

Gas
Transmission

Bacton Strategy workshop

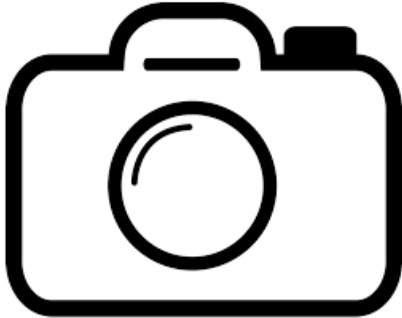
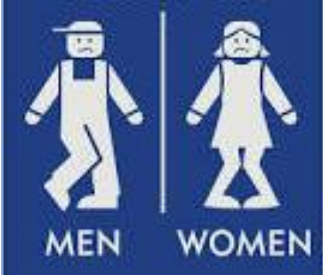
13th December 2018

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Slido.com
#Bacton

Housekeeping



Who are we?



Jenny Pemberton
Stakeholder
Engagement Manager



Bridget Hartley
Head of Gas
Transmission
Regulation



Jonathon Thorns
System Development
Engineer

Why are we here?



Gain your views on options and reduce the number we take forward



Set the direction we go in



Inform our business plan

Agenda for today

09.00 - Arrive

- Teas and coffees

09.30 – Morning session

- Who we are and what we do
- Background of the Terminal and overview of the current situation
- Options

12.30 - Lunch

- Hot and Cold Buffet

13.00 – Afternoon session

- Table discussions

14.00 – Next steps and close

- What we'll do next
- How to keep involved

Quick Poll

What three words would you use to describe National Grid Gas Transmission?

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 1 to 5, where 1 is know nothing and 5 is know a great deal, how much would you say you know about National Grid Gas Transmission's operational activities?

1. Know nothing
- 2.
- 3.
- 4.
5. Know a great deal

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01

Who we are
and what we
do

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National Grid Gas Transmission – the network

**Our
role**

To connect millions of people to the energy they use safely, reliably and efficiently

**We
own &
operate**

7,660km of high pressure pipelines, 24 compressor stations and over 600 above ground installations

**We
transport**

Over 3 times the energy provided by electricity each year

810 TWh

2017: Total gas demand

297 TWh

2017: Total electricity demand



National Grid Gas Transmission - TO/SO



Transmission Owner (TO)
Builds, maintains and owns assets



System Operator (SO)
Real-time operation of the network

Gas Transmission Stakeholder Priorities

Industrial and Domestic consumer priorities ...

I want an affordable energy bill

I want to use energy as and when I want

I want you to minimise disruption to my life

...are delivered through our stakeholder priorities...

I want to take gas on and off the Transmission system where and when I want

48% of Gas Transmission costs

I want all the information I need to run my business, and to understand what you do and why

1% of Gas Transmission costs

I want to connect to the Transmission System

2% of Gas Transmission costs

I want the gas system to be safe

4% of Gas Transmission costs

I want you to protect the Transmission system from cyber and external threats

17% of Gas Transmission costs

I want you to care for communities and the environment

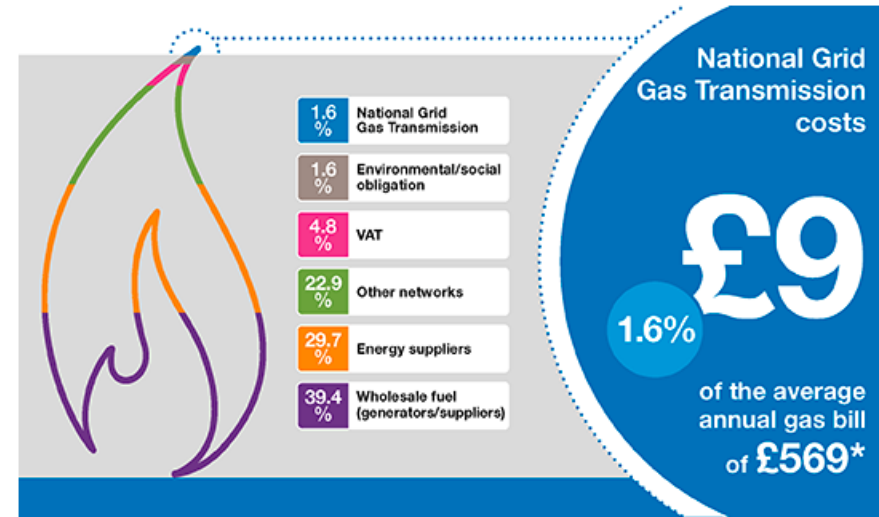
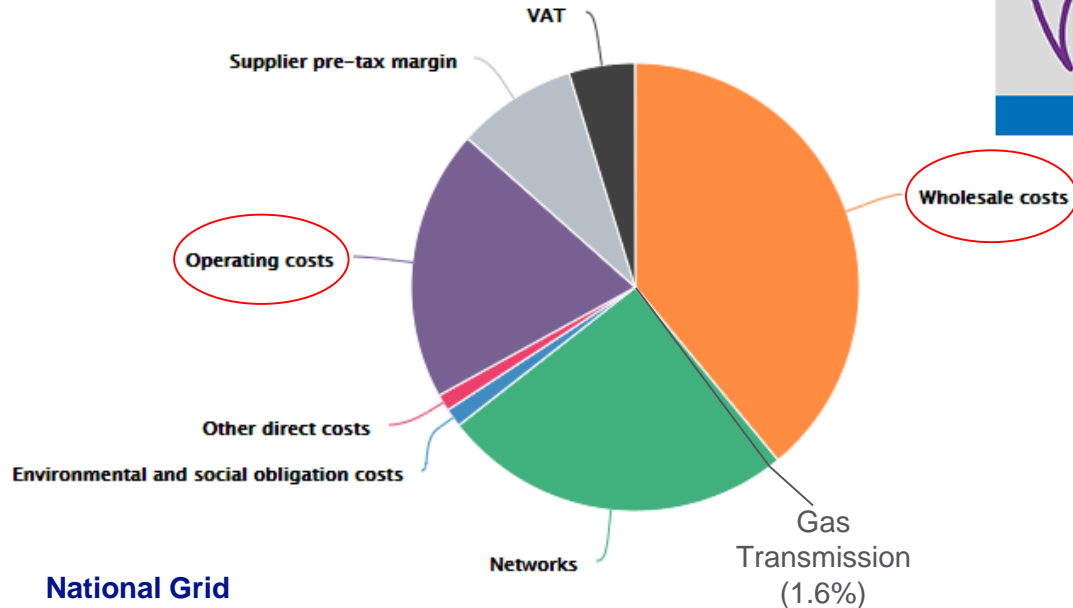
24% of Gas Transmission costs

