Reducing methane emissions

UKOPA
27th February 2024

Agenda

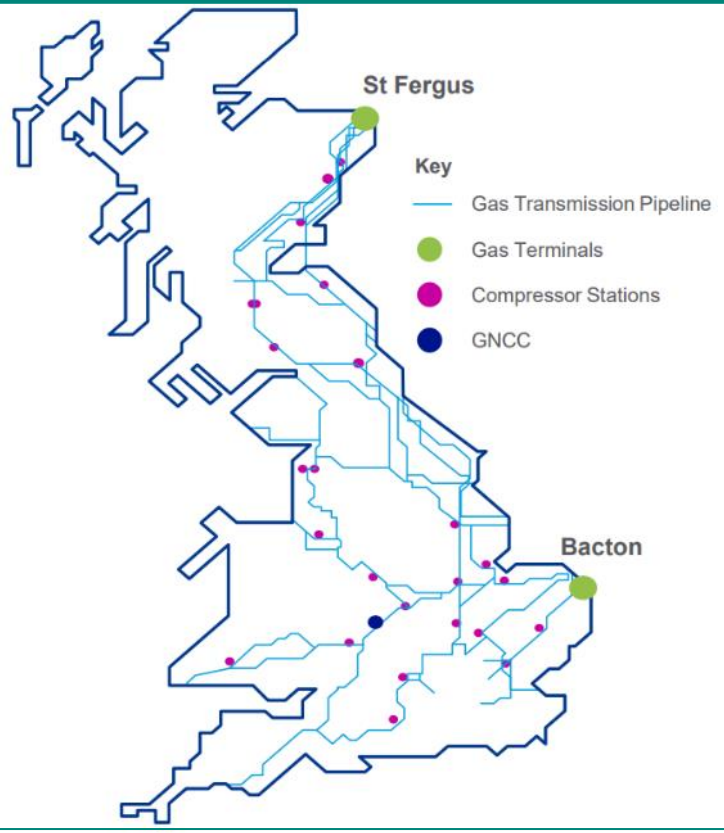
- The National Gas Transmission business
- Emissions Overview
  - What are scope 1, 2 and 3 emissions?
  - Business carbon footprint performance
- Glidepath to Net Zero
- Methane emission reduction
  - Methane emission sources in gas transmission
  - Reduction initiatives
- Recap
- Questions

national gas transmission

National Gas overview

Our essential role in keeping Britain's homes warm and its industry moving

national gas transmission



National Gas Transmission owns, manages, and operates the National Transmission System (NTS) in Great Britain, making gas available when and where it's needed.

23 compressor stations

~530 above-ground installations (AGIs)

7,660km network length

Gas National Control Centre (GNCC)

8 connected distribution networks

National Gas Services (NGS)

national gas metering

National Gas Metering is the largest equipment manager of industrial, commercial and residential gas meters in Great Britain - providing metering and reading services on behalf of National Gas Transmission.

~7.3m meters

~95% domestic meters

~5% industrial meters

In 2021...

About **42%** of the country's energy generated **by gas**

23m British homes **used gas** for heating

25% of industry **used gas** to power manufacturing operations

Source: Digest of UK Energy Statistics

Emma/Neil

Emissions overview

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What are scope 1, 2, 3 emissions?

- **Scope 1 emissions**— This one covers the Greenhouse Gas (GHG) emissions that a company makes directly — for example while running its boilers and vehicles.

- **Scope 2 emissions** — These are the emissions it makes indirectly – like when the electricity or energy it buys for heating and cooling buildings, is being produced on its behalf.

- **Scope 3 emissions** — Now here's where it gets tricky. In this category go all the emissions associated, not with the company itself, but that the organisation is indirectly responsible for, up and down its value chain. For example, from buying products from its suppliers, and from its products when customers use them.

