

Gas
Transmission

Bacton Strategy webinar

7th February 2019

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Who are we?



Bridget Hartley
Gas Transmission RIIO
T2 Manager



Jonathon Thorns
System Development
Engineer



**Jenny
Pemberton**
Stakeholder
Engagement Manager

Logistics



Should last for approximately about 45 min



Polling via webex



Your questions are welcomed throughout via chat function



All callers will be placed on mute

Agenda for today

01 - Bacton Terminal

02 – A summary of the last 6 months

03 - What we've heard & 04 - Conclusions

05 – Pressure and Blending

06 – Questions

07 – Upcoming events

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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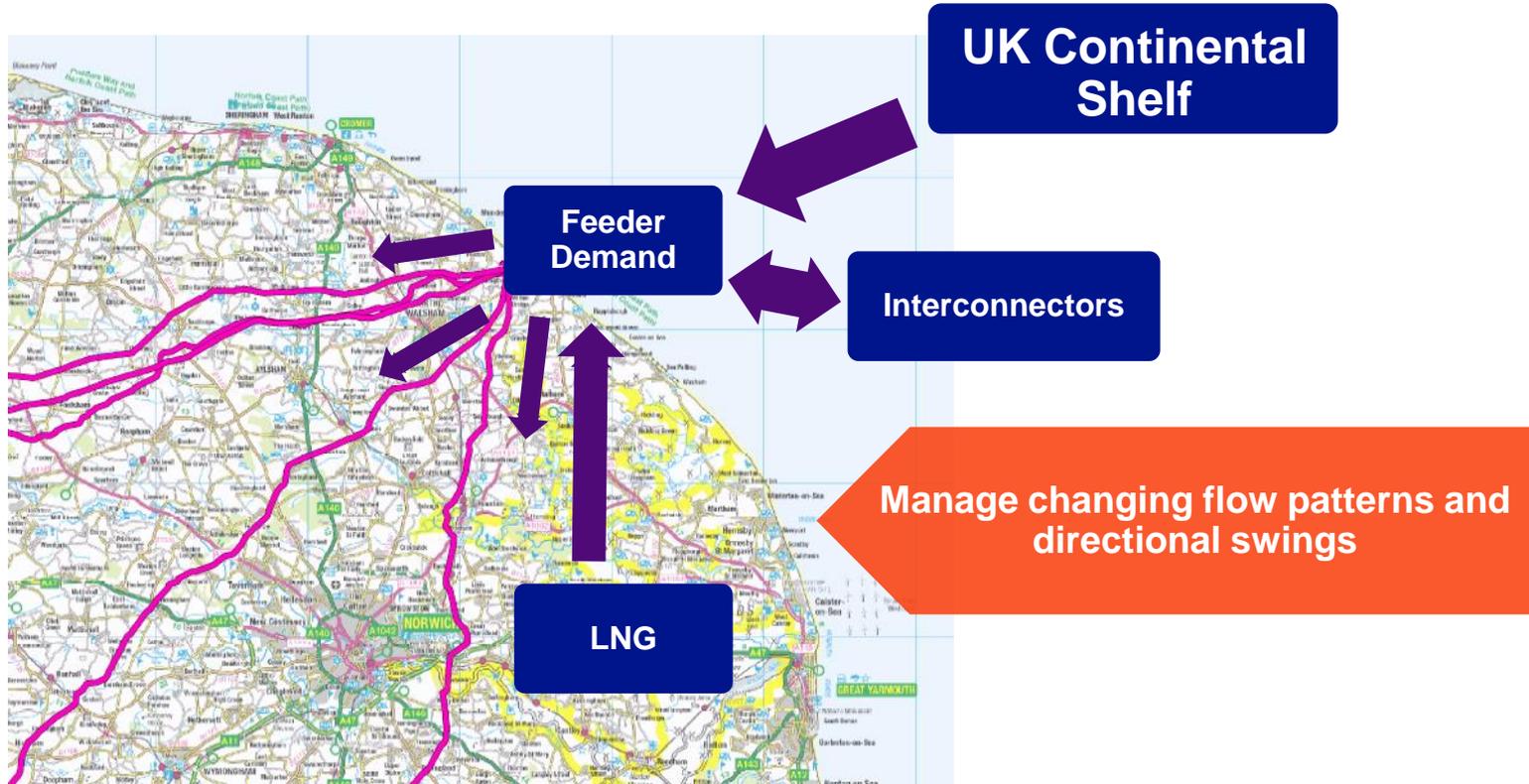
01

