Gas Option Advice Methodology

October 2025

Welcome

Join Q&A at Slido.com #3817815

- Duration: 3:30pm – 4:30pm
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- Camera and microphones are disabled
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- Contact us: **gwend@neso.energy**

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- GOA Methodology
- Stakeholder feedback
- Next steps in gas network planning
- Q&A

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Introduction

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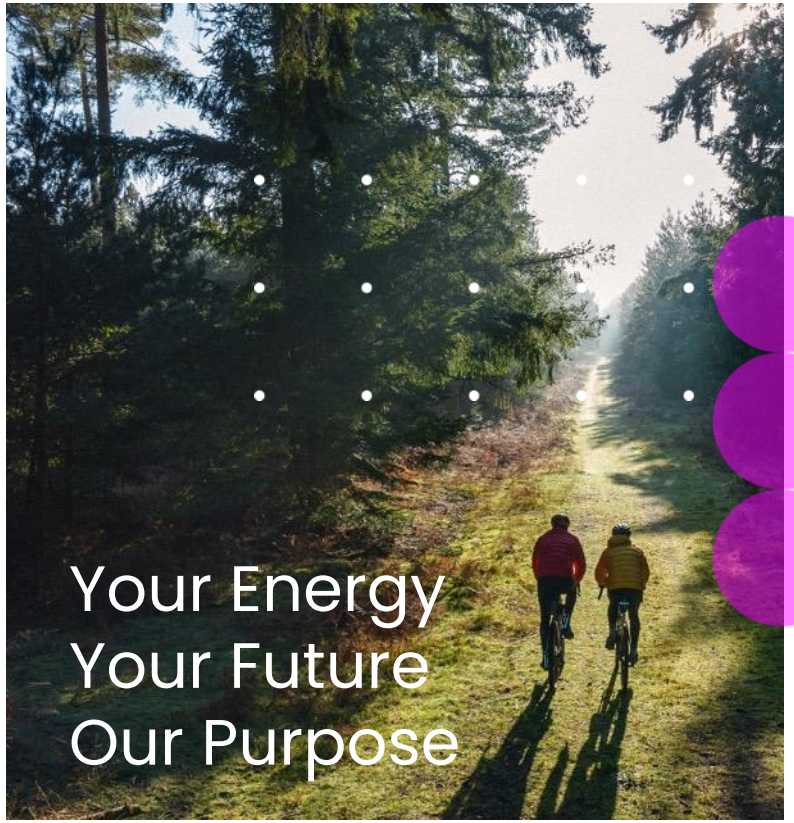
National Energy System Operator overview

Who we are:

The National Energy System Operator, NESO, is an independent, public corporation at the centre of the energy system taking a whole system view to create a world where everyone has access to reliable, clean and affordable energy.

Our work will be the catalyst for change across the global community, forging the path to a sustainable future for everyone.



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National Energy System Operator

