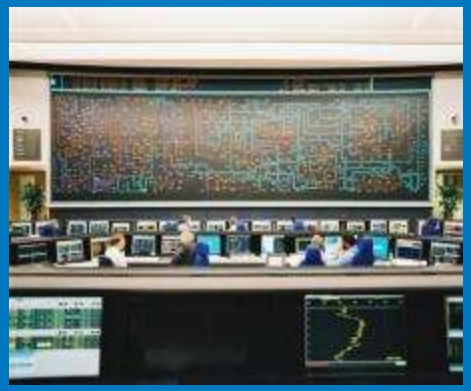
Welcome to the National Grid Customer Seminar



Thursday 26th February
London

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House Keeping

- No planned fire alarm
  - Leave through nearest exit
  - Muster point is at the front of the building near the taxi rank. A member of staff will be holding a sign for guests
- Facilities
- Mobile phones

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Safety Moment

112

The single European emergency number

Wherever your travels in the European Union take you, 112 can be dialed free of charge

- from fixed and mobile phones
- from a phone box or
- Pre-register to use the service via sending the text “REGISTER” to 112 for use in areas where mobile reception is poor

https://www.youtube.com/watch?feature=player_detailpage&v=jXVn2YIf5Jk

Agenda

Introduction	Nicola Paton
Connections Update	Julian Leslie
Customer Policy Update	Richard Smith
Charging and Capacity Developments	Patrick Hynes
Electricity Market Reform Update	Ian Nicholas & Paul Mullen
ITPR	Ben Graff
BREAK	
System Operability Framework Update	Vandad Hamidi
ETYS Update	Stewart Whyte
Transmission Owner Update	NGET– Duncan Hughes SHE – Danny McMillan SPT – Cathie Hill
LUNCH	
Round Tables and Interactive Zones	

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Round Table Sessions & Interactive Zones

1. Customer Policy
2. Charging and Capacity Development
3. ITPR - Onshore Competition
4. ITPR - Network Options Assessment
5. SP Transmission Construction Update
6. SHE Transmission Connections Update
7. National Grid Electricity Transmission
8. Network Development & Operability
9. Ancillary Services
10. Market Outlook
11. EMR
12. Customer Connections

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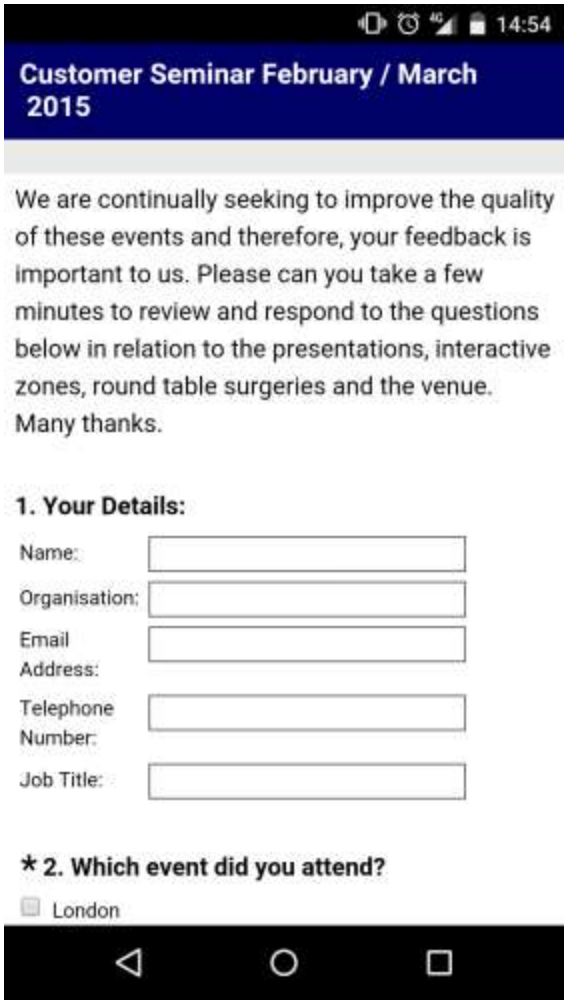
Mobile Interaction

- Use phone to scan QR Code found on feedback forms on tables
- Will go to online feedback form



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Connections Update



Julian Leslie
Electricity Customer Manager

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Topics

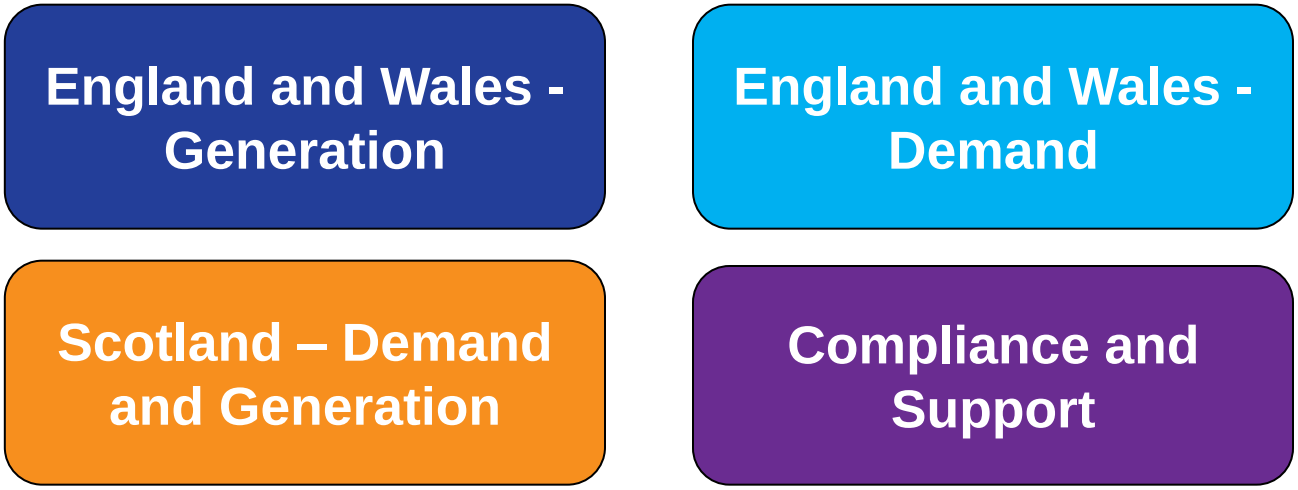
- Team developments
- Customer survey
- EU Code update
- Contracted generation developments
- EMR results

Team Developments

- Workload
  - Scottish onshore wind new offers
  - Mod apps
  - New connections – compliance
  - Offshore wind transitions almost complete

New structure and resource

- Change to team structure



- Additional resource in Compliance and Support and Scotland

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Customer Survey

- We need your help
- Your answers to the survey do help us to identify and prioritise improvement areas
- Last October for the Connections Process
  - Nearly 100 eligible customers
  - Only 30 responses
- Next phase of interviews starts 8th March and finishes on 2nd April
- Reschedule at a time to suit you

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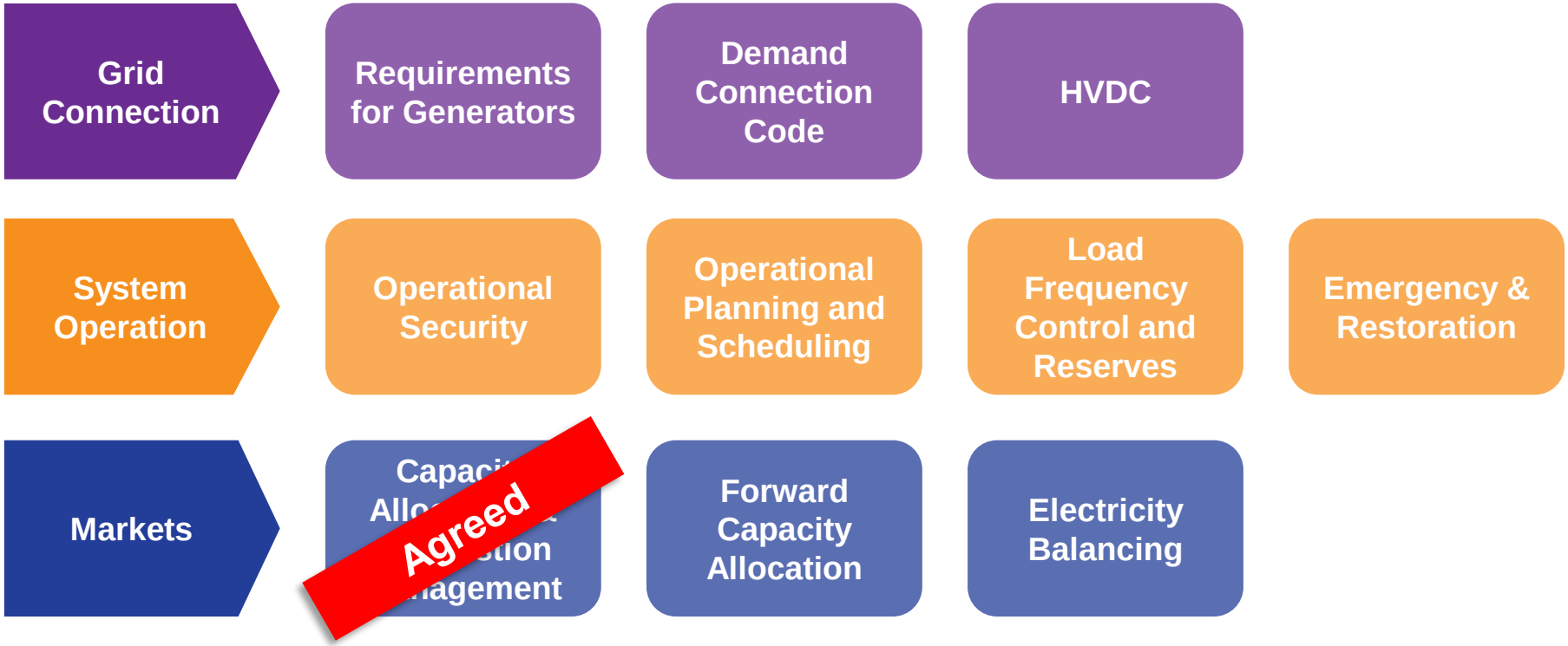
Latest Status on European Network Codes

- A suite of European Legislation entering in to force from 2015 onwards
- Will take precedence over all existing GB arrangements



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Focus on Requirements for Generators

- RFG is expected to be the next European Network Code to be adopted through Comitology in around June 2015
- Commission and member states are now agreeing the final text

When does it apply?

- **Applies to new generators who let major contracts 24 months after entry in to force of the Code**
- Does not apply retrospectively unless a need is demonstrated (needs a CBA, consultation and NRA approval). No areas currently identified

How to get involved

- Engage with GC0048 Workgroup which is defining changes to Grid/D-Code via grid.code@nationalgrid.com
- Engage with DECC to inform GB's negotiating position for Comitology

Key Topics in RFG: Pertinent Technical Requirements

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- Many requirements in RFG are the same or similar for Large generators. Greater potential impact for Small, Medium and D-connected generators
  - Type A and B (800 W – 50 MW†) requirements are akin to a '**product standard**'
  - Type C and D (>50 MW) requirements typically need **active management** of the generator
- Pertinent topics are:
  - New **Fault Ride Through** Requirements for Type B+ (>1MW)
  - Mandatory **Frequency Response** for Type C+ (>50MW)
  - National choice of **parameters** affecting all Types, where ranges are specified in the RFG

† All banding thresholds are still subject to agreement.

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To learn more and get involved ….

- Come along to the **Joint European Stakeholder Group**

  A single monthly meeting covering all European issues including European Network Code development and implementation

  Supported by DECC, Ofgem, National Grid and others

- Grid-Code / D-Code **GC0048 Workgroup** on RFG
- Sign-up for the **Weekly Email Newsletter Update**

For more information contact:
europeancodes.electricity@nationalgrid.com

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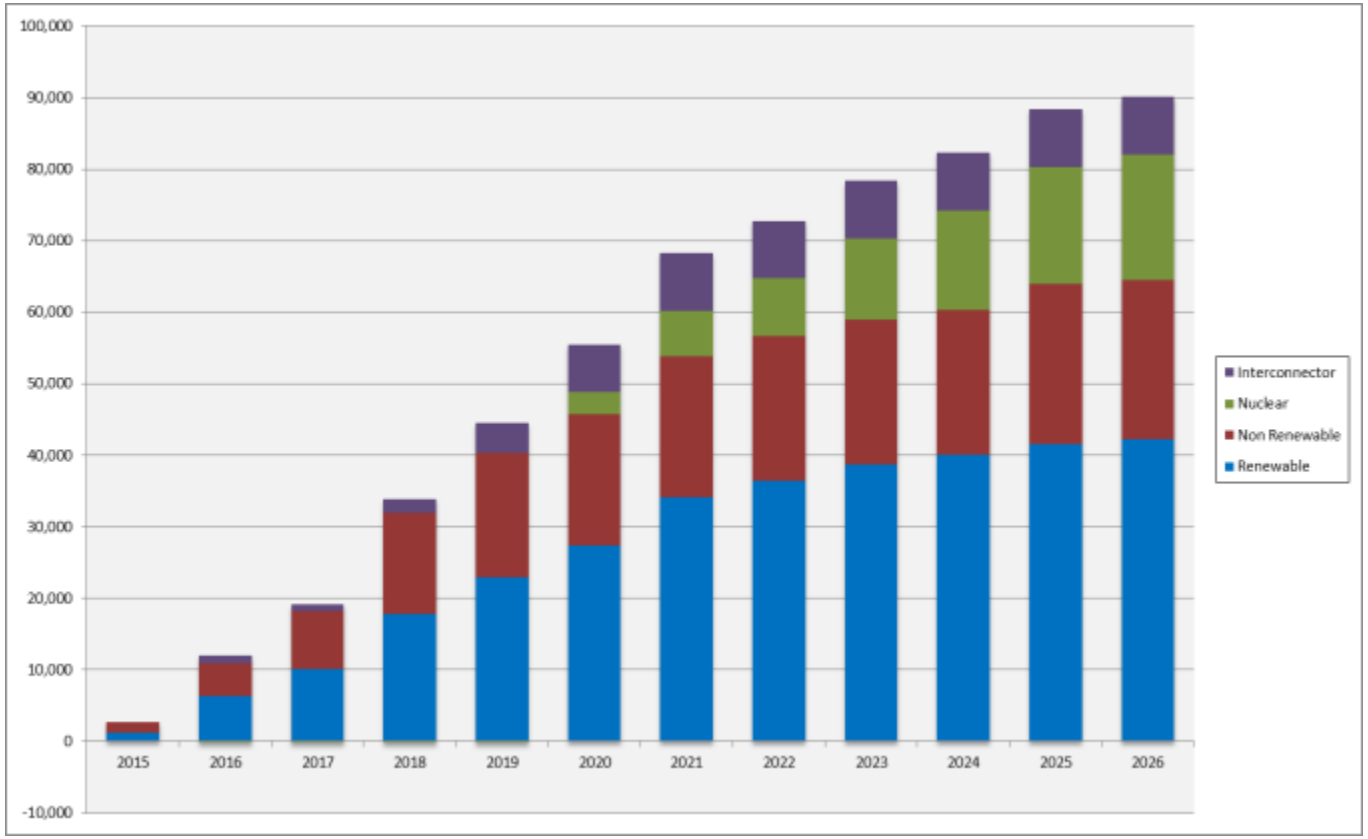
Contracted Generation