Bacton
Terminal

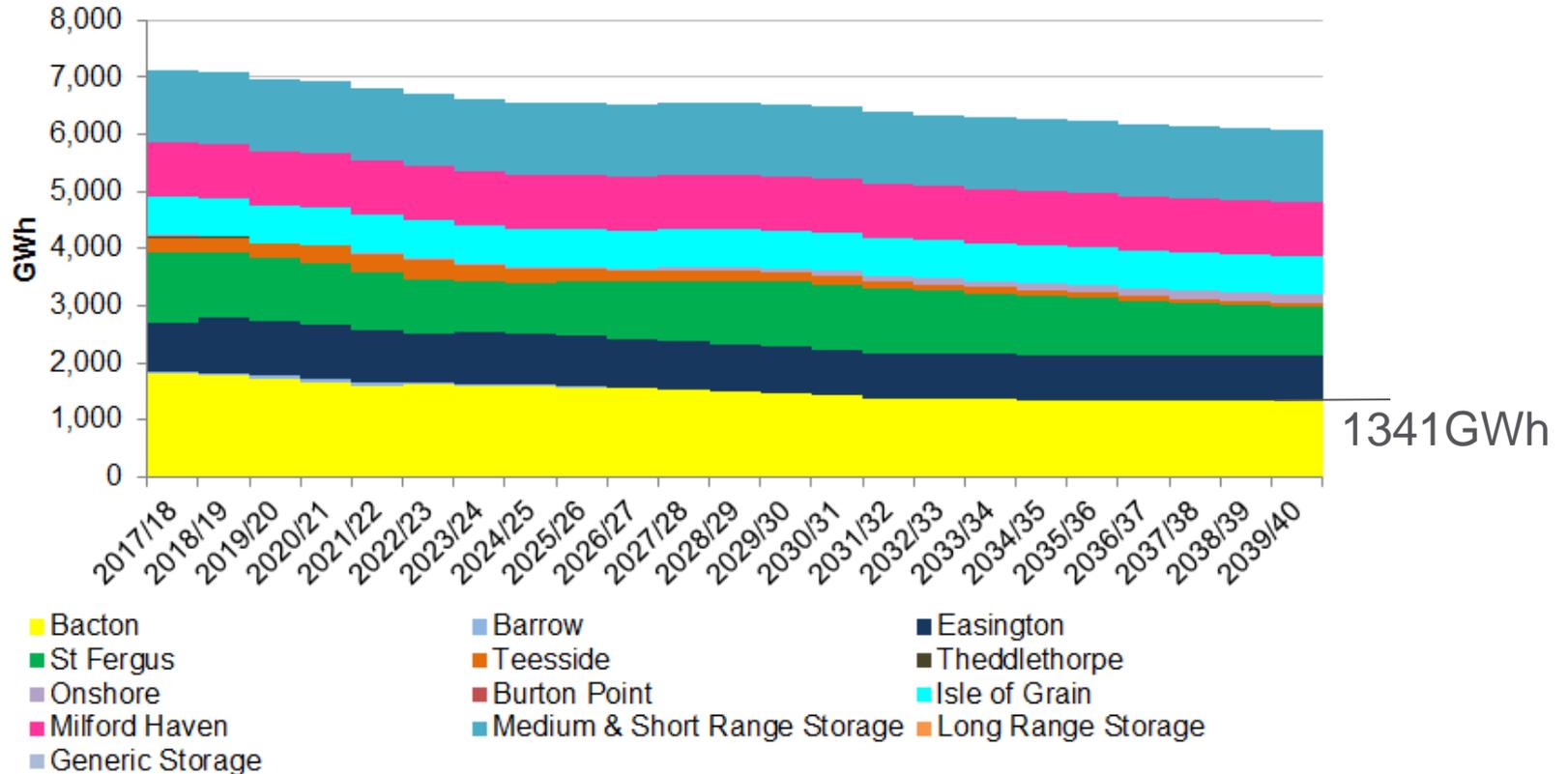
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Bacton provides a critical service



Predicted UK flows



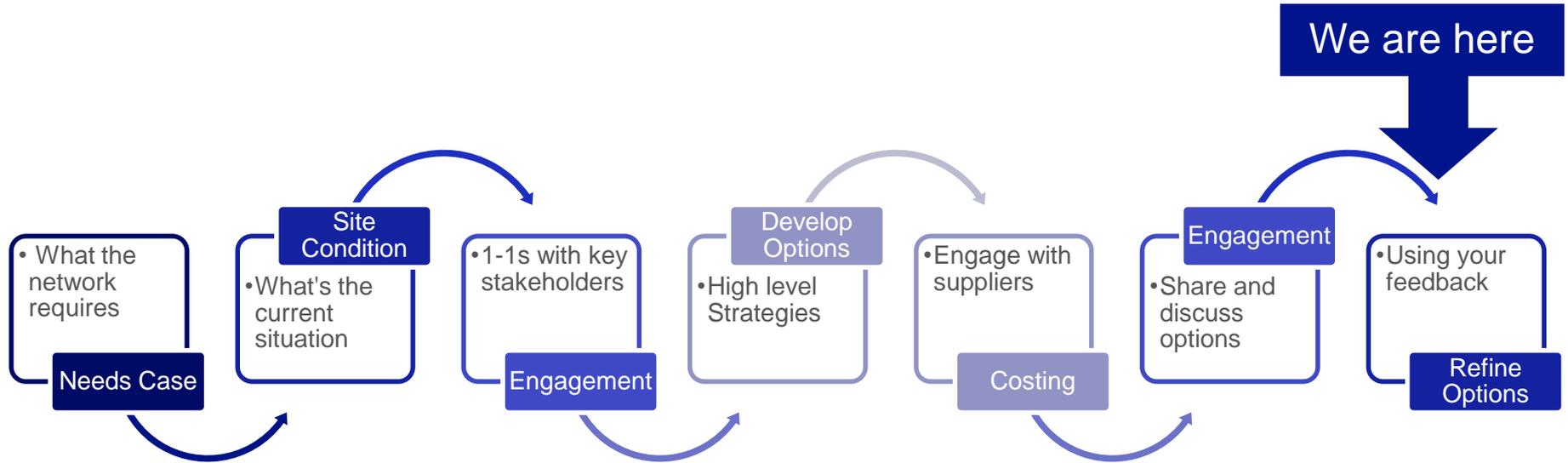
The drivers for change

1. Age related asset health and obsolescence issues
2. Changing supply and demand patterns

So we set out to understand

1. Customers and stakeholders needs of the site now and into the future
2. Impacts of not being able to meet those needs
3. Implications for the local communities
4. Views on potential options for the site