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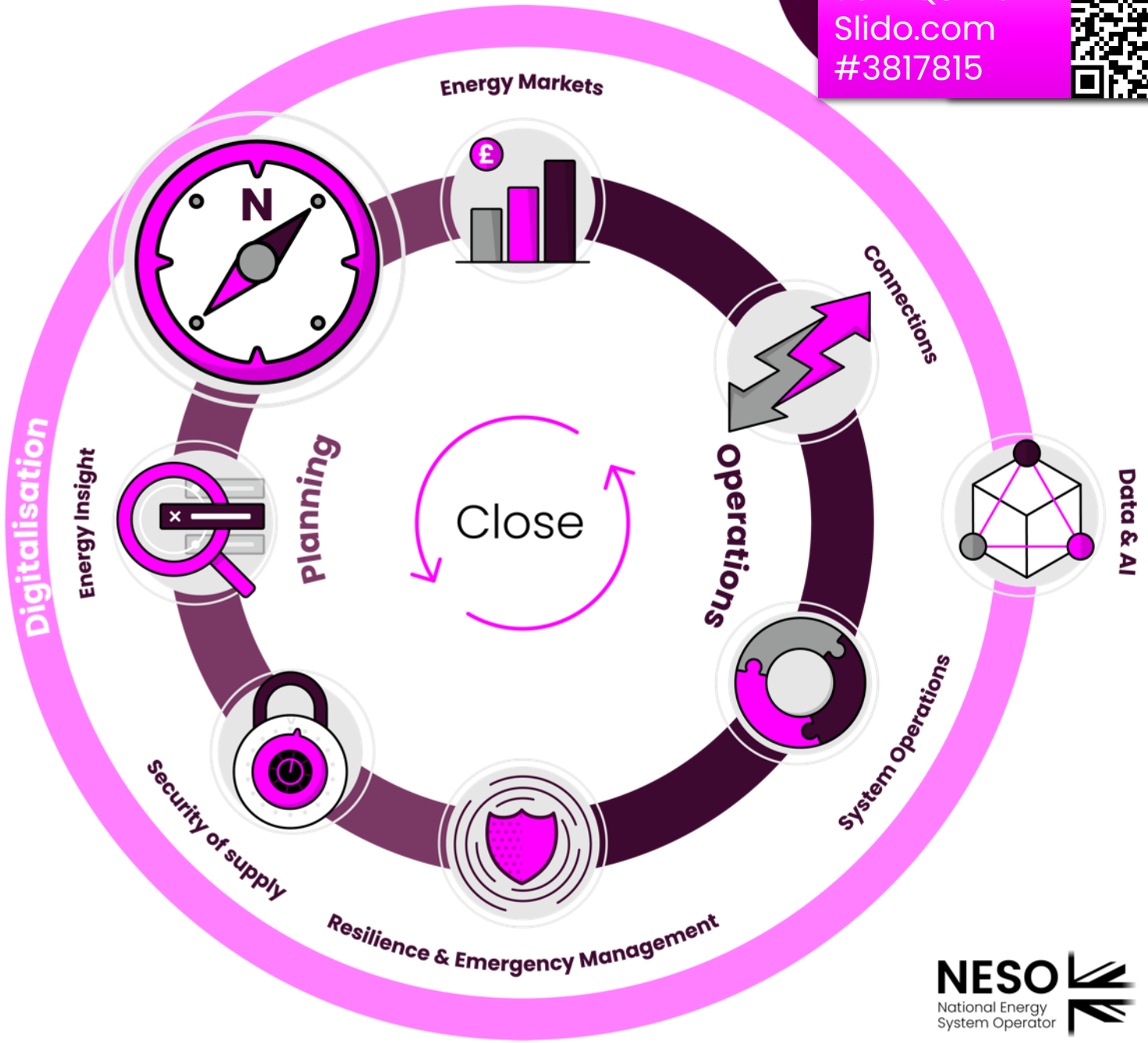
What we do

Strategic Planning

We take a long-term approach to planning, that identifies whole energy system needs and ensures that the system can be designed and built accordingly.



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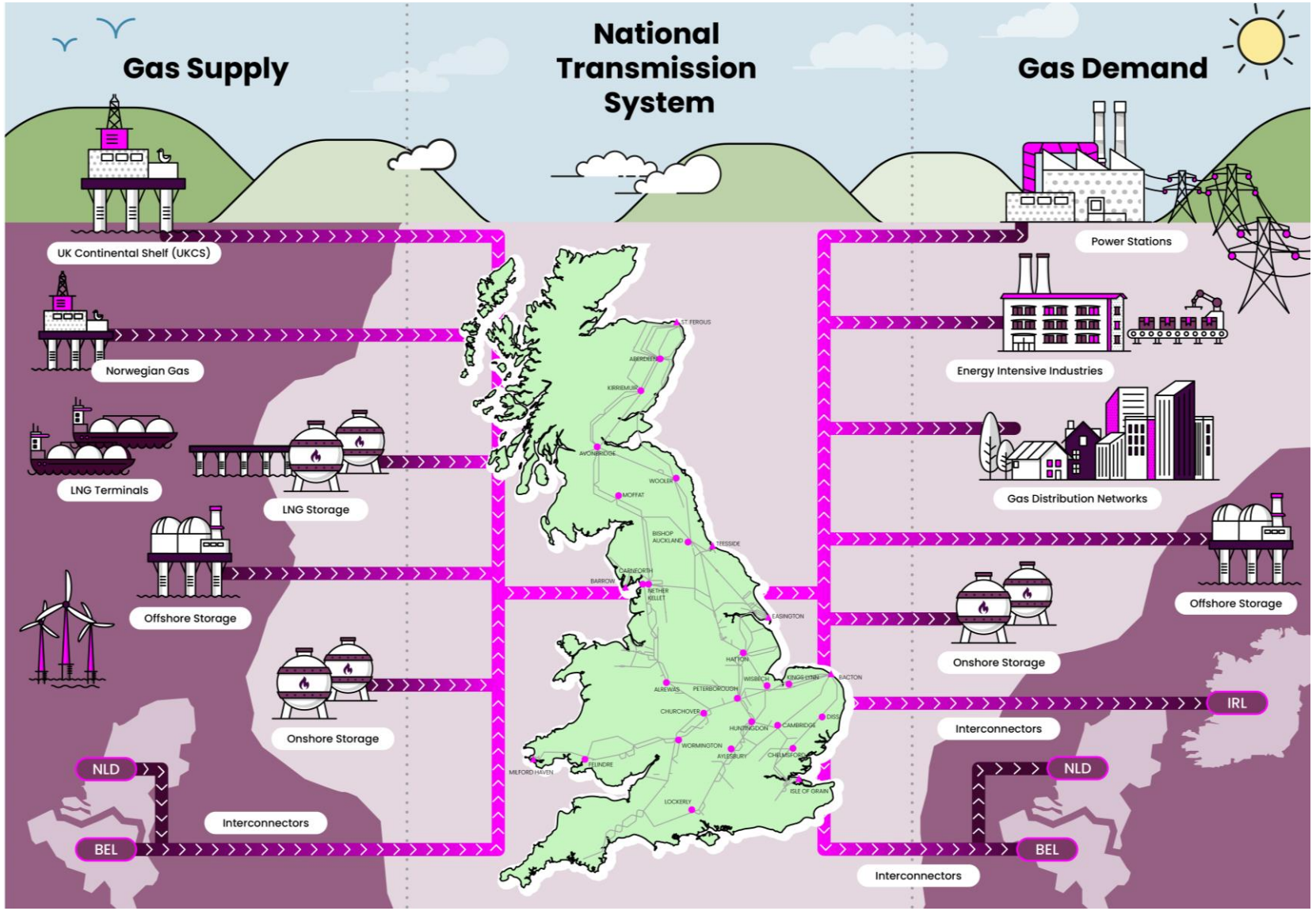
How we fit in the gas system



