

Bacton Update



**national gas
transmission**

Friday 19th January 2024

We will begin at 13.32 to allow everyone to join

Logistics



Should last around 60 minutes



Questions via Teams



All attendees on mute and cameras off



Slides & recording will be circulated

Agenda

1. Welcome & Introduction

2. Final Options Selection Report (FOSR)

3. Questions

Who will be speaking?



Martin Hadfield
Development Director
– North Sea Terminals



Sam Osborne
North Sea Terminals –
Capex Delivery
Manager



James Gudge
Regulatory
Development
Manager



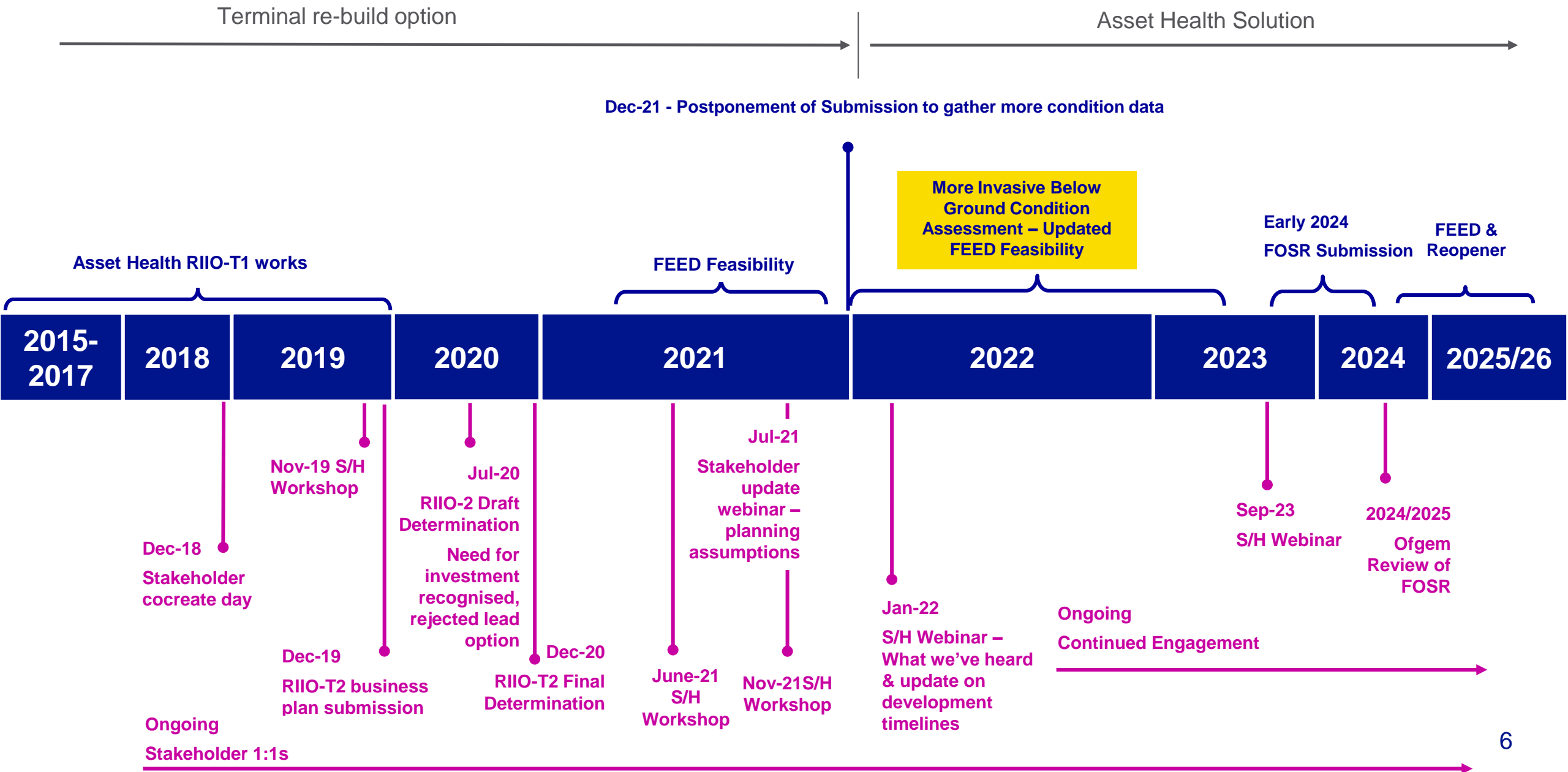
Edward Wamala
Project Manager



Ollie Stafford
Customer and
Stakeholder team

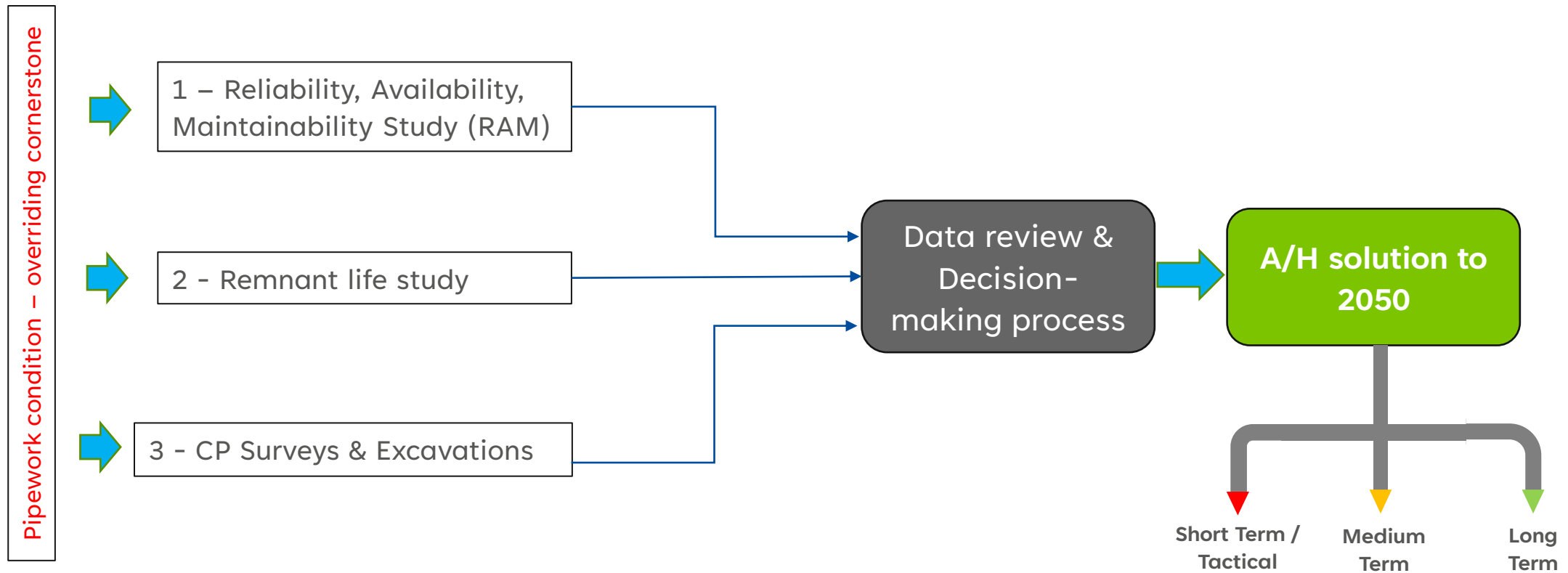
Final Options Selection Report (FOSR)

Bacton Future Operating Strategy



Additional Investigatory Works

- In order to further develop the options within our FEED Feasibility study we commissioned a range of additional studies with the aim to collect further data to underpin our options analysis.
- This predominantly centred around the condition of our below ground assets.



1 - RAM Study

- Study predicted average Terminal Deliverability to be **98.24% in 2025** which will reduce to **91.25% in 2050** due to equipment deterioration.
- Unplanned Terminal outage was predicted averagely occur every **16 years in 2025**. This would increase to **1 in a year in 2050**.
- Key contributors to loss of gas were identified as **Critical Valves , LV Electricals and Cathodic Protection**.
- If investments are undertaken on critical assets by 2030, Deliverability will increase to **98.32% in 2050**.

2 - Remnant Life Study

- Pipeline threat analysis established all above ground equipment was in **good condition** with no major external corrosion damage or loss of coating.
- Below ground pipe fatigue cyclic duty was assessed and confirmed having a 40year design life from 2022.
- Conclusion was ; **Majority of the terminal** is within TD/12 limits in as far as belowground pipe Sustained stress, Shakedown stress & Fatigue usage is concerned.

3 - CP Surveys & Excavations (Pipework)

- Below ground coating was analysed and found largely in **good condition**.
- Full sitewide CP system replacement required to meet PSSR regulations (pipework protection).

4 – Conclusions

- All FEED options suggest that AH is preferred up to 2050
- Items that currently are at end of life and in need for replacing and upgrading therefore become 'no regrets'
- Intention to utilise the FOSR submission windows to **accelerate this work and remove operational risk**.

