

Gas
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Asset Health - Costed Options

Shaping the Gas Transmission System

13th November 2018

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Who are we?



Bridget Hartley

RIIO 2 Submission
Manager



**Jenny
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Stakeholder
Engagement Manager



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Today we're going to present options for our asset health programme...



1

How we came up with the options ...



2

...we'll then describe the cost and risk implications of each option...



3

...and finally we'll ask you for your view on them.

Quick Poll – Getting to know you

1. Please tell us your name

2. Which of the following best describes you / your organisation?

3. On a scale of A to E, where A is know nothing and E is know a great deal, how much would you say you know about National Grid's operational activities?

- A. Know nothing
- B.
- C.
- D.
- E. Know a great deal

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01

Asset Health

The story so far...

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Asset Health – The story so far...

~70% of the network has reached the end of asset life

- T1 – We're spending over our allowance to deliver a safe and reliable network
- Working hard to deliver the right interventions by focusing on:
 - Strengthening our asset information
 - Efficient delivery of interventions through campaign approach

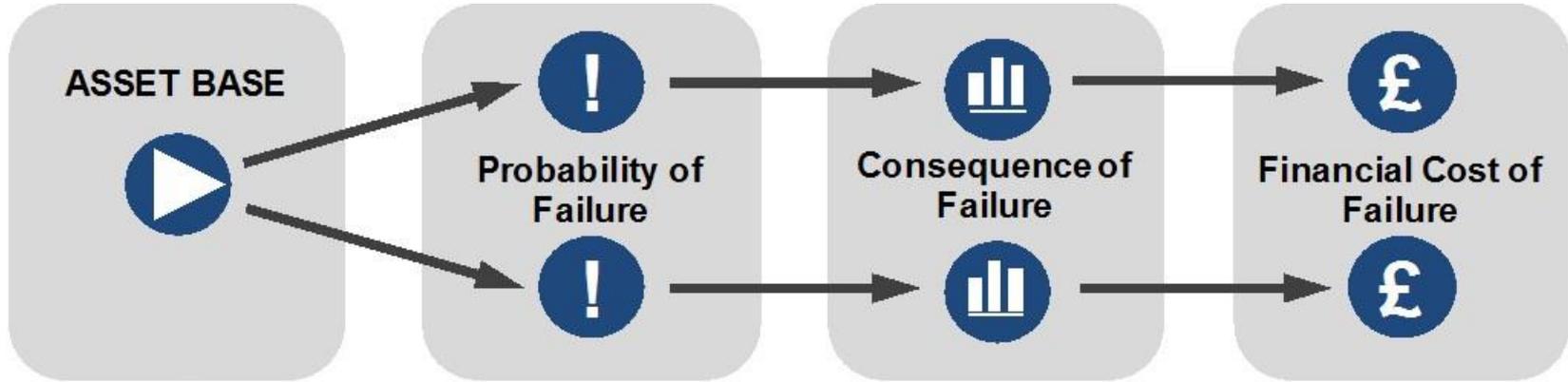
What level of risk?

- Extensive engagement to understand stakeholders views on how we should value the service risk factors within our decision support tool (Network Asset Resilience Metric - NARMS):
 - Safety
 - Environment
 - Reliability
- We also asked:
 - What length of time should we be demonstrating benefit to consumers?

Asset Health programme

- Through NARMS we have the ability to present multiple options that deliver an asset health programme that meets stakeholders needs

What is NARMs?



- Network Asset Resilience Metric: allows us to assign a common value across all the risk areas on the network creating MONETISED RISK
- Based on the principles of monetised risk we can forecast cost, risk and service performance of the assets in the long term
- Enables more transparent reporting and more holistic decision making, leading to more efficient spend

How have we developed NARMs and how will we use it?