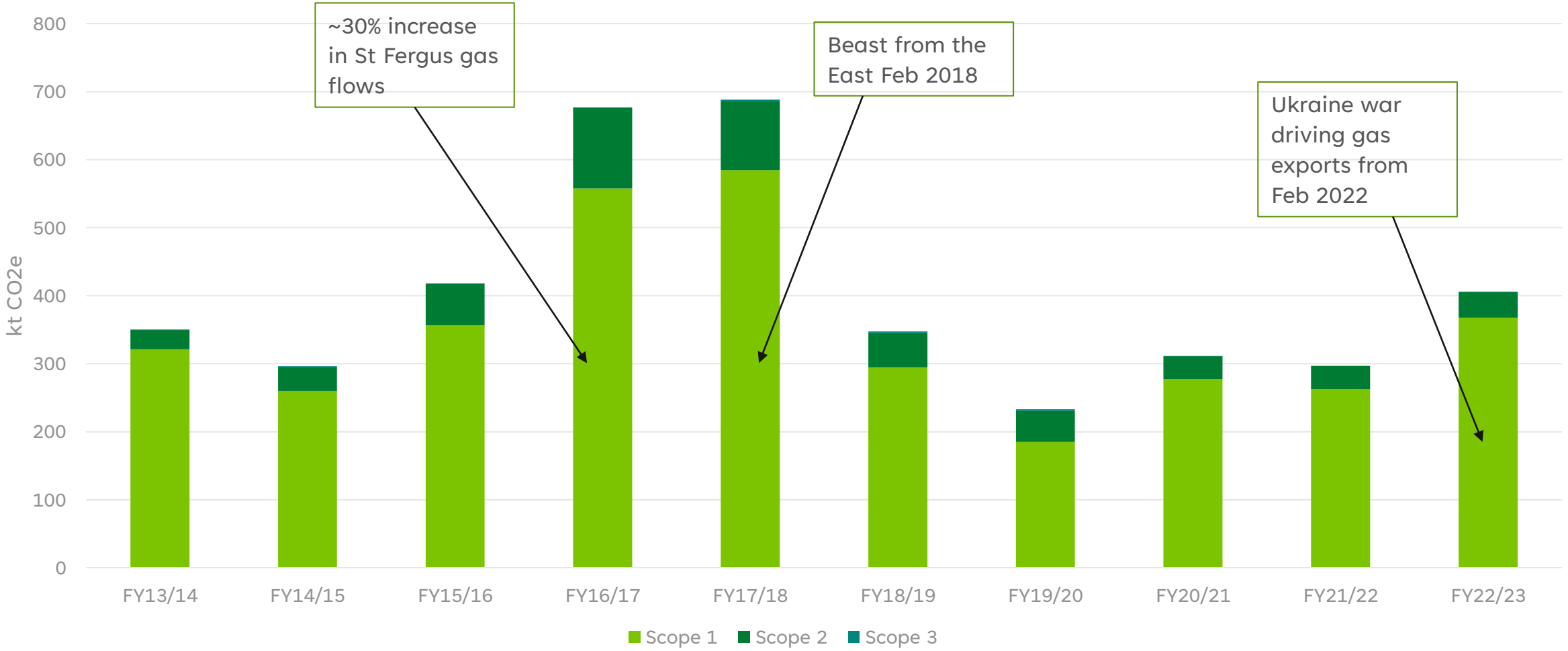
What are our Scope 1, 2, 3 Emissions

Scope 1 – Direct emissions	Scope 2 – Indirect emissions	Scope 3 – upstream, downstream emissions
Energy consumption (excluding electricity)	Electricity use	Business travel
Fugitive emissions		Employee commuting
Venting Emissions		Purchased goods and services
Fuel combustion		Waste generated in operations
Transport		Leased assets
		Capital goods
		Fuel and energy related activities
		Transport and distribution
		Downstream leased assets

Scope 1 emissions from the operation of our Compressor Fleet are our largest emission source

