Consultation

Bacton terminal site redevelopment – Re-opener Application

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Bacton Gas Terminal plays an important role in Great Britain's gas transmission system and is expected to remain strategically important as the energy system changes.

We have already accepted the strategic need for investment at the site. This consultation sets out our minded-to decision of National Gas Transmission's (NGT) proposals, including the scope and efficient cost of the investment, and seeks views before we make our final decision.

We want our consultation process to be transparent and intend publishing non-confidential responses on our website Ofgem.gov.uk/consultations alongside our final decision. If you want any part of your response to remain confidential this should be clearly highlighted, with confidential material included in separate appendices if possible.

Consultation Bacton terminal site redevelopment – Re-opener Application

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1. Executive summary

1.1 Bacton Gas Terminal is a strategically important part of Great Britain's gas transmission system, connecting the National Transmission System (NTS) to North Sea production, European interconnectors and the wider domestic network. Operating since 1968, Bacton is expected to remain important to the gas system to 2050 and beyond.

1.2 In RIIO-GT2 Final Determinations, we accepted the strategic need for investment to maintain Bacton's safety, reliability and compliance beyond 2035. The programme includes replacement and refurbishment of critical pipeline protection, valves, electrical and control assets, alongside inspection and cleaning of two major pipelines.

1.3 To deliver this, in October 2024 (updated March 2026) National Gas Transmission (NGT) submitted a Re-opener application seeking additional funding of £173.94m.

1.4 Having assessed NGT's application, we are consulting on our minded-to position to allow £140.37m, a 19% reduction against NGT's request.

1.5 Timely delivery is important. The March 2035 completion date provides NGT with flexibility to sequence the works around network and customer requirements and minimise operational impacts. Given the extended delivery period, we propose to introduce a PCD to provide clear accountability for delivery, including the return of funding if agreed outputs are not delivered. We also expect NGT to manage the programme so that the sequencing and timing of works do not adversely affect the resilience of Bacton Gas Terminal.

1.6 Our proposed reductions principally reflect our assessment of risk and contingency costs, and direct and indirect company costs, where the current evidence does not justify the full level of funding requested. We recognise that this represents a significant reduction to NGT's request. Ensuring Bacton has the investment it needs to remain safe and reliable is essential, but we must also ensure that consumers pay no more than is necessary. This consultation therefore sets out where we consider further evidence is needed. We remain open to revising our position where further evidence demonstrates that additional costs are efficient and justified.

2. Introduction

Background

2.1 This consultation sets out our minded-to position on NGT's Bacton terminal site redevelopment Re-opener application, submitted in October 2024 under Special Condition 3.10 of NGT's RIIO-2 licence. NGT applied for £173.94 million of additional funding to undertake investment at Bacton Gas Terminal. This consultation explains our assessment of the need per work area, scope and efficient costs of the proposed investment, and seeks stakeholders' views before we make our final decision.

About Bacton Gas Terminal

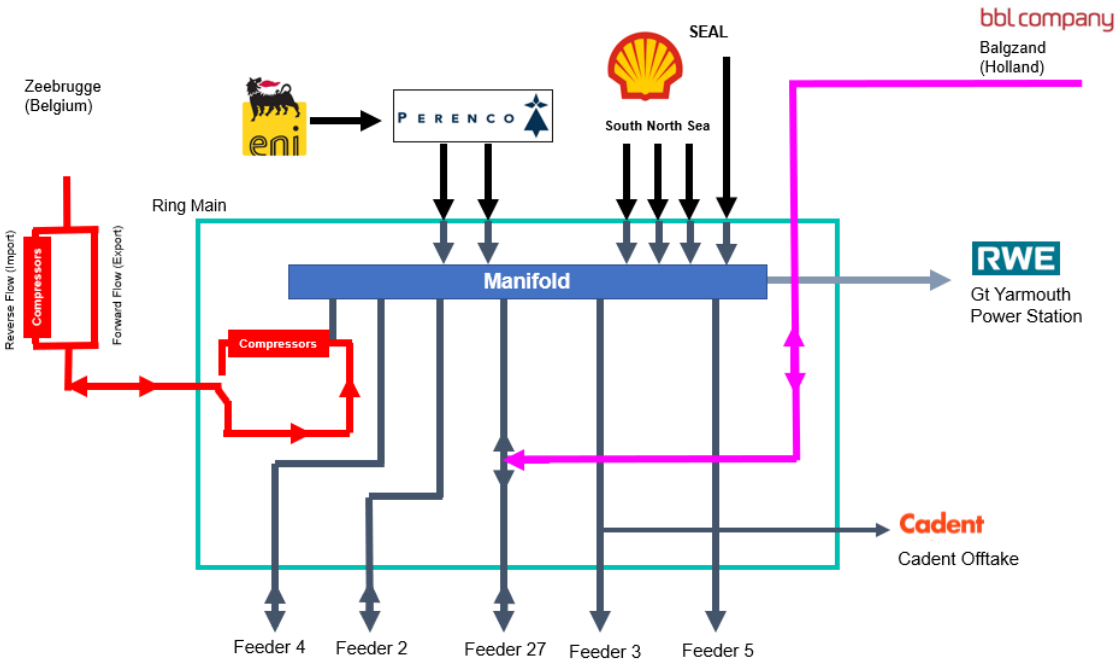
2.2 Bacton Gas Terminal is a strategically important entry and exit point on Great Britain's National Transmission System (NTS). It connects several major sources of gas supply and demand and enables gas to be moved between the wider transmission network, North Sea supplies, European interconnectors and downstream users.