What we've done

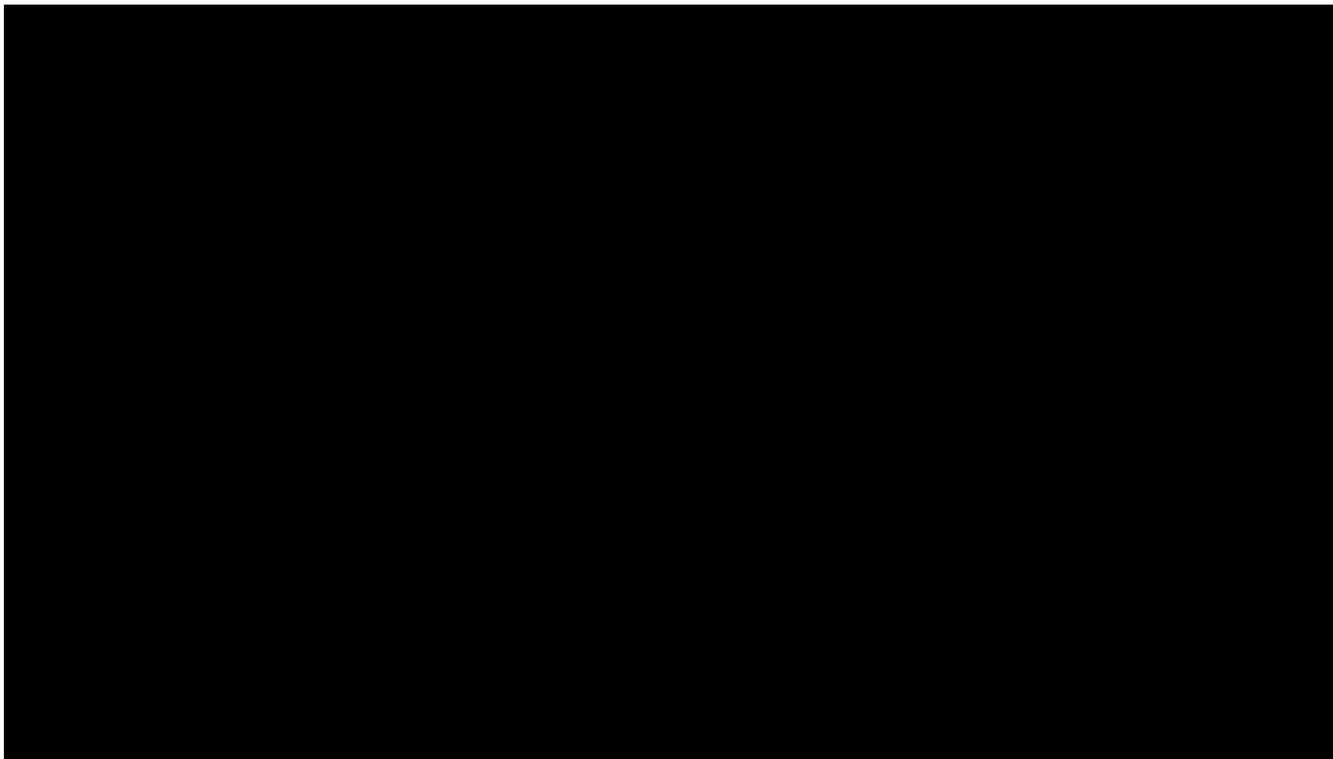


02

A summary of
the last 6
months...



