

1<sup>st</sup> December 2016



## **Transmission Connections Summit**

**Welcome and  
Introduction**

**Scott Mathieson**

**Network Planning and  
Regulation Director**

# Agenda

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*10.00am Networking breakfast*

*10.30am Introduction – Scott Mathieson*

*10.50am DSO Vison– Gerry Boyd*

*11.10am BREAK*

*11.30am Transmission Investment Programme –Pearse Murray*

*11.50pm System Changes and TECA – Craig*

*12.10pm System Operator Update – Grahame Neale*

*12.30pm LUNCH*

*1.30pm Responding to a Changing Market- Scottish Renewables - Michael Riley*

*1.50pm Queue Management Policy Development – Deborah Macpherson*

*2.10pm Group Exercise*

*3.00pm BREAK*

*3.20pm Question Panel*

*3.50 pm Stakeholder Engagement Survey – Cathie Hill*

*4.00pm Close*

## Introduction : The Aim of this Summit



To engage with you on our activities as a Transmission Owner and how we see the landscape evolving and the challenges this is presenting.



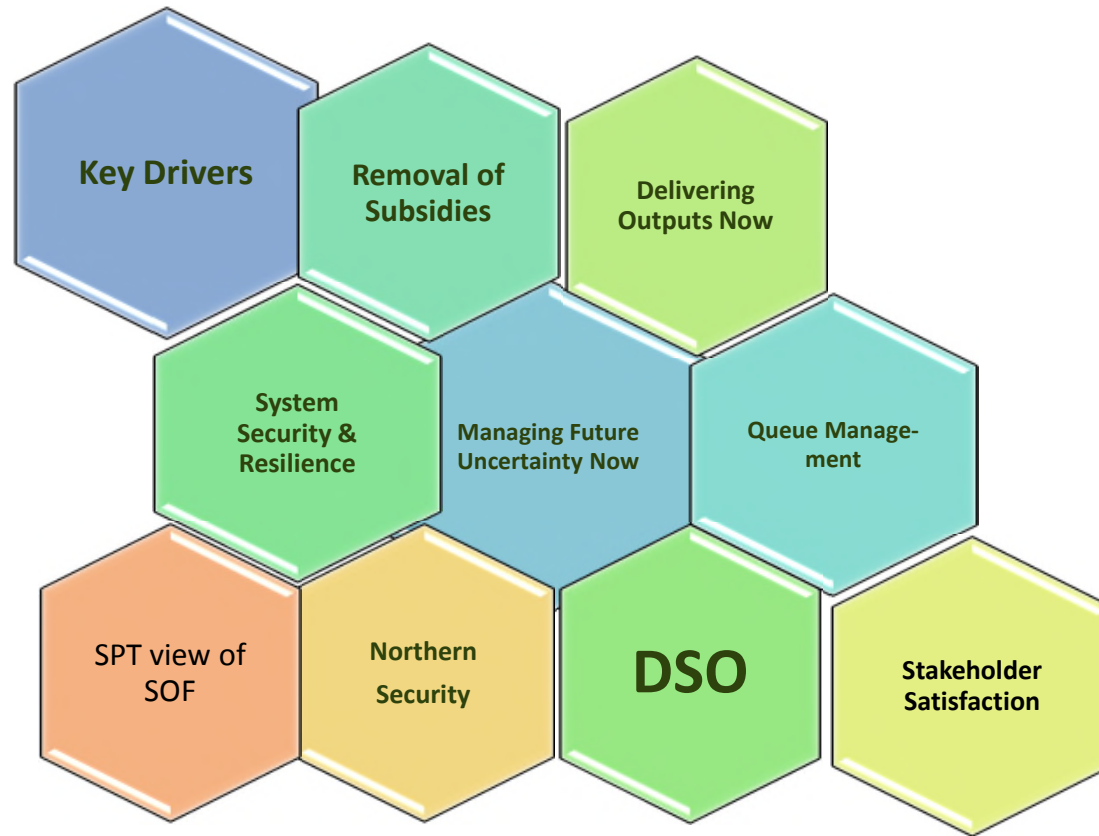
To gain some insight into the challenges and issues faced by Developers in a subsidy free world and what we can do to improve our service and increase stakeholders' satisfaction.



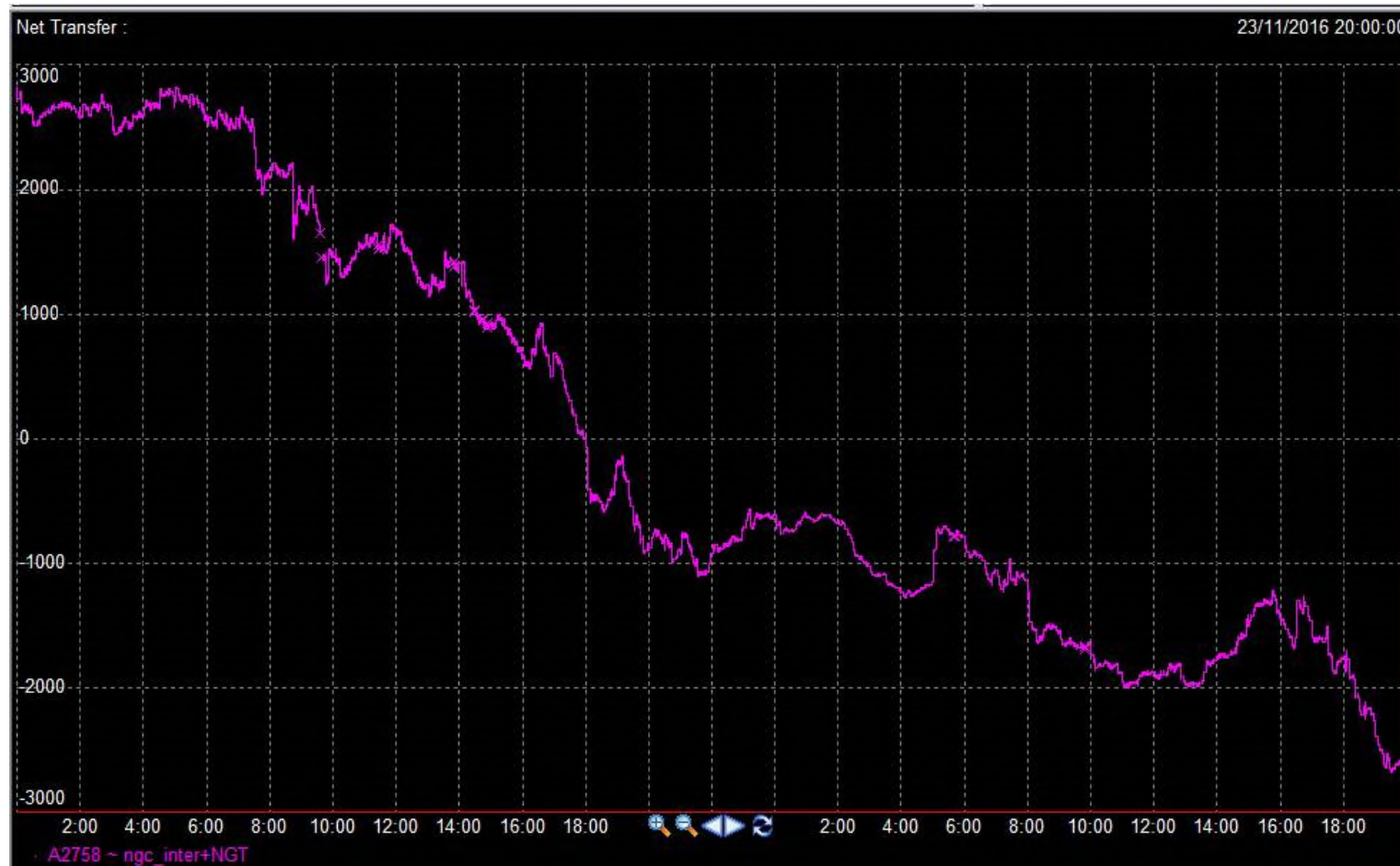
To understand what the future transmission system will look like and what we need to do to get there.

# What We will Cover Today

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## System Security and Resilience – SOF NATIONAL GRID VIEW



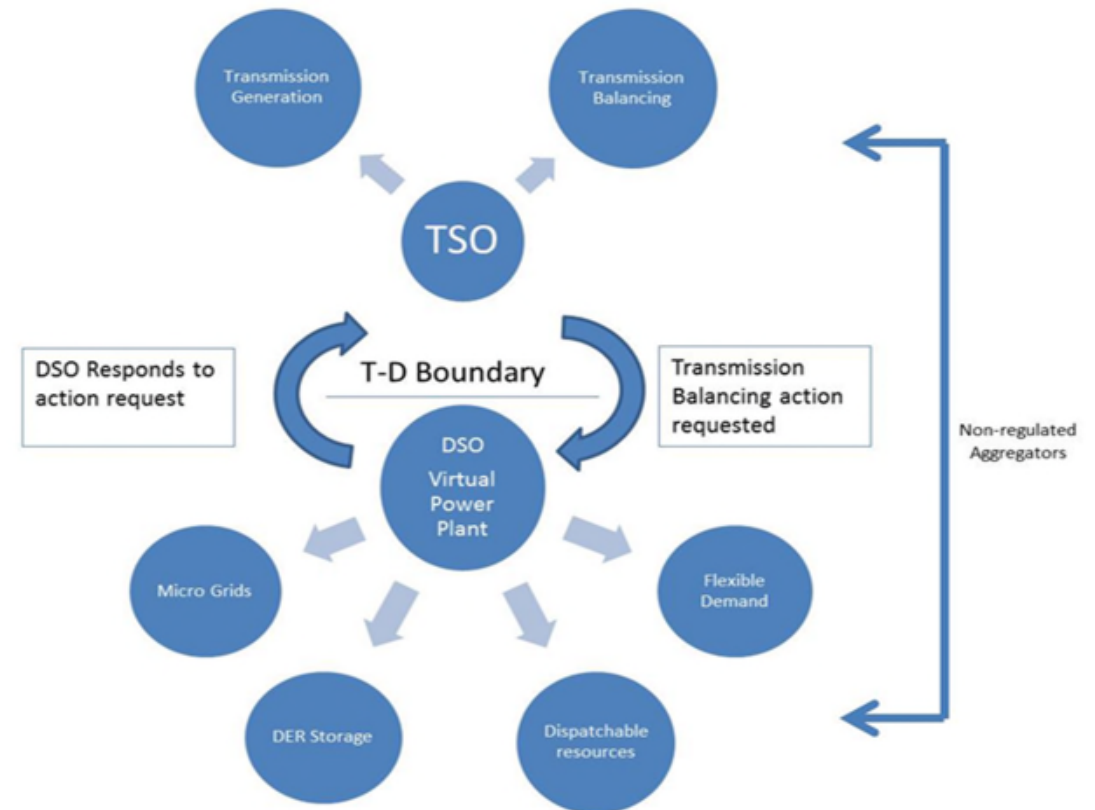
## Northern Security: WORKSTREAM OUTLINE

<b>Black Start (Resilience)</b>	<p>To evaluate Black Start capability and develop a zonal approach to restoration.</p> <p><b>It will deliver:</b></p> <ul style="list-style-type: none"><li>■ Revise LJRP</li><li>■ Develop a zonal restoration approach.</li><li>■ Update previous Black Start probabilistic analysis.</li></ul>
<b>Security</b>	<p>Focus on demand security with closure of nuclear, coal and gas generating plant.</p> <p><b>It will deliver:</b></p> <ul style="list-style-type: none"><li>■ Winter peak demand boundary capabilities for northern boundaries B0 to B7a.</li><li>■ Summer peak system access restrictions to maintain demand security.</li></ul>
<b>Operability (Voltage Control)</b>	<p>To analyse declining demands during summer minimum periods.</p> <p><b>It will deliver:</b></p> <ul style="list-style-type: none"><li>■ A range of commercial, operational and network based solutions for voltage management.</li></ul>
<b>Operability (Stability)</b>	<p>Focus on rotor angle and voltage stability with reduced synchronous generation and short-circuit levels. <b>It will deliver:</b></p> <ul style="list-style-type: none"><li>■ A range of commercial, operational and network based solutions (reinforcement/reconfiguration) for rotor angle stability and voltage stability management.</li></ul>

# Why Our DSO Vision is Important to the Future Transmission System

## Develop & Implement a SMART Zone

- Strong industry & regulatory focus in greater collaboration between the DNOs, TOs and SO
- SPD and SPT will jointly develop a SMART Zone for D&G building the foundations for the longer term DSO business model
- **Phase 1**  
SMART Zone Architecture Development  
Completion by Q1/Q2 2017
- **Phase 2**  
SMART Zone Formation  
Completion by 2021



