ofgem Making a positive difference for energy consumers

RIIO-GD2 Stakeholder Groups

Introduction

Pete Wightman, Head of Gas Distribution

29/08/18

Agenda (Repex) September 6th

1. **Introductions (10:00 – 10:30)** *(Pete Wightman, Head of Gas Distribution)*
    - Overview of RIIO2 and purpose of the group.
2. **Wales & West Utilities (10:30 – 10:50)** *(Ian Dunstan)*
    - Repex GD1 lookback
3. **Ofgem (10:50 – 11:20)** *(Callum Mayfield)*
    - Review of drivers of industry underspend in RIIO-GD1
4. **Open discussion (11:20 – 11:40)** *(All)*
    - Key points from review presentations of GD1
5. **Cadent (11:40 – 12:00)** *(Colm Goodchild)*
    - Future of network, drivers and emerging issues
6. **Follow-on discussion (12:00 – 12:30)**
7. **Lunch (12:30 – 13:00)**
8. **SGN (13:00 – 13:20)** *(Mark Jones/Mary Rodgers)*
    - Innovation, cost pressures and RPE indexation
9. **Follow-on discussion (13:20 – 13:50)**
10. **Northern Gas Networks (13.50 – 14.10)** *(Tony Pearson)*
    - Outputs and incentives in GD2

Agenda (Repex) September 6th (continued)

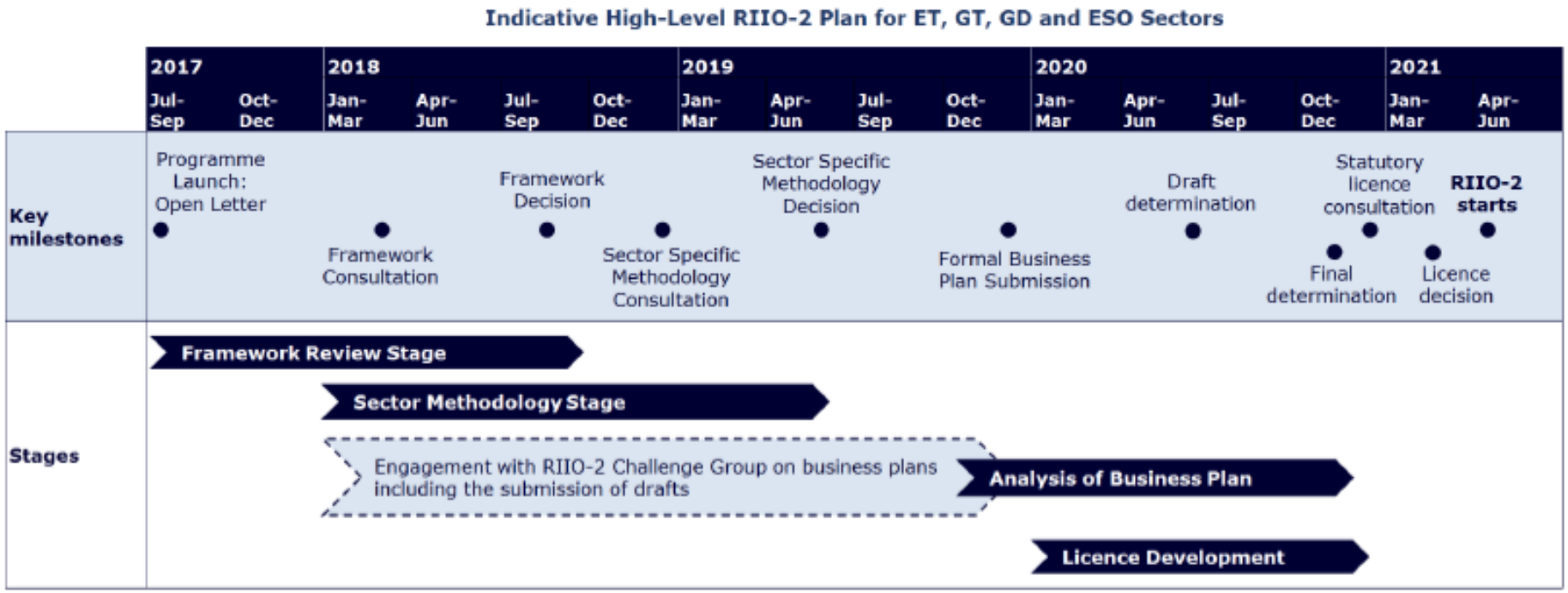
11. Ofgem (14:10 – 14:30) *(Pete Wightman)*

- Key questions for deliverables, incentives and outputs for RIIO-GD2

12. Any other business, concluding remarks and agreeing actions (14:30 – 15:00)

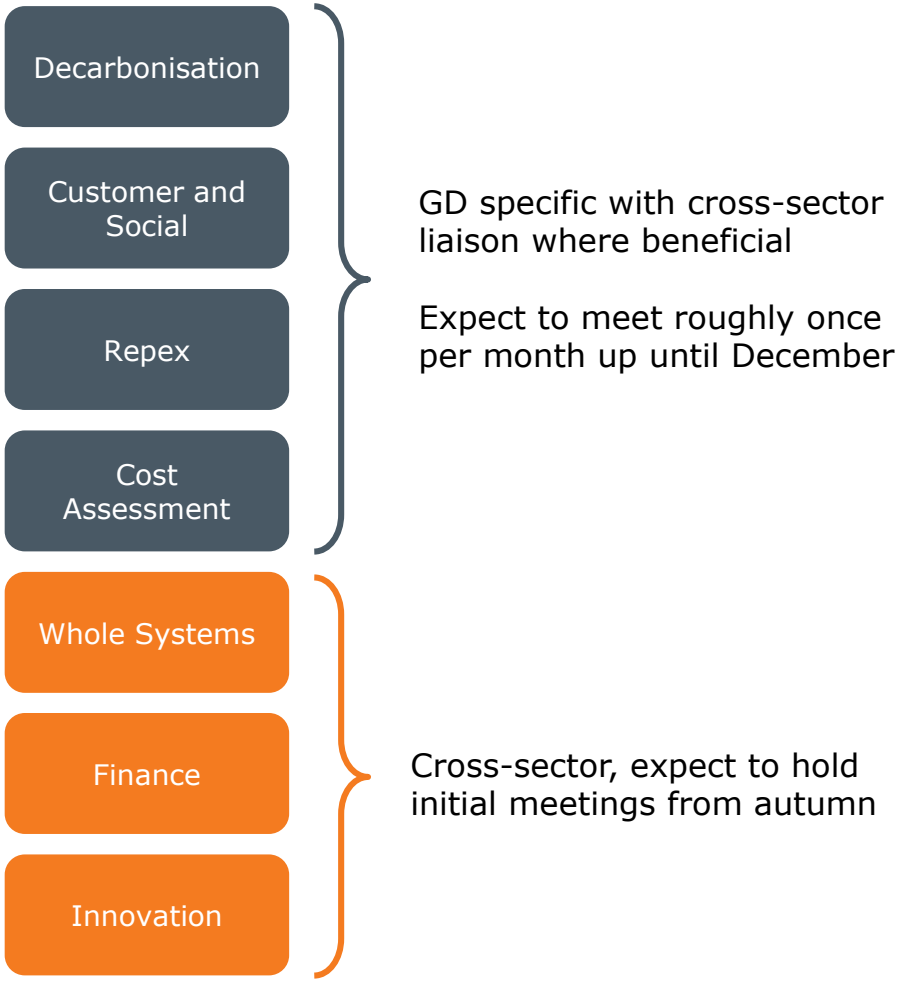
- Ofgem to identify and attribute actions ahead of next meeting
- Next meeting 02/10/2018 in Glasgow

RIIO-GD2 Timeline



Ofgem-led GD2 stakeholder groups

- Focus of groups at this stage is to inform Ofgem's policy and cost assessment thinking up to and beyond our December methodology consultations
- Aim to bring together expert and informed stakeholders to discuss and debate options.
- The groups will evolve as we move through the GD2 process. Eg:
    - As we get further into the detail we may discuss the specific methodology for an incentive or target setting.
    - The need for some groups may fall away / merge.
- Plan to publish materials (eg slides) on Ofgem website, as well as a non-attributable summary of discussions.



Focus of planned GD-specific sessions

Decarb & customer and social

- August 29 & 30 (London): Discussion on key policy questions for RIIO-GD2
- September 19 & 20 (Glasgow): Repeat above for any new key questions identified & follow-up on more detail from Aug 29 & 30
- October 24 & 25 (London): tbc

Repex

- September 6 (Glasgow): Review of RIIO-GD1 and initial view towards GD2
- October 2 (Glasgow): Structuring of outputs / incentives for GD2

Cost assessment

- September 5 (Glasgow): Cost drivers and cost categories
- September 26* (London): Cost assessment approach and modelling structure
- October 17* (Glasgow): Efficiency and benchmarking
- November 15 (London): BPDTs and annual monitoring

** Provisional dates*

Roles of wider GD2 stakeholder engagement

Ofgem - decision-maker

Sector-specific & cross-sector Working Groups

Core role: support development of outputs and incentives, and approach to cost assessment

Input to Ofgem policy development

Independent RIIO2 Challenge Group

Core role: challenge company business plans and challenge Ofgem policy development in specific areas

Output: independent report

Network Operators

Independent User Groups/ Company Groups

Core role: challenge company business plans

Output: independent report

Network Operator stakeholder engagement

Outputs and incentives

Initial thinking only – further development/consultation to follow

- We are looking to make the output categories for RIIO2 as intuitive and simple as possible, reducing overlap and potential confusion.
- We are proposing to consolidate existing output categories into three new categories as described below.
- We welcome early views from stakeholders; there will be further opportunities to provide formal feedback at a later stage.

Improve the Customer Experience

- *All consumers, including those who are vulnerable, should receive a safe, high quality, and reliable service*

Support the energy system transition

- *Network companies have to enable the transition to a low carbon, consumer-focused energy system*

Improve the network and its operation

- *A network in better condition will be safer, greener, more reliable, and more responsive to change*

Initial thinking only – further development/consultation to follow

- For illustrative purposes, we have mapped some existing and potential future output measures to the three new proposed output categories.
- Some measures may fall into more than one output category.