Develop the improved methodology

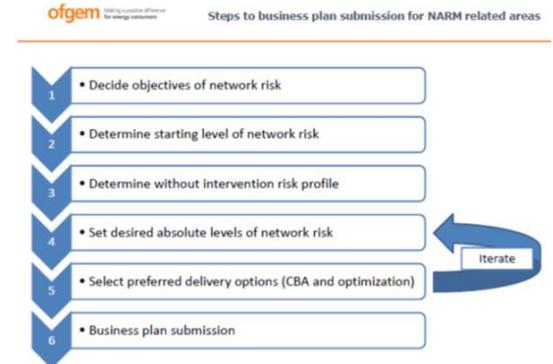
- Building on industry best practice that use monetised risk
 - Water
 - GDNs
- Employed specialist consultancies
- Continual consultation with key stakeholders
 - Ofgem
 - HSE

Consulted with stakeholders

- What value should we assign to each of the service framework areas?
- Consulted targeted stakeholders on specialised areas:
 - Citizens Advice
 - Environmental Agencies
 - HSE
- Conducted an open consultation for all our stakeholders
- Received a number of responses through workshops and online

Validate and implement

- We are now validating and testing the tool to ensure the results we receive are in line with what would be expected
- NARMs will be used to inform our RIIO 2 Asset Health programme
- This aligns with Ofgem's thinking



Ofgem and our approach to selecting options

As discussed, we are **exploring options** that meet what our stakeholders have told us and aligns with Ofgem views.

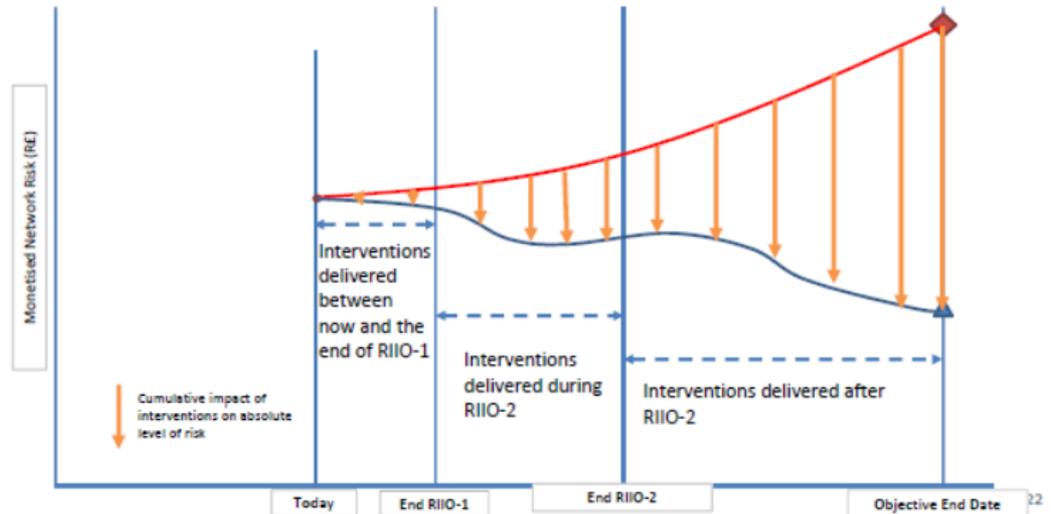
We are currently **in the optioneering phase** and testing our options with stakeholders.

Further work will be undertaken on delivery, legal requirements and cost efficiency once we have narrowed options



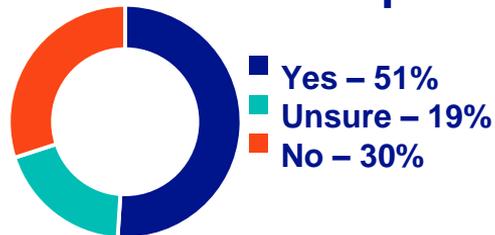
Step 5: Select preferred delivery options (CBA and optimisation)

- CBA and optimisation to determine programme of works – take account of delivery constraints (e.g. resources, outage availability, legal requirements)
- Initial optioneering – have all viable options been appropriately considered?
- How to deal with work spanning price control periods?



What we've heard

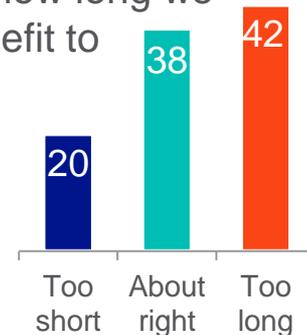
Are the default options correct?