2.3 Gas enters and exits Bacton through:

- Two North Sea sub-terminals, operated by Shell and Perenco, with a combined baseline obligated entry capacity of 44.8 mscm/day;
- INT (operated by Interconnector Limited) and BBL (operated by Bacton-Balgzand Line Company V.O.F.) interconnectors, which enable gas to be imported to or exported from Great Britain. Together, these provide baseline obligated entry capacity of 119.8 mscm/day and exit capacity of 63 mscm/day;
- Two offtakes, supplying the Cadent Gas Distribution Network and Great Yarmouth Power Station, with baseline obligated exit capacity of 2.2 mscm/day; and
- Five NTS feeders, three of which can operate bidirectionally, connecting Bacton to the wider transmission network.

2.4 A central ring-main, comprising approximately 1,472 metres of 600 mm pipework, enables gas to be routed between the different entry and exit points, as shown in Figure 1. This provides significant operational flexibility and allows Bacton to perform several different functions depending on prevailing system conditions.

Figure 1 - Simplified Terminal Arrangement



2.5 Bacton has been in continuous operation since 1968 and is expected to remain in use and of strategic importance beyond 2050. Continued investment is required to maintain the terminal and ensure that it can continue to operate safely and reliably, while supporting security of supply and the efficient operation of gas markets. The proposed redevelopment is principally an asset health programme designed to maintain Bacton's existing capability, rather than to increase the capacity of the terminal.

The RIIO-2 Bacton Terminal Redevelopment Re-opener

2.6 NGT owns and operates the NTS and is regulated by Ofgem through the RIIO price control framework. At our RIIO-GT2 Final Determinations[1], we accepted the strategic needs case for investment at Bacton to support the safe, reliable and compliant operation of the terminal over the medium and long term. However, there remained significant uncertainty about both the preferred investment solution and the efficient level of funding required.

2.7 We therefore decided not to provide full project funding through baseline allowances at the start of RIIO-GT2. Instead, the project was made subject to the Gas Transmission Project Assessment Process. This is a two-stage assessment process set out in Special Condition 3.10, Bacton terminal site redevelopment Re-opener and Price Control Deliverable. This allowed the scope, preferred option

[1] final_determinations_-_nggt_annex_revised.pdf, pages 73 and 74.

and costs to be developed further before we could determine the appropriate additional allowance.

2.8 The first stage of the process required NGT to develop and assess the available options and identify its preferred approach. NGT submitted its Final Option Selection Report in February 2024, identifying Option 1, Base Case Asset Health, as its Final Preferred Option. Following our assessment, in August 2024[2] we approved this option as the basis for the second stage of the Re-opener application which is focused on the detailed costs.

2.9 The second stage required NGT to submit a detailed Re-opener application setting out the scope of the proposed investment, supporting engineering evidence and the additional funding required. Re-opener applications are required to comply with the relevant licence conditions and Ofgem's Re-opener Guidance and Application Requirements Document, including the requirements for appropriate engineering justification, cost-benefit analysis and assurance.

2.10 NGT submitted its Bacton terminal site redevelopment Re-opener application in October 2024. We have reviewed the application and considered it to be valid because it meets the requirements of Special Conditions 3.10 and 9.4, had been prepared in accordance with our Re-opener Guidance, was published by NGT in accordance with the relevant requirements, and was accompanied by the required assurance.

