SP ENERGY NETWORKS

SPT Connections Summit 2018

WELCOME

- Fire / First Aid
- Breaks
- How to Make Use of the I-Pads

SP ENERGY NETWORKS

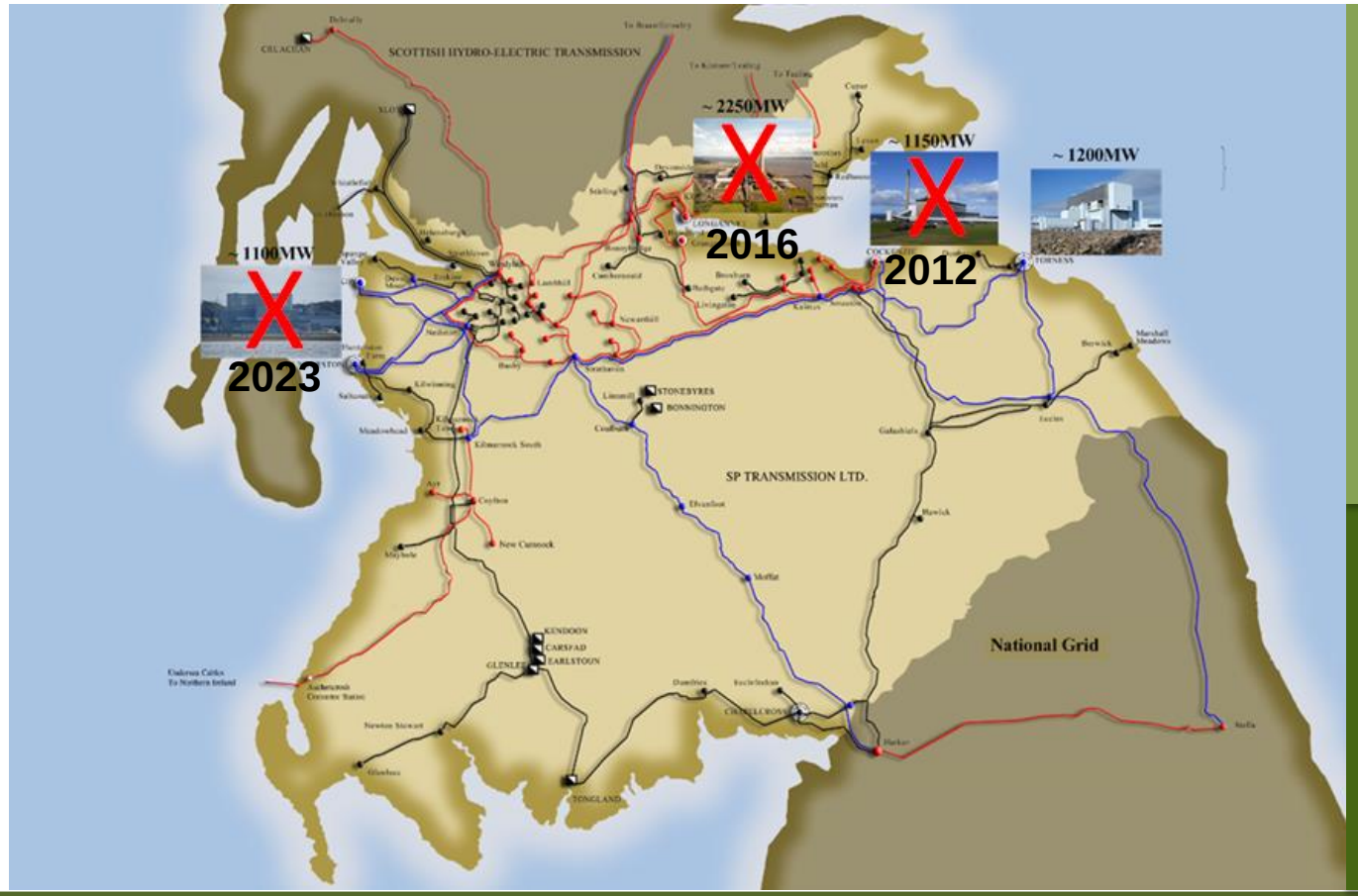
6th December 2018

Transmission Summit

SPT System Design

Diyar Kadar

Generation Background in SPT Area – 2012 to 2023



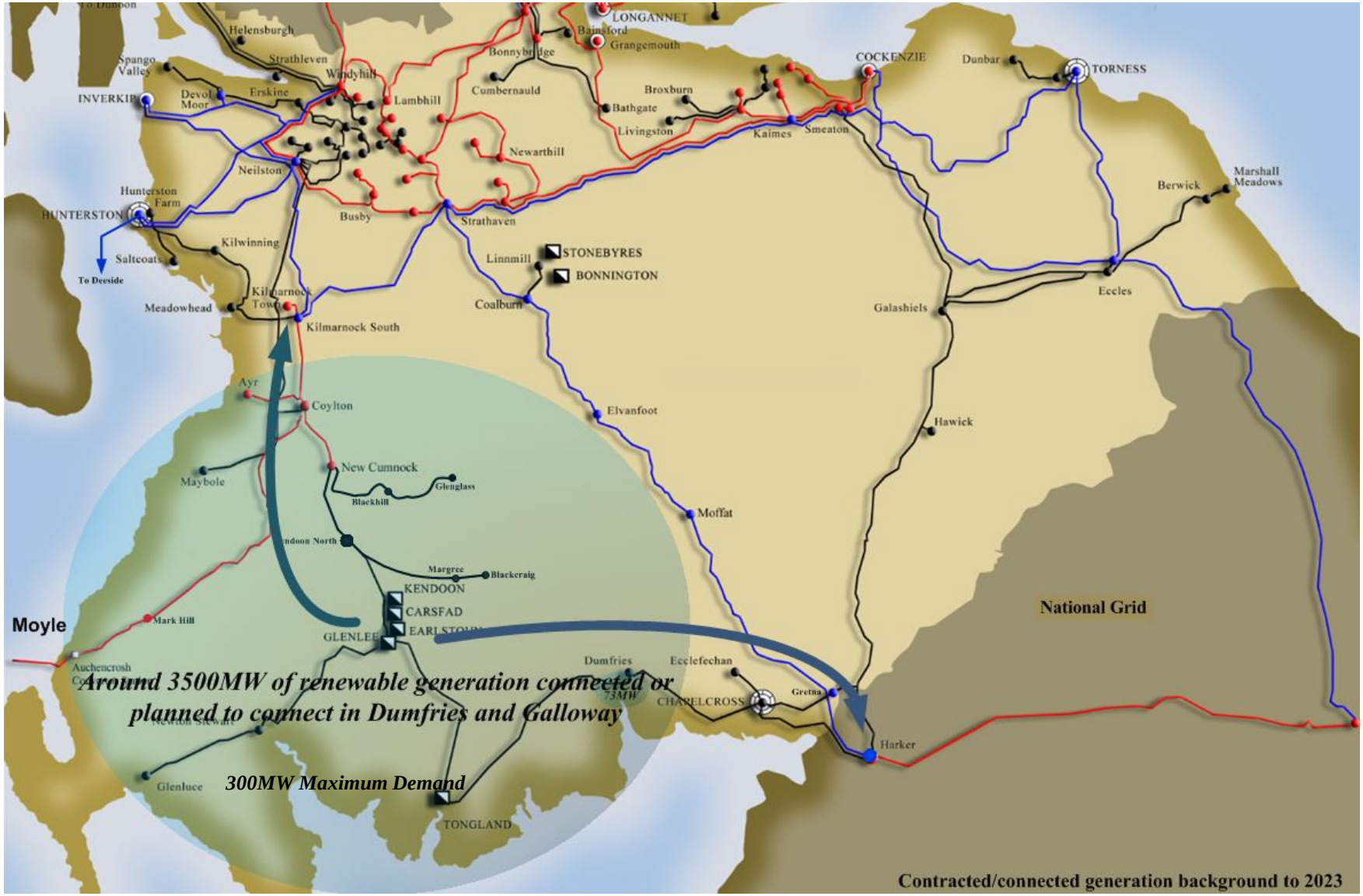
A Further 3000MW By 2023

Connected 3900MW

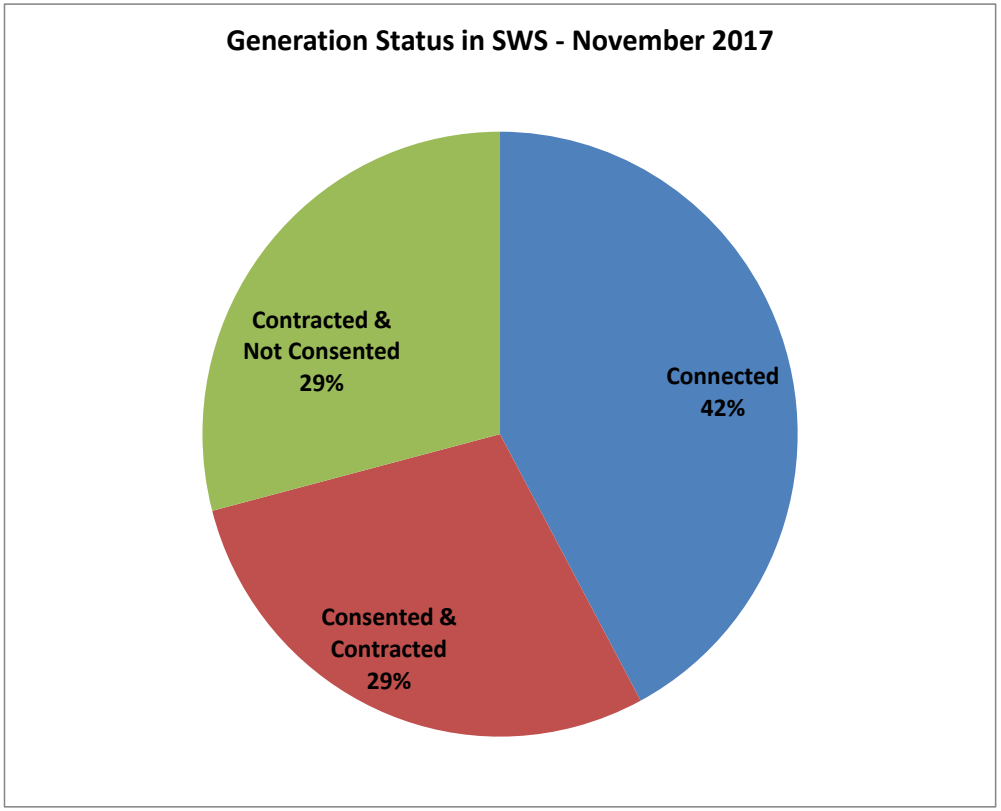
Onshore wind Generation status in 2018

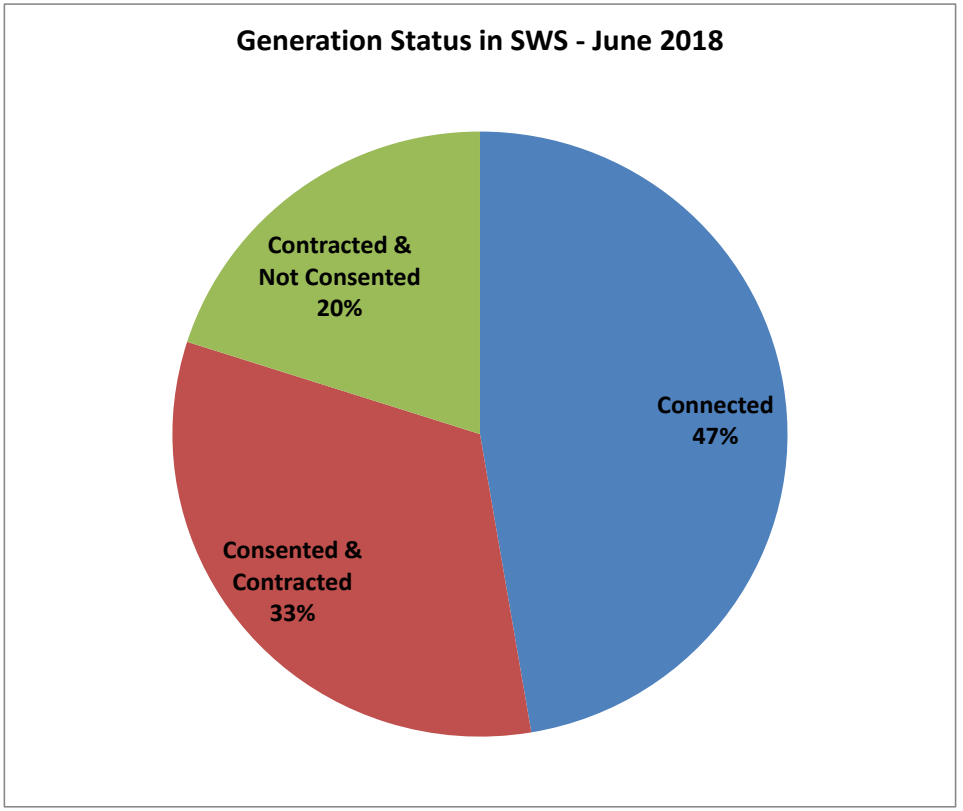
- **Conventional Generation Output down by 4500MW from 5700MW down to 1200MW**
- **Onshore renewable generation up from 950MW up to a contracted position of 6900MW**
- **A further 1150MW of offshore wind generation planned to connect by 2023**
- **Scottish Power Maximum Demand anticipated to remain ~ 4000MW**

Renewable Generation in South West Scotland



Future Developments – Generation Size



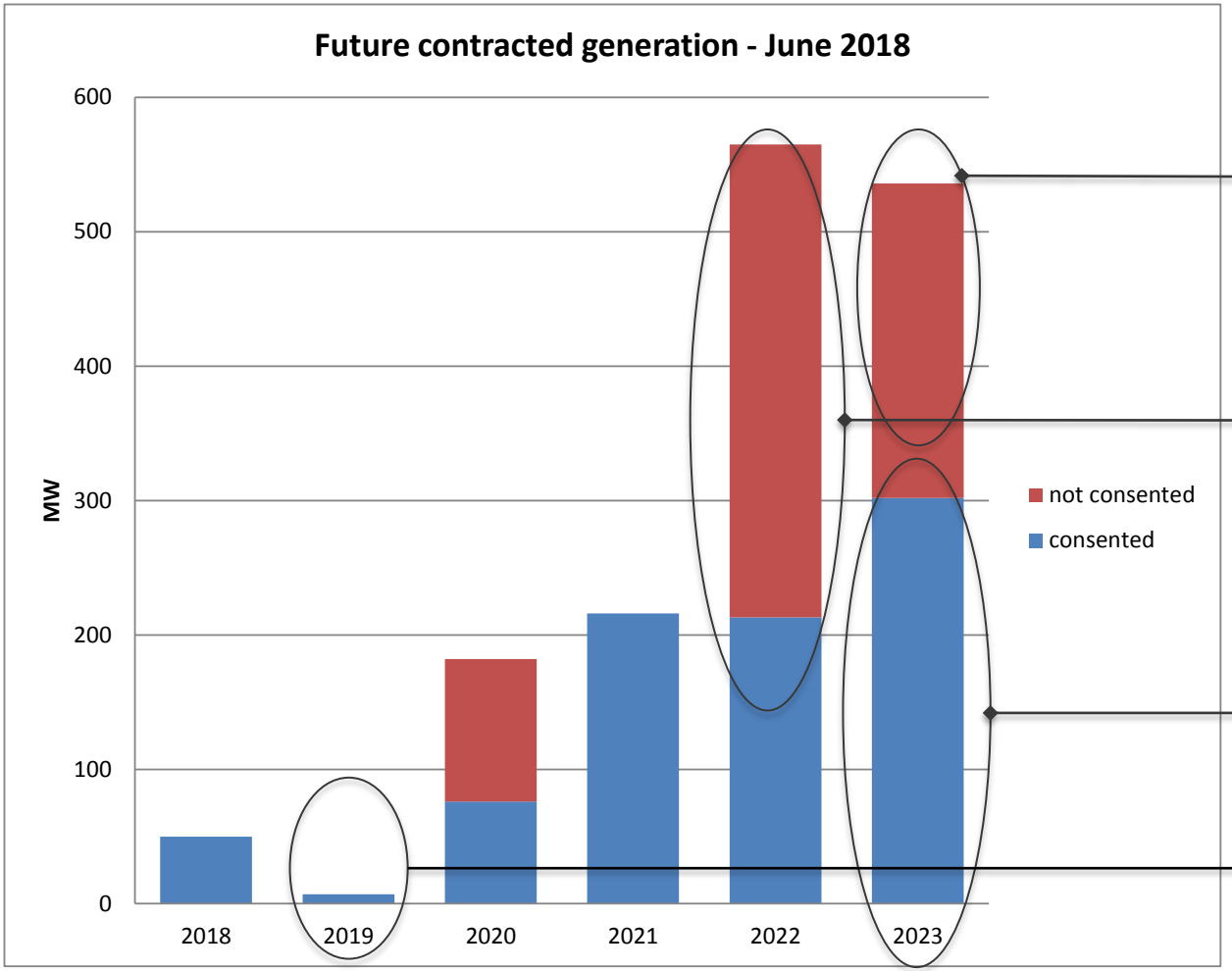


Total generation (Connected and Contracted) in the whole of South West Scotland is around 3100MW