I want you to facilitate the whole energy system of the future – Innovating to meet the challenges ahead

5% of Gas Transmission costs

I want you to be efficient and affordable

Our impact on a domestic consumer bill



We also have the potential to influence other aspects of the bill through the services we deliver

Gas System
Operator

02

RIO Framework

What does it mean?

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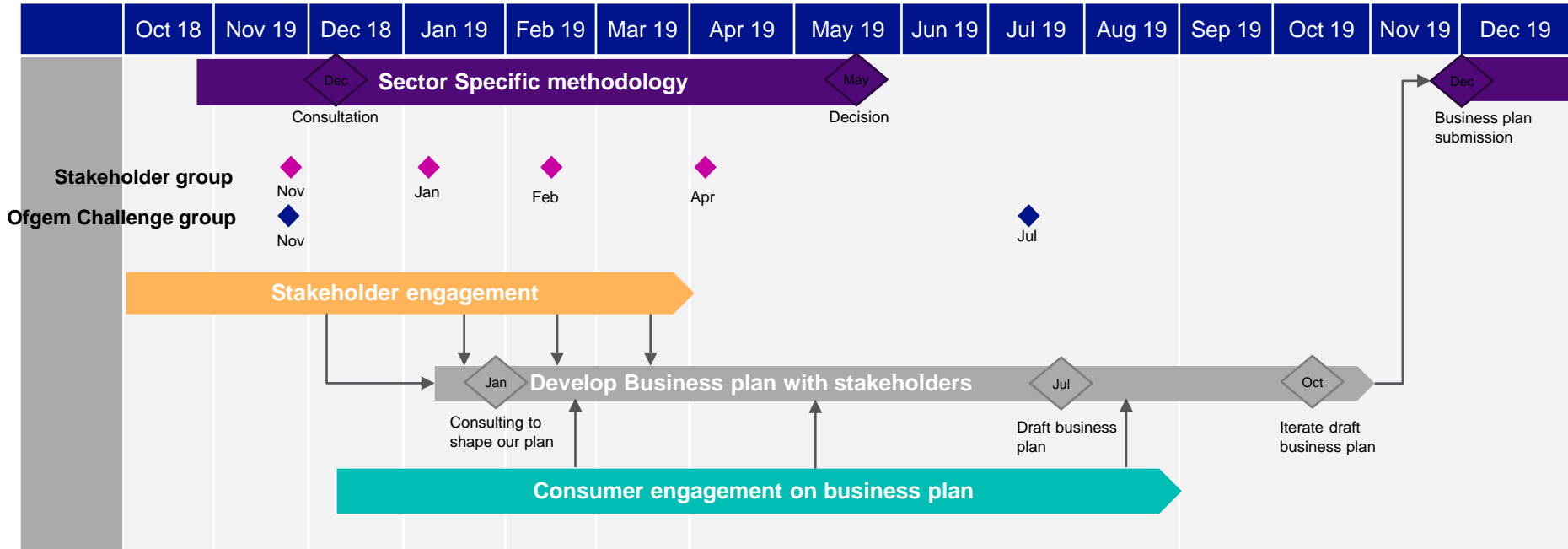
What is RIIO?