- Consider the impact of these options on our customers
- Do not increase risk to safety
- Consider an option to:
 - o Improve reliability by 10%
- Consider future proofing the network:
 - o Consider flexibility
 - o Incorporate hydrogen/green gases
 - o Support move to a decarbonised energy system

Is 25 years the right length of time for us to demonstrate value to consumers?

- Difference of opinion on how long we need to demonstrate benefit to consumers
- We are working with Ofgem to understand their cost benefit analysis requirements



- We'll look to show the impact of the different timescales on our investment decisions

What we've done

Costed up two default options

- Keep cost the same as T1
- Keep risk the same as T1

Started work on what 'future-proofing' looks like within options

Developed an 'improve reliability by 10%' option

Safety is maintained throughout all options

Technical Challenge - Delivering asset health up to 2045

How are we doing this?

- Talking to suppliers about the options available and potential costs
- We will share these with you

Results in increased Asset Health investment at exit points

- Additional to planned asset health investment at terminals

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02

Asset Health

Costed Options

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All costed options summary

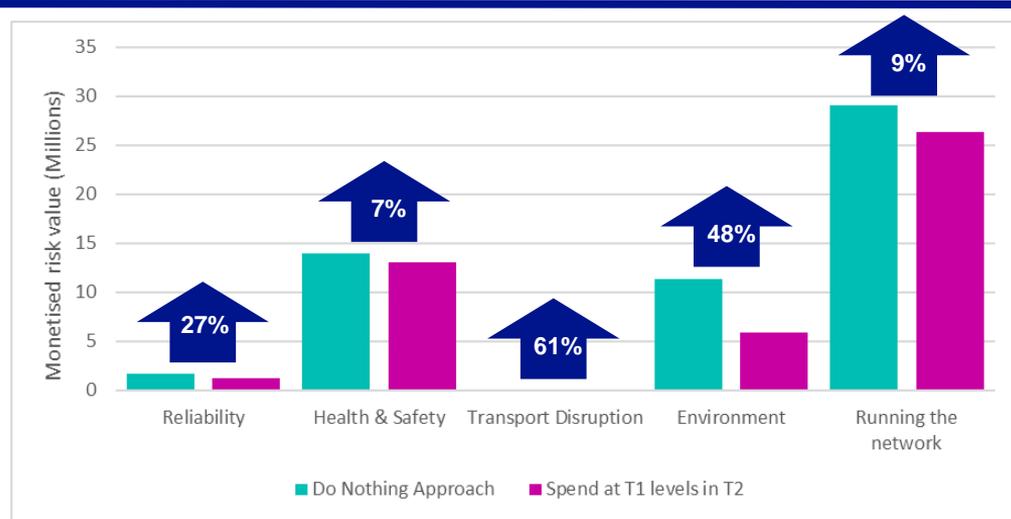
	Option	Eight year T2 spend £m	Indicative £/consumer bill / year	Health and safety	Transport disruption	Availability & Reliability	Environment
Default options	1. Spend at T1 levels in T2	649.4	0.07	Same (at risk)	Likelihood reduced by 20%	Likelihood increased by 100%	Likelihood increased by 10%
	2. Maintain same level of risk as T1	1,227	0.14	Same	Same	Same	Same
Requested by stakeholders	3. Improve reliability by 10% at the end of T2	1,992	0.23	Same	Same	Likelihood reduced by 10%	Same

Option 1 – Spend at T1 levels in T2

- This option looks at the impact to the service risk areas of keeping consumer costs the same over the T2 period.



- In this option:
 - There is no impact on costs for consumers as cost same as T1
 - Safety is maintained at current levels as per HSE guidance
 - Numbers of unplanned outages likely to increase from current levels



Graph shows monetised risk values at end of 2028 for option (pink) against if we were to do no investment at all (blue) over same period. **The higher the number, the higher the risk**

Option 2 – Maintain same level of risk as T1

- This option looks at the impact of keeping the Safety, Environment and Reliability service risk areas the same over the T2 period. This ensures risk at 2028 is the same as 2018.