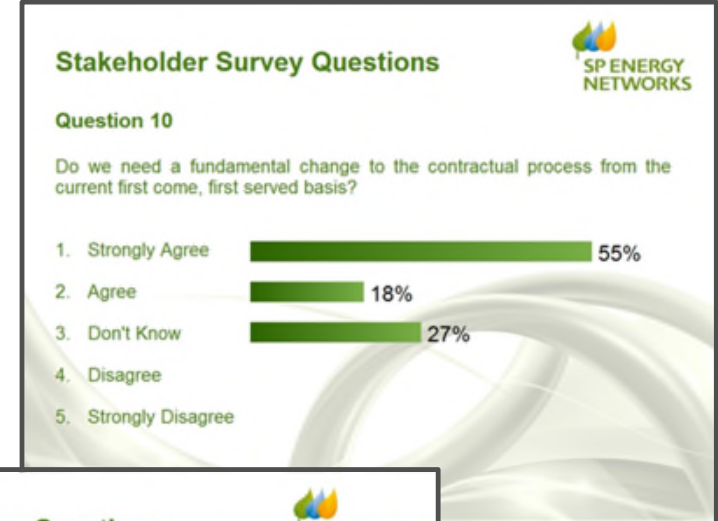
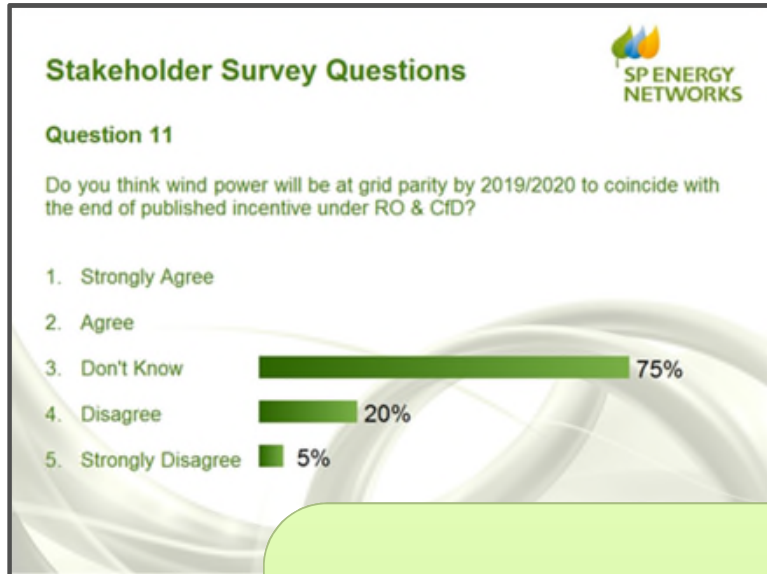
## Aims - SMART Zone Architecture Development

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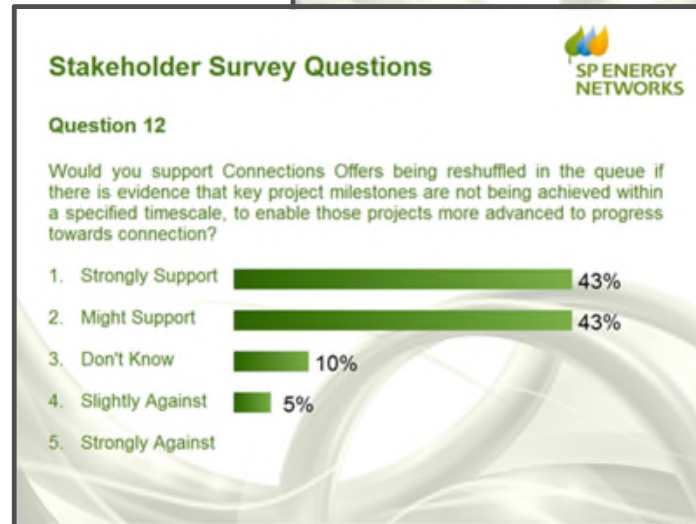
- Development of geographical T&D Active Network Management
- Flexible connection solutions for connection of generation
- Explore ways to 'ring-fence' the 11kV network to minimise any impact of cumulative generation on the 33kV and 132kV networks
- Greater control for SPD to connect DG and manage network access
- Maximise the non-firm capability of the 132kV and 33kV network
- Building foundations across T and D boundary for DSO
- Breaking new ground – development of new innovative approach to design and commercial solutions



# Feedback from Previous Seminar



2 years ago you told us the future was very uncertain, the contractual process needed to change and the Connections Queue should be fluid.





# The Future of DSO Services

## Recognising a need for change

### Widespread penetration of DG



### The closure of Thermal Plant



### Low Carbon Technology Uptake



### Step Change in Smart Players



### Challenges

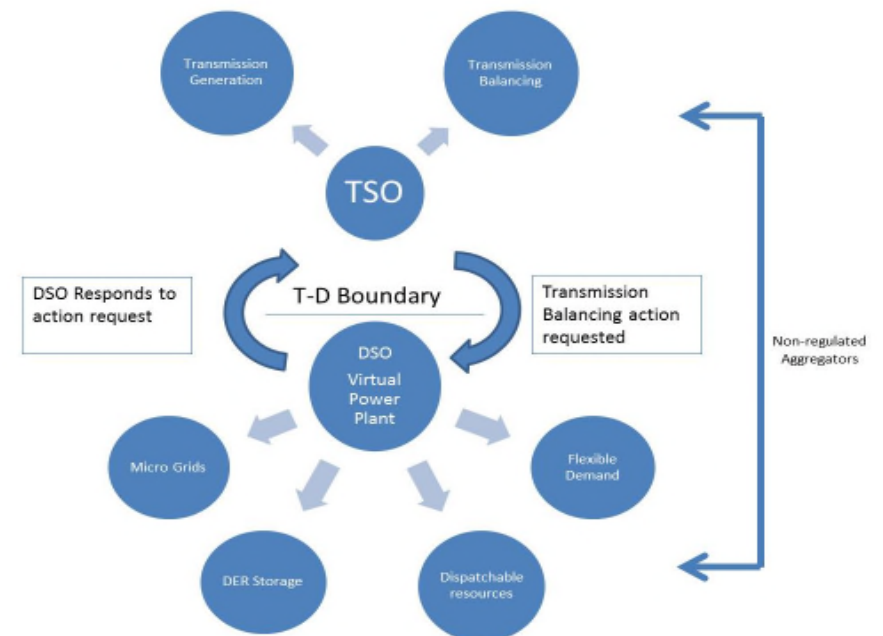
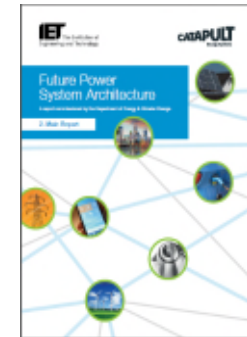
- Now over 27GW of DG connected in the UK
- The closure of thermal plant is changing the way we need to manage the network
- Heating and Transport contribute ~40% of the UK's CO2 emissions -> **EVs and EH**
- The way people interact with the electricity grid is changing; **prosumers, smart cities**

There is an emerging need to understand and control the network in real time

## The changing role of Distribution Network Operators

There is widespread UK and International opinion that the role of DNOs needs to change to meet future challenges

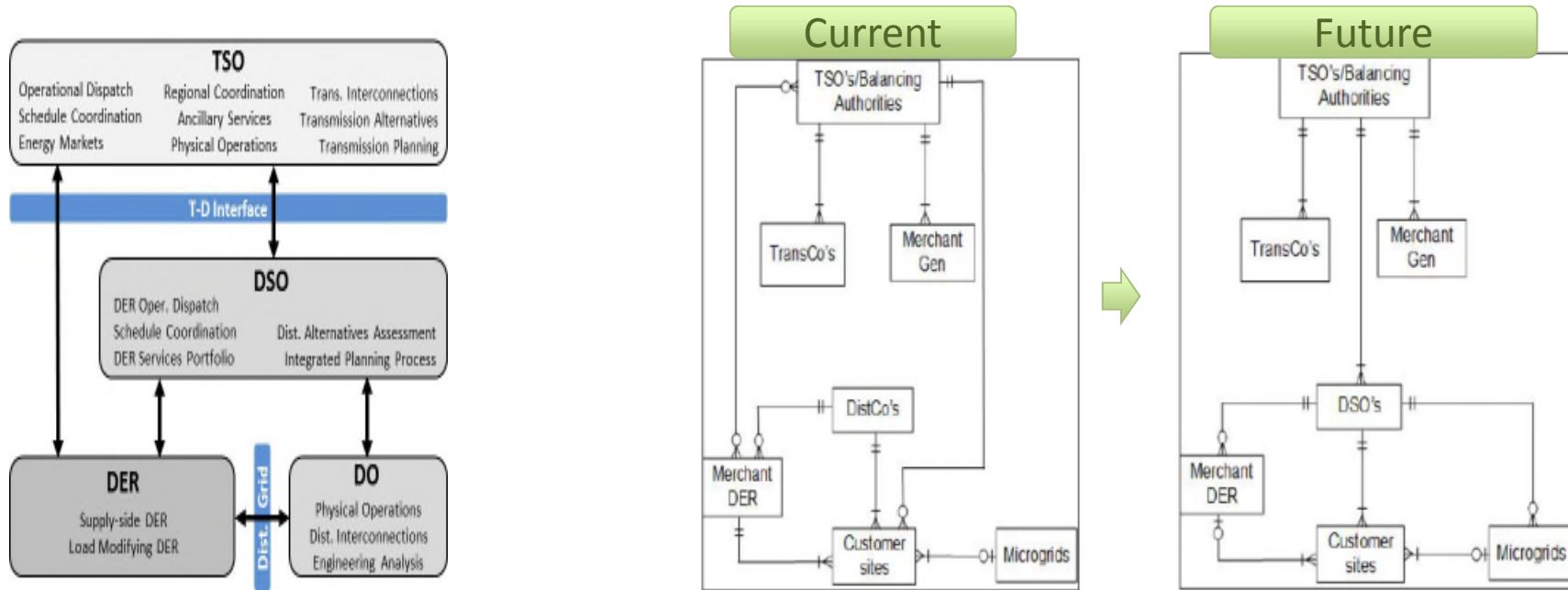
- IET and the Energy Systems Catapult have jointly published their report on the Future Power System Architecture, sponsored by BEIS - July 2016
  - Focuses on 7 key drivers and 35 functions that a Future Network will require
- BEIS/Ofgem published their Call for Evidence on Future Energy Systems on the 10<sup>th</sup> of November.
- Key that Government, network operators and wider industry work together to develop a viable DSO model



## What is a DSO?

There are a wide range of interpretations of a DSO, but common agreement:-

- That it will involve real time management of Distributed Energy Resources
- That it will require improved communication and interaction with the Transmission System Operator and with service providers