Constructive Engagement



Timeline – Business plan consultation



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03

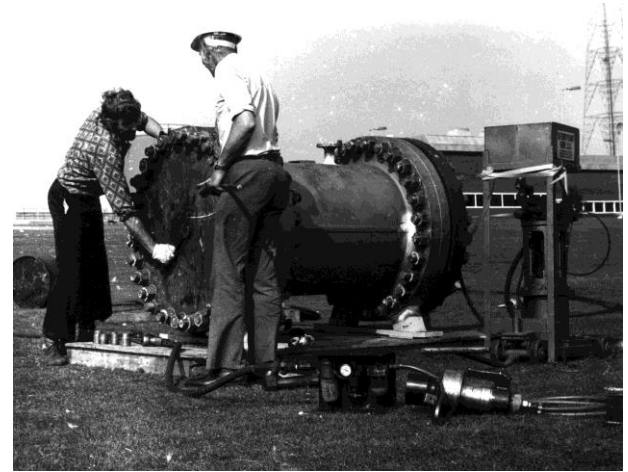
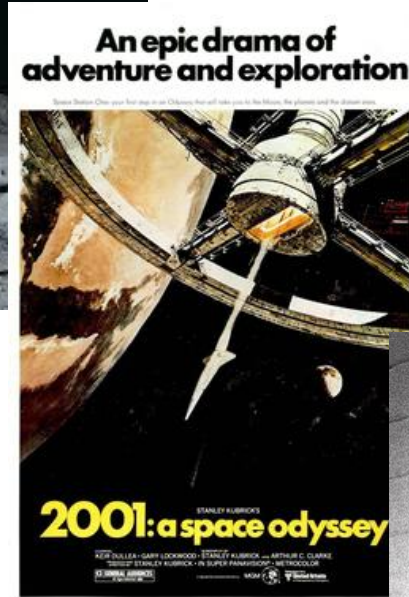
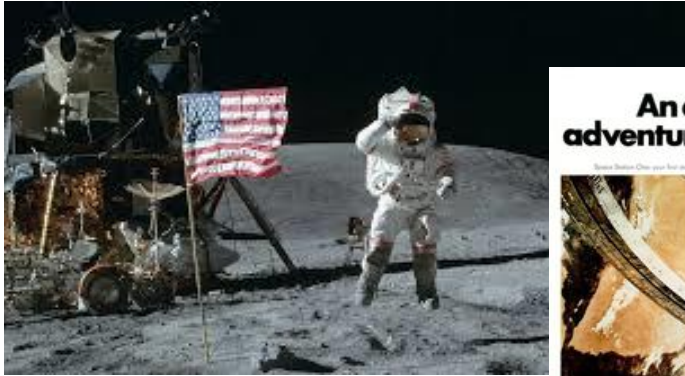
Why we're
here...

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A long time ago in a galaxy far,
far away....

Do you remember...