Video

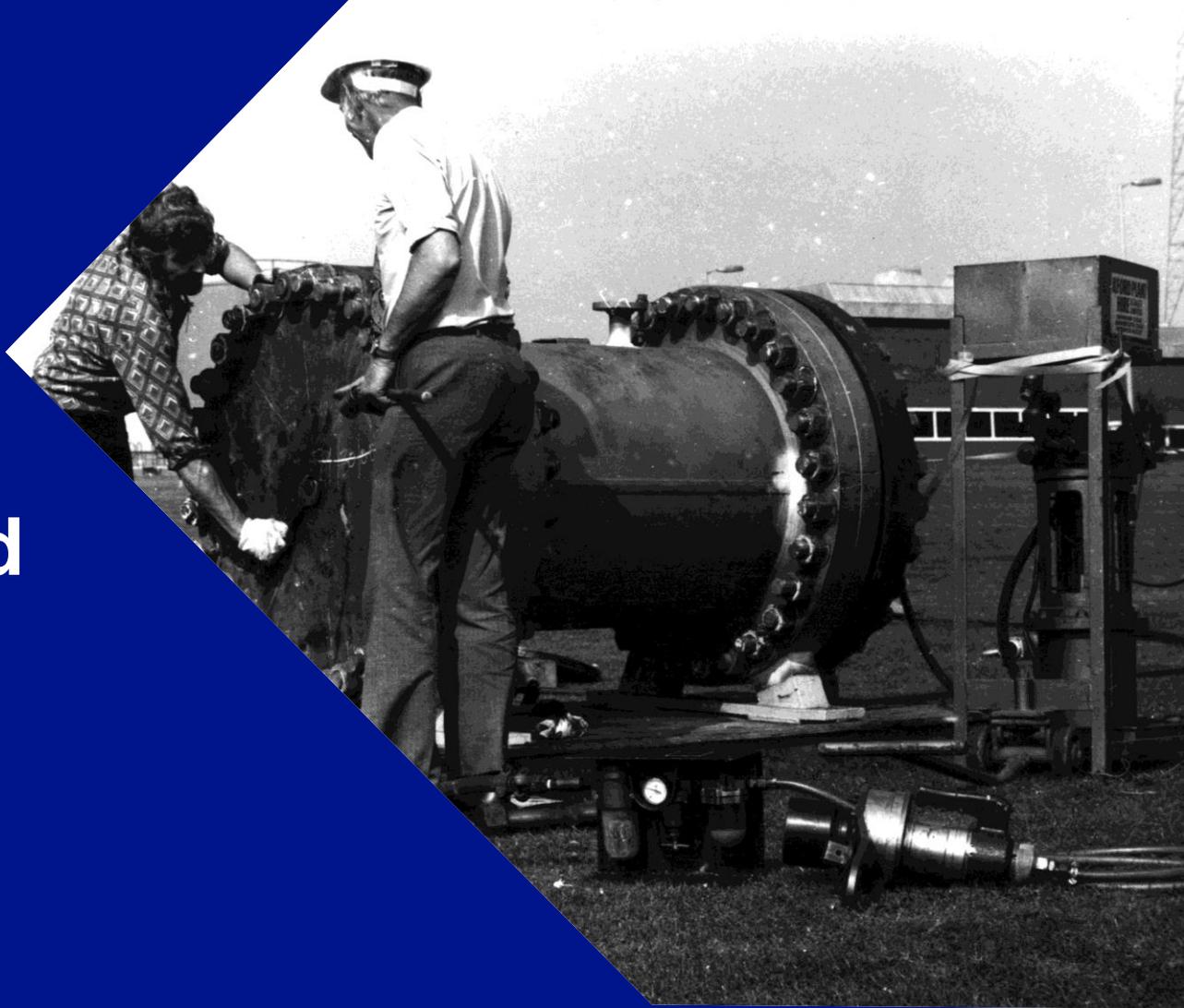


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03

What we heard

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We asked:

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

We need to align our work – efficiencies

Commitments we currently have (gas quality, capacity, pressures)

