National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

+44 (0) 1926 65 3000
nationalgas.com

Keren Maschler
Senior Manager Transmission Policy
Networks
Ofgem
Commonwealth House
3rd Floor
32 Albion Street
Glasgow
G1 1LH

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National Gas Transmission (NGT) Consultation Response – Methane emissions reduction and monitoring projects: Net Zero Pre-construction Work and Small Projects Re-opener (NZASP)

Dear Keren,

We welcome the opportunity to respond to this consultation. This non-confidential response is provided on behalf of National Gas Transmission (NGT). National Grid Gas (now National Gas Transmission) submitted three Net Zero Pre-construction Work and Small Net Zero Projects Re-opener (NZASP) submissions, to address methane emissions from operating the Gas National Transmission System (NTS). Two were submitted in October 2022 and one in December 2022. These submissions re-affirm NGTs continued commitment to minimise the impact our business has on the environment, which is important to us, and to our stakeholders.

In addition to the three theme submissions a core document was provided with common narrative applicable to all. Funding was sought for methane emission reduction equipment, assets and to improve our fugitive gas escape detection. The three submission themes were:

- Mobile Recompression;
- Compressor Machinery Train; and
- Detection and Analytics.

Through the investments requested, NGT will aim to implement methane emission reduction measures, which are responsible for 56% of the total methane emissions from operating the NTS. These investments will contribute significantly to reducing methane emissions from the gas transmission system and ensure NGT plays its part in achieving the government's commitment under the Global Methane Pledge and its broader net zero ambitions.

We are pleased that Ofgem have supported in principle our proposed investments in expanded mobile recompression capability, the trials of assets to reduce vented methane emissions from

the gas compressor fleet and a periodic leak detection programme, which covers all above ground installations on the NTS. However, as we describe in more detail within the appendix to this letter, we have some concerns. Specifically, around Ofgem's position on the delivery plans across all three theme submissions, and crucially on the allowances within the Detection & Analytics theme.

Whilst we understand Ofgem's concerns raised in this area we remain keen to explore alternative options that both address these and support the intention of the theme; to deliver a robust measurement-based data set to further understand methane leaks on the NTS. Improving our data on leakage is essential to making systematic and sustained progress in leakage reduction thereby supporting efforts to progressively meet the Net Zero legislative targets. The data forms a core source for future cost benefit analysis on what initiatives will be needed going forwards. Our concerns are set out under each of the questions posed by Ofgem in its consultation.

We welcome further engagement on those concerns to find the best resolution. For any queries on this response please do not hesitate to contact myself or Neil Rowley, Head of Regulatory Performance (neil.rowley@nationalgas.com, 07785 381424).
Your sincerely

Tony Nixon **– By Email**
Regulation Director, Commercial - On behalf of NGT

Appendix A – Importance of methane leakage reduction

At COP26 in Glasgow in November 2021 the UK government, along with 121 other country signatories, recognised that fast action to reduce global methane emissions keeps the goal of limiting global temperature rises to 1.5 degrees centigrade within reach and as such, helps to mitigate the worst consequences of climate change. By committing to this Pledge, the UK has agreed to cut its methane emissions by 30% by 2030 from a 2020 baseline.

Since NGTs submissions the urgency to reduce all greenhouse gas emissions, specifically emissions of methane have not diminished. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report[1] in March 2023 concluded that global surface temperatures had reached 1.1 degrees centigrade above 1850-1900 levels in the 2011-2020 period and that this warming was unequivocally caused by human activities, principally through emissions of greenhouse house gases. The IPCC also concluded that global greenhouse gas emissions in 2030 implied by nationally determined contributions (NDCs) announced by October 2021 would mean that 1.5 degrees would be exceeded during the 21st century and that limiting warming below 2 degrees was becoming harder.

In addition to the IPCC report the United Nations Environment Programme (UNEP), the Climate and Clean Air Coalition (CCAC) and the International Energy Agency (IEA) published in October 2023 an assessment of the benefits for the climate and health: "The Imperative of Cutting Methane from Fossil Fuels".[2] Both the IPCC and the UNEP, CCAC and IEA reports flag the continued need to reduce greenhouse gas emissions and specifically methane beyond the levels already committed to in NDCs to keep 1.5 degrees within reach.