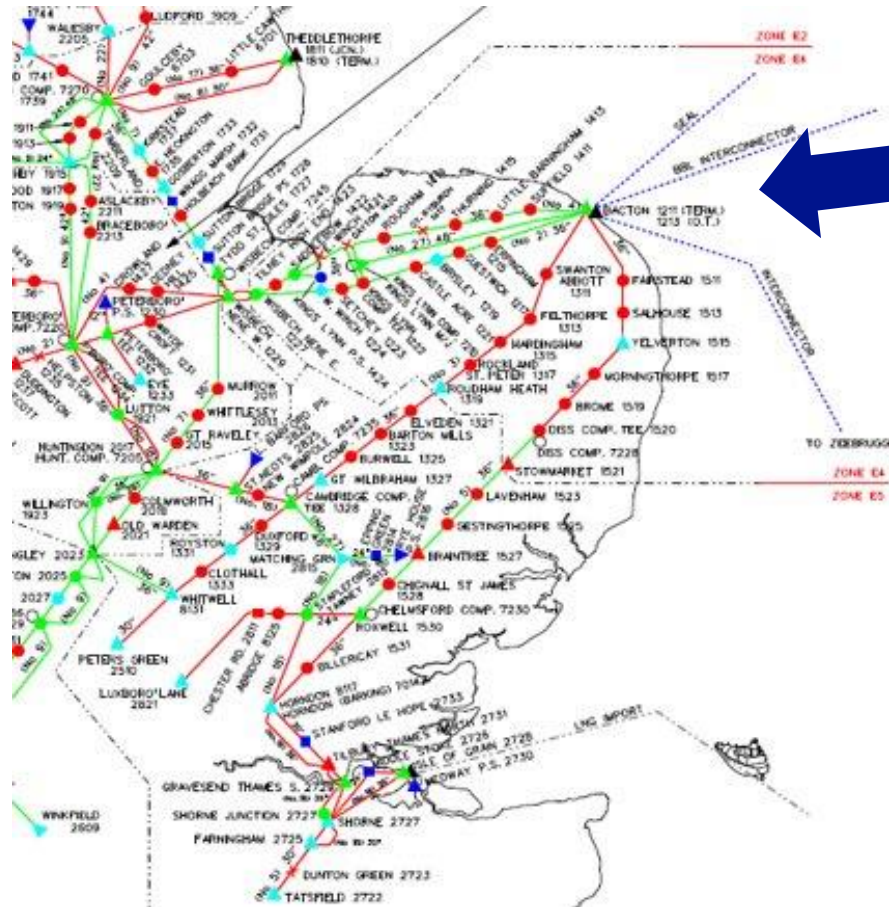


History of the site



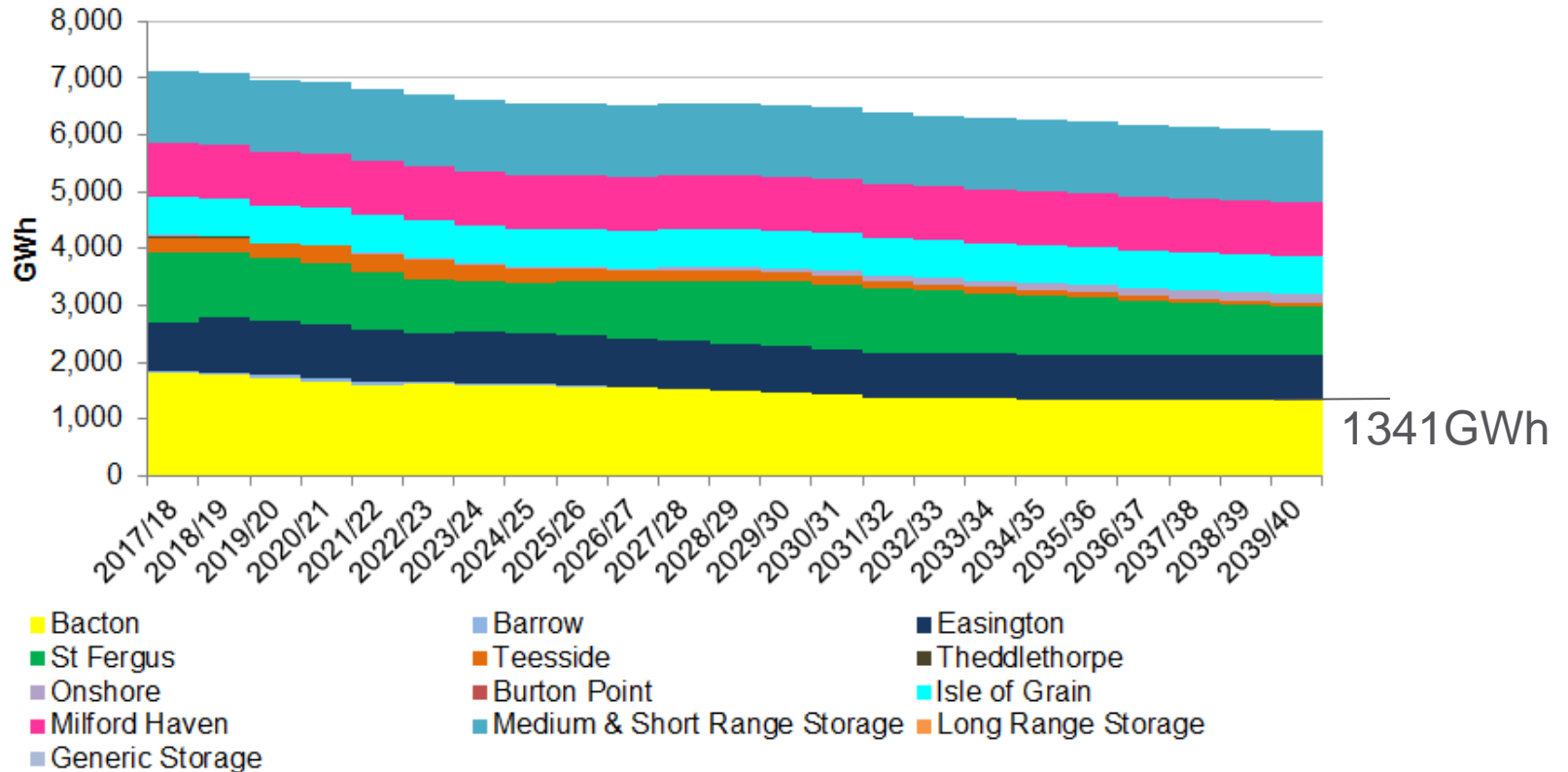
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Importance of the site



Bacton Terminal

Importance of the site



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03

The
opportunity

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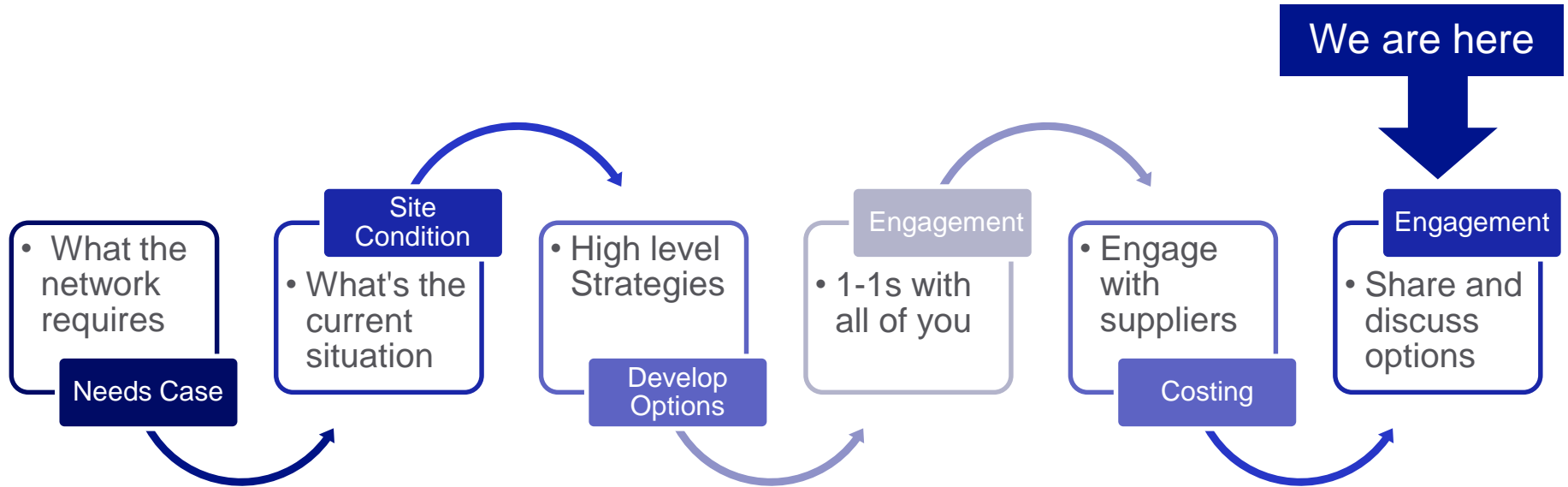
Problem statement