Moyle HVDC connection with Ireland has a capability of 500MW

We have an additional 400MW out in offers over and above the 3100MW

Future Developments – Generation Timing



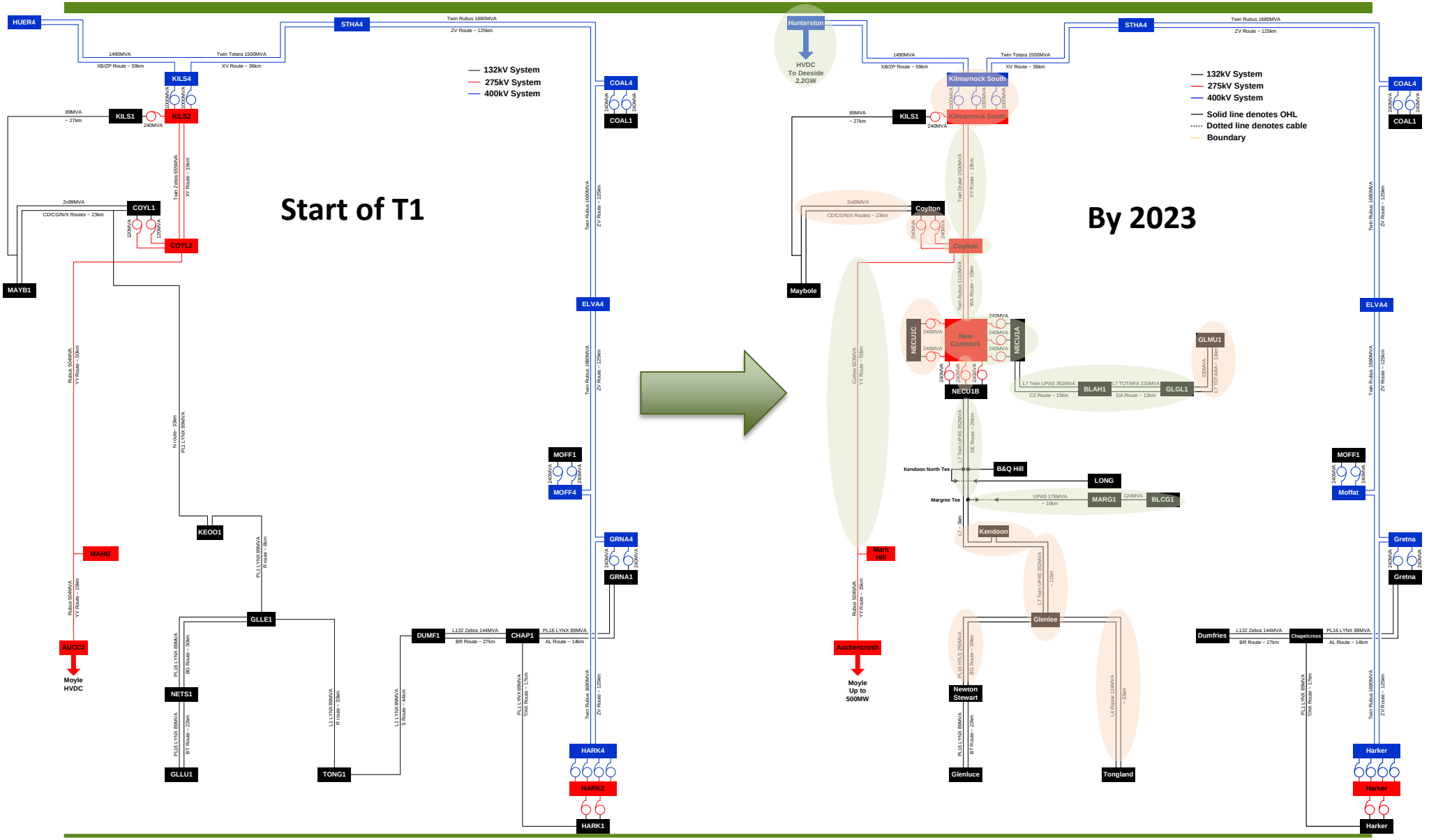
New Reinforcements

New Cumnock Board C

132kV Network Extension

Kilmarnock South Reinforcements

System Developments



Economically Constrained Infrastructure and new approach to generation management

Despite all these reinforcements, the infrastructure could potentially restrict generators from exporting all of their output

New non-build solutions are being developed

Derogation from design standards will be required to ensure network assets are not exposed to overloads beyond their capabilities

Generation Export Management Scheme (GEMS) is being developed to actively manage the system through new commercial arrangements

The scheme will maximise the utilisation of the infrastructure and minimise curtailment of generation whilst maintaining system security and quality of supply.

New commercial solutions now are being developed with generators which will ensure they are not commercially disadvantaged.

This will also allow new generators to connect, however we continue to assess further economic reinforcements

SP ENERGY NETWORKS

NGESO

Ian Pashley &
Matt Rivett

National Grid – Electricity System Operator

Whole Electricity System and South West Scotland Overview

6th December 2018

nationalgridESO

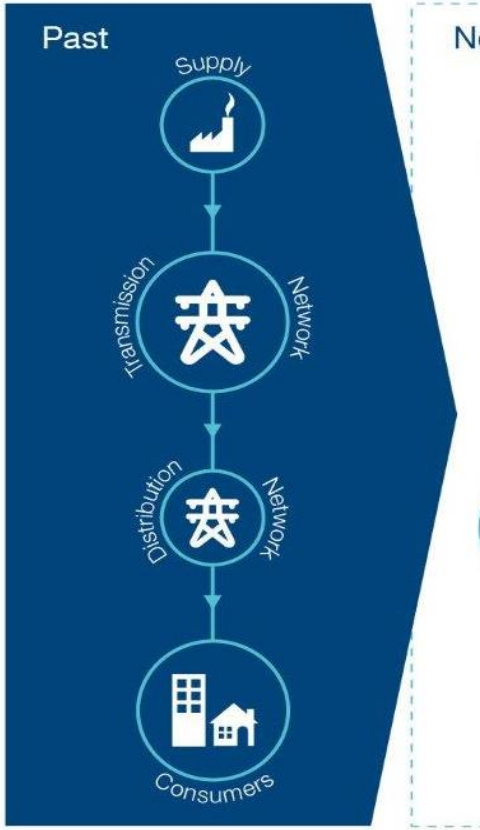
Contents

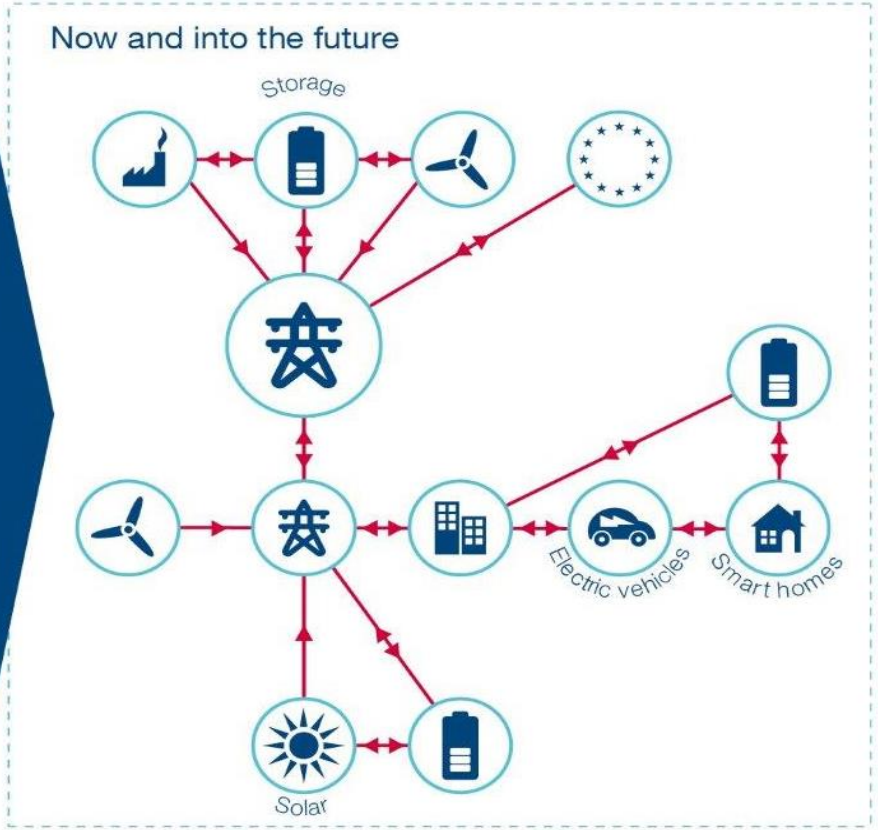
Whole Electricity System Overview: The Energy System is Evolving…

The energy landscape is changing to meet the challenges of decarbonisation, decentralisation and digitisation

Flexible resources are increasingly important for system operation, and for maximising use of existing network assets

The current model is becoming increasingly inefficient – new ways of working are required





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How are we responding to this challenge?

Providing thought leadership

- ‘Facilitating Whole Electricity System Outcomes’
- Proportionate access to the Balancing Mechanism for smaller parties
- Enhancing our information provision and procurement processes

Developing new ways of working

- Collaborating to meet regional network challenges
- Implementing solutions that go beyond traditional network boundaries
- Using our collaborative initiatives to learn how the ESO needs to change

Working with others

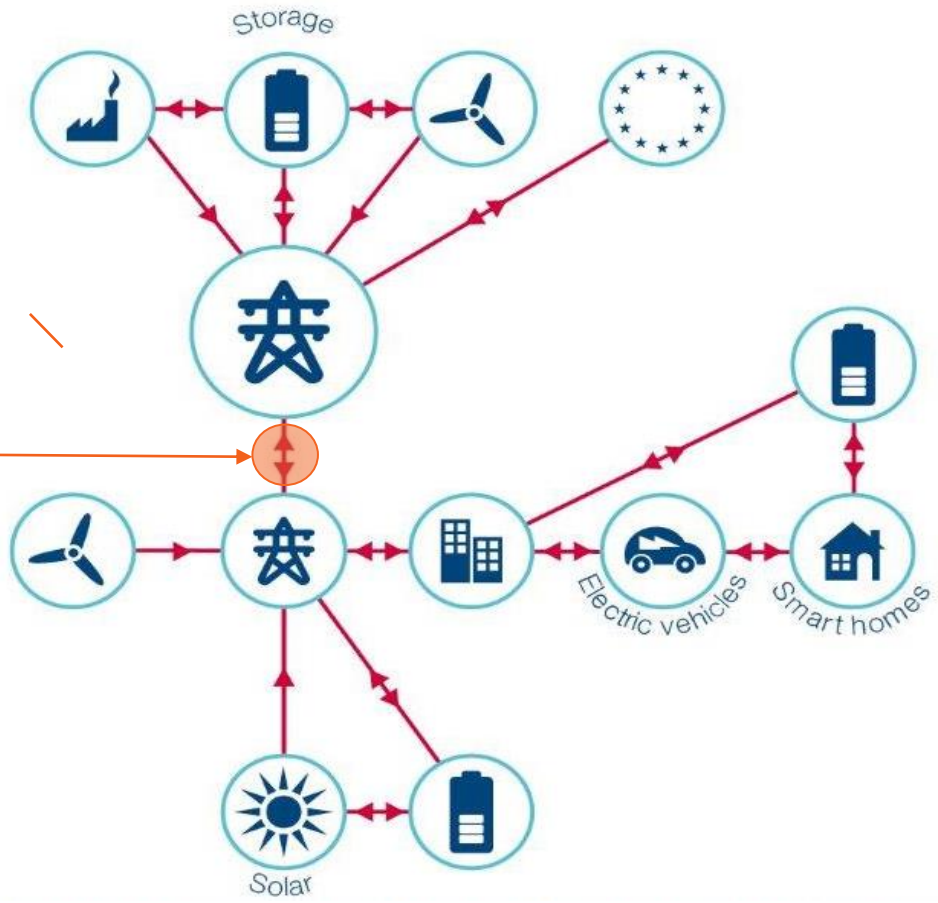
- Improving interactions between T and D
- Playing an active role in the Open Networks project
- Engaging with industry and academia

What are some of the latest developments?

RDP Constraint management:
Developing technologies to improve constraint management
(regional development programmes in the South East, South West and Dumfries & Galloway)

Whole System Investment Planning:
Use of T/D asset and service solutions to meet transmission system needs
(pathfinding projects in Pennine/Mersey regions through 2018/19)

Power Potential:
Transmission voltage service from DER
(technical and market trials through 2019)



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Transmission Network Development in South West Scotland

Assessing transmission infrastructure

Strategic Wider Works (SWW)

Electricity Ten Year Statement (ETYS)

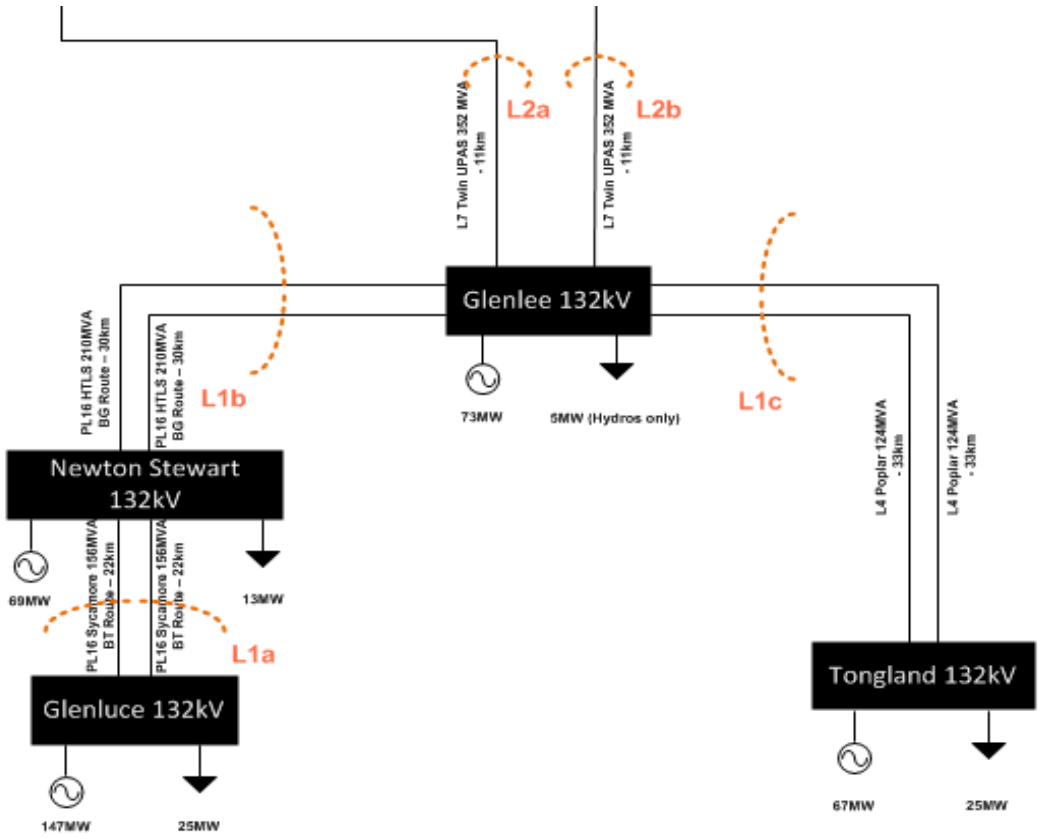
Network Options Assessment (NOA)

The Strategic Wider Works process analysed a number of transmission solutions, under various scenarios, and recommended that paying constraints and developing operational solutions was likely to be the most economic way forward for the transmission network in South West Scotland.