	GD	GT	ET	ED
Improve the customer experience *All consumers, including those who are vulnerable, should receive a high quality, safe and reliable service*	Interruptions Guaranteed standards Customer surveys Complaints Stkhldr engagement Carbon monoxide safety Emergency response Vulnerable customers FPNES Connections	Stakeholder surveys Reliability Stkhldr engagement Connections	Stakeholder surveys Stkhldr engagement Connections	Customer surveys Stkhldr engagement Interruptions Complaints Guaranteed standards Worst-served customers Vulnerable customers Connections
Support the energy system transition *Network companies have to enable the transition to a low carbon, consumer-focused energy system*	Low carbon - Energy efficiency - Green gas - Green company ops Whole system outcomes Innovation - Baseline & bespoke Asset stranding Network extensions	Whole system outcomes Low carbon (compressor emissions) Asset stranding Network extensions	Whole system outcomes Low carbon - SF6 - EDR - Losses Visual impact Asset stranding Network extensions	Whole system outcomes Low carbon - SF6 -Oil leakage - Energy efficiency -Losses Visual impact Asset stranding Network extensions
Improve the network *A network in better condition will be safer, greener, more reliable, and more responsive to change*	NOMs Repex MOBs Shrinkage Workforce resilience	NOMs Physical/cyber security Workforce resilience	NOMs Physical/cyber security Workforce resilience Reliability	NOMs Load index Workforce resilience

Our July framework decision set out three types of outputs for RIIO-2

- ✓ Licence obligations:
  - ✓ Minimum standards with associated licence obligations
  - ✓ Failure to meet could lead to enforcement action and penalties
  - ✓ Not directly linked with specific funding

- ✓ Price Control Deliverables:
  - ✓ Specific deliverables with funding attached (eg high value capital project)
  - ✓ Clear methodology of what happens when activity is not delivered, delivered late, or delivered to a lower specification or standard
  - ✓ We expect companies to work closely with stakeholders and their customer/ user groups to put forward proposals. Consequences for non-delivery will be determined by Ofgem through stakeholder engagement consultation.

- ✓ Output Delivery Incentives (ODIs):
  - ✓ Will apply where service quality improvements beyond the minimum standard is in the interest of consumers
  - ✓ Will reward or penalise performance; overall cost to not exceed value of performance
  - ✓ Could be relative or absolute
  - ✓ We propose to set a number of common metrics within each sector, determined by Ofgem through stakeholder engagement/ consultation. There will also be opportunities for companies to put forward proposals for individual ODIs in collaboration with their stakeholders and customer/user groups.

Initial thinking only – further development/consultation to follow

- This slide describes the role we expect Ofgem and companies to play in terms of proposing/ setting outputs.
- **Ultimately Ofgem will retain final decision-making on all aspects of the price control settlement.**

ODIs (financial + reputational)		Price Control Deliverables	Price control obligations
Sector-wide ODIs	**Company-specific ODIs**	**Activities to be delivered to a specified standard, are significant and/ or high-value** (incl. baseline "parameters")	**Minimum standards of service**
Metrics/ measures determined by Ofgem	Companies to propose metric/ measures with Ofgem oversight	Companies to propose deliverables with Ofgem oversight	Minimum standards determined by Ofgem
Targets/ incentive rates (where applicable) set by Ofgem	Companies to propose targets/ incentive rates (where applicable) with Ofgem oversight	Companies to propose options for what happens if output not delivered Ofgem oversight	Consequences in form of penalty/ enforcement determined by Ofgem
Opportunities for companies to propose targets/ value of incentive	Ofgem to determine final targets/ incentive rates	Ofgem to determine what happens if output not delivered	

- All activities led by Ofgem (orange) will involve significant stakeholder engagement and consultation.
- We expect companies to engage proactively and make extensive use of their user/ customer groups in developing and putting forward proposals (green). The onus is on the companies to put forward evidence-based proposals.

Presentation 1 – Repex GD1 lookback

Ian Dunstan, WWU

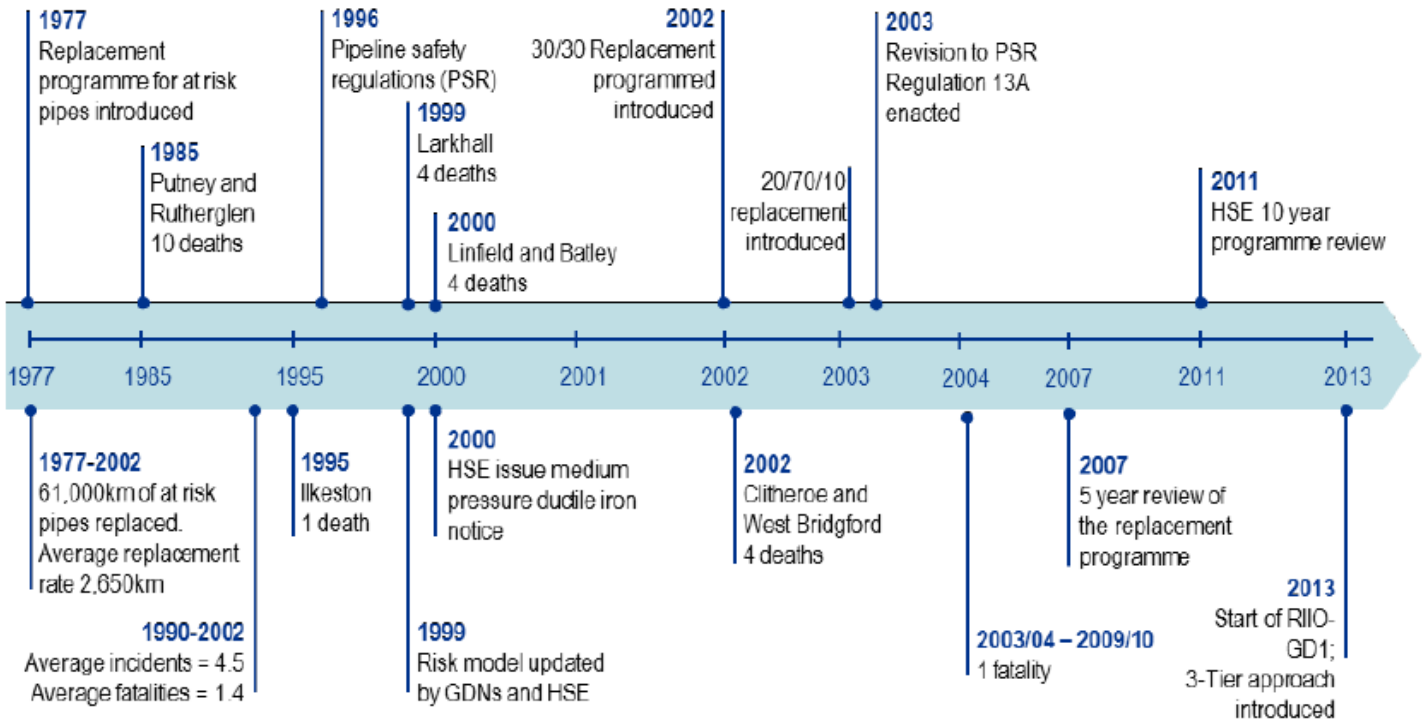
6th Sep 2018

The value of the Mains Replacement Programme

WALES&WEST UTILITIES

Key milestones

History of metallic mains replacement



Value of the programme

The 30/30 and subsequent 3 tier mains replacement programme provides significant safety, environmental and cost benefits to consumers since its commencement in 2002

- **By 2050 the programme will have delivered in WWU's geography**
  - **Safety benefits:** avoided over 2,900,000 gas escapes, 175,000 fractures, 205,000 Gas in Building events and 80 explosions preventing circa 100 serious injuries and 40 deaths
  - **Environmental value :** Prevented emissions equivalent to 12,400,000 tonnes CO2e
  - **Customer impact:** avoided 600,000 unplanned interruptions

WALES&WEST UTILITIES

Value of the programme

Delivering value to consumers

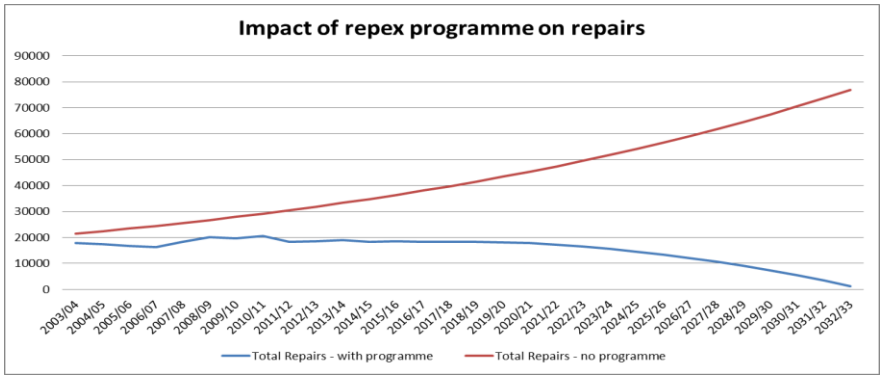
- **Financial Value:**
  - Net Present Value of the Programme from midpoint (2017/18) = circa +£1,289m
  - Pays back by 2037
- **Impact on gas bills**:
  - Minimal impact as capital investments are offset by future operating savings. Current cost is only £0.60 per consumer per annum more than having no programme but this figure decreases to £0 by 2030 as the cost of managing a severely deteriorated metallic mains network outweighs the programme costs
- **Future energy benefits:**
  - Completion of the Iron Mains programme supports a low cost, safe and secure gas network will play a significant role in a future sustainable energy mix for GB Business and Consumers

- **The programme also demonstrates compliance with the Pipeline Safety Regulations and the requirements of the HSE in managing iron mains**

WALES&WEST UTILITIES

Impact of programme to date

- **Current Impact of the programme**
- The programme from commencement to today has avoided over 148,000 gas escapes, 13,000 Gas in Building events and 6 explosions and resultant deaths and serious injuries
- **Graphs 1: Impact of programme on repairs**



- It can be seen from the graph above that with no programme we would currently be responding to over 36,400 leaks per annum instead of our current rate of just over 18,000. Due to the seasonal profile of leaks, this would require a repair workforce of circa 3x our current level to manage the higher risk escapes safely.

Impact of programme to date

- The impact on our current output measures is illustrated in the table below
- .