The National Grid Terminal at Bacton has age-related asset health and obsolescence issues.

We need to understand customers and stakeholders needs from the terminal now and in the future to:

- Support the delivery of our customers business strategies
- Make the right investment decisions
- Deliver the right outcome for the local community and environment
- Deliver efficient and affordable gas supplies for consumers
- Support security of supply
- Benefit wider GB PLC

What we've done



What we've heard

Capacity requirements remain high, but more short-term bookings

Bacton availability has an impact across Europe

We want no flow restrictions due to ongoing work

Low and consistent pressures are best

Bacton has a role to play in maximizing recovery of gas from the north sea

Our long-term strategy is beyond 2040

Bacton is important to the local economy

We want to be included in this process

Future Energy Scenarios projections are low

Discussion question

What services provided by the current Bacton terminal would you like us to preserve and why?



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Coffee Break

Back at 11:00

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04

The Options

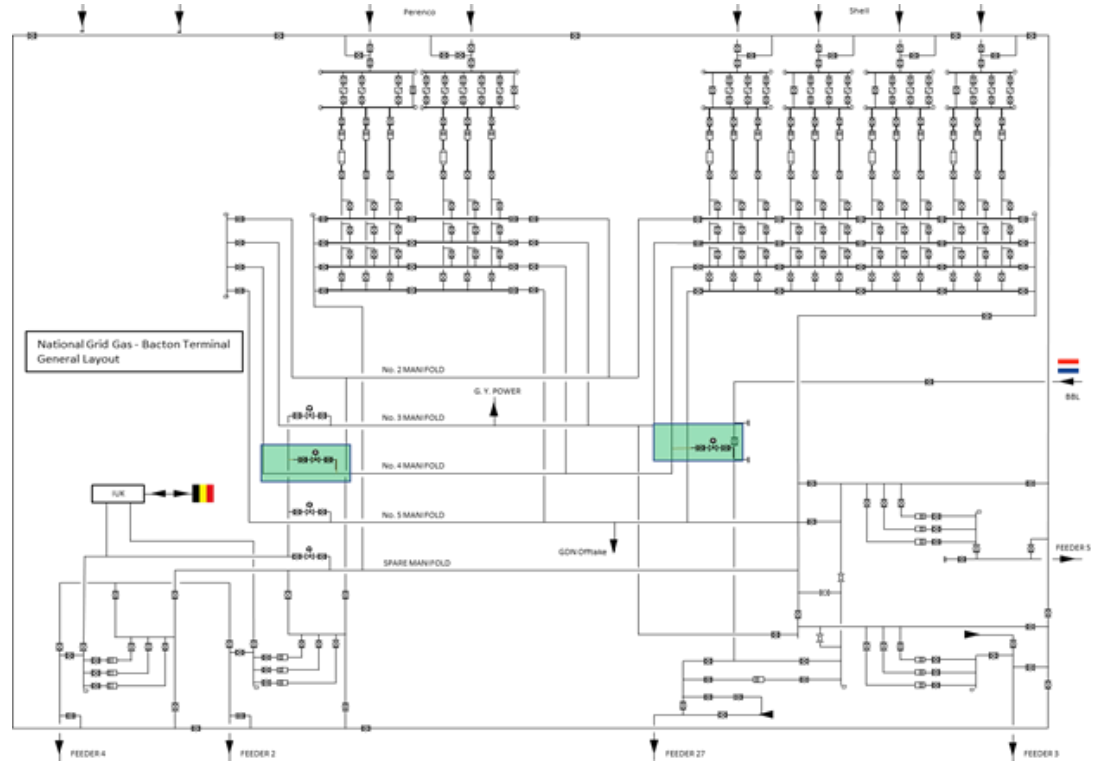
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Option 1 - Like for Like Asset Replacement

- Involves replacement of a number of assets; valves, metering, heaters, fire and gas, gas quality, control systems etc...
- Estimated 20 yrs of work
- Known operation, no change to how the site works