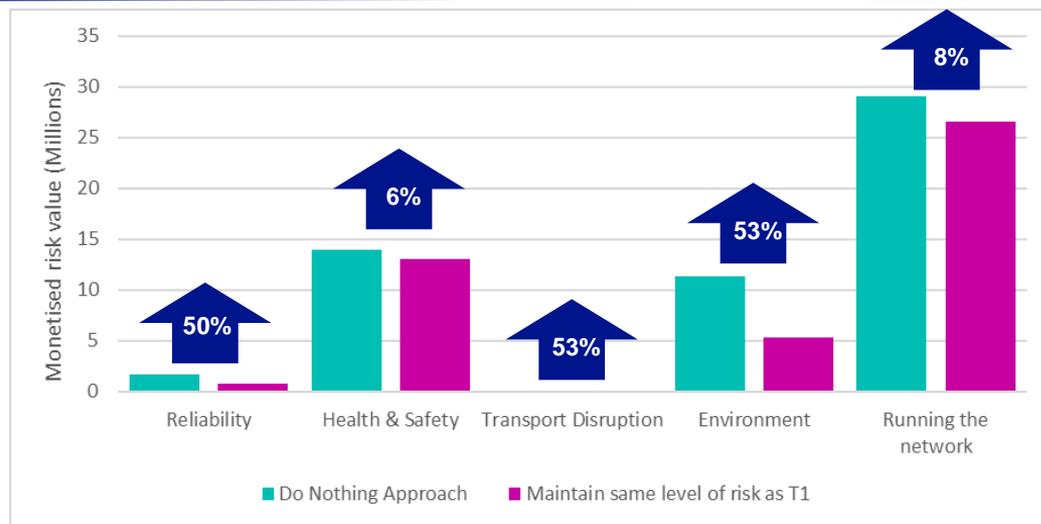
£1,227 (m)
Eight year T2 spend*

£4,910 (m)
Monetised risk removed by 2040

Annual Consumer bill impact

£0.14 /bill

- In this option:
 - This is more expensive than spending the same as T1
 - Safety and environmental performance will be unchanged compared to present
 - Reliability levels are maintained at current levels



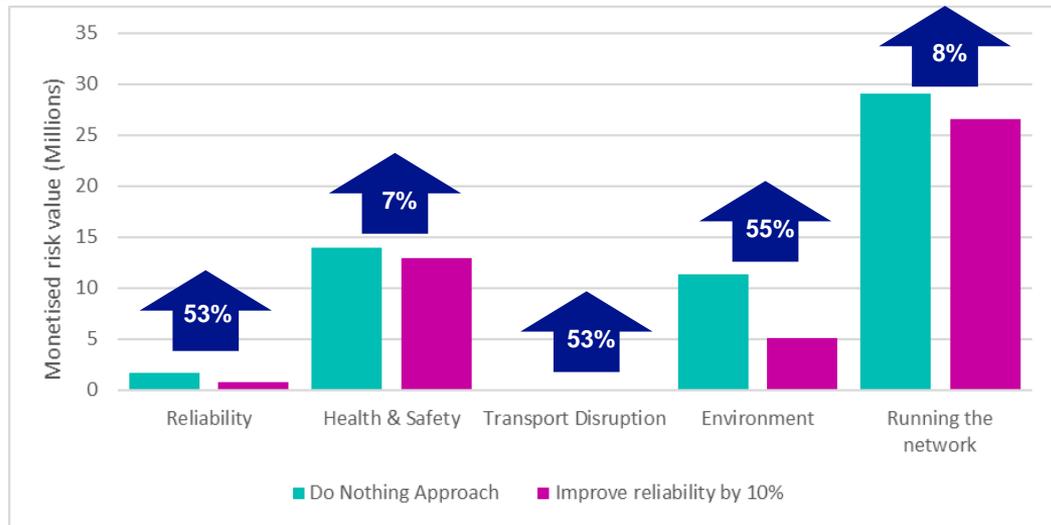
Graph shows monetised risk values at end of 2028 for option (pink) against if we were to do no investment at all (blue) over same period. **The higher the number, the higher the risk**