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Gas network planning timeline

GNCNR
Gas Network Capability Needs Report

NESO's independent view of GB's gas transmission system, the NTS, and its capability to meet current and future network requirements.

Strategic Planning Options Proposal

national gas transmission

SPOP
Strategic Planning Options Proposal

Required by NGT's Gas Transporter Licence Special Conditions, SPOP identifies the options which could meet the capability need(s) identified in the GNCNR so that NESO fulfil their obligations in the Gas Options Advice Document(GOA).

GOA
Gas Options Advice

NESO's independent assessment of NGT's preferred reinforcement options for NTS; where appropriate, to present a more suitable option to Ofgem.

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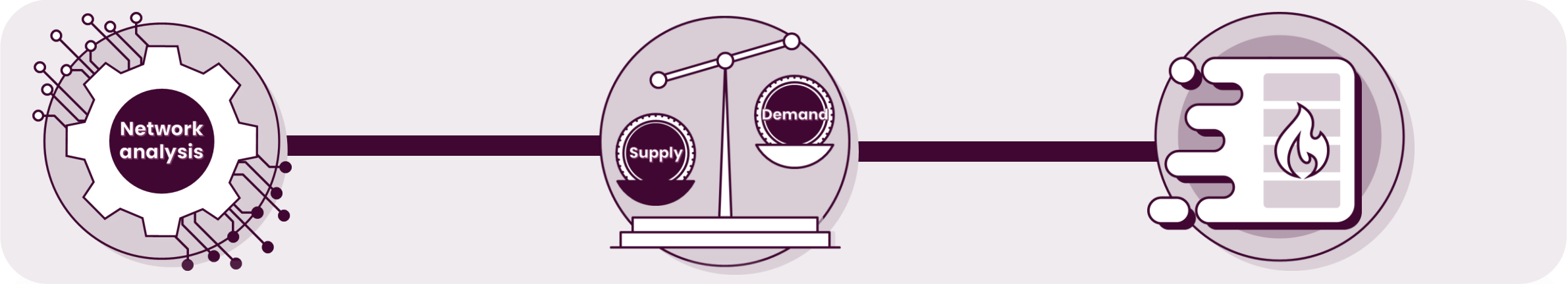
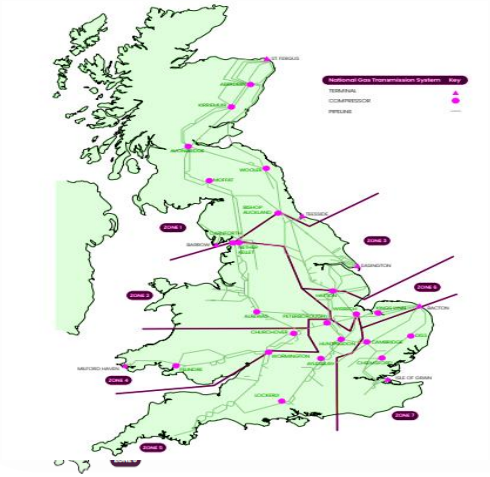
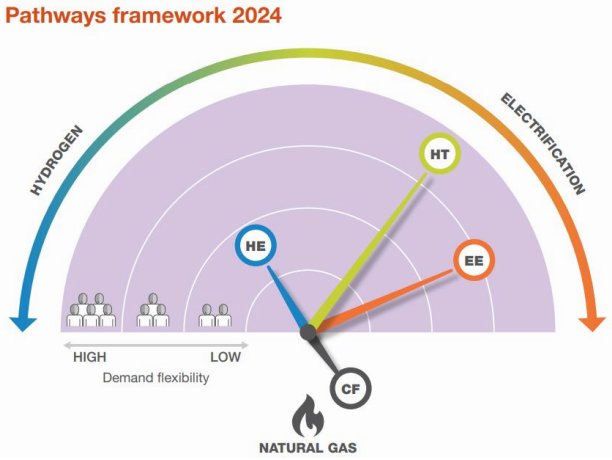
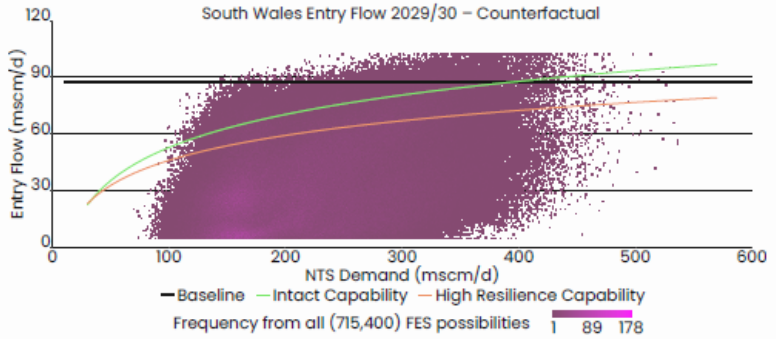
GNCNR Methodology