2.11 We therefore proceeded to a detailed assessment of the application, following a two-stage process:

- Step 1: Assessing whether the needs case test has been passed and the scope of the intervention / volume of outputs is appropriate, as set out in Chapter 3.
- Step 2: Assessing whether unit costs / overall project costs are efficient, as set out in Chapter 4 of this consultation document.

2.12 This consultation sets out that assessment and our minded-to position. We welcome views from interested stakeholders before reaching our final decision.

Transition to RIIO-GT3

2.13 The RIIO-GT3 price control commenced on 1 April 2026. Special Condition 3.10 has consequently been replaced by Special Condition 3.9, Bacton terminal site redevelopment Price Control Deliverable (BTRt). In developing the RIIO-GT3 licence framework, we ensured that the necessary regulatory provisions were

[2] Bacton Terminal Site Re-development decision | Ofgem

carried forward from the RIIO-GT2 arrangements to preserve our ability to determine applications made under former Special Condition 3.10 and give effect to any resulting PCD allowance in RIIO-GT3. Special Condition 3.9.8 therefore provides for the Authority to determine applications validly submitted under former Special Condition 3.10 and to modify the relevant RIIO-GT3 licence appendices in accordance with the principles that applied under that condition.

2.14 The RIIO-T3 price control set the policy for the treatment of certain cost categories, including overhead costs, and removed the previously applied opex escalator[3]. Our consultation position reflects this position and, as outlined in Chapter 4 (Cost Assessment), has impacted the proposed reduction to the allowances requested by NGT.

Consultation stages

2.15 The stages in this consultation process are:

- Stage 1: Consultation Opens – 27 November 2026
- Stage 2: Consultation Closes / Deadline for Responses – 15 January 2027
- Stage 3: Responses Reviewed and Published – 1 March 2027
- Stage 4: Decision and Direction Published – Spring 2027

How to respond

2.16 We want to hear from anyone interested in this consultation. Please send your response to the person or team named on this document's front page. We have asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can. We will publish non-confidential responses on our website at www.ofgem.gov.uk/consultations.

Your response, data and confidentiality

2.17 You can ask us to keep your response, or parts of your response, confidential. We will respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If you do want us to keep your response confidential, please clearly mark this on your response and explain why.

2.18 If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you do wish to be kept confidential and those

[3] RIIO-3-Final-Determinations-GT.pdf, paragraph 5.123.

that you do not wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we will contact you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

2.19 If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ("UK GDPR"), the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 4.

2.20 If you wish to respond confidentially, we will keep your response itself confidential, but we will publish the number (but not the names) of confidential responses we receive. We will not link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

How to track the progress of a consultation

1. 1. Find the web page for the call for input you would like to receive updates on.
2. 2. Click 'Get emails about this page', enter your email address and click 'Submit'.
3. 3. You will receive an email to notify you when it has changed status.

A consultation has three stages: 'Open', 'Closed (awaiting decision)', and 'Closed (with decision)'.

3. Bacton terminal site redevelopment Re-opener: Needs Case Assessment for NGT's proposed intervention

Section summary

This chapter sets out our assessment of whether NGT has adequately demonstrated the needs case for the scope of asset health interventions for which funding is being requested.

Question 1:	Do respondents agree with our assessment that NGT has demonstrated the needs case for the scope of interventions for which funding is being requested?

3.1 In October 2024, NGT submitted a Re-opener application seeking funding of £173.94m to deliver the Final Preferred Option. Table 1 below provides a build-up of the funding request per area of work (updated by NGT in March 2026).

Table 1: Bacton terminal site redevelopment funding request (Redacted)

£m (2018-19 prices)	RIIO-T2 2021-26	RIIO-T3 2026-31	RIIO-T4 2031- 36	Total
Preliminary Spend (FOSR + FEED)[4]	Redacted			6.90
Cathodic Protection System	Redacted	Redacted		19.26
Critical Values & Actuators	Redacted	Redacted	Redacted	89.90
Low voltage assets + control & instrumentation	Redacted	Redacted	Redacted	67.27
In-line Inspection Feeders 4 & 5	Redacted	Redacted		1.12
Total	13.28	140.21	30.95	184.35
Baseline Allowance	10.50			10.50
Funding Request	**2.78**	**140.21**	**30.95**	**173.94**

[4] See Chapter 5.

3.2 We consider that the Re-opener application aligns with our 2024 decision[5] on the Final Preferred Option (Base Case Asset Health). The proposed interventions involve the replacement of existing assets and will not increase the capability or capacity of Bacton Gas Terminal. The Final Preferred Option was developed within the context of a delivery strategy that envisaged phased investment over an extended period, by March 2035. The extended delivery timeline provides additional flexibility to sequence works around network and customer requirements, strengthening NGT's ability to minimise any operational impacts while safely delivering the investment required for Bacton Gas Terminal's long-term future. We expect NGT to manage the programme so that the sequencing and timing of works do not adversely affect the resilience of Bacton Gas Terminal.

