

**South West  
Scotland and  
Dumfries &  
Galloway  
Developer Forum**

# Welcome

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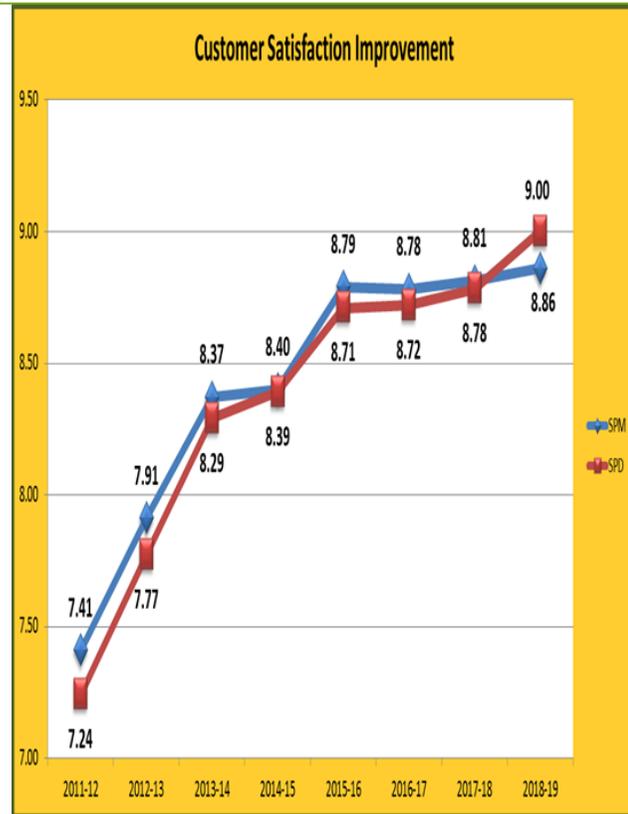
- Housekeeping
- Morning Session 10.30 – 12.00– South West Scotland
- Afternoon Session 13.00 – 15.00– Dumfries & Galloway

# Customer Satisfaction

**We have driven a sustained and Consistent improvement in satisfaction Over the last 7 years.**

The results are very strong when considering We are asking customers how they feel during events such as a power cut.

**We benchmark ourselves against the best in the UK annually through the Institute of Customer Service Benchmarking Exercise.**



**Our Institute of Customer Service Results put us equivalent to :-**

- 8<sup>TH</sup> in UK for all sectors
- 1<sup>st</sup> for Utilities
- 1<sup>st</sup> for Customer Effort

**Ahead of UK Service Leaders such as**

Waitrose

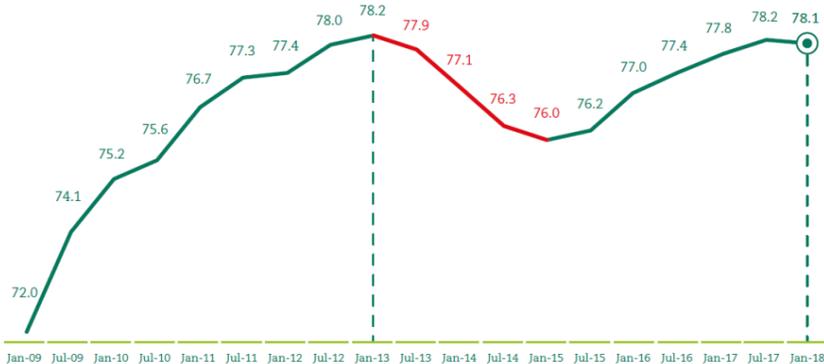
M&S  
SIMPLY  
FOOD

NETFLIX

## Our ICS Score

84.5

**Average UK Customer Satisfaction Score  
For All UK Service Sectors = 78.1**



## Ranking All Sectors

8th

Jan-18 Rank	Organisation	Sector	Jan-18 Score
1	Amazon.co.uk	Retail (Non-food)	86.6
2	first direct	Banks & Building Societies	86.1
3	Yorkshire Bank	Banks & Building Societies	85.3
4	Superdrug	Retail (Non-food)	85.1
5 =	John Lewis	Retail (Non-food)	85.0
5 =	Wilko	Retail (Non-food)	85.0
7 =	M & S (Bank)	Banks & Building Societies	84.7
7 =	Nationwide	Banks & Building Societies	84.7
9 =	Jet2holidays.com	Tourism	84.2
9 =	Tesco mobile	Telecommunications & Media	84.2
9 =	Waitrose	Retail (Food)	84.2
12	Greggs	Leisure	84.0
13 =	Aldi	Retail (Food)	83.9
13 =	Next	Retail (Non-food)	83.9
13 =	Pets at Home	Retail (Non-food)	83.9
16 =	M & S (Food)	Retail (Food)	83.8
16 =	Premier Inn	Tourism	83.8

1st

Customer Effort	Score
Wilko	3.7
Brittany Ferries	3.7
OVO Energy	3.8
WH Smith	3.8
Amazon.co.uk	3.8
first direct	3.8
Greggs	3.9
Nationwide	3.9
SAGA Insurance	3.9
Tesco Mobile	4.0
JD Wetherspoon	4.0
The Co-operative Bank	4.0
Santander	4.0
Morrisons	4.1
Pets at Home	4.1
Lidl	4.2
Next	4.2
Pret A Manger	4.2
Nationwide Insurance	4.2
Argos	4.2
M & S (food)	4.2

## Ranking Utilities

1st

	Jan 18 UICSI	Jan 17 UICSI	Y-O-Y Change
UK all-sector average	78.1	77.8	0.3
Utilities	74.4	74.4	0.0
OVO Energy	81.5	82.5	-1.0
Utility Warehouse	78.9	78.4	0.5
Bristol Water	77.4	N/A	N/A
M & S Energy	77.4	77.0	0.4
Yorkshire Water	77.4	80.1	-2.7
United Utilities (water)	77.3	69.9	7.4
Scottish Water	76.9	74.1	2.8
First Utility	76.8	77.4	-0.6
Wessex Water	76.7	79.5	-2.8
Anglian Water	76.4	77.0	-0.6
Dwr Cymru (Welsh Water)	76.4	75.3	1.1
Affinity Water	76.3	N/A	N/A
Severn Trent Water	76.0	78.0	-2.0
Power NI	75.9	76.9	-1.0
Northumbrian Water	75.6	76.1	-0.5

Average Customer Effort All Sectors	Utilities Customer Effort Score	SPEN Customer Effort
4.9	5	2.6

# Stakeholder Satisfaction 2017/2018 - 8.3/10

## You Said...

- More interaction /communication
- Provide more information on construction projects
- Improve D&T interface



## We Did...

- 57 x Pre app meetings
- 81 x Portfolio reviews
- 164 x Developer interface meetings (face/face, calls)
- 5 x Connections forums (2xSWS, 2xD&G, 1xACS)
- 1 x Workshop - LMS
- 1 x Newsletter issued
- 4 x TORI reports published
  
- Project milestone programme introduced
  
- Continued to build on 'Ditch the Label' - Interface meeting now in place with each SPEN distribution district, to ensure consistency of information for users of system

### Gareth Hislop – Transmission Policy and Commercial Manager

- Agenda
- Overview
- Next Steps



**SWS Forum**

6<sup>th</sup> June 2018

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**RIIO T2**

**Preparing for the Future**

**Jim Sutherland**

RIIO T2 Programme Director

## Price Control: RIIO-1 Overview

**Ofgem recognises the successes within RIIO-1, but also the need to evolve the framework for the transition to a low carbon economy.**

**Ofgem highlight that a stable regulatory regime has resulted in:**

Around £100bn investment in grids since 1990

A 17% fall in the cost of transporting electricity since the mid 1990s

Record levels of customer satisfaction within RIIO-1

Power cuts on local grids have halved since 2001

£8bn of benefits could be achieved by innovation schemes



**RIIO-2 should build on this by:**

Giving consumers a stronger voice

Responding to changes in how the networks are used

Simplifying the price controls

Ensuring fair returns

Driving innovation and efficiency to benefit consumers

# Price Review: Ofgem Consultation

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Ofgem issued their Framework Consultation document for RII0 2 on the 7<sup>th</sup> of March. A decision document is expected by the end of July.

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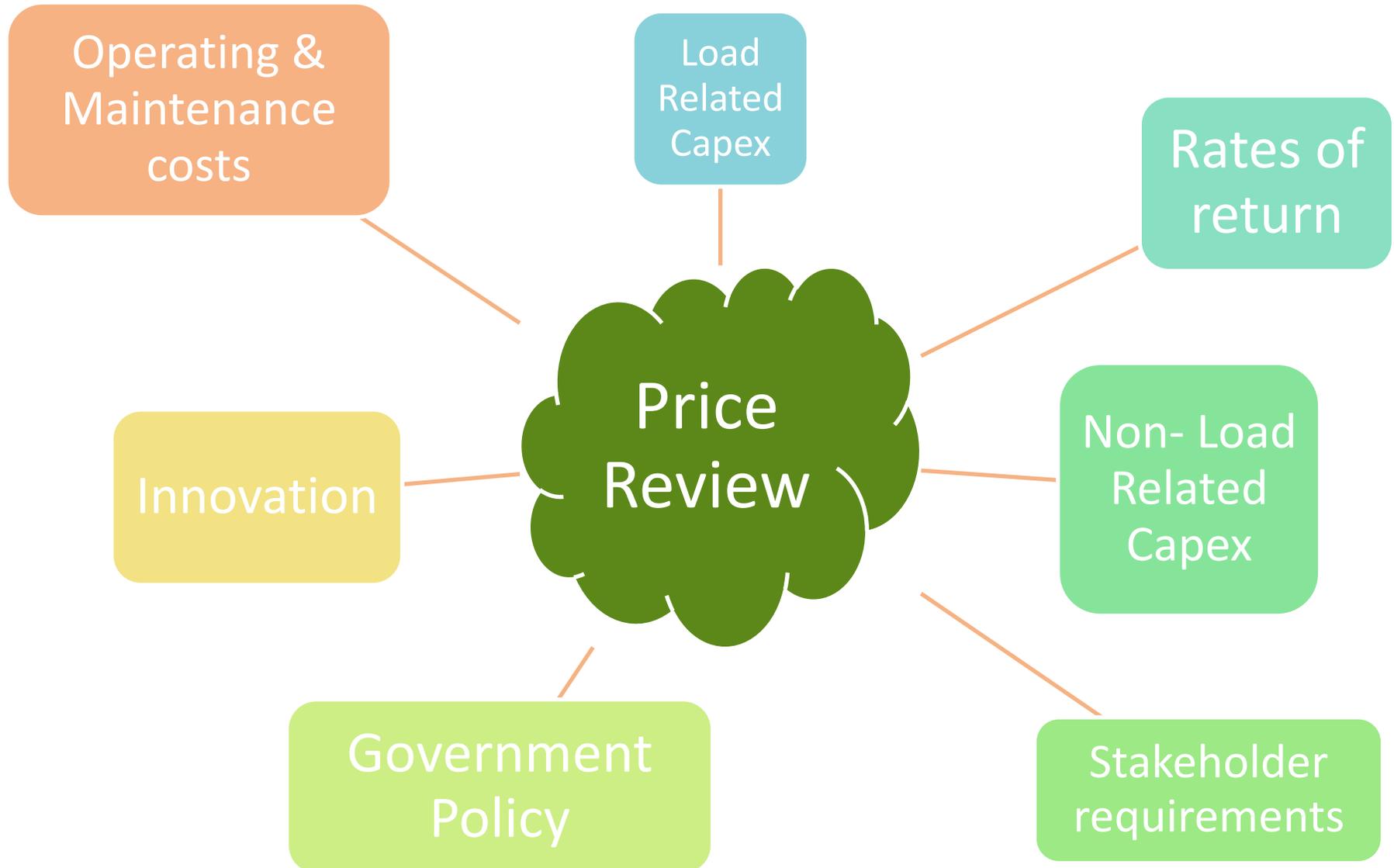
## **RIIO2 Framework Consultation 7th March 2018;**

- Important role for networks in the energy transition
- Stakeholders to have greater input to plans in future
- Lower allowed returns for investors to reflect market conditions
- Tighter incentives and possible fail safe mechanisms to limit financial returns
- Ongoing development of competition models for large new infrastructure.

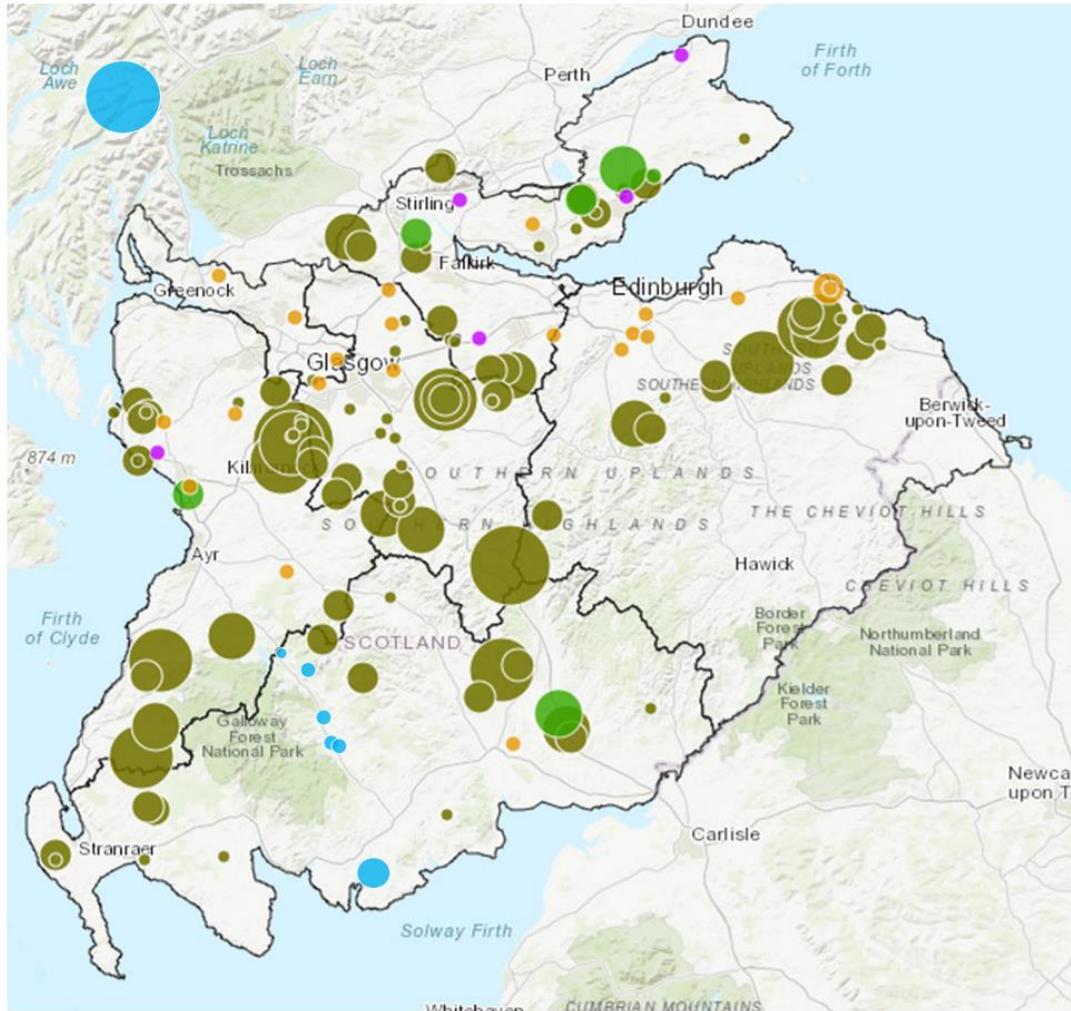
## **SPEN response issued on the 2<sup>nd</sup> of May;**

- Balance required between focus on price and cost with reliability and sustainability
- We must not lose sight of the significant benefits incentive based regulation has delivered for consumers
- Investor confidence required to deliver the energy transition and decarbonisation of Great Britain
- Support enhanced stakeholder model but should be proportionate
- Competition models should benefit customers