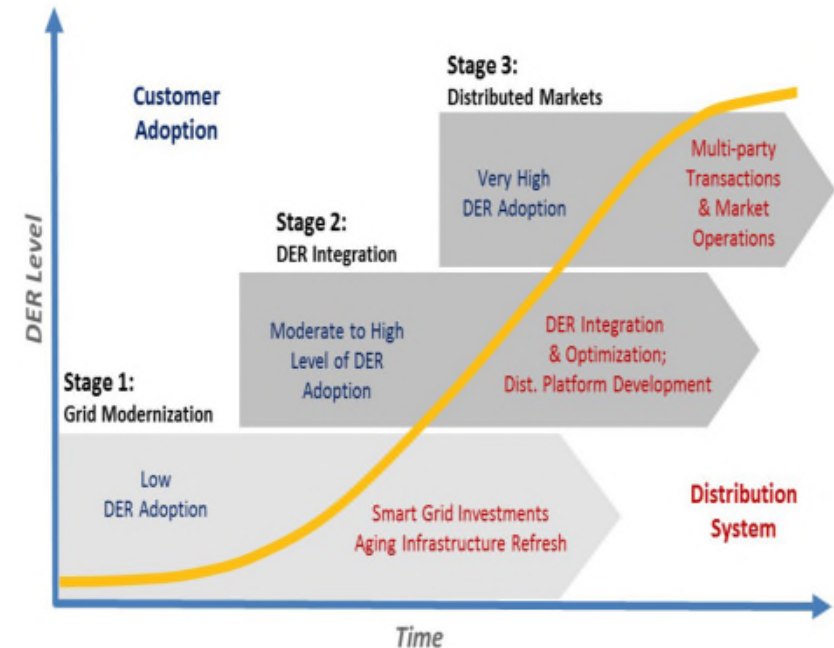


Who, when, commercial arrangements, licencing all have a range of opinions

## Our DSO Vision

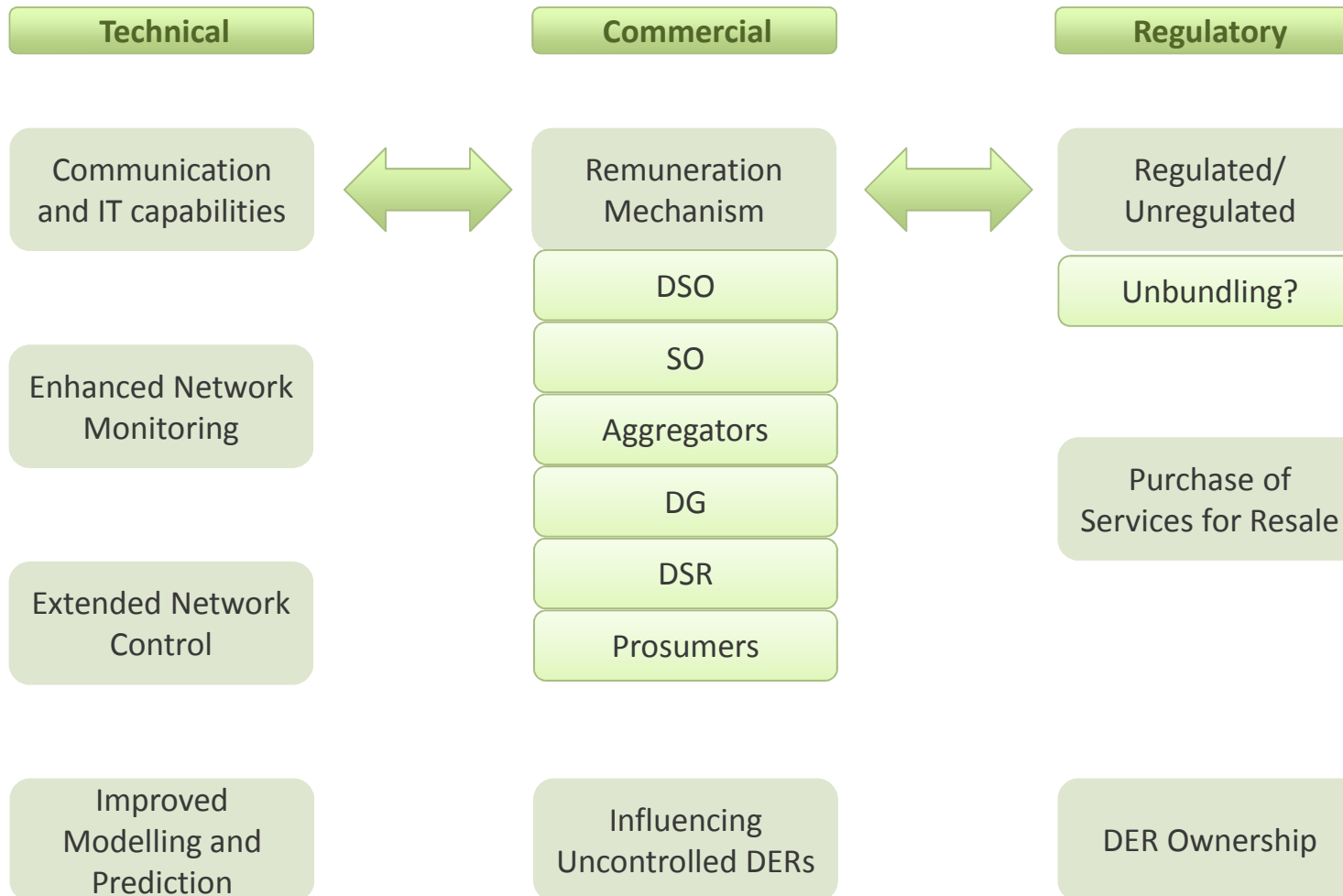
Our Vision is that SPEN will become a DSO:-

- Which will facilitate an open and inclusive balancing services market at the Transmission/Distribution interface. We will also carry out local system balancing, efficiently utilising the Distribution network
- We will continue to improve the level of customer service and manage system security in line with our current role as a DNO.
- We will enact balancing actions that best meet the needs of the SO and the capabilities of connected DERs.
- The transition to a DSO will be both modular and proportionate.
- Working with key stakeholders to develop and implement a fair and cost effective remuneration mechanism for DSO services and DER providers.



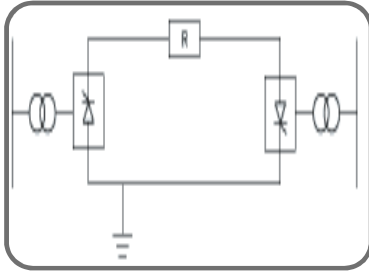
Transitioning to a DSO needs to demonstrate lowest overall cost for UK customers

# Key Enablers



## Innovation

### Innovation underway



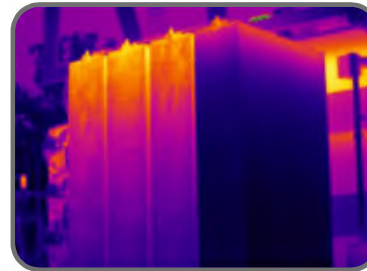
MVDC Circuit

~25% increase in capacity



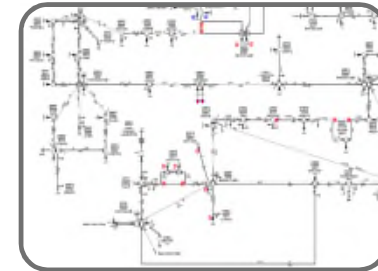
Voltage Optimisation

1-2% increase in capacity



Dynamic Ratings

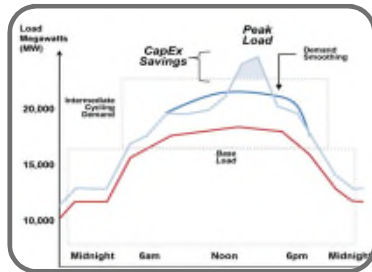
10% increase in capacity



ANM

10-20% increase in Capacity

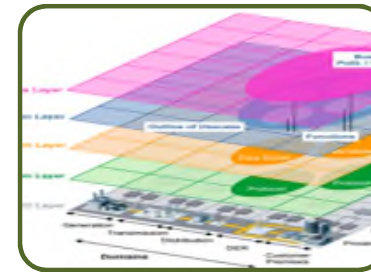
### Innovation opportunities under investigation



Demand Side Response



Energy Storage



INSPIRE

**Development of a smart grid test bed in North-Wales and Dumfries and Galloway for the future DSO model**





1<sup>st</sup> December 2016

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**Transmission Connections  
Summit**

**Transmission Investment  
Programme**

**Pearse Murray**  
Transmission Director

## Overview of Transmission Business

Units (kwh) transported over our network

36,000,000,000

% Network reliability

99.99998

Average annual investment

£337,500,000

Annual contractor hours worked

2,100,000



## Status of Key Strategic Upgrades

Project	Status
Beaully Denny	Complete
South West Scotland	In construction, phased commissioning, phases 2-4 2017
3.3GW Upgrade (MSCDN)	Complete
4.4GW Upgrade (Series Compensation)	Constructed, final protection commissioning 2017
4.4GW Upgrade (East West 400kV Uprating)	OHL upgrade complete, final cable section in construction. Commissioning 2017
East Coast and Central Upgrades	On hold
West Coast HVDC	In construction, commissioning 2017
Hunterston Kintyre	Complete
East Coast HVDC	On hold
Dumfries and Galloway	In development, scale reduced in 2016



## Highlights Since Last Year....

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- Completed the 240MVA Hunterston-Kintyre subsea link in conjunction with SHETL
- Commissioned new 400kV GIS substations at Hunterston East and Wishaw
- Upgraded the overhead line from Kilmarnock South to Auchencrosh using first large scale UK deployment of 'High Temperature Low Sag' conductor. Added 420MW capacity Auchencrosh to Coylton and 860MW Coylton to Kilmarnock South
- Commissioned the first phase of SWS, the 275kV infrastructure from Coylton to New Cumnock. Total investment of £80M in progressing the SWS scheme
- Completed construction of all 4 Series Compensation units and Central Belt overhead line upgrades required to deliver a 1.1GW increase in Scotland-England power transfer
- Connected 138MW of renewable generation with a further 398MW due before the end of the year
- Revised our proposals for asset modernisation and reinforcement in the Dumfries and Galloway region
- Modernised 55km of overhead line and replaced 14 circuit breakers, around half of all non-load RIIO-T1 outputs now complete



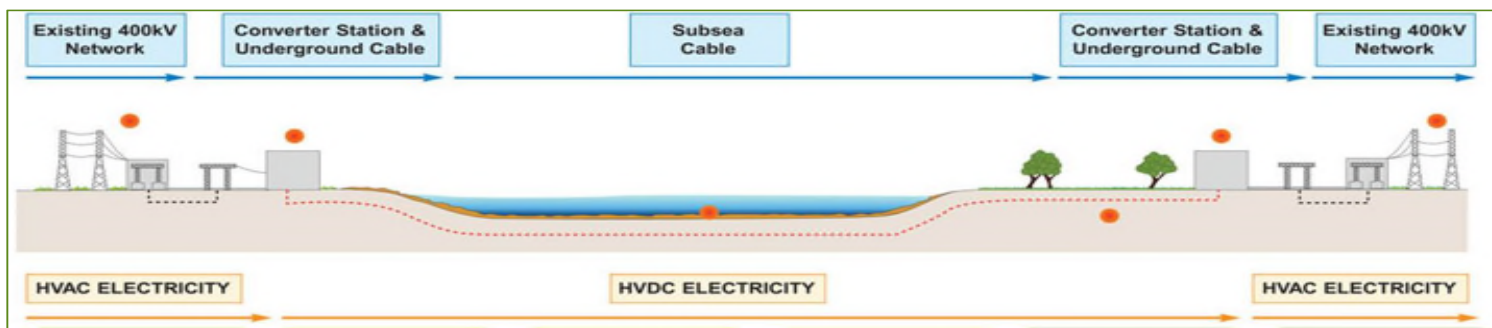
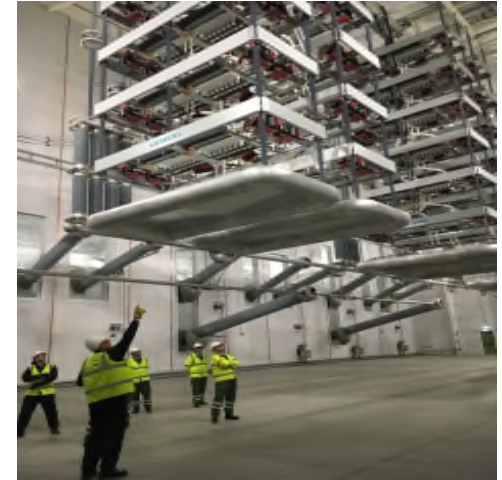
## South West Scotland

- Project made up of 4 phases, phase 1 (275kV) complete, phases 2 to 4 (132kV) underway
- Requires 65km of access roads, 3 million tonnes of stone, 5 new quarries, clearance of 175,000 tonnes of trees
- First windfarm energised August 2016
- 76km of 132kV overhead line in construction supported on 237 towers
- First tower erected last week
- 3 'collector' substations being built - 11 132/33kV transformers being installed
- Programme progressing in line with contracted connection dates



## Western Link HVDC

- 2.2GW link between Flintshire Bridge in Wales and Hunterston in Scotland. 420km cable route (2 poles) operating at 600kV.
- Largest link of its type in the world
- £1.2 Billion investment, in joint venture with National Grid
- Converter station construction now well advanced – Flintshire Bridge has been partially commissioned and Hunterston is nearing end of construction phase
- Approximately 600km of land and subsea cable now installed
- AC cables and 400kV connection points at both ends complete
- Commissioning of full link planned for Summer 2017



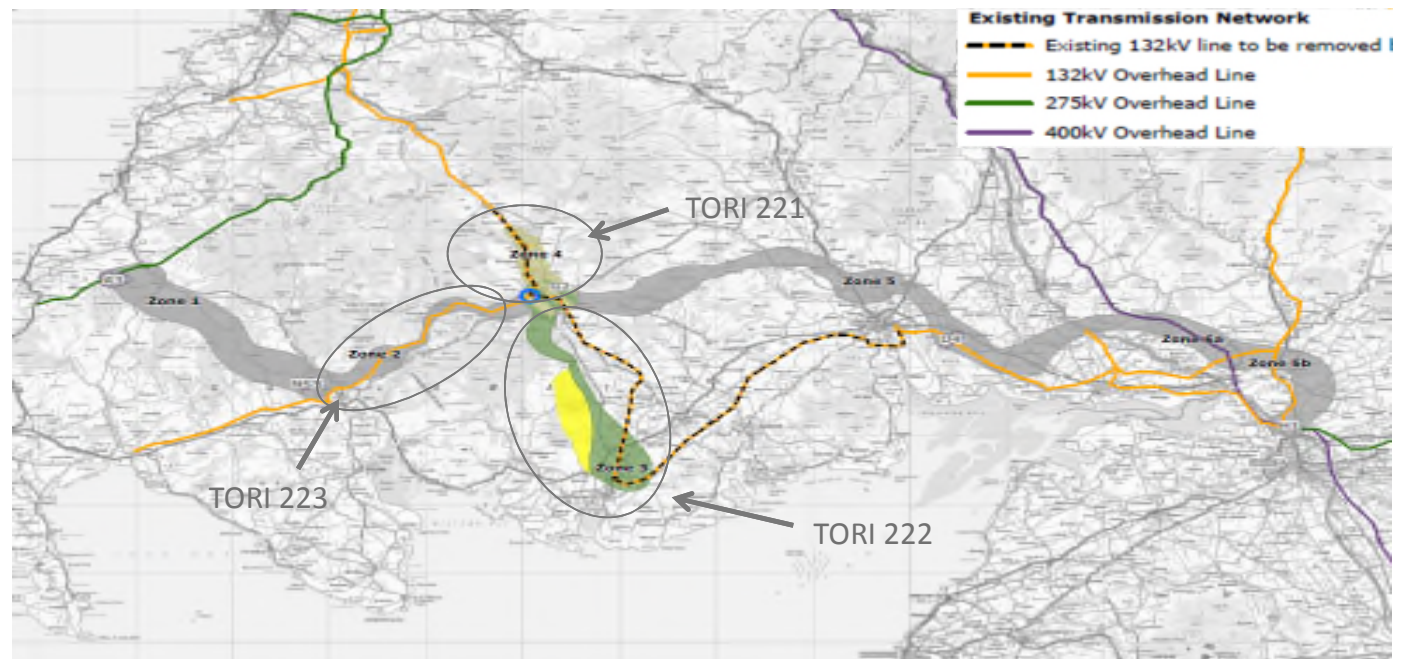
# Western Link HVDC

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## Kendoon to Tongland Reinforcement (KTR) Project

- The original Auchencrosh to Harker SWW project was consulted on in 2015
- Cost Benefit Assessment (CBA) identified that the full scheme was not economic
- KTR project now being progressed is significantly reduced in scope, scale and only partially meets the original project drivers
- Completion by 2023:
  - Kendoon to Glenlee Reinforcement (TORI 221)
  - Glenlee to Tongland Modernisation (TORI 222)
  - Glenlee to Newton Stewart Reinforcement (TORI 223)
  - New Cumnock SGT2B (TORI 213)
- 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