Output Description	2017/18	
	Actual	No programme
MRPS Risk existing on iron network	148,531	847,941
Fractures	616	2,185
Gas in buildings from fractures	48	170
Million repair risk score per annum	19	39
Unplanned interruptions	10,160	17,351
Environmental emissions (gwh)	376	496

- In summary, without the programme we would be operating a very reactive business with significantly increased risk and interruption to the public and a much increased impact on the environment

WALES&WEST UTILITIES

Track record

- The GDNs have delivered on our commitments
  - Since 2002 we have successfully delivered the HSE / Ofgem targets year on year
  - This is a considerable achievement given the scale of physical works
- Delivering a very reliable network as evidenced by our un-planned interruptions performance
  - 1 in every 200+ years

WALES&WEST UTILITIES

Benefit of programme on local economies

Company	Region	Repex 2014 - 2021 (£m)	Regional 'ripple' effect 2014 - 2021 (£m)
NG	East of England	873	836
	London	1,116	1,067
	North West	699	668
	West Midlands	669	644
NGN	Northern England	679	660
SGN	Scotland	474	463
	Southern England	1,330	1,273
WWU	Wales and West England	629	602
	National Total	**6,369**	**6,092**

WALES&WEST UTILITIES

In summary

- Positive NPV and short payback period
- Big contributor to UK Carbon Reductions
- Prevented many gas escapes
- Saved lives
- Avoided un-planned interruptions
- Track record of delivery
- Significant benefit to local economies

WALES&WEST UTILITIES

Presentation 2 – Review of the drivers of industry underspend

Callum Mayfield, Ofgem

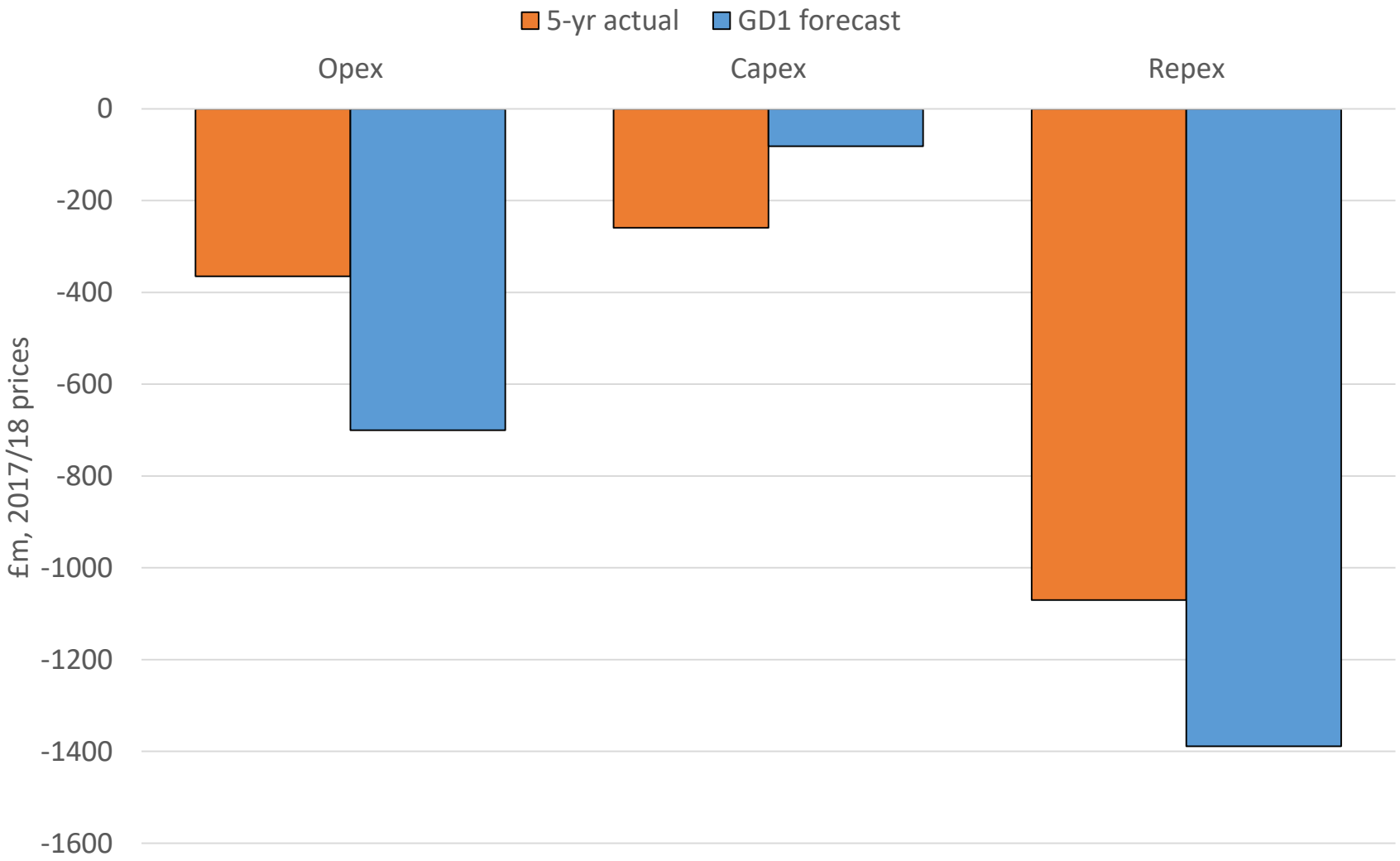
Overview

- Industry view of repex underspend
- Primary outputs and secondary deliverables snapshot
- Drivers of underspend
- Examples of differences in actual delivered vs BP assumptions driving underspend

Questions

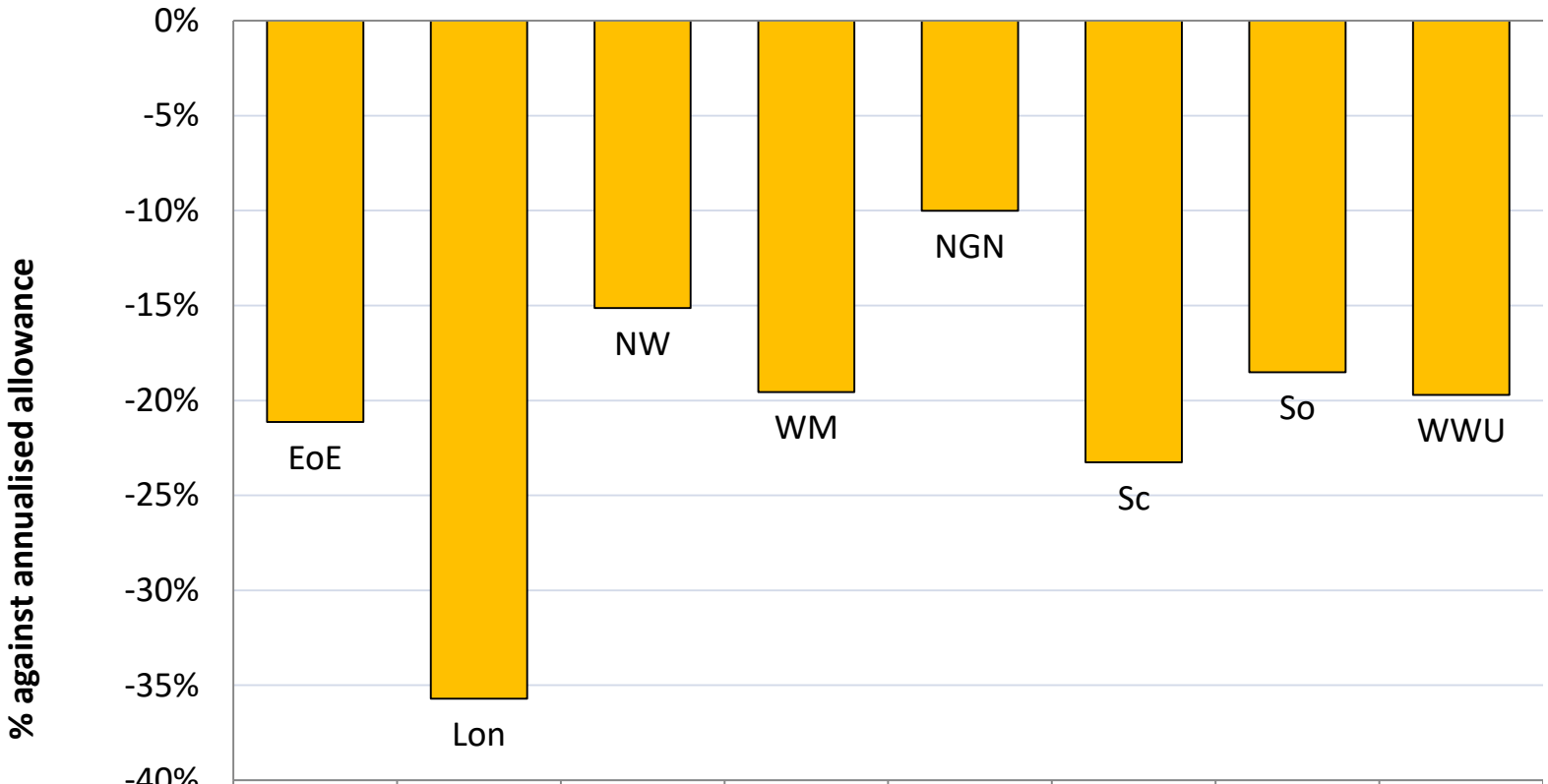
- Key questions from GD1
- Key questions for GD2