We want no flow restrictions due to ongoing work

Openness of communication – across terminal –
Aligning outages

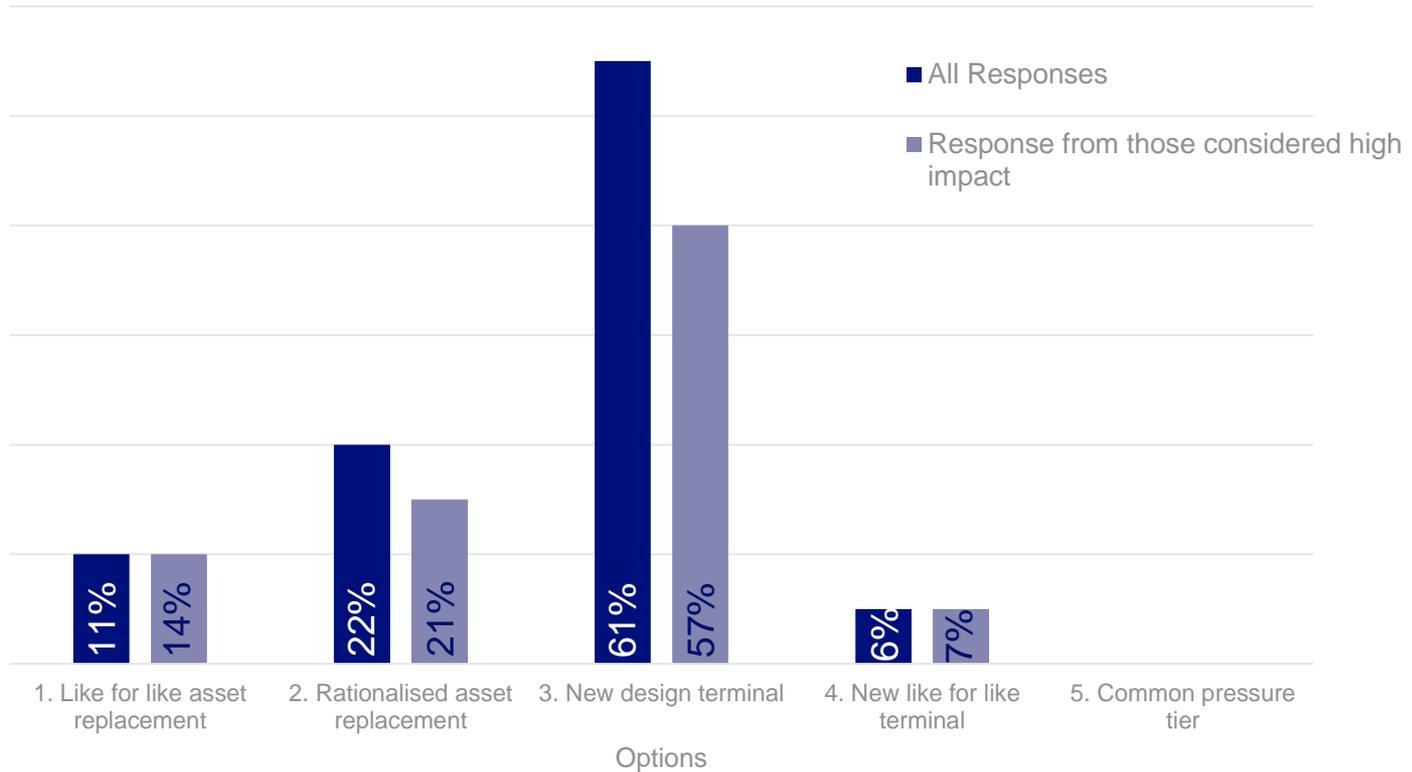
Consistency and Reliability

Flexibility between low and high pressures

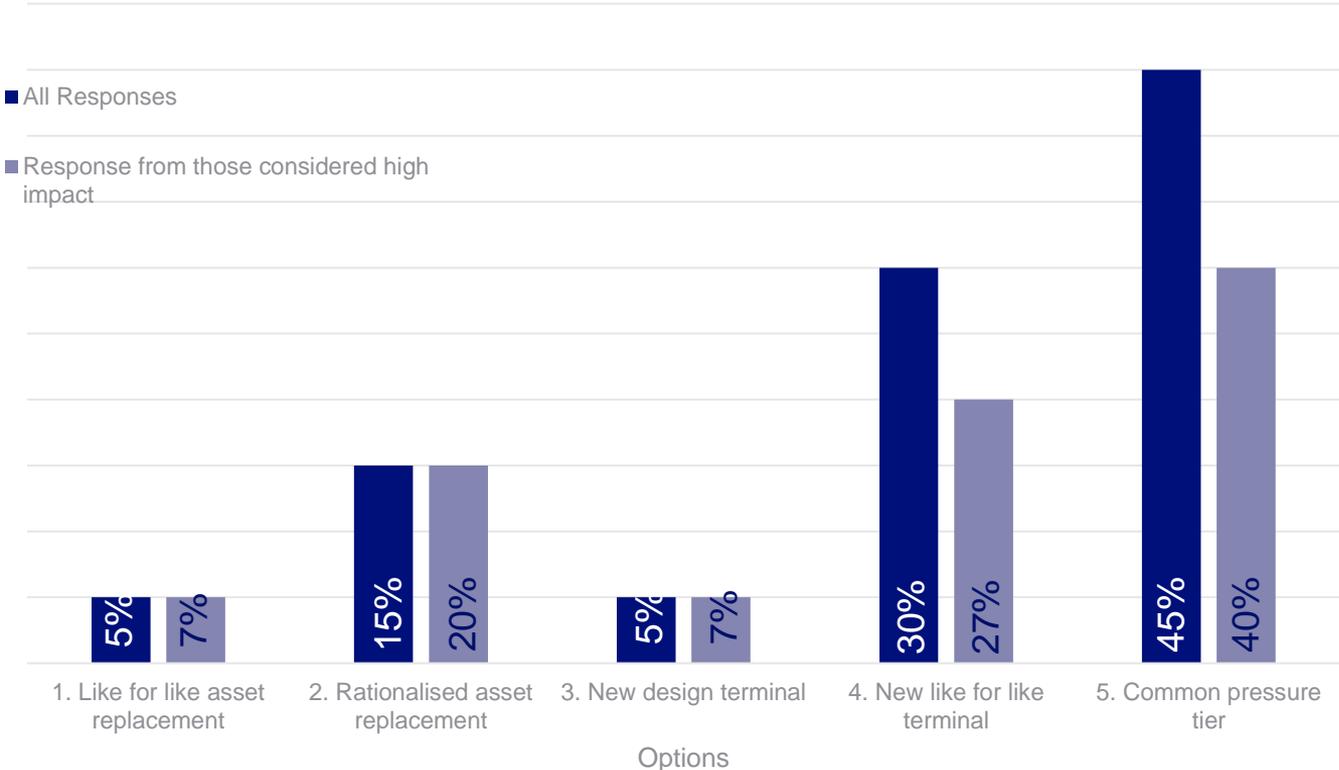
Long term thinking

Employment, supply chain, economy

1. Which of these is your preferred option?



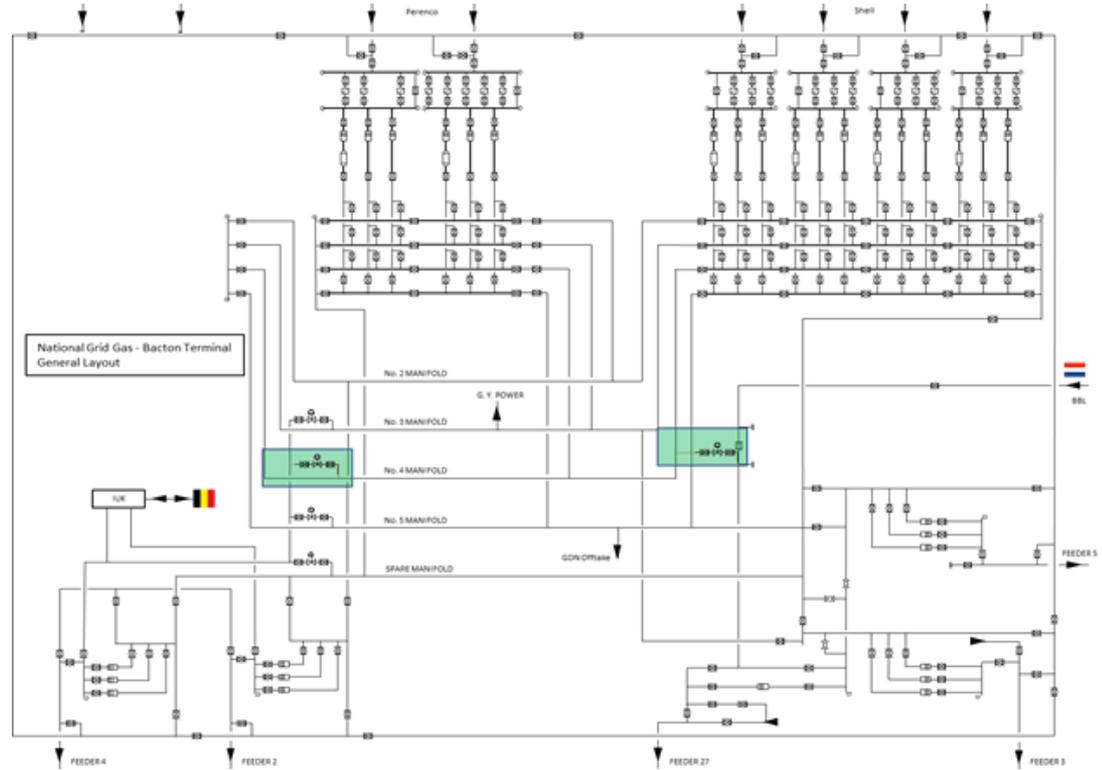
2. Are there any that you would like us to discount?



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 or until Bacton closes
- Known operation, no change to how the site works

Cost: ~£200m