Future Transmission Challenges

ESO Operability Analysis

- The result of the SWW means that South West Scotland will be operated as a radial network in 2023.
- This type of network configuration will lead to a number of nested constraint boundarie – example shown on the diagram.
- The ESO needs to be able to operate the system under pre-fault, post-fault and emergency scenarios.
- A network layout of this type lends itself to a more automated operational approach.



A wide-area ANM is being designed and developed to automate the management of transmission constraints in the South West Scotland region.

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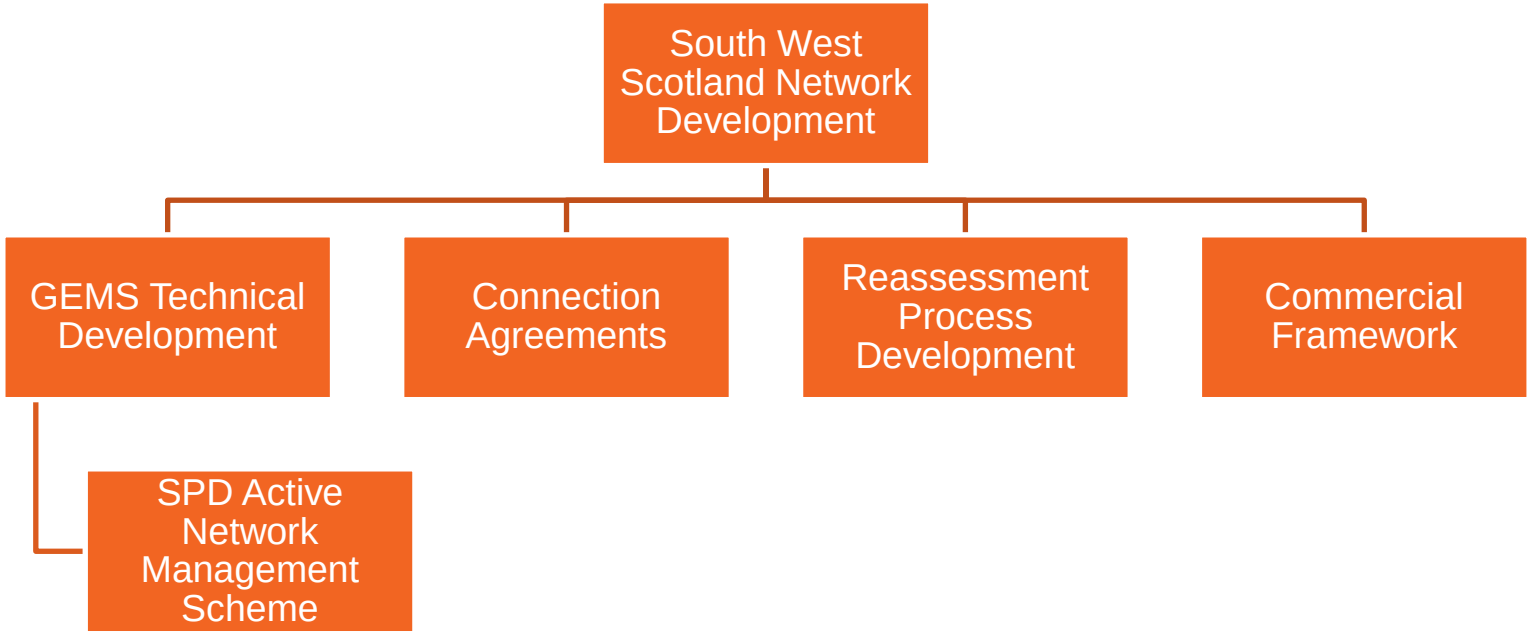
Developing the Non-Build Solution

Four Key Work Streams



The ESO is progressing work across a number of complex work streams in order to deliver the Generation Export Management Scheme, in conjunction with SPEN.

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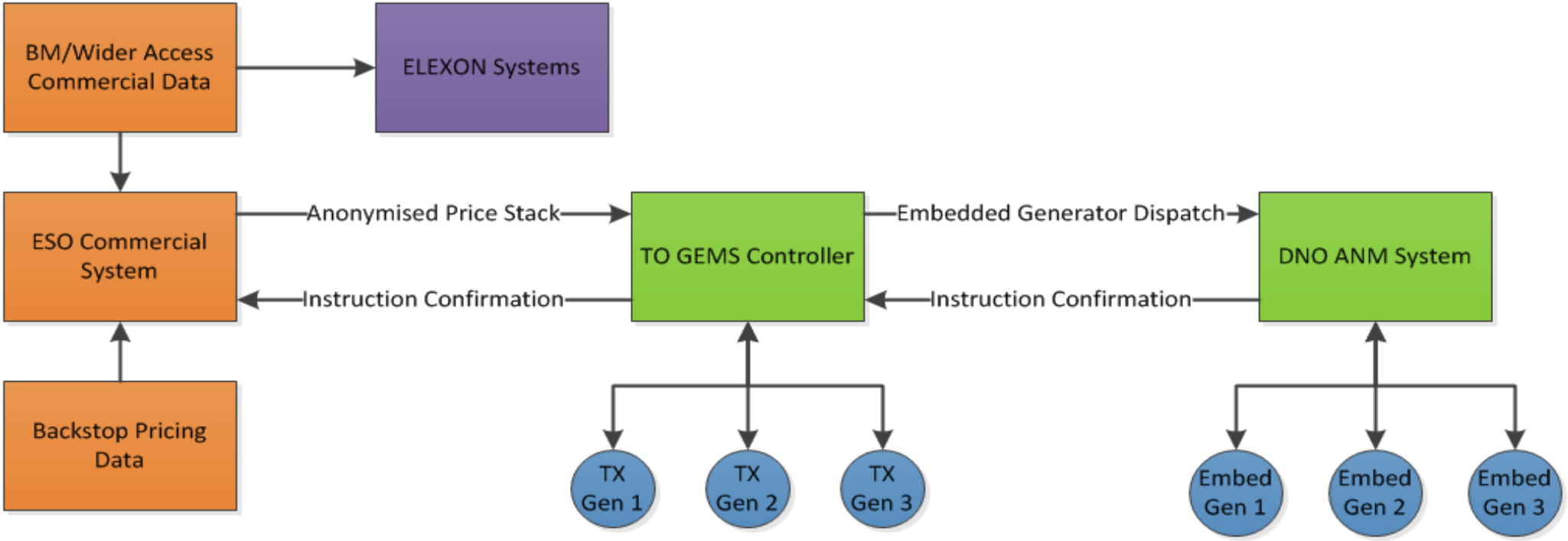
Developing the Non-Build Solution – Progress Update (1)

GEMS Technical Development Overview



The diagram shows the existing ESO systems and those ESO, TO and DNO systems that are proposed to be developed as part of the delivery of GEMS.

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Developing the Non-Build Solution – Progress Update (2)

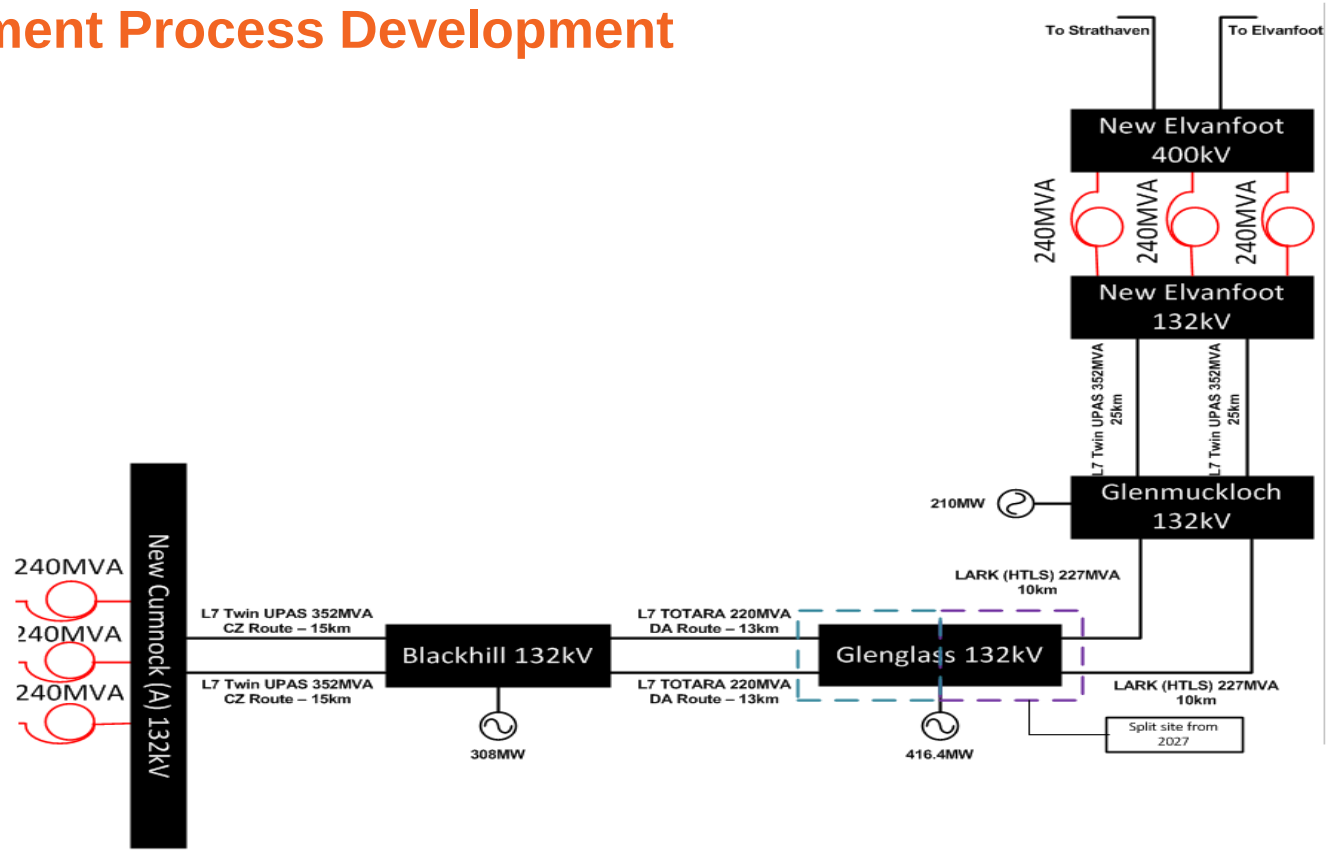
Bilateral Connection Agreements

- NGESO and SPT have now agreed the system architecture for the delivery of GEMS.
- We will shortly be looking to issue more information to Transmission connected Customers on how the GEMS architecture is likely to be deployed, and detail any specific requirements on individual Users.
- NGESO and SPT are still working closely with SPD to define how GEMS will interact with the proposed roll-out of Active Network Management (ANM) across the Distribution network post 2020.
- Appropriate technical standards and User requirements will be detailed in Bilateral Connection Agreements in due course.
- New connections into the South West Scotland area will be required to provide Control and Visibility via the GEMS system.

The GEMS architecture has been agreed between the ESO and TO and more information will be provided for Transmission connected Customers shortly.

Developing the Non-Build Solution – Progress Update (3)

Reassessment Process Development



The ESO is now working on further analysis of the South West Scotland area, based on changes to a number of factors within the group.

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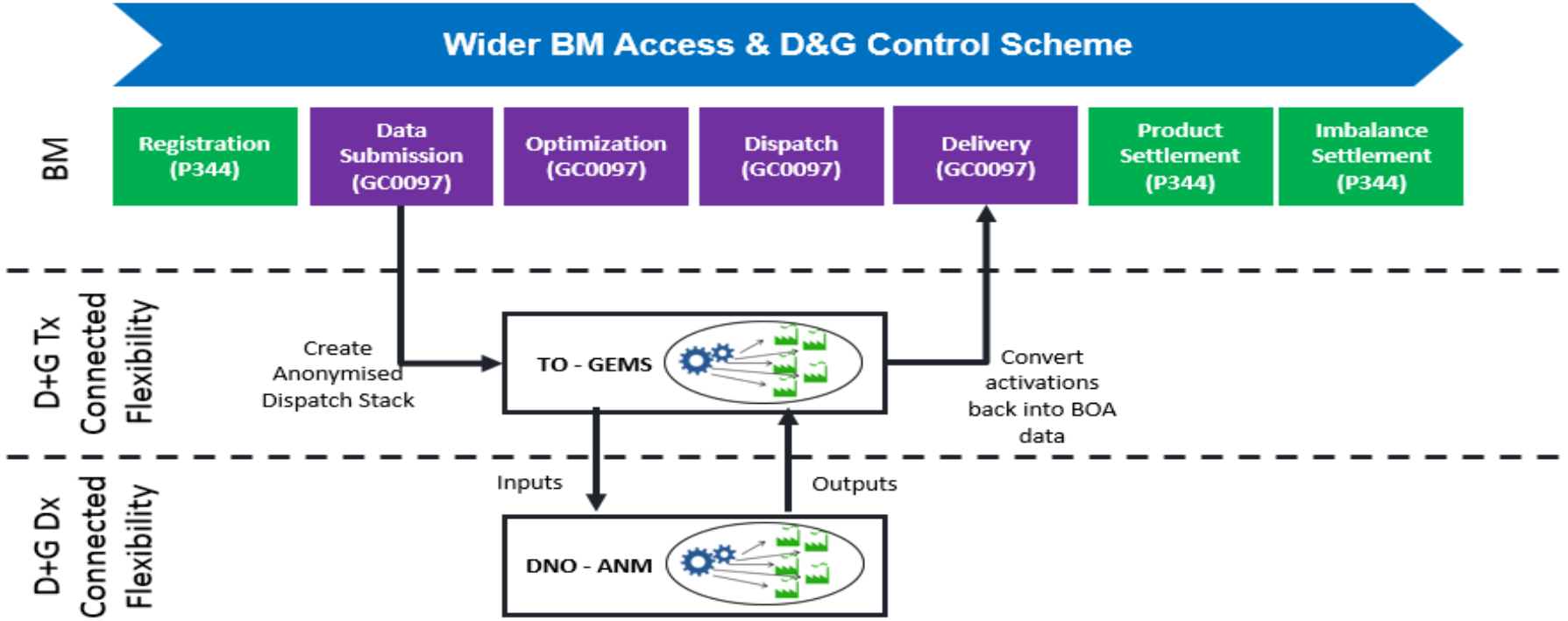
Developing the Non-Build Solution – Progress Update (4)

Commercial Framework



There will be a number of commercial routes to market available and Customers will be able to choose the most appropriate route for their project.

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Dumfries and Galloway Regional Development Programme (RDP)

Developing a 'Whole System' solution

- Due to the large potential for renewable generation projects in South West Scotland, the required network upgrades would have been costly and presented significant consenting risks.
- NGESO is looking at new ways to use technology and operational methods to provide more cost efficient outcomes for renewable developments in the region.
- The RDP is looking to develop an innovative approach to ensure both Transmission connected and Distributed Energy Resource can access the network in a fair and equitable manner.
- Working with SPT and SPD, NGESO is seeking to develop Transmission network constraint management services to maximise the utilisation of the Transmission network and ensure the ongoing management of the system.
- The RDP is therefore designed to ensure the necessary frameworks are designed and delivered.

The aim of the RDP is to ensure that both the technical systems and commercial frameworks are in place to enable all parties to participate in Transmission Constraint Management.