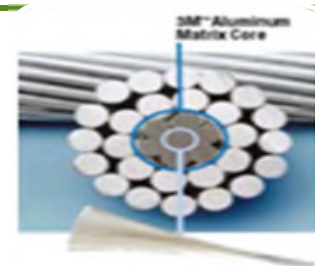




## Innovation in Transmission

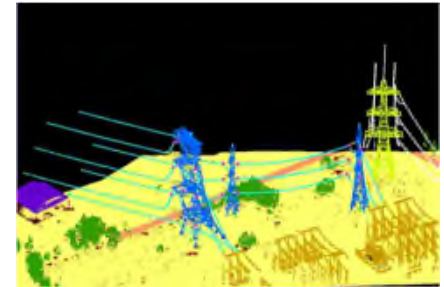
Only Transmission Company to make full use of all of the RIIO-T1 innovation mechanisms

- West Coast HVDC
- New Generation Conductor Systems
- Digital Substations, FITNESS
- Onshore Interconnector Upgrade
- VISOR
- Transmission Local Inertia
- Synchronous Compensation



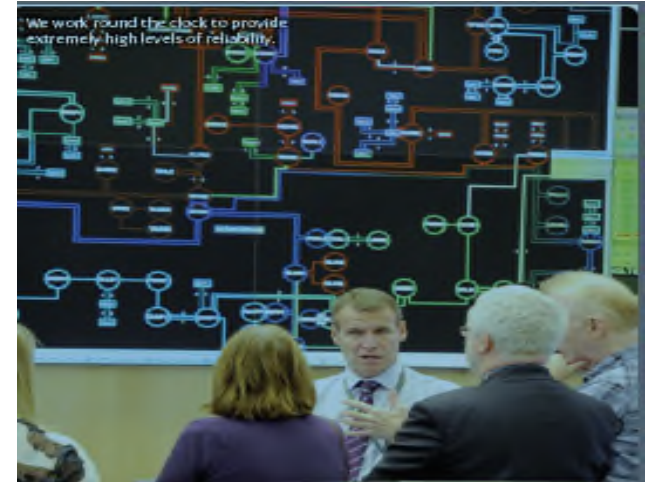
## RIIO-T1 Incentive Performance

- Energy Not Supplied
  - Only 13.9MWhrs of energy not supplied in 2015/16, well below incentive target of 225MWhrs.
  - Network reliability 99.99998%
- SF6 Emissions
  - Annual losses of 441kg, below incentive target of 618kg  
Exploring ways to deliver further cost effective reductions, including alternative environmentally benign gas
- Environmental Discretionary Reward
  - Recognised by Ofgem's expert panel as the industry leader in sustainability management



## RIIO-T1 Incentive Performance - Stakeholder Engagement

- At the heart of our structure
- Actively seeking input to help us take our business in the right direction
- Key Regulatory measures
  - KPIs
    - Score 73%
    - Key metrics on our part of the offer process, delivery of major projects
    - Expanding coverage in 2016/17
  - Expert Panel review
    - Submission highlighting key engagement, followed by Panel session
    - 6.25/10 – best transmission score
  - Survey
    - Score last year 6.9/10
    - Reviewing our approach to make it easier to act on feedback



As part of this year's annual survey, an independent company will be in touch with you after this event to seek your views



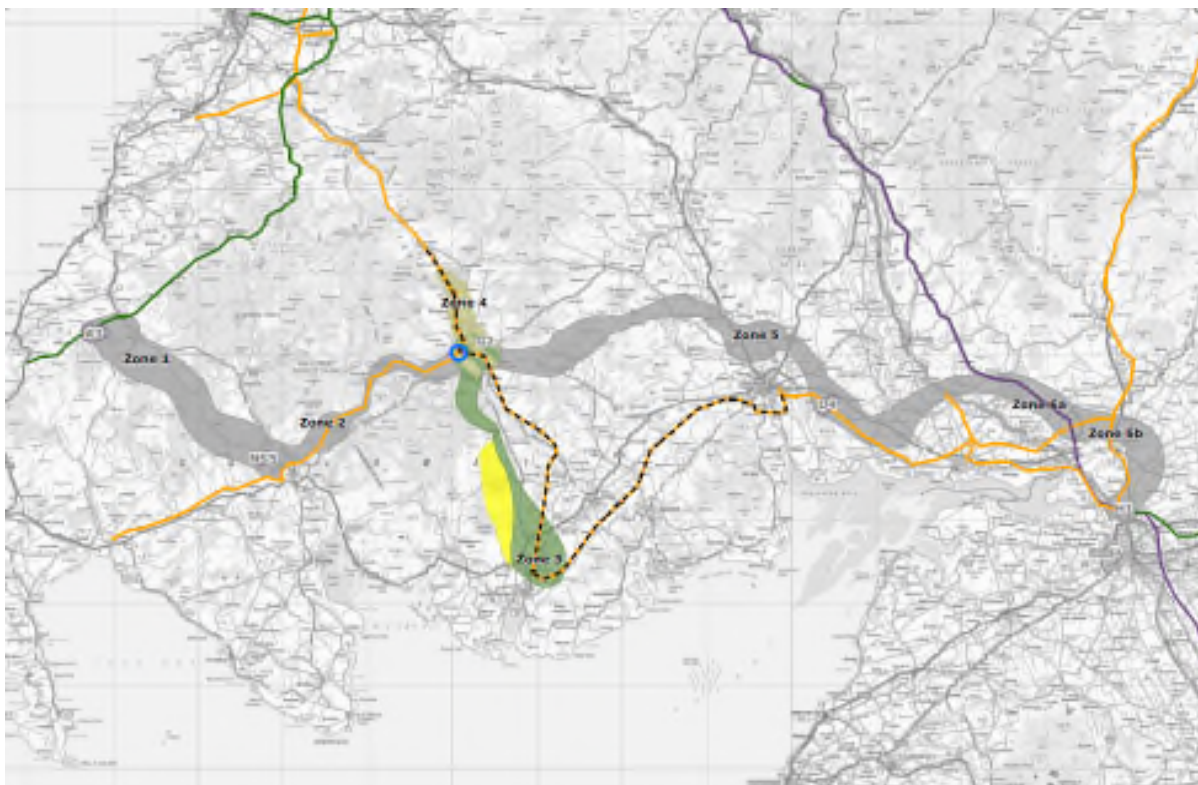
**Network Planning & Regulation**

1<sup>st</sup> December 2016

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# **Dumfries and Galloway**

## Dumfries and Galloway Reinforcement

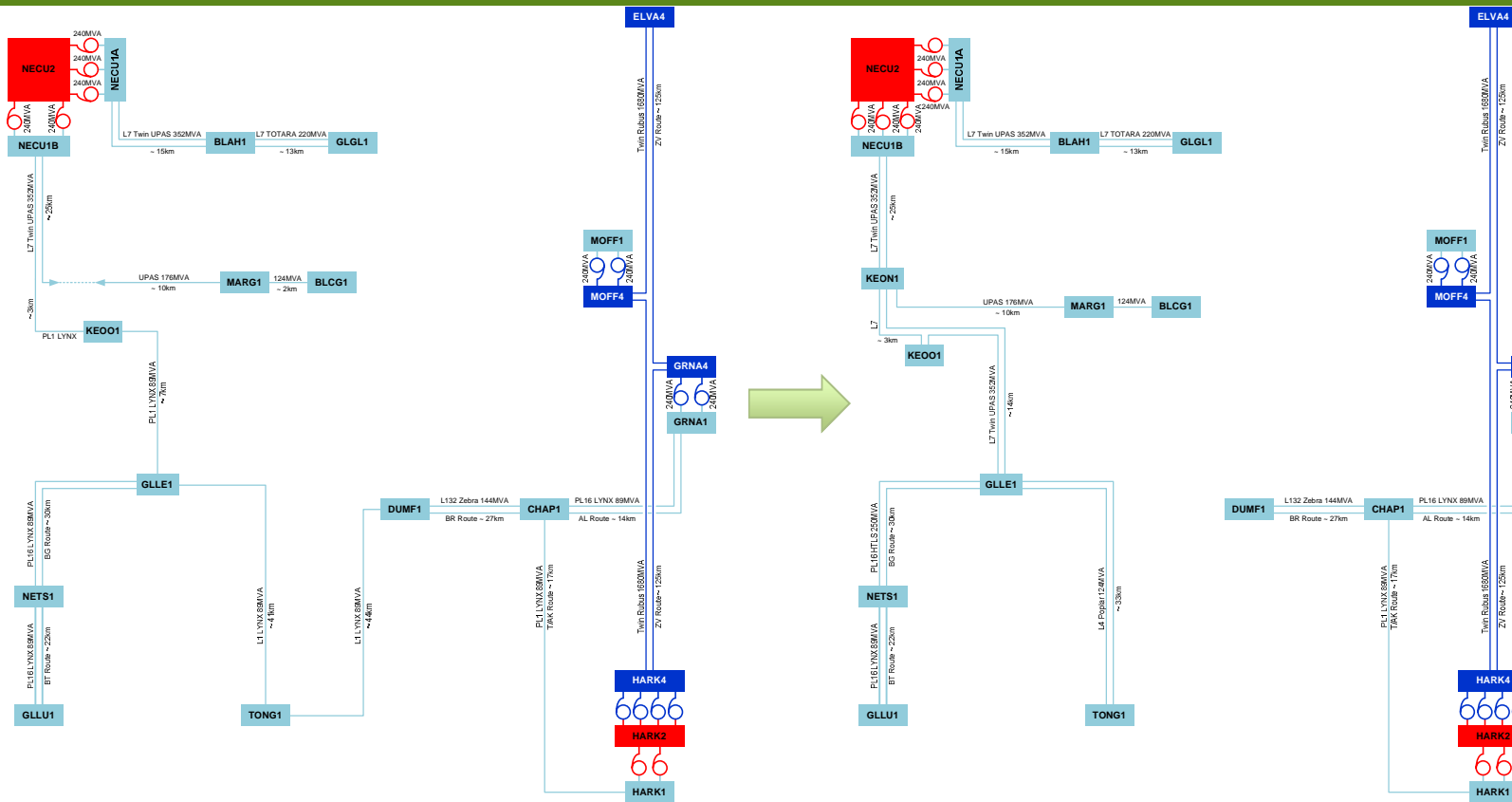


Original 400kV supergrid network from Auchencrosh to Harker proved to be uneconomic

A reduced radial 132kV network will be developed instead “Kendoon to Tongland Reinforcement”

This was based on the conclusions of cost benefit analysis works carried out by NGET SO and SPT

# Schematic of the proposed system



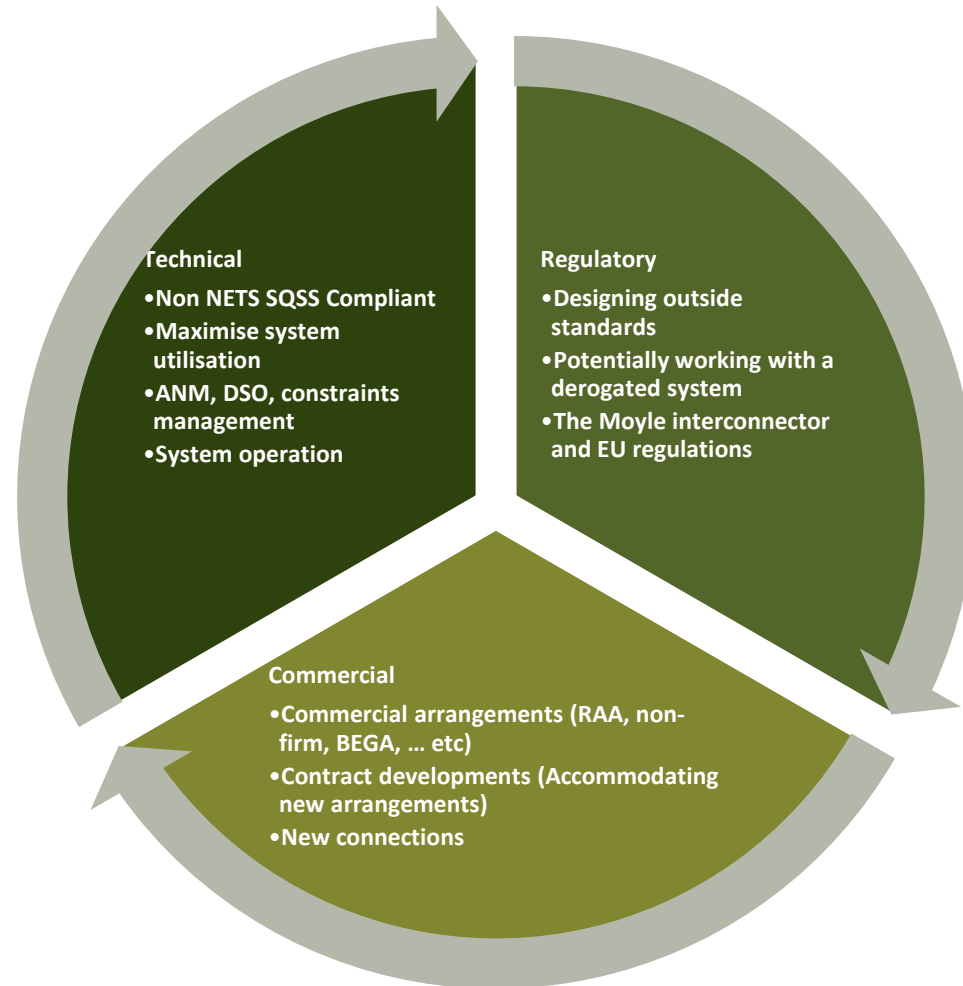
The KTR project builds on developments in South West Scotland and replaces the interconnected 132kV system with a radial one