# Price Review : The Ingredients



# Price Review: Connected Renewables



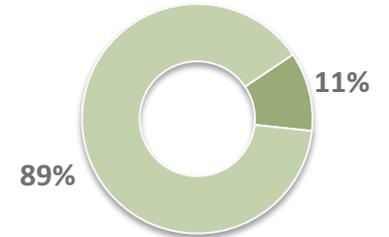
## Technology

- Biogas
- Biomass
- Solar PV
- Wind
- Hydro

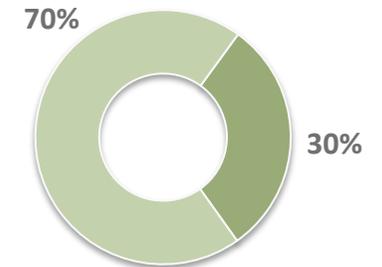
## Capacity (MW)

- >200
- 100-200
- 30-100
- 10 - 30
- ≤ 10

## 2010 Generation



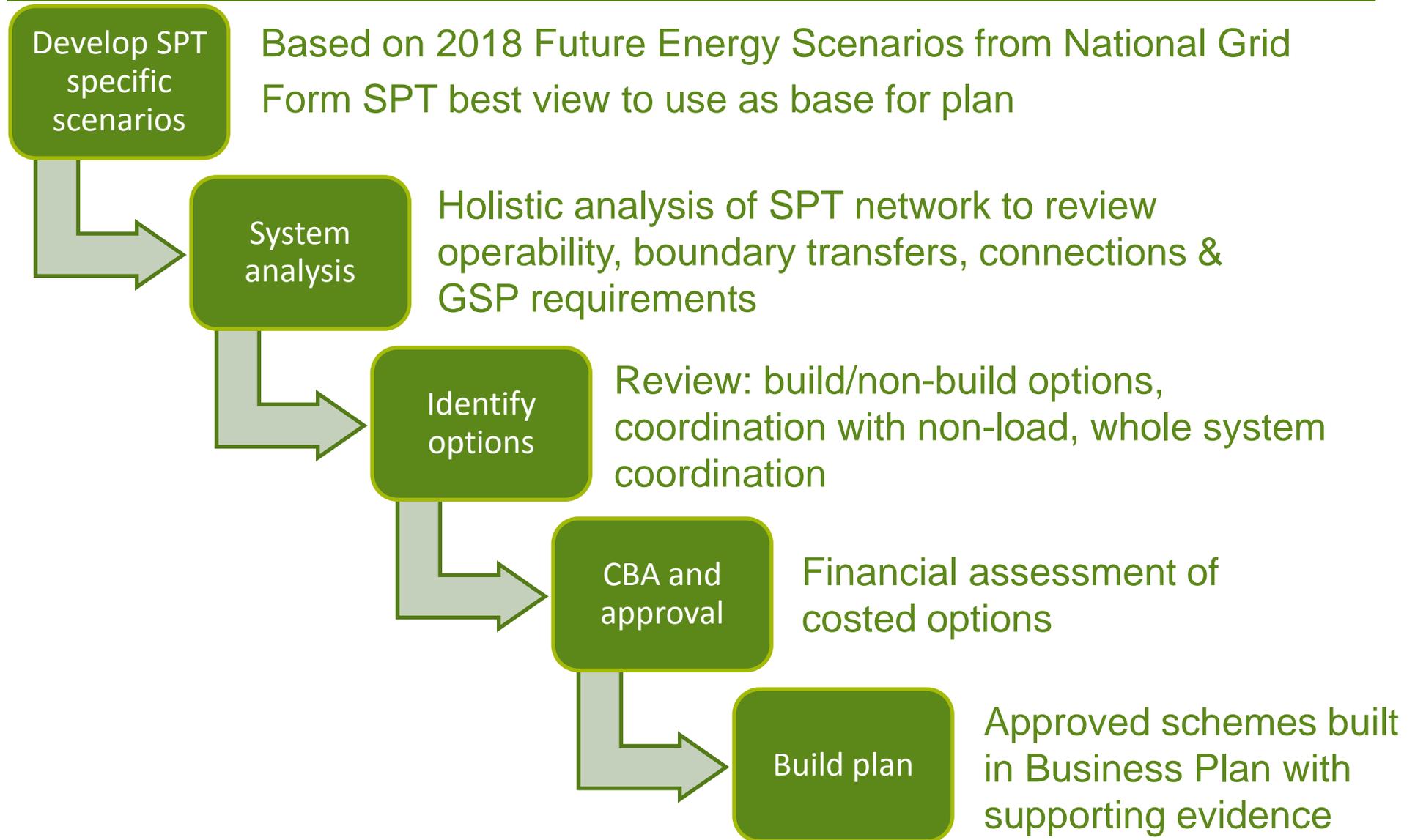
## 2017 Generation



- Distribution
- Transmission

As of December 2017

# Price Review: Developing our load investment



# Price Review: Ofgem's emerging themes

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A number of emerging themes from Ofgem have been identified which we will work to accommodate within our plans.

## Uncertainty

- 5GW of renewables connected to date
- Rate of future generation or uptake of electric vehicles is unclear
- 2030 solar generation targets which were set in 2014 have already been met

## Innovation

- £99m of investment in innovation since 2010
- World leading projects to reduce the size of substations (FITNESS) and improve system inertia (PHOENIX)
- Continue to develop new approaches as being implemented in D&G

## Whole system approach

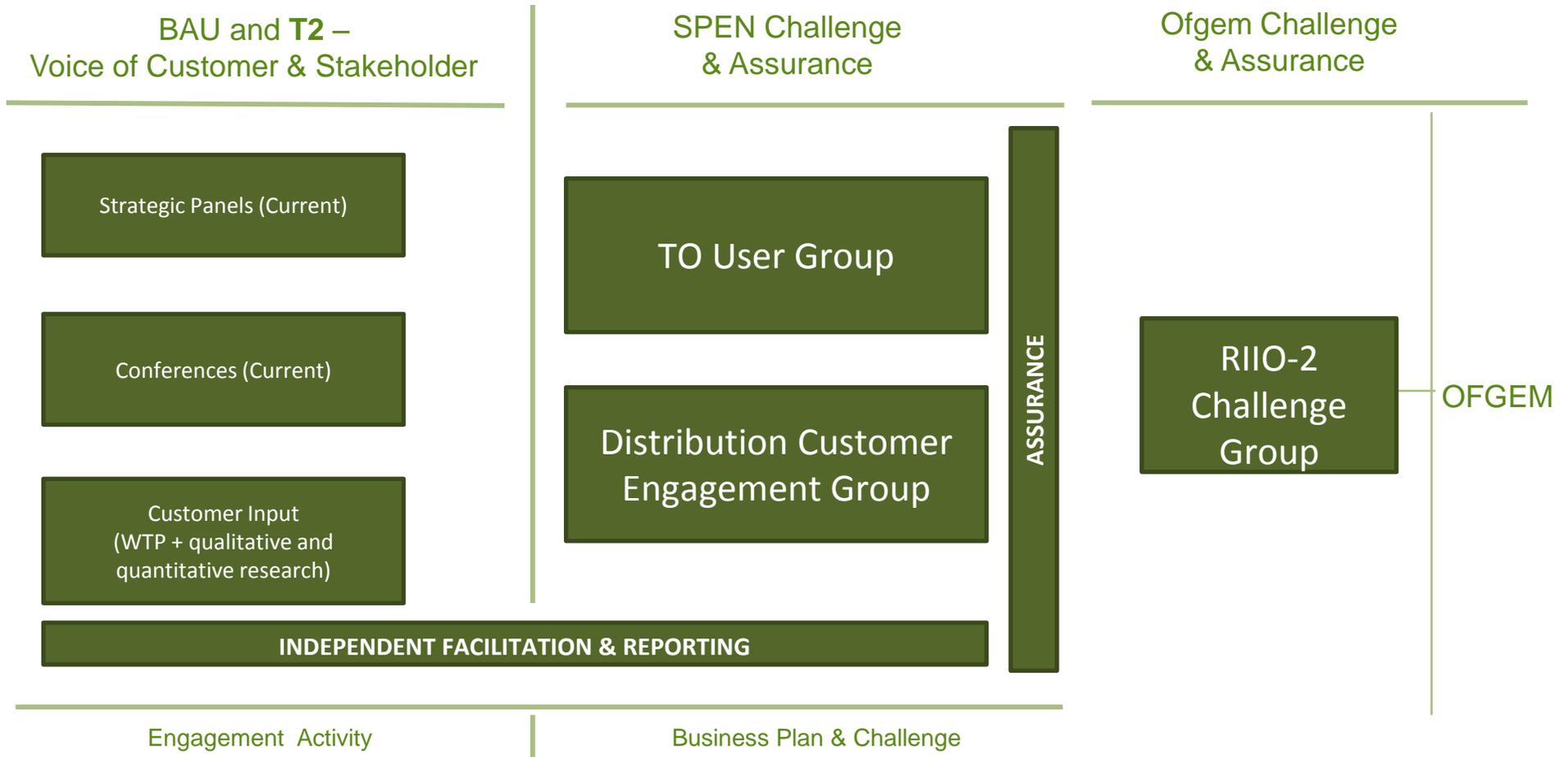
- 1/3 of distribution sites now export to transmission
- Build on the coordinated approach across all voltage levels that is demonstrated in D&G
- Coordination with DSO transition

## Build v non-build options

- Extensive use of smart grid control systems to manage the network more actively
- Commercial opportunities for users
- More focus on managing the power flows than only the assets

# Price Review: Proposed Stakeholder Engagement Model

The process for future price reviews will differ from recent reviews. Stakeholder engagement will play a much greater role in determining our plans and giving Ofgem assurance on the quality of the plans. This work starts immediately.



# Price Review: RIIO-T2 Timetable

## Timetable

- The conclusions of the framework consultation will emerge in summer 2018.
- The next review to be conducted under the RIIO-2 framework is transmission.
- Work is underway to develop our business plan during 2018 in time for submission in 2019.

Date	RIIO T2 events
March 2018	Request for views on key framework issues (this consultation)
Summer 2018	Decision on key framework issues
Q4 2018	Sector strategy consultation
Q2 2019	Sector strategy decision
Q4 2019	Final business plan submitted to Ofgem
Q3 2020	Draft Determination
Q4 2020	Final Determination
Q1 2021	Licence modification
1 April 2021	RIIO-T2 Price control commences

6<sup>th</sup> June 2018

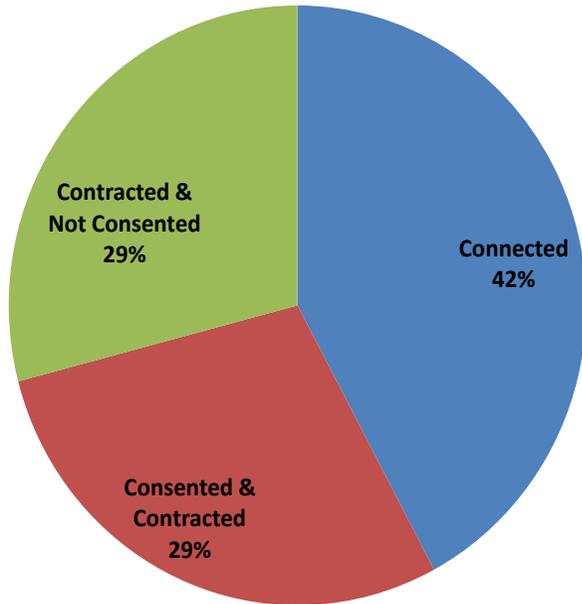
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# **SPT System Design**

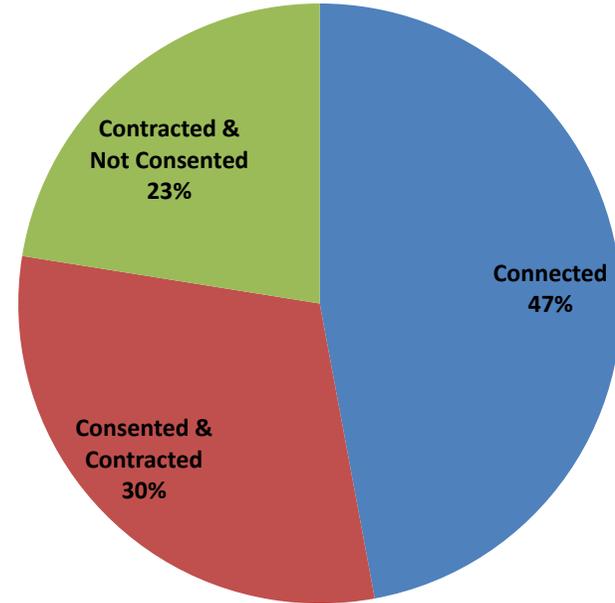
**Diyar Kadar**

# Generation Background – Change from last forum

Generation Status in SWS - November 2017



Generation Status in SWS - June 2018



Three new wind farm connected to the system (Blackcraig, Sanquhar and Whiteside Hill)

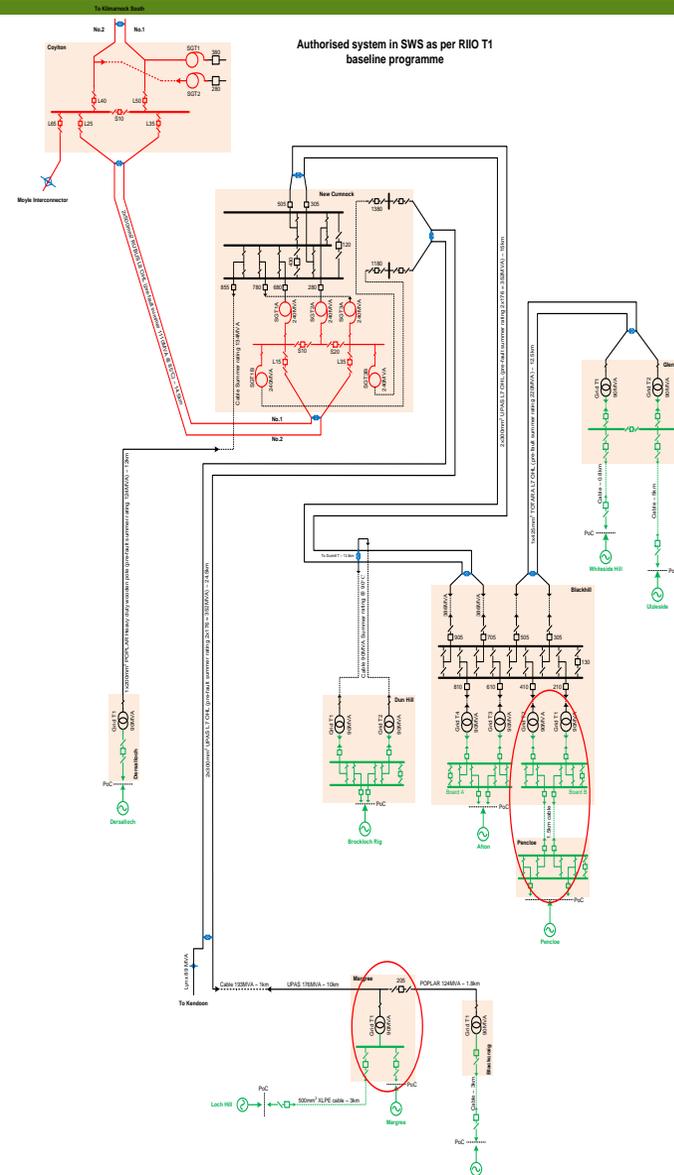
Total generation (Connected and Contracted) in the whole of South West Scotland is around 3080MW (an increase of ~ 40MW from December 2017)