More information can be found here: [Gas Network Capability Needs Report (GNCNR)]

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GOA methodology

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Assessment Framework

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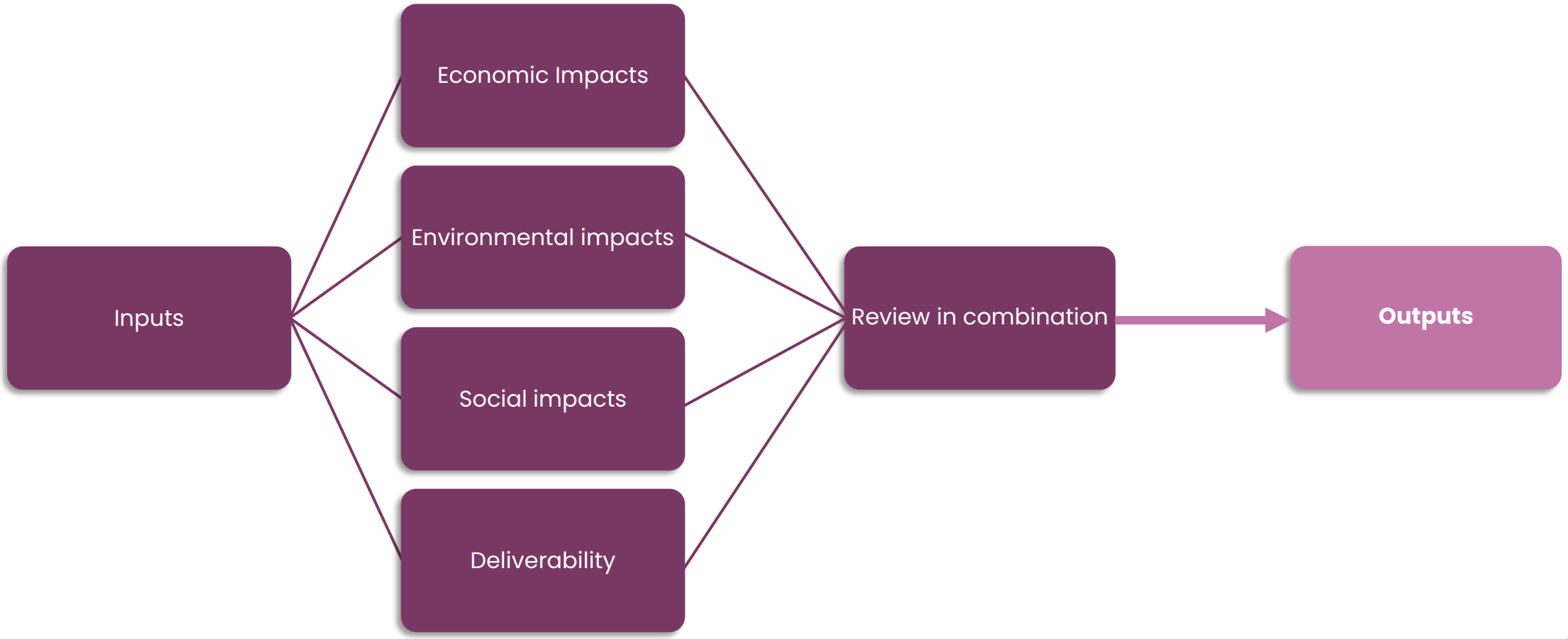