It enables the replacement of ageing assets and provision of enhanced capacity to the network in Dumfries and Galloway

The CBA concluded that 95% of the volume of generation will flow to the wider system without any constraints

# Future Challenges

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# Managing Uncertainty - TECA



## Managing Uncertainty - Objectives

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- Provide infrastructure that is:
  - Appropriately sized
  - Timely
- This will
  - Provide access to Users when it is required
  - Minimise the risk of unnecessary or stranded assets



## Managing Uncertainty – Cause and Effect

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- Uncertainty is normal, however:
  - Subsidies position for on-shore wind is a significant change
- We have seen
  - Significant volatility in connection dates
  - Variations in required connection capacity



## Managing Uncertainty – Transmission Economic Connections Assessment

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- TECA is an engineering, commercial and financial assessment:
  - Terminations or delays
  - Consents status
- Re-assess the works
  - Scalable solutions
  - Innovative approaches
  - Where possible, defer to allow certainty to develop

### Best View Assumptions:

#### High :

- Any projects with consent and in construction
- Any projects with consent and a date pre March 2018
- Any projects with consent and a date pre March 2018 and no works

#### Medium :

- Subject to Government Legislation re ROCs
- Subject to information available on project

#### Low :

- Any projects without consent and a date post March 2018
- Assumed that there will be no further CFD for onshore wind



## Managing Uncertainty – Transmission Economic Connections Assessment

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- **Alternative Solutions**
  - Reconductor using HTLS
    - Avoids line re-builds
    - Defers investment
  - Tee into lines, build substation later
- **Works Triggered**
  - Alternatives exhausted or not feasible
  - Works need to progress to meet programmes
  - Close liaison with NGET to minimise risk





Network Planning & Regulation

1<sup>st</sup> December 2016

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# Security of Supply

## Security of Supply – South Australia 28/09/16

- Severe weather caused a number of faults on the 275kV system
- Unexpected sustained reduction of 445MW of wind generation (23% of demand)
- Subsequent overload & trips on circuits to neighbouring state
- Rapid drop of system frequency
- Complete system collapse



## Security of Supply – South Australia 28/09/16

- Wind output reduction due to turbine Fault Ride Through settings
- Lack of frequency responsive generation in SA network
- Fall in frequency could not be arrested by demand disconnection
- Black Start restoration impeded by generating plant failures



## Security of Supply - Generation Background Change

- Significant loss of flexible and demand responsive generation in Scotland.  
4.9GW
  - 123MW Fife Power
  - 196MW Chapelcross
  - 1124MW Peterhead (unavailable to the market)
  - 1152MW Cockerzie
  - 2304MW Longannet
- Hunterston likely to close by 2023
- Torness likely to close by 2030





## Security of Supply - Scottish Import Requirements

- Probabilistic modelling study on the requirements of the Anglo-Scottish connection completed in 2016
- Post-Nuclear, 99.9% confidence that all demand can be met with 4GW of import capability



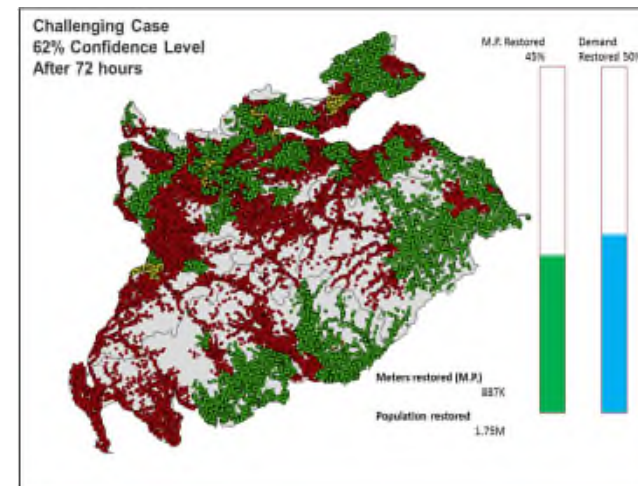
## Security of Supply - Scottish Network Resilience

- However, vulnerable to severe weather
- Very limited frequency-responsive generation in Scotland
- System stability degrades with closure of large thermal generators



## Security of Supply – Black Start

- Partial or total system shutdown
- For central Scotland, a Black Start would be a 5+ day event
- Reliance on England & Wales system for restoration
- A challenging scenario but without significant damage results in, for 62% of events modelled, only 50% of demand being restored in 72 hrs
- New Black Start Task Group Established by BEIS



## Scottish Network Resilience – Next Steps

- Work with GBSO to understand generator responses during fault sequences
- Review demand disconnection and system defence schemes
- Review of GB-wide strategic response plans



## System Operator Update

Grahame Neale  
Electricity Connection Contracts Manager

## Our connections team has changed

**Julian Leslie**  
Electricity Network Development Manager

**James Kerr**  
Electricity Connections Contracts Team Manager (Scotland)  
james.kerr@nationalgrid.com & 01926 654904

**James Abrahams**  
Electricity Connections Contracts Team Manager (E&W)

**Grahame Neale**  
Connection Contract Manager

**Ali Harper**  
Connection Contract Manager

**Stacey McLanaghan**  
Connection Contract Manager

**Deepak Solanki**  
Connection Contract Manager

**Michael Dutton**  
Connection Contract Manager

**Bilal Khan**  
Connection Contract Manager

**Chris Thackeray**  
Connection Contracts Manager

Vacancy

## Flexible Statement of Works

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- A number of 'small' embedded generators have a **Bilateral Embedded Generation Agreement (BEGA)** with National Grid to enable early 'non-firm' system access.
- This type of agreement requires the User to be a **Balancing Mechanism (BM)** party, and install a range of **equipment (EDT/EDL)**. We know that many Users do not want to be active BM participants, therefore installing this equipment is costly and unnecessary.
- We are working with SP Energy Networks to **remove the requirement** for BEGAs which will be replaced with **Flexible Statement of Works** agreement – removing the need for a BEGA.
- For more information, please discuss directly with your National Grid **Connection Contract Manager** and **SP Distribution**.

## Queue Management – Policy development

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- We are currently working on proposals to manage the **GB connections queue** more effectively.
- A workshop was held in October to discuss **possible options** for queue management with our customers and stakeholders.
- The proposals will be discussed further in the customer seminars in January to give all our customers an opportunity to get involved in **shaping the outcome**.
- Based on our customers' views, we will **look to develop one of the options** further and will provide a further update by March 2017.



## Working Together with SP Energy Networks

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- We work closely with both SP Transmission and SHE Transmission.
  - In the coming months we plan (as a working group) to **review** our obligations with the **System Operator Transmission Owner Code (STC)**. This *may* trigger STC and CUSC **changes**. We hope this will **improve** the connections process for Customers and each company.
- Dumfries & Galloway
  - ~30 agreements to be amended ahead of **January** security statements.
  - Commercial & technical solutions to constraint management required – currently under development
  - DSO trial area - we are supportive of this approach.

# Charging Review

 <p><b>Market Developments</b> <i>Regulatory developments including evolution of European arrangements</i></p>	 <p><b>Distributed Generation</b> <i>Increased penetration of distributed energy sources</i></p>	 <p><b>Smart &amp; HH Metering</b> <i>New consumer technologies</i></p>	 <p><b>Facilitating Flexibility</b> <i>Demand side response, energy storage, DSO</i></p>	 <p><b>Predictable Charges</b> <i>Improving our forecasts and removing volatility</i></p>	 <p><b>Reflecting Sunk Costs</b> <i>Ensuring recovery of revenue in a fair manner from users</i></p>
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For further information visit  
[http://www2.nationalgrid.com/UK/Industry-information/System-charges/Electricity-transmission/charging\\_review/](http://www2.nationalgrid.com/UK/Industry-information/System-charges/Electricity-transmission/charging_review/)

We are also hosting a special Transmission Charging Methodologies Forum on the charging review on 8<sup>th</sup> December.  
If you would like to attend, contact : [cusc.team@nationalgrid.com](mailto:cusc.team@nationalgrid.com)

## Have you seen?

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- **Electricity Ten Year Statement (ETYS) & System Operability Framework (SOF)**. Launched 30<sup>th</sup> November.
- **Customer Seminar** invites (by email) – 10<sup>th</sup> January (Glasgow) & 17<sup>th</sup> January (London).
  - Topics include: Future of the System Operator, Future of the System – Operability & Challenges, interactive sessions and Expos.



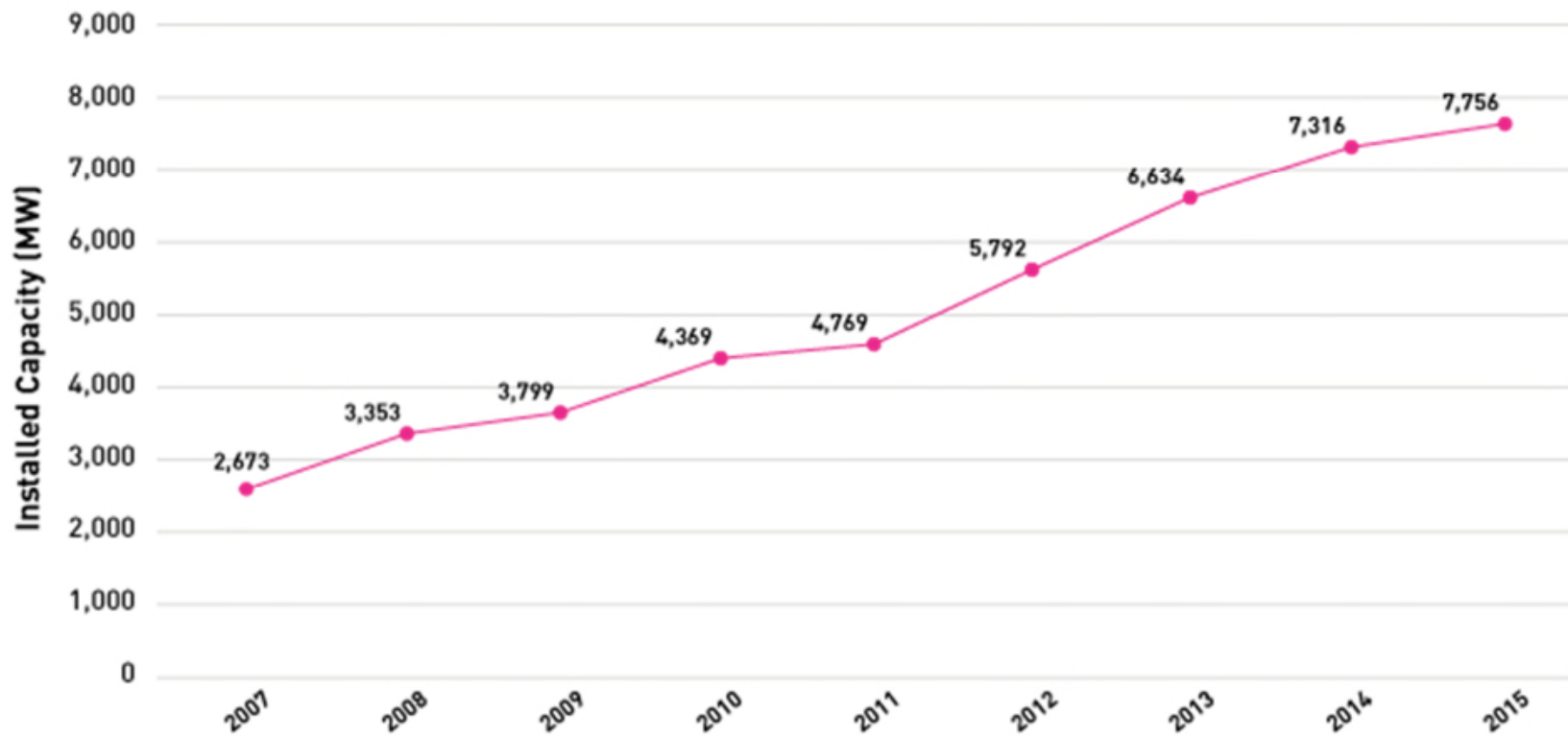
## **Scottish Renewables: Responding to a changing market**