Slight change in the consented position and around 692MW remains unconsented

# Baseline system in SWS

Margree collector not constructed

Blackhill Board B energised but not exporting yet

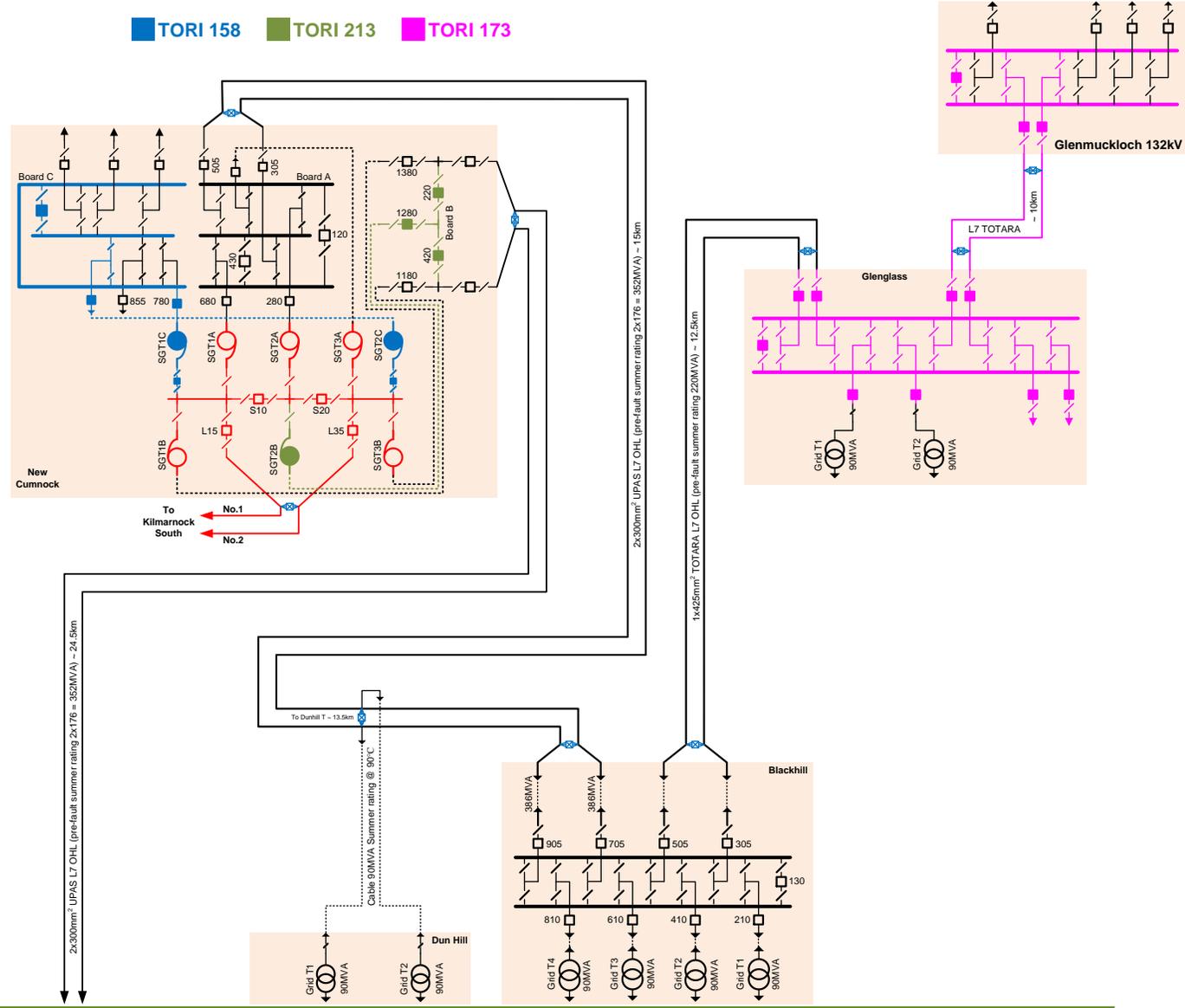


# Future Developments – South West Scotland

TORI 158 – Increase Capacity at New Cumnock (Board C), currently planned for 2022

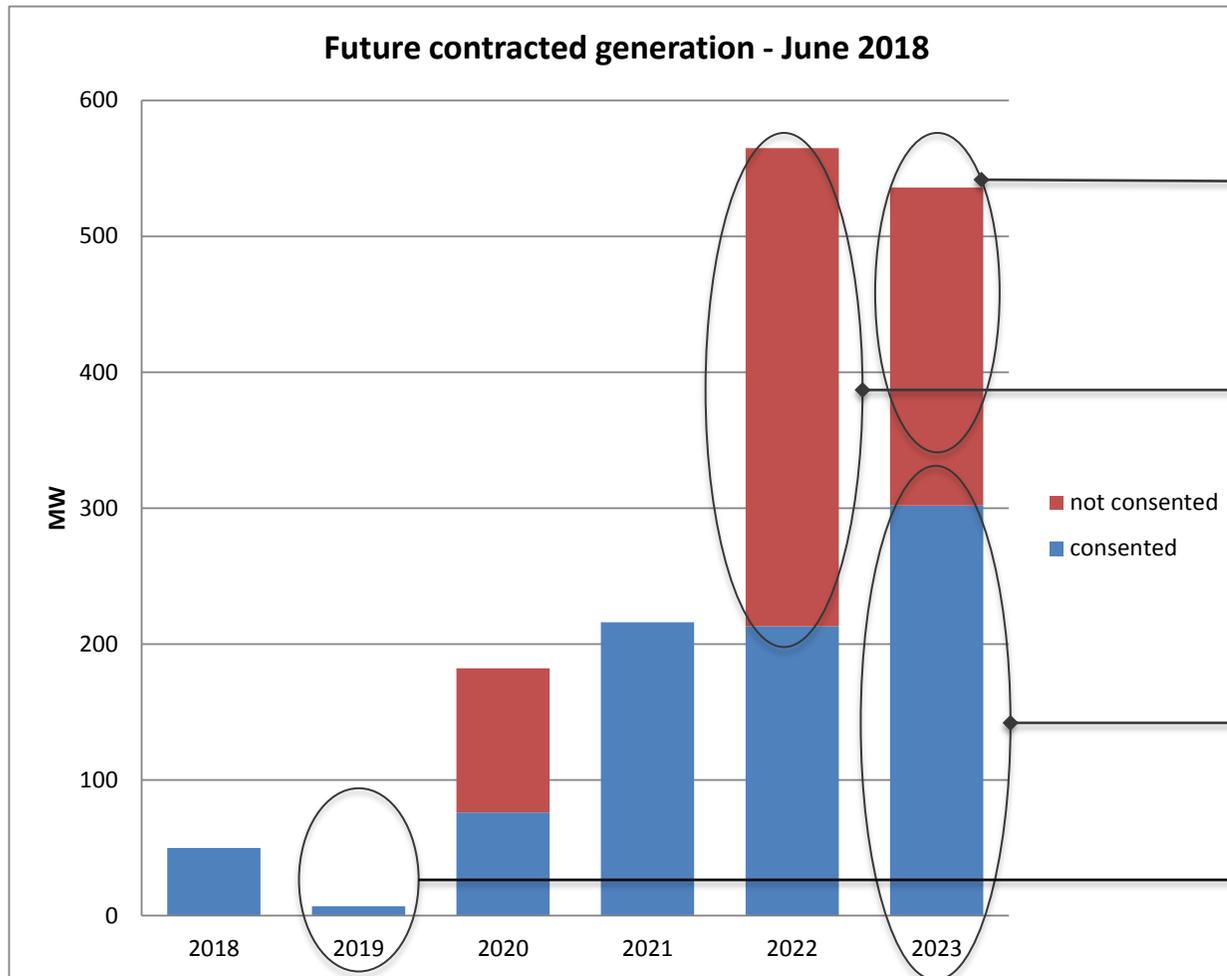
TORI 213 – Increase capacity at New Cumnock (Board B), currently planned for 2022

TORI 173 – Extend the 132kV network to Glenmuckloch, currently planned for 2023





# Future Developments – Generation



New Reinforcements

TORI 158 Trigger  
(New Cumnock Board C)

TORI 173 Trigger  
(132kV Network Extension)

TORI 143 Completed  
(Kilmarnock South Reinforcements)

# In Summary

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Future reinforcements in SWS are contingent on further generation connections

Significant number of developments have pushed back their connection dates, developers are also assessing increased TEC

The timing of delivery of TORIs 158 and 173 will be dependent on connection dates

Wider system reinforcements at Kilmarnock South (TORI 143) and KTR (TORIs 221 and 222) are progressing and are not contingent on generation connection

Against a contracted background the system is non-compliant and new offers will be contingent on further reinforcements

Reinforcement options are being assessed to ensure the system is developed in a coordinated manner

6<sup>th</sup> June 2018

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# **SPT Programme Update**

**Pearse Murray & Colin McNeil**

## SWS Project Progress (Stages 2 – 4)

- £167m expenditure to date (£61m since Jan 17)
- Steel tower overhead line main construction in progress / 233 towers in total:
  - 100% accesses foundations and towers
  - 91% conductoring complete
- Dunhill substation works complete and **Brochloch Rig** WF firm supply delivered Dec17 **TORI 114 and 145 completed**
- Blackhill substation **TORI 115 116A and 116 B** energised and **Afton** Windfarm connected Feb 18
- **Blackcraig** windfarm energised on **2<sup>nd</sup> March**
- **Sanquhar and Whiteside Hill** Windfarms connected via single circuit Route C (Blackhill to Glenglass) **TORI 022, 30 March**
- Works to complete double circuits on routes B,C and D to follow May to July 2018



## Glenglass Term Tower at Blackhill

- Some minor works remain on Blackcraig wood pole line re fitting of bird diverters.
- Minor issues with transformer at New Cumnock, which require works to existing Bucholz relay.
- 132Kv cable testing scheduled for w/c 4<sup>th</sup> June on Glenglass terminal cables.

Term tower completion establishes second circuit on C Route w/c 4<sup>th</sup> June



## SWS Project Progress (Stages 2 – 4)

### C Route outage works, priority of works

- Transfer ground deploy fibre circuits to OPGW. Secures protection & communications.
- Pull bonds into position under tension on overhead line second circuit.
- New conductors to be installed with first circuit live.
- Second cable circuit to be established from Blackhill to Glenglass terminal tower

### 132Kv cable works at Blackhill basement



Terminal Tower 132Kv cables presented to switchgear at Blackhill

## SWS Project Progress (Stages 2 – 4) Remaining works.

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- Establish landscaping at Blackhill, Dunhill ,Glenglass, New Cumnock & Coylton:- tendering initiated.
- Dunhill Access road to be returned to landowner (ESN) standard requirements.
- Potential tendering Margree works 4<sup>th</sup> Quarter 2018.
- Ayrshire operational Inter-tripping scheme completion July 2018.
- Removal of temporary construction roads and crane pads across SWS scheme.
- Close out minor snags across scheme.
- Financial closure, Project Reviews complete by 4<sup>th</sup> quarter 2018.

# Flyover



6<sup>th</sup> June 2018

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# **SPT Delivery**

**Colin McNeil**

- Programme
- Stakeholders
- Delivery strategy and contractors
- Enabling works , access
- Health and Safety , Welfare
- Environmental impact management
- Weather
- Summary



## Overall Programme

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- Timeframe - initial SWS main spine concept developed from 2007 post BETTA and on receipt of numerous requests for connection
- Protracted discussions with EAC and key landowners, including SRG
- S 37 granted Nov 2014
- Main contract awarded to enable detailed design Apr 2015
- Permission to fell trees Sept 15
- Pre-commencement conditions cleared allowing works to start Feb 2016 for routes B and C and – June 2016 for Route D,
- Acceleration requests to OHL main contractor May 16
- Contractors encounter various issues ( environmental stoppages, access, stone deliveries, weather etc )
- Additional resources and extended working deployed to secure all Connections by end Q1 2018

- Local communities
- Local Councils
- Landowners
- Wind farm developers
- SNH , SEPA
- Fisheries trust
- Supply chain
- Others

- Main OHL design and build type contract competitive tendered 3 packages
- Substations and Cable design in house, disaggregated
  - Enabling, Civils, Installation
  - Transformers, Plant and Protection equipment
  - SCADA and telecomms
- Snow clearance, peat management, road maintenance
- Over 100 Contracts awarded. 2.8 million man hours

## SWS Enabling Works scale

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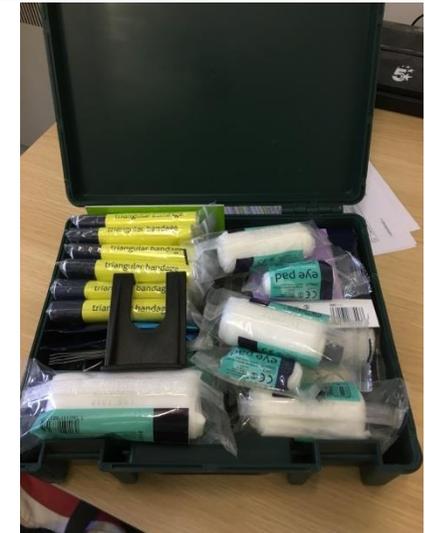
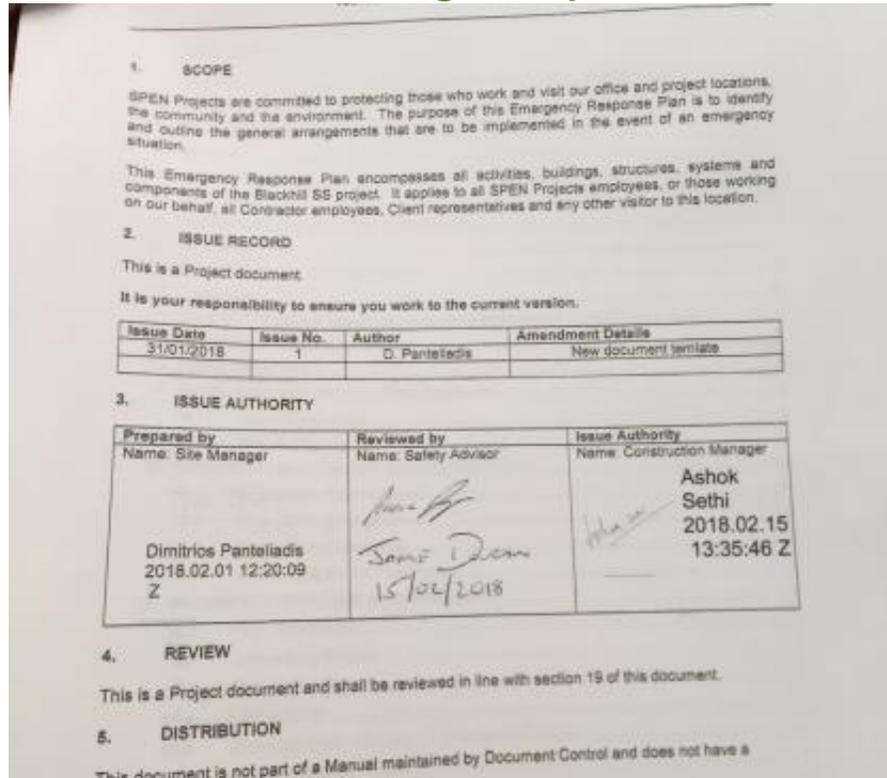
- 3 quarries established
- 1.1 million tonnes of stone
- truck haulage distance equivalent to navigating the world 14 times
- 45.6 km of new access roads established and 38.4km of existing forest roads upgraded
- 970 hectares of commercial forestry felled with 160,000 tonnes of FCS accredited timber sold



# Health and Safety / Welfare

Emergency response plan  
Helicopter landing area  
Live test emergency services

Satellite phones  
Emergency food and water  
Defib and medical supplies



- Afton reservoir
  - Water quality Pollution prevention plan
  - Fisheries culvert installation, protecting spawning areas
- Climate impacts
  - Temperatures down to -13C plus windchill
  - Heavy snow and ice at higher levels, unable to salt
  - Beast from East
  - Volume of rainfall
- Multiple concurrent work areas, traffic management



Snow clearance contractor deployed  
4 am -730 am clearing access  
Contractors held at muster point  
Road declared safe or closed each morning  
Speed limits and escorted convoy protocol

## Heavy Rainfall



Works reduced or stopped during Heavy rainfall  
Close liaison with SEPA, immediate notification, mitigation  
and follow up

## Summary

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- Construction works on SWS phase 1 nearing completion with all windfarms ready to connect now energised
- The main infrastructure from Colyton to New Cumnock and New Cumnock to Blackhill and on to Glenglass virtually complete
- Work at Kilmarnock south progressing well
- Demolition and removal of the 1930's N route line and other works eg landscaping will be completed in 2019
- Constructed assets have some residual capacity but we will have to upgrade some elements as and when customers require further connections

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- Thank you

## Q&A Session

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Gareth Hislop will take some questions from the floor.

