

# **RIO-2 Stakeholder Workshop**

## **- Long Term Value for Money**

**1 November 2017**

ofgem

- **Introduction (13:30 – 13:55)**
  - The purpose and context of the workshop
- **Stakeholder Views (13:55 – 14:20)**
  - James Hope – UK Power Networks
  - Dave Handley – Scottish Gas Networks
- **Coffee and get into groups (14:20 – 14:30)**
- **Breakout Groups (14:30 – 16:00 25 mins per group + time for rotation)**
  - How well did RII0-1 incentivise long term thinking and providing long-term value for money?
  - How should we incentivise innovation and what role should an innovation stimulus play?
  - What role should competition play in delivering long-term value?
- **Break (16:00 – 16:15)**
- **Report Back (16:15 – 16:25)**
  - Each group to present key discussion points
- **Wash Up and Closing Remarks (16:25 – 16:30)**
  - Next steps and further engagement

- In our open letter in July we set out our draft overarching objective detailing what we believe RIIO-2 will need to focus on, building on the RIIO-1 framework and making changes where we have learnt lessons or where we will need to adapt to the future.
- Building on the strong theme of enhanced stakeholder engagement that was brought about through RIIO-2 we want to make sure that we are involving our stakeholders early.
- As trailed in the launch webinar, today is one of a series of stakeholder workshops which we are holding over Oct and early Nov to build on the open letter and get your views on some of the key issues we will be considering as part of our framework consultation.

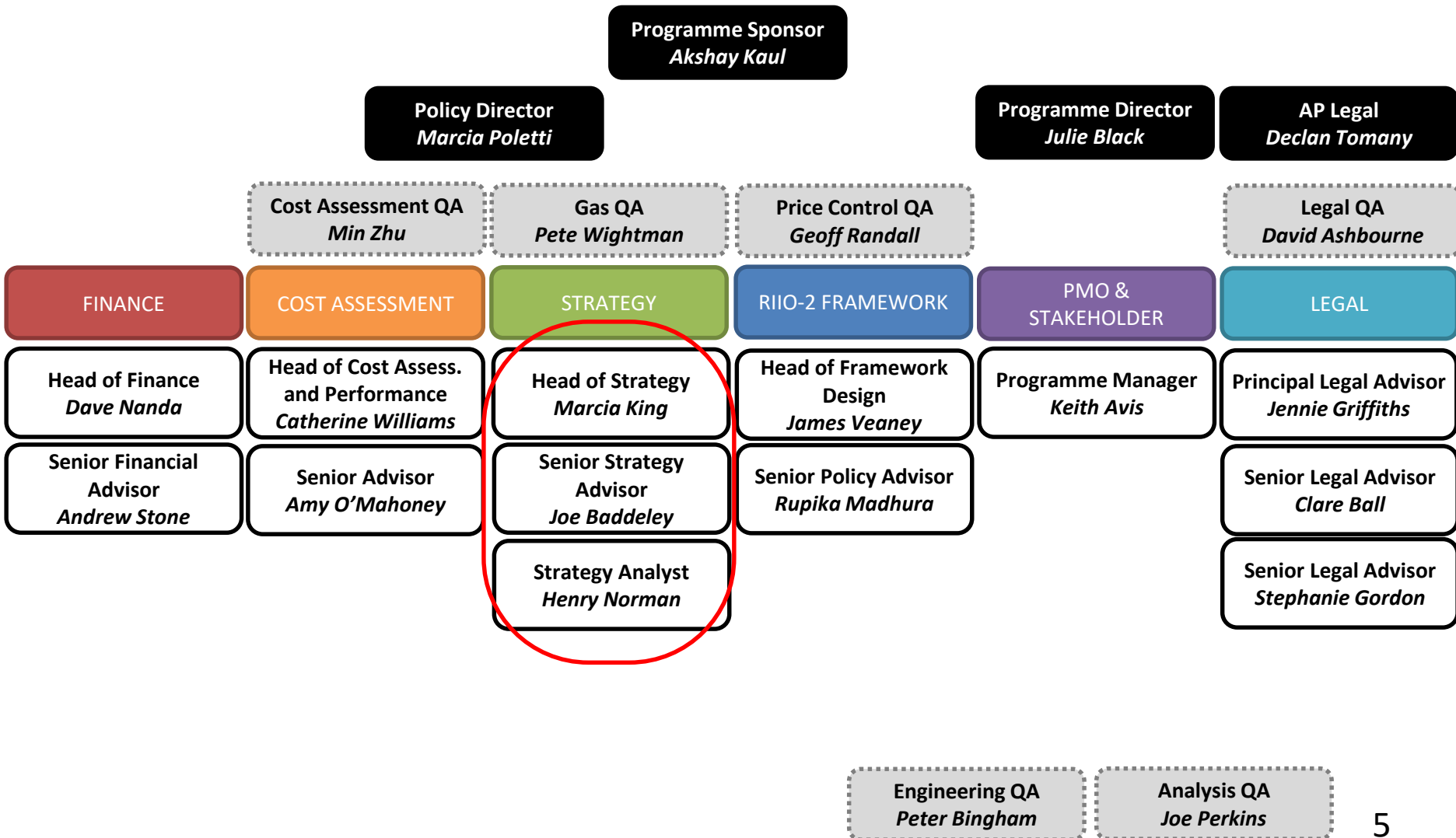
## **To ensure regulated network companies deliver the flexible services that consumers want and need.**

RIIO 2 will aim to achieve this by:

- Giving consumers a stronger voice in setting outputs, shaping and assessing business plans;
- Allowing regulated companies to earn returns that are fair and represent good value for consumers, properly reflecting the risks faced in these businesses, and prevailing financial market conditions;
- Incentivising companies to respond in ways that benefit consumers to the risks and opportunities created by potentially dramatic changes in how networks are used;
- Using the regulatory framework, or competition where appropriate, to drive innovation and efficiency; and
- Simplifying the price controls by focusing on items of greatest value to consumers.