Repex represents the largest category of underspend by far



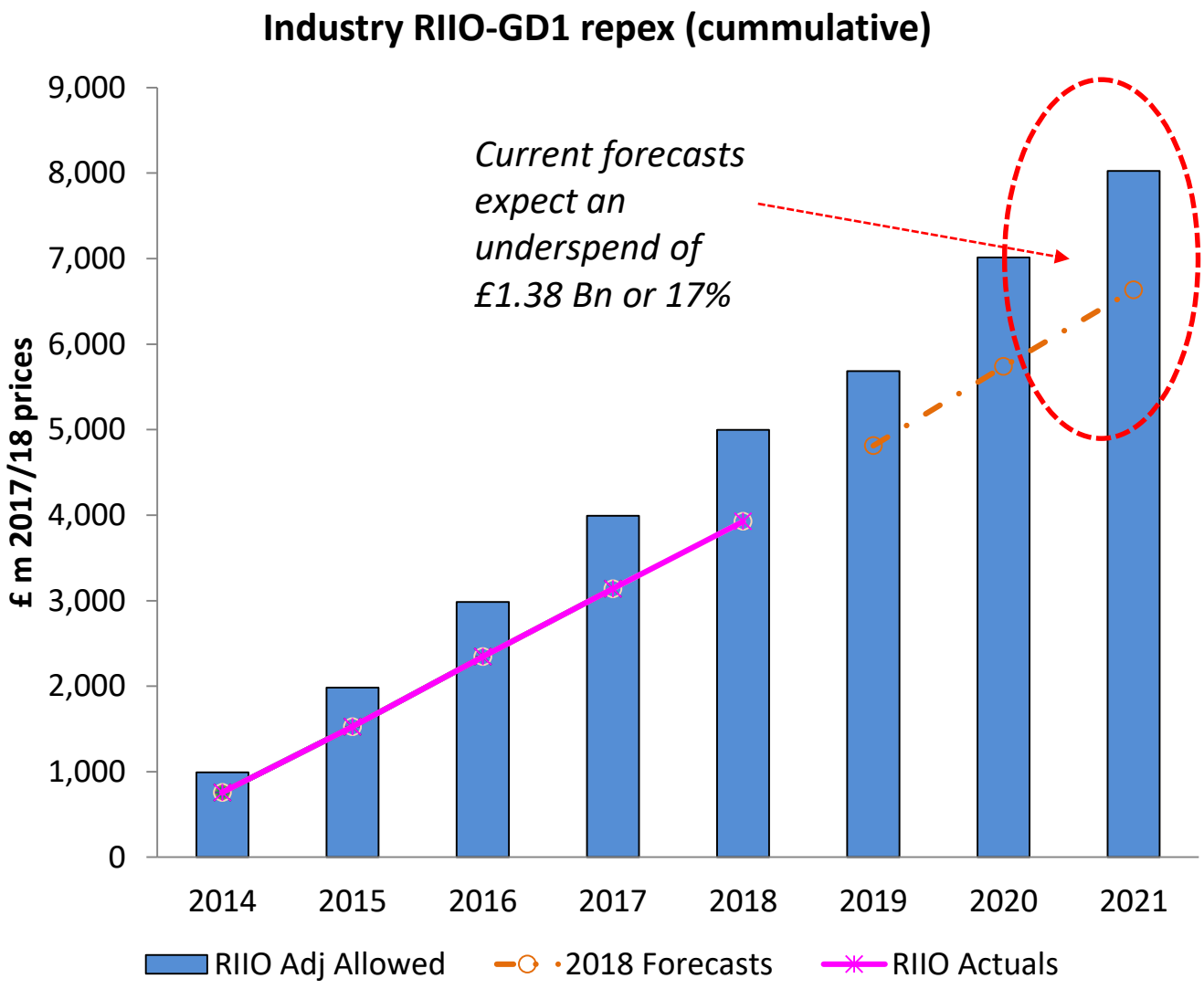
Repex underspend is occurring throughout the industry

Repex underspend against allowances, 4-yr actual



	EoE	Lon	NW	WM	NGN	Sc	So	WWU
Cumulative 4yr actual	-21%	-36%	-15%	-20%	-10%	-23%	-19%	-20%

Industry is forecasting significant underspend for GD1



- The industry is currently expecting to underspend by 17% against allowances over whole of GD2
- This underspend represents a combination of efficiency improvements, factors which were uncertain at the start of GD1 that have benefitted the GDNs and areas were the design of the price control has allowed GDNs to benefit.

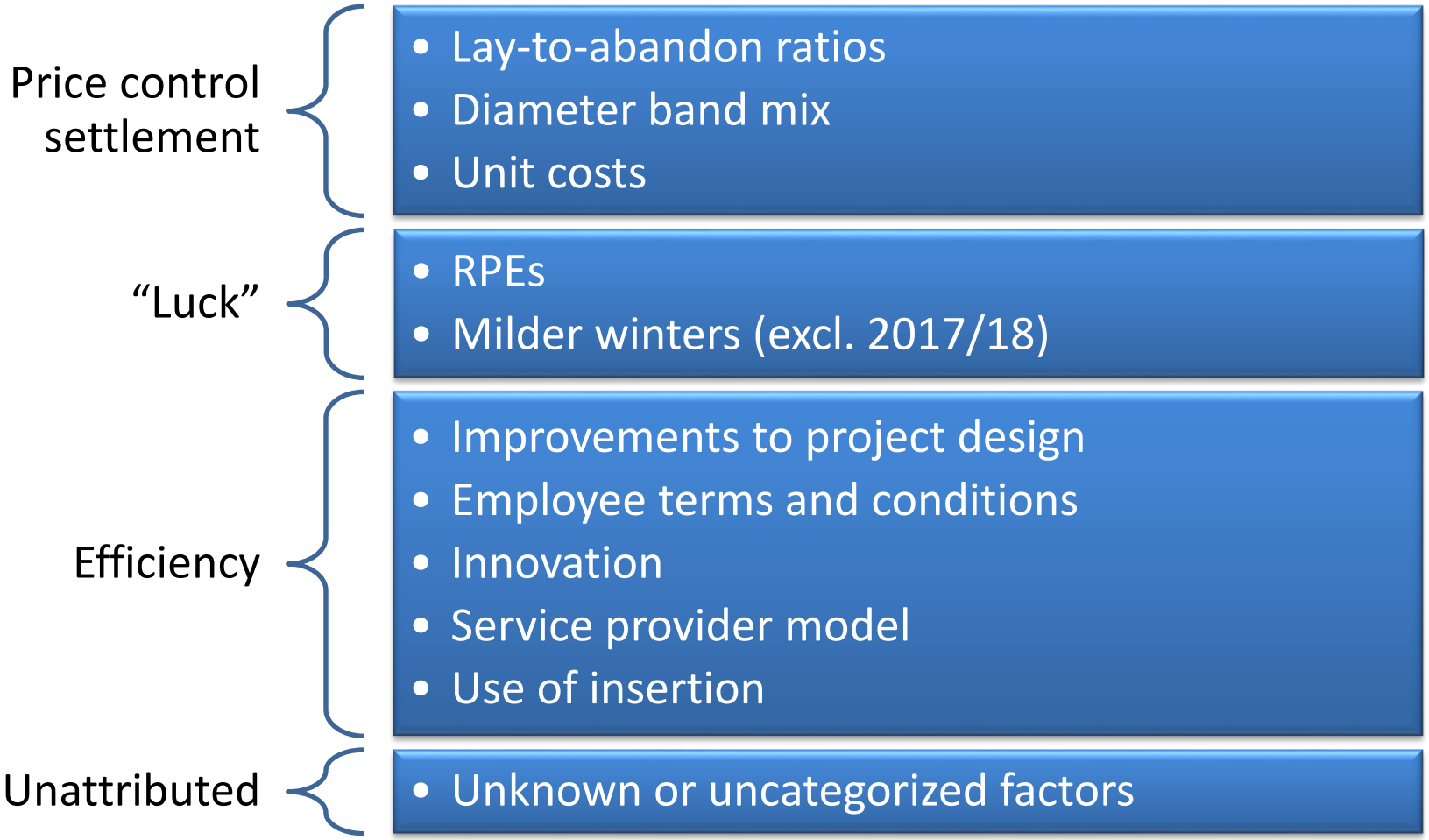
Overview of primary outputs and secondary deliverables

Category	Units	5-yr to date	RIIO-GD1
Network risk (outperformance vs target)	incident/yr	17.3%	24.6%
Tier 1 abandoned	*km*	8.2%	7.7%
Tier 2* abandoned	*km*	-42.2%	-7.7%
Tier 3 abandoned	*km*	-48.5%	5.0%
Steel mains abandoned	*km*	-13.7%	-7.2%
Other mains abandoned	*km*	109.9%	107.7%
Steel services	#	-13.7%	-4.4%
Services transferred	#	-2.7%	-1.5%
Services relaid	#	6.0%	8.1%

It is noted that there was uncertainty around services workload and activity type at the beginning of GD1, owing to incomplete historical service asset records

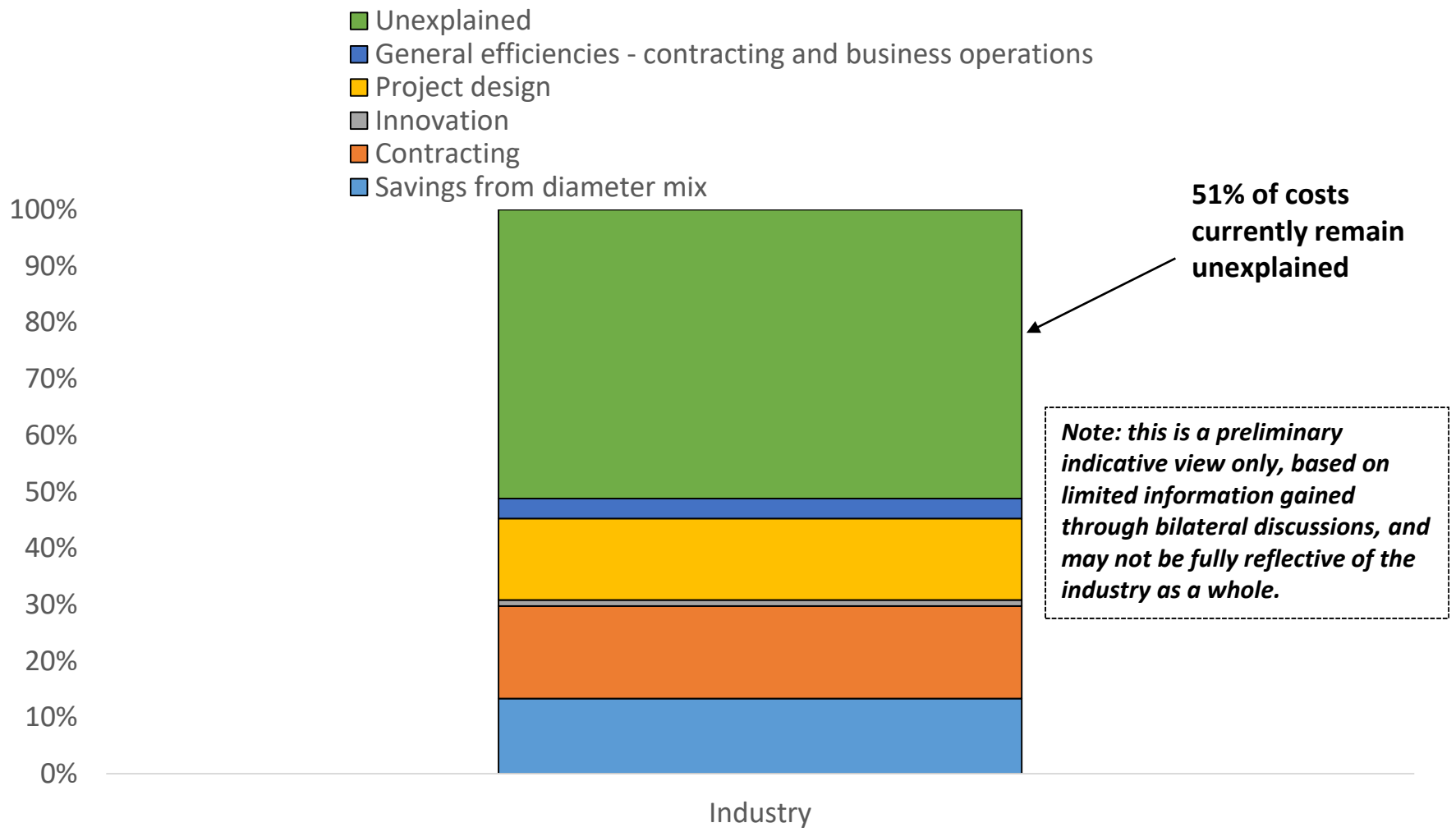
**includes Tier 2A, which is a variable component with a volume driver attached to account for forecasting uncertainty. Final adjustments to cost allowances will be made during closeout of RIIO-GD1 to reflect actual volume of Tier 2A work undertaken.*