### Gareth Hislop – Transmission Policy and Commercial Manager

- Agenda
- Overview
- Next Steps

# Dumfries and Galloway Forum

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James Greenhalgh  
Electricity Customer Connections Manager

Matthew Rivett  
GB Connections Assessment Team

Adelle Wainwright  
Commercial Analyst – Market Change, Electricity

GB System Operator



# Agenda

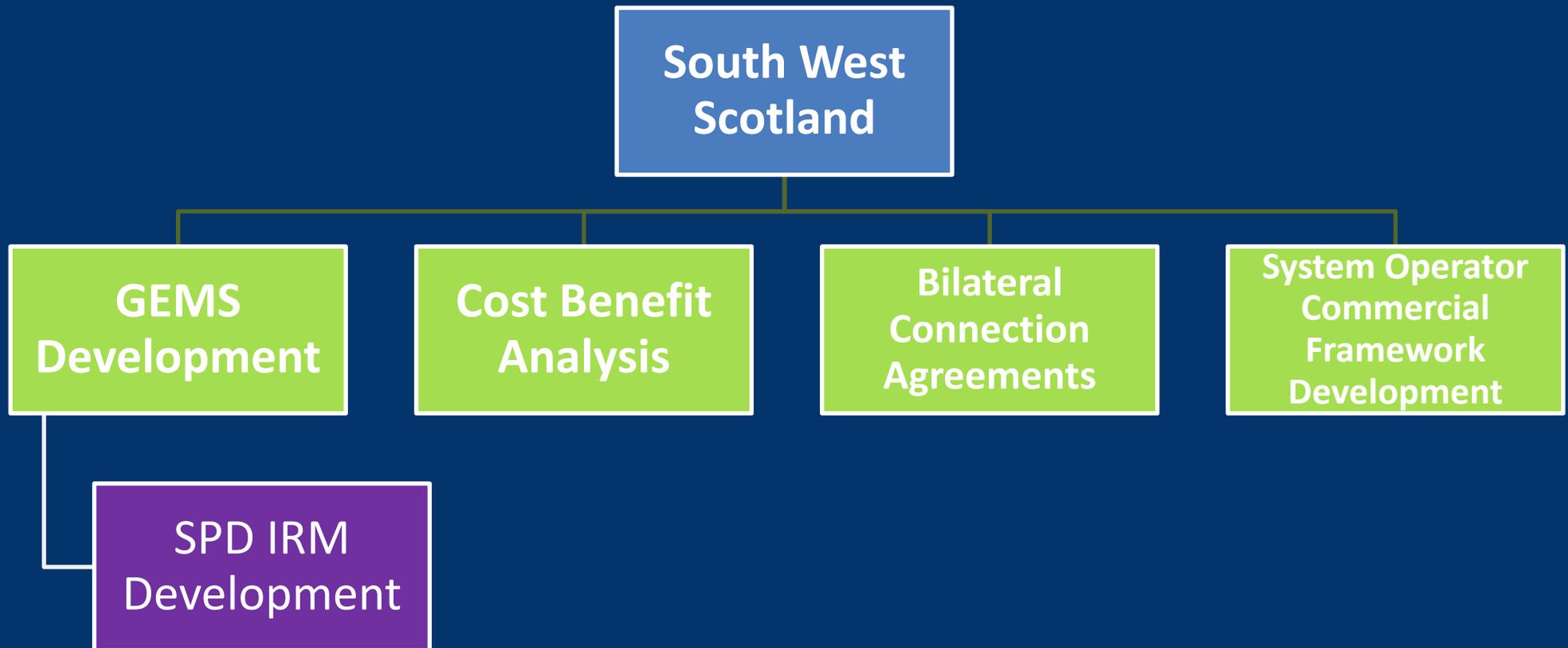
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- Welcome and Introduction
- Progress update since December 2017
  - Generation Export Management Scheme (GEMS) Development
  - Further Cost Benefit Analysis
  - Bilateral Connection Agreements
  - System Operator Commercial Framework Development
- Wider Balancing Mechanism Access

## Welcome and Introduction

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- James Greenhalgh – Electricity Customer Connections Manager
- The South West Scotland Work Streams



## Progress Update – GEMS Development

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- **Team formed to progress the SO commercial and technical requirements of the GEMS scheme, also to look at compatibility with existing industry codes and frameworks**
- **Now moved into detailed design and scenario simulations between SO and TO**
- **Regional Development Plan kicked off with SPD to ensure compatibility between TO and DNO solutions (GEMS and IRM)**
- **Regional Development Plans now part of the System Operator Forward Plan**

## Progress Update – Further Cost Benefit Analysis

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- Due to the changing nature of the generation background, the System Operator is currently working with the TO in order to identify all of the potential GEMS boundaries and network capability.
- This assessment primarily involves the following:
  - Production of an Economic model to demonstrate the ‘benefit’ of GEMS
  - Analysis of Load Management Scheme boundaries and GEMS
  - Assessment of potential incremental transmission reinforcement works across constrained boundaries as generation background changes in the future
  - Scenario analysis to cater for new generation applications and expansion of GEMS
  - Aiming to conclude this work in July 2018

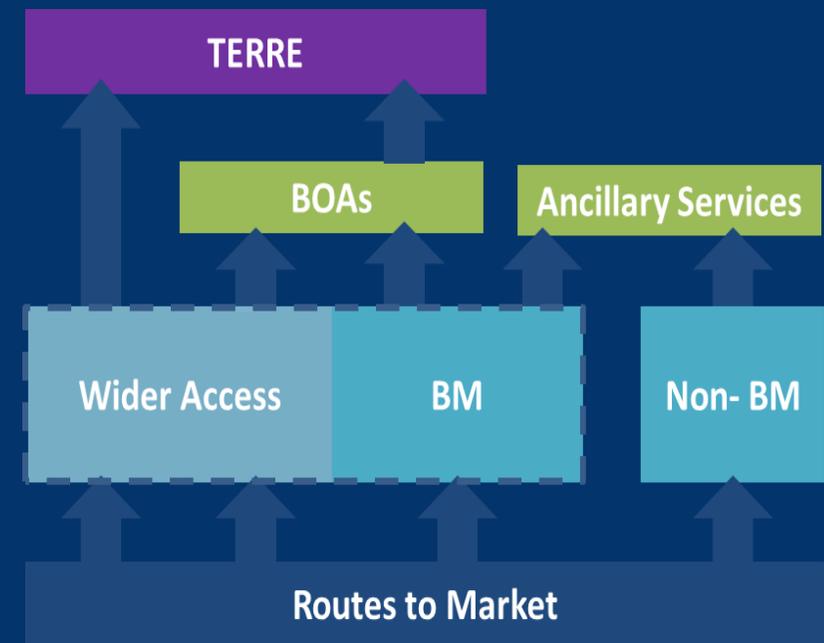
## Progress Update – Bilateral Connection Agreements

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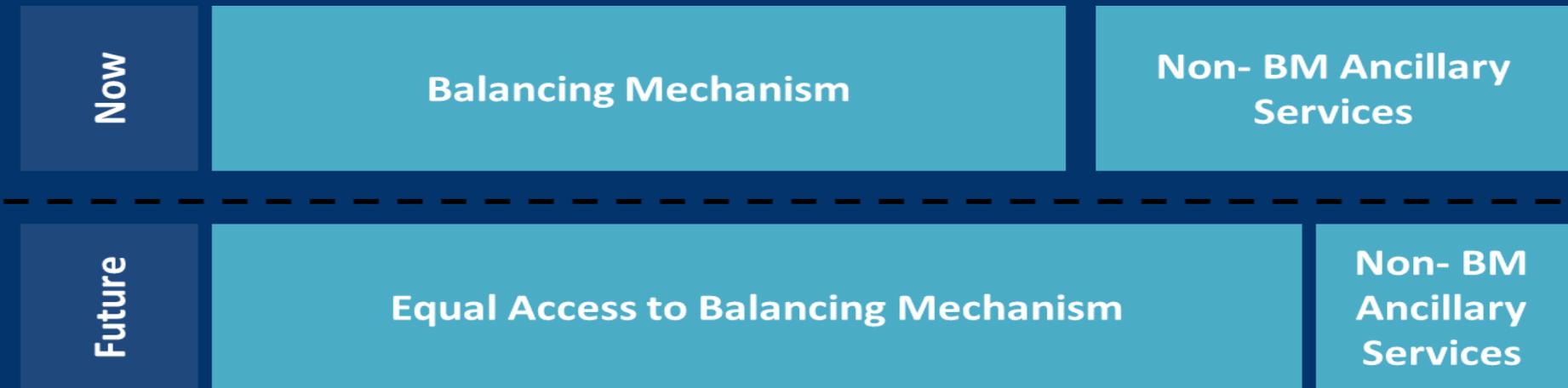
- **Impact assessment currently being undertaken to assess:**
  - **Required works for GEMS from the TO, DNO and Customers**
  - **Control and Visibility Requirements (in line with other Regional Development Plans)**
  - **Correct charging method for GEMS**
  - **Construction Agreement impact**
  - **Any security arrangements required**
  - **Any technical requirements at this stage**
- **Aiming to complete this work by end of June**

# Progress Update – SO Commercial Framework Introduction

- Requirement to facilitate a commercial framework that allows both Transmission connected and embedded flexibility to participate in the Dumfries and Galloway Control Scheme on an equal footing.
- Our proposal aims to overcome these challenges in a way that is:
  - aligned with wider structural changes happening in the GB market;
  - utilises already planned IS system developments and;
  - avoids the need to create a unique solution for South West Scotland

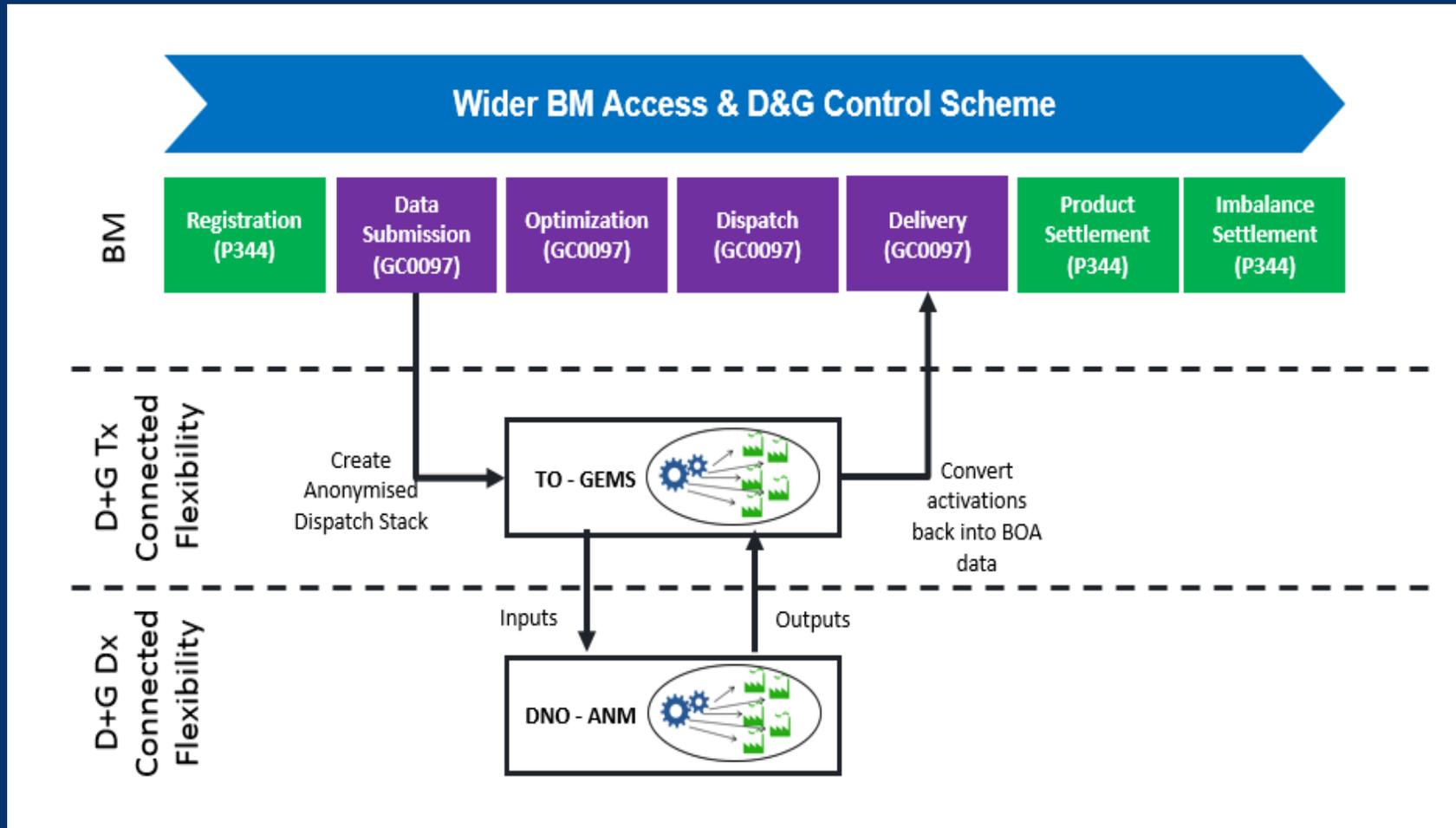


## Progress Update – Wider BM Access

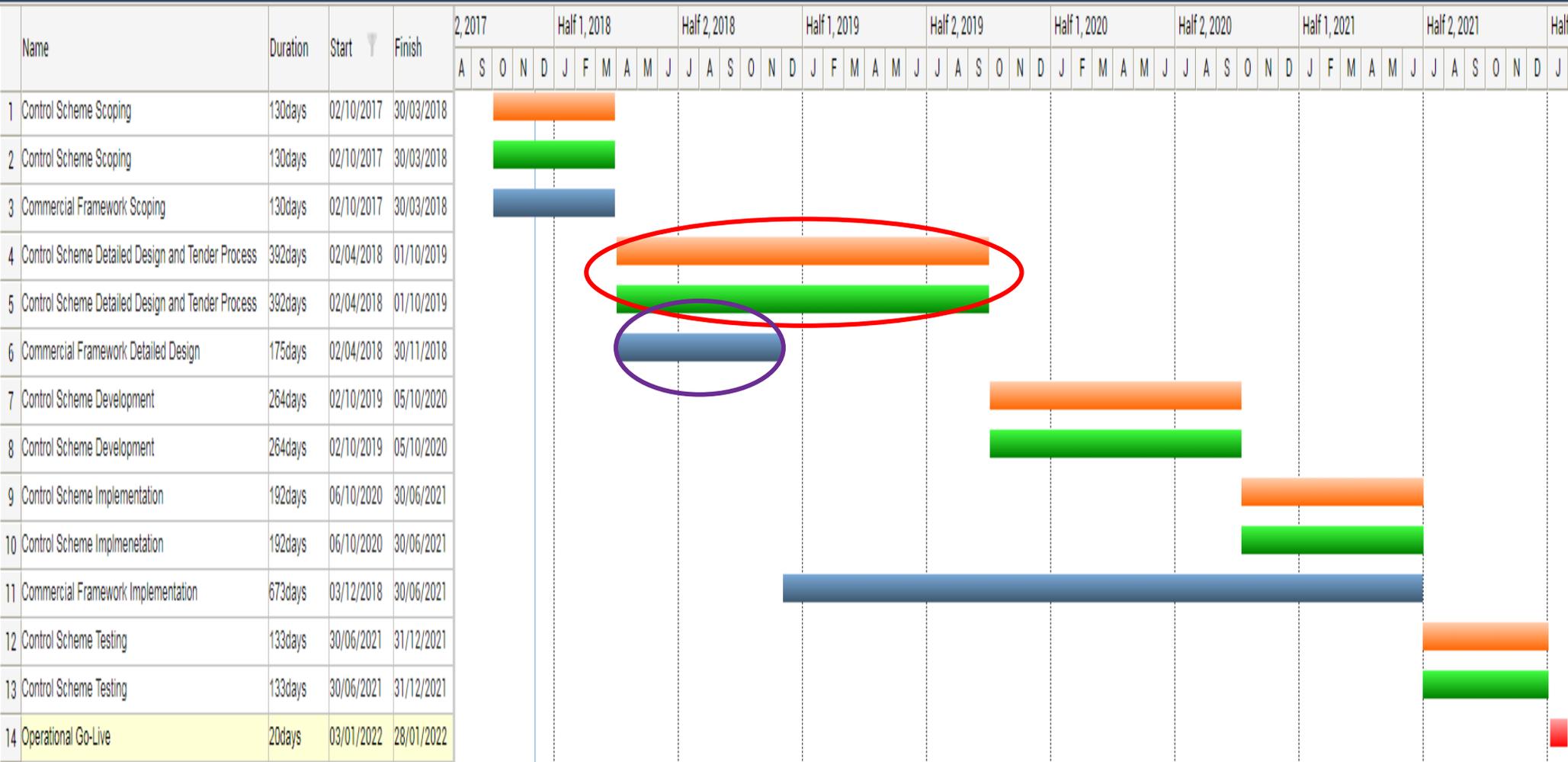


- The European Electricity Balancing Guideline (EBGL), which became EU law on 18th December 2017, requires Transmission System Operators to develop European Balancing auction platforms to allow standardised balancing products to be exchanged cross border.
- Platforms will be open to all types of balancing service providers including embedded players, aggregators and demand side.