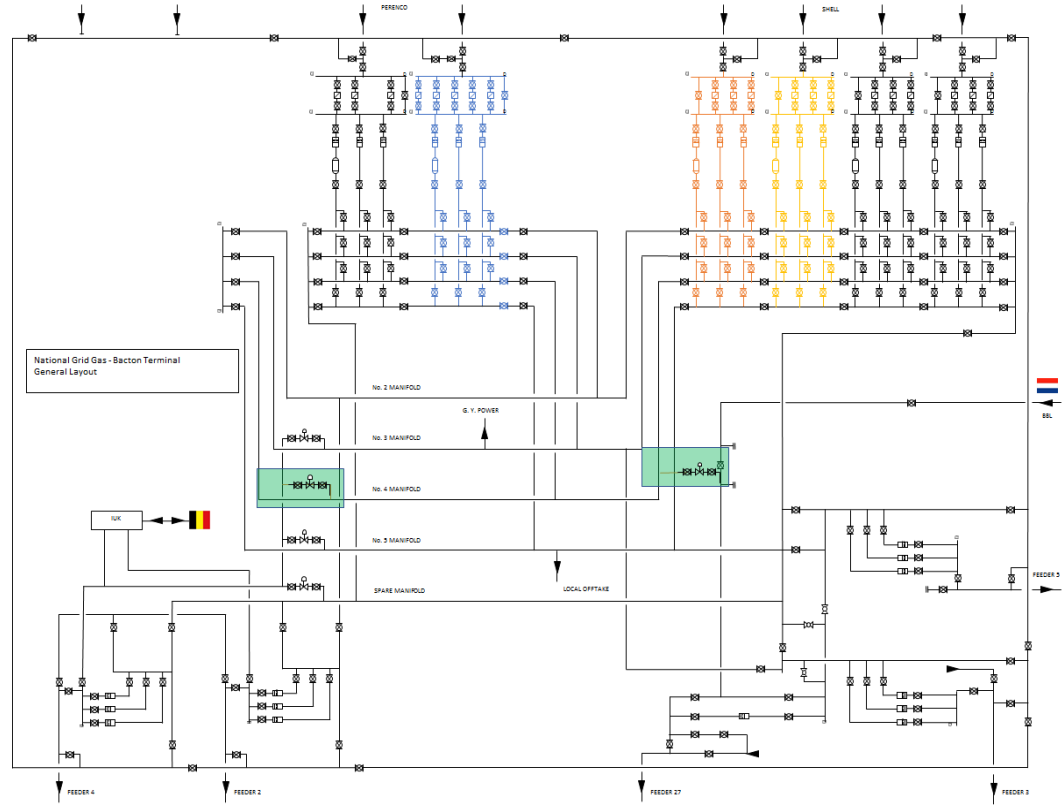
Cost: ~£200m



Option 2 - Rationalised Asset Replacement

- Rationalise incomers (Combination of the coloured incomers)
- Asset health work on remaining equipment
- Estimated 15-20 yrs of work
- Known operation, no change to how the site works
- Reduced capacity

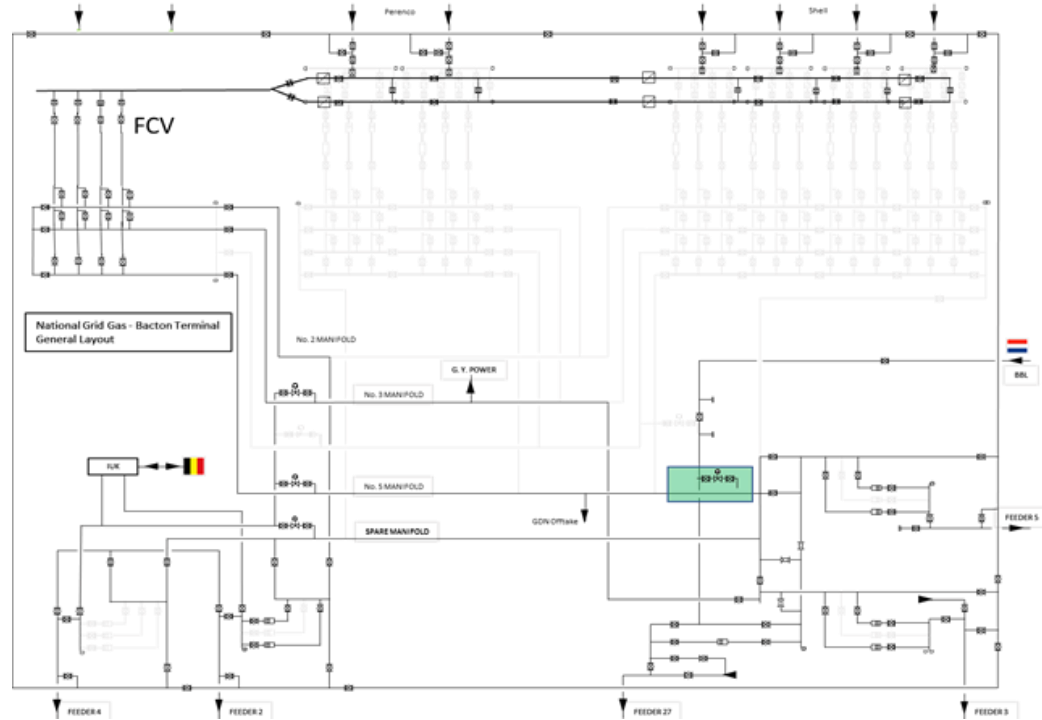
Cost: ~£150-200m



Option 3 - New Design Terminal

- New Brownfield site (Greenfield to be considered)
- Built in modules
- Built offline Tie-ins staged to reduce disruption
- Similar operating philosophy, reduced number of assets
- Estimated 3-5 yrs