Today's workshop focusses on how the price control framework can ensure network companies deliver lowest cost solutions over the long term including what the role of the innovation stimulus should be and what role competition should play in RIIO-2

Date	Workshop	Content
18 Oct	Consumer voice	<ul style="list-style-type: none"> <li>• What worked well in RIIO-1 and how it can be improved</li> <li>• Exploring alternative approaches</li> </ul>
23 Oct	Delivering what consumers need	<ul style="list-style-type: none"> <li>• How can RIIO-2 best ensure delivery of whole system outcomes?</li> <li>• How will RIIO-2 need to adapt to the wide range of potential energy transition futures?</li> </ul>
24 Oct	A fair return	<ul style="list-style-type: none"> <li>• What should the return a company earns reflect</li> <li>• How can we improve the framework to minimise 'undeserved' returns</li> <li>• Exploring alternative approaches to ensuring fair returns</li> </ul>
31 Oct	Simpler clearer	<ul style="list-style-type: none"> <li>• Reducing complexity in the price control</li> <li>• Increasing transparency in reporting and monitoring the price control</li> </ul>
1 Nov	Long term value for money	<ul style="list-style-type: none"> <li>• How well did RIIO-1 incentivise long term thinking and providing long-term value for money?</li> <li>• How should we incentivise innovation and what role should an innovation stimulus play?</li> <li>• What role should competition play in delivering long-term value?</li> </ul>





## **Marcia King**

- Heading the team responsible for reviewing the framework in light of some of the challenges we will face in the future. Particularly around the energy transition and how the framework will need to adapt.



## **Joe Baddeley**

- Focussed primarily on how the framework can deliver whole system outcomes, ensure efficient network utilisation and enhance the use of competition. Also the link to the SO team in relation to RIIO.



## **Henry Norman**

- Focussed primarily on innovation and how the stimulus may be used in future and the role that energy efficiency, as part of a suite of flexible services, might play in RIIO-2.

## RIIO-1

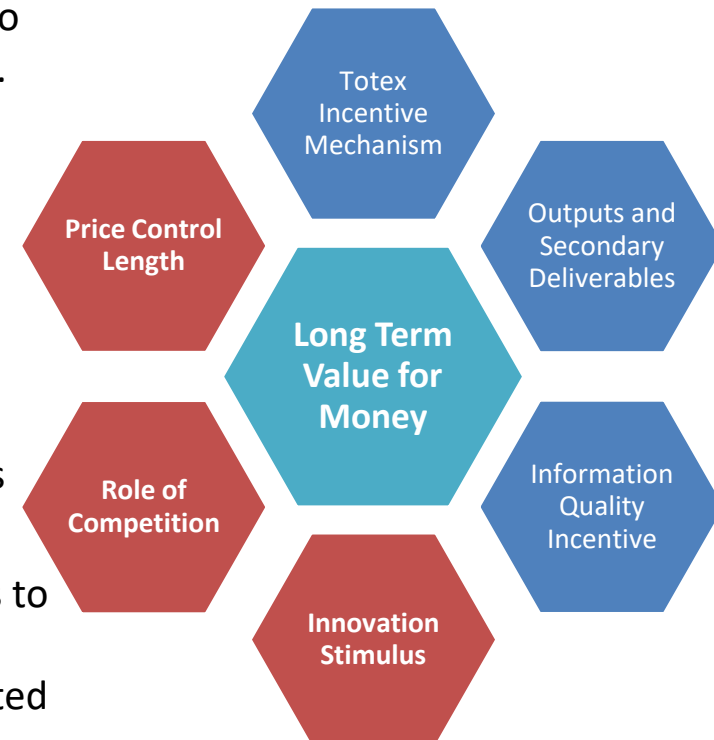
**RIIO-1** sought to encourage network companies to deliver a sustainable energy sector and provide value for money, playing a full role in managing the energy transition.



## RIIO-2

**RIIO-2** will continue to encourage companies to deliver long term value for consumers, recognising the important roles that innovation and competition will play in supporting this.

- The RIIO framework seeks to incentivise network companies to find delivery solutions that are lowest cost over the long term.
- There are a number of elements of the framework which encourage this. Today we are focussing on three key aspects:
  - Price Control Length
  - Role of Competition
  - Innovation Stimulus
- In developing RIIO-2 need to consider how these elements drove efficiency and innovation in RIIO-1 and how these tools might be used in RIIO-2
- Need to consider how the framework will support companies to innovate and proactively respond to changes in how the networks are used whilst recognising the uncertainty associated not only with the pace, but with the direction of change.



## Longer term thinking

- Longer price control was only one component of RIIO-1 designed to encourage this longer term thinking – an ex-ante price control based on outputs and longer term context for business planning also supported this evolution.
- For RIIO-2 need to balance encouraging longer-term thinking and the delivery of efficient solutions with potential scale of uncertainty.

## Role of competition

- Further value for consumers could be recognised in RIIO-2 through the greater use of competition, potential to expand current competition to more sectors or compete at different stages.