RIIO-T1 and T2 BCF performance

NGT BCF performance driven by gas compressor utilisation



Glidepath to NetZero

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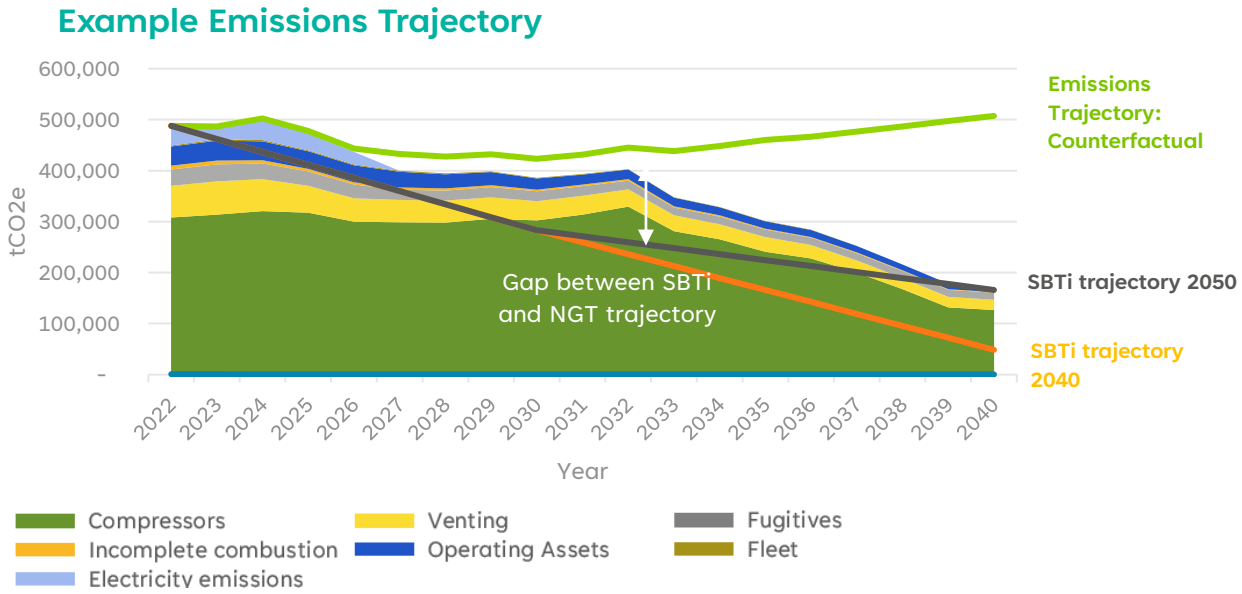
Glidepath to Net Zero

NGT are committed to **net zero by 2050**, with an ambition of **achieving net zero by 2040** - a decade ahead of the UK Government target.

Our ambitious RIIO-2 **Environmental Action Plan** commitment has seen NGT develop a Science Based Target initiative (SBTi) aligned glidepath to Net Zero – which we completed in October 2023.

The modelling used has helped us to identify where new initiatives can have the most impact upon reducing our emissions.



Methane Emission Reduction Initiatives

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Typical On-site Emissions Sources