# Progress Update – Wider BM Access – D+G Specific



# Timeline and Next Steps



## Interactive Session

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- We would now like to spend some time taking you through some of the detail with regard to both the proposed Commercial Framework and the Technical Requirements for GEMS.
- We would value your comments / thoughts and questions in these two areas.

### Commercial Framework Table

- More information on Wider Access Principles.
- Information on the proposals and how this is likely to work across the GB network.
- Colleagues on hand to answer questions and take feedback.

### GEMS Technical Requirements Table

- Technical Questions on the table to help shape the detailed design of GEMS – we'd really value your input at this stage.
- Colleagues on hand to answer questions and work through potential options for your project.
- Diagrams of how we intend the dispatch process to work.

6<sup>th</sup> June 2018

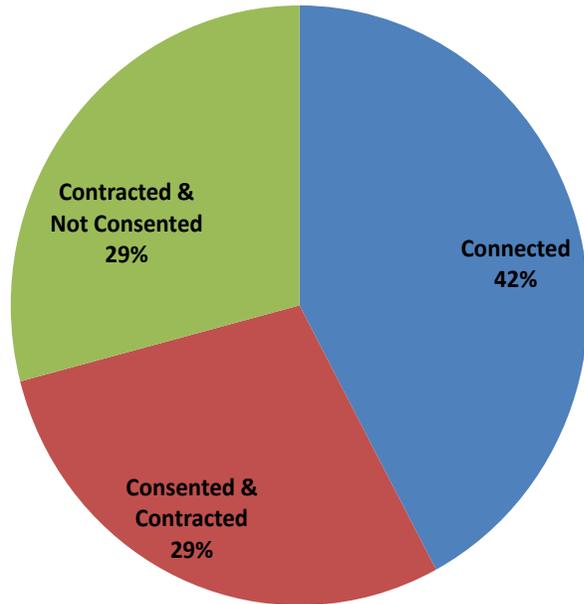
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# **SPT System Design**

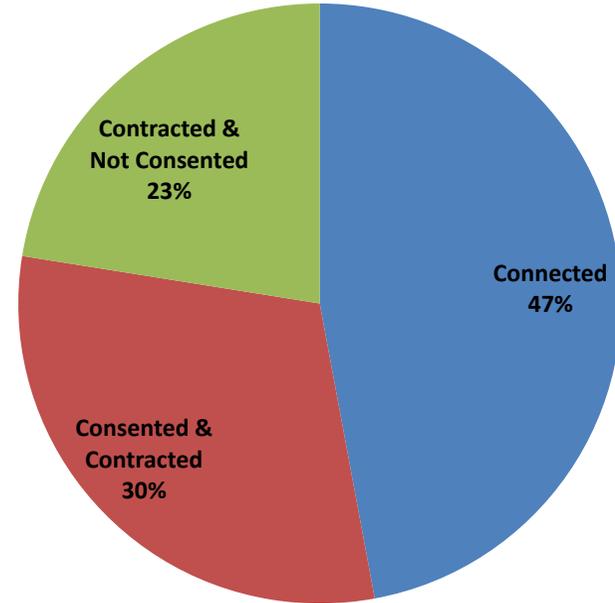
**Diyar Kadar**

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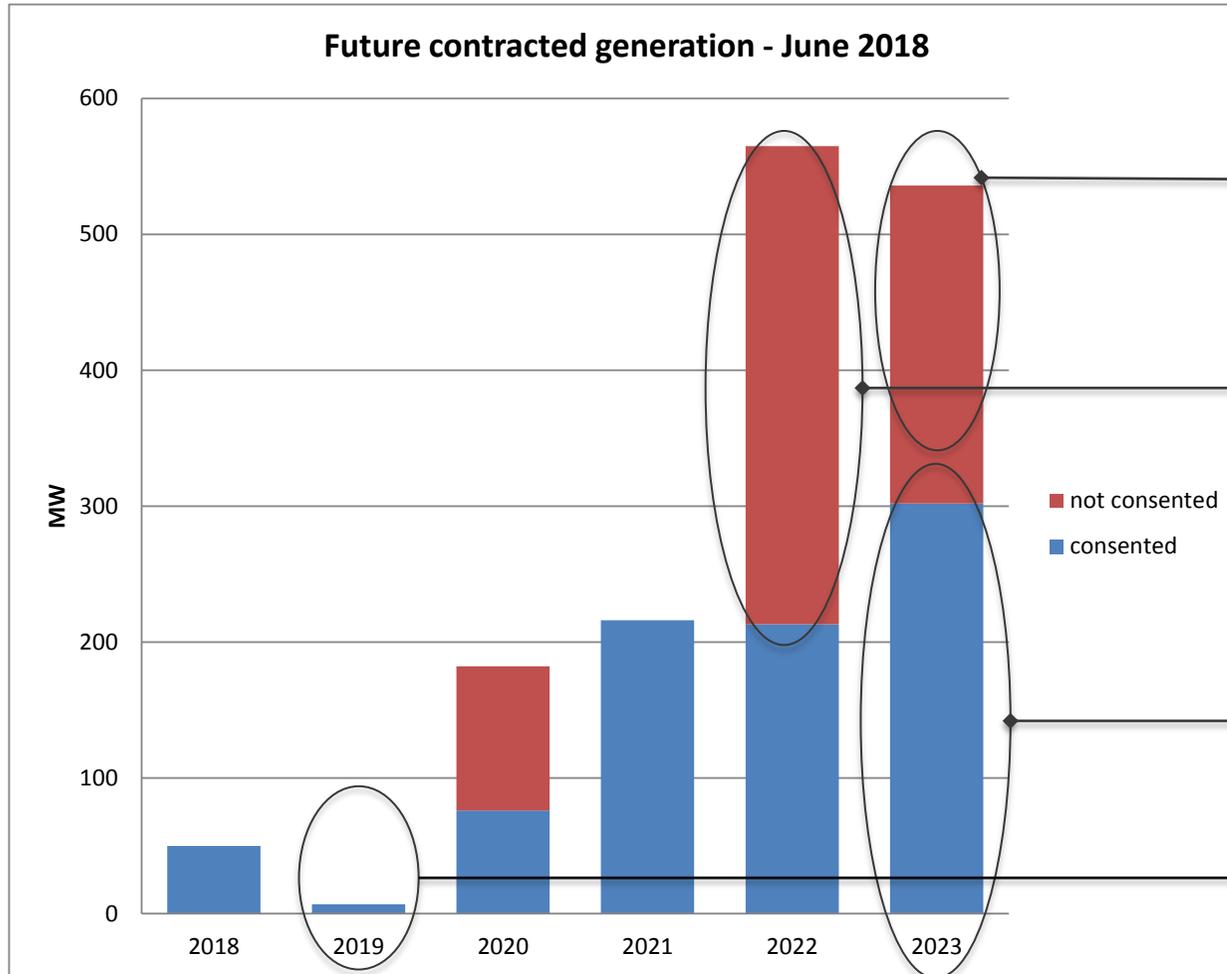


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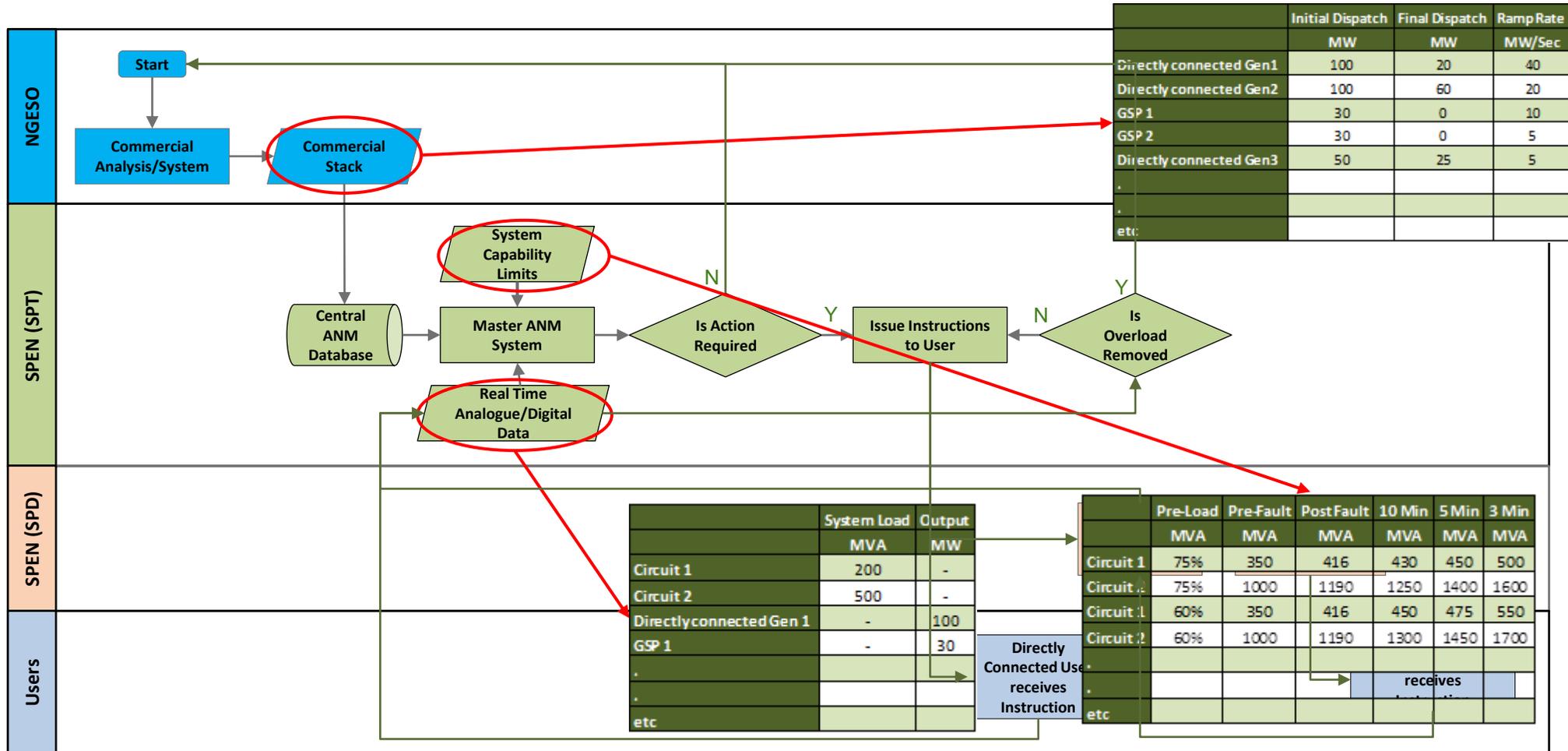


# Generation Export Management System (GEMS)

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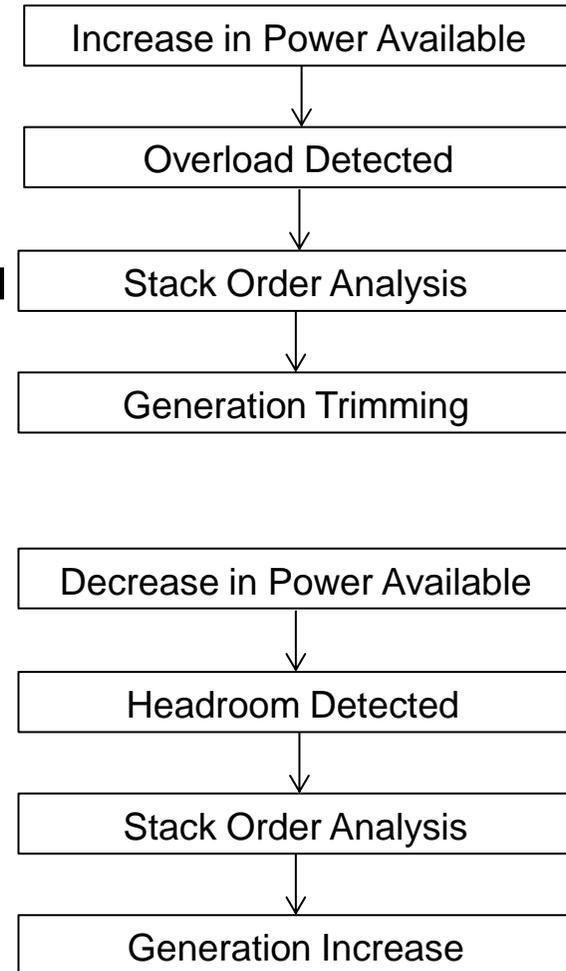
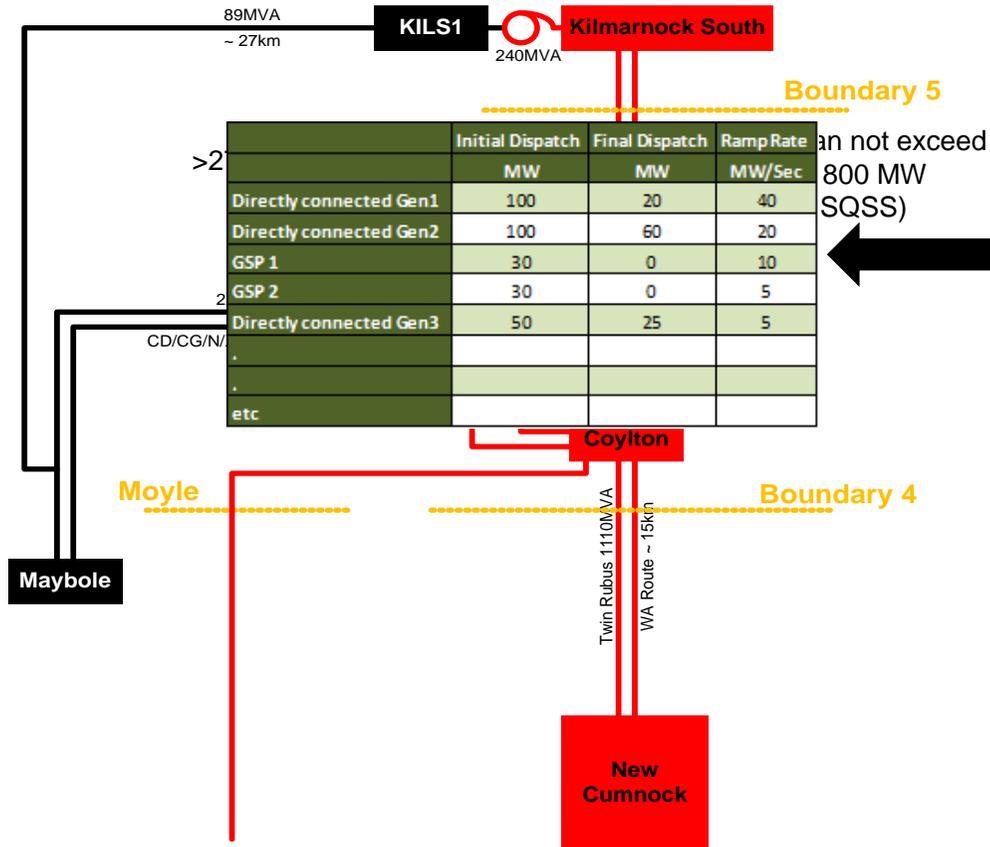
<b>Functional Requirements</b>
<b>Ability to monitor multiple network boundaries</b>
<b>Utilisation of pre-fault and post fault limits</b>
<b>Multiple stack selection</b>
<b>Flexibility in scheme selection (Commercial, LIFO, ... )</b>
<b>Scalable and configurable</b>
<b>Reliable and robust (redundancy in design)</b>
<b>Control and visibility</b>
<b>Speed and dependability</b>
<b>Interaction with SO systems</b>
<b>Interface with Distribution ANM scheme</b>
<b>Standards and protocols</b>

# GEMS - Process



**Steady state** – in this mode GEMS will receive instructions from the SO, potentially half hourly, and instruct generators to regulate their outputs to a certain level with a certain ramp rate. This mode of operation is not time critical and will ensure the maximum economic utilisation of the transmission network without exceeding pre-fault system limits. The system will operate in this mode during intact and planned outage conditions.