More Information

Regional Development Programmes:

https://www.nationalgrideso.com/insights/whole-electricity-system/regional-development-programmes

Contact Email Addresses:

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commercial.operation@nationalgrid.com

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SP ENERGY NETWORKS

06 December 2018

System Resilience and Black Start

Eric Leavy
Head of Transmission Networks

Background - The Changing Energy Mix

UK Energy Policy:

- Restrict coal from 2023 and close by 2025
- Potential for earlier closures

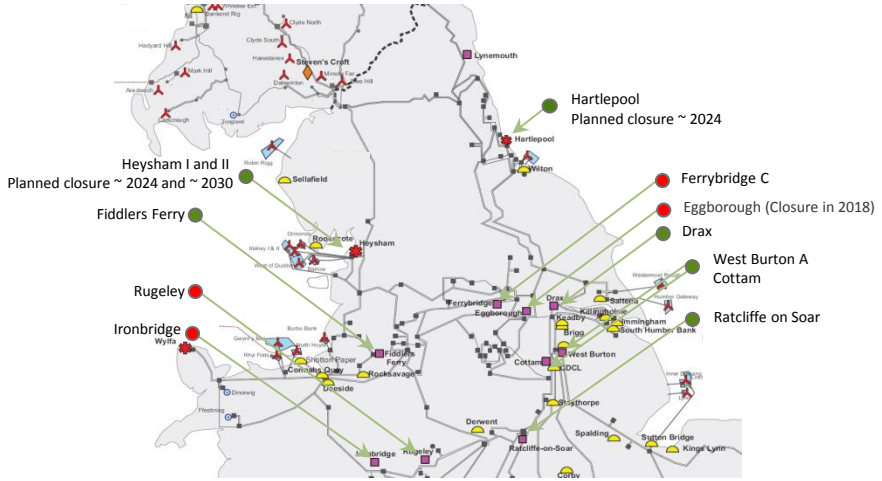
Nuclear Advanced Gas Reactors:

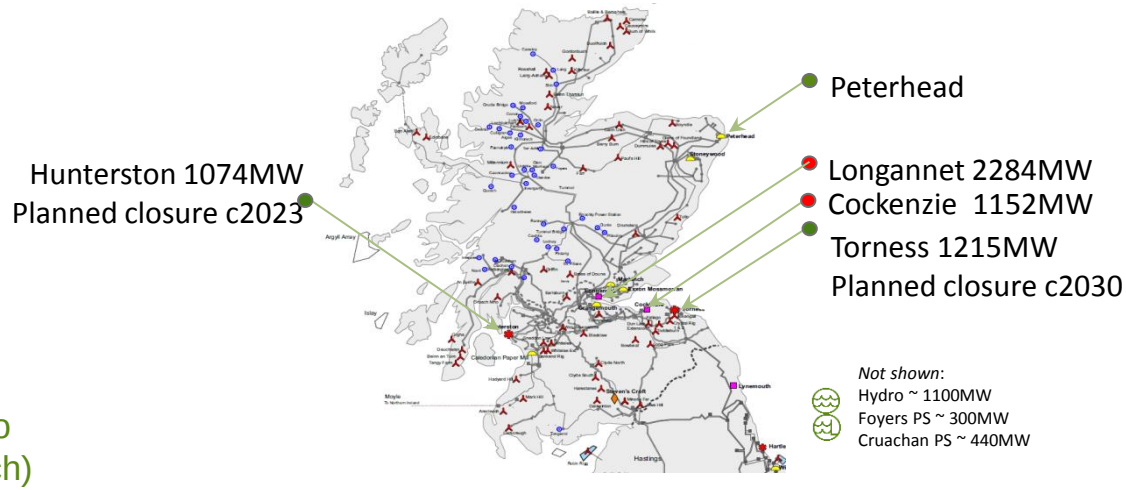
- Closure planned from 2023 to 2030
- Uncertain reliability towards end of life

Scottish Position:

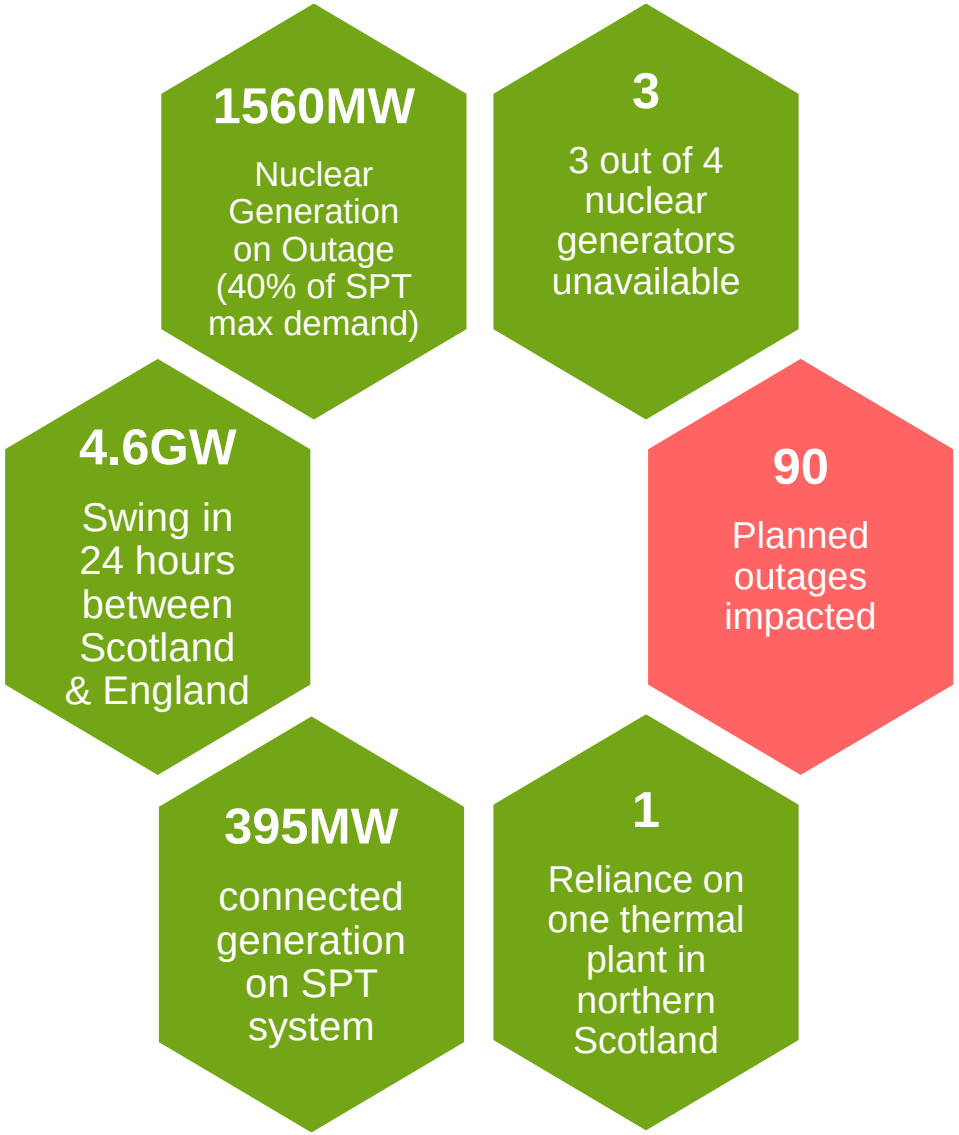
- 3.5GW of coal plant recently closed
- 2.3GW of nuclear plant expected to close 2023 to 2030 (Hunterston U7 presently offline since March)
- 1.2GW CCGT at Peterhead uncertain in medium term

For comparison Scottish maximum demand is 5.5GW
4GW is in the SPT area, which serves a population of 4m





Where Are We Now?



- Based on real events that occurred during October 2018
- Significant interaction with the ESO to manage risk
- Short term impact on SPT programmes of work
- Long term concerns about security of supply

Emerging Issues: Scottish Generation Pattern, Winter 2018 / 19

Generation Position

- Hunterston Unit 7 on extended outage since March 2018 - return to service date?
- Late notification of generation outages -> since October 2018 - Hunterston Unit 8 outage has now extended into 2019 (?)

Risks

- Rapid evolution of generation pattern is now restricting planned transmission system access,
- **Delivery of our asset modernisation and maintenance programmes is critical to maintaining a reliable and resilient system. (90 outages already cancelled !)**
- This over time steadily increases the risk of system unreliability

SPEN Actions

- Revised Q4 planned modernisation and maintenance programmes > returned transmission circuits to service early -> this re-secures the system in the short term
- Additional helicopter patrols for increased assurance on strategic power corridors
- Pro active Deployment of OHL ERS now being considered to enhance network security during substation investment programme

We think we have good reason to think it is already going pear shaped

- Some of our industry partners and policy makers are yet to share our view of these risks
- We are informing and persuading as best we can where we can
- Explaining issues to resilience teams in our area
- Meantime we also need to deliver our own mitigation actions

Resilience is not just about electricity systems

and a black start will affect everybody – some very badly

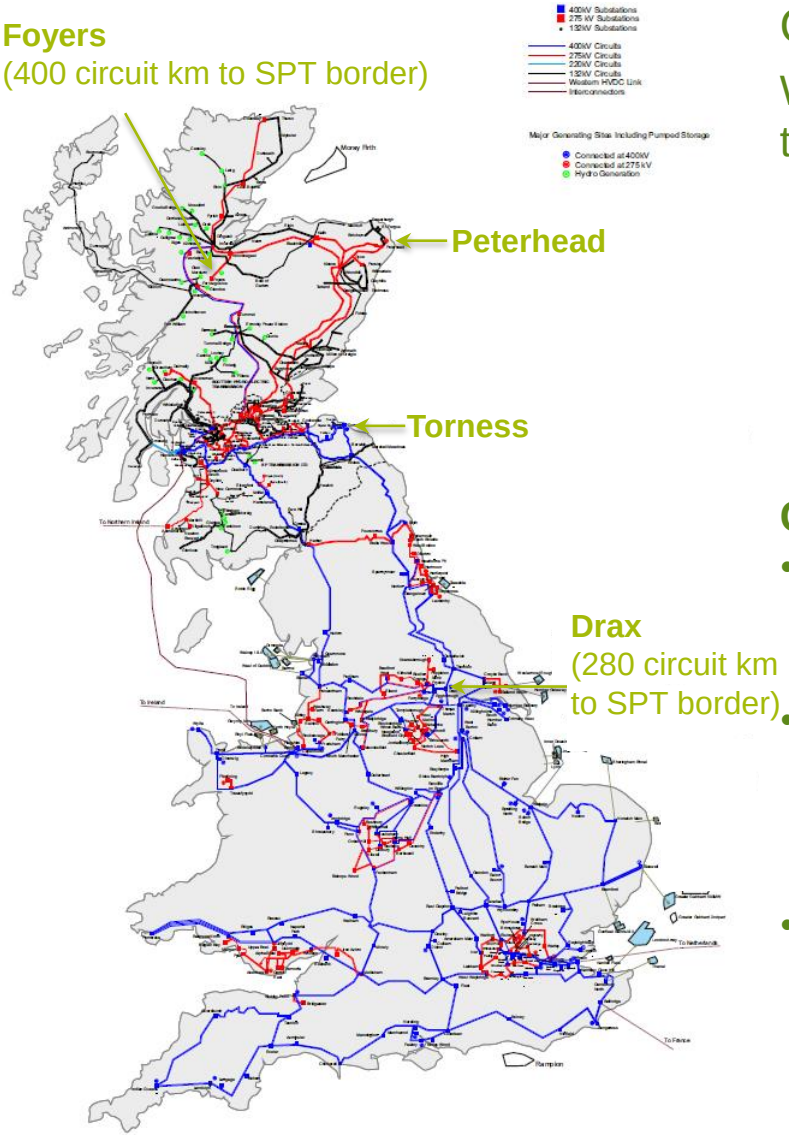
2 Key Resilience Policy Messages

- **We support the establishment of a formal standard for Black Start restoration in Great Britain, which we believe should require 60% of demand to be restored within 24hrs in each transmission zone and throughout Great Britain (and 100% of demand restored within three days).**

- **Improved resilience and accelerated restoration timescales in Scotland will enable the rest of Great Britain to access and benefit from Scotland's near 7 GW wind capacity, thereby helping to accelerate overall recovery timescales.**

How Can We Accelerate Scottish Restoration following a Black Start?

Foyers
(400 circuit km to SPT border)



OPTIONS and OPPORTUNITIES

We are focussed on seeking actions to improve the timeline for restoration from:-

- External generation centres via long transmission corridors
  (Foyers-Peterhead-SPT and Yorkshire-SPT)

- Support from wind generators in the SPT area; and
- A series of proving tests of new methods/ systems

Cruachan - Drax Feasibility Study

- Technical feasibility of establishing a corridor directly from Drax to Scotland has been assessed and we now understand the network challenges
- Technical feasibility of utilising larger transmission connected wind resources to support recovery

Black Start from Distributed Energy Resources

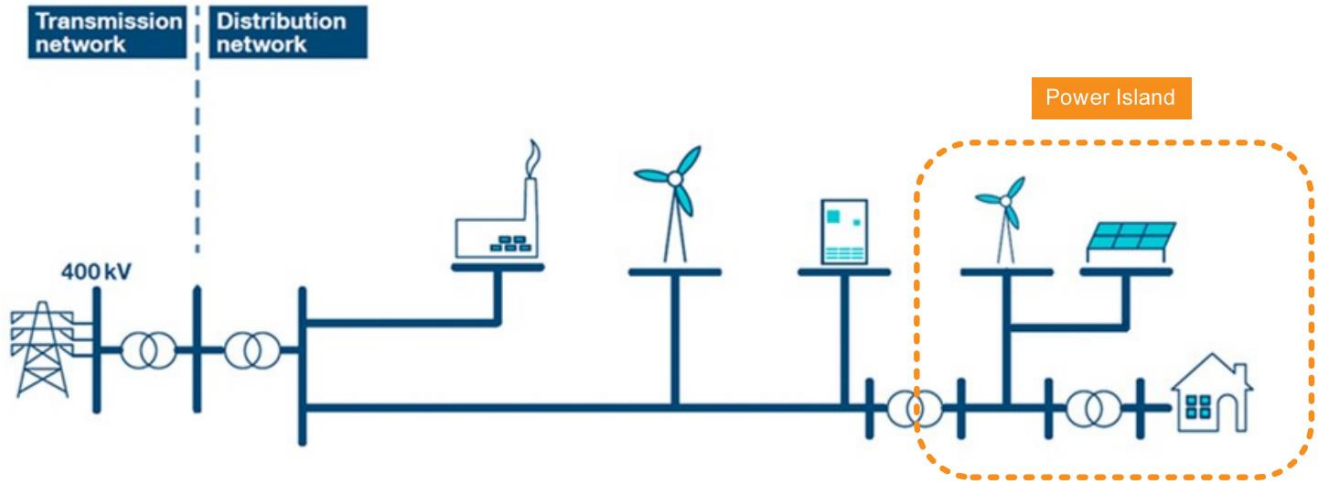
- Technical feasibility of utilising embedded distributed energy resources to support recovery

SPT-led collaboration with NGESO and Wind Farm Owners/Operators to Identify and Discuss Issues and Overcome Challenges

- Restoration Process and Timeline
- Operation with Very Low Fault Level
- Network Behaviour
- Forecasting Wind Resource
- Controllability
- Telecommunications
- Maintaining Operability
- Skills and Experience
- Readiness

Black Start from Distributed Energy Resources

- This project will explore how to make Black Start from DER a practical reality.



- Case studies on SPEN networks to develop technical, organisational and commercial requirements/options then design and test solutions.
- Extensive consultation with industry stakeholders.

Network Innovation Competition

- **3-year, £11.7m ESO project** to examine/test how DER can be used in system restoration
- **£2.4m funding for SPEN plus >£2m for pilot trials with SPEN networks & customers**
- Aligns with DSO transition & develops new restoration capability of international relevance

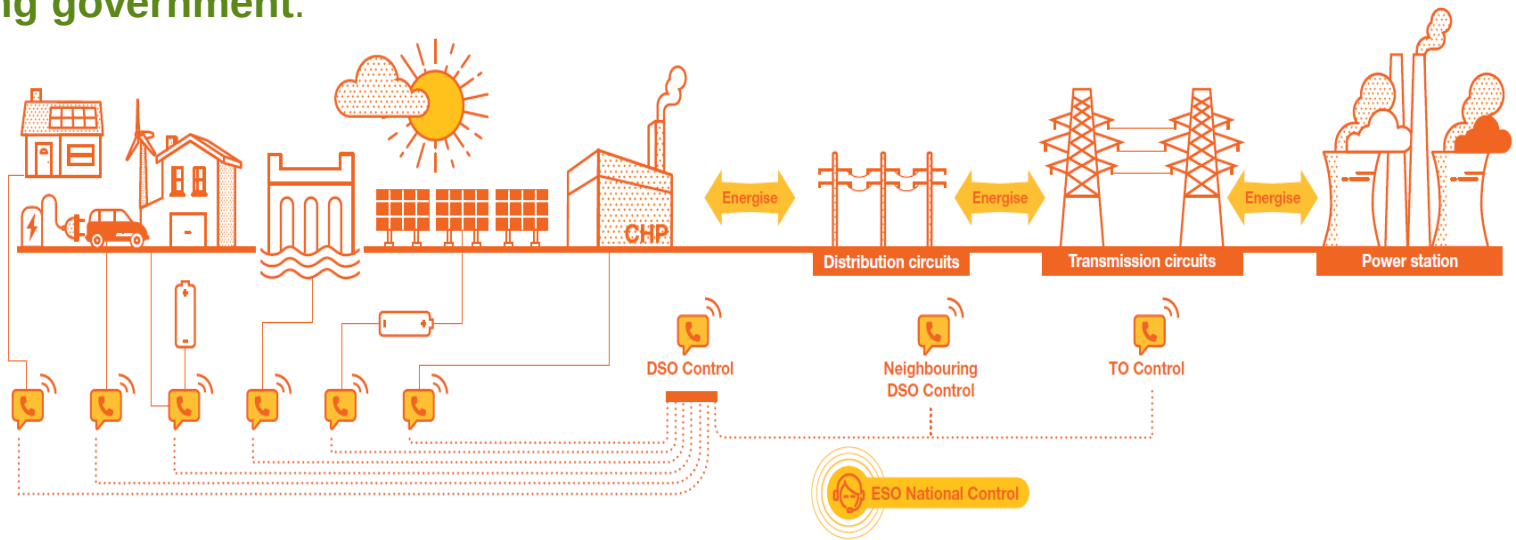
GB needs new black start capability and DER offer a significant opportunity.