- 27.5GW Renewables by 2020, 10GW Consented
- 13 to 15GW required to meet 2020

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EMR Results

- Capacity Mechanism
  - 1.8GW Trafford Power successful
  - 5.2GW of new generation unsuccessful
  - 6.6GW of existing generation unsuccessful
  - May result in early closure of existing
  - Delays/terminations of future new capacity
- Contract for Difference
  - Complete on morning of 26th

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Customer Policy Update



Richard Smith
Customer Policy Development Manager

Current Work Areas

- Queue Review
  - To date management within Queue at transmission level
  - Now looking at wider process and embedded interactions
- CMP 192 Review
  - Reviewed CMP192 following implementation
  - Currently quantifying total value at risk between spend and liability

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Current Work Areas

- Non-Firm Policy
  - Use CUSC/SQSS definitions
  - Minded to only offer to consented projects
- Active Network Management
  - In principle we support ANM, but it should not impact on our ability to operate the system

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Current Work Areas

- Investment Ahead of TEC (Delay Charge/Backfeed)
  - Proposal based on CEC before TEC
  - Will roll out interim in near future
  - Do we formalise in CUSC
- Distributed Generation National Grid Application Process
  - Statement of Works – CMP238
  - Looking at wider process

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Current Work Areas

- High Volts
  - Engaging with DNO's to look at technical issues
- Outage Cancellations
  - We are now experiencing constraints on parts of the system which have led to outages being cancelled
- Refurbished Assets
  - Refurbishment rather than replacement of assets being explored as an option
  - How do we reflect this in Connection Offers

Stakeholder Engagement

- Are there any other issues we should be looking at?

For more information contact:

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Customer Policy Development Manager
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Charging & Capacity Developments



Patrick Hynes
Electricity Charging and Capacity Development Manager

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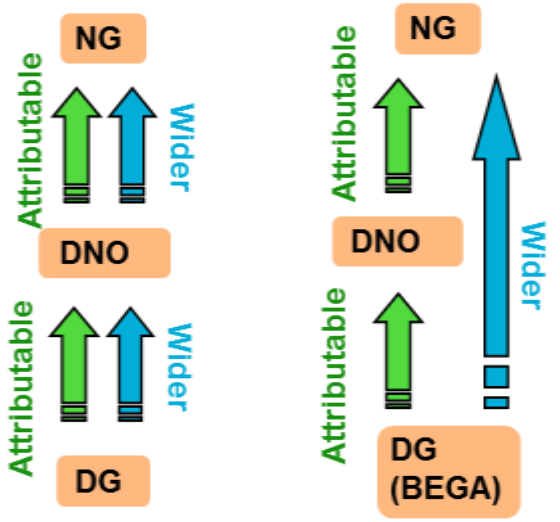
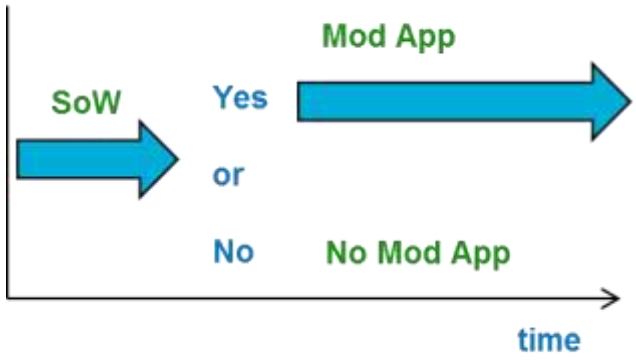
Ongoing modification proposals

- **CMP223: Arrangements for Relevant Distributed Generators Under the Enduring Generation User Commitment**
  - Passing lower securities through DNOs to embedded generation

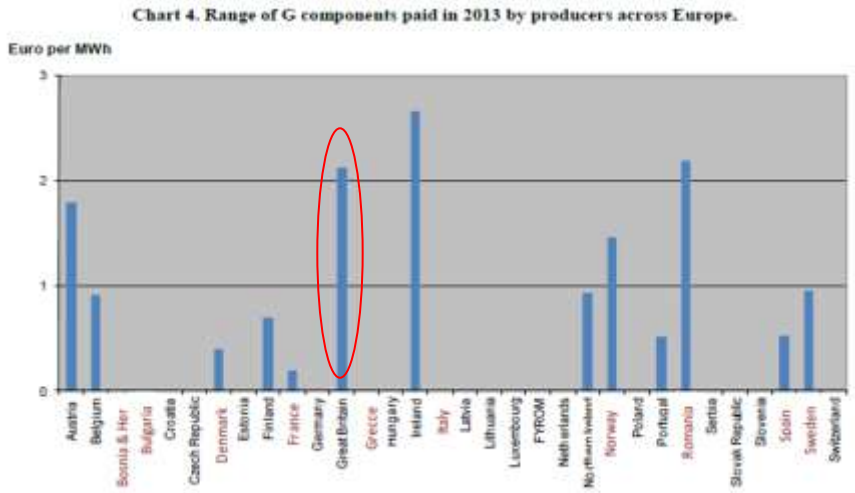


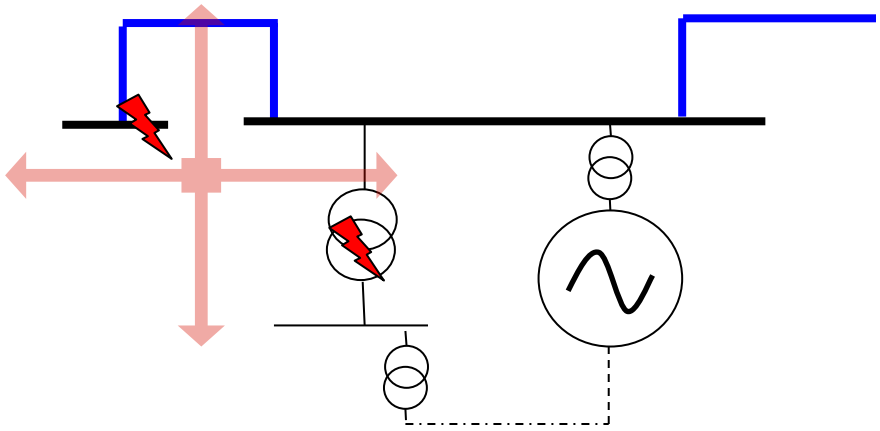
- **CMP238 – Application of Statement of Works Process when a Modification Application is made**
  - Removing the need to go through SoW process prior to a Modification Application



Ongoing modification proposals

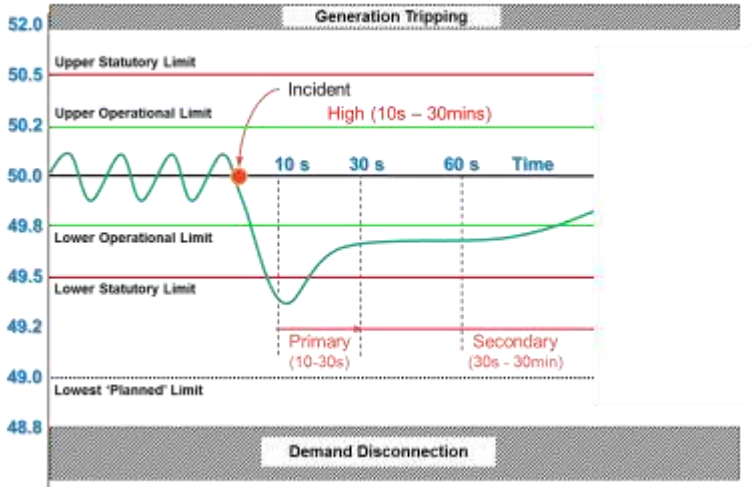
- **CMP227 - Reduce the G:D split of TNUoS charges, for example to 15:85**
  - When should we move to a lower Generation component?
- **CMP235 / CMP236 – Introduction of a new Relevant Interruption Types…**
  - Expanding the definition of event where compensation would be paid.
    - Loss of station supplies Tx system
    - Quality of supply on Transmission System

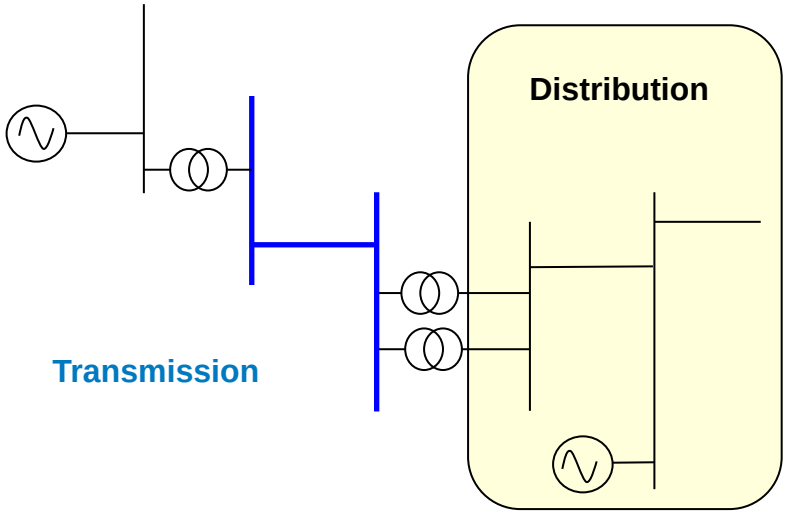




Ongoing modification proposals

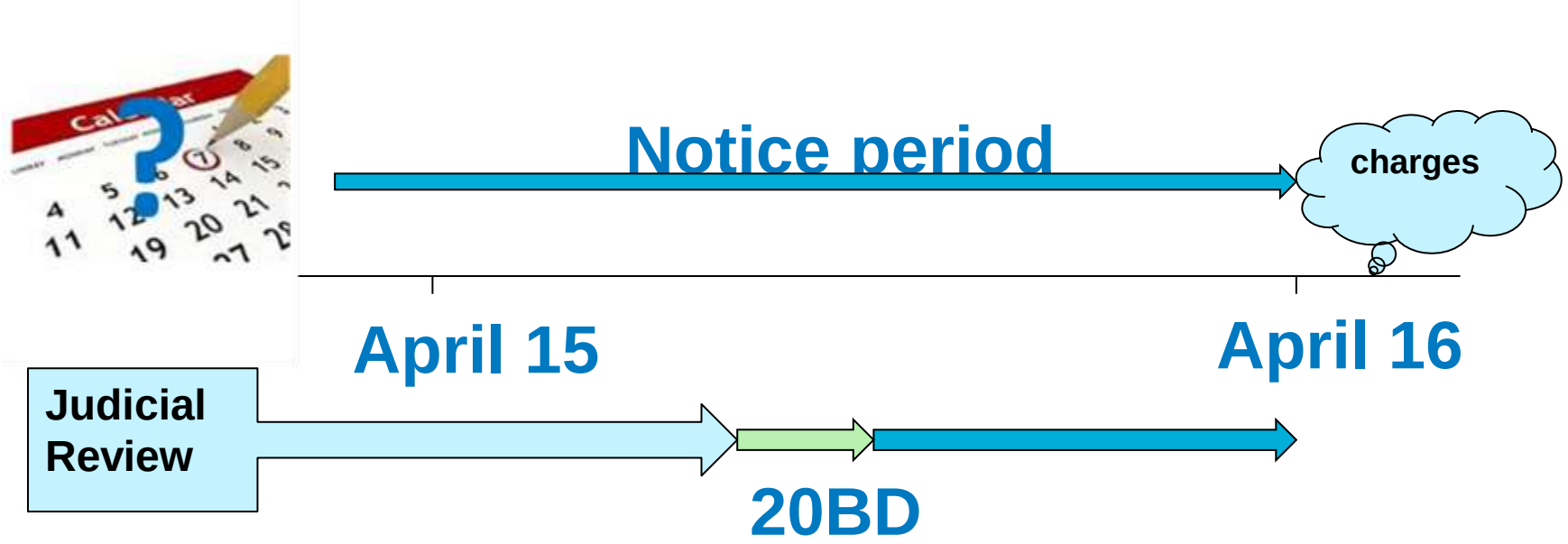
- **CMP237 – Response Energy Payment for Low Fuel Cost Generation**
  - Recognising that current arrangements need to be updated to cover low fuel cost stations
- **CMP239 – Grandfathering Arrangements for the Small Generator Discount**
  - Currently a separate time limited condition
  - Including this in charging methodology to make it enduring for existing parties.