Specifically, from an energy network regulatory framework perspective, the focus on the energy transition and the energy sectors contribution to Net Zero goals has also heightened. Since NGT submitted its proposals Ofgem's mandate has been expanded in the Energy Act 2023 to add a specific need to support the government in meeting its legal obligation to get to net zero by 2050. This rightly does not change Ofgem's principal duty but requires Ofgem to consider how its decisions may assist the Secretary of State in meeting the government's net zero target, while protecting the interests of existing and future consumers.

As the operator of the GB National Transmission System, NGT plays a critical role in the UK natural gas supply chain, transporting predominantly methane gas from beach landing points at gas terminals and LNG terminals, operated by other parties, to industrial users, power generators and household consumers, via the gas distribution networks. NGTs submissions under the NZASP re-opener will allow NGT to start to reduce known methane emissions arising from operating the NTS, while also establishing a measurement-based fugitive methane emission performance baseline.

[1] https://www.ipcc.ch/report/sixth-assessment-report-cycle/
[2] https://www.unep.org/resources/report/imperative-cutting-methane-fossil-fuels-assessment-benefits-climate-and-health

Appendix B – NGT response to the consultation questions

Mobile Recompression theme

Question 1: Do you agree with our minded to position and with the proposed funding level for the projects in this theme?

NGT agrees with Ofgem's minded to position and the proposed funding level for the projects within this theme. NGT is pleased that Ofgem recognises the benefit that investment in additional mobile recompression capability will bring in methane emission reduction from operating the NTS.

NGT has initiated validation of quotes for the Capex investments within this theme and will confirm these to Ofgem post consultation. We will describe any price fluctuation since submission and whether we believe it has impacted the CBA to enable Ofgem to assess the materiality of any price change.

Compressor Machinery Train theme

Question 2: Do you agree with our minded to position and with the proposed funding level for the projects in this theme?

NGT agrees with Ofgem's minded to position and the proposed funding level for the projects within this theme. NGT is pleased that Ofgem recognises the benefit that investment in the trials of combined gas recompression and zero loss seals will bring in methane emission reduction from operating the NTS.

With respect to the proposed reductions to NGTs staff costs and the requested risk allowance. Whilst we calculated these required allowances in good faith and in line with accepted methodologies, the proposed reductions will not prevent the trials delivering on the outputs NGT has committed to. Therefore, NGT can accept the proposed funding level for this theme.

NGT has initiated validation of quotes for the Capex investments within this theme and will confirm these to Ofgem post consultation. We will describe any price fluctuation since submission and whether we believe it has impacted the CBA to enable Ofgem to assess the materiality of any price change.

Detection and Analysis theme

Question 3: Do you agree with our minded to position and with the proposed funding level for the projects in this theme?

Periodic fugitive monitoring

NGT agrees with Ofgem's minded to position and the proposed funding level for the expanded periodic leak detection programme but does not agree with Ofgem's minded to position with respect to monitoring of 'capex' repairs, 'new' repair Opex and TR32 monitoring of planned repairs.

NGT is pleased that Ofgem sees value in NGT expanding its existing periodic fugitive monitoring programme from compressors stations and terminals to all above ground installations to enhance visibility of methane emissions from the NTS. The value that will be gained from implementing the expanded periodic fugitive monitoring programme does however come with Opex costs associated with monitoring a detected leak until repair and the repair itself. These costs along with the resource and Opex required to undertake the initial detection cannot be decoupled. Repair and leak monitoring is a consequence of the proposed expanded periodic leak detection programme which is new incremental activity to NGTs baseline agreed allowances in RIIO-2. We are currently not funded to take up the projected additional leak repairs and monitoring from the additional detection activity.

NGT acknowledges Ofgem's view that Opex spend due to changes in volume of work is NGT's risk to manage. However, it is our view that this applies to current programmes of work and as these activities are new works an additional allowance to cover these requirements is a valid request.