SPEN team prior work on initiatives led to selection as a partner by ESO.

Strong support from generators and other stakeholders, including government.

Project will address **technical**, **organisational** and **commercial** challenges to build new capability, and support the transition to DSO.

Case studies and real-life trials in SPD and SPM areas will support business adoption and rapid roll-out.



Partners:

nationalgridESO

tnei

Kick-off in Jan 2019
Completion Jan 2022

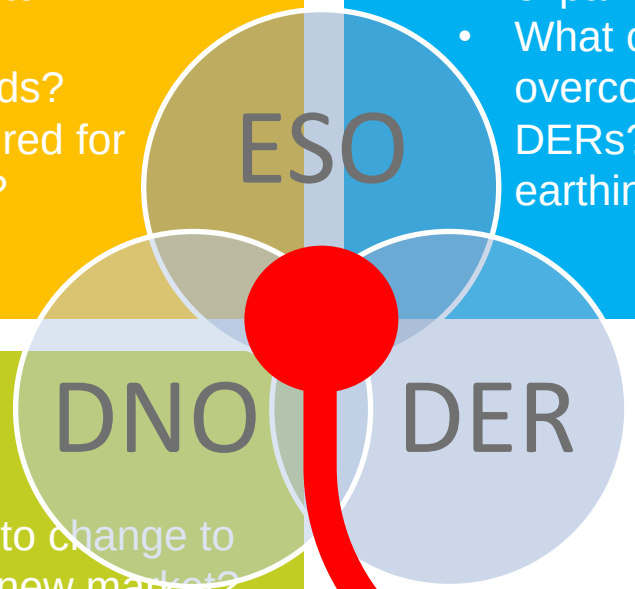
A Collaborative Approach

Organisational

- How does industry collaboratively achieve this?
- What tools are needed to coordinate and control distribution power islands?
- What resilience is required for systems and telecoms?

Technical

- How can multiple distribution power islands be energised, expanded then joined together?
- What challenges need to be overcome on the network and on DERs? e.g. reactive range, earthing, protection, stability



Procurement & Regulation

- What regulations need to change to facilitate and drive this new market?
- How will the ESO (and the DSO) buy the service?
- How should contracts be structured?

Global first
Sustainable
New markets
Consumer value
Essential service

What Action is Required

- Analysis confirms that in challenging but realistic recovery conditions, restoration times in Scotland are lengthy, and can be expected to become ever more onerous without major intervention.
- Our focus is to achieve improved resilience and restoration timescales.
- Our T2 business plan will include necessary funding to address the network operability issues.

- **In view of the uncertain long term future of Peterhead, and the planned closure of nuclear generation. SPEN consider market mechanisms should be revised NOW with a view to deliver up to 2 GW of schedulable source(s) of power directly onto our network that can be sustained for up to 7 days.**
- **However- Eastern Link, European Link, new Power Station are all 5/10 years off !**

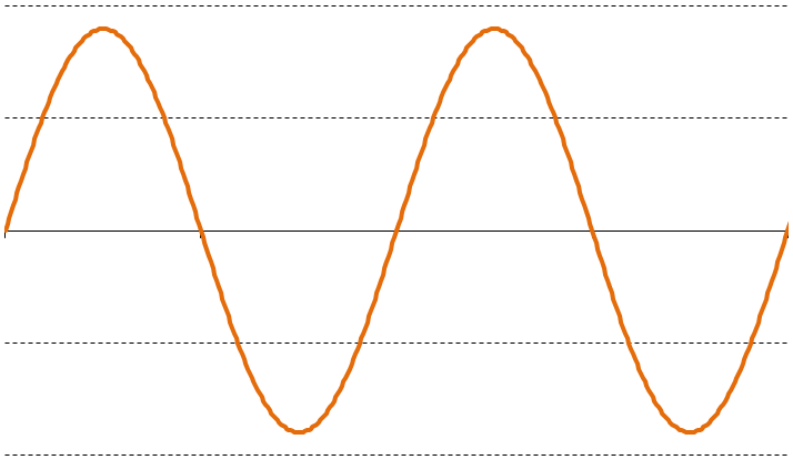
- The Capacity Market does not provide locational signals aligned with strategic requirements. No new build CCGTs which pre-qualified for the last T-4 auction were located in Scotland or the north of England, and none were successful in the auction.
- Transmission Use of System charges lead to an average c.£10m/yr price differential for 1GW CCGT capacity located in the SPT area relative to England and Wales.
- We believe something urgently needs to be done to address the system challenges.

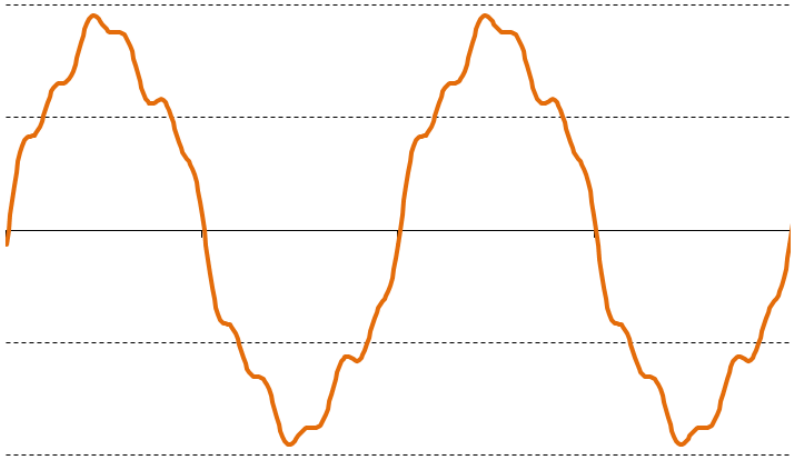
SP ENERGY NETWORKS

SPT Connections Summit

6 December 2018

Harmonic Voltage Distortion

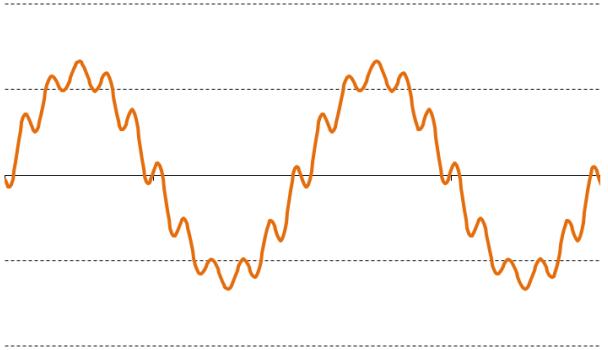




Introduction

- In this presentation we'll look at:
  - A quick review of harmonic voltage distortion
  - Existing compliance approach
  - Issues with the existing approach
  - Proposed solution

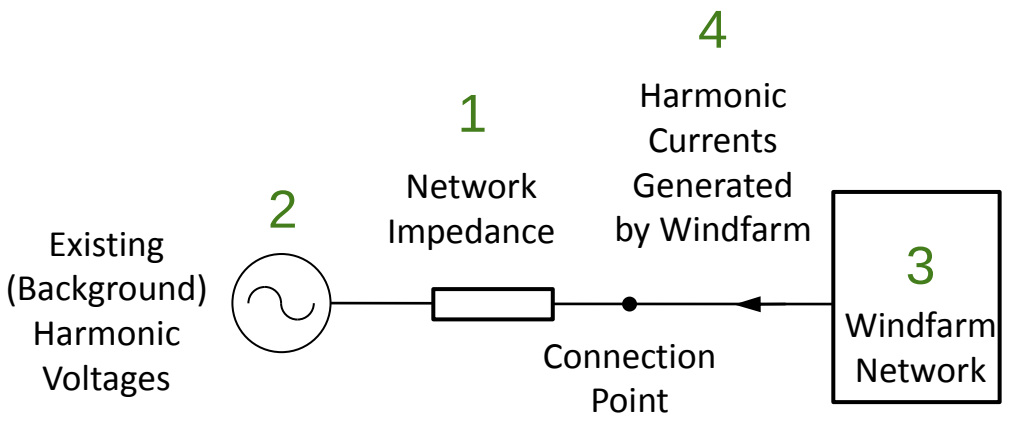
Harmonic compliance is an increasing problem for Users and TO's



What affects the harmonics at the Connection Point?

1. Transmission network
2. Background harmonics
3. Windfarm network
4. Windfarm harmonics

These change constantly



More issues as renewables increase

Harmonic Resonance

- Cause of many compliance issues
- Transmission and windfarm networks work together
- Amplification of background harmonics
- More problems in networks that
  - are weaker
  - use more cable

Studies show high resonance risk in 132kV networks

Existing Approach

The User is responsible for harmonic compliance

- Network studies
  - Network data
  - Background measurements from TO
  - Marginal non-compliance can be resolved by measurement
- Measurements to confirm compliance

Issues with Existing Approach 1

- Network does not exist – no background measurements
- Final network design uncertain
- Windfarm design and harmonic emissions not known
- Engineering Recommendation G5/4 sequential process
- How to apportion headroom fairly?
- Inefficient mitigation
- Filter redundancy
- Mitigation costs may not be distributed equitably between Users
- Late identification of problems

Issues with Existing Approach 2

Who is responsible in case of a network resonance?

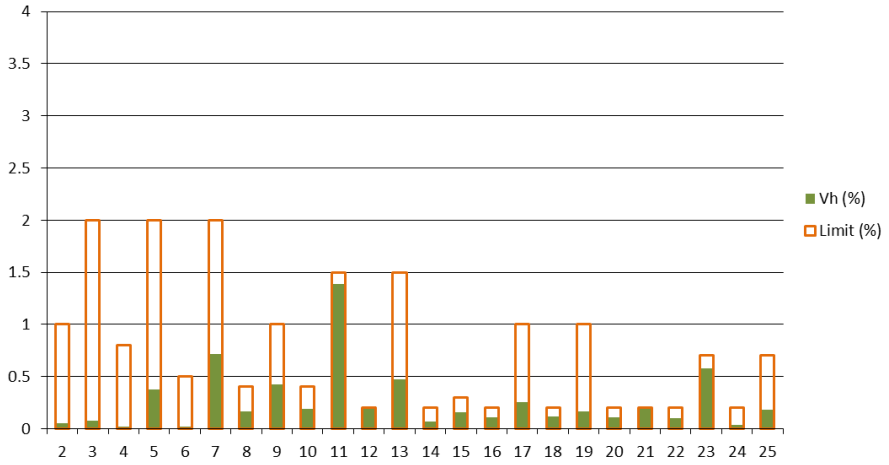
Transmission Owner

- Background not from new windfarm
- Cable circuits

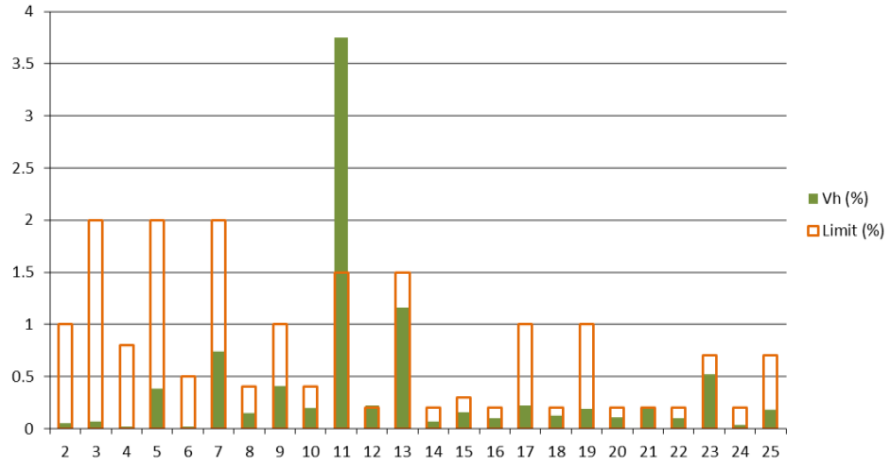
Windfarm

- Cables part of the resonant circuit

Before connection



After connection



Innovation Projects and Design Studies

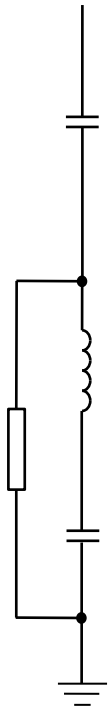
- Two successful innovation projects completed
  - Standardised filter for 33kV
  - Solution options for SWS
- RIIO-T2 Business Plan:
  - Install standardised 132kV, 20Mvar damped filters

Connection and User Impact

- RIIO-T2 delivery from 2021 to 2026
- Significantly reduced harmonic resonance risk
- May appear as one-off works in offers
  - E.g. if User opts for cable connection
- User remains responsible for harmonic compliance
- Shunt reactors to compensate filters

Nearly done…

- Next Steps
  - Submit RIIO-T2 business plan
  - Finalise filter design
  - Finalise filter locations
- Any feedback or questions on harmonics?



SP ENERGY NETWORKS

Dec 2018

Delivery Update

Colin McNeil
SPT Projects

Reinforcement

Completed East West and Series compensation (Onshore reinforcement) adding 1100MW to onshore Scotland / England B6 boundary transfer capability

Offshore HVDC now operational at up to 2200MW North South

Total North South Scotland / England and Wales at 6600MW

Kilmarnock South upgrade progressing

Capacity reinforcements on XY Kilmarnock South / Coylton and YY Coylton Markhill routes completed utilising HTLS conductor.