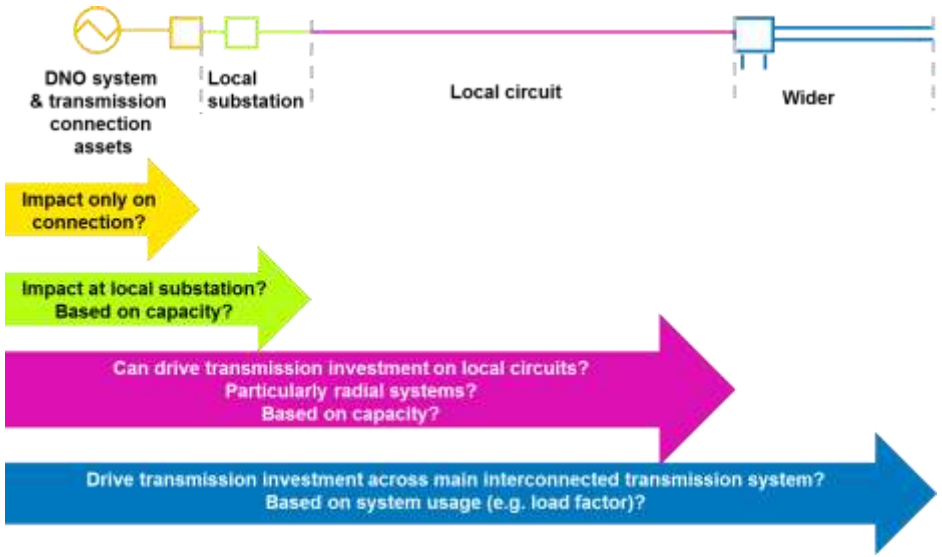
Ongoing modification proposals

- **CMP240 – Amending the Cancellation Charge liability within a CMP213 Judicial Review Period**
  - With the ongoing JR, flexing the date when closure decision needs to be given without incurring cancellation charge

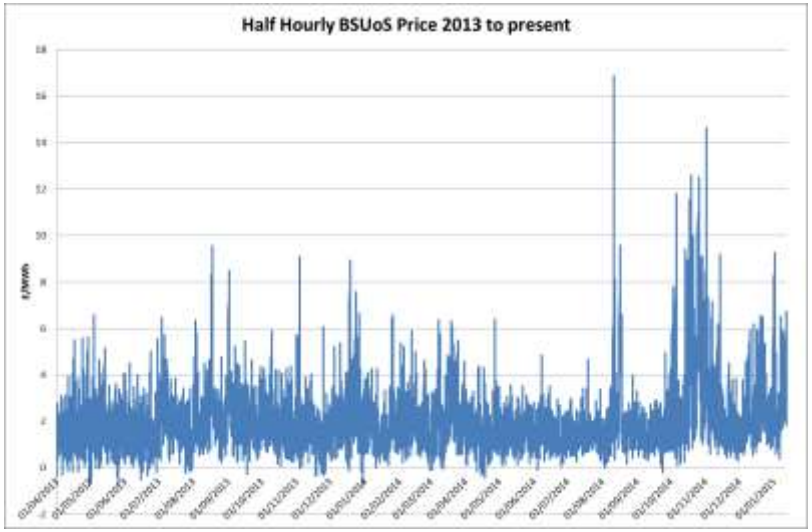


Ongoing Strategic Issues Update

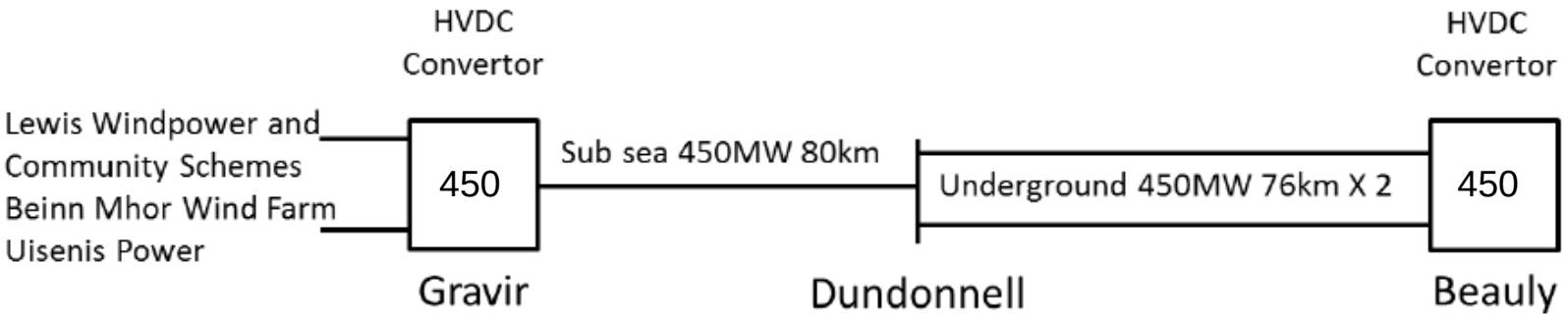
- **Exporting GSPs**
  - What signals should be sent to exporting GSPs
  - Definition of capacity and associated rights
  - Appropriate party



- **BSUoS Stability**
  - Investigating alternative models for recovering BSUoS
  - Objective is to improve predictability and / or stability



Treatments of anticipatory investments



- Proposed link consists of 2 x underground cables
  - 2nd cable understood to be purely anticipatory investment
- Current methodology looks at overall cost
- How should the additional cost be dealt with

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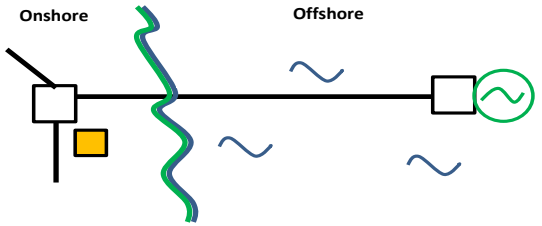
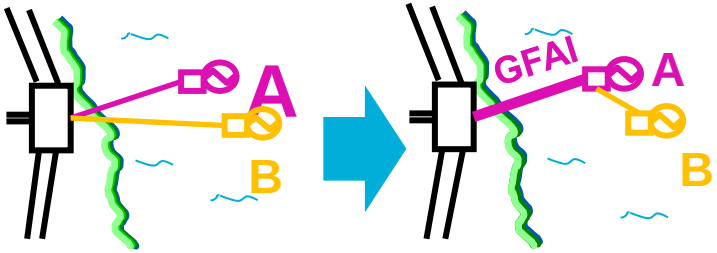
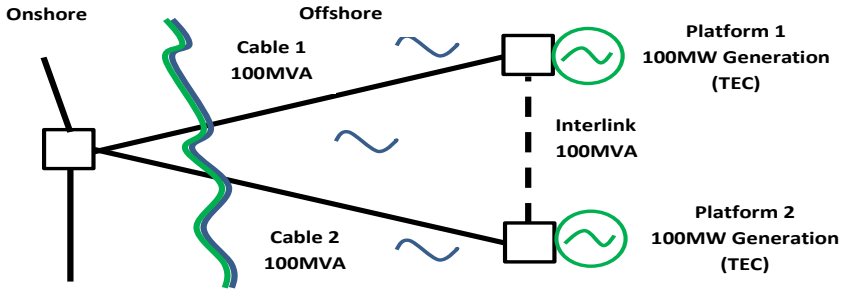
Further offshore considerations

- Tender fee reconciliations
- Bespoke elective spares
- User commitment for shared offshore works (GFAI)
- Interlinks







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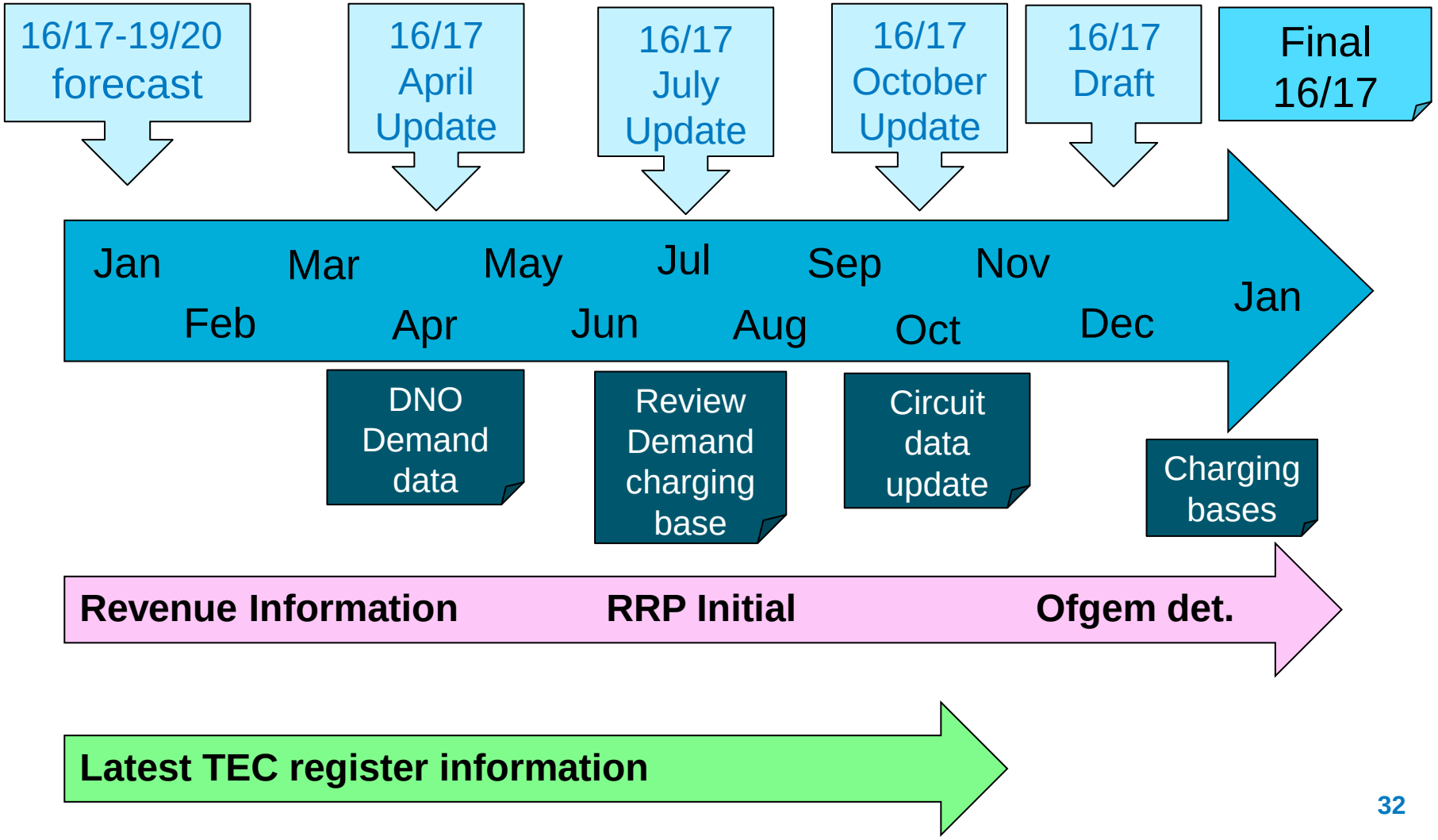
Tariff forecast calendar



EMR Update



Ian Nicholas - EMR Delivery Manager &
Paul Mullen - EMR Delivery Manager

Capacity Market

Ian Nicholas
EMR Delivery Manager

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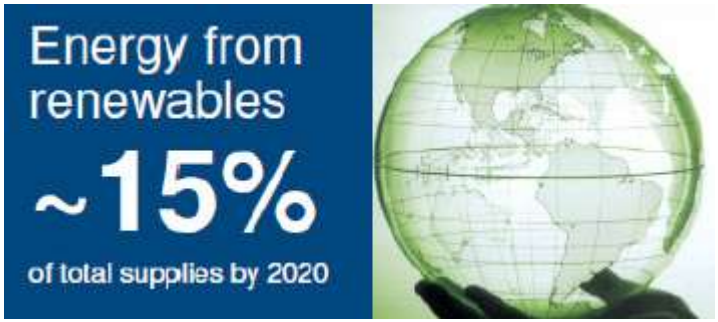
Why EMR? – the changing energy landscape