3.3 We consider that in developing the Re-opener application available rationalisation opportunities have been included (cathodic protection and low voltage assets). In making this assessment we sought further information on possible reductions in the operational footprint of the site. In particular, the number of North Sea Incomers (i.e. the subsea pipelines bringing gas from offshore North Sea fields into the onshore sub-terminals operated by Shell and Perenco). It was clear that this would reduce operational flexibility and resilience while increasing costs of the site redevelopment project. These rationalisation options were considered as sensitivities in the [redacted] Reliability Availability and Maintenance Study.

3.4 Based on our assessment, we propose to retain the scope of the Re-opener as set out in NGT's submission. The subsections in this chapter set out our assessment of the needs case for investment in: the cathodic protection system; critical valves and actuators; and low voltage assets and control and instrumentation. We also highlight the In Line Inspection work already completed by NGT, and NGT's deliverability and contracting strategy.

Cathodic protection system

3.5 Cathodic protection protects against corrosion on the 9km of underground pipework at Bacton gas terminal. Cathodic protection is the secondary form of protection against corrosion, with the primary defence being the pipework's external coating.

3.6 We accept the needs case for this intervention presented in NGT's Engineering Justification Paper. The cathodic protection system has a key role in preventing corrosion of the underground pipework. The evidence presented demonstrates

[5] Bacton Terminal Site Re-development decision | Ofgem

that the current cathodic protection system is only protecting 5% of the underground pipework on site. Our engineering review concluded that this represented an unacceptable risk to the long-term integrity of the underground pipework. We note that the same asset health intervention was funded during RIIO-GT2 at St Fergus terminal.

3.7 NGT considered four options to address the issue of cathodic protection at Bacton as set out in Appendix 2 of this document. Based on this assessment it was determined that the full replacement (the preferred option) of the existing cathodic protection system is needed. We agree that this is the correct option. The intervention will mitigate the risk associated with only 5% of the underground pipework on site currently being protected. The new system will be isolated from the cathodic protection systems of third parties at Bacton gas terminal. This will make it more effective at protecting underground pipework.

3.8 NGT sought funding of £19.26m for replacement of the cathodic protection system at Bacton gas terminal. Following our cost assessment (see Chapter 4 for our rationale), we propose that allowances of £12.95m are awarded for this work package.

Critical valves & actuators

3.9 Valves enable day-to-day operation of the site, effective isolation of sections of the site, limit gas loss in an emergency, manage flow direction / flow rate and pressure, facilitate maintenance / repair / modification / testing and commissioning.

3.10 There are over 1,000 valves with diameters ranging from 1” to 48” at Bacton gas terminal. They are located at different operational locations within the site depending on their purpose and pipework configuration. They may be located wholly above ground, in a pit or below ground which determines their accessibility and how they are operated.

3.11 NGT considered four options to address the above issues with valves and actuators as set out in Appendix 2. Based on this assessment it determined that the preferred option was the replacement of 50 critical valves & actuators.

3.12 We accept the needs case for intervention presented in the Engineering Justification Paper and that the choice of valves for intervention has been determined through a robust process based on convincing evidence. Nine of the valves need to be replaced to ensure compliance with Health and Safety Executive requirements under the Pressurised System Safety Regulations 2000. The other forty-one have been chosen based on asset condition / defects and criticality. Asset condition was determined by a remnant life study using defect

survey data for individual valves. The criticality of each valve was informed by a Reliability Availability Maintenance (RAM) study of Bacton gas terminal carried out for NGT by engineering professional services provider [redacted].

3.13 As part of the assessment process we assessed whether any of the valves proposed for replacement relate to the ENI (North Sea pipeline) disconnection or other potential disconnections. We are satisfied that this is not the case and that all these valves are suitable for replacement.

3.14 We also sought further information on NGT's associated proposal to replace six of the existing fifteen Flow Control Valves. NGT demonstrated that these six valves have a history of recurring defects that have – in the past – negatively impacted on double filtration, i.e. added to an operational risk of dust build up and caused additional disruption of gas exports. The valves removed will be harvested for spares to be used on the remaining nine Flow Control Valves. We are satisfied that the proposed replacement will have a positive impact on the effectiveness of double filtration as a mitigation.