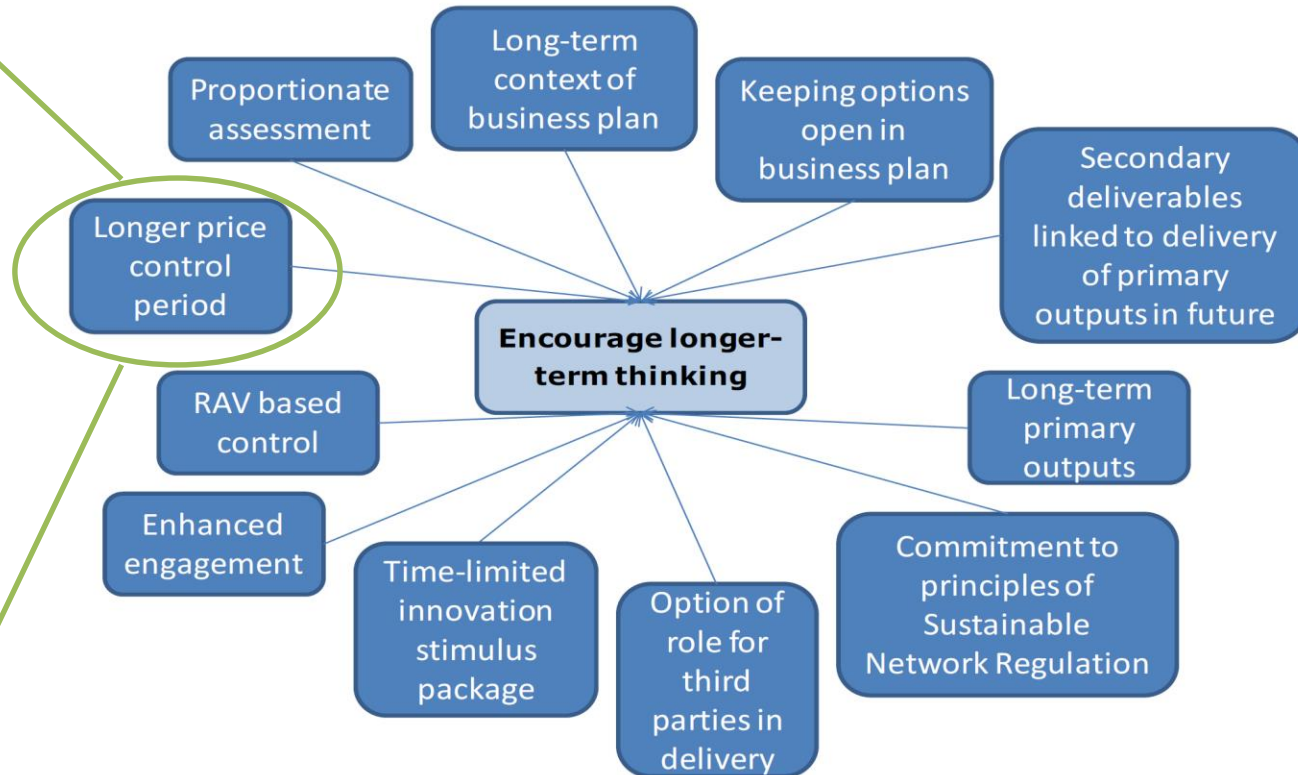
## Innovation

- Innovation will be a key to enable network companies to adapt and evolve to changes and continue to deliver efficiencies and drive down the costs.
- Companies have already taken dramatic steps forward (though LCNF and innovation stimulus) and seen some significant cultural shifts and quantifiable benefits for consumers.
- For RIIO-2 question is whether innovation is now sufficiently embedded such that the framework design provides inherent incentives to innovate or whether there are still aspects of innovation that RIIO-2 may need to specifically incentivise.



## Benefits of 8 years

- Supplier contracts over longer period with associated cost savings
- Companies incentivised to be efficient and innovate due to longer pay back period
- Companies able to make significant changes to their structure and business model



However...

- Range and scale of plausible options for how networks used in future maybe greater than in RIIO-1
- May be difficult to set an 8 year price control without needing significant reopeners.
- Need to balance the benefits of a longer price control with the risks and consider whether other aspects of the price control sufficiently encourage longer term thinking.

**Option?:** Could consider setting more stable aspects of price control on longer term basis and then aspects that are more subject to change and uncertainty could be reviewed on a more regular basis.

### What is the scope of the competition?

- Focus on competition ***for*** the market – ie to carry out functions of an incumbent network owner
- Important to distinguish this from competition ***in*** the market, eg retail, RIIO fast-tracking

### Where have we utilised competitions for the market?

Area	Number of licensees	Value
OFTOs (ET)	15	<b>£2.9bn</b> (total transfer value of the projects)
Onshore transmission (ET)	None, but intention since 2013	Lumpy pipeline, <b>c£500m-1bn a year</b>
IDNOs (ED)	10	<b>c500k customers</b> (1.7% of market)
IGTs (GD)	11	<b>c2m customers</b> (8.4% of market)

### Common characteristics of these competitions (noting IDNOs/IGTs are different in some areas):

- Assets subject to competition are *new* and usually *high value*
- Winner is awarded a licence<sup>1</sup> – sets out obligations and incentives similar to those of incumbents
- Revenue bid through competition and fixed for longer-term (20-25 years), subject to few reopeners / sharing.

<sup>1</sup> Some onshore competition models would be covered by contract

Incumbents already run competitive procurements, so **where's the value** in competition for the market?

### *Project specific benefits:*

- Downward pressure on debt/equity – also locked in longer term
- More efficient 'gearing' (ie ratio of debt to equity)
- Downward pressure on delivery costs (inc benefits of integrating construction and operations)

### *Broader benefits:*

- Discovery and implementation of a more efficient risk allocation
- Innovation, ie new, more efficient ways to do things
- Depending on the model, competition could be used to identify optimal solutions as well as the delivery

### *Price control benefits:*

- Wider benefits for leveraging rest of price control (eg WACC, capex, opex)

### Observed benefits to-date:

<b>OFTOs</b>	
Type of saving	Savings as a % of value of projects
Financing savings	8-11%
Operational savings	18-25%
<b>Total net savings</b>	<b>23-34%</b>

Tender Round	NPV saving (over 20 years)
TR1 (9 projects)	£244m-£469m
TR2 (4 projects)	£326m-£595m
TR3 (2 projects)	£102m-£154m

<b>IDNOs/IGTs</b>
Benefits to connection customers:
<ul style="list-style-type: none"> <li>• Reduced connections costs</li> <li>• Improved quality of service</li> <li>• Innovative services</li> </ul>

We have focused on where we think **the benefits of competition significantly outweigh the costs**