Connections

Connected 7 new connections in 2018
Providing 436MW capacity for new generation

Significantly ahead of programme on shared infrastructure capacity delivered eg SWS
Progressing large volume of contracted works through design and tendering

South West Scotland , next steps

Working on next stages of SWS with a number of connections to recently installed infrastructure, Kendoon Tongland Reinforcement -Taking lessons learned from SWS and working on development of KTR

Removes constraints and facilitates more connections

Works at existing Glenlee site progressing with planning and stakeholder engagement, design work in progress, expecting tendering early 2019

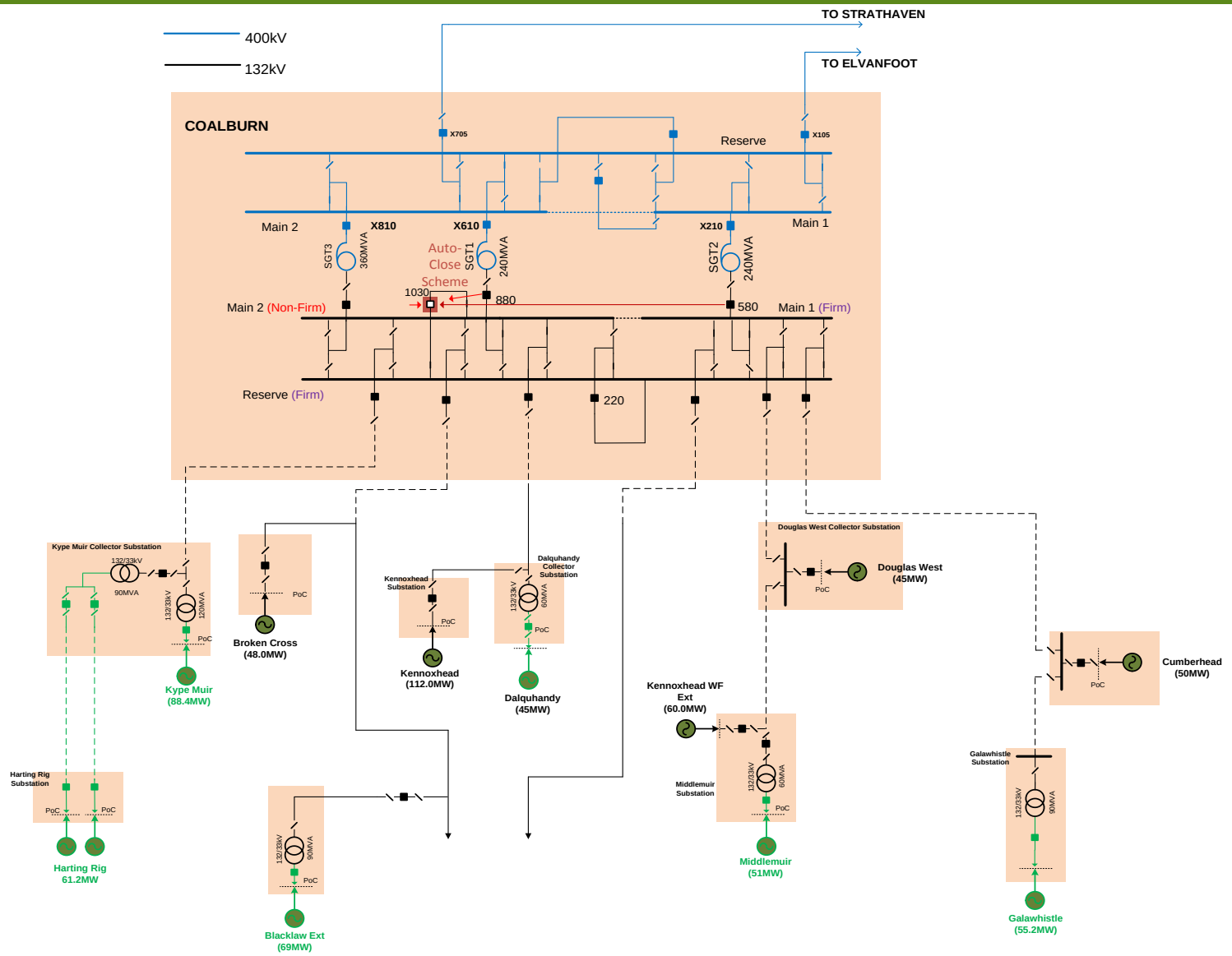
Ongoing challenges

Planning
Programme
Clearing planning pre-conditions
Supply chain management
Health and Safety , Welfare
Accessing remote sites
Enabling works including peat
Environmental impact assessment and management
Logistics Geography
Weather
Resource

Lookahead

Kendoon Tongland Reinforcement
Coalburn and Markhill sites becoming major nodes
SWS new connections at New Cumnock and Glenglass
GEMS Generation Export management system
Offshore WF connections
Enabling other TO and DNO connections
A significant number of other project spread across the SPT Network
NOA projects
LMS evolution
Blackstart recovery capability

Coalburn a quickly moving picture



Stakeholders

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

2018 Issues and lessons learned

Construction issues

- Road authorities- access restrictions / other Utilities
- Unchartered services - GPR surveys
- Unforseen ground conditions – local information
- Special engineering difficulties- surveys and trial dig
- Wayleaves and servitudes
- Managing potential impact on stakeholders

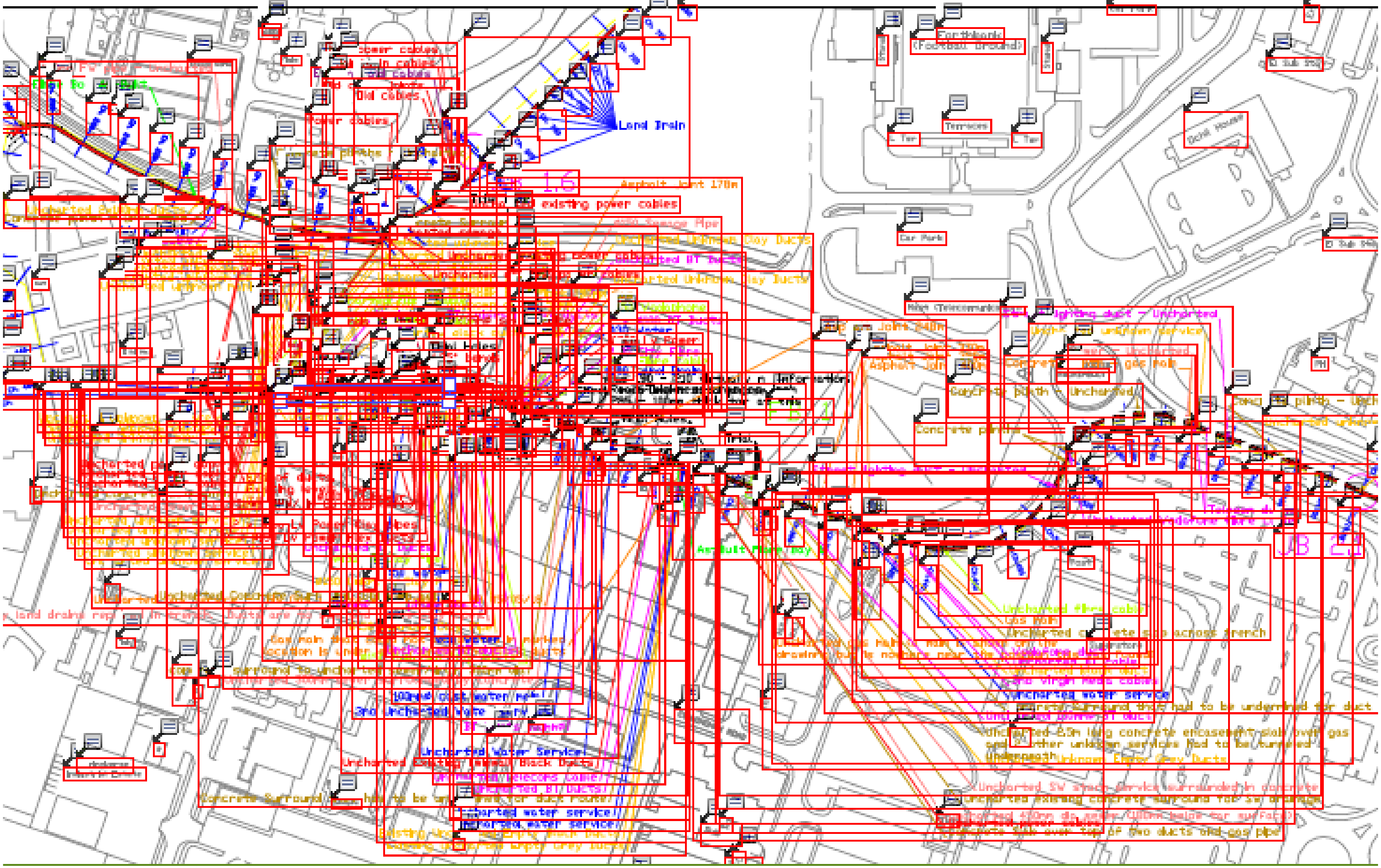
Lessons learned

- Route selection, on / off public road Programme
- Route proving
- Ensure contractor programmes are achievable
- Ensure works are adequately resourced
- Managing change

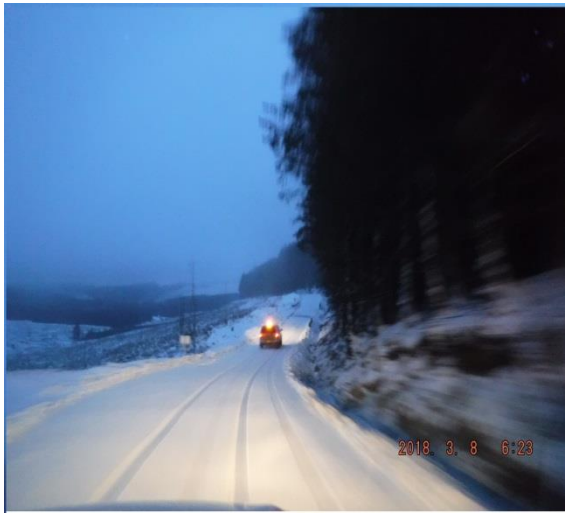
Uncharted services Stirling area 2 x 132kV ducted cable install in public road

Service congestion in public road on new 132kV circuit South Lanarkshire

Stirling area 132kV cable route almost 90% uncharted , undetected services



400kV Torness Eccles including HDD under Main East Coast rail line



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

Working at Height sheeting CSE terminations at Blackhill gusting to 45mph

Drone inspection and survey non outage assessment pre fault intervention

HTLS conductor application Colyton Markhill 46km increase capacity of existing line by 60% 504MVA -> 850MVA

So what next ?

Roll out HTLS deployment to deliver reinforcement faster

3D modelling to reduce issues on site and speed up tendering process and improve contract billing accuracy

Move towards more Digital substations- significant reduction in site work, allows prefabrication of site and faster delivery on site

Digital trial at Wishaw 275kV

Active Network management LMS , GEMS maximise connected generation

Increase non build solution to enable more capacity to access quicker

Manage increased design complexity, ensuring systems operate and interact correctly

Reliable diverse communications systems and monitoring

Thank you

6th December 2018

SPT Connections Summit

SPT Development

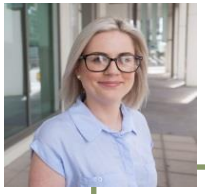
Laura Campbell

Agenda

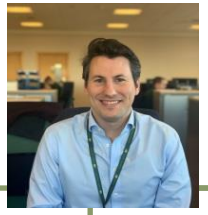
- Introduction to Project Development team
- KTR project scope and completion dates
- Progress to date
- Next steps

SPT Project Development Team

Gary Jenkins Project Development Manager



Cheryl Blenkinsop
Project Manager



Miguel Calleja
Project Manager

Laura Campbell
Project Manager

Marcos Israeliantz
Project Manager

Kendoon to Tongland Reinforcement (KTR) Project

SCOPE:

- Construction of 44km of 132kV overhead lines between Kendoon and Tongland
- Removal of 90km of existing 132kV overhead lines
- Substation extension works at Glenlee with reconfigurations at Kendoon and Tongland

AIMS:

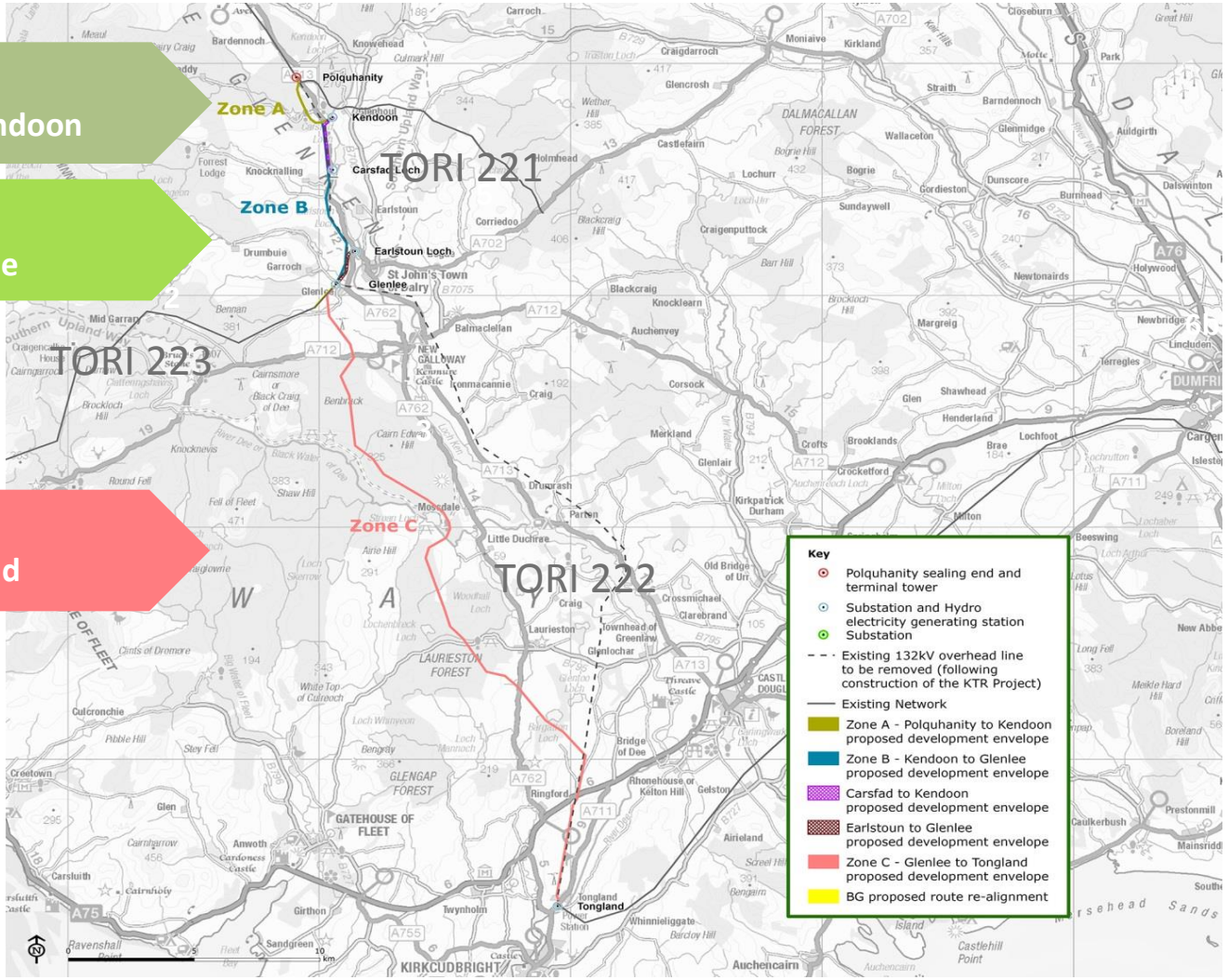
- Allow existing generation contracted in D&G to connect as planned and provide some headroom for new generation.
- Replace infrastructure at end of life and improve security of supply to customers.
- New commercial and operational arrangements will be developed to manage wider system constraints (GEMS).

Kendoon to Tongland Reinforcement Project

Zone A:
Polquhanity to Kendoon

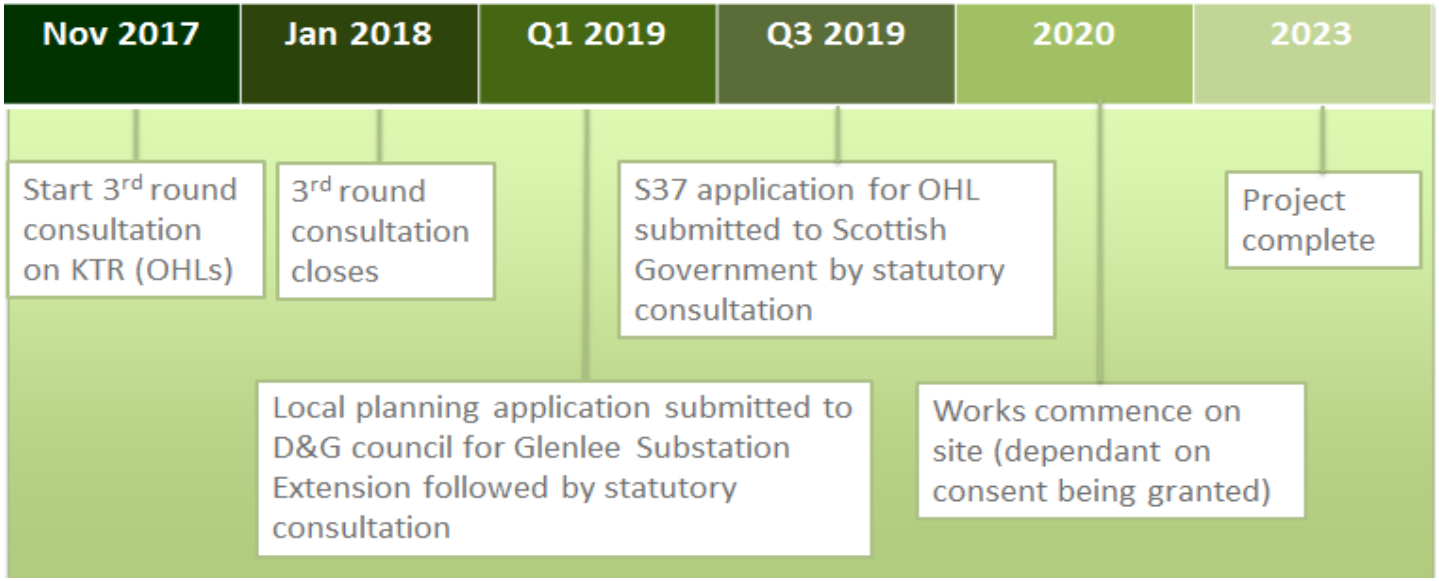
Zone B:
Kendoon to Glenlee

Zone C:
Glenlee to Tongland



Kendoon to Tongland Reinforcement (KTR) Project

- Kendoon to Tongland Reinforcement (KTR) project:
  - Kendoon to Glenlee Reinforcement (**TORI 221**)
  - Glenlee to Tongland Modernisation (**TORI 222**)
  - Glenlee to Newton Stewart Reinforcement (**TORI 223**)
  - New Cumnock SGT2B (**TORI 213**) completed by 2022



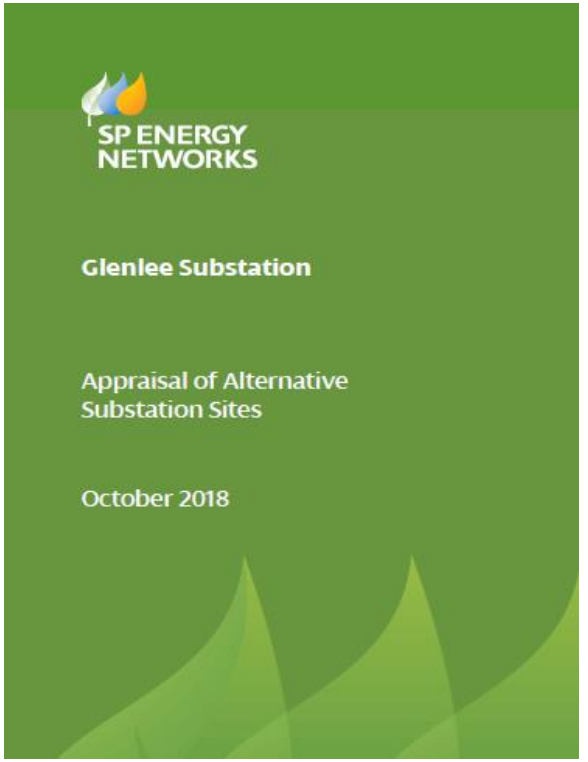
https://www.spenergynetworks.co.uk/pages/dumfries_galloway_strategic_reinforcement.aspx

KTR Progress to date

- 3rd Round KTR Public consultation on Preferred OHL Routes for Kendoon to Tongland Reinforcement (KTR) project started in November 2017 and was completed in January 2018
- Further local briefing events undertaken including Laurieston Community Council
- D&G Connections Forum – June 2018
- OHL Design Freeze 2.0 due December 2018 based on 3rd round feedback, site visits, surveys and design workshops.
- CCI Ltd appointed to undertake cable undergrounding study work commenced November 2018.