Identified drivers of underspend

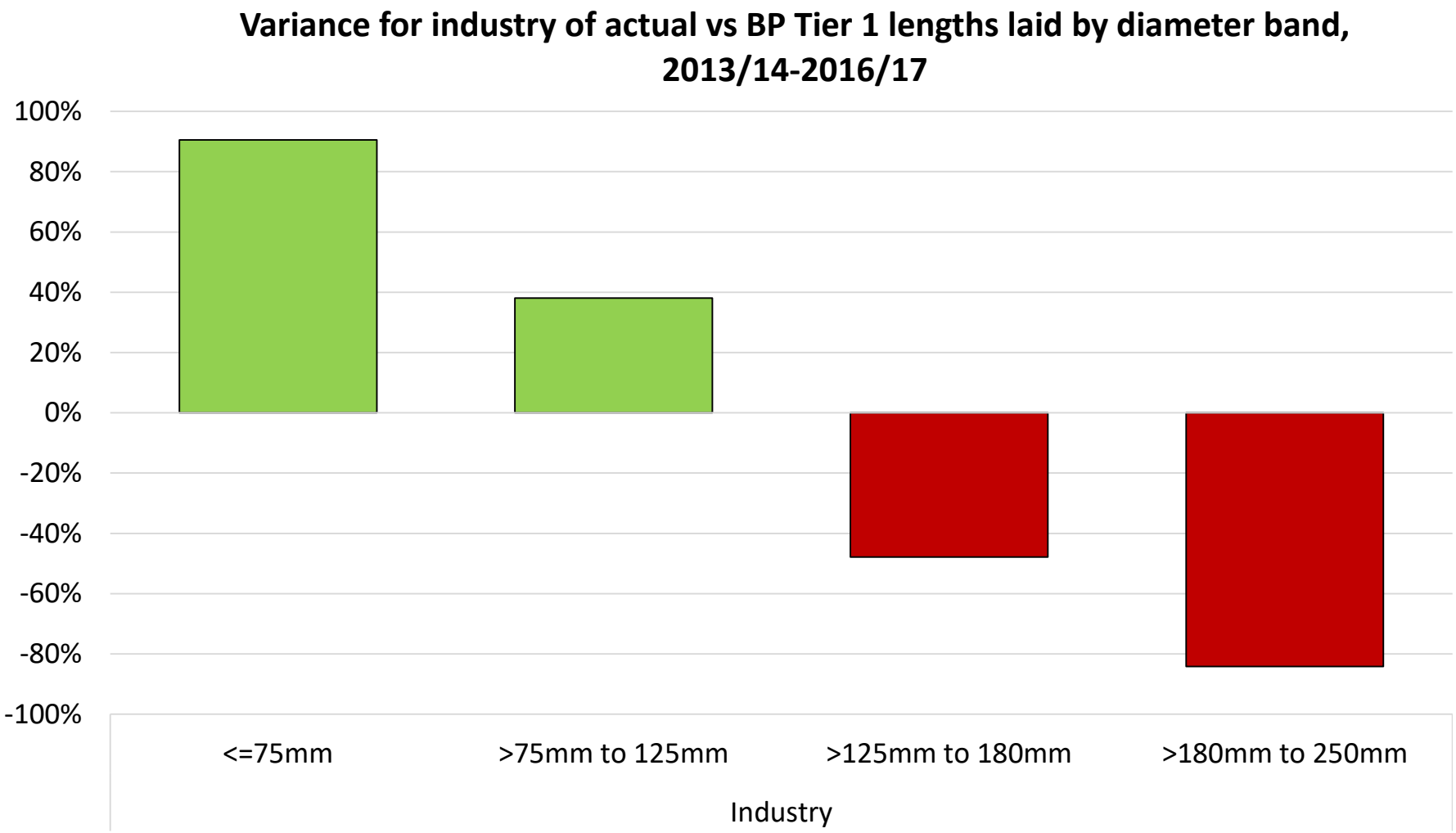


The materiality of different underspend drivers remains largely uncertain

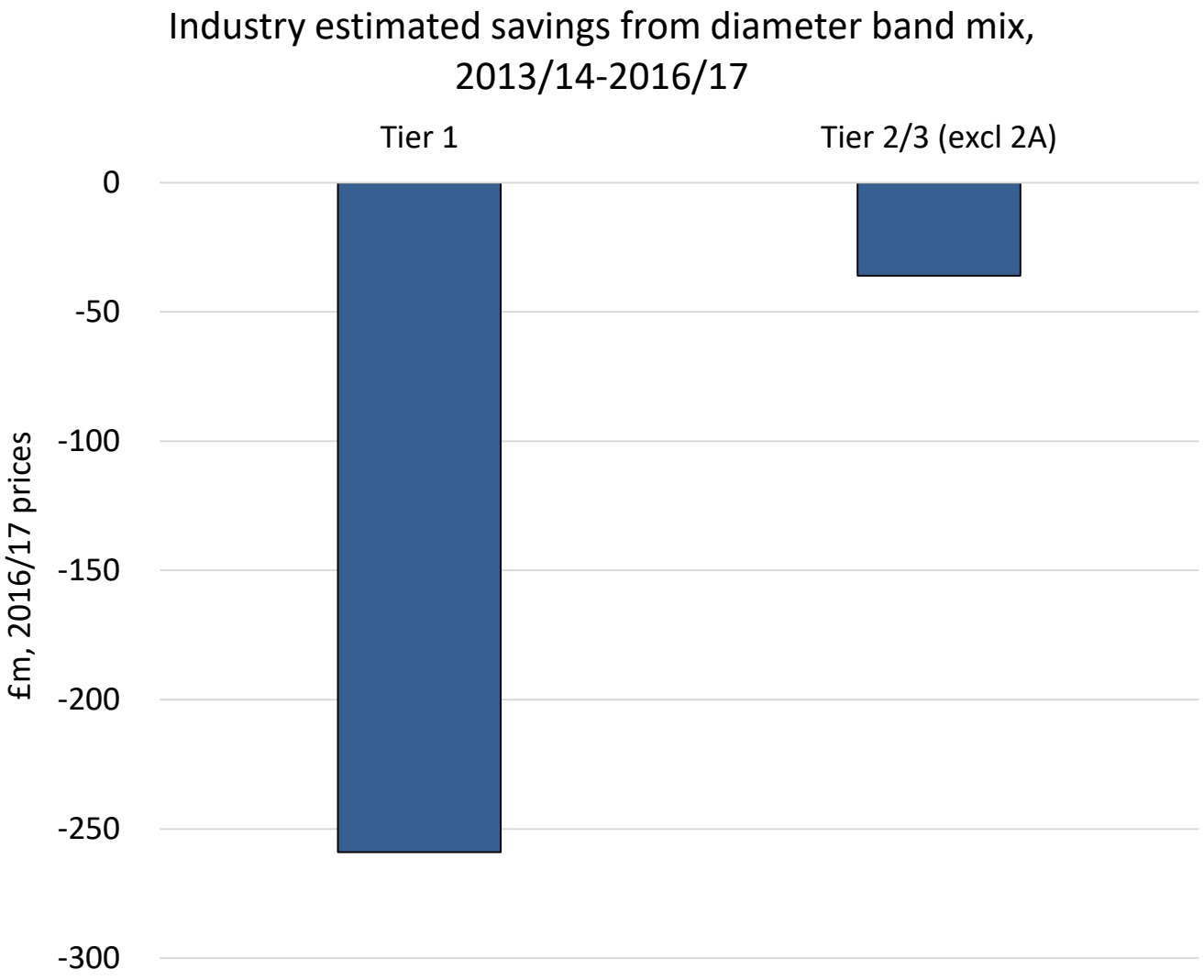
Current indicative view on underspend drivers materiality across GD1



Replacement efforts have strongly focused on smaller diameter pipes



Close to £300m savings estimated from diameter band mix



Estimates compiled by Ofgem are based on an analysis of the difference between actual GDN workloads and those laid out in their business plans at the beginning of GD1. The workloads for Tier 1 are sub-divided by four diameter bands.

The weighted average unit costs over the first 4 years of RIIO-GD1 is used to produce the unit cost for each pipe diameter band which is taken as the basis for determining the costs that would have been incurred if the actual workload delivered was consistent with the profile detailed in the companies' GD1 business plans.

Key questions from RIIO-GD1

- How could we better understand the complete picture behind repex underspend?
- How much of repex underspend can be attributed to efficiency improvements versus luck or price control design?
- Is there a clear link between achieving risk removed primary output target and the cost associated with doing so? What's the evidence?
- How important has innovation been in driving cost reduction? What's the evidence?