3.15 We sought further information on the viability of using refurbished valves from existing stocks rather than purchasing new ones. We are now satisfied that investment in new valves at Bacton terminal will enable refurbishment of the current valves and release sufficient stock to build a pool of valves that can be used during future replacement programmes. We anticipate approval of this programme will eliminate the need for NGT to purchase new large bore valves for future replacement programmes. NGT should build and maintain a stock of refurbished valves for use across the network.

3.16 NGT sought funding of £89.9m for replacement of the 50 valves identified. Following our cost assessment (see Chapter 4 setting out the rationale for the proposed cost disallowances that affect this work package), we propose that allowances of £74.26m are awarded for this work package.

Low voltage assets and control & instrumentation

3.17 Low voltage electrical systems are the first stage of power distribution and are used to supply power to the different circuits and electrical equipment across the site. Surveys commissioned by NGT have revealed that several components of this system[6] are defective and/or obsolete with opportunities for rationalisation if replaced.

[6] Including two low voltage transformers, one standby generator, three power supply and battery systems, 28 distribution assets, six kiosks, 100 external lighting columns and 90 control and instrumentation pieces of equipment, such as pressure temperature, flow and level instruments and others.

3.18 NGT considered three options including a 'do nothing' option for each component. The performance of each option against relevant assessment criteria is summarised in Appendix 2 of this document. Based on this assessment, NGT determined that the preferred option was the replacement of the existing low voltage electrical system.

3.19 Having reviewed the evidence provided, we agree with NGT's option as presented in their Engineering Justification Paper to replace the existing low voltage system and control and instrumentation equipment, due to its deteriorated asset health condition.

3.20 To minimise electrical downtime on a site that is in continuous operation and to ensure ongoing resilience and security of supply of Bacton terminal, it is proposed that a new rationalised low voltage system is installed in parallel with the existing system. Once the new system is fully energised, the existing system will become redundant and so will be removed.

3.21 NGT sought funding of £67.3m for replacement of the low voltage electrical network at Bacton Gas Terminal. Following our cost assessment (see Chapter 4 setting out the rationale for the proposed cost disallowances that affect this work package), we propose that allowances of £55.22m are awarded for this work package.

In Line Inspection of Feeders 4 & 5

3.22 NGT requested funding for measures to reduce the risk of dust disrupting gas exports. These measures were delivered in full during 2025-26 and comprised:

- additional inspection and cleaning of Feeders 4 and 5 to reduce the risk of suspended dust blocking filters on the Interconnector with Belgium.
- temporary pipework validation to facilitate these inspections.
- filter bank spares at Bacton, enabling increased filter maintenance.

3.23 We agree with NGT that the inspection and cleaning of Feeders 4 and 5 was an appropriate mitigation against the risk of disruption to exports to Belgium, given disruption experienced in recent years. We also consider that maintaining filter bank spares at Bacton is appropriate given their role in reducing the risk of disruption to gas exports.

3.24 NGT requested £1.12m for these activities. Based on our assessment of the evidence provided, we propose to allow £1.04m. The £0.08m reduction reflects the removal of risk and contingency costs, as the work has already been completed. Chapter 4 sets out our cost assessment in further detail.

Deliverability & contracting strategy

3.25 Bacton Gas Terminal is a complex operational site, with the proposed works interacting with planned maintenance, outages, third-party assets and other major projects. NGT has therefore developed an integrated delivery programme across RIIO-GT2, GT3 and GT4, taking account of:

- operational maintenance and regulatory requirements;
- NGT and third-party outages;
- the sequencing of valve isolation and associated interventions; and
- other works planned under RIIO-GT3.

3.26 NGT proposes to deliver the works through a combination of New Engineering Contracts 4 (NEC4) covering option selection, design, enabling works and construction. These contracts have been directly awarded through NGT's competitively procured Design and Consultancy and Asset Health frameworks. A summary of the status of the contracted works is set out in Appendix 3.

3.27 As part of our assessment, we sought and were provided with further evidence from NGT on:

- the justification for direct awards, particularly to suppliers within NGT's ownership structure; and
- delivery of the three projects as separate work packages rather than as a single combined package, which the (Redacted) Cost Assurance Report identified as potentially lower cost.

3.28 With regard to direct awards, we consider NGT's contracting strategy appropriate. Direct awards through competitively procured frameworks provide access to specialist capability and continuity of engineering knowledge, while reducing the cost and programme risks associated with re-tendering, mobilisation and design handovers.