**Michael Rieley**

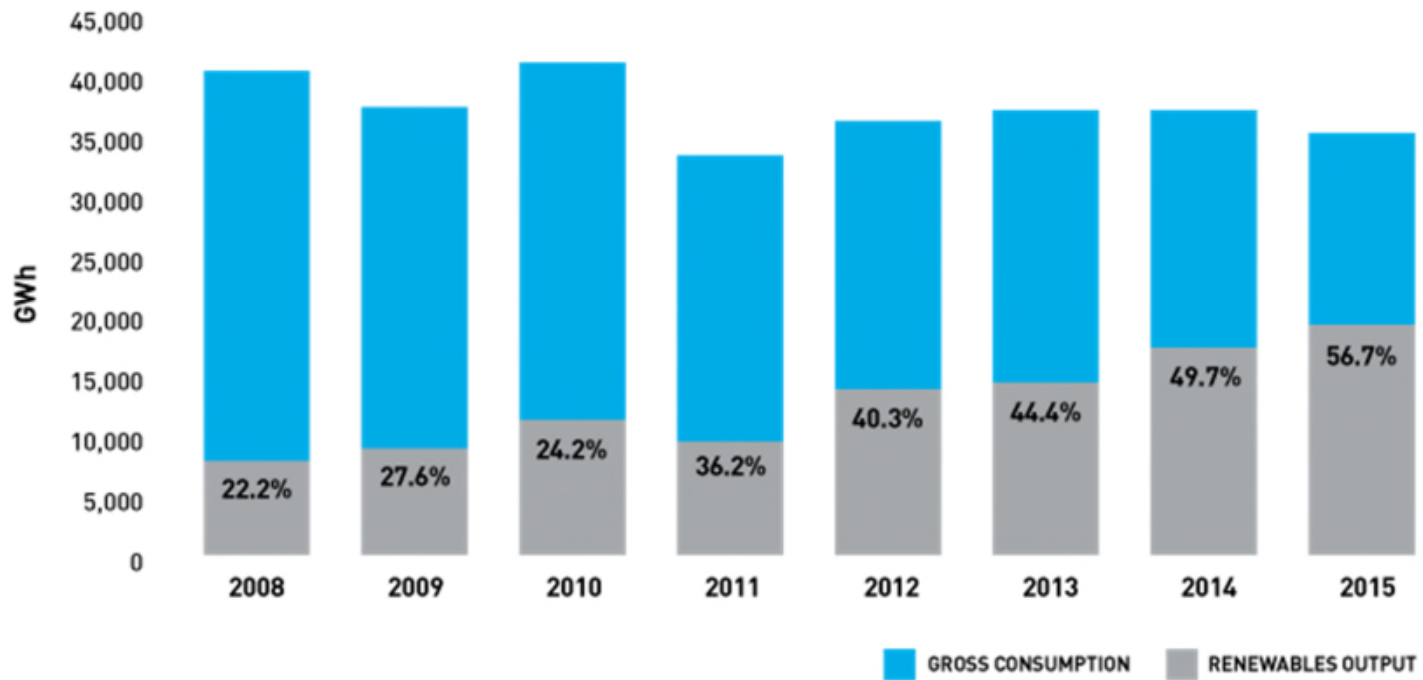
**Senior Policy Manager – Markets and Systems**

- 
- Story so far
  - What has changed
  - What is changing
  - Where to next?
    - Renewables
    - Networks

## TOTAL INSTALLED CAPACITY OF RENEWABLES ELECTRICITY IN SCOTLAND 2007-2015

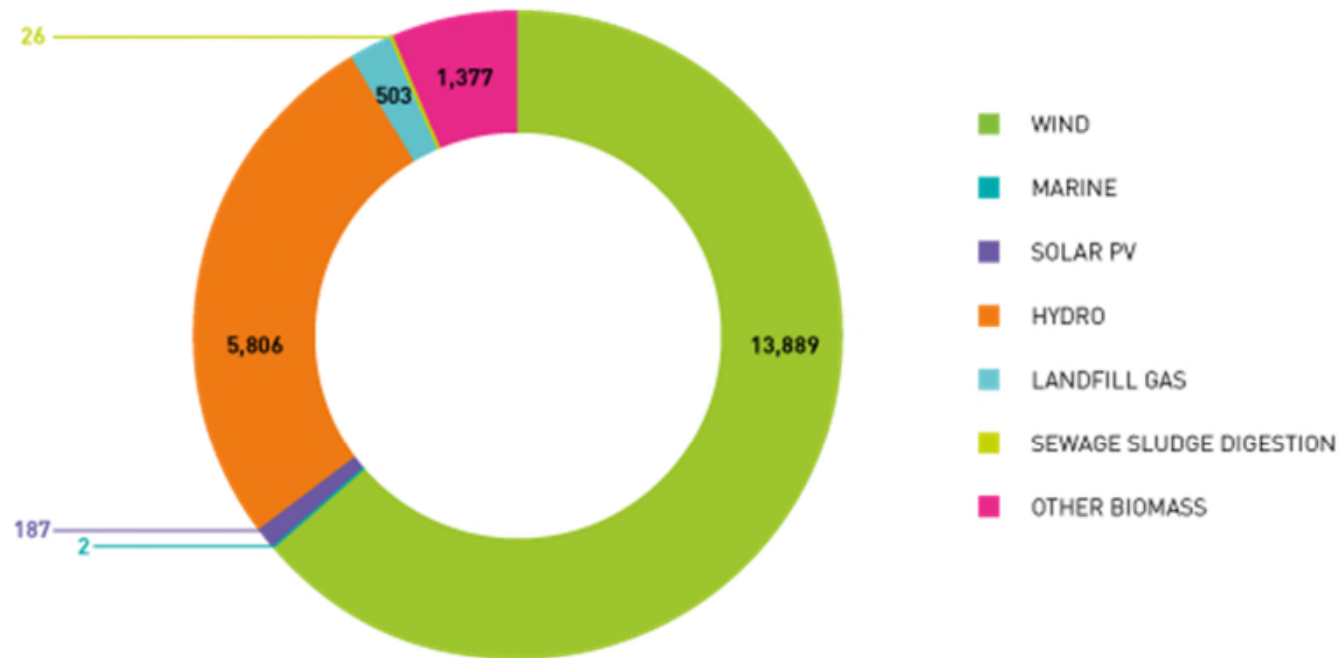


## GROSS ELECTRICITY CONSUMPTION AND % RENEWABLES OUTPUT



## 2015 ELECTRICITY OUTPUT BY TECHNOLOGY (GWh)

TOTAL = 21,760 GWh

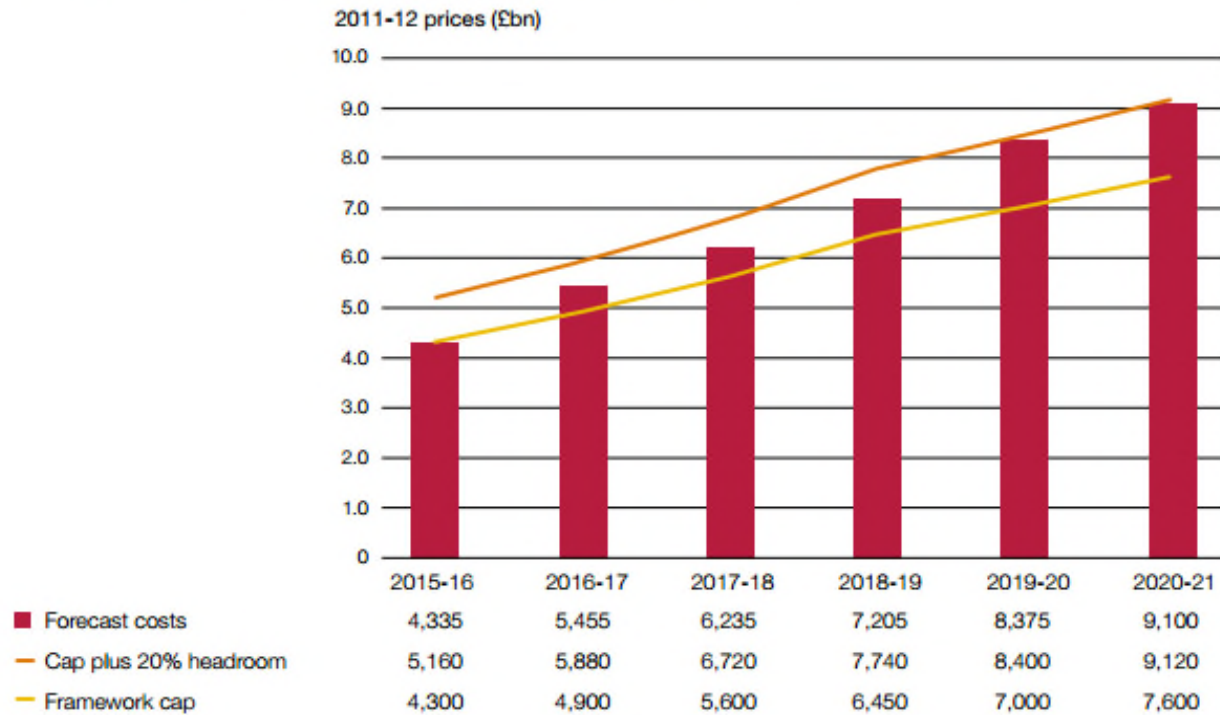





### Figure 7

#### Department's forecast of the Framework's scheme costs (June 2015)

In June 2015 the Department reported that the Framework's costs were on course to exceed the cap in every coming year, and just within the 20% headroom in 2020-21



Note



HOME » NEWS » EARTH » ENERGY

## Amber Rudd: end to pursuit of green energy at all costs

Keeping the lights on is now top priority, energy secretary to say, as she warns that households face paying over the odds for energy for years to come due to poor value green subsidies handed out by her predecessors

HOME » FINANCE » ECONOMICS

## Britain abandons onshore wind just as new technology makes it cheap

Vestas chief Runevad says UK rules shut out the latest hi-tech turbines, leaving Britain behind as the global wind boom spreads

FEATURES

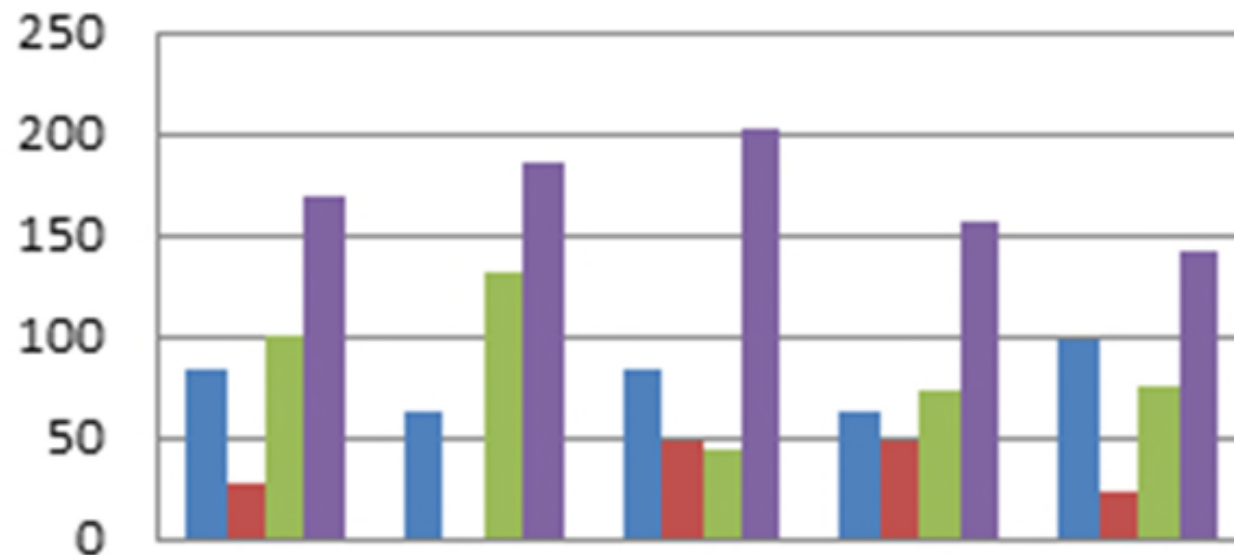
# Energy Secretary Amber Rudd on windmill-slaying, North Sea oil and the EU

*The climate change minister wants a more practical focus on future bills – while admitting renewables will push them up*



James Forsyth

What is the long term role for renewables?