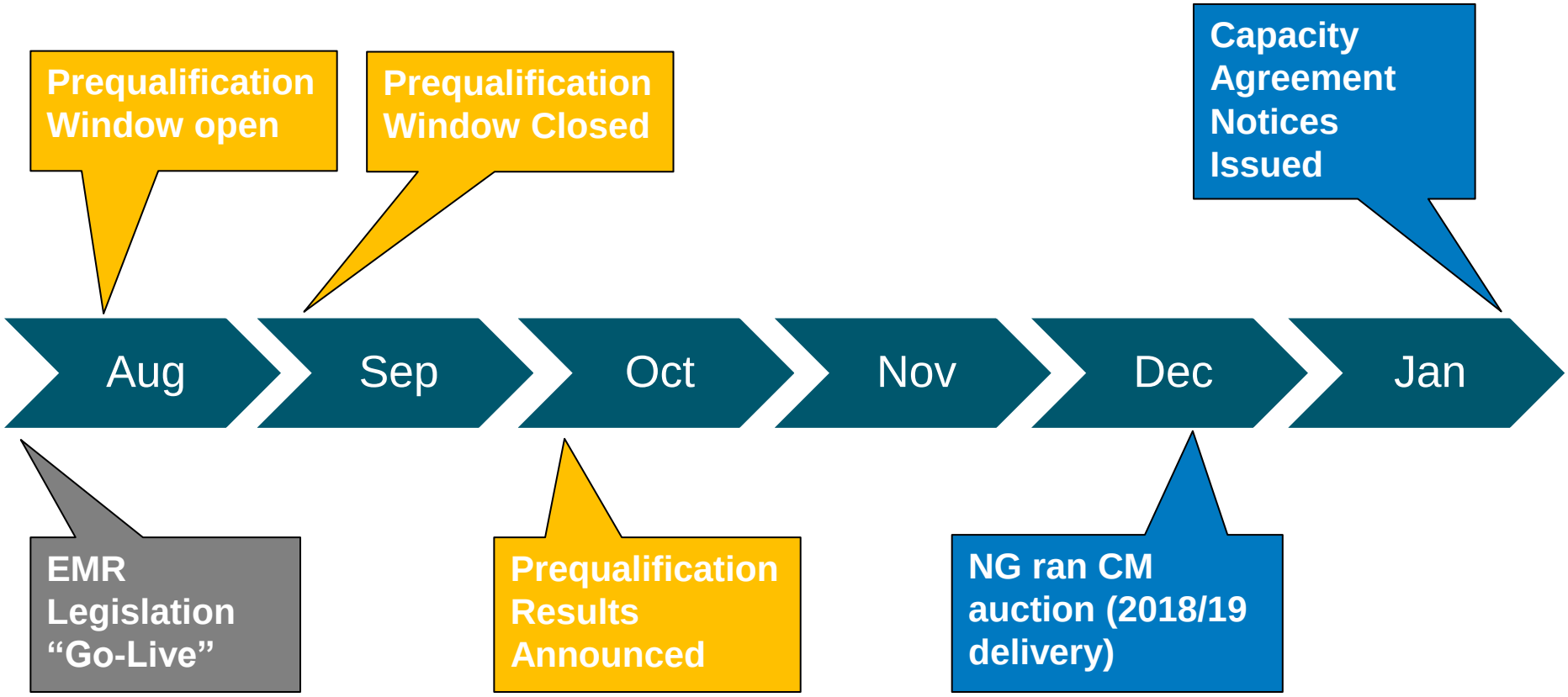
Capacity Market

To provide reliable and flexible security of supply

Contracts for Difference

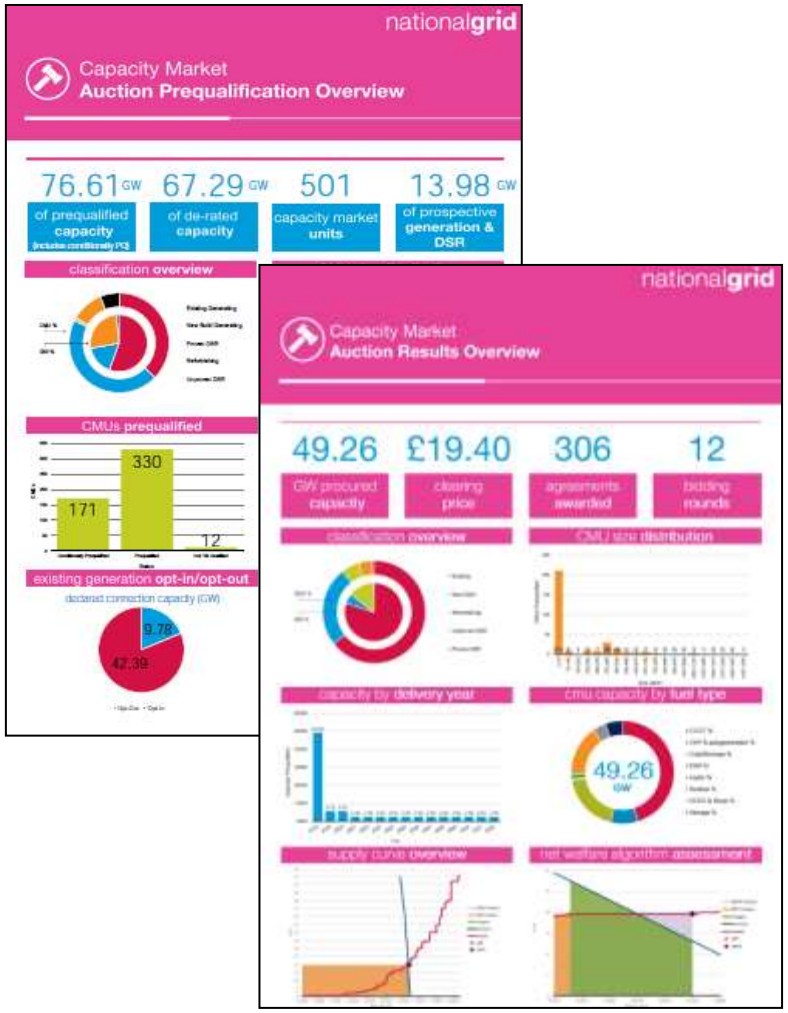
To incentivise low carbon investment and manage emissions

Capacity Market Timeline 2014/15

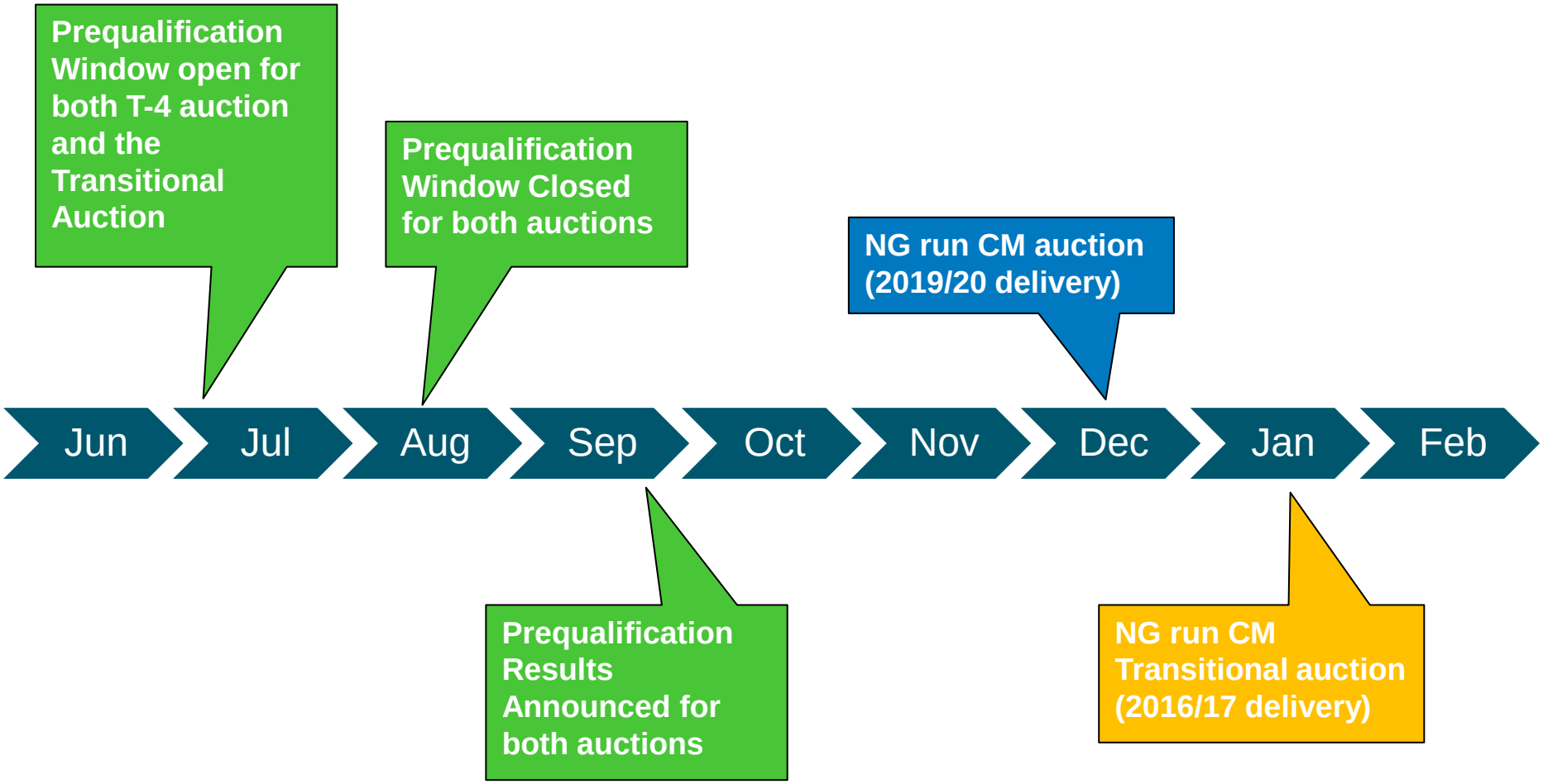


2014 Capacity Market Summary

- **67.29GW** of Capacity Prequalified for the 2014 Auction representing 501 Capacity Market Units
- Auction held over three days and 12 rounds in December 2014
- **49.26GW** of Capacity Procured representing 306 Capacity Market Units
- Clearing Price of **£19.40/kW** and total expenditure in 2018/19 of approx. **£950million** (2012 prices)



Capacity Market Provisional Timeline 2015/16



Contracts for Difference

Paul Mullen
EMR Delivery Manager

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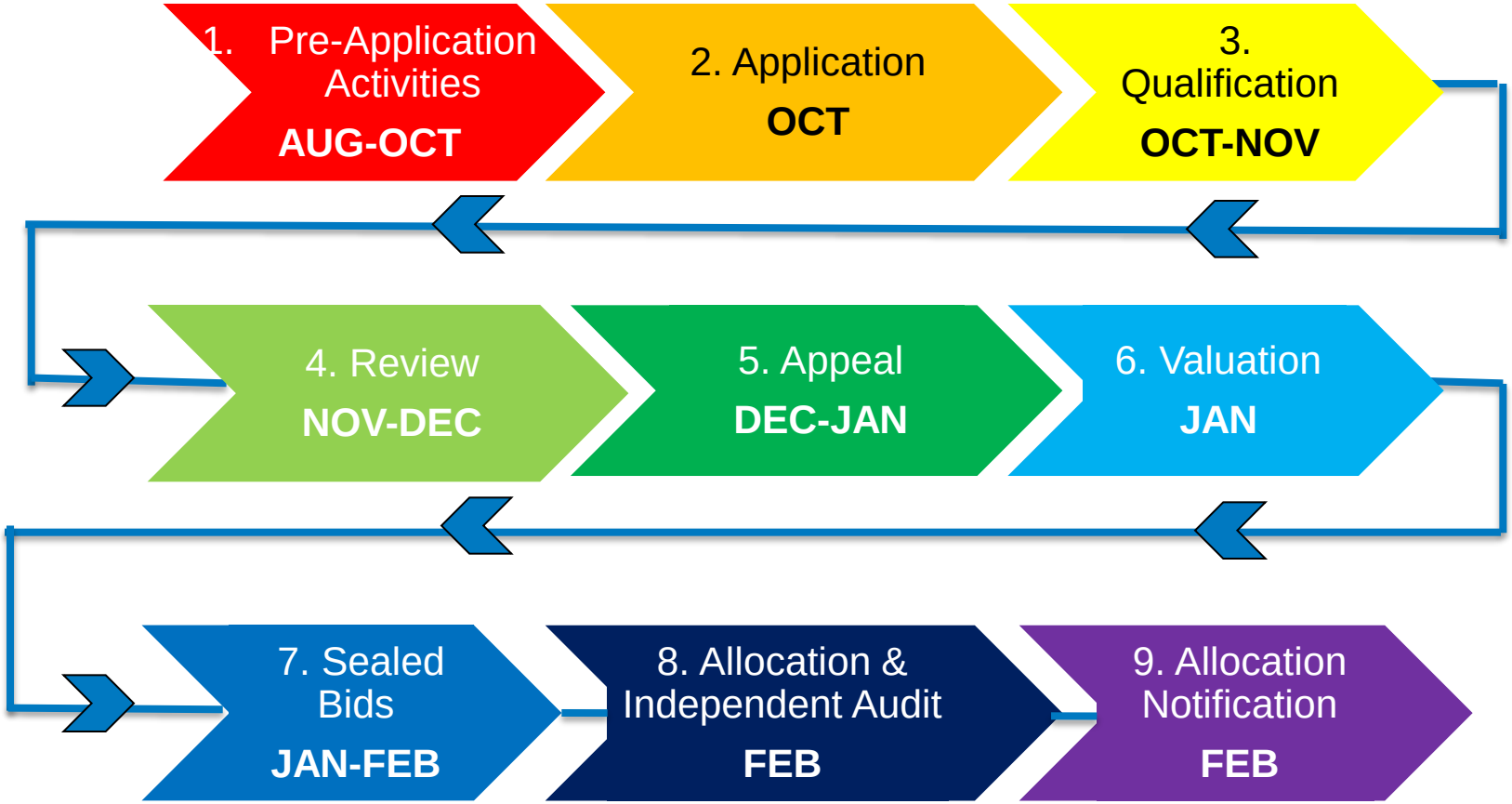
CfD Process – End to End



CfD Process – Next Round

Non Delivery Disincentive

Budget: £50 million already indicated for established technologies

Implementation Events from late spring 2015

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ITPR



Ben Graff
Transmission Strategy Manager

What is Integrated Transmission Planning and Regulation (ITPR)?

- ITPR is a project initiated by Ofgem in early 2012 to consider how to achieve **coordination of network investment** with multiple Transmission Owners with differing objectives/drivers and how to **deliver this investment efficiently and economically**

Conflicts of Interest

Broader advisory role to TOs, developers and Ofgem

Identification of Interconnection opportunities

Network Options Assessment (NOA) methodology

Coordinating other aspects of system planning

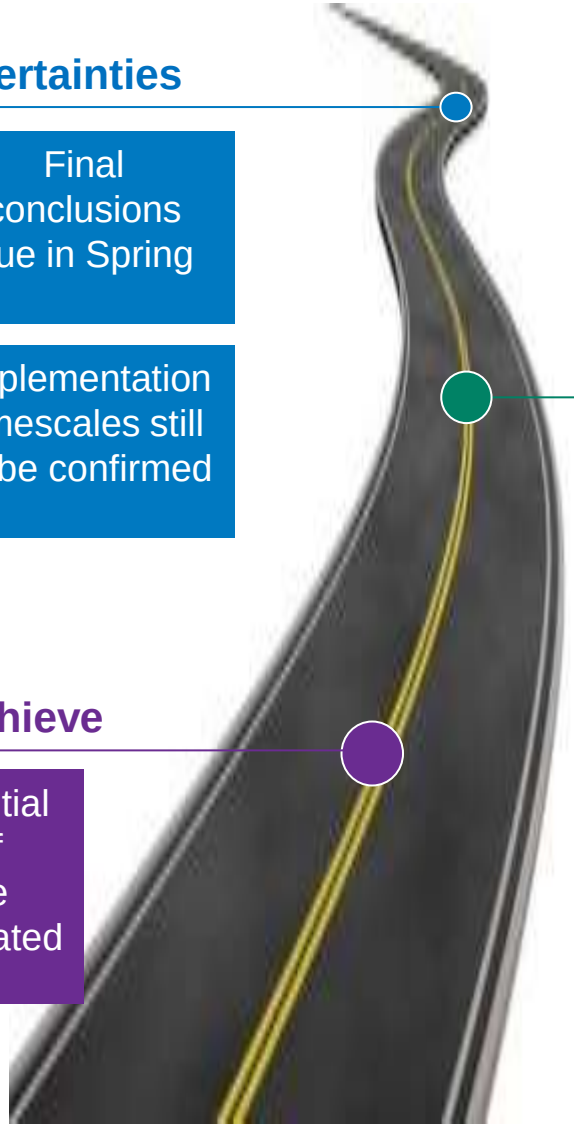
Facilitating onshore competition

Greater role developing needs cases for strategic investment

Where are we on our ITPR Implementation journey?