Option 1 - Like for Like Asset Replacement

- You liked...

**Known
Operation**

**Resilient/
flexible**

**Proven gas
quality and CV
capping
capability**

**No long-
term
outages**

**Pace allows
future varia
nce**

- You didn't like.....

**Complex
integrated
planning**

**Historical
problems
remain**

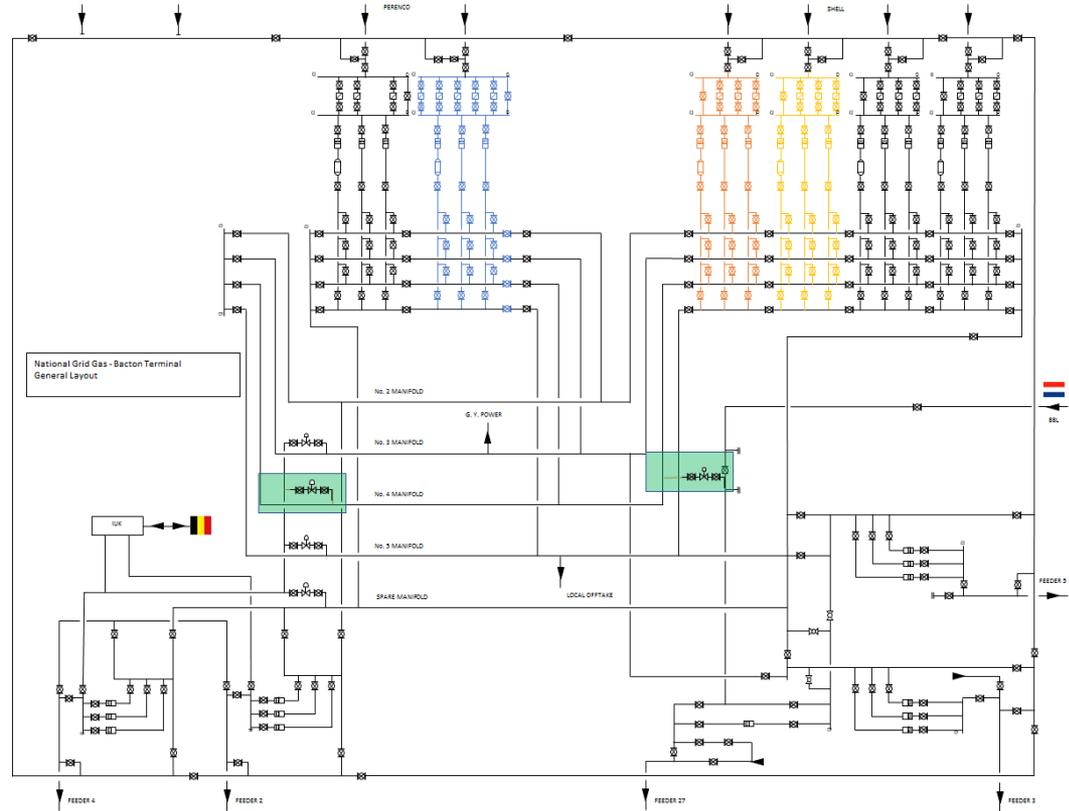
**High
consumer
costs**

**Uncertainty
of long-term
justification**

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 2 - Rationalised Asset Replacement

- You liked...

**Known
Operation**

**Low
impact
locally**

**Limited
Maintenance**

**Reduced
future OPEX
and CAPEX**

- You didn't like...