## 2030 Electricity generation (TWh)

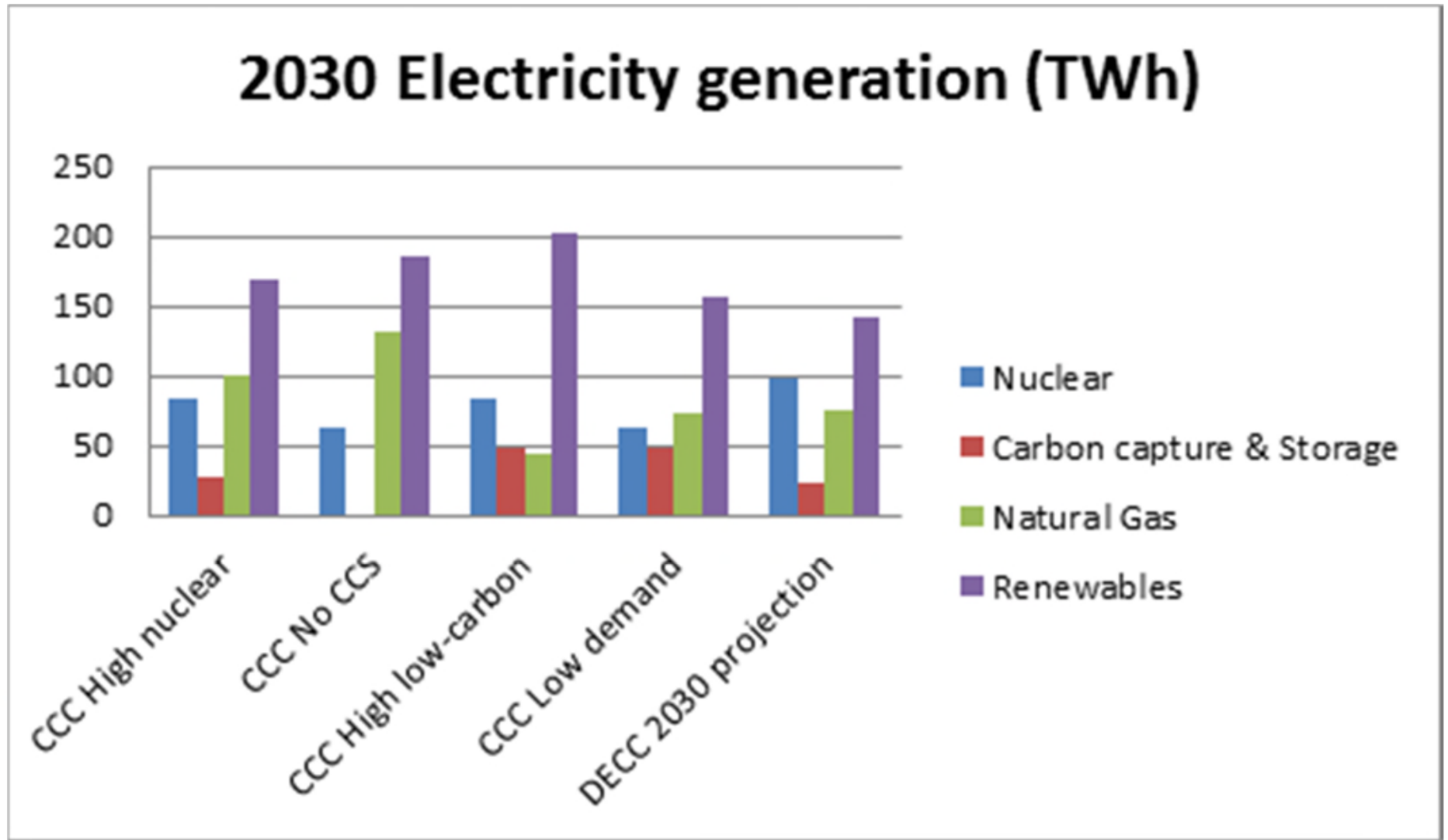


Renewable Electricity Output in 2030 is

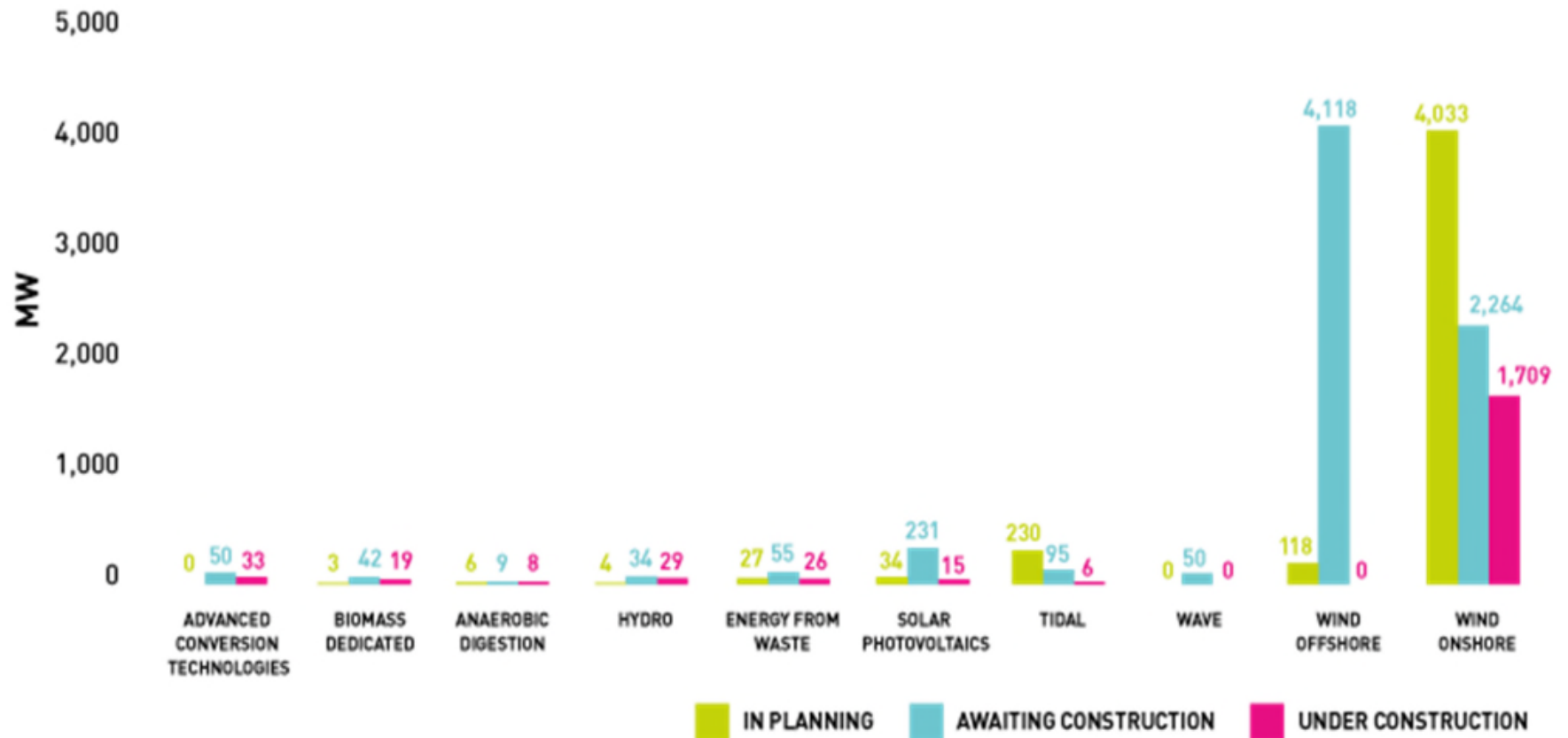
- 1. 
- 2. 

- 3. 
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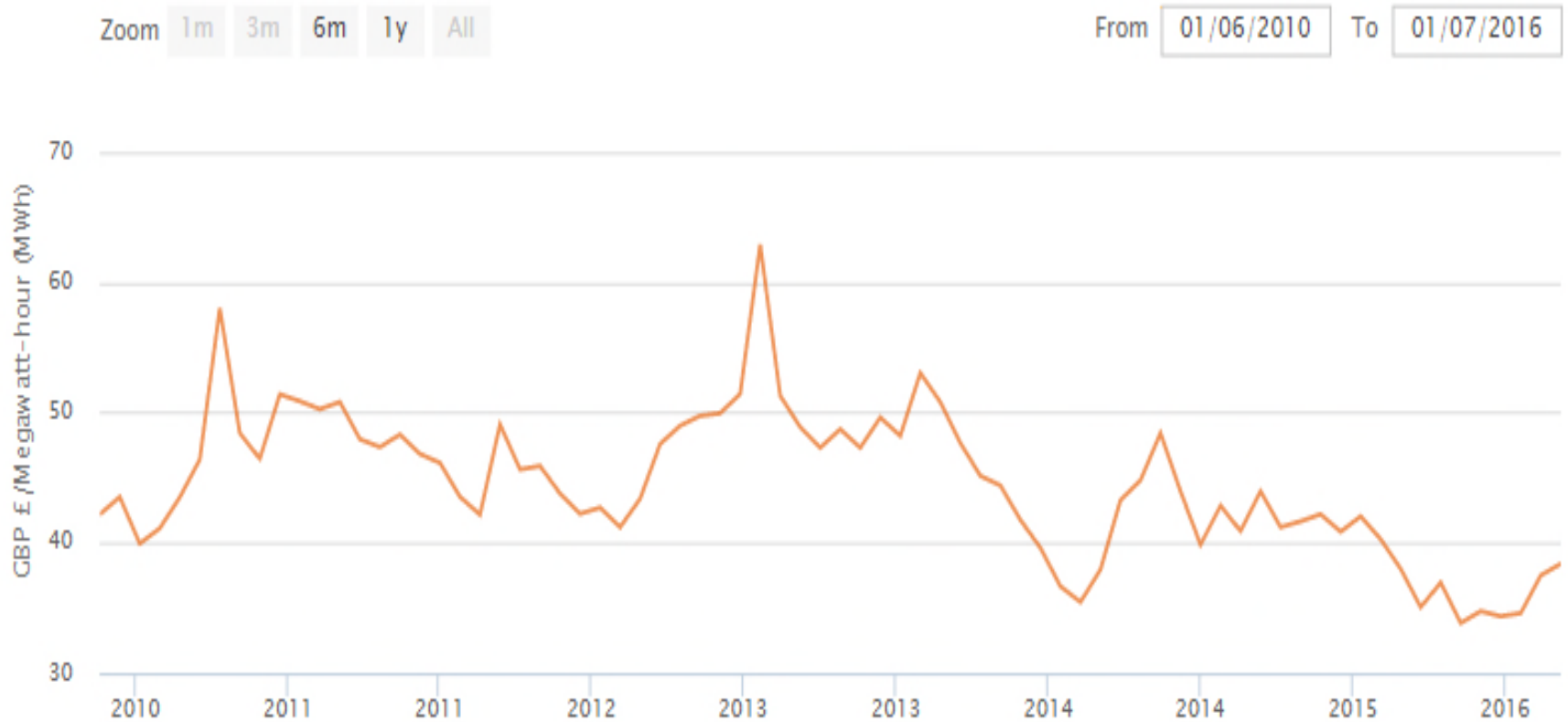
What is the long term role for renewables?