There are many uncertainties

- Policy requires further development
- Final conclusions due in Spring
- Licence drafting requires further development
- Implementation timescales still to be confirmed



We approach these uncertainties collectively in the following ways

- Proactively creating hypothesis around what the outputs look like
- Testing these hypothesis with each other and landing on a way forward
- Flushing out differences in understanding, to agree timely implementation

What are we trying to achieve

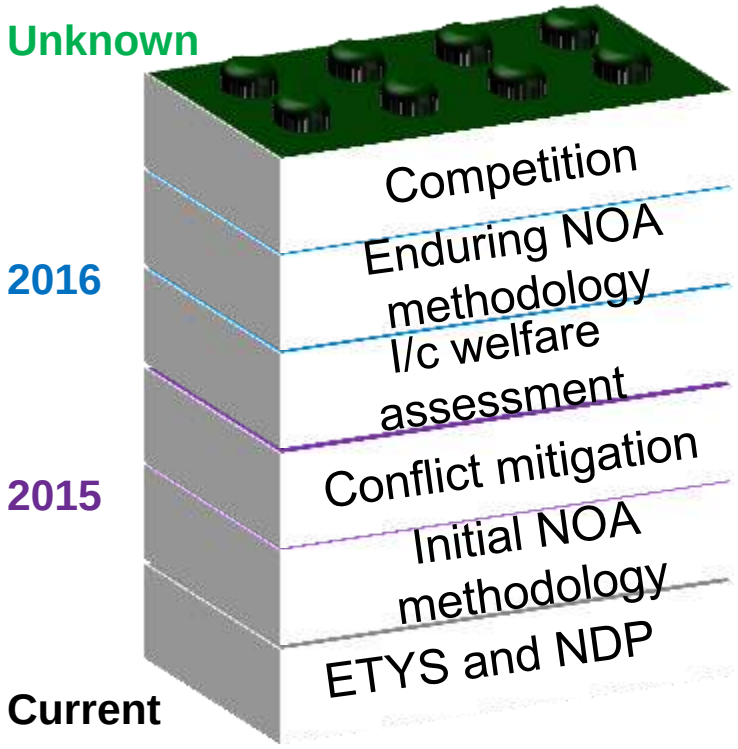
- Ensure 2015 and 2016 obligations can be met and that outputs work for all
- Ensure potential conflicts of interest are properly mitigated

The main NOA output will be delivered in a two year phased approach agreed with stakeholders…

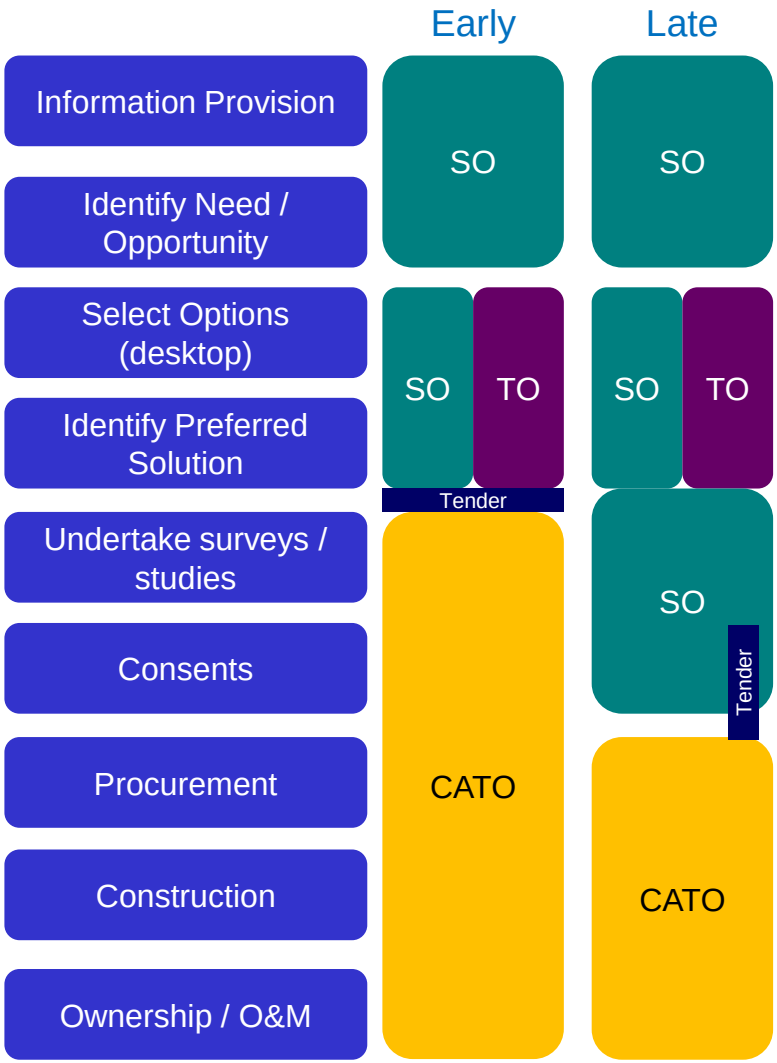
Round Tables

Sessions 1 and 2:
- Onshore Competition Table
- Network Options Assessment (NOA) Table

Session 3:
- General ITPR Discussion



Ofgem have proposed two models for onshore competitive tendering



Early Model:

- SO develop the project to the point where a high level specification could be prepared
- SO undertakes some early development activity e.g. determining the capacity needed and connection and interface points
- Model preferred in our consultation response

Late Model:

- SO undertakes all pre-construction activities including more detailed routing and securing consents for the project

We are committed to doing the right thing. Effectively managing conflicts of interest is key for successful implementation

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Business separation and information ring-fencing	• Business and legal separation from associated competitive businesses • Ring-fencing of sensitive information related to the enhanced SO role
Transparency and information provision	• Publication of and consultation on methodologies for the NOA process • Publication of annual NOA report • Transparency on business structures
Annual compliance statement	• Summary of measures employed to ensure business compliance • Submitted to Ofgem and published on our external website • Aims to increase transparency of activities

Contact details

For more information contact:

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Transmission Strategy Manager
M: +44(0)7836 293164
ben.graff@nationalgrid.com

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Coffee Break

Please sign up for Round Table surgeries and take a look at the Interactive Zones

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System Operability Framework Update



Vandad Hamidi
SMARTer System Performance Team Manager

What's happening in GB?

Islanded AC Power System

Changes in the Energy Landscape

Generation

- Increase in non-synchronous generation
- Closure of conventional plants

Demand Side

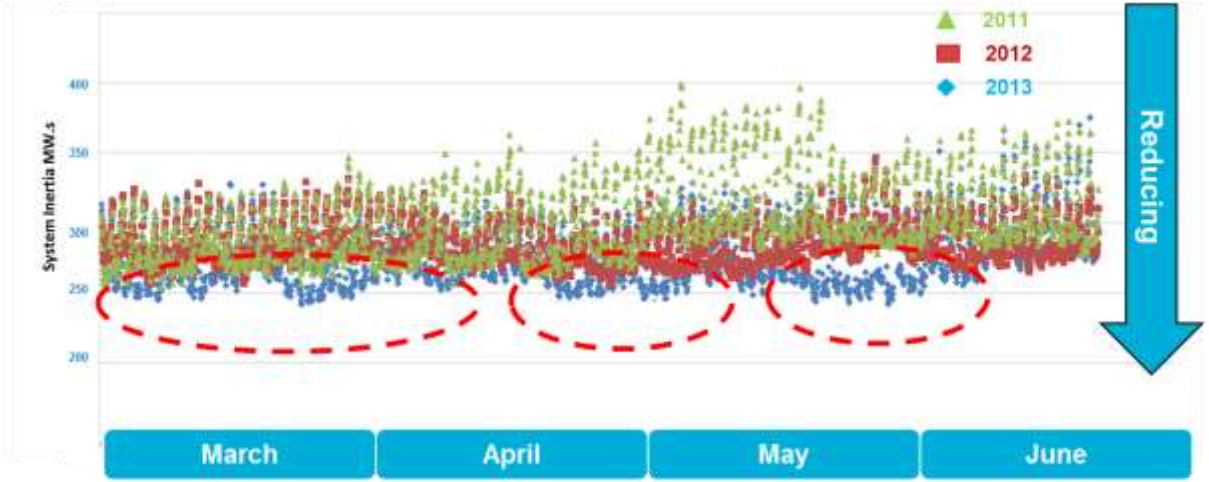
- Increase in Embedded non-synchronous generation
- Change in Demand type (LED lights – Heat Pump)

Network

- First Embedded HVDC Link (parallel to AC)
- Thyristor Controlled Series Compensation (TCSC)

And the impact?

System Inertia



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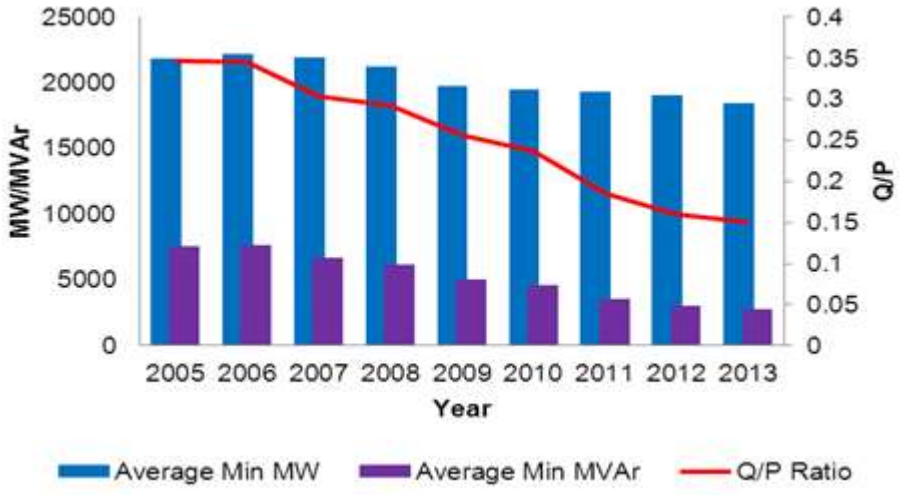
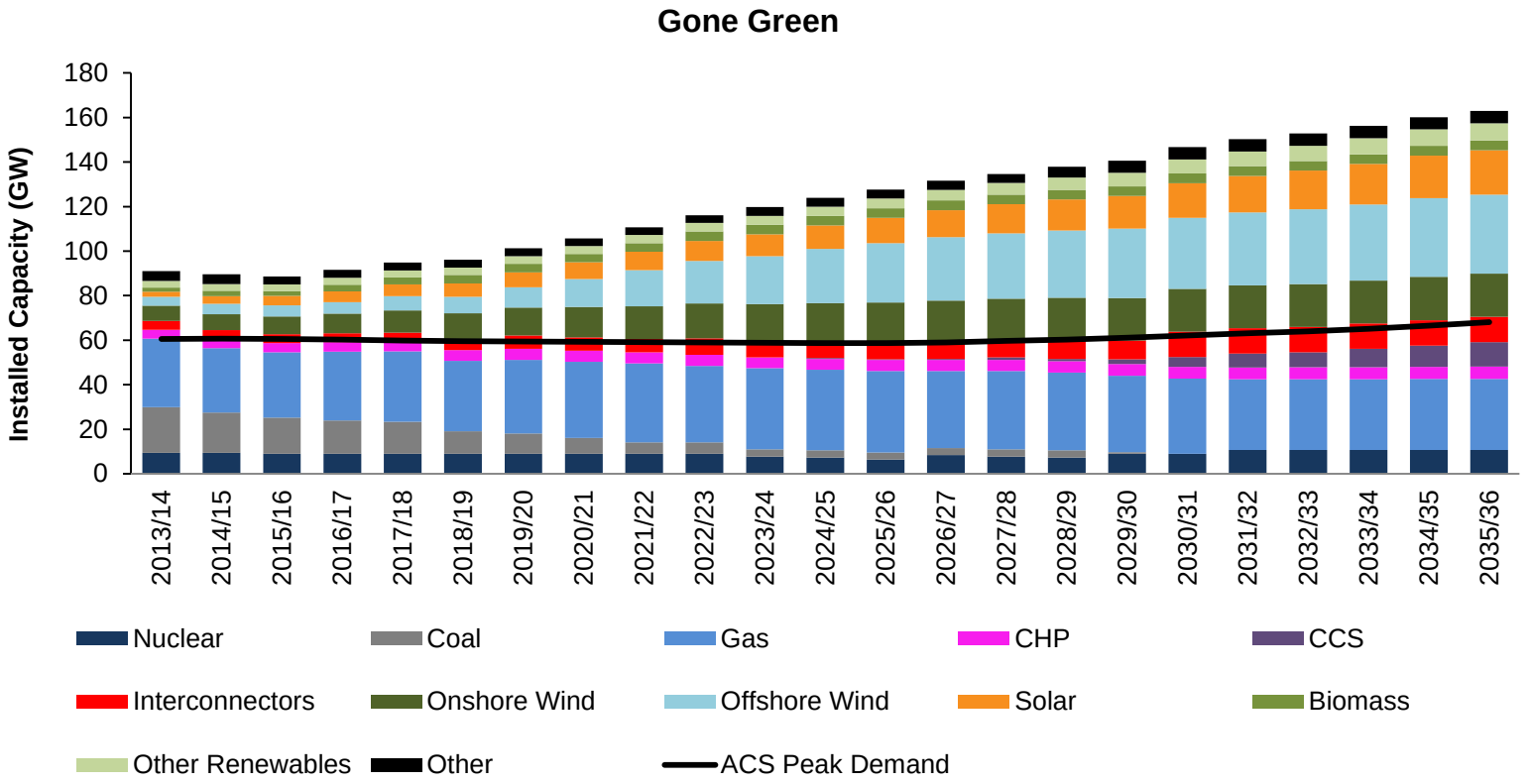


The scale of change
Generation Mix (Gone Green Scenario)



The scale of change
Generation Mix (Gone Green Scenario)