**Complex
integrated
planning**

**Increased
risk -
reliability**

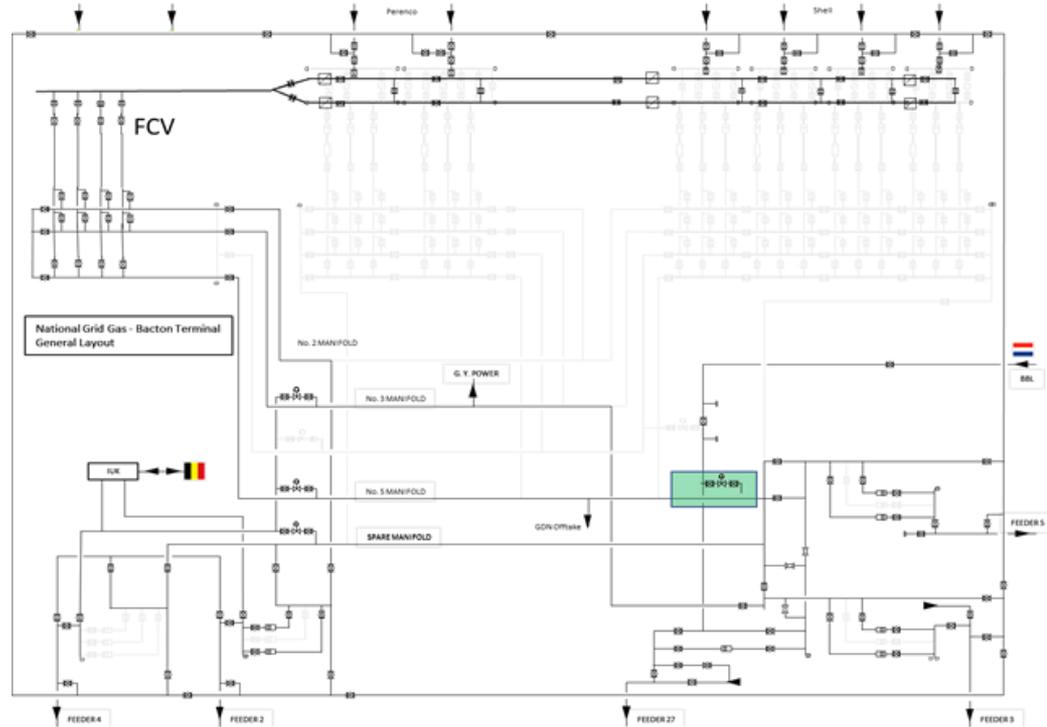
**Reduced
filter
capacity**

**Reduced
future
capability**

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 3 - New Design Terminal

- You liked...

Quick delivery
limits local
impact

Efficient

Reduced
complexity

Opportunity to
separate other
assets

Best use
of land

Future Proof

- You didn't like...

Risk of Cross
contamination

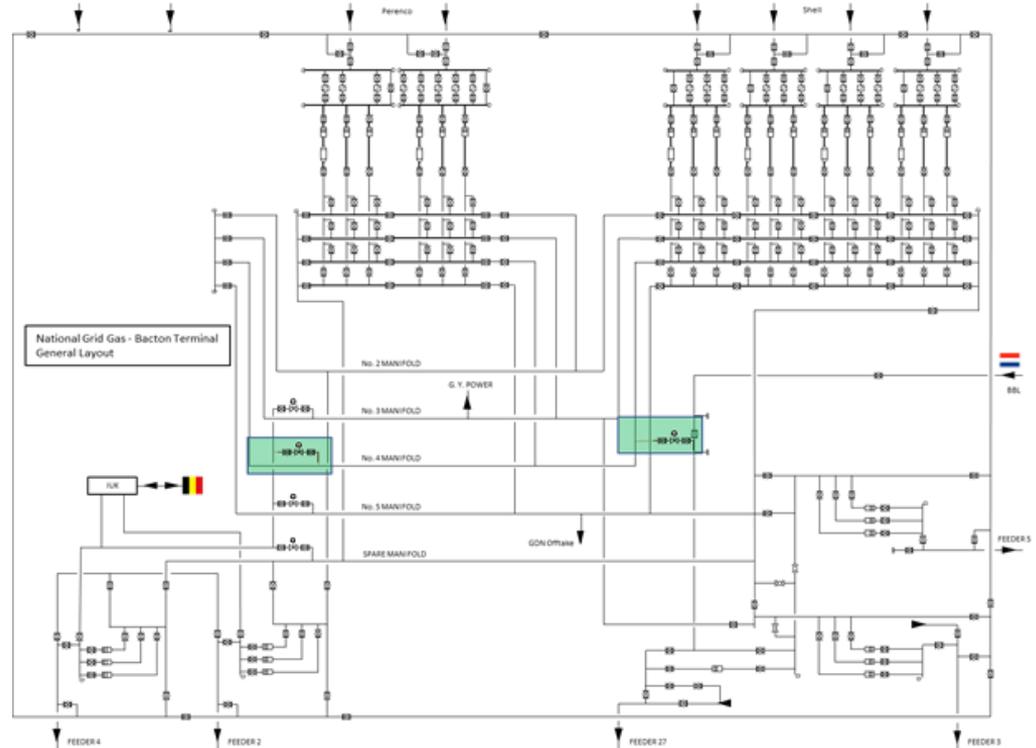
New skills,
external
risk

Wider
costs
unknown

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 4 - New Like-for-Like Terminal

- You liked...

**Will be
BAT**

**Opportunity for
community
benefit**

**Increased
availability and
reliability**

**Zero impact
during
build**

- You didn't like...