Gas emitting – Scope 1
Direct CO2 – Scope 1
Indirect CO2 – Scope 2

Typical On-site Emissions Sources

Gas emitting – Scope 1
Direct CO2 – Scope 1
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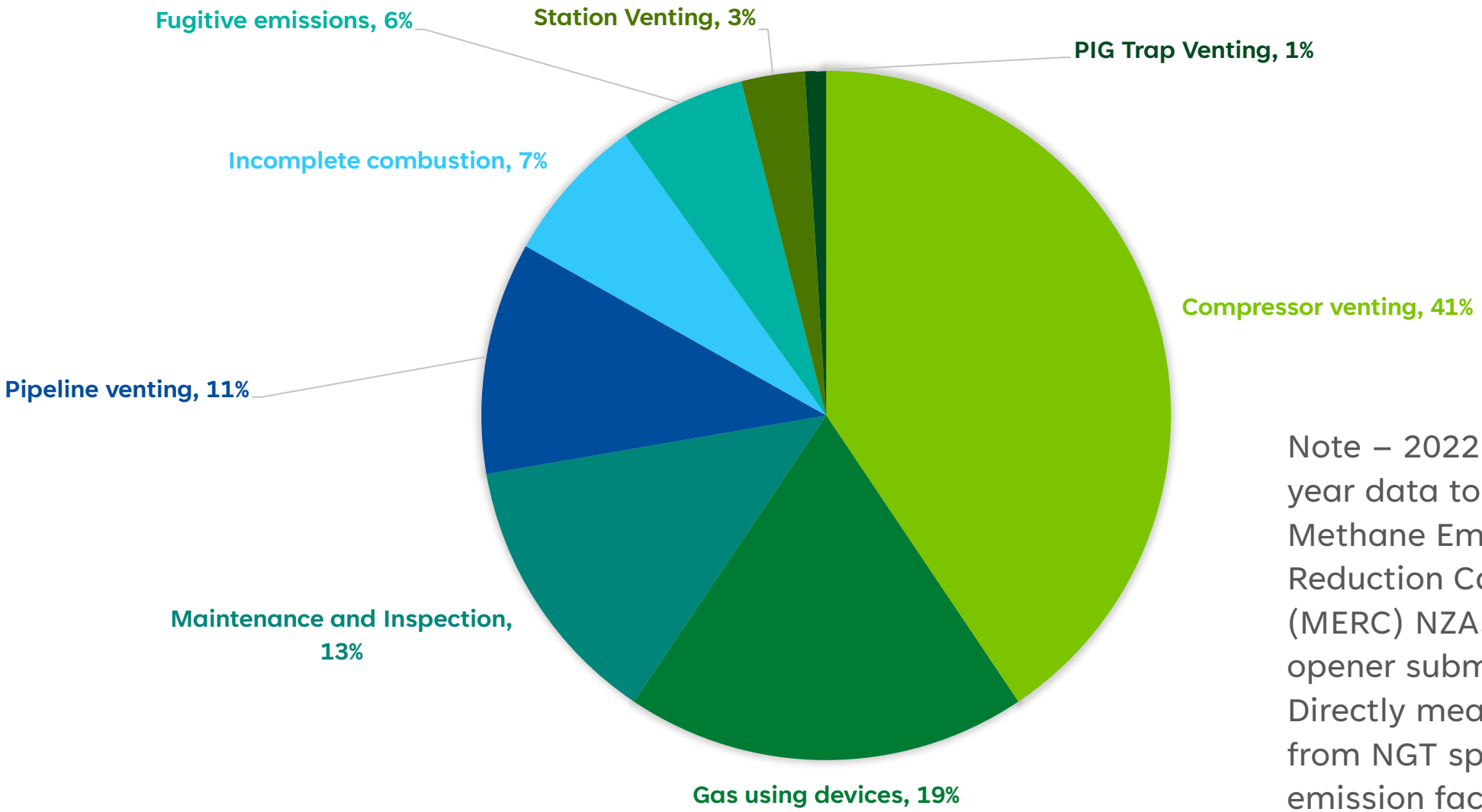
Methane emission sources



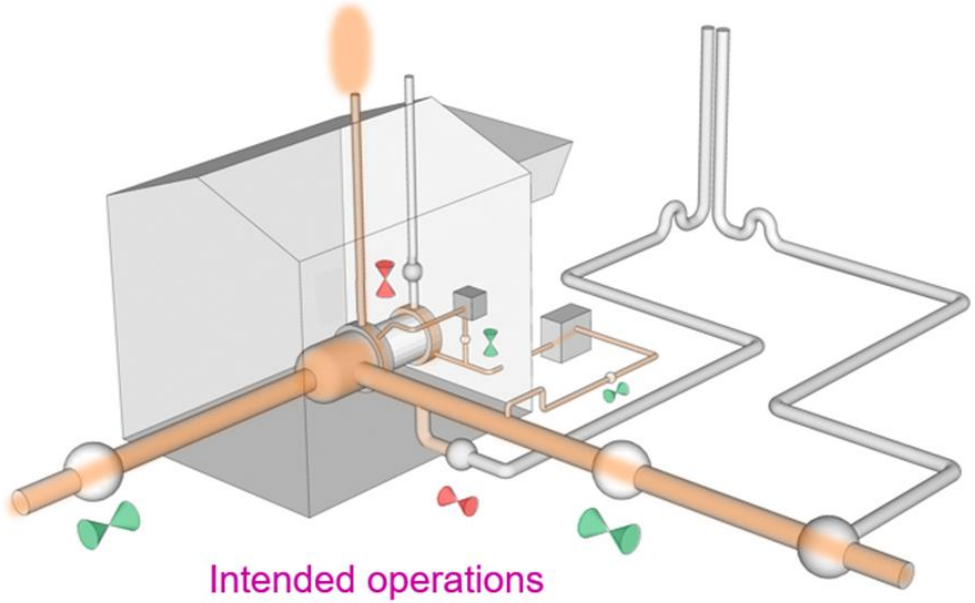
Note – 2022 calendar year data to support Methane Emission Reduction Campaign (MERC) NZASP re-opener submissions. Directly measured or from NGT specific emission factor