### **OFTOs:**

- New assets only
- No size threshold, but all recent projects well over £100m

### **IDNOs / IGTs:**

- New assets only
- No size threshold

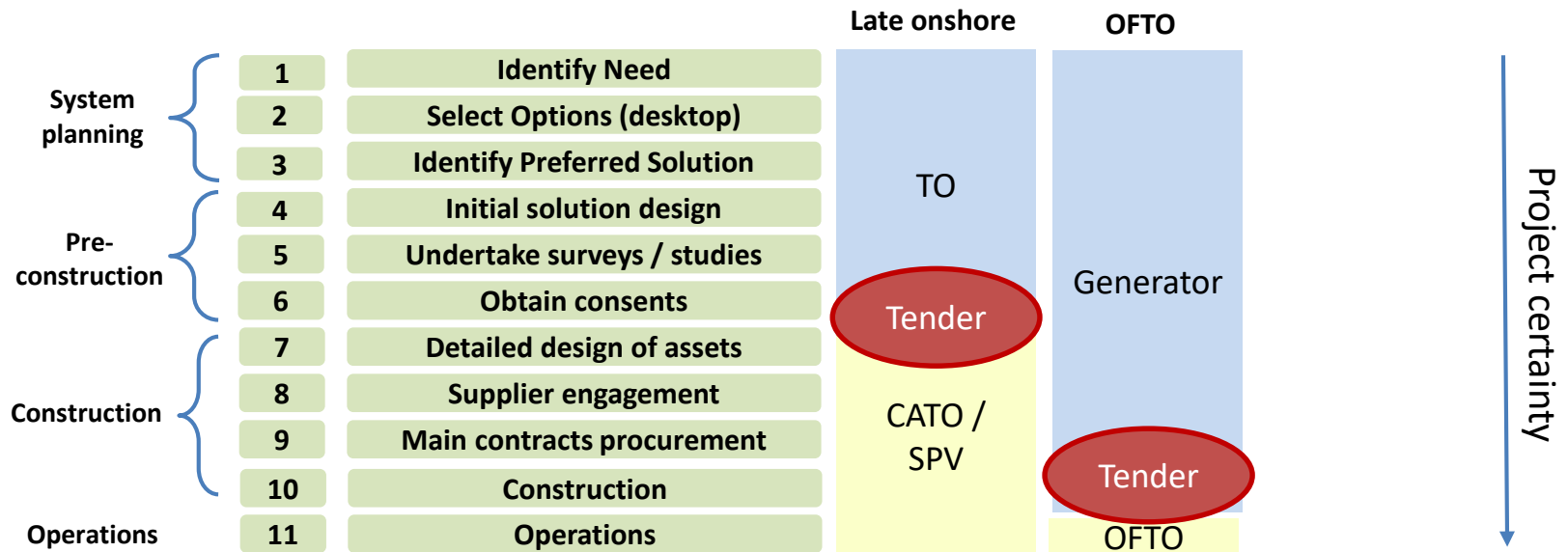
### **Other implicit criteria:**

- Project need is confirmed – avoids lost sunk costs of running a competition and mitigates stranding risk
- Bankable proposition (eg licence, codes, last resort arrangements)
- Regular, clear pipeline of relatively homogeneous projects
- Manageable new bidder entry costs

} *helps depth of competitive market*

**Current focus for competition has been for electricity transmission (OFTOs, RIIO-T1 (SWW))**

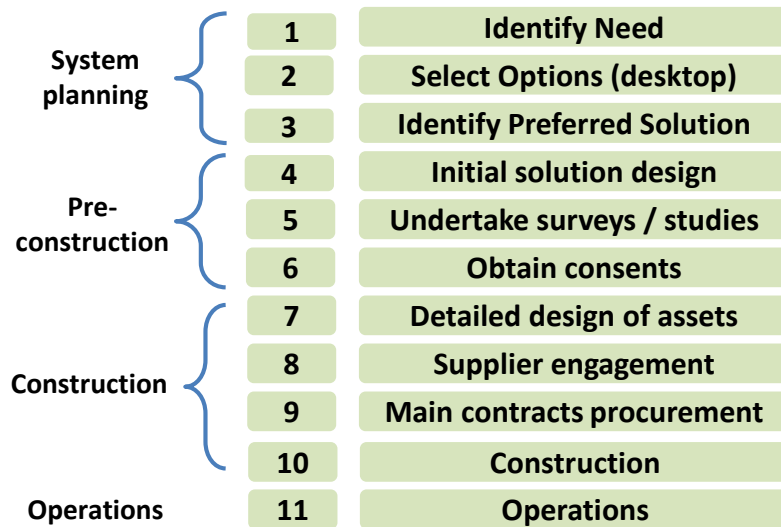
New, high value (>£100m) projects have similar development processes that typically take 7-15 years from initial identification of need through to start of operations



These represent 'late' models, where the tenders come after the original choice of solution

We are also considering 'early' models where a tender would be run to identify a solution. The delivery party could be decided at this stage, or through a later, separate tender

### What do we mean by 'early models'?



#### 'Very early'

Competition focused on identifying solutions to system needs. Can be sector / technology-neutral



#### 'Early'

Competition focused on identifying the best design for an identified solution. Likely to be sector-specific (eg tx, dx)

Project certainty

### Benefits of early models:

- Potentially high capex/opex savings on individual projects
- Allows innovative ideas from across the market (current and new players)
- Could provide an efficient method of identifying optimal whole system solutions

### Challenges of early models:

- Managing certainty of need for the project
- Hard to fix costs – risk of cost escalation
- The market for holistic solution design is untested
- Hard to run a robust tender – bid evaluation very sensitive to counterfactuals