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Assessment Framework

ASSESSMENT CATEGORIES	DESCRIPTION	NPV OR SI&D MATRIX ASSESSMENT
Capital costs	Costs associated with the design, planning, building and assets	NPV
Operating costs	Costs associated with the operation and maintenance of the investment options	NPV
Network constraint costs	Costs that NGT incur when gas flows on the NTS are constrained, they serve as a benchmark against the capital and operating costs in the economic assessment	NPV
Environmental impacts	Environmental cost of emissions that are incurred as part of an investment option	NPV
Social impacts	Consider to what extent can these options ensure network security of supply, promote and maintain safety for the consumer	SI&D Matrix assessment
Deliverability	Consider the likely complexity in implementing the option, together with any known challenges concerning the proposal's geographical location and whether it is reliant on unproven technology.	SI&D Matrix assessment

The net present value (NPV) assessment will consider:

- Capital costs
- Operating costs
- Network constraint costs
- Environmental impacts

The social impacts and deliverability (SI&D) matrix assessment will consider the following factors:

- Social impacts
- Deliverability

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Capital and Operational Costs

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For each option we calculate the total cost of investment over the expected life of the related assets:

- **Capital investment** costs for designing, constructing and commissioning any new assets on the NTS
- **Capital investment** costs for removing (decommissioning) redundant assets on the NTS
- **Expenditure** associated with operating and maintaining the new or decommissioned assets

We have commissioned Jacobs to create a unit cost library to assist in asset costing calculations

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Environmental Impacts

ASSESSMENT CATEGORIES	DESCRIPTION	NPV OR SI&D MATRIX ASSESSMENT
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NESO is aligned with UK government's commitment to the protection and enhancement of the environment.

- **Greenhouse gas emissions** associated social cost of greenhouse gas emissions incurred in construction and maintenance and in changes to network operation
- **NO_x emissions** associated cost of significant air pollutants

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Social impacts

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For each option we will assess the consequences of investment proposals on communities or society both the positive and negative impacts that result from these options:

- **Security of supply** assessment of the options will need to consider whether and how they deliver a safe and secure network

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Deliverability

ASSESSMENT CATEGORIES	DESCRIPTION	NPV OR SI&D MATRIX ASSESSMENT
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For each option we will we apply a framework against each option, considering a range of factors:

- **Complexity** assessment of the options that could lead to constraints against the timeline stated in NGT SPOP
- **Geographical considerations** assessment of whether the options will be in the proximity of areas of population or sensitive areas, such as AONB/NSA/SSSI*
- **Technology** assessment of the options technology being presented that could lead to further justification for safety legislation.

AONB: Areas of Outstanding Natural Beauty; applicable in England and Wales
NSA: National Scenic Areas; applicable in Scotland
SSSI: Site of Special Scientific Interest

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Net Present Value (NPV) method

Constraint cost savings of option compared to baseline **–** Overall costs of option **=** **Net present value of option**

The economic analysis will compare different options by their net present value (NPV) over an assumed lifetime.

- All options will be compared to a base case, 'do nothing' option.
- Assessed against (forecasts based on) all Future Energy Scenario (FES) net zero pathways and Counterfactual/Falling Behind
- Where an investment produces a reduction in constraints (or operational emissions) versus the base case, this is defined as a 'benefit.'
- If the discounted benefits of an option outweigh the discounted costs it will have a positive NPV.
- A positive NPV will be considered for the SI&D assessment

Constraint costs may occur if NGT cannot meet its contractual obligations at supply and demand points on the NTS.