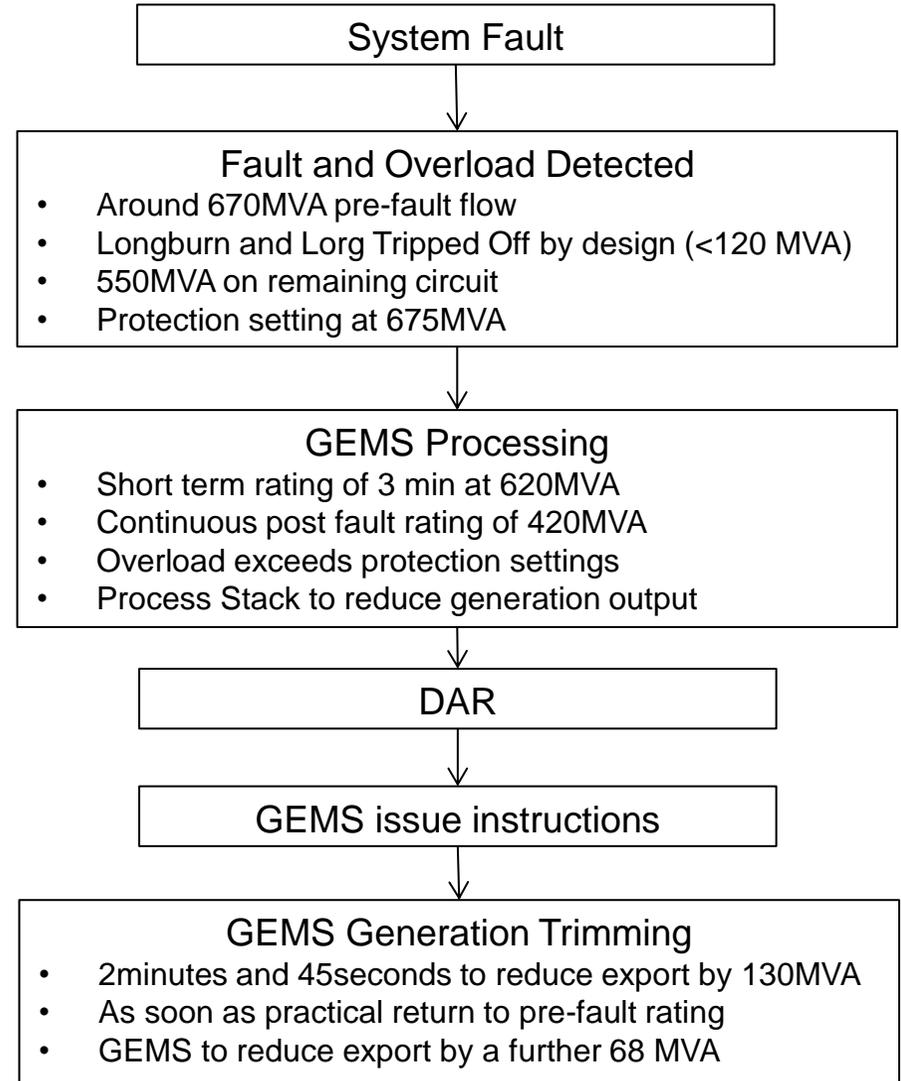
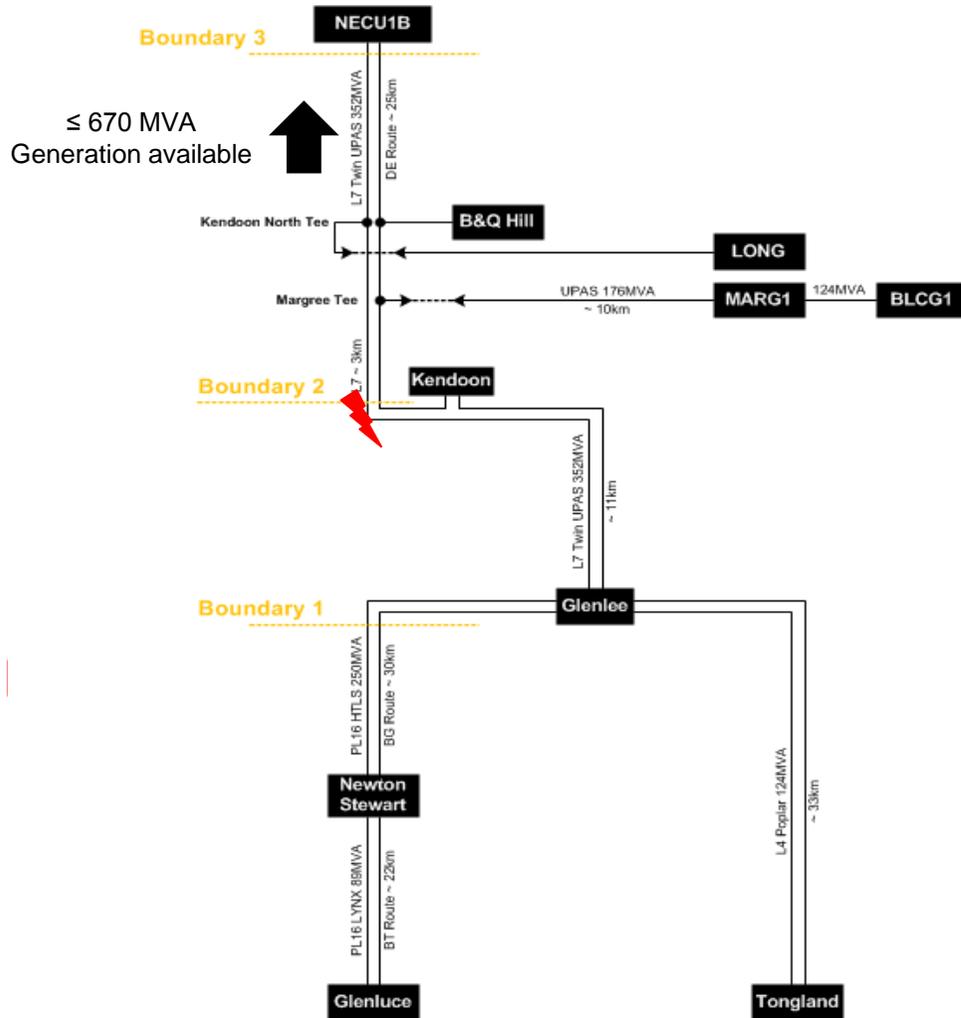
# GEMS – Modes (Steady State)



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**Depleted state** – in this mode GEMS will need to act in near real time and to within the post fault capabilities of the transmission network. Instruction will be issued to generators for fast ramp down and responses will be required in a timely manner to minimise exposure to post fault system limits. The speed with which the responses are required will be dependent on the pre and post fault loading on the system and thermal capability of the circuits. The system will operate in this mode in post fault conditions (unplanned outage conditions).

# GEMS – Modes (Depleted State)



# GEMS – Modes

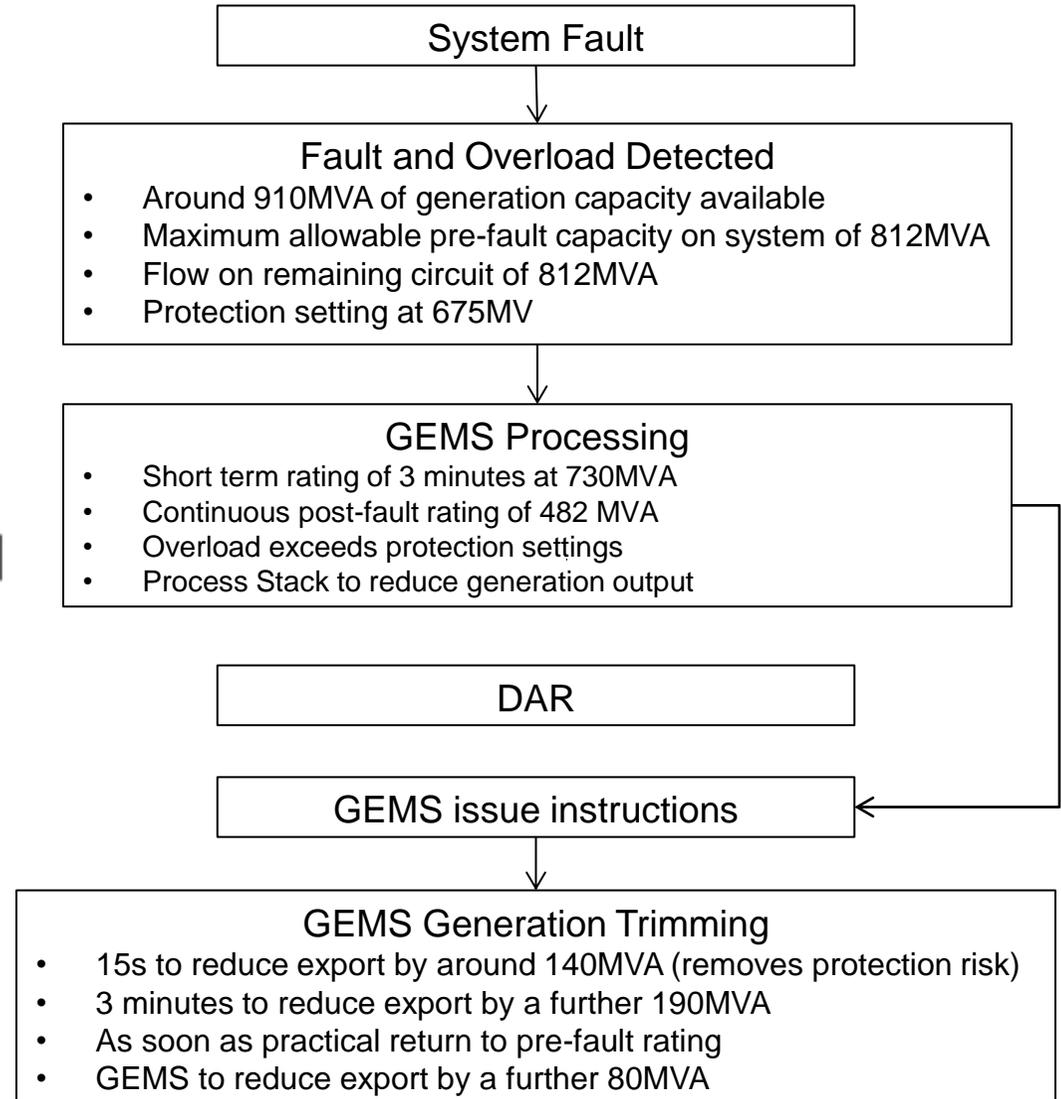
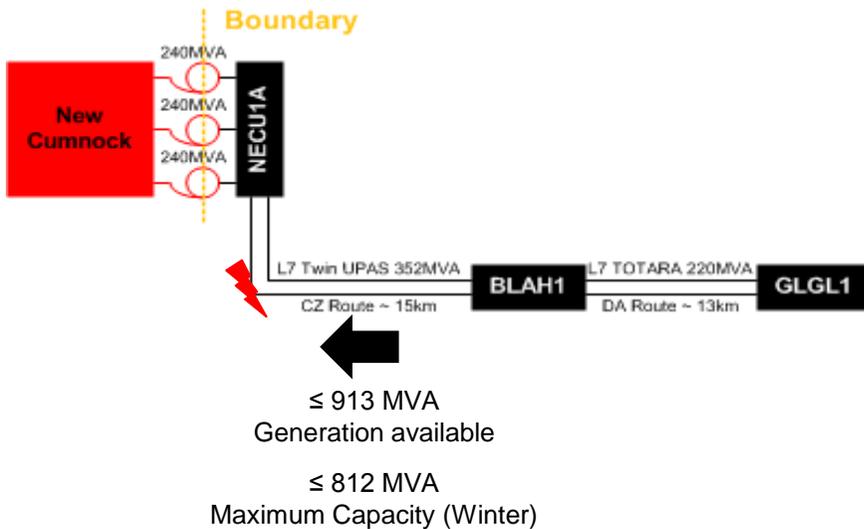
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**Emergency state** – in this mode GEMS will need to issue hard trip signals to generators to ensure overloads do not cause the disconnection of demand customers, or if generators do not respond to instructions. The system will operate in this mode under any system conditions to maintain security of supplies and avoid unnecessary tripping of generation. This also provides the failsafe mechanism to ensure the transmission network is not operated beyond its capabilities.

# GEMS – Modes (Emergency State)



# Next Steps

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Develop detail technical specification from the functional requirements

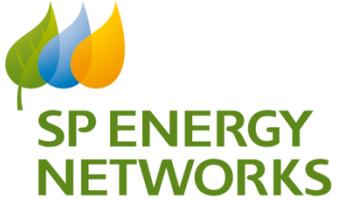
Develop the specification for interfaces with generators, SO systems and SPD ANM

Engage with solution providers and users

Develop SPT contracts in accordance with the SO commercial framework

Develop the system against a continuously changing background

Current plans to start tender process in Q2 2019 and commission system in Q1 2022



6<sup>th</sup> June 2018

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## **Dumfries and Galloway Developer Forum**

**SPT Development**

**Colin Brown**

# Agenda

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- Recap on KTR project scope and completion dates
- Progress since last forum
- Next steps