### Technical and commercial innovation encouraged through:

Core price control incentives

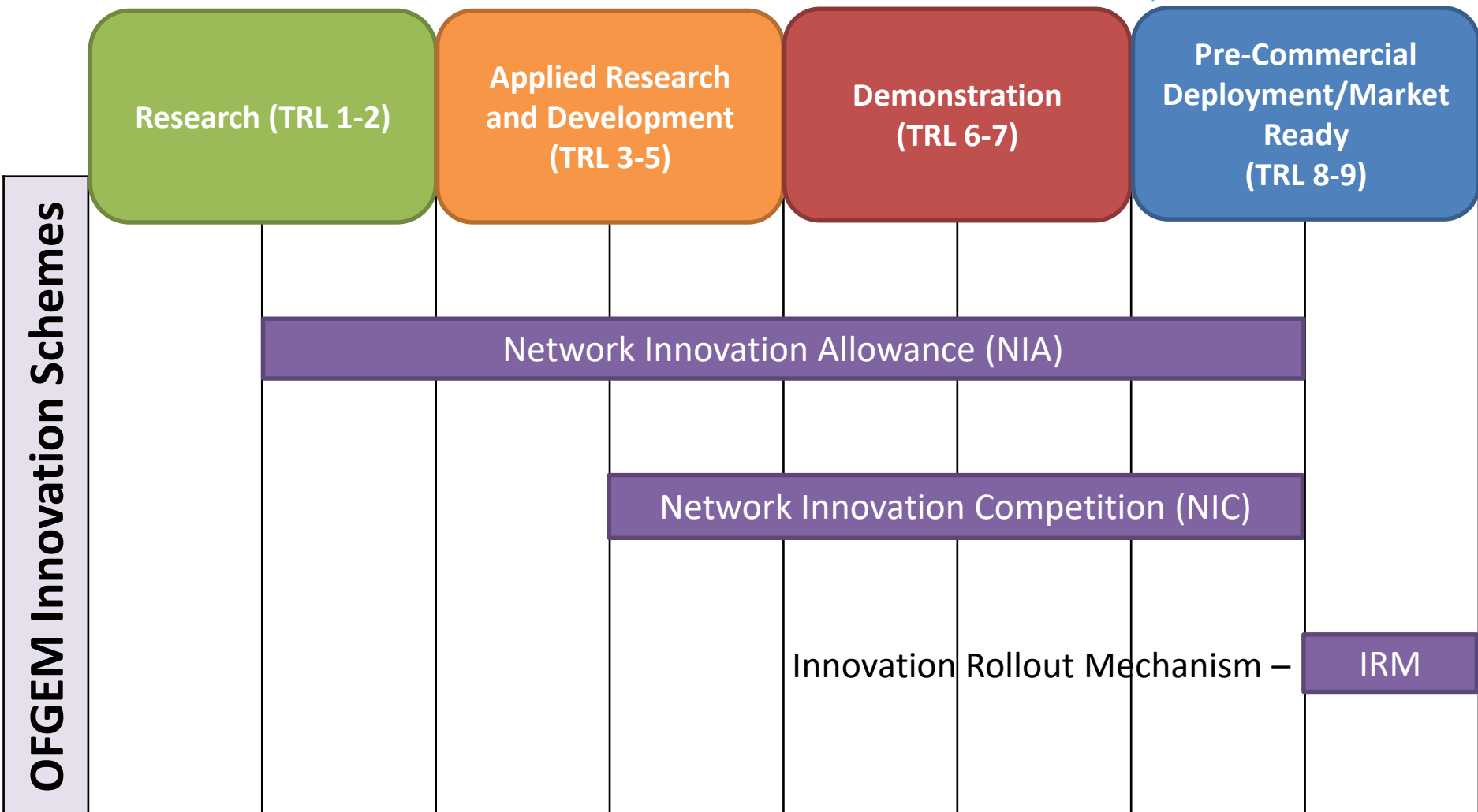


Specific Innovation schemes

- **The totex approach** – to equalise the incentives between capital expenditure and operational expenditure so that companies were not unduly incentivised towards ‘capex’ and consider novel ‘non-build’ solutions
- **The totex incentive mechanism\*** (TIM) – to encourage efficiency and innovation by network companies and share the resulting financial benefits between companies and customers.
- **The eight year price control period** – to allow companies to retain the benefits from the TIM for longer.

- **Network Innovation Allowance (NIA) (£65m per annum)** – part of each licensee’s price control allowance to be spent on smaller-scale research, development and demonstration projects
- **A Network Innovation Competition (NIC) (£90m)** – to fund larger scale flagship development and demonstration projects
- **An Innovation Roll-out Mechanism\* (IRM)** – to fund the roll-out of proven innovations with carbon and/or environmental benefits in to business as usual

Schemes aim to cover the innovation lifecycle

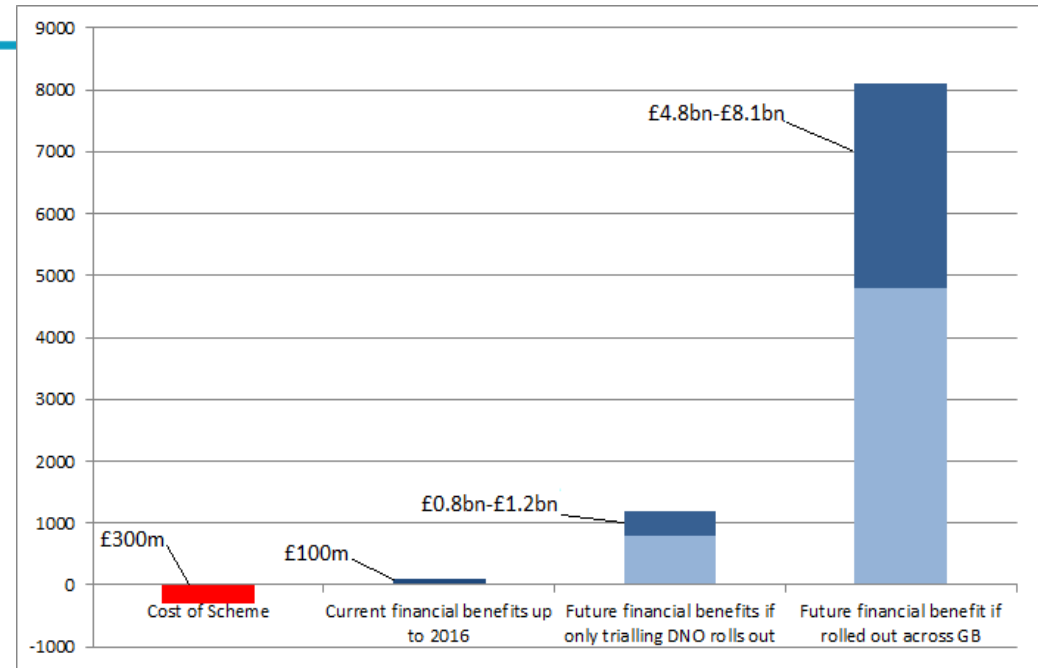




## Did LCNF deliver value for money?

### *An Independent Evaluation of the Low Carbon Network Fund (Pöyry, 2016)*

- Between £4.8bn - £8.1bn of financial benefits by 2030.
- In addition £600m -£1.2bn of carbon abatement benefits.