3.29 With regard to the use of multiple contracts, we agree with NGT that the use of separate contracts enables specialist suppliers to be matched to individual work packages, supports value engineering and commercial challenge as designs mature, and reduces the risk of consumers funding risk allowances associated with a single integrated contract.

3.30 Overall, we consider NGT's delivery approach appropriate. The programme has been developed drawing on its experience of similar works at Bacton and St Fergus, and takes appropriate account of planned NGT and third-party outages. We expect the programme to be further refined as the projects progress towards construction.

4. Bacton terminal site redevelopment Re-opener: Cost Assessment

Section summary

This section sets out our assessment of NGT's requested project costs and our proposed allowances. It explains our approach to assessing Main Works Contractor (MWC) costs, direct and indirect company costs, and risk and contingency costs, including the adjustments we propose to ensure that allowances reflect efficient expenditure.

Question 2: Do respondents agree with our approach to cost assessment and the proposed allowances for this Re-opener?

4.1 In its Re-opener application, NGT requested funding for the cost categories as set out in Table 2 below (updated March 2026), totalling £173.94m. For further detail on the breakdown of costs that NGT submitted under each cost category see Appendix 3. Following our assessment of the efficient level of costs we propose to reduce these allowances to £140.37m, a 19% reduction.

Table 2: Cost requested by NGT and our consultation position (Redacted)

£m (2018-19 prices)	NGT – CP	NGT - Valves and actuators	NGT -LV Assets & I	NGT - Total	Ofgem – CP	Ofgem - Valves and actuators	Ofgem - LV Assets & I	Ofgem - Total
Main Works Contractor	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
Direct Company Costs	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
MWC Risk / Contingency	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
NGT Risk / Contingency	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
Total Direct Costs	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
Indirect Company Costs	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
Total Project Costs	**19.26**	**89.90**	**67.27**	**176.43**	**13.56**	**74.26**	**55.22**	**143.04**

Preliminary Spend (FOSR + FEED)				6.90				6.80
In-line Inspection Feeders 4 & 5				1.12				1.04
Total project costs, FOSR and In-line Inspection				**184.35**				**150.87**
Baseline Allowance				10.50				10.50
Funding Request / Allowance				**173.94**				**140.37**

4.2 As part of our general cost assessment approach, we considered whether either unit cost data from our RIIO-GT3 Final Determinations, or actual project cost data from similar interventions at St Fergus Gas Terminal during RIIO-GT2 could be used to provide robust cost estimates. However, following engagement with NGT we determined that neither approach was viable and that a project specific assessment was more appropriate. This does not mean that we have not drawn on appropriate insights from other projects and RIIO-GT3 Final Determinations to inform our assessment.

4.3 The following subsections outline the rationale and the outcome of our cost assessment process for each of the following cost categories:

- Main Works Contractor costs
- Direct company costs
- Indirect company costs
- Risk and contingency costs

Main Works Contractor costs

4.4 Main Works Contractor (MWC) costs are the external contractor costs of physically delivering the three Bacton asset-health work packages, rather than NGT's own staff/overhead costs.

4.5 NGT submitted a request for funding of £(Redacted)m of MWC work. We propose reducing the allowance to £(Redacted)m, a reduction of 9%.

4.6 NGT submitted its Cost Assurance Report alongside its Re-opener application. Based on the information available, we are content that at aggregate level, the Re-opener application amounts and the amounts in the Cost Assurance Report align. We note, however, that the direct fee to the MWC, at 14% of total contract costs,

is at the upper end of the expected range. We would expect this to reduce through competitive tendering.

4.7 The Cost Assurance Report identified potential savings of 18% from delivering the three projects as a single work package. Following engagement with NGT, we consider that the use of separate contracts enables specialist suppliers to be matched to individual work packages, supports value engineering and commercial challenge as designs mature, and reduces the risk of consumers funding risk allowances associated with a single integrated contract.

4.8 The projects have progressed since the Cost Assurance Report was completed and we expect NGT to provide further evidence of tendered costs during the consultation phase.

4.9 At this stage, however, our minded-to consultation position is as follows:

- For cathodic protection we propose setting allowances equal to the value of tendered costs for the several contracts awarded to deliver the work package (£(Redacted)m). We also propose removing the value of MWC risk and contingency (£(Redacted)m, see Table 4 below) which is already included in Build Contract Target Cost.
- For critical valves and low voltage assets we propose adjusting the funding request by -7%. This reflects the difference between NGT's forecast contract costs (£(Redacted)m) and the value of contracts subsequently awarded (£(Redacted)m).