Key questions for RIIO-GD2

- To what extent is the remaining workload over the next 11 years comparable to the workloads in RIIO-GD1?
- When setting ex ante allowances, how can we mitigate the effects of some underspend drivers while still encouraging improvements in efficiency?
- What cost efficiencies seen in GD1 are not repeatable in GD2, and which can be advanced further?
- How much room is there to lower costs through innovation in RIIO-GD2?

Presentation 3 – Future of network, drivers and emerging issues

Colm Goodchild, Cadent

Future of networks, drivers and emerging issues

Colum Goodchild

September 2018

20 minutes

Cadent

Your Gas Network

Overview

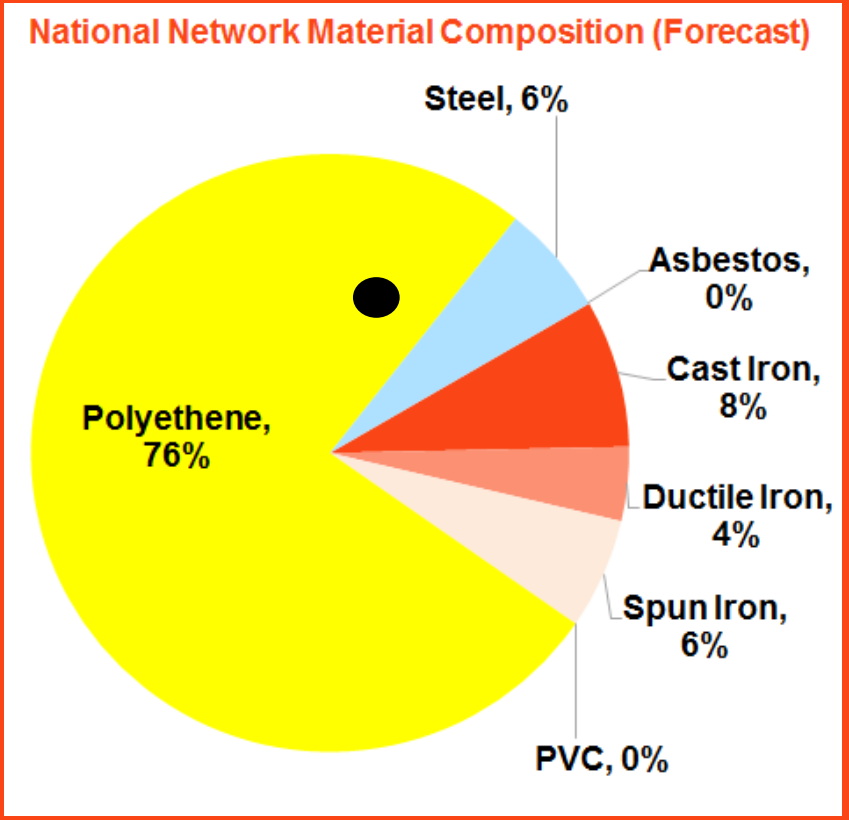
- The distribution pipeline asset base in 2021
- Some drivers remain: Customer Service, Economic, Environmental & Safety benefits
- Emerging issues:
    1. Safety risks beyond the IMRRP – Steel et al.
    2. Stubs
    3. Risers
- An existing driver coming into focus: Down Tools at the end of 2032?
- A Future Network delivering for Customers: Low Cost , Reliable & Safe

What will our network look like in March 2021?

Cadent's current (14/15) rate of replacing pipe is 1.2% per annum of the entire asset base or 3.7% per annum of our metallic stock.

The stock is **old and ageing**.
DR7 lay dates:
CI 1850 - 1955,
SI 1925 - 1975
AC 1930 - 1955
Imperial DI 1960 - 1971
PVC 1960-1975

National length of Steel ~16,000km and Iron (SI, DI, CI) ~48,000km



Some drivers remain

Customer Service, Economic, Environmental & Safety Benefits

Foundations for repex : Economic & Environmental benefits for customers and society

- The HSE/Ofgem commissioned 10 year review of the Iron Mains Replacement Programme (http://www.hse.gov.uk/research/rrhtm/rr888.htm) has established that there are significant customer benefits associated with the replacement program:
  - *'One of the main findings from the CBA is that the main benefits arising from the IMRP relate to network efficiency (reduced repair costs and reductions in the level of private shrinkage) and environmental benefits (lower emissions).'*

- This position is supported by more recent work by KPMG (Iron Mains Risk Reduction Programme Summary of evidence of the costs and benefits of the programme) which concludes that decommissioning is cost beneficial:
  - *'The programme would largely remain cost beneficial even if the safety benefits are excluded. The IMP helps support lower cost, safer and more environmentally friendly gas networks as it continues to play a key role in the energy mix in great Britain'*

- The risk monetisation work also shows significant environmental and reliability benefits. https://www.ofgem.gov.uk/sites/default/files/docs/2015/11/gdn_asset_health_risk_reporting_methodology_-_v2.0.pdf

Foundations for repex : Safety Legislation (http://www.hse.gov.uk/gas/supply/mainsreplacement/10-year-review.htm)

Legal Mandate

- ***The Health and Safety at Work etc. Act 1974 (HSWA), section 3(1), requires pipeline operators to conduct their undertakings to ensure, so far as is reasonably practicable, that persons not in their employment are not exposed to risks to their health and safety.***
- ***In addition, the Pipelines Safety Regulations 1996 (PSR), regulation 13 requires the operator to ensure that a pipeline is maintained in an efficient state, in efficient working order and in good repair.***

HSE Guidance

A continued risk management programme is justified because:

- *Although the risk profile for remaining pipes is now relatively flat, the condition of remaining 'at risk' iron pipes will deteriorate further with time, and*
- *Construction of new buildings will continue to encroach upon iron pipes not currently within 30 metres of occupied buildings and will make them at 'at risk'.*

Although we have already removed a large volume of Iron pipe and used effective targeting to remove the pipe posing the highest risk. The risk of failure in the remaining stock (which is extensive) is still present throughout the country and is increasing as the pipes continue to deteriorate.

New Drivers

a) Safety risks beyond the IMRRP – Steel et al.

b) Stubs

c) Risers

Steel: identified by HSE and Ofgem as an emerging issue in 2011

"At the time the original programme was approved steel mains and services were excluded as the risks at that time were not at the same level as the iron population."

"Steel mains are failing and causing GIBs and are likely to do so at an increased frequency in the future."

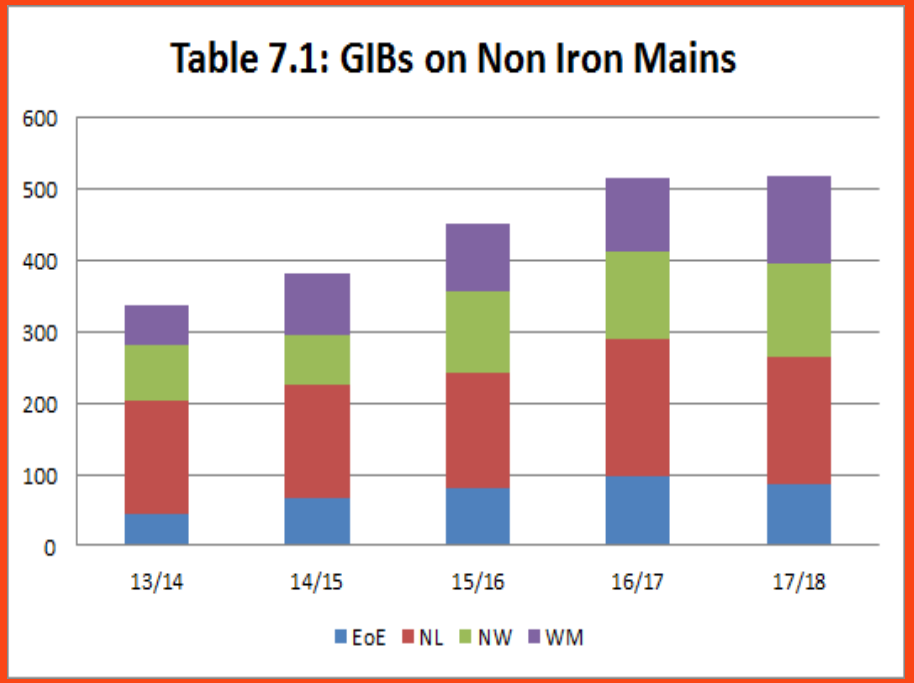
"there is evidence that failures and GIBs from steel mains assets are increasing. This degradation is considered likely to be corrosion related and to be progressive."

- **Extracts from 10 year review of the Iron Mains Replacement Programme, HSE/Ofgem**
-

Steel et al.

- We are 7 years further down the road and are continuing to see failures on Steel pipes leading to GIBs.
- Steel has a higher deterioration rate, particularly in aggressive soils.
- There is also a high proportion within 30m of properties

- Our safety obligations apply to all pipes, regardless of material, diameter, or distance from building.

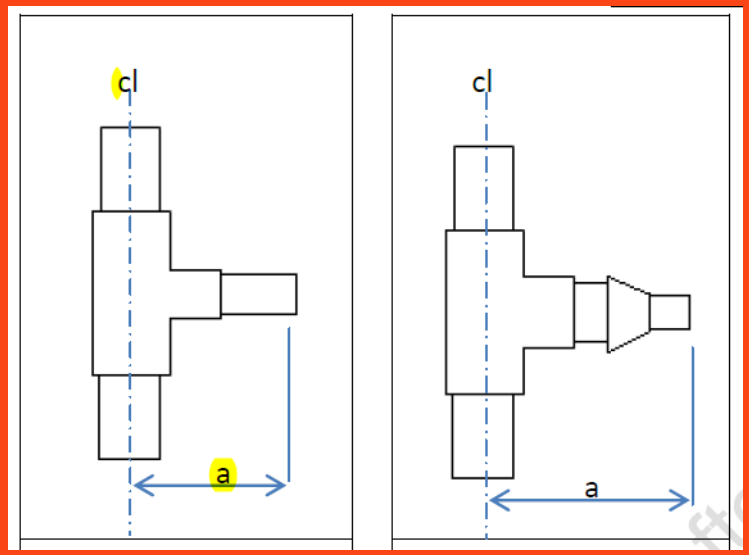


Stubs: A legacy to be addressed

History

- Prior to GD1 we were working to a programme to replace all iron within 30m.
- That is, we were planning on replacing all T1/T2/T3 pipes
- Sensible decision (cost efficient, good engineering) to leave T1 connections onto T2/3 pipes until the T2/T3 pipe was replaced.
- This created a number of ‘stubs’

Stubs



Nationally there could be up to 45,000 T1 stubs

Stubs: A legacy to be addressed

- With change to IMRRP in GD1 we now no longer have an enforcement plan to tackle all T2/T3 within 30m.
- As such we need to think what to do with T1 stubs.