# Kendoon to Tongland Reinforcement (KTR) Project

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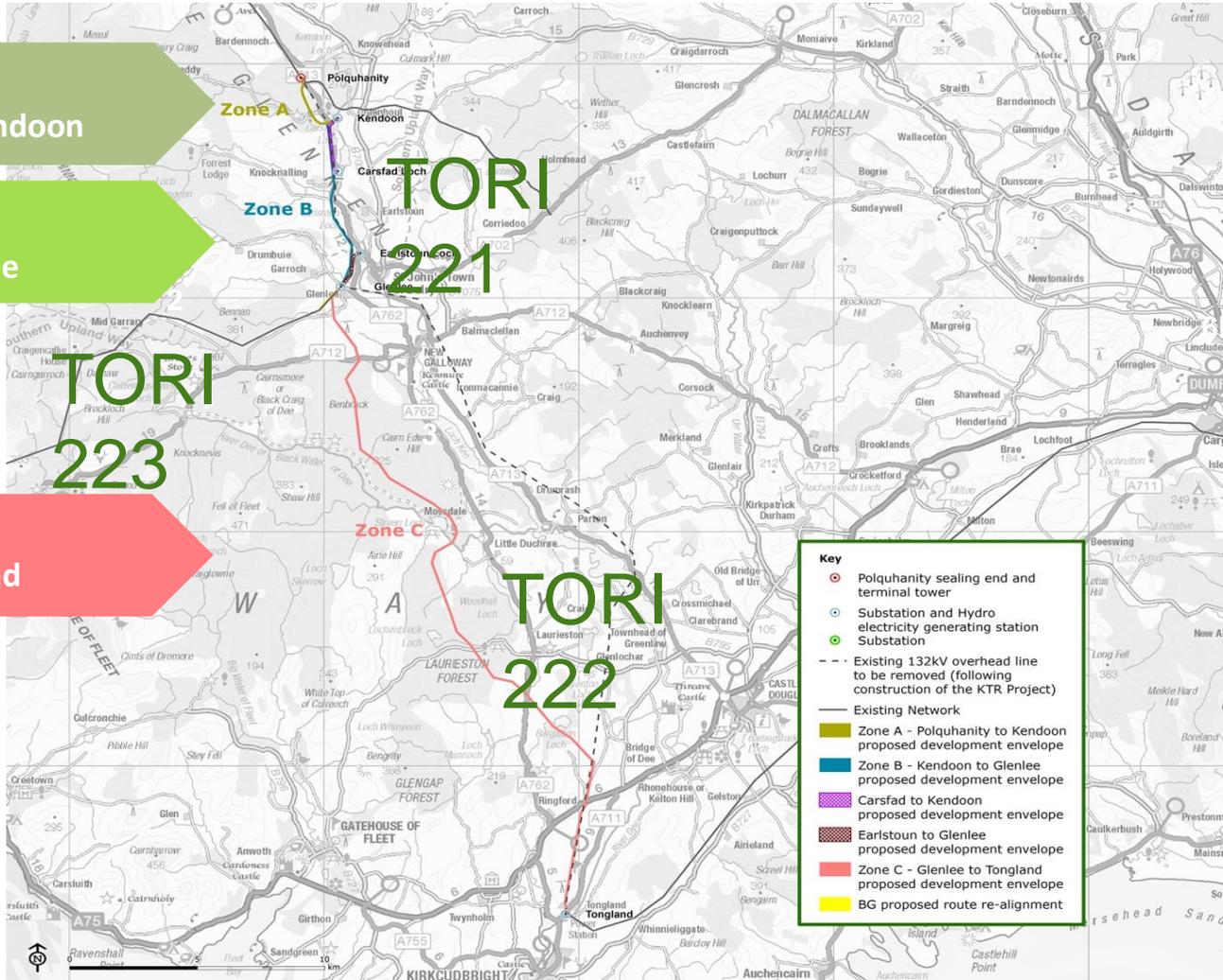
- Kendoon to Tongland Reinforcement (KTR) project is being delivered through the following TORIs:
  - Kendoon to Glenlee Reinforcement (TORI 221)
  - Glenlee to Tongland Modernisation (TORI 222)
  - Glenlee to Newton Stewart Reinforcement (TORI 223)
  - New Cumnock SGT2B (TORI 213)
- Estimated completion by 2023
  - TORI 213 will be completed by 2022
- A combination of these TORIs will allow all existing generation contracted in D&G to connect as planned and provide some headroom for new generation
- New commercial and operational arrangements will be developed to manage wider system constraints

# Kendoon to Tongland Reinforcement Project

Zone A:  
Polquhanity to Kendoon

Zone B:  
Kendoon to Glenlee

Zone C:  
Glenlee to Tongland



# 3<sup>rd</sup> Round of KTR Public Consultation

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- Public consultation on Preferred Routes for Kendoon to Tongland Reinforcement (KTR) project started in November 2017 and was completed in January 2018
- Events in New Galloway, Kirkcudbright and Mossdale
  - Route alignments, including suggested tower and pole locations
  - Potential locations for temporary construction accesses and working areas
  - Removal of line in some areas
  - Any other issues, suggestions or feedback people may have
- Consultation feedback report to be published summer 2018



# Glenlee substation extension



- First stage of works in 2019 is to extend Glenlee 132kV substation
- Extension approx. 90m x 40m
- Pre-construction surveys undertaken
- Discussions with landowners ongoing

# Consultation on Glenlee substation extension

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- Public consultation on the Town & Country planning application for Glenlee substation took place in March 2018
- Consultation event held in New Galloway
  - Substation extension
  - Potential locations for temporary construction accesses and working areas
  - Any other issues, suggestions or feedback people may have
- Planning application delayed until summer 2018 to take account of alternative options raised
- Further local briefing events undertaken including Laurieston Community Council



# Peat probe surveys



# Next Steps

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Milestone	Date
3 <sup>rd</sup> round consultation completed	January 2018
Glenlee planning application submission	Summer 2018
Extension works at Glenlee	2019
Submission of Section 37 applications	2019
Construction	From 2020
Project completion	2023

6<sup>th</sup> June 2018

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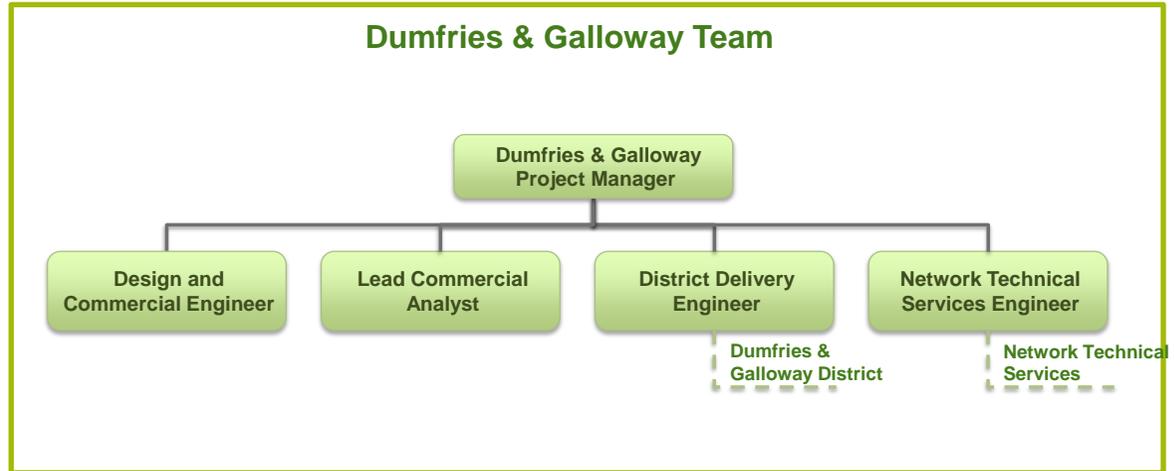
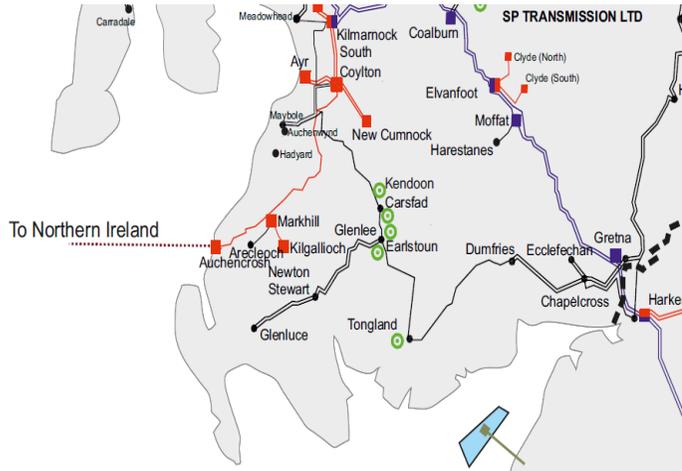
# Dumfries & Galloway Distribution ANM

**Gerard Boyd**

# Dumfries & Galloway – Project summary

Dumfries & Galloway Smart Zone – IRM 2017 (£8m) 2018-2023

IRM Funded project to deliver a fully integrated ANM enabled Distribution network in D&G

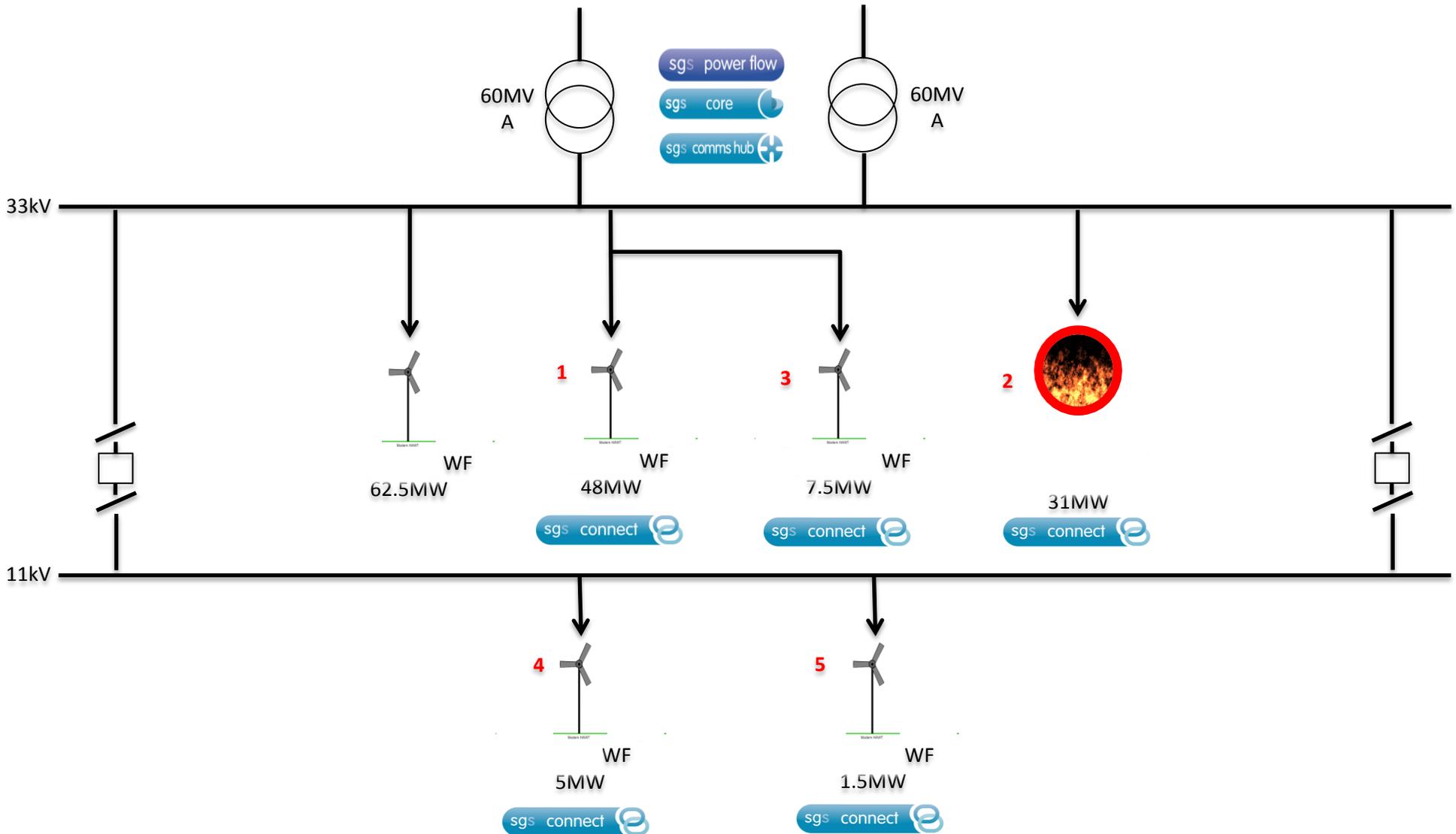


## Project Programme

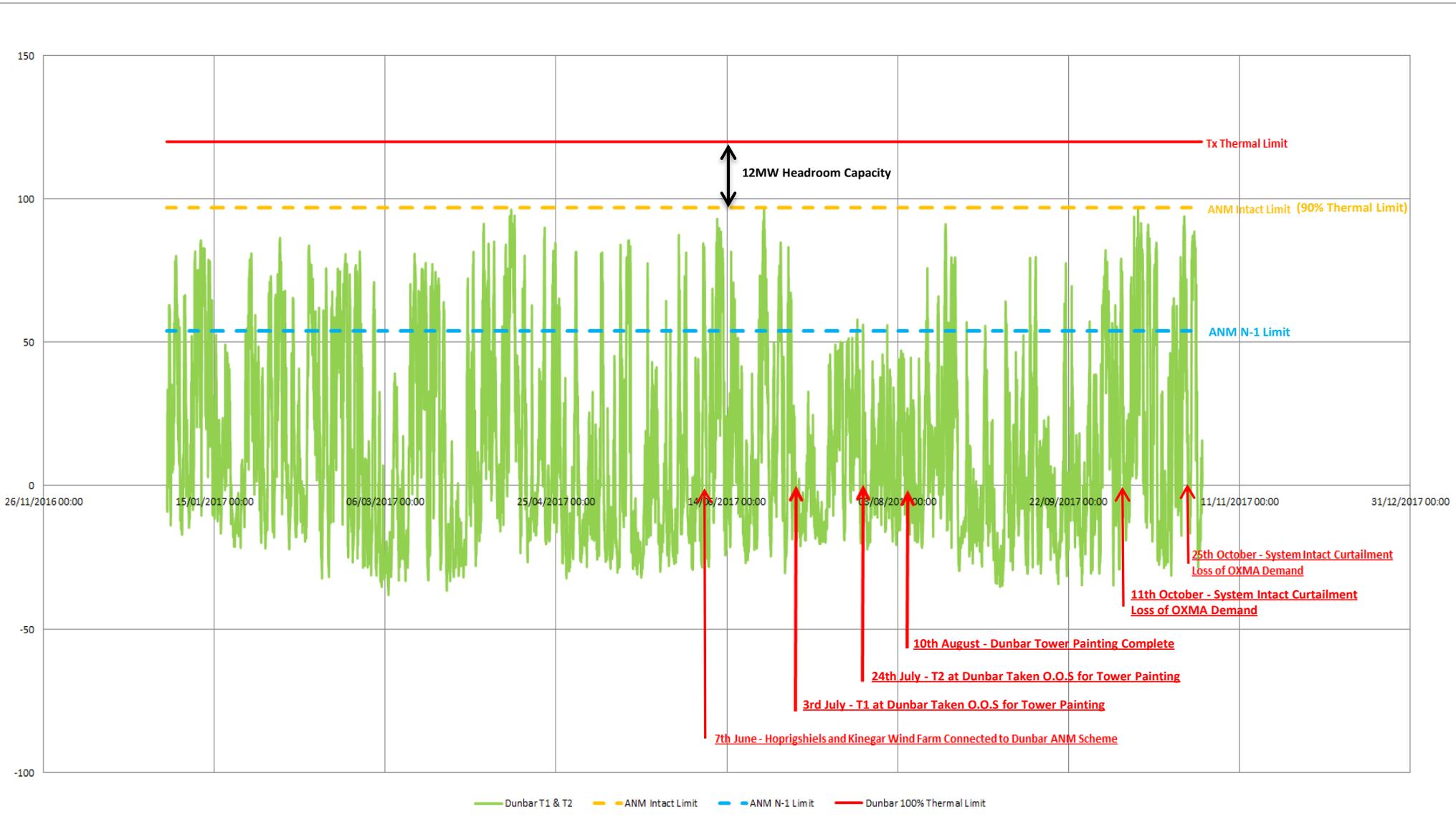
- Acceleration of central system procurement
- Project team recruitment Q1-2 2018
- Temporary resource to support governance and project planning

	2018				2019				2020				2021				2022				2022			
	Q1	Q2	Q3	Q4																				
D&G Team recruitment																								
Stakeholder event and developer meetings																								
Commercial principles of access developed																								
Technical specification development																								
System & central system procurement																								
Installation of ANM central system																								
Installation of ANM field controllers																								
Site specific ANM enablement																								
Operational and support arrangements																								
Staff training programme																								
Ongoing scheme support																								

# Distribution ANM (ARC Project) – Dunbar Grid Supply Point



# Distribution ANM (ARC Project) – Dunbar Grid Supply Point



# Progress

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## Recruitment

- 4 roles interviewed and progressing through appointment
  - PM role still in interview process
- 

## Central System

- Specification being developed by Network Technical Services, building on the learnings from our ARC project
  - Planning to commence tender process Q3
- 