Wider considerations / comparators

In reaching our conclusion on the best option for Bacton we also considered both Brownfield and Greenfield ‘New’ Terminals, which had several challenges associated with them:

1. **Brownfield** – this option looked to utilise an existing / disused part of the Terminal. Challenges associated with additional decommissioning works and proximity to equipment meant that this option would not be viable.
2. **Greenfield** – Due to the scale of works involved with planning & consents, disruption, and risk to existing terminal operations this was not deemed feasible. Technical interactions with both incoming supplies and outgoing interconnection arrangements would have meant extensive outages required to minimise risk increasing cost and time.

These challenges also reinforces that the best whole life cost solution for Bacton is to undertake the Asset Health solution to keep it operating safely up to 2050 and provide a pathway for and future energy transitions. It also ensures the security of supply is maintained to UK and EU gas consumers at the most efficient costs.



Brownfield

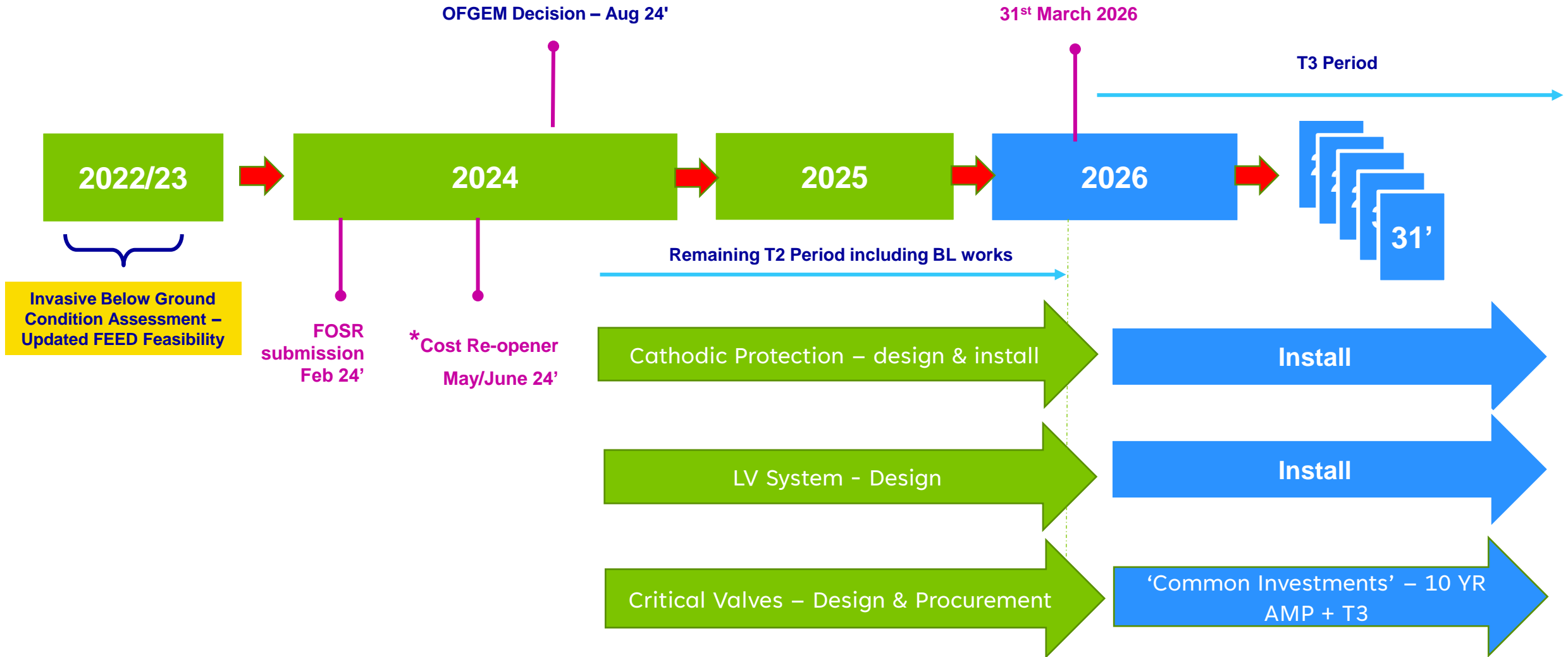


Greenfield

Asset Categories / work packages

RIIO T2 Baseline funding:	Final Options Selection Report (FOSR):	10 Year AMP:
CP Surveys	Cathodic Protection	Bacton Road Crossings
Fire Water Ring Main	Low Voltage Electrical Systems	Fire & Gas System install
ENI Decommissioning	Critical valves	Cyber
FOSR Development		Physical Security
CP, LV and Valves development work		Network Operability
		Civils & Roads

