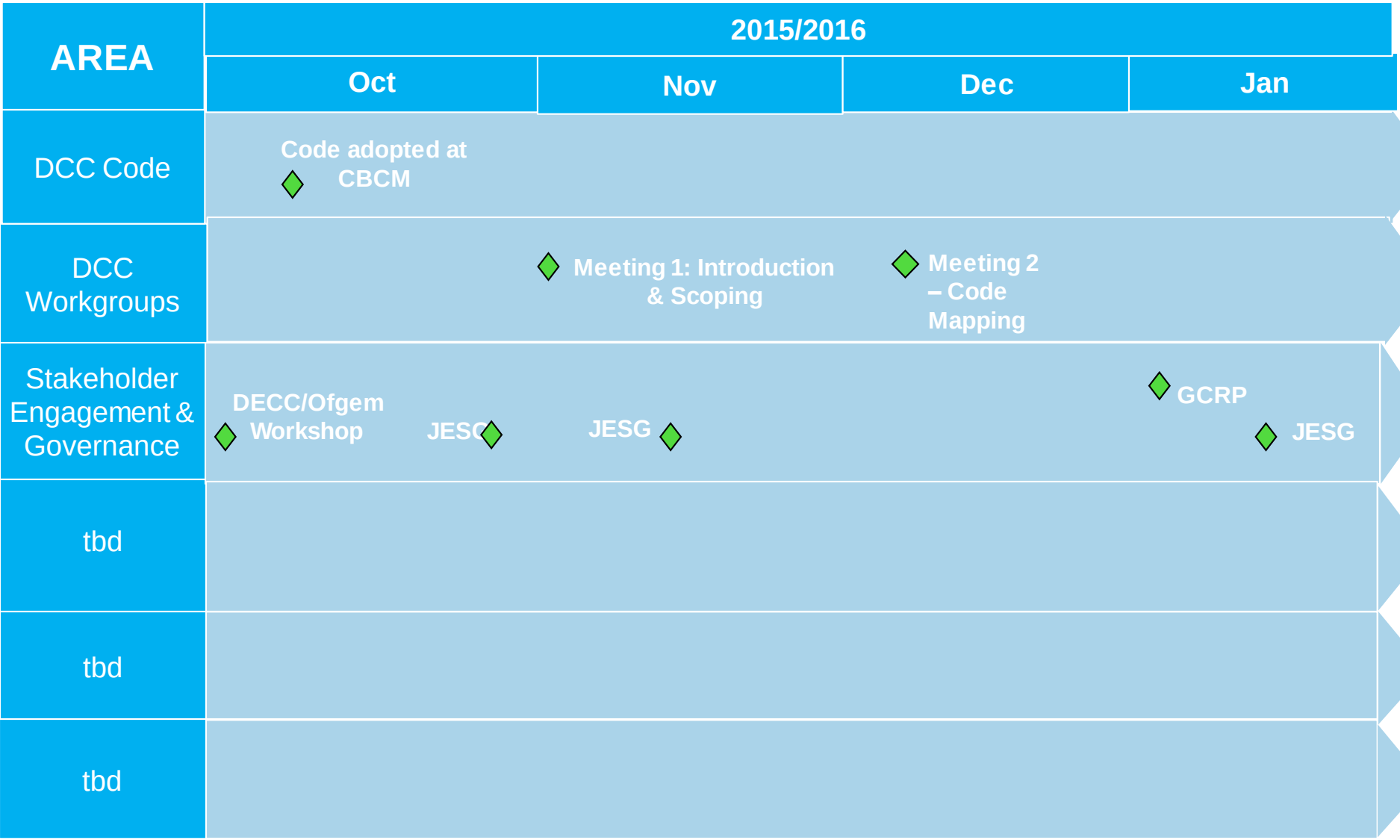
DCC Implementation Overview

	2015		2016				2017				2018				2019	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Code Approved		OCT														
Entry Into Force				APR												
Implementation				2 YEARS												
Compliance Deadline																APR