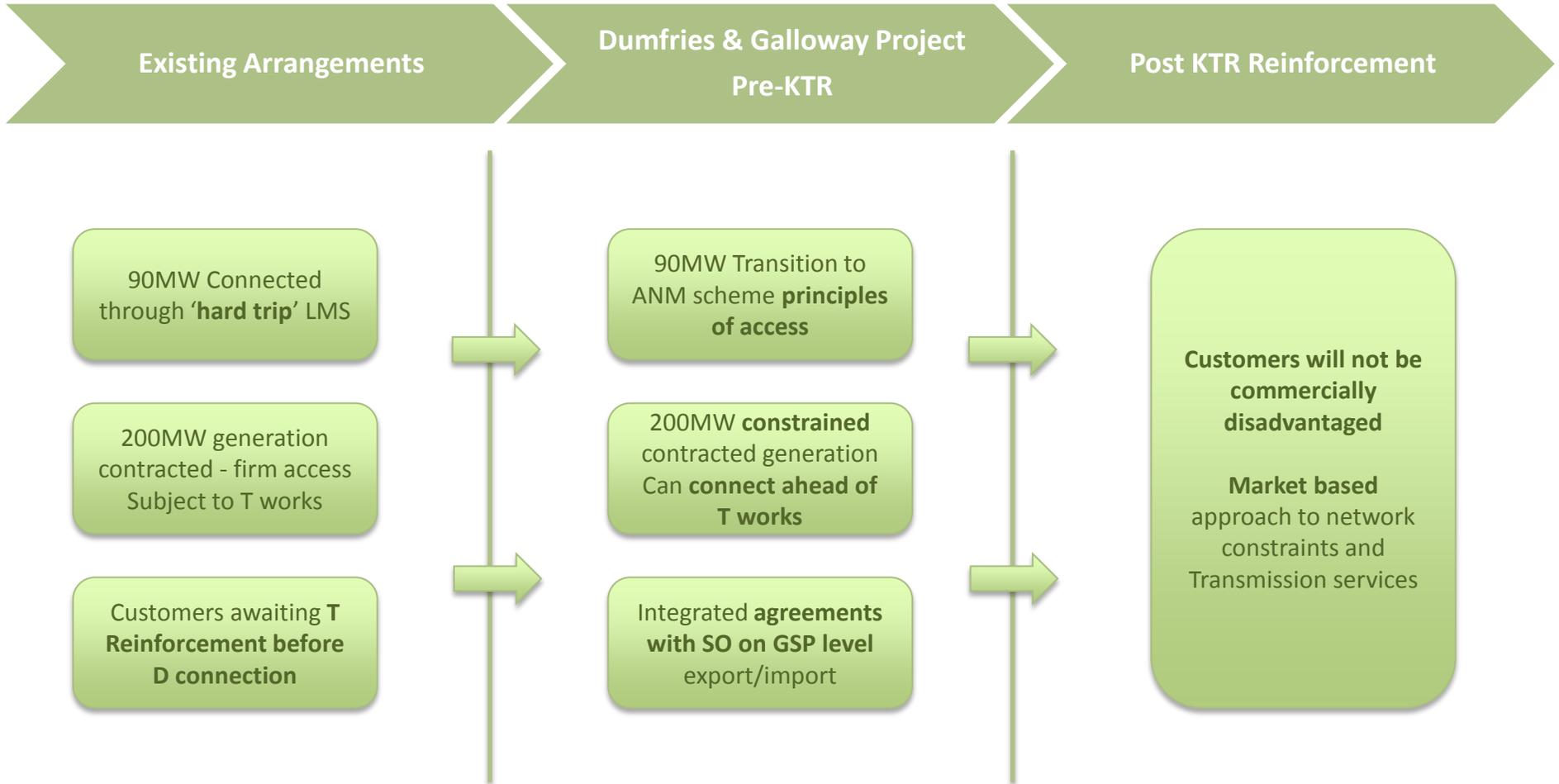
## Network Modelling

- Refreshed 2018 network modelling study commissioned
  - Will review and identify likely curtailment levels for currently connected generation and future connecting generation
- 

## Working with National Grid and SPT

- Working with NG SO and SPT to ensure alignment between T&D solutions
  - Jointly defining future commercial arrangements critical to the success of the project
-

# What does it mean for you?



**Commercial arrangements at the heart of D & G IRM project**

6<sup>th</sup> June 2018

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# **Policy & Commercial**

**Deborah MacPherson**

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# Open Networks Update

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This project is addressing some of the most interesting & complex changes we've ever faced, and will change how the system is operated for years

# Summary of Open Networks project

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Establish 2017 – Phase 1

2018 – Phase 2

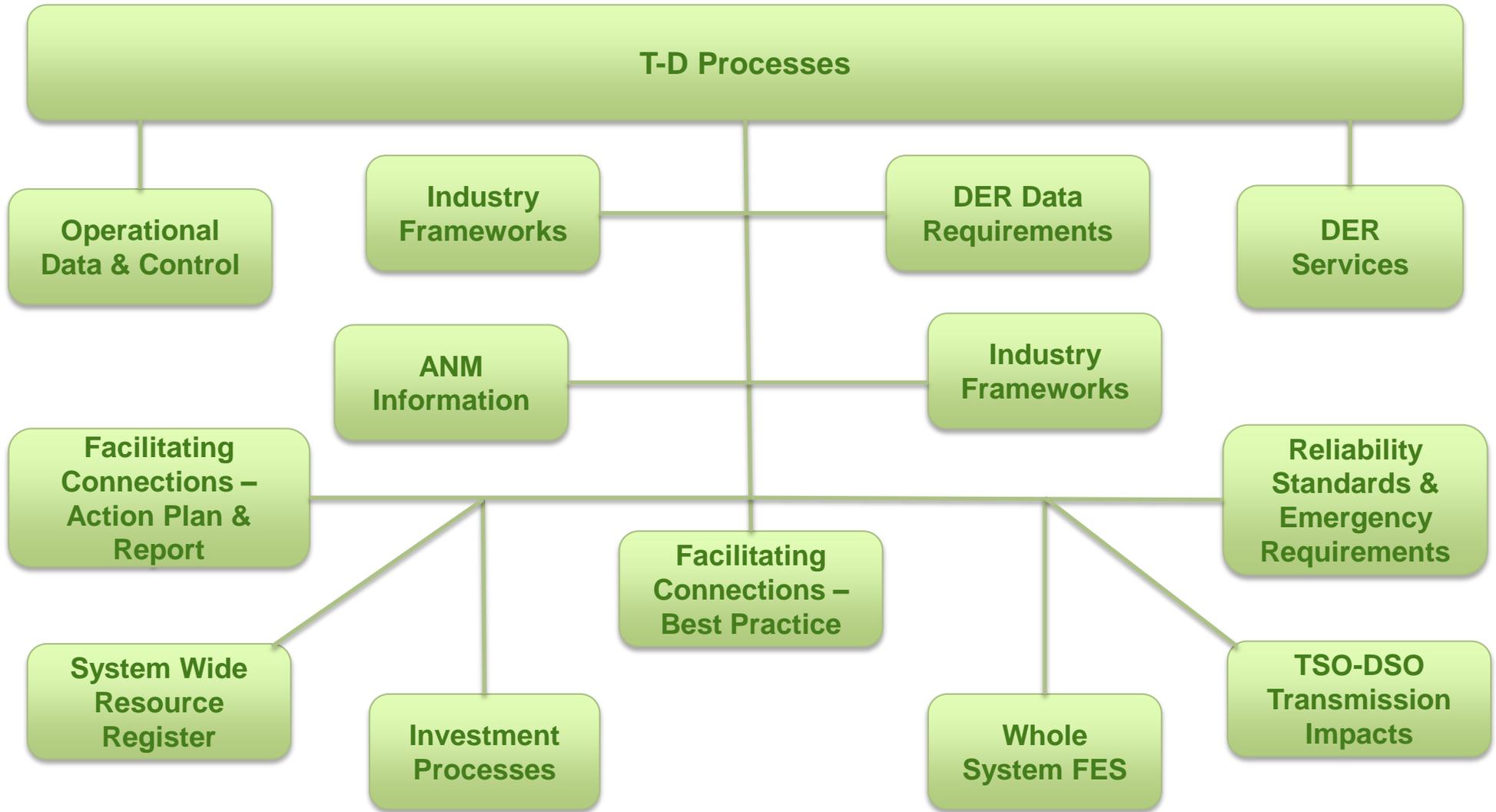
An unprecedented collaboration across all GB and Irish DNOs, TOs, the SO:

- WS1 – Better transmission distribution coordination and think about the system holistically
- WS2 – improve the customer experience
- WS3 – progress the transition of DNO to DSO
- WS4 – network charging

# Workstream 1 - T-D Processes

Focus during Phase 2 of the Open Networks Project will continue to the develop transmission-distribution (T-D) investment and operational planning processes and put in place improved processes in the shorter term to support Open Network project objectives.

# Workstream 1 – T-D Processes Overview



# Workstream 1 – Key Objectives for 2018

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## **Enable Greater DER Access to Networks and Services by –**

- Developing DER service procurement models and processes
- Implementing mechanisms to identify & publish DSO service requirements
- Publishing and taking forward action plans to enable the timely connection of flexible resources where these can avoid investment and unlock connection capacity.

## **Introduce Whole System Investment Planning by –**

- Developing and consulting on Whole System Investment Planning models  
Developing DNO capability and establishing improved data and models to support whole system investment and operation.
- Establishing the framework to produce distribution level FES

## **Provide Further Information to Customers by –**

- Collating & publishing information for DER customers to support connections and service provision.

## **Ensure Continued Network Reliability -**

- Identifying and agreeing further transmission and distribution network and DER requirements to ensure network reliability remains high for consumers and customers.

# Workstream 2 – Customer Experience

Customer Experience will continue to focus on improving customer experience and ensuring that processes and information meet customer requirements.

*“Improve information provision to customers through application, connection and post-connection processes”*

## Workstream 2 – Customer Experience Overview



## Workstream 2 – Key Objectives for 2018

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Customer benefits from 2018 work:

- Enhanced information
- Improved consistency of approaches
- Opportunities for better use of existing network capacity
- Focus on vulnerable customer and consumer groups.

# Workstream 3 – DNO Transition

**Defining future DSO models, presenting their merits in an impartial manner and identifying the least regrets actions to transition to a DSO.**

Focus during Phase 2 of the Open Networks Project will be the completion of the detailed SGAM modelling, engaging with stakeholders on the outputs and define both a Cost Benefit Analysis for the DSO transition and the least regret investments identified through the SGAM models.

A key challenge will be communicating the extremely detailed SGAM models into something easily understood by stakeholders.

## Workstream 3 – Key Objectives for 2018

No.	Product	Timeline
1	SGAM Modelling of DSOs and DER Procurement	Jan-May
2	Further SGAM Modelling of DSO Functionality	Mar-Dec
3	Market Agnostic DSO Elements	Mar-Dec
4	Independent Review of DSO Models inc CBA	May-Dec
5	DSO Model Validation & Review Including Public Consultation	May-Oct
6	Key Enablers for DSO	Apr-Dec
7	Further Trials to Address Gaps in DSO Functionality	Apr-Dec
8	Preferred DSO Models & Proposed Implementation Plan	Nov-Dec

# Workstream 4 – Charging

The Charging WS will support input to the Ofgem Charging Futures Forum and associated Task Forces.

*“Assessing network access and charging arrangements and supporting Ofgem’s ongoing reviews”*

# A view of what the future might look like ...

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Greater alignment between T&D charging.

## Influencing User Investment

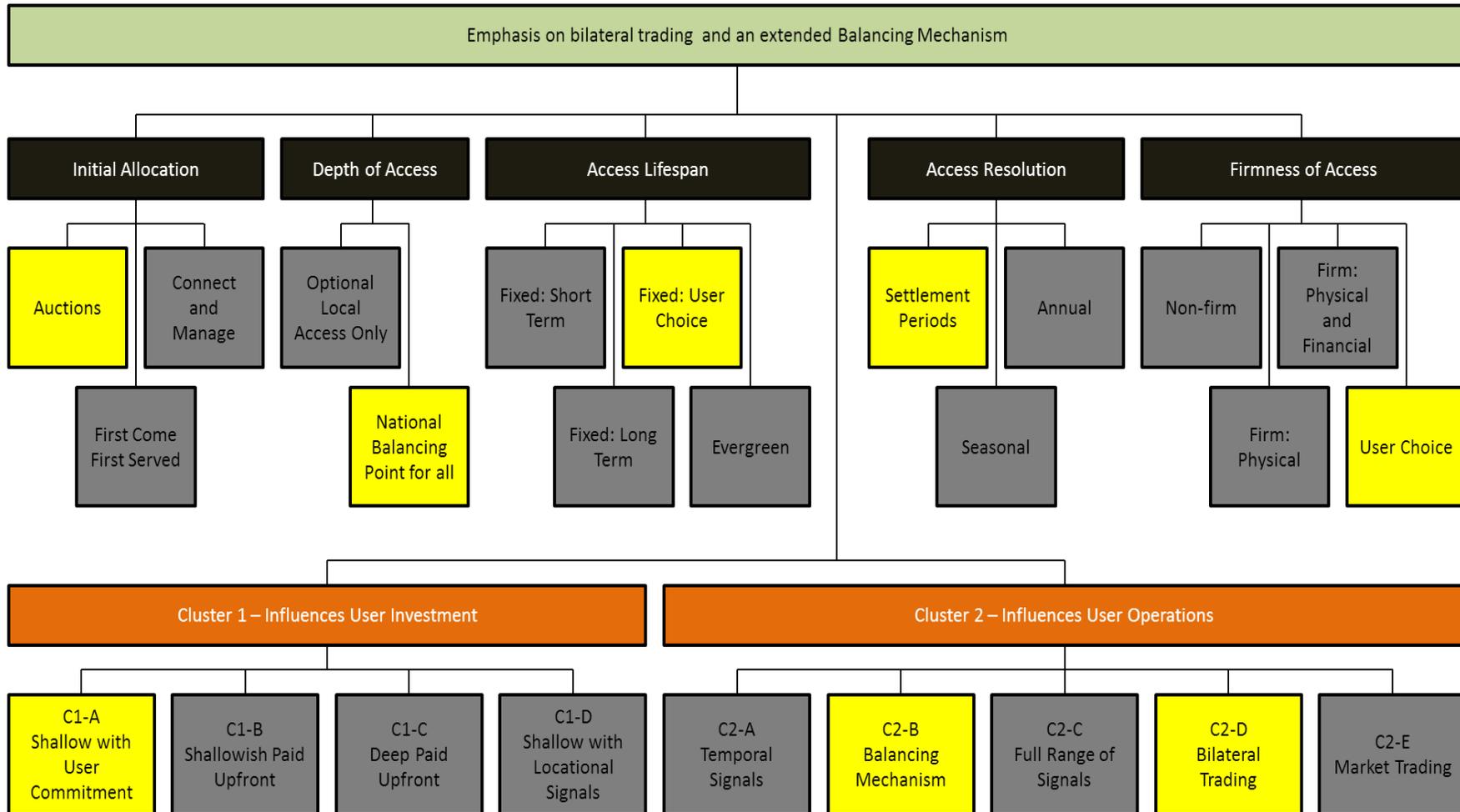
- Move to shallow connection charging at distribution with locational UoS at EHV only and an HV/LV representative model adjusted for locational issues.
- Distribution user commitment

## Influencing User Operations

- Reallocation of rights providing users with wider range of access choices and ability to vary choice through connection lifetime:
  - Distribution Balancing Mechanism (compensation for actions to balance the system) or distribution ANM (with compensation for constraints).
  - market-based or bilateral trading of capacity
  - Time of use charges

# Review of Options Package Reform

## Example:



## Workstream 4 – Next steps

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21<sup>st</sup> May 2018: Task Forces publish final report on Electricity Network Access and Forward Looking Charges.

<http://chargingfutures.com/whats-happening/task-forces-tcr/task-force-meetings-publications/task-force-publications/>

Over the next few months: Open Networks WS4 to develop proposals for the recovery of distribution network costs incurred in the provision of flexible and active network management connections.

Summer 2018: Ofgem to publish consultation on initial proposals for reform, including how it proposes to take forward implementation.

Post consultation, expected ...

- Creation of further Task Force(s) to progress work
- Trials

## Q&A Session

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- Gareth Hislop will take some questions from the floor.
- Thank you and feedback forms.