Process Emissions ~ 41%

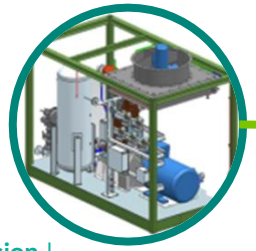
Process emissions from compressors are NGTs largest methane emissions source

Project **CH4RGE** confirms the case for a technology-based emissions reduction effort which could make a significant impact in overall carbon emissions during the transition to Net Zero

NGT are currently working with the equipment manufacturers to deliver integrated solutions for the significant reduction in these process emissions



Innovation and continual improvement



Combined gas recompression

Zero loss seals

Venting pipeline ~ 15%

To limit pipeline venting mobile recompression units are used to remove and re-inject gas out of and into sections of the network.

Outages are carefully managed to maximise maintenance activities on the network and to ensure the most effective deployment of the recompression units, as such minimising the volume of gas to be vented.

Current fleet capability recompress to 7 barg with the remaining vented to atmosphere, two new recompression units are to be commissioned in 2025 which can recompress to as low as 1 barg which minimises venting Requirement.

Innovation and continual improvement

Expansion of mobile recompression fleet

STATS Remote Techno Plug

Fugitive emissions ~ 6%

To identify leaks on the network NGT subject it's 23 Compressor Stations and 2 Terminals to 4 yearly surveys:

1. **Detect** fugitive emissions
2. **Quantify volume of loss** using a Hi-Flow sampler
3. **Record** any identified leaks into the **Defect** system for assessment
4. **Repair** or **monitor** in line with NGT standard

Innovation and continual improvement

Expansion of fugitive emission monitoring

Use of Optical Gas Imaging (OGI) for elevated fugitive methane sources

Join Oil and Gas Methane Partnership 2.0 for reporting transparency

NGT are also considering the application of GHGSAT technology to identify methane emissions via the use of satellite imagery

In addition.....

Best Available Techniques – "Best Available Techniques" is a legal requirements for all Env permitted sites. NGT strive to employ BAT in all areas of operations as best practice, to maximise the reduction in emissions
NGT's Formal Environmental Assessment (FEA) process, ensures that all modifications and projects, that has an environmental impact, assesses the BAT options and progresses implementation.

Maintenance and Inspections – Site operations undertake frequent inspection of the equipment to assess the condition and identify issues (daily, weekly, monthly, yearly). Detailed preventative maintenance processes are identified for all items of equipment to ensure both reliability and integrity

Alternative Fuel Vehicles - Transition of commercial vehicle fleet to AFVs managed via EAP – target 20% AFVs by 2026 (under review due to viability and supply chain suggested 5% is realistic)

Green Energy Procurement – consider Power Purchase Agreements supported by Renewable Energy Guarantees of Origin (REGOs) certified electricity supplies

Re-cap

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Re-cap

- We have a SBTi aligned glidepath to net zero and a commitment to reach net zero scope 1 and 2 emissions by 2050
- Methane emissions represents ~30% of our scope 1 and 2 emission performance
- Initiatives such as CH4RGE are underway to reduce our vented methane emissions and enhance our BCF
- We will continue to build on strategies to achieve our glidepath

Questions?

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