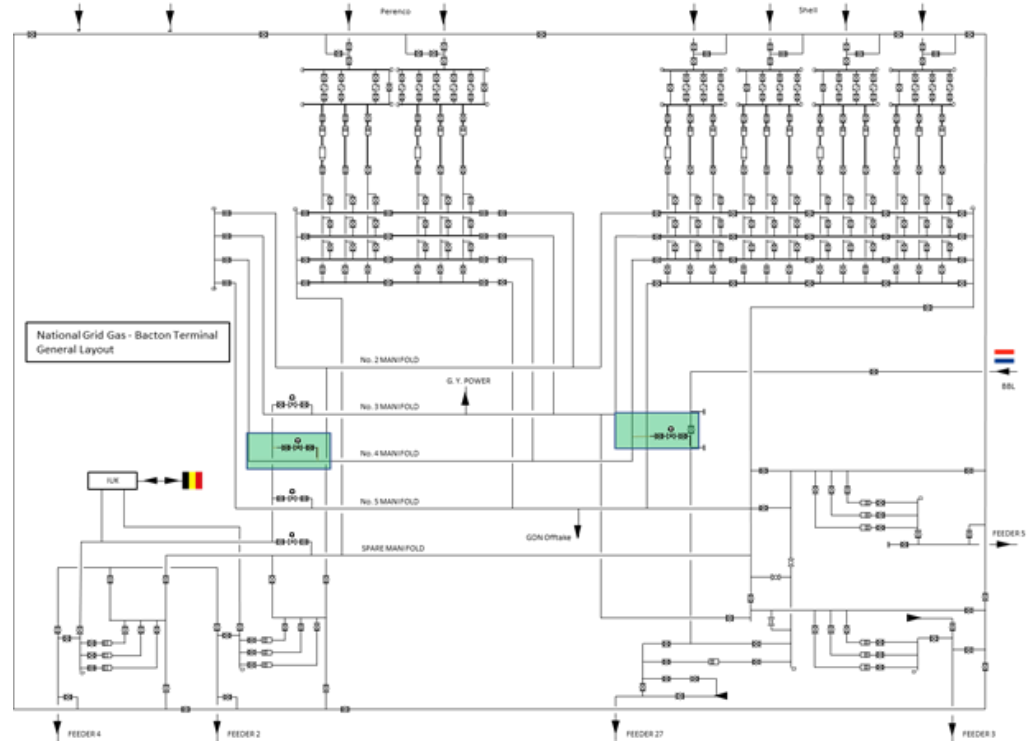
Cost: ~£170m



Option 4 - New Like-for-Like Terminal

- New Greenfield Site - like for like
- Possibility to look at modular build to speed construction
- Built offline Tie-ins staged to reduce disruption
- Estimated 5-10 years

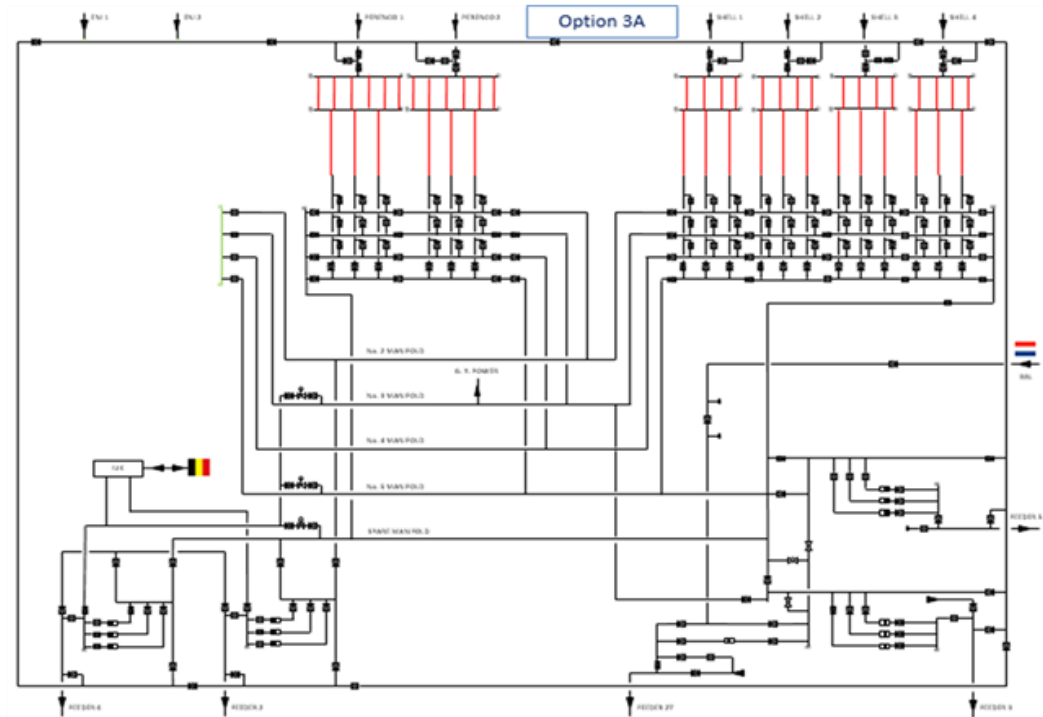
Cost: ~£600m



Option 5 - Common Pressure Tier

- Common pressure terminal
- Terminal operates at "floating" pressure.
- No flow control, heating, filtering
- Estimated 15-20 years to pipe through

Cost: ~£200m



Quick Poll – Impact and Interest

On a scale of 1 to 5, where 1 is not impacted at all and 5 is impacted a great deal, how impacted are you or those you represent) by what we've just spoken about?