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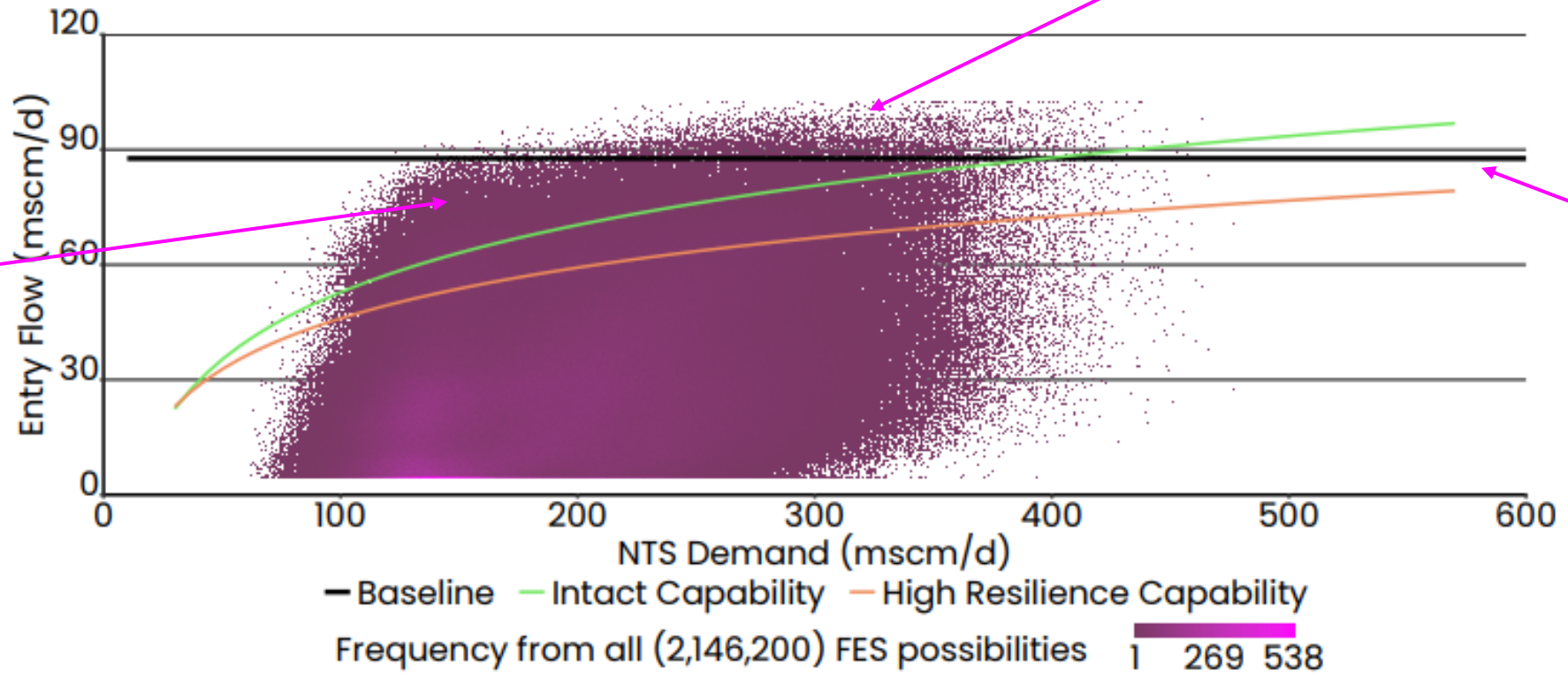
NPV constraint costs

Constraints not included (non obligated capacity)

Constraints included (firm capacity)

Baseline



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NPV assessment method

The elements used in the NPV calculation:

- **Option costs** – this includes any build costs, operating costs, decommissioning costs, environmental costs. Also, the cost of commercial contracts with third parties that will reduce constraints
- **Constraint costs from each option** - they are calculated by determining the network capability impact of each option under the FES pathways and the Counterfactual/Falling Behind
- **Base case constraint costs** - it is the situation where there is no intervention on the NTS
- **Constraint cost savings** - they are calculated by comparing the constraint costs from one option to the base case constraint costs
- **Operational Emissions savings** - calculated by comparing the social cost of emissions from one option to the base case cost.