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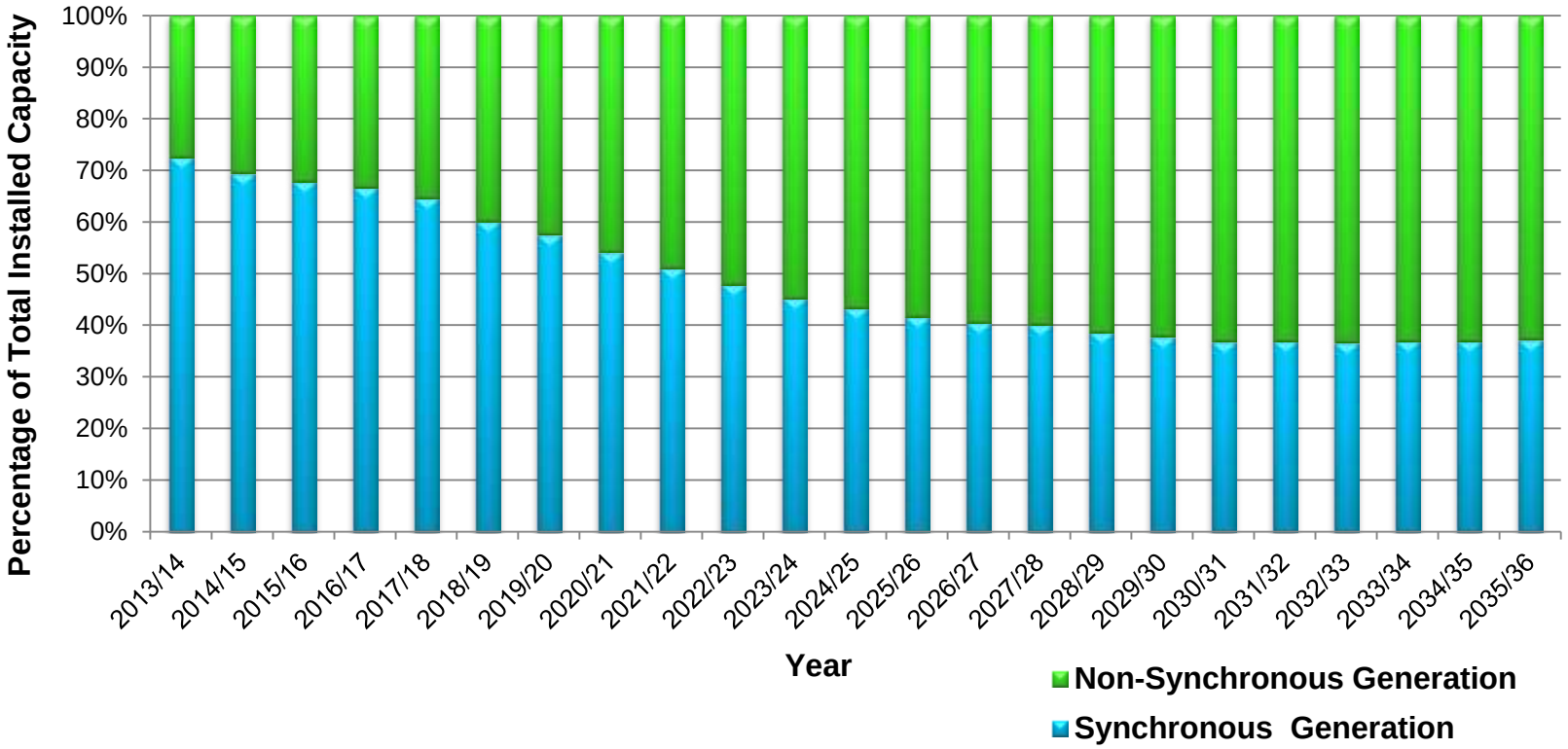

Power grids were designed to operate with 100% synchronous generation!

Example - System Inertia & Frequency Containment

	Solution	Cost (2020 Gone Green)
Conventional Services	Constrain generators	Extra £600m
	Constrain largest infeed/outfeed	Extra £130m-£270m (depending on when the large infeeds are connected)
	Carry larger volumes of response	Extra £210m

	Solution
New Services	Enhanced Frequency Control (Fast Response or synthetic inertia)
	Low Load Operation of Thermal Plants
	Synchronous Compensator

System Operability Framework (SOF)

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Future Energy Scenarios

Change in Energy Landscape

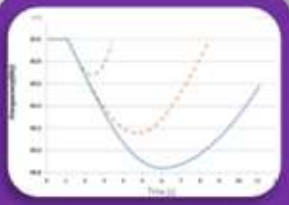
- Generation mix
- Interconnection
- Demand side services

Performance Requirements

Economic, Efficient and Operable System

- Large infeeds (>1800MW)
- System stability
  - Frequency
  - Voltage
  - Rotor angles
- Constraint minimisation
- Market facilitation

Operational Challenges



Reduction in System Strength

- System inertia
  - RoCoF
  - Primary response
  - System stability
- Short circuit level
  - Power quality
  - Protection
  - HVDC commutation
  - System stability

Operation Solutions & Opportunities

SMART Grid Development

- Rapid response
- Demand side response
- Low load operation of thermal plants
- Dynamic thermal ratings
- System wide controller
- Parallel HVDC links

Electricity Ten Year Statement

System Operation Chapter of ETYS

- Variations in each topic
- Opportunities for stakeholders to provide new services
- Stakeholder feedback

SMART Frequency Control Project
(Enhanced Frequency Control Capability, EFCC)

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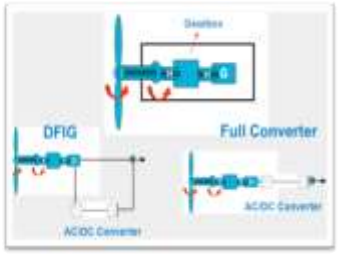
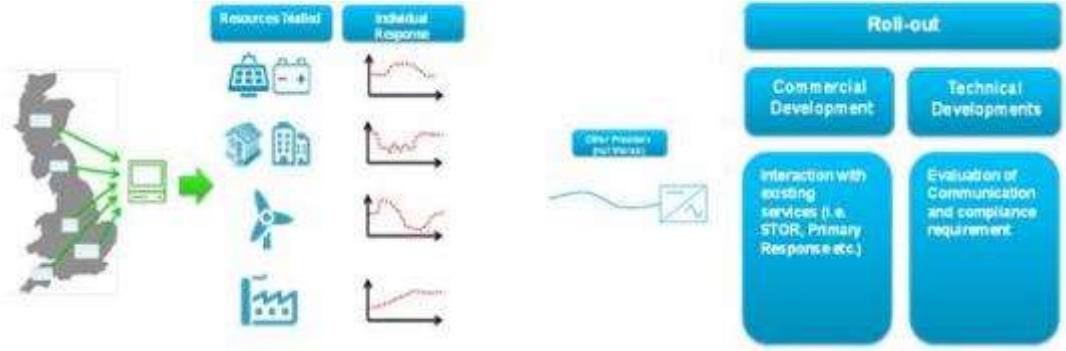
- **Why SMART Frequency Control?**
  - Change in generation mix



- **Benefit of SMART Frequency Control**
  - A potential saving of up to £200m per annum by 2020 to be passed to the consumers
  - New balancing services commercial framework for rapid frequency response

- **Objective**



- **Collaboration**

ALSTOM

BELECTRIC

centrica

flexitricity
Unlocking smart grid revenue

MANCHESTER 1824
The University of Manchester

University of Strathclyde Glasgow

SOF and the interaction with market players

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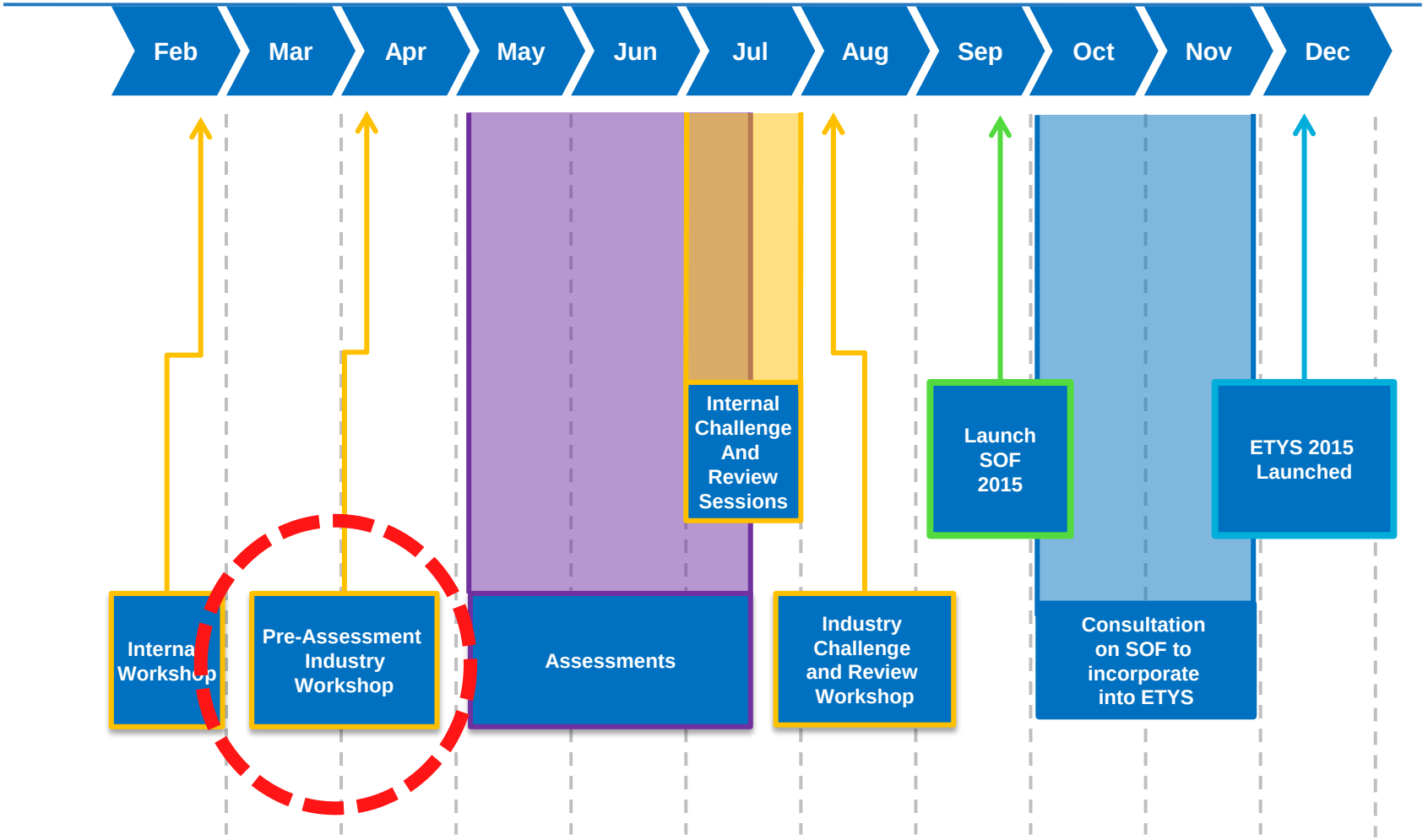
How? \ Who?	Service Providers (Generators, Aggregators, Interconnectors)	Onshore and Offshore Transmission Owners	Distribution Network Operators	Manufacturers and Technology Providers
Design of the new balancing services	Future revenue streams	Future compliance	DSO services	Future products / Compliance
Coordinate the use of existing capability	Additional incentives	Coordination of resources	Coordination of resources	Retrofit vs new design
R&D and joint innovation projects	Collaboration and engagement	Collaboration and engagement	Collaboration and engagement	Collaboration and engagement

SOF aims to provide necessary input into commercial and regulatory frameworks to ensure future grid operability

High Level Development Timeline



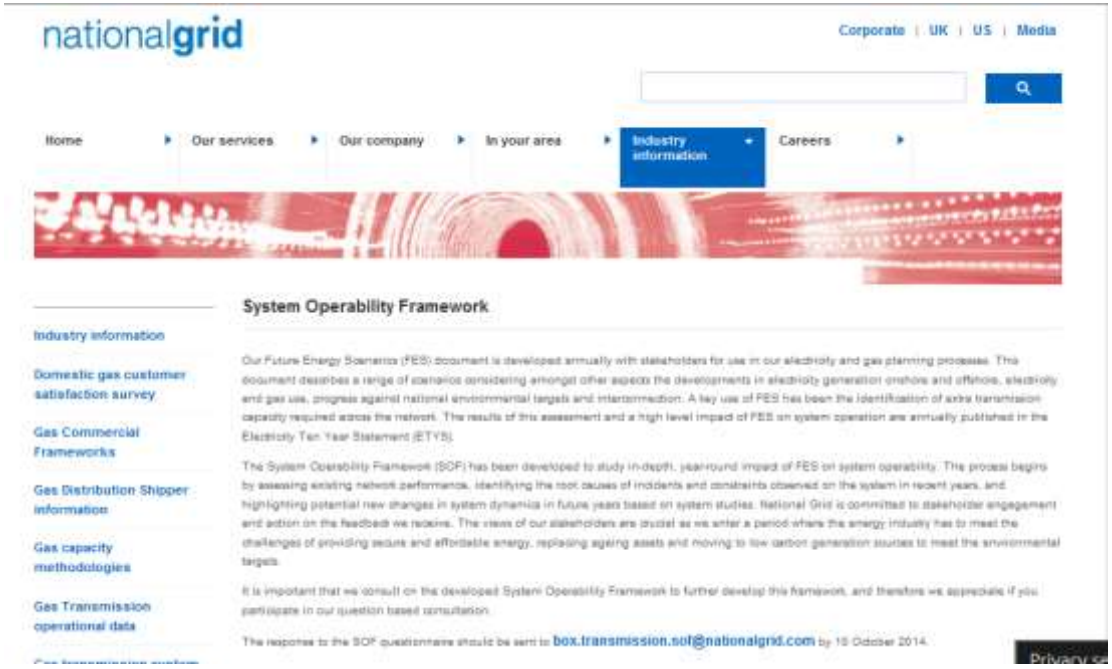
9th April 2015 – Warwick

System Operability Framework

Thank you for your attention

For more information contact:

box.transmission.SOF@nationalgrid.com



http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/System-Operability-Framework/

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Electricity Ten Year Statement Update



Stewart Whyte
Network Development Strategy Manager

Agenda

- Background
- Network Development Policy
- 2014 Outcomes
- Document Launch
- Identification of opportunities
- Customer Capacity Tool

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ETYS Chapters

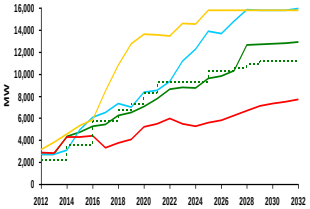
Network Development Inputs

Stakeholder engagement process

UK Generation and demand Scenarios

Network Capability and Requirements

Identify future transmission capability requirements



Network Development and Opportunities

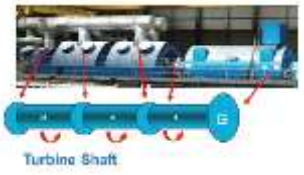
Identify future transmission solutions

Selection of preferred option

System Operation

Operational chapter

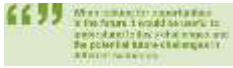
Articulation of key Operational challenges today and in the future



Stakeholder Engagement

ETYS 2015 Engagement timeline

Summary of ETYS 2014 Engagement



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Network Development Policy

What Does the Future Generation & Demand background look like?