## PRE-OPERATIONAL CAPACITY OF RENEWABLES PROJECTS (JUNE 2016) TOTAL = 13,244 MW

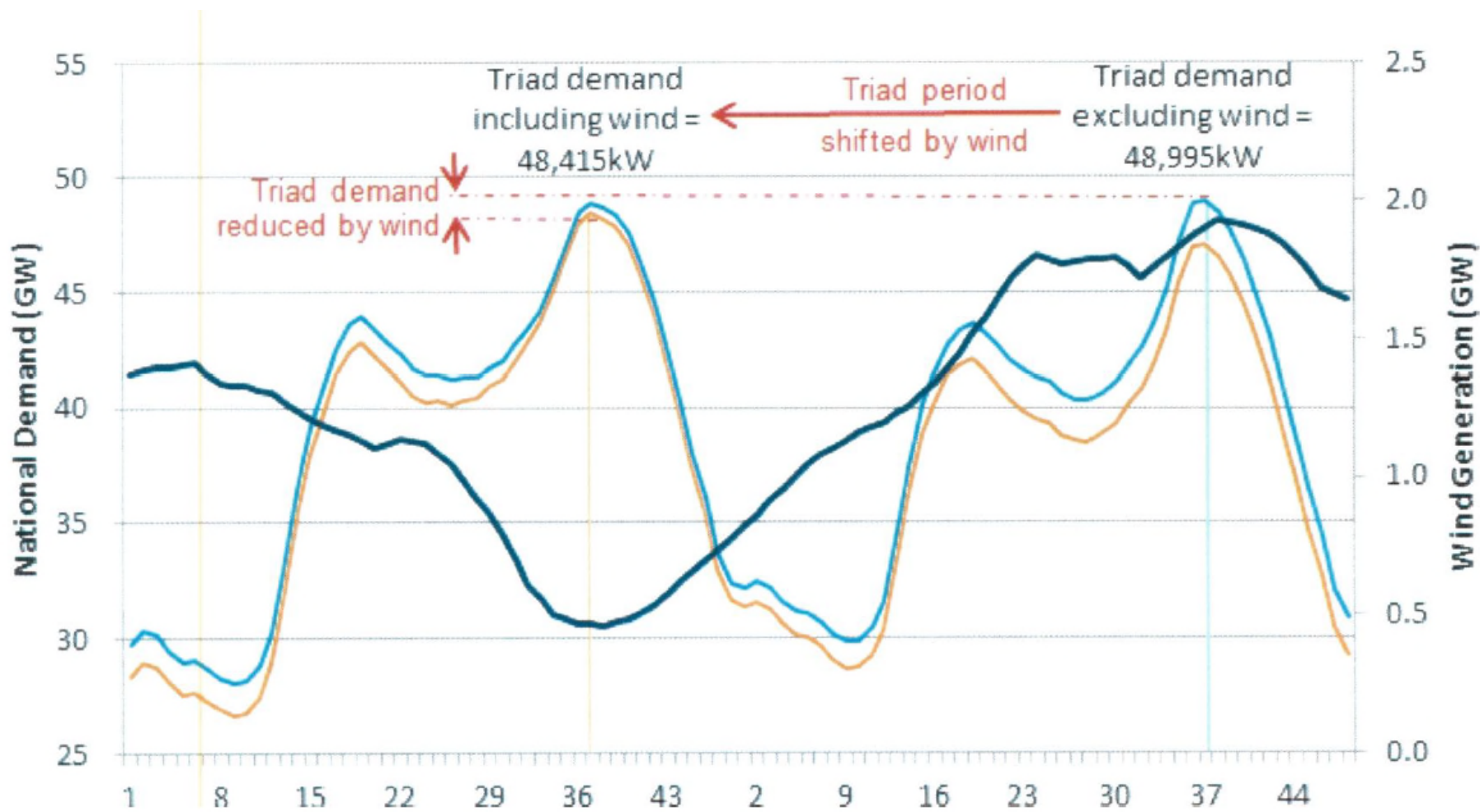


## Electricity prices: Day-ahead baseload contracts - monthly average (GB)



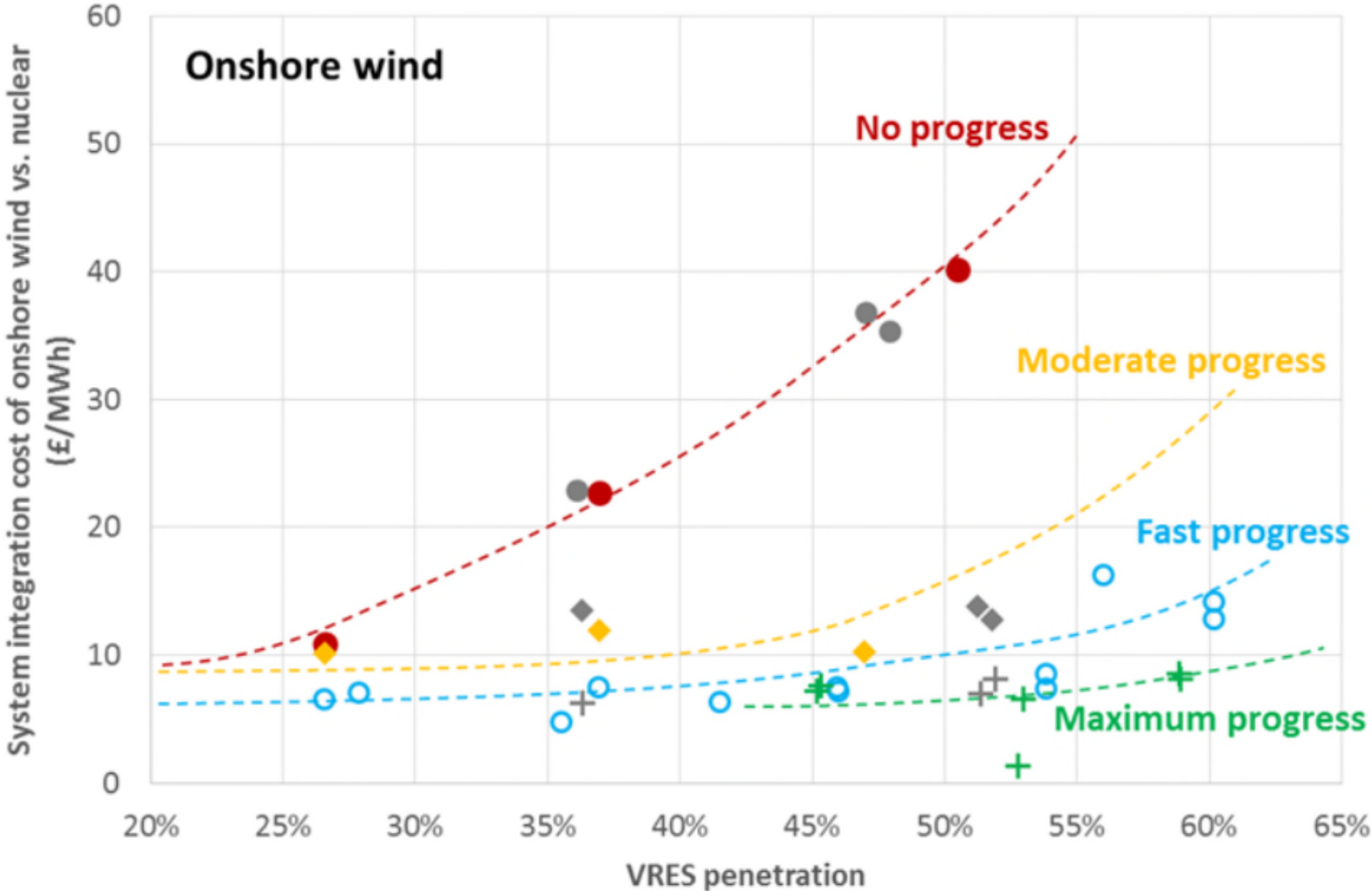
What is the long term role for networks?







**Figure 4.** Imperial College London, system integration costs (£/MWh) by technology in three core scenarios at 2030



## Short Term: challenges

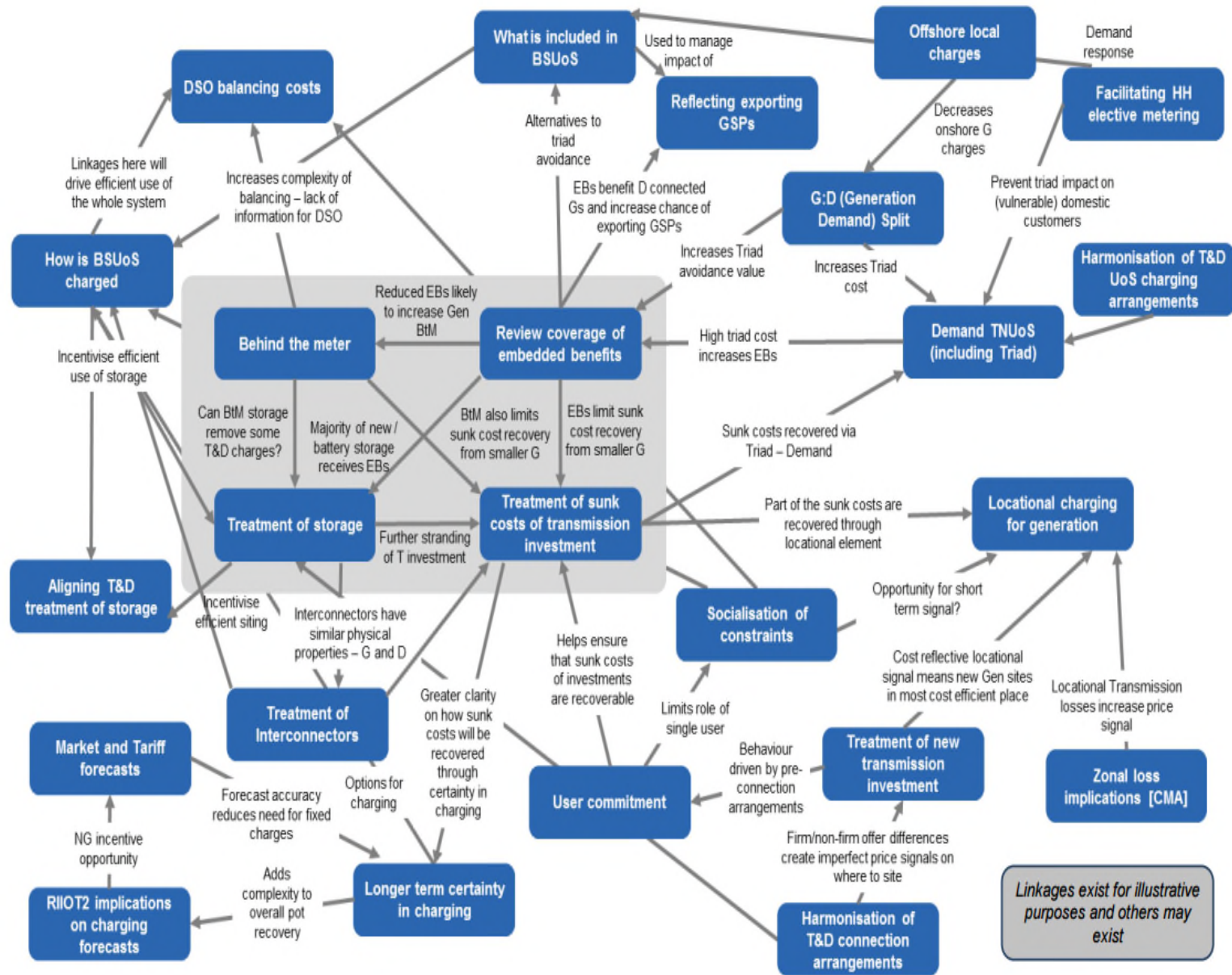
“Our view is that the absence of locational pricing for losses is a feature of the wholesale electricity market in Great Britain that gives rise to an AEC, as it is likely to distort competition between generators and to have both short- and long-run effects on generation and demand.” **Competition and Markets Authority**

“We are concerned that the size and increase of the TNUoS demand residual payments may now be distorting the market” **Ofgem**

## Longer term: Opportunities?

“A holistic charging review, with clear governance, goals and timescales that is unambiguously signalled to the market is the best way to address the current challenges in commercial arrangements” – **National Grid**

“We foresee a number of significant changes that either enable or drive broader consideration of distribution tariff design in the medium to longer term” – **Ofgem & BEIS**





## Queue Management

## Queue Management – Our Work To Date

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- **Our Consultation:**
  - **Consultation published – February 2016**
  - **2 Consultation feedback sessions**
- **Our Industry Engagement:**
  - **4 DG Stakeholder Workshops**
  - **4 Roundtable Workshops with Scottish Renewables**
  - **Scottish Renewables Onshore Wind Event**
  - **2 ARC Dissemination Events**
  - **NGET Queue Management Work**
  - **DGDNO Steering Group**
  - **Ofgem Briefing**

**2016 Capacity Released ~ 600MW**

## Queue Management - Current Developments

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### Application

- Pre-Queue (ENA Consultation - Treatment of Changes to Connection Applications)

### Contract Management

- ENA Consultation - Progression Milestones

### Queue Management

- SPEN Queue Management Proposal

### Connected Sites

- Capacity Management

## Queue Management – Governing Principles

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- Initial queue position determined by offer acceptance date
- Projects must advance in accordance with progression milestones
- Where possible consented projects should be given the opportunity to advance
- Queue positions reassigned based on date of consent and ability to progress
- Ability to recover capacity where contracted MW differs from planning MW



## Queue Management Consultation Outcomes

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Strongest support for permanent queue position change, subject to clarification of:

- Definition of “Stalled Projects”
- Treatment of Reinforcement Costs.

Working with Scottish Renewables we have developed guidelines which determine:

- When to terminate
- When to be flexible
- When to treat as stalled

Building on the principles of ENA Consultation on Progression Milestones

## ENA Consultation - Progression Milestones

	Detail	Evidence
Milestone 1	Initiated Planning Permission	Submission of planning application / commissioning of EIA
Milestone 2	Secured Planning Permission	Permission Granted / Appeal lodged / Judicial Review launched
Milestone 3	Land Rights	Proof provided to demonstrate that land right obtained
Milestone 4	TSO Interface	Be progressing appropriate TSO process, SoW, BEGA, BELLA, etc.
Milestone 5	Progress Adoption Agreement	Design submission / adoption agreement being progressed.
Milestone 6	Commence Works	Agreed construction plan being followed
Milestone 7	Construction of Generating Activity	Completion of generation facility

## SPEN Principles of Queue Management

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### **When to Terminate (no valid agreement):**

- Early milestones (1, 3, 4 and 5) not achieved in agreed timescales.

### **When to be flexible (Queue position retained):**

- Milestone 2 not achieved. Project in appeal
- Milestone 2 achieved but subject to conditions to be resolved
- Milestones 1 to 6 achieved but completion of customer works delayed (for reasons outwith customer's control)
- Milestones 1 to 5 achieved but commencement of customer's works delayed (for reasons outwith customer's control)

### **When to Treat as Stalled (loss of queue position):**

- Milestones 1 to 5 achieved but commencement of SPEN works delayed (at request of customer)
- Milestones 1 to 5 achieved but commencement of customer's works delayed (at request of customer)
- Milestones 1 to 6 achieved but completion of customer's works (milestone 7) delayed beyond an agreed time period (for reasons within customer's control)
- Milestones 1 to 7 achieved but completion of DNO works delayed beyond an agreed time period (at customer's request)

## SPEN Charging Options

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Project	Initial Queue Position		Project	Revised Queue Position	
A	1	Stalled	B	1	Consented
B	2	Consented	A	2	Stalled

Subject to reinforcement

### Option 1

- Party B connects without requirement or liability for reinforcement costs
- Party A given new connection date, revised queue position - connection subject to reinforcement and associated costs.

### Option 2

- Party B connects without requirement for reinforcement but retains liability for the associated costs
- Party A given new connection date, revised queue position – connection subject to reinforcement but not to associated costs

## SPEN Charging Options

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Project	Initial Queue Position		Project	Revised Queue Position	
A	1	Stalled	B	1	Consented
B	2	Consented	A	2	Stalled

Subject to reinforcement

### Option 3

- Party B connects without requirement for reinforcement but retains liability for the associated costs (subject to below)
- Party A given new connection date and revised queue position – connection subject to reinforcement.
  - No liability for reinforcement costs where instruction given to commence works given within 1 year of 'stalled' designation.
  - Liability for reinforcement costs transferred from Party B to Party A where instruction to commence works not given within 1 year of 'stalled' designation.
  - Party A liable for abortive costs in event of termination.

DNO will not commence reinforcement works prior to receipt of instruction from Party A.

## Preferred Position

Project	Initial Queue Position		Project	Revised Queue Position	
A	1	Stalled	B	1	Consented
B	2	Consented	A	2	Stalled

Subject to reinforcement

- Party A given [x] months (from date of notification) within which they must provide SPEN with an unconditional instruction to progress the connection works.

### Where not given:

- Party A given a revised queue position and connection date which will now be subject to reinforcement works and associated costs.
- Party B advances without the requirement for reinforcement and associated costs.
- Opportunity to advance will only be given where an unconditional instruction to commence works is given by advancing party.

## Queue Management – Discussion

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### Group Discussion

- For each of the charging options please discuss the advantages and disadvantages of each approach.

## Stakeholder Survey

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- We use a range of channels to gather feedback from stakeholders – events like this, one to one, focus groups
- An important part of this is independently gathered survey information
- We use this to track year on year changes in overall satisfaction and pinpoint any specific issues
- As well as helping us improve what we do we also report these results to the regulator and we will be given a reward or penalty depending on the score
- Attendees will be contacted soon and asked to take part
  - The survey is on your overall satisfaction with us as a transmission business
  - Participation can be anonymous
  - Please take the time and if you can, add specific likes, dislikes, suggestions