	Net Present Value (NPV) Relative to Do			
FES pathway	HT	EE	HE	CF/FB
GOA Option	**NPV (£m)**	**NPV (£m)**	**NPV (£m)**	**NPV (£m)**
1	90	184	440	410
2	86	182	447	420
3	79	178	491	485
4	88	192	488	461

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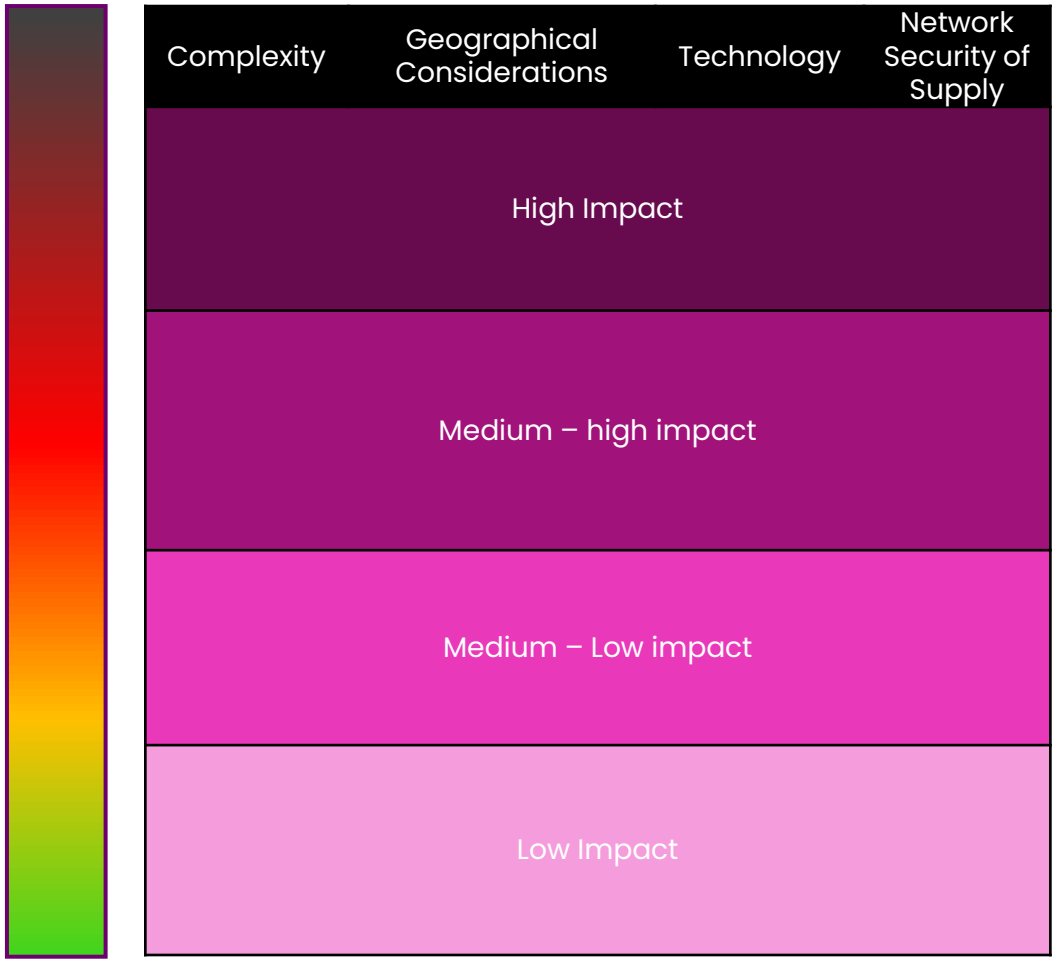
Social impacts & deliverability framework



The framework will assess the impacts and feasibility on the proposed option:

- Complexity
- Geographical considerations
- Technology
- Security of supply

Each area of consideration will be assessed separately within the framework and combined with the NPV outcome.

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Option recommendation

	Net Present Value (NPV) Relative to Do							
FES pathway	HT	EE	HE	FB	Deliverability (Inc. Geographical Considerations)			
GOA Option	**NPV (£m)**	**NPV (£m)**	**NPV (£m)**	**NPV (£m)**	**Complexity**	**Geographical Considerations**	**Technology**	Network Security of Supply
1	90	184	440	410	1	3	1	2
2	86	182	447	420	2	1	3	2
3	79	178	491	485	1	1	1	1
4	88	192	488	461	4	4	2	1

Each investment option proposed will consider each element of the assessment: environmental, social, deliverability and economic.

The economic assessment will be the primary decision driver and will be used to inform the recommendation on option(s) to Ofgem.

In future iterations of the GOA we will review previous investment recommendations, updating the progress of these and where relevant, the benefit of each option.