Consultation on Glenlee substation extension

- Further Public consultation on planning application for Glenlee substation March 2018
- Feedback to investigate substation extension and alternative options.
- Full appraisal of 4 options was undertaken and report published.
- The original option 1 has been selected due to economic, technical and environmental factors.
- Ongoing consultation with local residents
- A full EIA will be undertaken prior to planning application.
- Planning application delayed until Q1 2019

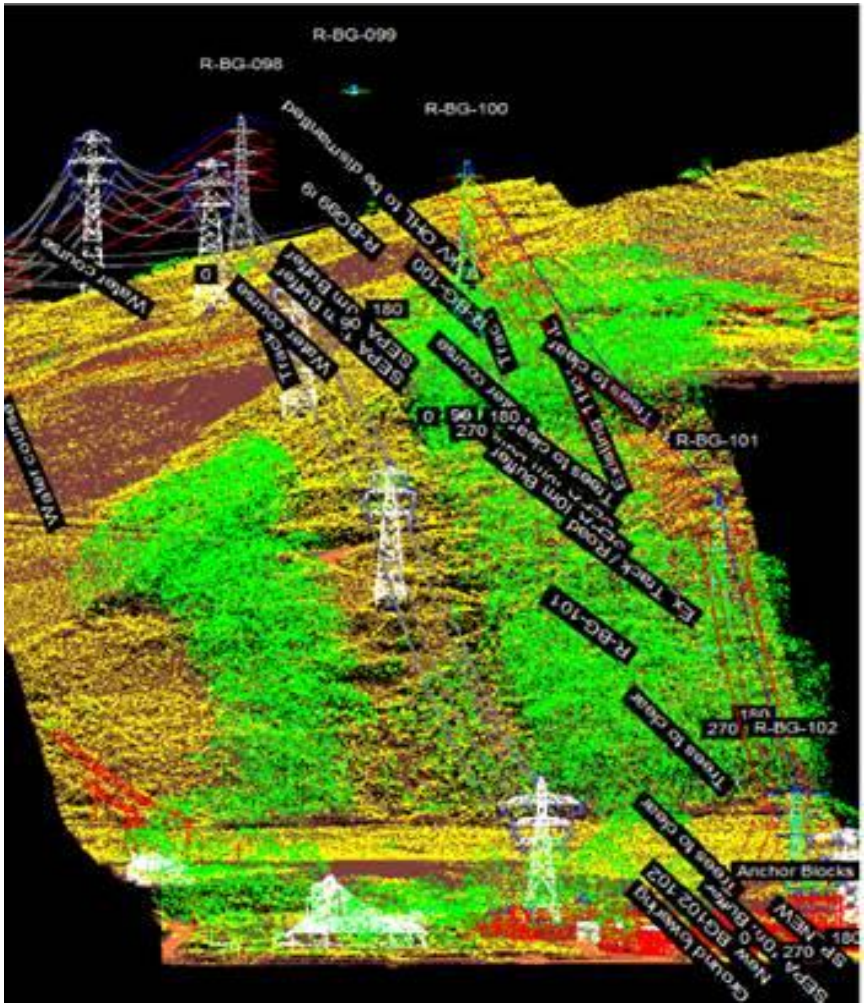


Glenlee substation extension

- First stage of works in late 2019 is to extend Glenlee 132kV substation
- Extension approx. 90m x 40m
- Pre-construction surveys undertaken
- Discussion with landowners ongoing
- SPG/DRAX discussion are on hold upon completion of sale by end 2018.

Desktop engineering & field based surveys

- OHL Design Freeze 2 – Dec 2018 based on round 3 consultation feedback.
- OHL EIA will commence based on DF 2.0.
- Construction team carried out detail review and site visits for construction accesses, quarry locations, tower locations and construction laydown areas.
- Stage 2 intrusive surveys planned 2019
- Tower foundation design 2019



Next Steps

Milestone	Date
3rd round consultation completed	January 2018
Glenlee planning application submission	Q1 2019
Extension works at Glenlee	Q3 - 4 2019
CCI underground survey completion	Q2 2019
S37 EIA commencement	December 2018
Submission of Section 37 applications	Q3 2019
Construction	From 2020 / 2021
Project completion	Q4 2023

Questions

Further information can be found on our website:

https://www.spenergynetworks.co.uk/pages/dumfries_galloway_strategic_reinforcement.aspx

SP ENERGY NETWORKS

RIIO-T2 and How it Affects You

Connections Summit

6th December 2018

Alan Kelly

RIIO-T2

Policy and Licence Manager

Suzie Taylor

RIIO T2

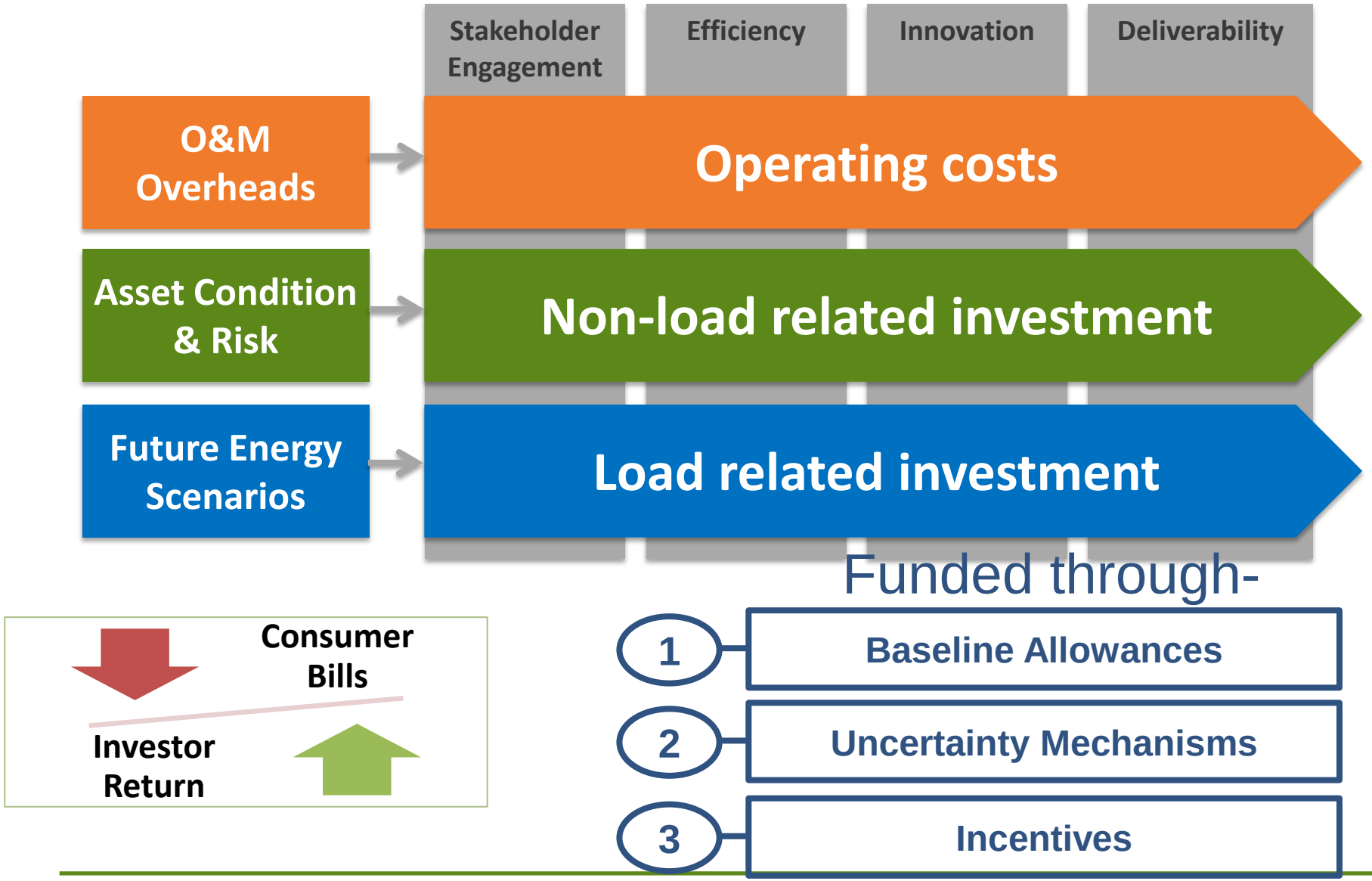
Stakeholder Engagement Manager

The RIIO framework

Ofgem's framework for setting price controls is called RIIO which sets our Allowed Revenue using Incentives to deliver Innovation and Outputs.

Revenue	Incentives	Innovation	Outputs
	The mechanisms used by Ofgem to encourage us to deliver improvements in areas that our customers value.	Things we can do differently to provide a safe, reliable and sustainable network whilst delivering value for money to our customers.	Things our customers value: Safety Environment Customer Satisfaction Social Obligations Connections Reliability & Availability

RIIO-T2 - Plan Components & Funding



Funded through-

1. Baseline Allowances
2. Uncertainty Mechanisms
3. Incentives

Background : RIIO-T1 Output Incentive Mechanisms

Financial Incentives

- **Reliability (Energy Not Supplied)**
- **Environmental Discretionary Reward**
- **Sf6 leakage**
- **Stakeholder Satisfaction & Engagement**
- **Timely Connections**

Reputational and Reporting incentives

- **Safety**
- **Network Access Policy**
- **Business Carbon Footprint**
- **System Losses**
- **Visual Amenity**

Review of Safety Incentive in RIIO-T1

- **The extent of the Safety incentive in RIIO-T1 is to comply with the legal safety obligations as set and monitored by the Health and Safety Executive (HSE) as the safety regulator.**

- **Safety is embedded as business as usual and recognised by our Directors and Delivery Managers as a primary responsibility. Safety is established as our number one priority so developing the safety incentive to improve performance is not required although increasing transparency of our performance could be beneficial.**

- **Evidence of progress and good practice in RIIO-T1 include the embedding of Safety observation monitoring and review, establishment of behavioural safety teams, legitimacy given to good housekeeping. Contractor safety requirements are embedded in procurement processes and therefore priced in by contractors. The safety management System (SMS) led by our SP Corporate team and embedded across all SP businesses across the Iberdrola group.**

Changes for T2 - Connections

What is the Timely Connection Incentive in RIIO-T1?

1. All new or modified offers for connection to the transmission network are provided to customer within 90 days
2. Transmission owners have tighter timescales to meet to allow the ESO to complete the offer, that are specified in the STC.
3. There is a penalty only incentive for the Scottish TO's in RIIO-T1 to meet their deadlines up to 0.5% of allowed revenue

What You Highlighted at Customer Connection Roundtable

- 90 day offer period OK; quality of information more significant.
- Improve pre-application engagement
- Commissioning dates should be project specific; offers and mod-apps
- More engagement during offer period
- Early warning of delay during construction period
- Better securty information

There is presently no incentive for going beyond STC obligations with respect to connection contracts. We considering the possibility of putting an incentive in place for pre-contractual work and advice offered by SP Transmission that could fund us to do more in this area.

Timetable

- The conclusions of this 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

RIIO-2 Ofgem Sector Specific Consultation: Due December 18th 2018

ET RIIO2 Stakeholder WG 5

ofgem Making a positive difference for energy consumers

Overview of proposed consultation position for December consultation

Policy area	RIIO1	Proposed consultation position for December
Incentive Scope 	Applies to Scottish TOs only (SHET & SPT), not NGET TO. The incentive applies to the timeliness of connection offers only. Connection offerees are not currently required to be surveyed on the quality of the connection offer. TO and SO functions of NGET will be separate entities from April 2019. Standard Condition C18 of the Transmission Licence already applies to NGET TO.	• We propose to seek views on potential barriers around expanding the incentive to NGET TO. • We propose to consult on the options and barriers to linking this incentive to the SSO (or a wider stakeholder engagement initiative). • Linking to the Stakeholder Satisfaction Output would allow for the quality of offer to be assessed. This should provide TOs with both a reputational and financial incentive to improve the quality of connection offer for the customer. • We are looking at whether introducing an ED-style Incentive on Connections Engagement (ICE) would be of benefit, and may consult on this. • We are looking at what more could be done to incentive improvements to the end-to-end connection process.
What are your thoughts on the proposed incentive scope?		

Engaging with you for RIIO-T2



RIIO-2 : Stakeholder Engagement

- **Stakeholder engagement is always at the heart of SP Energy Networks activity.**
- **RIIO 2 formalises some of that engagement activity through Independent Stakeholder Groups**

RIIO-2 Challenge Group
Single industry group to be established by Ofgem.
The purpose of this group is to look at the business plan from a different perspective to that of users and local stakeholders.

DISTRIBUTION

Customer Engagement Group
Each distribution company to establish an independently chaired customer engagement group to provide:

- Challenge to company's business plan.
- Independent assurance to Ofgem.

TRANSMISSION

User Group
Each transmission company to establish an independently chaired User Group to provide:

- **Input to company's business plan.**
- Challenge to company's business plan.
- Independent assurance to Ofgem.

STATUS UPDATE

Ofgem Challenge Group

- Members and Chair recruited November 2018.

SPEN Transmission User Group

- Chair (The Rt Hon Charles Hendry) and Members recruited August & September 2018.
- Open hearings will take place in Jan 2020 to publicly debate contentious aspects of business plans.

SPEN Distribution User Group

- Chair position advertised (closes 9th December 2019)
- Member recruitment to follow

The Transmission User Group – The Independent Members

1 Secretariat
1 Chair
9 Members

System Operator

Supplier

(SPEN) Secretariat

Julian Leslie
National Grid SO

Martin Kearns
EDF

David Ritchie
Environmental Consultant, AECOM

Andrew Robertson
Head of Operational Technology, SHEPD

Distribution Network

Innovation / future consumers

The Rt Hon Charles Hendry
Chair

Prof. Karen Turner
Director of the Centre for Energy Policy

Dan Thomas
Grid & Operations Manager, Banks Group

Generator

New / non-traditional business model

Rob Cormie,
Edinburgh Advisers.