- Where stubs are above the safety threshold (PAST) they will be dealt with promptly

- For the other stubs we are thinking through how best to address the challenge – resource, innovate and manage. No pathway yet identified

Risers: An area of focus

- **Current focus on gas supplies in high and medium rise buildings**
  - North London Multi Occupancy Building population significantly larger than any other network c. 50,000 buildings
  - Planned and **unplanned** interruptions – impact on customers
  - Extensive Surveys undertaken in GD1 will inform investment strategy for GD2 and beyond.
- **Continued refinement of asset management tools (risk monetisation)**
- **Gas Act obligation to maintain gas connections to premises if customers want a supply.**
- **Innovative alternatives being developed in GD1 such as Cadent's alternative energy programme for low use e.g. cooking supplies.**

An existing driver coming into focus

a) Down tools in 2032

Managing the transition to post IMRRP world

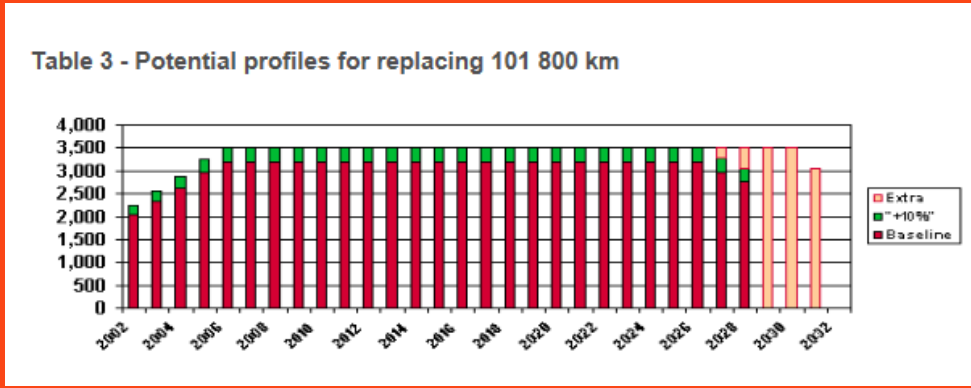
- **The IMRRP will conclude at the end of 2032. This step change in activity needs to be thought through, as a 'cliff edge' transition will be difficult to manage. High costs to maintain a workforce which knows it will be disbanded, whilst delivering a mandatory programme to an immovable deadline would impact on customer bills. As an industry we need to think about how we continue to cost effectively secure resources.**

Areas of thinking:

What will replacement volumes look like beyond 2032, continued investment to move to plastic networks.

Can we 'step up, to glide down'

Cost profiles and volume profiles both need to be considered



http://www.hse.gov.uk/gas/supply/mainsreplacement/irongasmain.htm

Future Networks Vision

a) Low cost

b) Safe

c) Reliable

d) Leak Free

Low cost, safe, reliable, leak free

- We have a vision for a plastic distribution networks, cheap to maintain (lower cost base) and delivering great reliable service to our customers.
- We are thinking about how we best manage the transition to this new world, how we can harness innovation to reduce the costs of change, particularly for large diameter mains, and to give us the tools to manage a very different sort of network.
- We are at the centre of Great Britain's changeover to lower carbon energy distribution – reducing leakage from our network and building a network for future gases.
- We are also thinking about future operating patterns, to match skills and resources to plastic networks, new gas blends and different gas flows.
- We keep our customers safe and warm today and will continue to do so in the future.

Presentation 4 – Innovation, cost pressures and RPE indexation

Mark Jones/Mary Rodgers, SGN

Repex Stakeholder Engagement

Innovation, Cost Pressures and RPE Indexation

SGN

Innovation

All of the gas distribution networks have been collaborating with each other and with other external partners to develop new and innovative techniques for managing risks on the gas distribution network

With respect to Repex delivery, each GDN has a broad portfolio of projects registered on the NIA project database

Some of these projects are complete and implemented, others are currently in-flight with varying degrees of success and progress

The following slides illustrate a small sub-set of these projects that SGN have been working on as a means of illustrating the types of innovation in the Repex business area

Innovation benefits

Successful innovation projects have driven operational efficiency

These benefits are shared with customers in GD1 and are fully realised by customers on an enduring basis

It is unlikely that these projects would have progressed without the NIA framework

An ecosystem of SMEs now exists to bring forward new ideas and partner with the GDNs all through the TRL range –these companies have also been prepared to take some financial risk themselves within the framework

This transparent environment of the NIA has fostered further innovative thinking and shared application across GDNs

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Continuing to innovate

We believe that significant further efficiency benefits are still to be realised

To realise these benefits will still require a demonstration that the innovation is viable

The associated cost and risk of this will largely depend on the technology readiness level of the idea

As the TRL level increase it will be necessary to demonstrate that it can be safely and efficiently implemented within the bounds of gas network policy and procedures and it is cost effective to deploy network wide (is it scalable?)

Benefits to the network within a price control period are unlikely to cover the cost of innovation given uncertainty in cost, timing and success

Maintaining the existing framework ensures benefits will continue to be realised with the appropriate allocation of risk between third parties, consumers and networks

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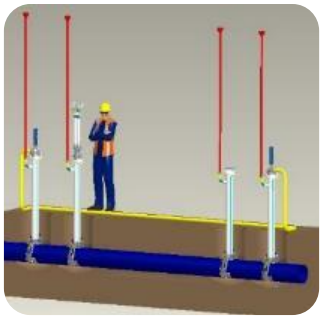
Keyhole Projects

Development of an overall keyhole solution to mains replacement activities

SGN_NIA0052 Core Drill and Flow Stop

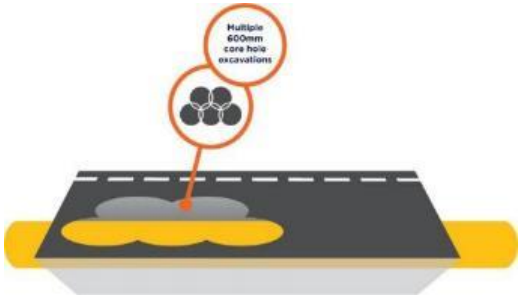


SGN_NIA0056 Mains and Service Replacement through Keyhole

iCORE TECHNOLOGY

Core • Dril • Connect

SGN_NIA0051 Olympic Rings



+ Camera, Water extraction & keyhole replacement & repairs methods

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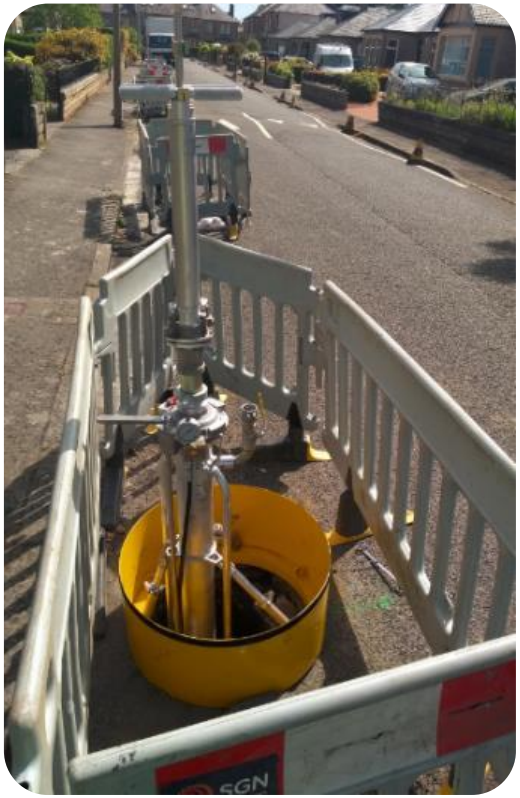
Core Drilling & Flow Stop

To design, develop and build equipment to allow under pressure drilling, CCTV insertion and flow stop through a 600mm core excavation.



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Mains & Service Replacement through Keyhole

iCORE TECHNOLOGY

Core • Drill • Connect

To enable technical assessments, designs,

development and field trials of keyhole tooling method and equipment for mains and service replacement.

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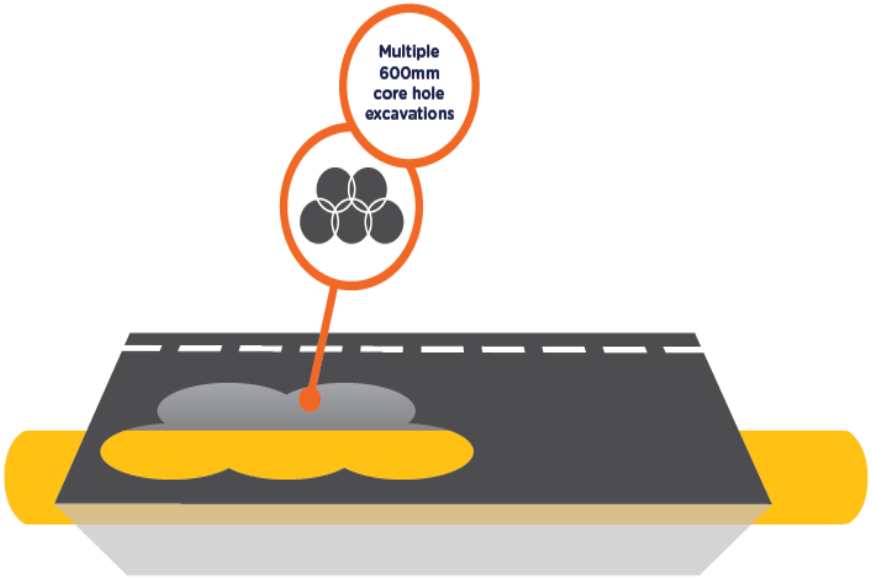
Olympic Rings