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Stakeholder feedback

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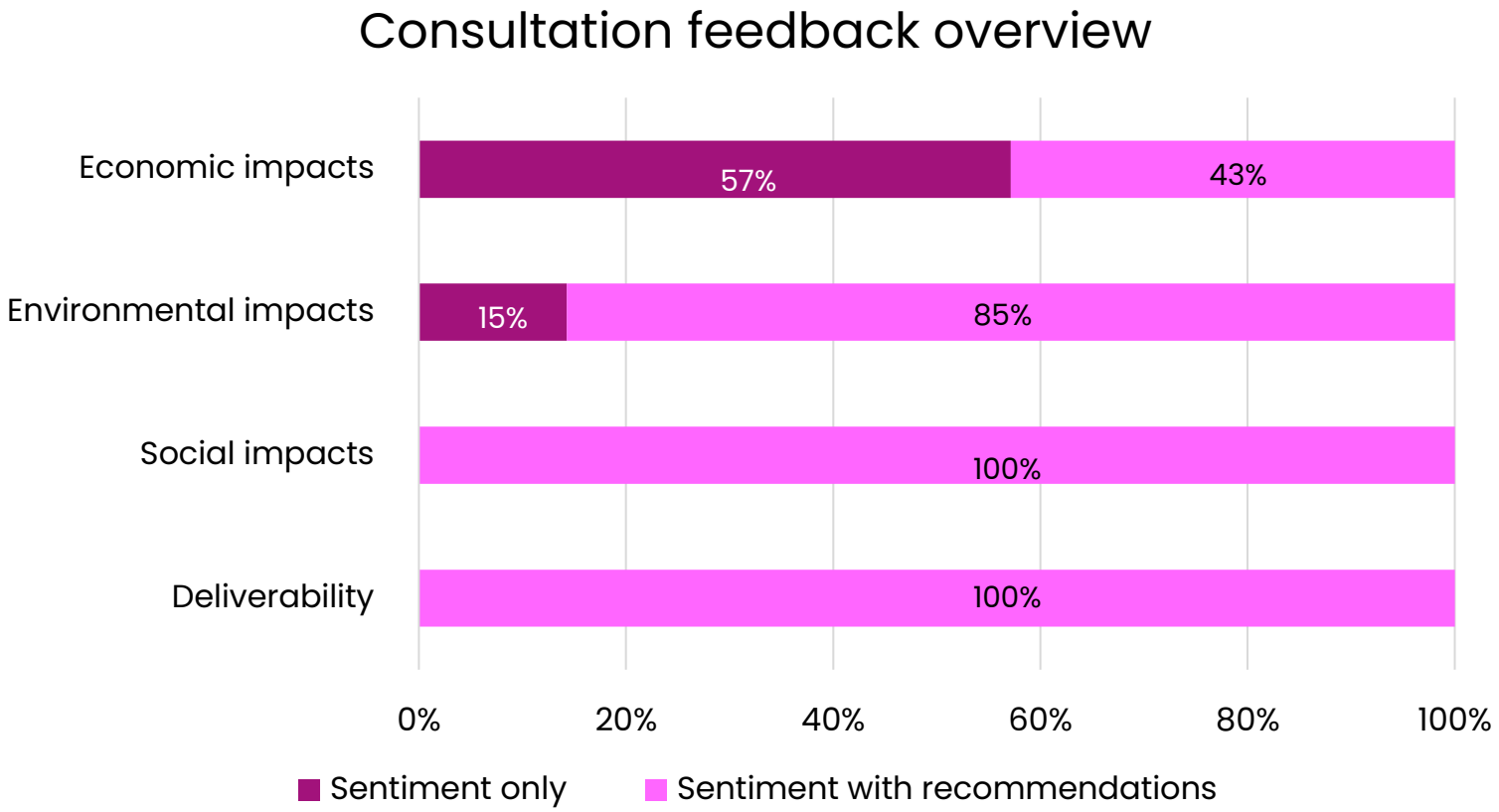
Stakeholder Feedback

A majority of stakeholders provided recommendations alongside their general opinions on our assessment approach; these recommendations played a crucial role in shaping our final methodology.

The GOA methodology consultation (May – June 2025) invited your feedback on our method to assess:

- Economic impacts: capital and operational costs
- Environmental impacts: Emission
- Social impacts: Security of Supply
- Deliverability



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Next steps in gas network planning

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Next steps in Gas Network Planning

As the GOA 2025 is the response to the GNCNR and SPOP, we are dedicated to building on this foundation and further develop to deliver the most valuable analysis of the gas transmission network.

Publish GOA by 31st December 2025

Future GOA webinar in Q1 2026 to discuss the recommendations to Ofgem and industry

Preparing gas network planning role for future CSNP responsibilities

Continued stakeholder engagement

We will continue engaging with our stakeholders throughout the development and refinement of our methodologies and analyses.

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Q&A

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Thank you

Sli.do will be open until 5pm today

Slides and FAQ document to be published to website

If you have questions/feedback, please contact **gwend@neso.energy**