Option 3 – Improve reliability by 10% by end of T2

- This option looks at the impact of improving availability and reliability by 10% by the end of T2. Safety and Environmental risk are stable



- In this option:
 - This requires increase in spend to deliver the benefits
 - Increased Asset Health investment at exit points in addition to planned asset health investment at terminals
 - Likelihood of unplanned outages reduced

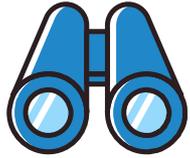


Graph shows monetised risk values at end of 2028 for option (pink) against if we were to do no investment at all (blue) over same period. **The higher the number, the higher the risk**

All costed options summary

	Option	Eight year T2 spend £m	Indicative £/consumer bill / year	Health and safety	Transport disruption	Availability & Reliability	Environment
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We're continuing to develop these options



Maintain risk until 2045

-
- Due to the level of uncertainty, we are unable to develop this option at this time



Lower cost for consumer

-
- Stakeholders have asked us to develop this option
 - This aligns with learning from the water industry
 - We will understand stakeholder views further and develop a suitable option



Future proofing within options

-
- Stakeholders have asked us to investigate the impact of future proofing the Gas National Transmission System e.g. hydrogen
 - We have started looking at what this might look like

Quick Poll – Impact and Interest

On a scale of A to E, where A is not impacted at all and E is impacted a great deal, how impacted are you or those you represent) by what we've just spoken about?

- A. Not impacted at all
- B.
- C.
- D.
- E. Impacted a great deal

On a scale of A to E, where A is not interested at all and E is interested a great deal, how interested are you (or those you represent) by what we've just spoken about?

- A. Not interested at all
- B.
- C.
- D.
- E. Interested a great deal

Quick Poll...

1. Have we provided you with enough information to allow you to take a view?

- A. Yes
- B. Somewhat
- C. No

Please give a reason for your answer

2. At this stage, which of these is your preference?

- A. Keeping cost the same as T1
- B. Keeping risk the same as T1
- C. Increased reliability by 10%

If there was another option, what would it be?



Quick Poll...Having heard about each of these options...

1. Should we pursue the reduced cost to consumer option further?

- A. Yes
- B. Unsure – more information needed
- C. No

If unsure, please state what additional information you'd need to inform your view

2. Should we pursue future proofing within these options further?

- A. Yes
- B. Unsure – more information needed
- C. No

If unsure, please state what more information you'd need to inform your view



Quick Poll...

1. How would you like to receive the output of this work?

- A. Report of all the findings
- B. Webinar
- C. Workshop or event
- D. Other

If other, please specify



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3

Asset Health

How it all fits together

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Where does Asset Health fit in with the wider plan



What is the right Gas Transmission System for our customers and stakeholders now and in the future

Create integrated programmes of work to deliver these outputs

Example programmes of work:

- Emissions
- Asset Health
- Cyber
- ISS
- Decommissioning
- Operating and maintaining the network

Agree outputs to deliver these

Example outputs:

- Environment
- Safety
- Reliability

What's next...

Future proofing	This has not been taken in to account to date, however we'll continue to look at what this looks like and come back to you in the new year
Ofgem Engagement	Ofgem are engaging on asset health via targeted workshops and working groups.
Industrial Emissions Directive	We will look at becoming compliant as part of this work
Planned deliverability	We will continue to engage to ensure we have a robust stakeholder view on which approach to take. We will then look at the deliverability of this plan.
Reporting the outputs	We will report back all the findings of our work over the last 12 months. This will be Q1 2019

Any questions?



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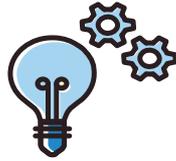
Thank you for joining the call today



Visit our website

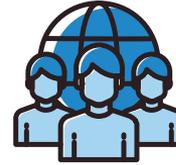
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- You will find everything we've engaged on, updates and plans for our RIIO T2 journey as well as ways to engage:

www.yourenergyfuture.nationalgrid.com



Newsletter

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- If you've entered your email address you will receive our regular newsletter that contains:
 - Updates on our RIIO 2 plans
 - Deep dive on key topics
 - Upcoming events and activities
 - Signpost relevant events



Contact us directly

-
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