Test & develop a potential solution to enable multiple coring within highways

Reduces the need for conventional excavation, allowing existing equipment to be used within core & vac excavations



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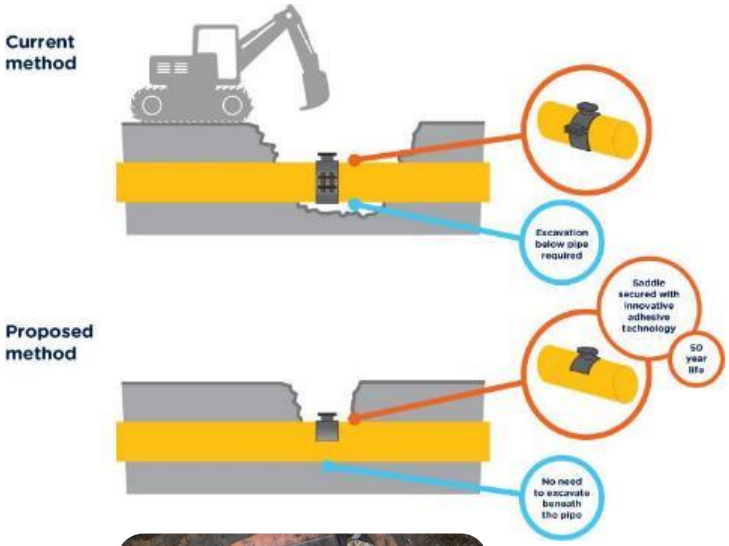
Permanent Bond & Bolt

To design & develop a bespoke adhesive that forms a branch connection without requirement for full excavation.

Saddle applied to main at SGN site in Redhill alongside lab testing by ALH. Testing has exceeded expectations. Final Field trials expected August.



Gas Eco (Geco) Gas Pump

Distribution Mains Replacement

To develop a single stage air powered gas pump capable of pressurising gas normally released into the atmosphere from pipes & holders

PE Asset Life Research

To carry out the technical assessment of PE & determine the residual life expectancy & risk associated with PE pipes & fittings

Service Replacement

- Pneumatic PE Pushing Machine
- 20mm Serviflex 1 1/4" Steel Services

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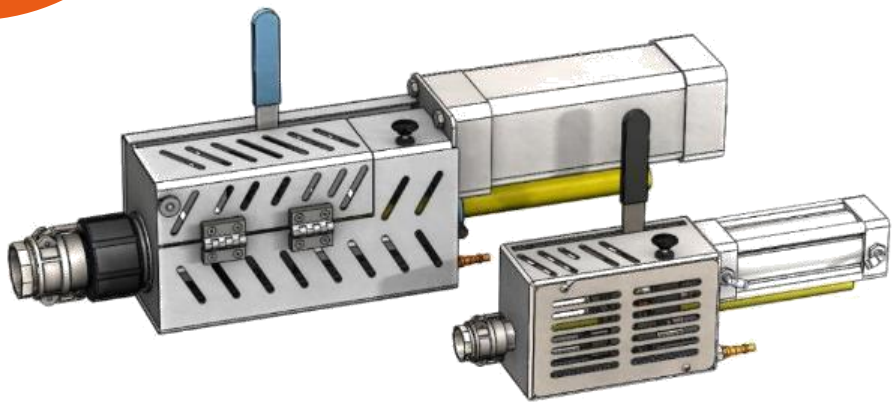
Your gas. Our network.

Pneumatic PE Pushing Machine

To aid the insertion of PE services around bends and fittings, covering sizes 20/25/32/40mm.



20mm Serviflex for 1 1/4" Steel Services

Serviflex is a corrugated dual wall liner that when used with specialist installation equipment can negotiate tight radius bends without compromise to the design life of the material.

Riser replacement/ refurbishment

- Self Amalgamating Tape
- MicroStop

Self Amalgamating Tape

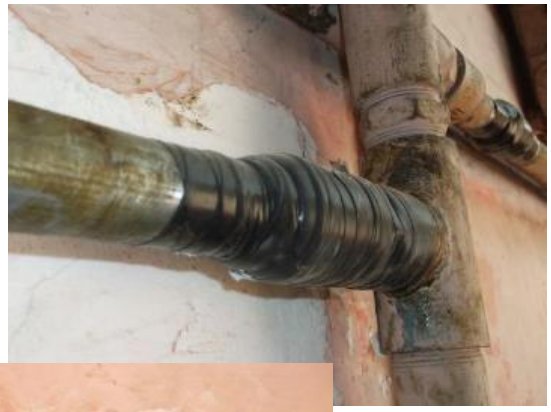
Initial internal repair technique for leaks on 1” & 2” screwed joints within network risers and lateral pipework. Preparatory work to plan replacement

https://www.youtube.com/watch?v=MVttCFM7BzA&feature=youtu.be

Self Amalgamating Tape (Phase 3)

To investigate the potential of expanding the scope of repair work which can be carried out by SAT to include underground repair work.

Stage 3 will also seek to prove that a SAT repair can be classified as a permenant repair.



Microstop

To assess and support the development of a network riser flow stopping operation

- MACAW carried out extensive offsite testing of fittings and equipment
- Tests included both long term pressure testing and Fire testing.
- Fire tests showed minimal signs of leakage on failed gaskets
- Offsite test results allowed G23 and field trial to progress

Microstop live trials

- Field Operatives trained in both Scotland and Southern networks
- Over 60 jobs completed in Scotland to date
- Various uses from below ground replacement, Connections and repair activities.
- Case studies in Glasgow on “tenemental” property show savings of between 3 ½ and 5 days over conventional replacement.
- Approval target in SGN July 2018 (currently with SGN Engineering Policy to approve

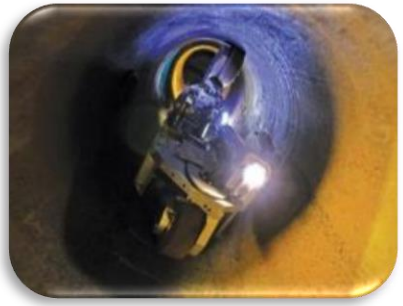
Alternatives to mains Replacement

- CISBOT

ROBOTICS
Reducing cost through innovation

CISBOT

- Catalyst for change - Revised HSE enforcement policy for Iron Mains – Large Diameter
- Global Search – discovered ULCR with their robot in CISBOT
- Inspection/repair of large diameter pipelines under live conditions
- Deployed in South London in October 2013 and repaired 88 joints on 24” main
- Completed 2 year programme for 9 major large diameter refurbishment projects



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RPEs and Cost Pressures

RPE Indexation

Identified below are a range of factors that can have an impact on the cost of delivering the Repex programme; both increasing and decreasing costs depending upon the prevailing market conditions: -

- Labour costs
- Material costs e.g. polyethylene
- Transport and fuel costs
- Environmental e.g. Clean air zones
- Reinstatement materials
- Last mile logistics
- Supply chain on-costs
- Regional factors e.g. urbanity /sparsity

Cost Pressures

Identified below are a range of factors that can have an impact on the cost of delivering the Repex programme; both increasing and decreasing costs depending upon the prevailing market conditions: -

- Labour market availability & costs
- Other major UK construction projects
- Fragmentation of remaining pipes
- Programme completion
  - Acceleration or a Cliff Edge?
- Opportunities for pipe insertion
- Workload mix
- Traffic management
- Lane rental; parking bay suspensions
- Notices of direction
- Material costs e.g. polyethylene
- Transport and fuel costs
- Reinstatement materials
- Last mile logistics
- Supply chain on-costs
- Regional factors e.g. urbanity /sparsity

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Conclusions

Innovation in GD1 has already started to address increasing cost pressures and deliver consumer benefits e.g. reduced excavation and time on the job reducing local disruption

Cost pressures over GD2 are expected to increase given current trends

These increase can be partially offset through the deployment of existing innovation identified in GD1 and further offset by new innovation in GD2

This needs to be supported through a transparent regulatory mechanism e.g. the existing NIA framework

Presentation 5 – Outputs and incentives in RIIO-GD2

Tony Pearson, NGN

Outputs and Incentives

RSEG Meeting 6th September 2018

Outputs and Incentives
GD1 Repex Outputs

RIIO GD1 Repex Outputs	
Primary Output	Iron mains – level of risk removed (based on 2013 MRPS)
Secondary Outputs	Length of iron mains off risk
	Number of services replaced
	Number of GIB events associated with iron mains
	Number of iron mains fractures and corrosion failures
	Asset Health & Risk metrics
	Customer supply interruptions
	Customer Repex satisfaction score
	Contributes to the overall Shrinkage reduction metric

Outputs and Incentives

What we thought worked well in GD1

- Having outputs is giving a different type of focus
- Drivers moved from just efficient spend to efficient spend for efficient delivery of services to customers
- Clearer linkage between what GDNs are doing and why we are doing it
- Development of a Totex mentality utilising trade-offs between investment types
- Increased environmental focus
- Improvements in innovation and collaboration

Outputs and Incentives

What we think worked less well

- Incentives need better calibration and more differentiation
- Having outputs for areas of high uncertainty, difficulty in forecasting or where they are strongly influenced by circumstances outside the control of the GDNs
- Process for NOMs outputs
- Needed greater clarity of output details to ensure effective delivery

Outputs and Incentives

Areas for thought and discussion

- Linkage of measures and outputs to customer and stakeholder desired outcomes
- Consideration of a range of funding mechanisms, e.g. ex-ante allowance, volume drivers, etc.
- Safety Risk output – HSE overview and enforcement delivers this
- Licence obligations – already required to deliver these
- Reporting measures to show trends and direction of travel
- Some common metrics across all and some GDN-specific based on their particular Stakeholder feedback

Key questions for deliverables, incentives and outputs in RIIO-GD2

Pete Wightman, Ofgem

Conclusions

- Any other business
- Action items
- Date of next meeting

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Our core purpose is to ensure that all consumers can get good value and service from the energy market. In support of this we favour market solutions where pratical, incentive regulation for monopolies and an approach that seeks to enable innovation and beneficial change whilst protecting consumers.

We will ensure that Ofgem will operate as an efficient organisation, driven by skilled and empowered staff, that will act quickly, predictably and effectively in the consumer interest, based on independent and transparent insight into consumers' experiences and the operation of energy systems and markets.

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