**More than
required**

**Unjustifiable
cost**

**Previous
issues
not addressed**

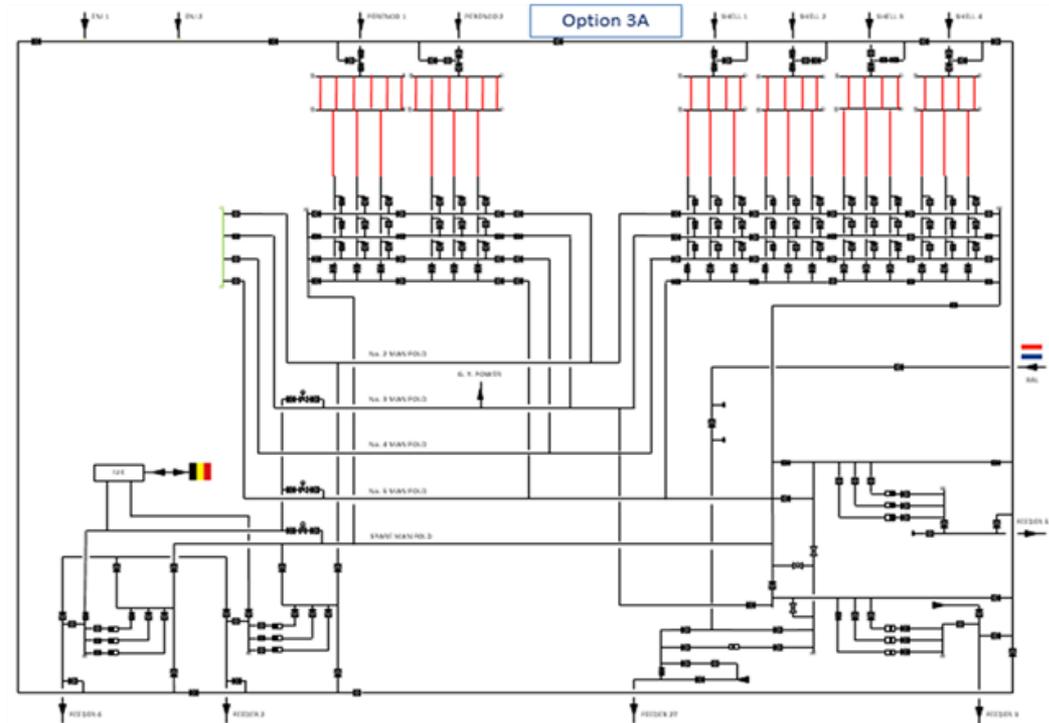
**Long/
expensive
planning**

**Environmental
Impact**

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



Option 5 - Common Pressure Tier

- You liked...

Limited landscape impact

Reduced Maintenance

Easier local planning

- You didn't like...

Greater pressure swings

Loss of jobs

Increased risk of dust/liquid etc

Large effect on upstream processes

More expensive for operators

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04

Conclusions

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We will develop detailed costings for the following options:

- Option 3: New design Brownfield terminal
 - Improved reliability, efficient, quick delivery
- Option 2: Rationalised Asset Replacement
 - Proven design, known operation, no long term outages
 - Rationalising incomers an option, dependent on flexibility/reliability of future plant



We have **discounted** the following options

- Option 4: New like for like terminal
 - High cost, limited benefit, high environmental impact
- Option 5: Common pressure tier
 - Impact on upstream, greater pressure swing, less control



Quick poll

Have we articulated the options and impacts in a way to help you make an informed view?

1. Yes

2. Somewhat

3. No

Please explain your answer

Quick poll

Do you agree with the options we will be progressing?

1. Yes

2. Somewhat

3. No

Please explain your answer

Next steps

- Conduct more detailed costing of preferred options
 - We have engaged with suppliers for brownfield terminal construction
- Share more detail on options being investigated in a webinar on 28th March

05

Pressure and blending: Findings and conclusions



Pressure services

Need to think about export (high pressure is best)

Demand for compression is likely to increase

Compression would increase UKCS production

91% (100% high impacted stakeholders) think we should progress this further

73% (100% high impacted stakeholders) say it should be a top priority

Pressure services - It's less clear who should pay for this service...

27% Spread across UK consumers

55% Paid for by users of the service

18% NG should pay, recovered thru Transmission Charges

We have spoken to the Oil & Gas Authority and their expectation is that it should be paid for by users of the service...

Therefore we will...

- Engage with interested parties on how we could deliver this service
- We do not anticipate this to form part of our RIIO business plan submission

Blending

Blending could be critical for SNS recovery strategy)

If we ship off spec gas - issue to our customers

Benefit to consumer – UKCS is cheaper than LNG

55% (100% High impacted stakeholders) continue to progress this

91% think it should be paid for by users of the service

45% (100% High impacted stakeholders) say it should be a top priority

Blending next steps

- The “asset” side of blending is relatively easy
- Whichever option is chosen should facilitate blending, but is likely to be too slow for customers
- The complex part is contracts, and how it is managed
- We will continue to engage with interested parties If you're not already involved and want to be, please contact Phil.Hobbins@nationalgrid.com

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07

Questions

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Upcoming engagement

- Fri 8th Feb & Wed 20th Feb: Shaping the South East Network webinar
- Wed 13th Feb: GT playback consultation
- Tue 19th Feb: Network Capability webinar
- Thu 7th Mar: Shaping the South East Workshop
- Thu 28th Mar: Shaping the Bacton strategy update webinar

Thank you