How does it affect the network?

What options do we have to accommodate for future requirements?

Decision on options

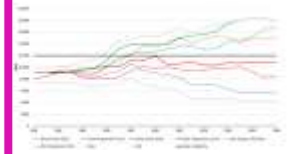
Publish results end November (licence obligation)

Input

Stakeholder Engagement Process

UK Generation and Demand Scenarios

Requirements

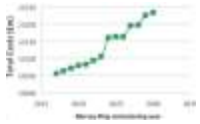


Identify Future Transmission Capability Requirements

Solutions

Identify Future Transmission Solutions

Calculate Operational Costs for Transmission Solutions



Select

Development of Options

Selection of preferred options

Output

Electricity Ten Year Statement (ETYS)

Capital Plan

England and Wales
NDP 2014 Recommendations

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Project	Network Area	No Progression	Slow Progression	Low Carbon Life	Gone Green	Contracted Sensitivity	ETYS 2014 decision
Western HVDC Link	Scotland to England border	2016	2016	2016	2016	2016	Complete Construction
Series & Shunt Compensation	Scotland to England border	2015	2015	2015	2015	2015	Complete Construction
Wylfa – Pentir Second Circuit	North Wales	N/A	N/A	2027	2028	2025	Complete pre-construction planning
Pentir-Trawsfynydd Second Circuit	North Wales	N/A	2022	2027	2021	2021	Delay
South Coast Reactive Compensation	South Coast	N/A	2021	2021	2020	2020	Delay
Bramford-Twinstead New Overhead Line	East Anglia	N/A	2025	2023	2023	2023	Delay
Hinkley – Seabank New Line	South West	2029	2027	2025	2026	2021	Continue pre-construction
Wylfa-Pembroke HVDC link	North and South Wales	N/A	2024	2024	2024	2024	No decision required

Scotland
ETYS 2014 Recommendations

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Project	Network Area	No Progression	Slow Progression	Low Carbon Life	Gone Green	Contracted Sensitivity	ETYS 2014 decision
Shetland HVDC link	SHET	2020	2020	2020	2020	2020	N/A
Western Isles HVDC link	SHET	2020	2020	2020	2020	2020	N/A
Caithness-Moray HVDC Link	SHET	2018	2018	2018	2018	2018	N/A
Orkney 132kV Sub Sea link	SHET	2018	2018	2018	2018	2018	N/A
Beauly – Denny reinforcement	SHET/SPT	2015	2015	2015	2015	2015	N/A
Central 400kV Upgrade	SPT	N/A	2021	N/A	2019	2019	N/A
Dumfries and Galloway	SPT	N/A	2023	N/A	2023	2023	N/A

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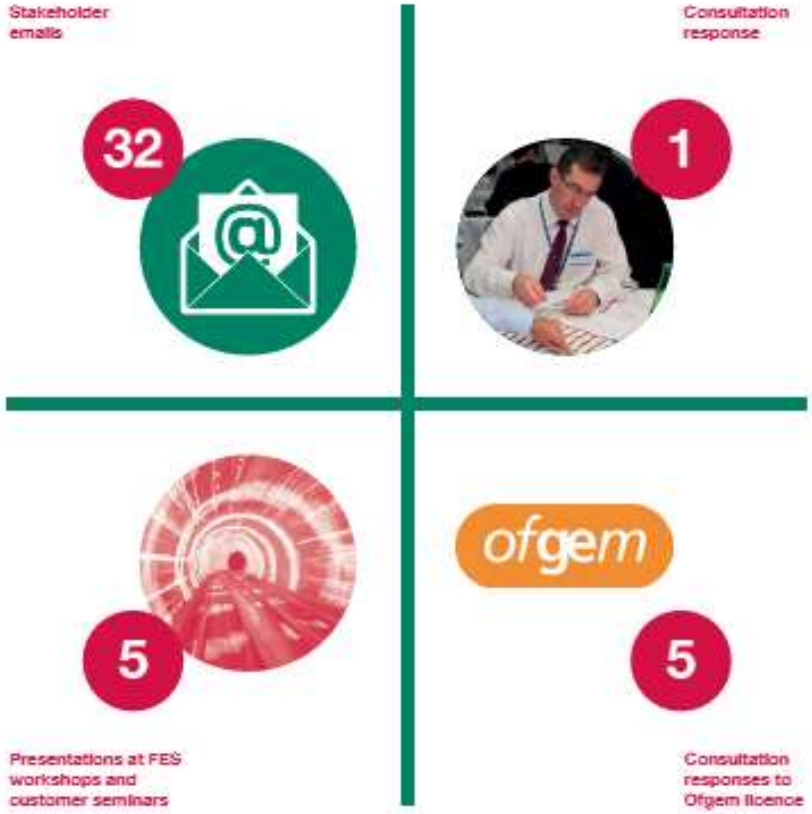
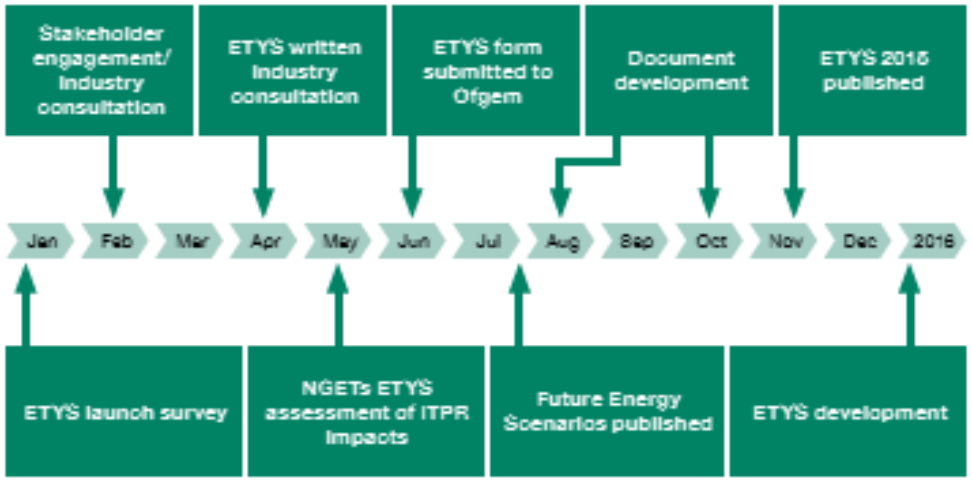
Stakeholder Engagement



- 522 signed up to receive ETYS
- 302 opened document
- 189 clicked Link
- 58.9% open rate of document



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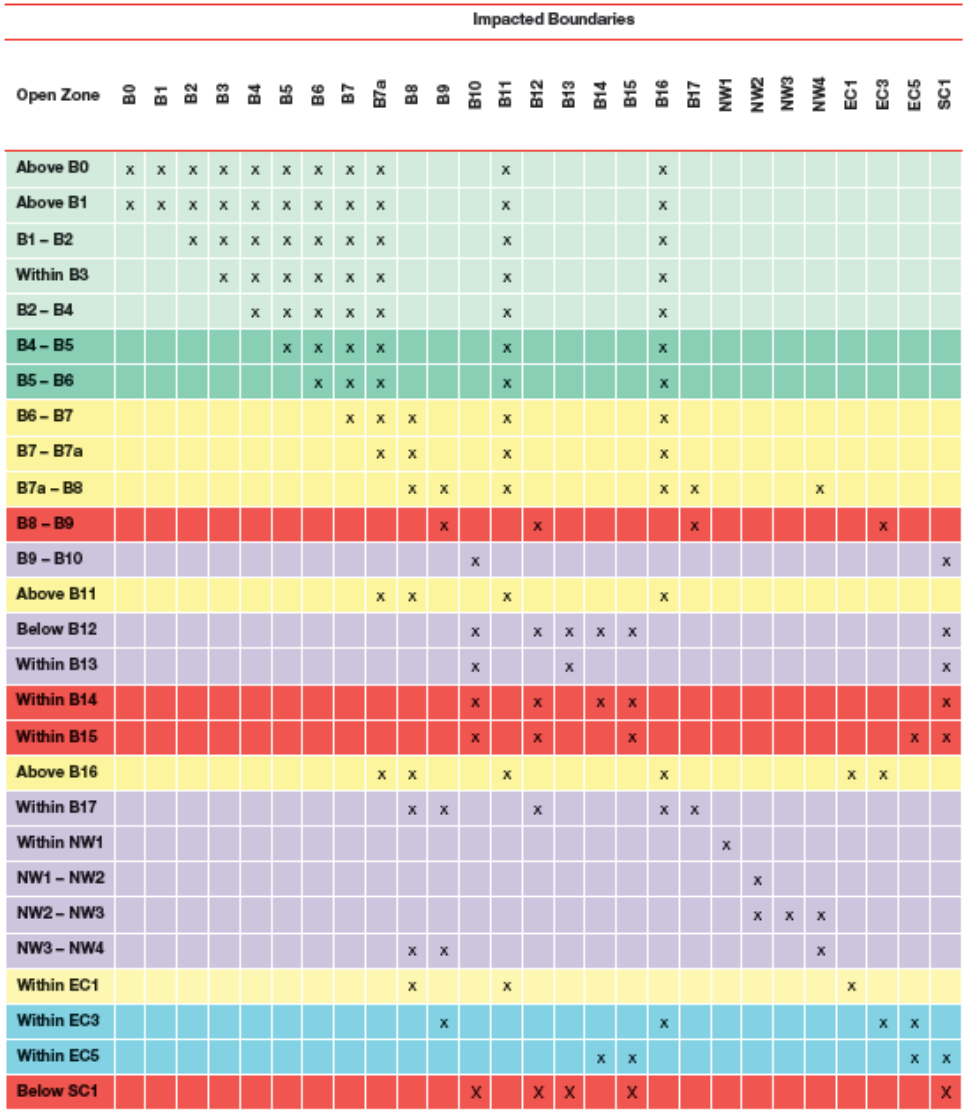
ETYS 2014 Capacity Identification

- Chapter 4 Network Opportunities
  - Highlights boundaries regionally
  - Provides a high level view of connection timescales
  - Opportunities for connection and service provision
  - Key issues affecting the area
  - Linked to Chapter 4.3 Commercial Opportunities



	Impacted Boundaries																								
Open Zone	B0	B1	B2	B3	B4	B5	B6	B7	B7a	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	NW1	NW2	NW3	NW4	EC1	EC3	EC5	SC1
Above B0	x	x	x	x	x	x	x	x	x				x					x									
Above B1	x	x	x	x	x	x	x	x	x				x					x									
B1 – B2			x	x	x	x	x	x	x				x					x									
Within B3				x	x	x	x	x	x				x					x									
B2 – B4					x	x	x	x	x				x					x									
B4 – B5						x	x	x	x				x					x									
B5 – B6							x	x	x				x					x									
B6 – B7								x	x	x			x					x									
B7 – B7a									x	x			x					x									
B7a – B8										x	x		x					x	x				x				
B8 – B9											x			x					x						x		
B9 – B10												x															x
Above B11									x	x			x					x									
Below B12												x		x	x	x	x										x
Within B13												x			x												x
Within B14												x		x		x	x										x
Within B15												x		x			x									x	x
Above B16									x	x			x					x						x	x		
Within B17										x	x			x				x	x								
Within NW1																				x							
NW1 – NW2																					x						
NW2 – NW3																					x	x	x				
NW3 – NW4										x	x												x				
Within EC1										x			x											x			
Within EC3											x							x							x	x	
Within EC5																x	x									x	x
Below SC1												X		X	X		X										X

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Customer Interface Tool

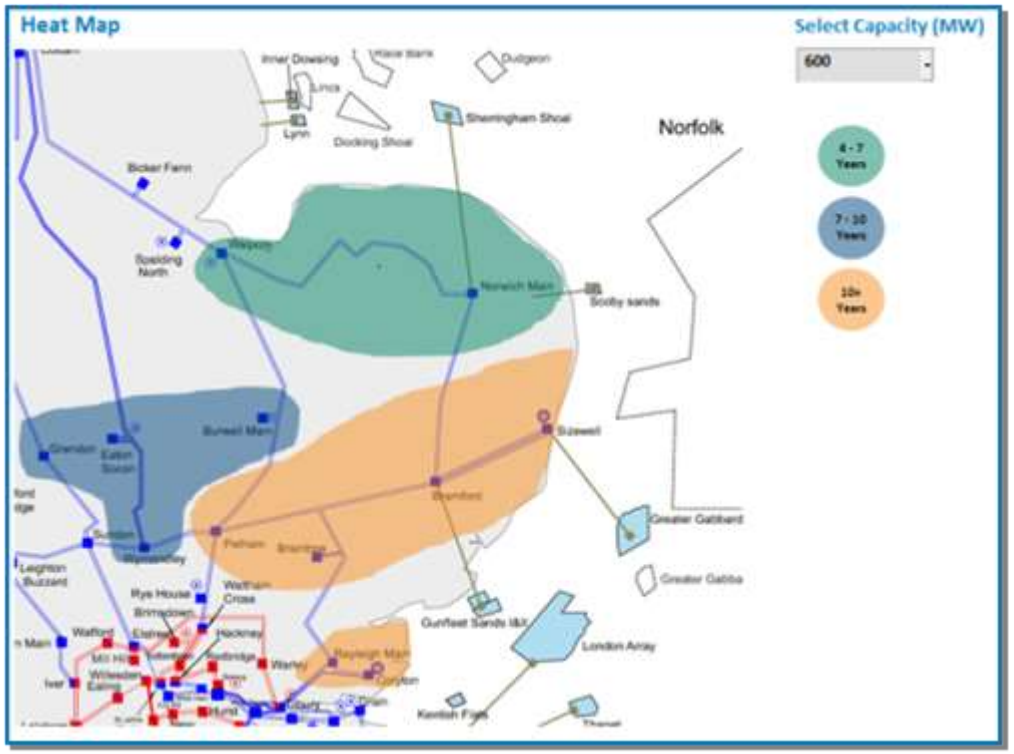
Why?

What are we trying to achieve?

- Requested by Industry
- Provide clarity for potential applicants
- Improve Customer Connection Process

Who have we consulted?

- Customers
- Transmission Owner
- System Operator



Please visit our stand for demo and feedback!