4.10 We expect to place greater reliance on tendered costs in reaching our Final Decision. This is consistent with our RIIO-GT2 Final Determinations[7], which stated that Re-opener applications should be based on fully tendered costs.

Direct company costs

4.11 Direct company costs are NGT's own staff costs directly attributable to delivering the Bacton terminal redevelopment project, rather than payments to the MWC or NGT's corporate/indirect overheads. NGT calculated them from the volume of Full-Time Employee (FTEs) multiplied by the full employment cost for the relevant staff grades.

4.12 NGT requested allowances of £(Redacted)m to fund the direct company costs for this Re-opener. We propose awarding allowances of £(Redacted)m for direct company costs. The 29% reduction is due to the following adjustments in allowances for the various roles identified in the funding request:

[7] paragraph 3.28

- Operations Supervisor (critical valves and low voltage assets). We propose to set the allowance to 250% of the allowance for cathodic protection, reducing the allowance by £(Redacted)m. This reflects the relationship in FTE requirements across the other operational roles, taking account of the longer delivery periods for critical valves and low-voltage assets (10 years) compared with cathodic protection (four years). A justification for the different treatment of Operations Supervisors was not provided by NGT.
- Delivery Subject Matter Expert. We propose to reduce allowance by 50%. This reflects our assessment that the number of FTEs in this role is not efficient to deliver the two work packages. Our proposal reduces the allowance by £(Redacted)m.
- Delivery Supervisor. We propose to remove the allowance to reflect our assessment that a lower level of FTEs assigned to delivery roles would be sufficient to deliver the work packages. This reduces the allowance by £(Redacted)m.

Indirect company costs

4.13 Indirect company costs are costs associated with supporting the Bacton redevelopment project that are not charged as NGT employees' direct project labour.

4.14 NGT requested allowances of £(Redacted)m to fund the indirect company costs to deliver the scope of work for this Re-opener. We propose reducing these allowances to £(Redacted)m as set out in Table 3 below. The 29% reduction is due to the following adjustments as set out below.

Table 3: Proposed Indirect Company Cost Allowance (Redacted)

£m (2018-19 prices)	Cathodic protection system	Critical valves & actuators	Low voltage assets + control & instrumentation	Total
NGT Overheads	Redacted	Redacted	Redacted	Redacted
NGT Indirect	Redacted	Redacted	Redacted	Redacted
MWC – Design	Redacted	Redacted	Redacted	Redacted
Total	Redacted	Redacted	Redacted	Redacted

NGT overhead costs

4.15 In our our RIIO-GT3 Final Determinations[8] we agreed that capex unit costs, built up from first principles, should include a percentage uplift equivalent in value to the proportion of indirect costs which are capitalised.

4.16 In calculating NGT overhead costs, an uplift of 7.1% was applied for the period after 31 March 2026. No justification was provided as to how this uplift was calculated, nor to the split between the BSC and the CAI costs. This is also materially higher than the uplift applied in the Peterborough compressor Re-opener funding request. This means that we were unable to set allowances in accordance with the policy set out in our first Re-opener decision for RIIO-GT3, i.e. the Peterborough decision[9]. The allowance for NGT overheads in that decision was equivalent to an uplift of 5.93% of total allowances, excluding risk and contingency costs. In the absence of additional data, we think a percentage uplift of 5.63% remains appropriate and therefore propose applying it in this case giving an allowance of £(Redacted)m, a reduction of 36%.

4.17 For clarity we set out below the Peterborough compressor Re-opener methodology we would apply once NGT provide the necessary breakdown of the BSC and the CAI costs during the consultation period. This may change our approach set out in paragraph 4.16.

Business Support Costs

4.18 Once we receive the additional data and the breakdown of NGT overhead costs, we propose to remove the allowances for BSC in full. This is in line with the policy as set out in both RIIO-GT2 and RIIO-GT3 Final Determinations[10]. We consider that NGT has already received allowances for the BSC to deliver its entire programme of work for the RIIO-GT3 price control.

Closely Associated Indirect costs

4.19 Once we receive the breakdown of NGT overheads, we propose to reduce NGT's Closely Associated Indirect by 19%. This is in line with our approach at RIIO-GT3 Final Determinations (Table 14) on TO Closely Associated Indirect costs, a component of baseline opex allowances.

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[8] Paragraph 5.32

[9] https://www.ofgem.gov.uk/sites/default/files/2026-10/Decision-Peterborough-Compressor-Emissions-Re-opener-Application-redacted.pdf

[10] In RIIO-GT2 Final Determinations it was clear that the Opex Escalator related to CAI costs (paragraph 4.34, there is no reference to BSC. In RIIO-GT3 Final Determinations, paragraph 5.123, we stated that additional CAI allowances would be part of the project assessment, no similar statement was made in relation to BSC.