1. Not impacted at all
- 2.
- 3.
- 4.
5. Impacted a great deal

On a scale of 1 to 5, where 1 is not interested at all and 5 is interested a great deal, how interested are you (or those you represent) by what we've just spoken about?

1. Not interested at all
- 2.
- 3.
- 4.
5. Interested a great deal

Explore your thoughts...please go to relevant option...

Are there elements that you wouldn't be able to cope with? And why?

Are there elements that you like? Why?

Are there any specific environmental, transportation or safety issues we should be aware of?

Answers
on a post
it...

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Lunch

Back at 13:00

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Quick poll

Which of these is your preferred option?

Option 1 -
Like for like
asset
replacement

Option 2 -
Rationalised
asset
replacement

Option 3 -
New design
terminal

Option 4 -
New like for
like
terminal

Option 5 -
Common
pressure tier

Quick poll

Are there any that you would like us to discount?

Option 1 -
Like for Like
Asset
Replacement

Option 2 -
Rationalised
Asset
Replacement

Option 3 -
New Design
Terminal

Option 4 -
New Like-for-
Like
Terminal

Option 5 -
Common
Pressure

Summary

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05

Additional
considerations

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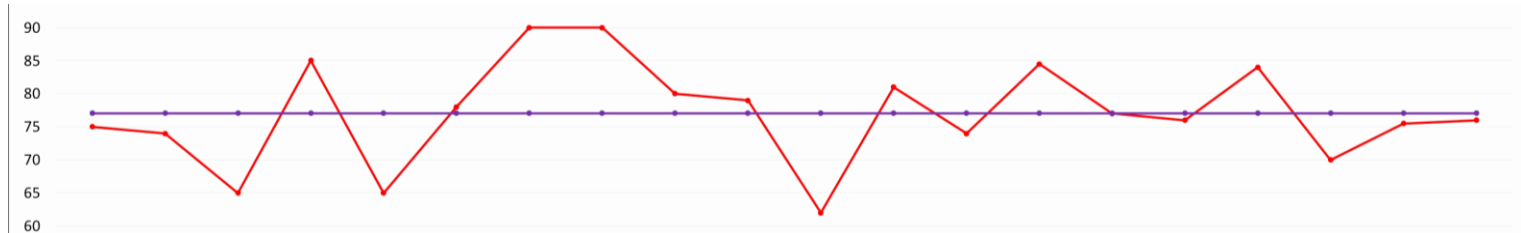


Entry Pressure

You said:

We would like
lower and
consistent entry
pressures

- Current terminal pressures are driven by the South East pressure requirement
- We must meet our offtake pressure obligation
- We are obliged to offer "effective competition between relevant shippers and between relevant suppliers" - as per license condition



Quick Poll – Impact and Interest

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- 2.
- 3.
- 4.
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Discussion questions

What benefits would this service bring?

Would an interruptible/seasonal solution still be of benefit?

Who should pay for this service?



Quick poll

Is this something we should continue to progress?

Yes

Not sure

No

How important is it to you that we progress this?

1. Top priority – do it now
- 2.
- 3.
- 4.
5. Not interested

Quick poll

Who should pay for this service?

Spread across UK
consumers

Paid for by users of the
service

Other – please specify

Blending

You said:

Our production can
be limited by
National Grid's
Gas Quality Limits

- We are bound by GSMR limits.
- Gas must be of GSMR quality at site exit (entry to the transmission system)
- We are assessing the opportunity to provide an interruptible blending service.
- Oil and Gas Authority are being consulted on the impact this could have



Quick Poll – Impact and Interest

On a scale of 1 to 5, where 1 is not impacted at all and 5 is impacted a great deal, how impacted are you or those you represent) by what we've just spoken about?

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1. Not interested at all
- 2.
- 3.
- 4.
5. Interested a great deal

Discussion questions

What benefits would this service bring?

Would an interruptible/seasonal solution still be of benefit?

Would you be willing to pay for this service?



Quick poll

Is this something we should continue to progress?

Yes

Not sure

No

How important is it to you that we progress this?

1. Top priority – do it now
- 2.
- 3.
- 4.
5. Not interested

Quick poll

Who should pay for this service?

Spread across UK
consumers

Paid for by users of the
service

Other – please specify

What happens next - Our commitment

- We'll process everything you've told us today
- We'll combine your feedback with the insights we've gained from other engagement activities
- We'll ask our Stakeholder Group to scrutinise this and we'll use it to inform our RIIO-2 business plan
- We'll publish our plan and all updates on our website, and keep you informed through our webinars and newsletters

Quick Poll – And finally

1. On a scale of 1 to 5, where 1 is know nothing and 5 is know a great deal, how much would you say you know about National Grid Gas Transmission's operational activities?

1. Know nothing
- 2.
- 3.
- 4.
5. Know a great deal

2. What three words would you use to describe National Grid Gas Transmission?

Thank you