### What went well

- Companies are more innovative
- Licensees engaging with customers and third parties at unprecedented level
- Current benefits are estimated to be 1/3 of total cost
- Some solutions more likely to make it to BAU, eg connections for distributed generators

### Issues

- We want to make sure companies make a real contribution to the costs of projects
- We want to enhance access to the NIC for 3<sup>rd</sup> parties
- There is not a clear overview and direction for innovation projects
- The innovation mechanisms are burdensome in places

### Solutions already identified

- Companies to make a 10% non-refundable contribution to the costs of projects
- Require companies to issue a call for third party led projects each year
- Require companies to work together to develop innovation strategies for the gas and electricity sectors
- Make various changes to make the operation of these mechanisms less onerous

### Gas NIC Project 2016

**Project: NGGD 'HyDeploy' (£6.8m)**

- Performed the first practical deployment of hydrogen onto a live GB gas distribution network since the 1970s

### Electricity NIC Project 2015

**Project: ENW 'Celsius' (£4.7m)**

- Developed a new way of managing the temperature of substations – increasing their operations capacity and lifespan

### Electricity NIC Project 2016

**Project: WPD 'OpenLV' (£4.9m)**

- To develop a new software platform which uses cloud technology to enhance visibility of residential-level substations

### Gas NIC Project 2015

**Project: NGN 'City CNG' (£0.7m)**

- To design and build the UK's first scalable city based Compressed Natural Gas (CNG) fuelling station

### Status quo

#### Incremental improvements

Building on LCNF review and suggested NIC/NIA improvements identified

### Phased removal

#### Pathway to RIIO-3

More focused/narrowing scope with greater reliance on other incentives

### Removal

#### Complete removal in RIIO-2

Reliance on outputs/incentives, totex and sharing factor to drive innovation

In all options, look to focus on whole system outcomes

#### Where keeping, make process less burdensome

#### What **might** this look like?

- Innovation as an output rather than separate pot
- Greater role of ex post regulatory assessment?

#### Considerations:

- Consistent with performance based regulation

#### But,

- Would information sharing benefit be lost?
- Scale of innovation challenge to be met versus speculative risk

#### What **might** this look like?

- Increase 10% contribution from companies
- No funding for R&D by equipment manufacturers
- Clearer stance on involvement in government policy areas

#### Considerations:

- Continued funding for all stages of development

#### But,

- No exit strategy and retaining status quo without clear evidence it is required

#### What **might** this look like?

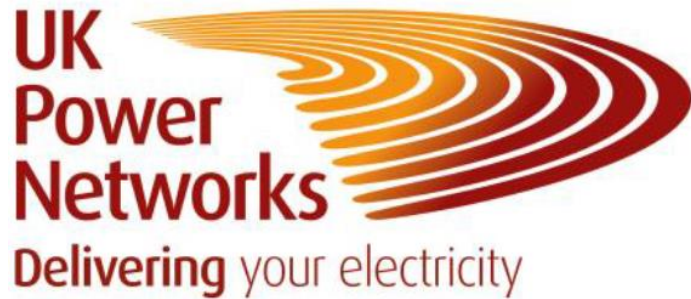
- Funding for earlier-stage/riskier projects (TRL1-6) and removal of funding for later-stage projects
- Environmental output with financial incentive attached
- Savings spanning price controls

#### Considerations:

- Reduced governance requirement

#### But,

- Would we see less innovation or a focus on the companies on short term operational efficiencies?
- Shorter price controls may compound this?



**James Hope**  
Head of Regulation and Regulatory Finance



**David Handley**  
Head of Regulation



## RIIO-2 – Long term value for money

James Hope, Head of Regulation & Regulatory Finance

1 November 2017



# About UK Power Networks

## Three distribution networks:

- London;
- East of England; and
- South East of England.

Measure	Data	% of industry
End customers	8.2m	28%
Population served	c.20m	-
New metered connections*	46,000	32%
Distributed generation connected	8.5GW	31%
ED1 totex allowance (2012/13 prices)	£6,029m	25%
Energy distributed	80TWh	28%
Peak demand	16GW	N/A



\* Average per annum 2010/11-2014/15

# Purpose of the presentation

To provide an overview of UK Power Networks' perspective on:

- The removal of NIA funding in RII0-ED2, placing more emphasis on companies to innovate to deliver future efficiencies;
- The continued role of NIC funding in RII0-ED2 to develop whole-system focussed projects;
- The removal of specific innovation funding by RII0-ED3; and
- Length of the period.