DCC Plan On a Page



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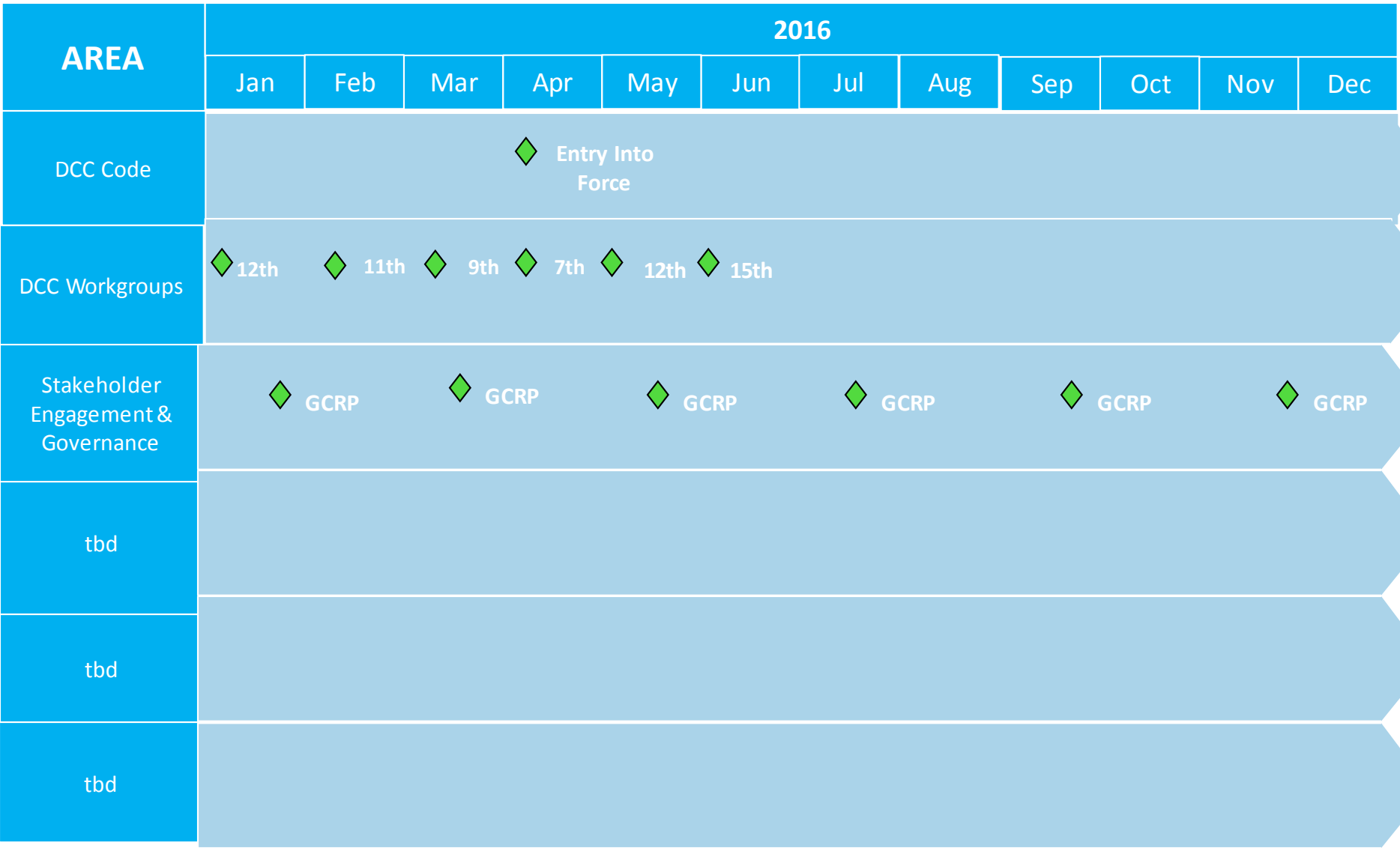
DCC – Plan on a page



Future Meetings

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Future meeting date proposals

Tuesday 12th January (+ Wednesday 13th Jan for HVDC/DCC)
Wednesday 10th February (+ Thursday 11th Feb for HVDC/DCC)
Wednesday 9th - Thursday 10th March*
Wednesday 6th - Thursday 7th April
Wednesday 11th - Thursday 12th May
Tuesday 14th - Wednesday 15th June
Tuesday 12th - Wednesday 13th July
Tuesday 9th - Wednesday 10th August
Tuesday 13th - Wednesday 14th September
Tuesday 18th - Wednesday 19th October

For the first few meetings GC0048 will take place on day 1. Calendar appointments and further details on the content will follow.
*From March onwards agenda for all 3 GCCs to be confirmed.