FOSR cost reopener



Rationalisation and resilience

Given the strategic importance of Bacton to UK gas supplies and also the wider EU community NGT consider that the flexibility that already exists inherently in how the site was designed and currently operates, any rationalisation of plant and equipment can pose risks

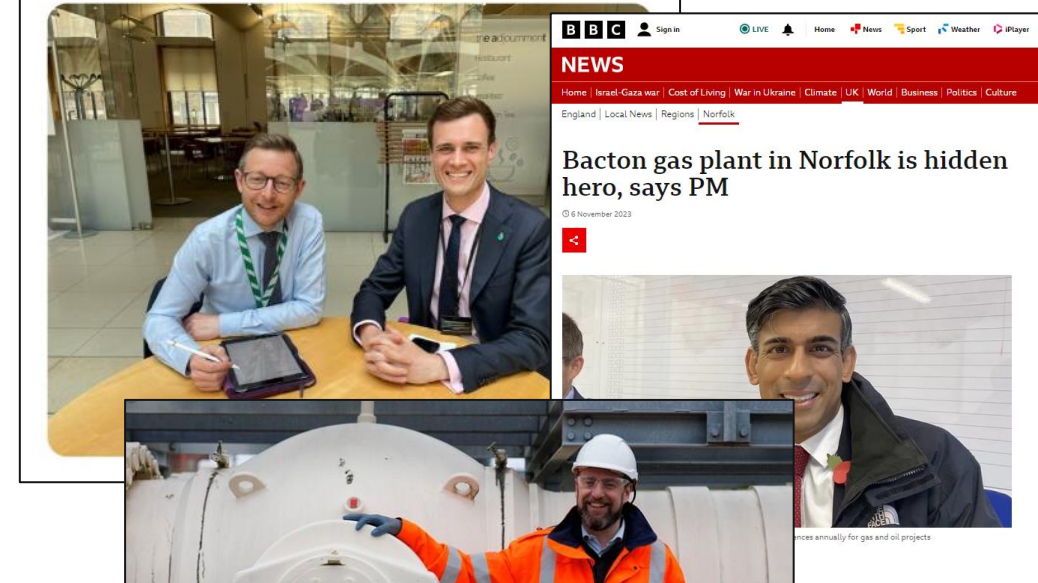
- **Rationalisation** – NGT don't intend to rationalise any of the main process equipment, pipework and ancillaries unless there is a case that shows a piece of kit can be replaced with a much smaller modern equivalent for example LV electrical equipment lends itself well to be reviewed when the design stage takes place and likely to be the only area where items can be removed / rationalised.
- **Resilience** – Bacton has high levels of resilience due to its design but there are resilience risks that we will look into in more detail in the FOSR submission chiefly Dust / Liquids and other operational configurations that allow the site to be as flexible as it can. The resilience assessment will also help demonstrate areas where there are any single point failure risks

Summary / Recap

Bacton Gas Terminal is critical to UK Security of Supply and the role it plays is supported by the work NGT has done as part of FOSR. This has also been a key message from our wider stakeholder community which we have acknowledged in our work.

Bacton is also a high profile site and forms a key strategic part of the UK's energy system.

- **Asset Health to 2050** – The preferred solution coming out of the all the work undertaken indicates that in all options there is an element of Asset Health however the best option for UK consumers, providing the best value for money is one which sees the plant maintained to current levels of resilience and flexibility to 2050 under a full Asset Health solution.
- **Value to consumers and stakeholders** – by focusing on upgrading, repairing and maintain elements of the Terminal, heavy costs and risks associated with creating a 'brand new' terminal are avoided allowing us to maintain reliability whilst we undertake the upgrades.
- **What do we need from you?** – As a valued stakeholder input to all the work we have been doing we appreciate and value your input and feedback. We would like any more feedback and consideration you have regarding our work ahead of our submission to Ofgem.



The small corner of Norfolk that helped defeat Putin's energy war
An unheralded pipeline has transformed Britain into a gas bridge to Europe

Q&A

Via Teams

Next Steps

FOSR

- Mid Jan / Early Feb 24' internal review and governance for submission.
- Continued stakeholder engagement – developing of the asset health detail working to ensure interactions all work as one and individual stakeholder sessions (This session + series of 121's).
- Engineering Justification Paper planning and drafting for the FOSR Cost re-opener – focussed effort to ensure that previous lessons learned from submissions are being embedded in our reopener.

What next?



You will receive the materials from today's session



If you have any further questions or would like to discuss anything specific please get in touch:
engage@nationalgas.com

Thank you