# Premise

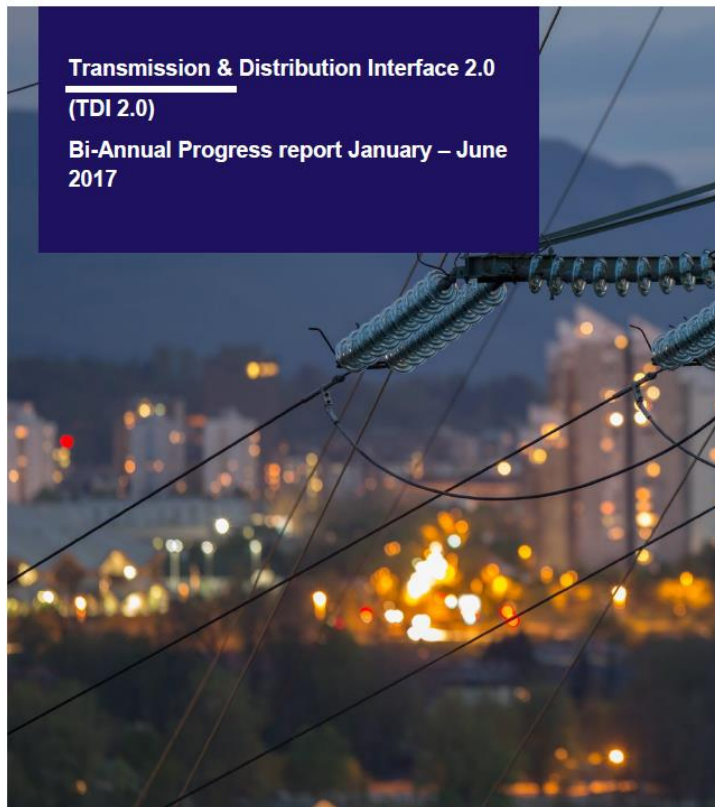
- Available innovation funding has increased over time, and sparked a demonstrable ramp up in DNO innovation activity leading to DSO transition.
- An external view - Recent Pöyry 2016 report:  
*“the LCNF has succeeded in encouraging DNOs to innovate and has served to move the level of innovation within the DNOs from a ‘low’ base to a ‘moderate’ level”*
- David Smith, CEO of Energy Networks Association:  
*“This report demonstrates that innovation funding has been very successful in enabling energy networks to deliver the innovative solutions that will be vital to overcoming the significant challenges of decarbonisation.”*
- Balance between funding and regulatory reporting, admin, reviews, ex-post Vs ex-ante assessment.



# The removal of NIA funding in RII0-ED2, placing more emphasis on companies to innovate to deliver future efficiencies

- Culture of innovation now well embedded within DNOs – 13 years of innovation funding by the end of RII0-ED1;
- Scale back relatively straightforward BAU innovation;
- Replace with incentives to reward good performance (whilst retaining support for development of solutions that may not deliver benefits within the specific price control period);
- Enable companies to bear more risk in pursuit of totex savings they can deliver; and
- Leave efficiencies to be revealed via performance, rather than assumed up front.

# The continued role of NIC funding in RII0-ED2 to develop whole-system focussed projects



- NIC to be refocussed on large scale projects with long term or whole system benefits; and
- Need to develop whole system incentives for RII02
  - maturity question
  - cross vector applicability.

# The removal of specific innovation funding by RII0-ED3

- Expect any specific innovation funding will have fallen away;
- Strong incentives should drive continued innovation among DNOs; and
- Arrangements including whole system / cross vectors incentives should be better developed and understood by all parties.

# Length of the period

UK Power Networks' RIIO-2 response advocated moving back to a **5 year control period**.

Rationale:

- Continued levels of uncertainty;
- Greater customer protection; and
- Achieving a balance between incentives to invest and complexity of uncertainty mechanisms.

# Thank you



# Long term value: RII02 Workshop

Innovation

1<sup>st</sup> Nov 2017



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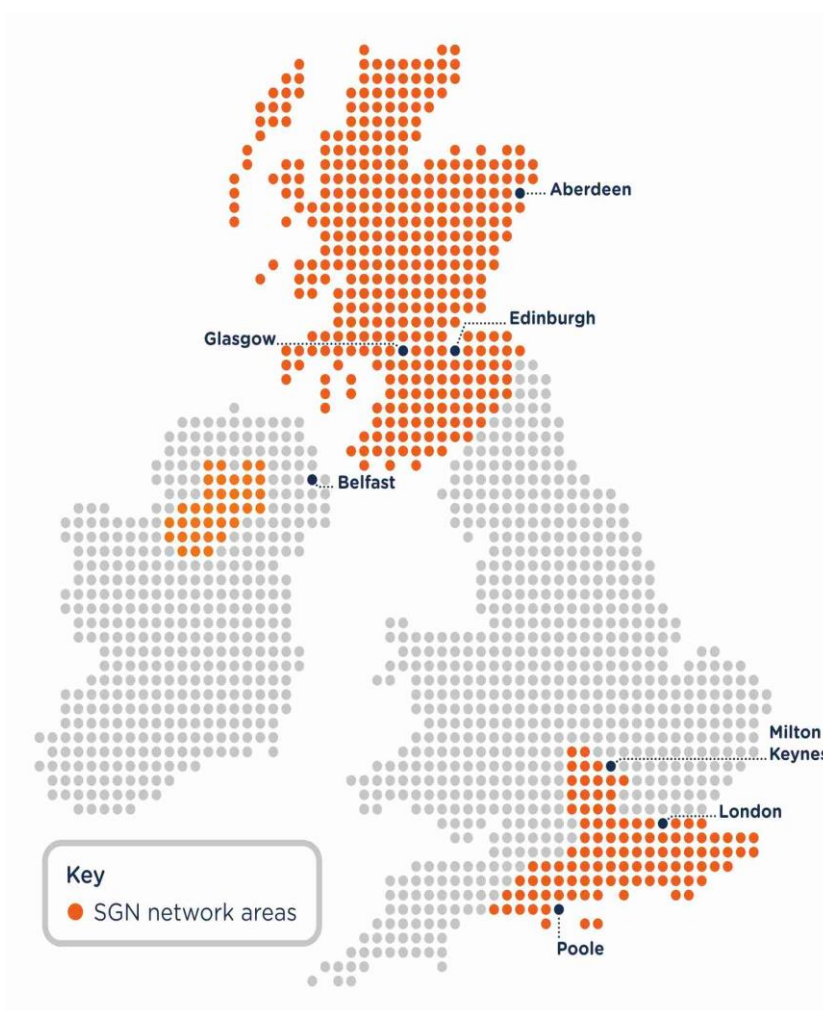
Your gas. Our network.