The requested Opex allowances are driven by gas escape management procedures which require NGT to monitor gas escapes once detected to the point of repair and where possible, repair immediately subject to risk assessment. This management procedure is a part of NGTs safety management system and must be followed unless there is evidence to suggest this is no longer fit for purpose and requires amendment.

To give an indication to Ofgem that the proposed periodic detection programme represents 'good value' for consumers, NGT used a typical survey from its existing periodic compressor and terminal fugitive monitoring programme, which focuses on leaks above 10,000 part per million threshold. This showed, once monetised at the cost of carbon, for an average leak (299 kilograms per year), the repair achieved around cost parity with the Opex allowance to resolve. This is a simplified example, which does not include any of the Opex requested to monitor before repair. What it shows is that NGTs 'No leak / Leak' threshold is reasonable and would achieve cost parity based on the assumed number of repairs forecast. We acknowledge that Ofgem have worked collaboratively with us through this project to find the best approach to Opex associated with leak detection. Given the purpose of this theme is to develop a robust set of measurement-based data, it is not suitable to utilise a CBA process at this time.

Given the challenges in splitting out the detection from the repair or monitoring of found leaks as described above, we wish to present some alternative options for consideration and possible further discussion.

Option 1 - Repurpose £1.3m monitoring allowance
In summary this option proposes the repurposing of the current detection allowance to undertake all Opex elements required as part of the detection. Explicitly, Opex for detection, and or repair / monitoring resulting from the detection. Whilst this has the benefits of working to

the current proposed allowances, it would result in a significant reduction of the detection ambition. We would propose to take a sampling approach to make efficient use of the allowances. However, this option needs further development to determine how sampling could be effectively utilised to provide confidence in the underlying data to support future investments through CBA processes. It also risks taking a longer period of time to determine the data baseline, thereby potentially impacting on the ability to quickly reduce emissions from the NTS.

Option 2 – Unit cost repairs / monitoring and Price Control Deliverable (PCD)
This option proposes the use of the £1.3m allowance for detection and would introduce a fixed cost per repair and monitoring which should then be assessed at the end of the price control or a 'to be' determined period against the actual leaks managed. This mechanism would have the benefit of only providing allowance for leaks which are managed and would allow for the full programme of detection to take place. It should be noted that this proposal is not without risk to NGT as the actual Opex to undertake the variety of leaks detected would be a forecast and the outturn could be higher than forecast. However, NGT would be interested to explore such a mechanism further. If such as option was to be taken forward, we would anticipate the need to further discuss the unit cost and PCD elements.

Option 3 – £1.3m detection and ex post Opex request
This option proposes that NGT accept Ofgem's minded to position on detection and records the Opex directly spent on monitoring and repair activities for ex post submission of allowance. Although all options included are with the intention of pass-through costs, this option has the benefit of accurately reflecting the true cost of resolving the leaks detected. This option does however, come with risks. If this option was to be developed further, we would like to explore the reopener mechanism rules to ensure there is a balance of risk for NGT.

As stated, we are keen to continue discussions on the options to deliver on the ambition of the detection programme.

Continuous fugitive monitoring
Furthermore, NGT does not agree with Ofgem's minded to position and the proposed funding level for the deployment of continuous fugitive monitoring systems on the NTS. The value in continuous fugitive monitoring is in the speed of detection of fugitive emissions which can occur in between periodic fugitive surveys and the ability of these systems to identify 'hot spots' of fugitive emissions within the site being monitored.

It is NGTs view that continuous and periodic fugitive monitoring systems are complimentary to one another for efficient fugitive leak detection. NGTs proposed implementation at compressors and terminals and running these systems in parallel with a periodic monitoring programme would allow the value to be reviewed and a robust business case put forward in RIIO-GT3 combining both methods.

As can be seen in NGTs funding request for periodic fugitive monitoring the components of the programme related to leak detection and monitoring post detection prior to repair are Opex and resource intensive therefore a system which potentially automates this is an attractive proposition and in NGTs view worthy of detailed assessment.

Reporting requirements, project deliverables and associated delivery dates

Question 4: Do you agree with our proposed reporting requirement?

NGT agrees with Ofgem's proposed reporting requirements for projects within all three themes.