Angela Love
Consultant, Vulnerable / Whole System

Consumer representative / research

Amanda Burgauer
Chair,
Scottish Rural Action

Rural Voice / Community energy

SP ENERGY NETWORKS

SPT Connection Summit

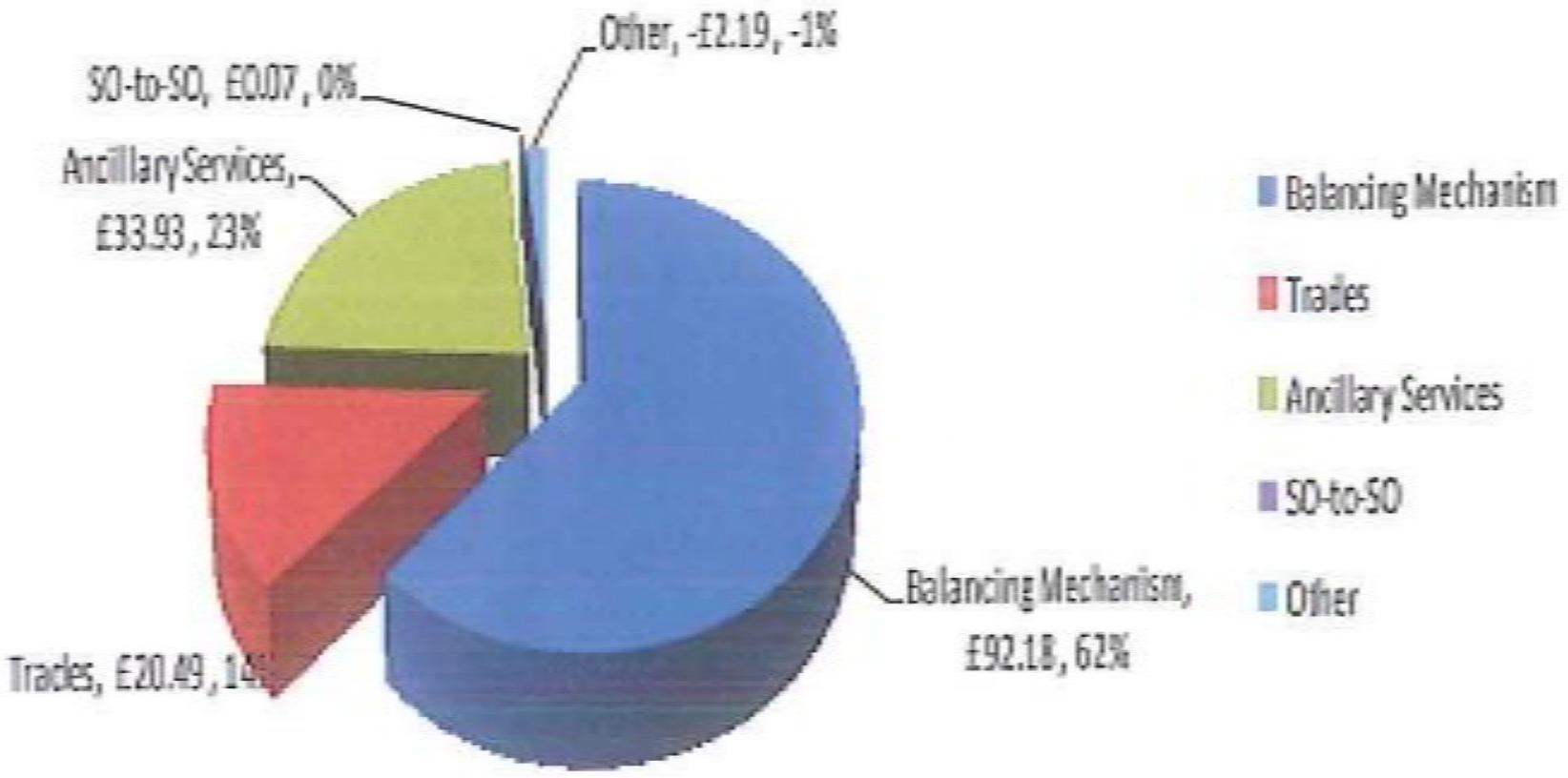
6th Dec 2018

Milorad Dobrijevic – Network Outage Planning Manager

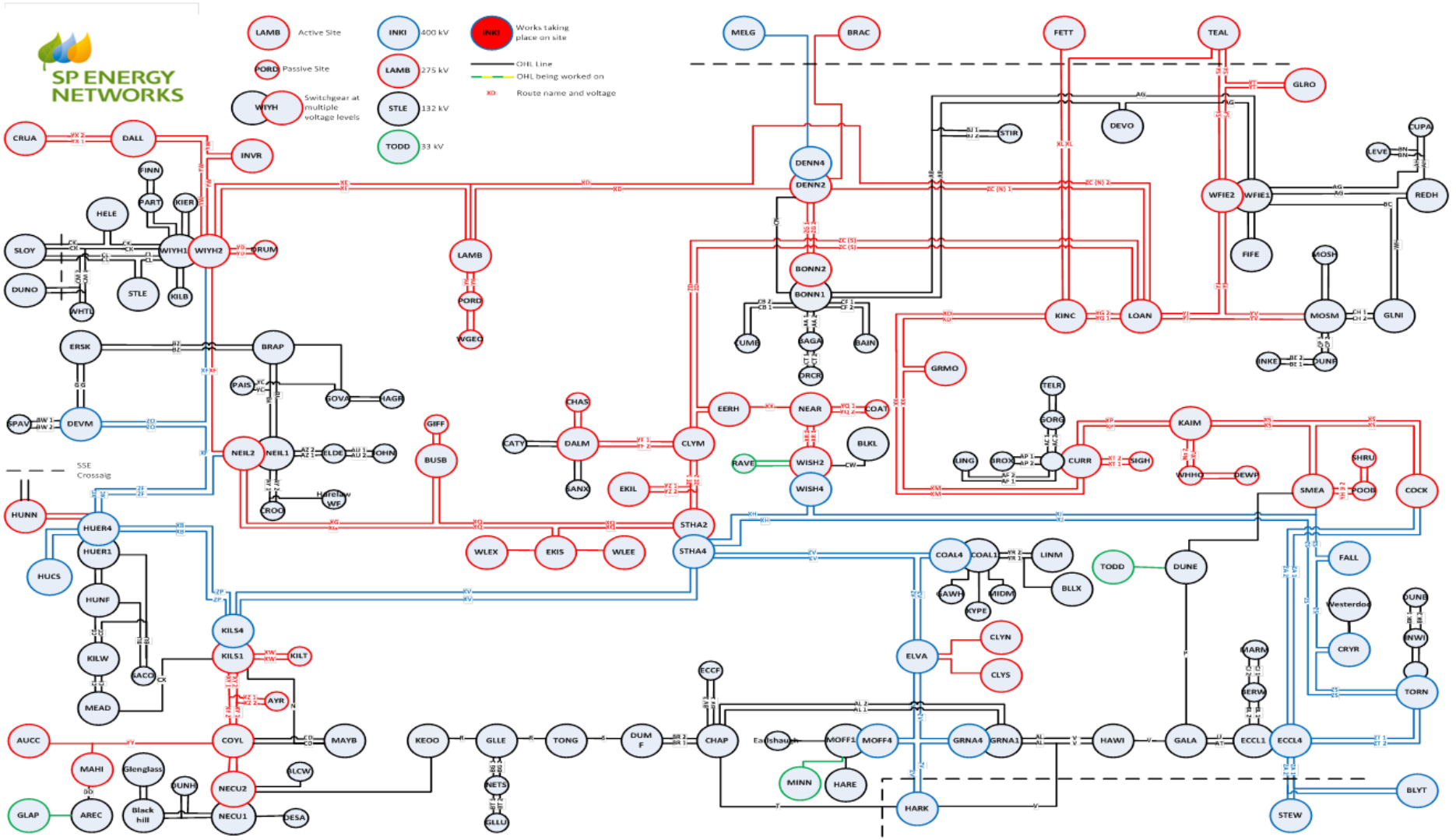
SP Energy Networks – “Network Operation & Enhanced Service Provision”

Overview of System Balancing Costs

September 2018 - £144.49m



SPT Grid System



2019 \ 20 - SP Transmission Outage Plan Summary

- *67 different projects included in the plan for this new outage planning year (50 projects in 2018\19)*
- *Key Main Interconnected Transmission system nodes being worked on in this new regulatory year*
    - *Currie*
    - *Kilmarnock South*
    - *Strathaven*
    - *Wishaw*
    - *Kaimes*
- *Key OHL Power Corridors being worked on in this new regulatory year*
    - *Kincardine – Currie – Kaimes – Smeaton - Cockenzie*
    - *Longannet – Mossmorran – Westfield – Tealing*
    - *Clydesmill – East Kilbride – Strathaven*
    - *Easterhouse – Newarthill - Wishaw*
- *Key locations being worked on where Generation customers \ stakeholders will be affected*
    - *Clyde South*
    - *Dunbar*
    - *Ewehill (new W\F connection)*
    - *Markhill (new W\F connection)*
    - *South & South West Scotland*

Background

- *"The relationship between the Electricity System Operator and the Transmission Owner is becoming increasingly important with strong interdependencies between the two. However, there is a gap in the current STCP arrangements where the Transmission Owner could agree to incur increased expenditure to reduce overall system costs."*

- *"Previously, there was no mechanism through which the Electricity System Operator can fund the Transmission Owner for carrying out works which lead to overall system cost savings. For example, the Transmission Owner could build a temporary tower so as to maintain a circuit operational when upgrading a section of the network, or add an additional shift of work to minimise the outage period."*

STCP 11.4 – Key Elements

"What have SP Transmission done to help reduce system costs"

- *STCP 11.4 has two types of enhanced service provision's offered by a Transmission Owner to the Electricity System Operator*

    i. *Commercial Operational Service (COS) – Where the cost of this service is <£1.4 million. ESO approval only*
    ii. *Joint Works projects (JW) – Where the cost of this service is >£1.4 million. ESO & Authority approval required*

- *Process design to be used for within year and long term planning timescales*

- *Process can be initiated by the ESO or the TO*

- *Designed to enable the ESO and TO's to work together to deliver works differently to reduce overall cost of system.*

Proposed Kaimes bypass for 2019

“SP Energy Networks - Enhanced Service to Generators”

SP Energy Network have changed our outage planning processes based on feedback received from our customer & stakeholders.

“what have we done”

- *Engagement – Ensure connected generators are part of the outage planning process so that suitable outage windows acceptable to both the generators & Transmission Owner are identified*
- *Communication – 1 to 1 stakeholder engagements sessions arranged with generators Bi annually.*
- *Analysis – Assisting generators with trip investigations*
- *Long Term Planning – Identifying network outages that will affect a generators ability to generate.*

“Transmission Owner – Generator Enhanced Service Trial”

SP Transmission are carrying out a trial with a connected generator, where the generator will pay the direct costs to SPT to change the design & deliver method of a large scale project that in turn will substantially reduce the outage period affecting them.

“what have we done”

- *SPEN’s long term outage planning process identified a 5 month outage that would affect a “T” connected generator*
- *Early engagement with Stakeholder has identified options to reduce outage period*
- *Using STCP 18.1 the stakeholder is requesting a “Mod App” that in turn will fund SPT to change the design & delivery stage of the project*
- *5 months original outage to be reduced to two 5 week periods, one summer \ one winter*

SP ENERGY NETWORKS

December 2018

Green Economy Fund

GREEN ECONOMY FUND

Green Economy Fund Criteria

SPEN has committed to voluntarily contribute up to **£20m,** funding initiatives that support Scotland's ambitious green energy plans

Priorities of the Fund:

- Renewable and low carbon innovative solutions
- Transport – supporting the uptake and infrastructure provision of Electric Vehicles
- Local energy systems – local solutions to match generation and demand
- Learnings and data to assess future impact of low carbon economy
- Provision of affordable energy for consumers – tackling fuel poverty
- Low carbon job creation
- Projects on the ground
- Geographical spread of project within SPEN operational area

Timescales	✓
Carbon Reduction	✓
Social and/or Economic Benefit	✓
Innovation	✓
Energy Ambition	✓
Learnings	✓
Funding Source	✓

This isn't just about green projects, but creating and accelerating a green economy!

GEF In the press….

HIGHLIGHTS

SCOTSMAN

ic bus
e saved
wer firm
funding

17th century park set for futuristic makeover

stv

Glasgow's electric bus scheme awarded £1.5million

GlasgowLive

Electric bus project gets green cash

AN electric bus scheme is among more than a dozen projects sharing in £6 million from a green economy fund.

The £20 million fund, established by SP Energy Networks, supports low-carbon transport and heating schemes.

The first round of funding has seen £1.5 million awarded to establish Glasgow's first permanent electric bus routes, the M3 First Glasgow service.

Two electric buses, manufactured by Alexander Dennis, will operate between Milton and the city centre, serving an estimated 200,000 passengers a year.

The council-operated 100 service connecting the Riverside Museum with Kelvingrove, the SEC and the city centre will receive three months' funding of £25,000. In Edinburgh, a mini hydro-electric scheme on the Water of Leith will

TRANSPORT

£1.5m award for green bus route

An electric bus scheme was among more than a dozen projects that shared in £6m from a green economy fund.

The £20m fund, established by SP Energy Networks, supports low-carbon transport and heating schemes.

The first funding round awarded £1.5m to Glasgow's first permanent electric bus route, the M3 service.

Two buses will run between Milton and Cowcaddens.

The Herald

i

■ AN ELECTRIC bus scheme is among more than a dozen projects sharing in £6million from a green economy fund.

The fund, established by SP Energy Networks, supports low-carbon transport and heating schemes. The first round of funding has seen £1.5million awarded to establish Glasgow's first permanent electric bus routes – the M3 First Glasgow service.

Mail Online

Electric bus scheme awarded £1.5 million

By PRESS ASSOCIATION
PUBLISHED: 10:02, 13 November 2018 | UPDATED: 10:02, 13 November 2018

Share

An electric bus scheme is among more than a dozen projects sharing in £6 million from a green economy fund.

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The council-operated 100 service connecting the Riverside Museum with Kelvingrove, the SEC and the city centre will meanwhile receive three months' funding of £25,000.

In Edinburgh, a mini hydro-electric scheme on the Water of Leith at Saughton Park will also receive cash, along with an app which tracks electric vehicle charging points.

Frank Mitchell of SP Energy Networks has announced awards totalling £6 million (Tony Marshall/PA)

FREE METRO

insider.co.uk

13 innovative projects awarded funding from £20m Green Economy Fund

UtilityWeek

EveningTimes

Museum bus link is saved after green energy firm's investment

BY CATRIONA STEWART

Funded Projects

Round 1

City of Edinburgh Council – Saughton Park Micro-hydro Project
Southern Uplands Partnership – Support Community Energy Action
Edinburgh World Heritage Trust – Canongate Housing Energy Efficiency & Conservation
Community Transport Glasgow – Keeping Mobile through Electric
Hawick Community Council – Hawick Community EV Car Club
South Ayrshire Community Transport – KA8 Electric Car Club
Clyde Gateway Developments Ltd – Clyde Gateway Community Energy Project
Sanctus Media Ltd – WattsUp App (EV Driver Assistance)
Community Energy Scotland – Communities Delivering Smart Energy Systems
Ettrick and Yarrow Community Development Co – Ettrick and Yarrow Smart Grid Demonstrator
Dumfries and Galloway College – Renewables Technology STEM Hub

GREEN ECONOMY FUND

Securing Glasgow’s only Electric Bus Service

Glasgow's Electric Route 100

SP ENERGY NETWORKS

TRANSPORT SCOTLAND

SPT

Glasgow CITY COUNCIL

GREEN ECONOMY FUND

Glasgow's First Electric Passenger Bus Service

Glasgow Bus

Working in partnership with:

First Bus

ALEXANDER DENNIS

SPT

GREEN ECONOMY FUND

Timescales – Round 2

ROUND 2		
MILESTONE	DATE	GUIDANCE
Expression of Interest live	**Early November**	Documentation and online form available on SPENs website.
Expression of Interest (EOIs) Closes	**7th December**	EOIs will be evaluated as received and applicants are advised to submit early. *The Round 2 EOI will close on the deadline or when quota of Expressions of Interest has been received.
Applicants contacted to be advised invited to submit an application.	**18th December**	Applicants that submitted early and pass the EOI will be sent the application form early. Depending on demand it is expected all Round 2 applicants that pass the EOI will be invited by 18th December.
Applicant Workshops	**Early January**	Applicants who submitted a successful EOI will be invited to attend workshops to help support and strengthen their formal application.
Deadline for full applications	**21th January**	Applications will be evaluated and assessed by an external panel.
Decision announced	**12th March 2019**	All medium and large grants will require additional due diligence and SPEN and its agents will work with applicants through this process.

Thank you for your time