# Who we are

- £5.3bn value of assets
- Two distribution networks in GB:  
74,000km
- Building a third in NI
- 5.9m customers - 14 million people
- 3,300 staff 2,000 contractors
- 33 biomethane plants

## Our work – each year

- Emergency - 50,000 repairs and  
220,000 calls
- Replacement – 1,000km mains  
replaced
- Connections – 20,000 (4,000 fuel poor)
- Delivery of Infrastructure



# Innovation in RIIO-1

R&D Category \ Market State	Efficiency	Gas Mix	Networks	Commercial	Studies (techno/econ)	Estimate for Broad Market Application
Steady State	Keyhole Risers Inspection, NDT Pre-heating	Bio-Methane Bio-SNG	Oxygen Content Siloxanes	Leyland CNG Fife Hydrogen Aberdeen H <sub>2</sub> Buses	Cornwall Energy Island Fuel Cell/Heat pump Bridgend Future modelling	Immediate Deployment
Flexible Networks	Automation Pressure reduction Robotics	IGEM Gas Quality Standard Working Group	Oban Real time Networks	Future Billing Methodology I & C gas quality impacts	Distributed Sources of Gas Energy Map 2050	Roll out 2020-25
Highly Flexible Networks			Hyhouse Hy-Deploy			Roll out 2025-30
Repurposed Networks			100% H <sub>2</sub>		H <sub>2</sub> Clusters CO <sub>2</sub> capture H21 Leeds	Roll out post 2030

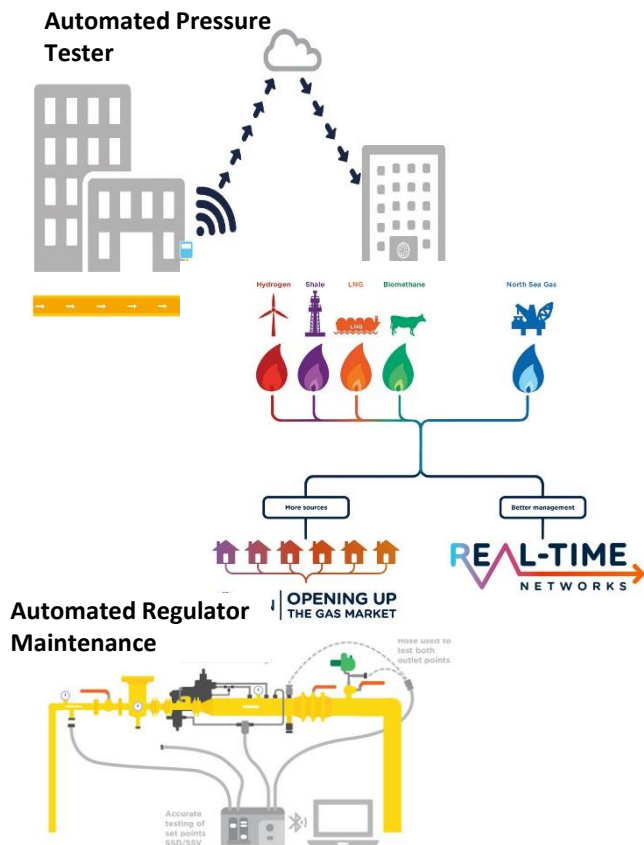


# Reason for Promoting Innovation



- *Requires a long term perspective.*
- *Not the natural domain of low-cost of capital.*
- *Driving a cultural and technological shift.*
- *Knowledge sharing maximises consumer benefits.*
- *Builds the small business ecosystem & broadens innovation base.*
- *Pro-active response to changing customer/industry issues.*
- *Decarbonising heat is a 'wicked' problem: multi-framed, complex, requiring collaborative and distributed leadership.*

# Innovation in RIIO-2



- *NIC and NIA - success stories in RIIO-1*
- *Ofgem has successfully delivered structure, strategic oversight and consumer value.*
- *Opportunities to evolve innovation as we move into RIIO-2 To focus on projects that:*
  - *Reducing barriers to the deployment of commercial / near commercial technologies.*
  - *Promote 'Public-good' outcomes.*
  - *High technical / deployment risk.*
  - *Set-out least cost decarbonisation options.*
  - *Focus on whole-systems thinking*
- *Balancing accountability with Reporting requirements/governance.*

Thank you...



**SGN**

Your gas. Our network.

- Break into three groups to discuss the following topics for 20 mins before rotating to the next topic.
- There will then be a short break followed by a report back from each of the group moderators.

### **How well did RIIO-1 incentivise long term thinking and providing long-term value for money?**

To consider...

- What has a longer price control delivered?
- How have the other aspects of the price control encouraged longer term thinking?
- Could you have a 'twin track' price control with certain aspects set on a longer basis?
- Are there benefits to different sectors have different lengths?

### **How should we incentivise innovation and what role should an innovation stimulus play?**

To consider...

- Do we still need an innovation stimulus? Is this different for different sectors?
- If keeping the innovation stimulus, what improvements could you make?
- What other aspects of the framework could be used to encourage innovation?
- What would be the impact of removing the innovation stimulus?

### **What role should competition play in delivering long-term value?**

To consider...

- Where should competition be applied in RIIO-2 to provide best value for consumers?
  - Are our criteria still appropriate?
  - Should we consider other sectors than ET?
- What are the benefits and challenges of the different competition models?

- **Thank you** for your time today!
- We very much welcome your engagement as we work towards developing our proposals for how the overarching framework may need to adapt in light of the lessons learned from RIIO-1 and also, as we have highlighted here today, the challenges the sector will face in RIIO-2.
- The next major milestone for the programme is the consultation document on the framework, which we are aiming to publish towards the end of Feb 2018 with a decision in the summer.
- We aim to publish slides and notes of the workshops following their conclusion.
- Please email [RIIO2@ofgem.gov.uk](mailto:RIIO2@ofgem.gov.uk) if you would like to provide more detailed comments on anything discussed here today or in any of the other workshops.