Question 5: Do you agree with our proposed project deliverables and their associated delivery dates?

NGT worked collaboratively with Ofgem to build the content of the submissions from trigger of the NZASP reopener in June 2022 to the submission of all three themes including the proposed delivery plans for the investments. The 'Common Elements' core document, applicable to all three theme submissions, stated in Section 4d that NGTs delivery plans assumed award decision in February 2023. The delivery plans proposed, were made based on an agile risk-based approach being taken by Ofgem to the proposed investments and a swift decision.

Ofgem have proposed, in Table 8 of the consultation, an amendment to NGT delivery deadlines to account for the timing that has passed since the submission was made and the launch of the consultation on the 4th October 2023. Ofgem have set an expectation that NGT makes up for the delay and follows our proposed plans by the next financial year.

At this point in time, it is not possible to deliver on the original project plan, as it is not possible to adequately account for the eight-month delay between NGTs assumed award decision and the expected final determination on NGTs requested investments post consultation end on the 8th November 2023. The Mobile Recompression and Compressor Machinery Train theme investments require orders of capital items with linked procurement events, where opportunities to expedite are limited. The Detection and Analytics theme cannot follow the delivery plan proposed by Ofgem as the expanded periodic monitoring programme is a time dependent activity and it is not possible to do the same amount of monitoring in less time.

Therefore, we have proposed updated delivery plans for all three themes is in Table 1.

Table 1: Proposed project delivery plans

Project/FY[3]	2023/24	2024/25	2025/26	2026/27
Pipeline recompression	Part payment of one high/low pressure pipeline recompression set.	Part payment of one high/low pressure pipeline recompression set.	Commissioned one high/low pipeline recompression set.	N/A
Compressor station and PIG trap recompression	Procurement and part payment of eight small recompression units for compressor	Part payment of eight small recompression units for compressor station	Commissioned eight small recompression units for compressor station depressurisations	N/A

[3] Any financial year ends on the 31st of the last year. 2022/23 ends on the 31st of March 2023.

	station depressurisations and PIG trap venting.	depressurisations and PIG trap venting.	and PIG trap venting.	
CMT (site 1) **Aberdeen A or C – Combined Gas Recompression**	Develop (Detailed design, order long lead materials, FEA[4], FPSA[5])	Develop (Detailed design, FEA, FPSA)	Execute programme	Close project/ Analysis and Report Findings
CMT (site 2) **Huntingdon or Peterborough – Combined Gas Recompression**	Develop (Detailed design, order long lead materials, FEA, FPSA)	Develop (Detailed design, FEA, FPSA)	Execute programme	Close project / Analysis and Report Findings
CMT (site 3) **Aberdeen B – Zero Loss Seal**	Develop (Detailed design, order long lead materials, FEA, FPSA)	Develop (Detailed design, FEA, FPSA)	Execute programme	Close project / Analysis and Report Findings
CMT (site 4) **Bishop Auckland B – Zero Loss Seal**	Develop (Detailed design, order long lead materials, FEA, FPSA)	Develop (Detailed design, FEA, FPSA)	Execute programme	Close project / Analysis and Report Findings
Expanded monitoring programme	Procurement of periodic fugitive emissions monitoring equipment[6] and desktop/site-based training for the team. Shadowing of third-party contractor carrying out existing periodic fugitive surveys for	Periodic fugitive surveys in-house of all compressor stations, terminals and multi-junctions using developed procedures. Survey 1/3 of other AGIs. Participate in proficiency testing as a provider of periodic fugitive	Periodic fugitive survey at all compressor stations, terminals and multi-junctions. Survey 1/3 of AGIs not yet tested. Obtain accreditation for periodic fugitive monitoring methods to bring within scope of ISO17025	Periodic fugitive survey at all compressor stations and terminals and multi-junctions. Survey remaining 1/3 of AGIs not tested so all assets have been fully monitored at least once.

[4] Formal Environmental Assessment
[5] Formal Process Safety Assessment
[6] This equipment was already funded.

	2022/23. Development of monitoring procedures using own equipment.	monitoring services and apply for accreditation	accredited laboratory.	