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National Grid TO Major Projects



Duncan Hughes
Planning Application Team Manager

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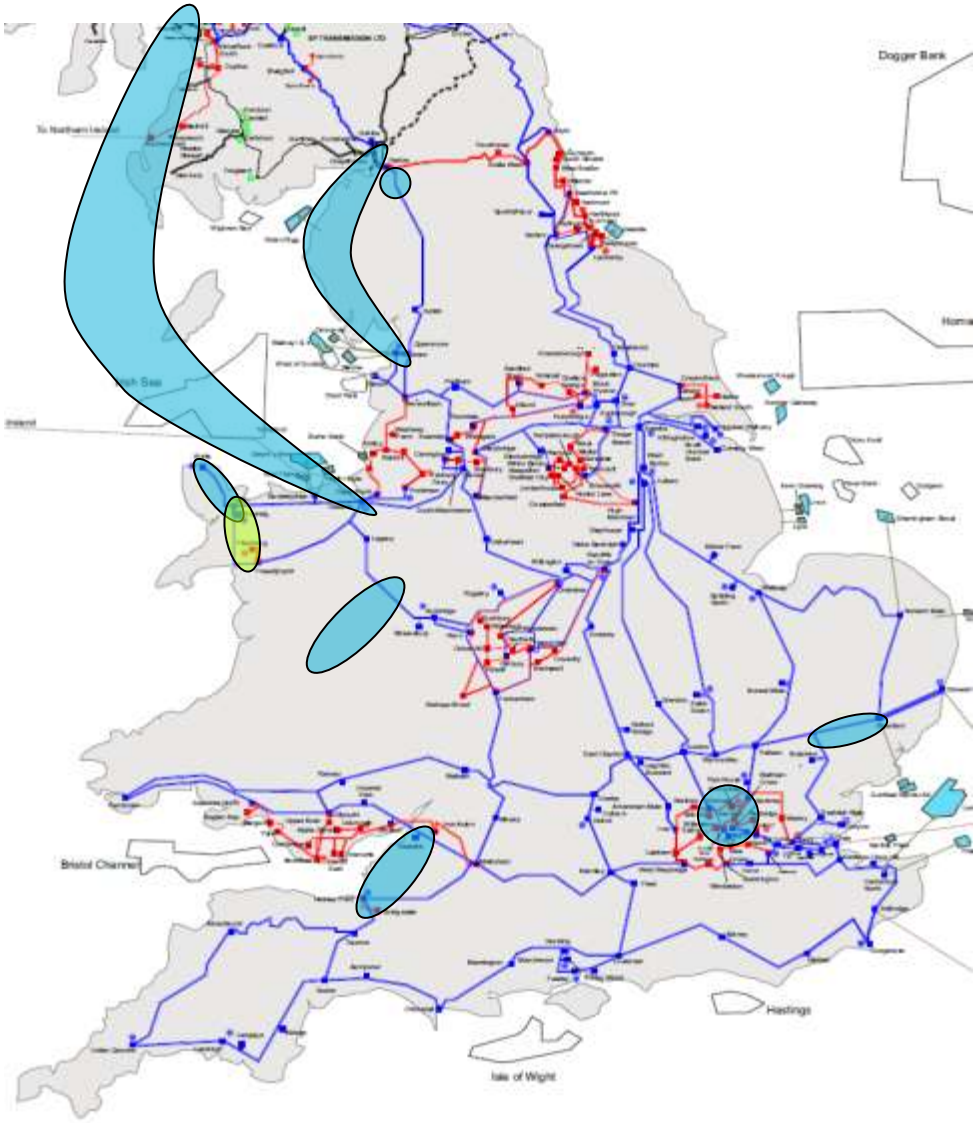
National Grid's Major Projects



In Construction

- London Tunnels
- Series Compensation
- Western Link (HVDC Interconnector with Scotland)

In Pre-Construction

- Hinkley Point C Connection (~54km)
- North Wales (~40km)
- North West Coast Connections (~167km)
- Mid Wales (~50km)
- Bramford-Twinstead (~29km)

Scotland – England Reinforcements

Western HVDC Link

- Joint venture between National Grid and Scottish Power
- 2.2 GW CSC HVDC Link
- ~420km
- Converter station construction commenced 2013
- Subsea cable installation commenced 2014
- Completion scheduled for 2016/17

Series Compensation

- Co-ordinated project with SPT
- Maximises effectiveness of existing assets
- Fixed and thyristor controlled capacitors
- Commissioning in progress

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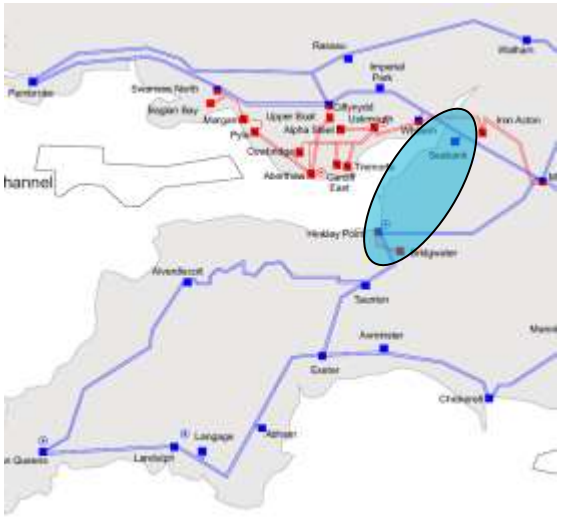
London Cable Tunnels

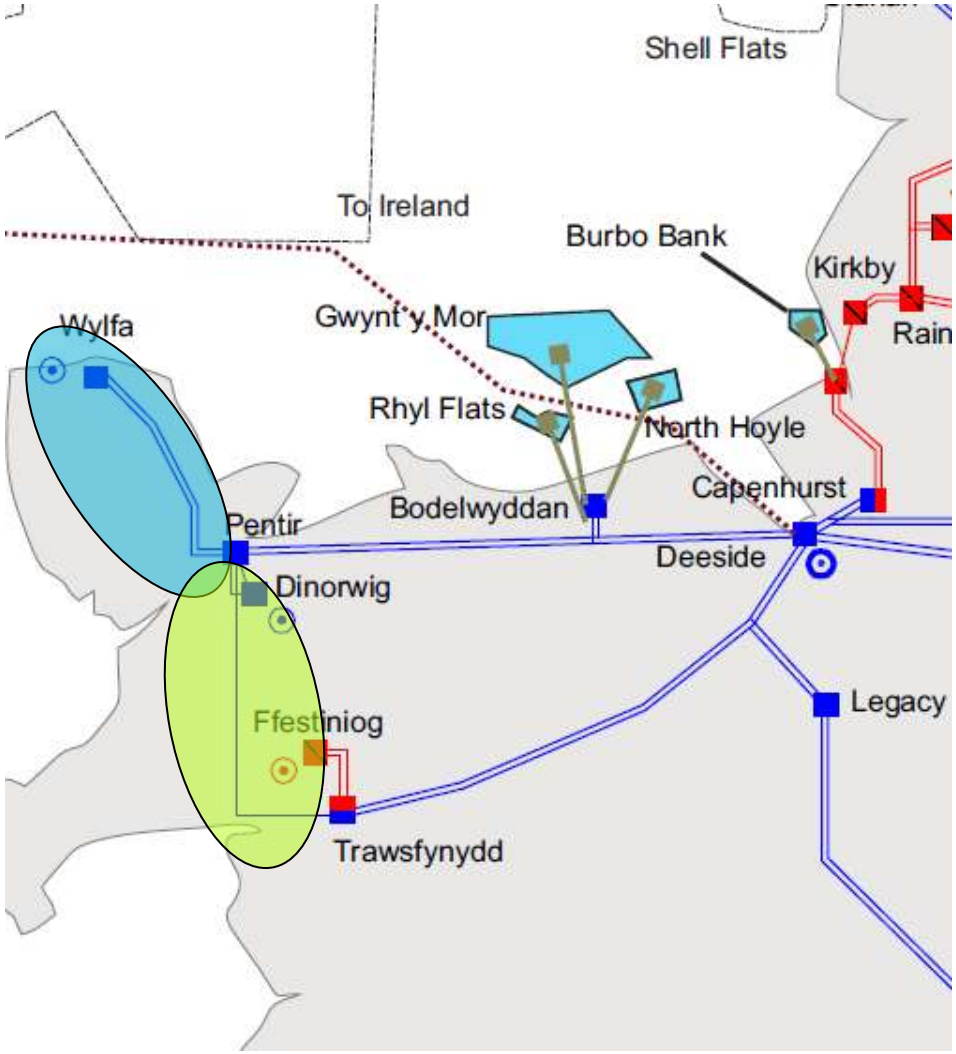
- Scheme value ~ £900m
- Asset replacement of old 275 kV oil filled cables
- Upgrades London network to meet future requirements
- 35.5 km of new tunnels containing 400 kV double circuits
- Construction scheduled to complete in 2018

Hinkley Point C Connection



- New 400kV double-circuit from Bridgwater to Seabank, ~ 46km OHL, + 8km underground cable
- Connections new generation at Hinkley Point (3.3 GW) and Seabank (1.2 GW)
- First use of T-pylon
- DCO application submitted May 2014
  - Secretary of State decision expected 2015
- Ofgem SWW funding review underway, 1 – 2 year process
- 5 years of pre-construction development work
- Completion expected 2021

North Wales



- New 400kV double-circuit from Wylfa to Pentir, ~40km
- Connecting new nuclear (2.8 GW) and wind generation (2 GW)
- Preferred route corridor announced January 2015
- Stage 3 consultation in 2015
- DCO application scheduled for 2017
- Changeable generation background over the course of development

North West Coast

- Potentially up to ~275km new circuits
- Facilitates connection of 3.4 GW new nuclear generation
- Stage 2 consultation process complete
  - Final design to be confirmed
- SWW and DCO requirements
- Completion scheduled for 2024

SP ENERGY NETWORKS

Customer Seminar
SP Transmission Update

Cathie Hill

February 2015

Update Topics

- Progress on major upgrades
- Update on SWW projects
- Overview of connection timescales

SPT Major Reinforcements

Western HVDC Link

- Main building erecting commenced at Hunterston Converter Station
- 6 out of 8 HVDC land cables installed in Scotland
- First 'landing point' drill at Ardneil Bay complete and pipe installed
- First marine campaign complete

Hunterston Kintyre

- SPT onshore drilling and duct installation complete
- Substation construction commenced

Beauly Denny

- Continuing with tower line construction and substation works
- Transfer Capability available by end 2015

- MSCDN – commissioning final unit
- Series Comp – in construction
- East-West – re-conductoring and substation works progressing – outage dependent

4.4GW Upgrade

Series Compensation
Moffat Platform Erection
–

Re-conductoring
OHL over M74

Dumfries & Galloway Strategic Reinforcement

SP ENERGY NETWORKS

Main project drivers

- Replace assets approaching end of life and remove infrastructure no longer required
- Facilitate renewables in the area

Current Status

- Options generated and technically assessed
- Stakeholder survey carried out
- Options for route corridors and substation locations identified

2015 Plan

- Public consultation – two stages, post General Election
- Cost Benefit – facilitate connections, impact on boundaries
- Need case submission end 2015

Connecting in this Area

- Likely that any generation will impact transmission network
- GSP transformer replacement, OHL re-conductoring triggered
- Restricted access becoming very difficult to manage
- Timescales set by SWW reinforcement - 2023

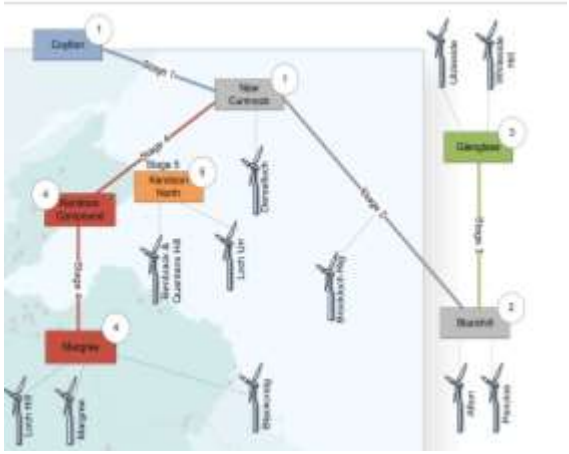
South West Scotland

Progress since last seminar

- Coylton – New Cumnock – Coylton works done, 275kV tower erection ongoing, New Cumnock civil
- 132kV circuits - remaining Section 37 consents received Feb 15, contracts for OHL, transformers, switchboards


Coylton - New Cumnock OHL


New Cumnock S/S



Network under construction

Connecting in South Ayrshire

- Building 275kV/132kV infrastructure for 2016 &2017 connections
- Earliest connection in this area likely to be 2019
  - Reinforcement of new assets,
  - Changes at Kilmarnock South
  - Upgrading required at Maybole and New Cumnock GSPs
- Timescales could be longer where new 132kV overhead lines needed

Connection Considerations

- Make good use of pre and post application meetings
- We will look at ways to connect you that avoid long lead times – but it may be un-avoidable
- We might look at ‘collaborative connections’ – though not always achievable
- Where connection is at distribution but impacts transmission we will look to use ARC techniques – more info at the round tables

SHE Transmission Update

Scottish and Southern Energy
Power Distribution

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SHE Transmission Update

- Slides to be provided

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Question and Answer Session

Julian Leslie
Electricity Customer Manager

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Round Table Sessions & Interactive Zones

1. Customer Policy
2. Charging and Capacity Development
3. ITPR - Onshore Competition
4. ITPR - Network Options Assessment
5. SP Transmission Construction Update
6. SHE Transmission Connections Update
7. National Grid Electricity Transmission
8. Network Development & Operability
9. Ancillary Services
10. Market Outlook
11. EMR
12. Customer Connections

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Feedback Forms

Please fill in your feedback form to help us improve the next event

Thank you

Lunch Break

Round Table sessions will start at 13:00

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Round Table Sessions & Interactive Zones

1. Customer Policy
2. Charging and Capacity Development
3. ITPR - Onshore Competition
4. ITPR - Network Options Assessment
5. SP Transmission Construction Update
6. SHE Transmission Connections Update
7. National Grid Electricity Transmission
8. Network Development & Operability
9. Ancillary Services
10. Market Outlook
11. EMR
12. Customer Connections

Thank you for coming

Canapés and drinks will be available

Have a safe journey home

For any unanswered questions please contact your

Customer Account Manager or e-mail
transmissionconnections@nationalgrid.com