4.20 In RIIO-GT3 Final Determinations, we recognised that CAI costs for Re-openers would continue to be assessed on a case-by-case basis[11]. There is ongoing engagement with NGT with regard to the allocation methodology for the capitalised CAI and should further evidence underpinned by a robust and transparent methodology for CAI cost allocation become available during this consultation process, we will consider it in our decision.

NGT indirect costs

4.21 We propose to reduce NGT's indirect costs by 37% from £(Redacted)m to £(Redacted)m. This reduction results from our proposal that this allowance for the role of Investment Engineer should be equalised between critical valves and low voltage assets. For most direct and indirect roles, the funding requested is equalised between the two work packages. No clear explanation has been provided that this should not be the case for this role.

MWC Design

4.22 We propose to make no adjustments to the MWC Design costs, as submitted in NGT's funding request. These costs were derived from the Cost Assurance Report, and our assessment is that they represent an efficient level to deliver the three work packages.

Cross-check of our direct and indirect costs assessment

4.23 Our overall assessment, based on our bottom-up analysis above, is that the funding request represented an inefficient level of expenditure to deliver the three work packages. NGT's direct and timesheet indirect request is £(Redacted)m, representing 317 FTEs over the lifetime of the project. When non-timesheet company costs are included, this equates to around 481 FTEs. Our proposed direct and indirect allowances total £(Redacted)m, equivalent on the same basis to 343 FTEs or 34 FTEs per annum over the 10-year delivery period.

4.24 As a further sense check against previous Re-openers, our proposed allowance results in a 23% NGT company cost / 77% MWC cost split. This sits around the middle of the range seen across the previous RIIO-GT2 projects considered (18%–28% for NGT company costs), supporting the reasonableness of our proposed allowance. Further information can be found in Appendix 4.

[11] RIIO-GT3 Final Determinations, paragraph 5.123.

Risk and contingency costs

4.25 NGT requested allowances of £(Redacted)m for the risk and contingency costs associated with this Re-opener. We propose to reduce this allowance by 52% to £(Redacted)m as set out in Table 4 below. This is 7.1% of total project costs which is below our policy of capping risk and contingency costs at 10% of project costs as set out in both RIIO-GT2[12] and GT3 Final Determinations[13].

4.26 Our proposed reduction reflects our assessment that:

- some risks relate to scope/design uncertainty that should be resolved before our funding decision;
- some risks are duplicated or already provided for elsewhere;
- some risks are within NGT's management control and should not therefore be funded through contingency; and
- for some remaining risks, we consider the value attributed to the risk to be overstated.

4.27 An explanation of the adjustments arising from our assessment are set out below.

4.28 For the risks identified in the Cost Assurance Report we propose to:

- Exclude 46% of specified risk value relating to scope uncertainty that were estimated at an early stage of project development. This should be resolved before our funding decision once tendered costs for the build phase are available (Risk ID 23P-002,003,004,005). This reduces the allowance by £(Redacted)m.
- Exclude 7% of specified risk value relating to similar uncertainty being included several times (Risk ID 23P-008,009). This reduces the allowance by £(Redacted)m.
- Exclude 53% of unspecified risk value to align with our reduction of specified risks. We consider this to be appropriate as no detail was provided as to what these unspecified risks are or how the value was calculated. We did consider removing the value entirely but believe that to do so might exclude genuine risks that project professionals believe should be reflected in the Cost Assurance Report even though at an early stage of project development it was not possible to identify them. We expect that the contract award process will reveal more information that can be used to inform our final decision. This reduces the allowance by £(Redacted)m.

[12] RIIO-GT2 Final Determinations, paragraph 3.211.
[13] RIIO-3-Final-Determinations-GT.pdf, page 90.

4.29 For the risks identified in NGT's P50 analysis from the Re-opener application we propose to:

- Adjust the allocation of risks to the F3 Design Stage as set out in the footnote to Table D in Appendix 3. This is to ensure that all risks are properly assigned to either the F3 Design or F4 Delivery stage of the project programme.
- Exclude F3 Design Stage risk value relating to scope uncertainty that will be resolved before the funding decision.
- Exclude 18.2% from the F4 Delivery Stage risk value relating to: (low voltage assets T-76244 and cathodic protection T-81917, as the risk is within the control of NGT management, who will have sufficient time and financial resources to secure the necessary expert staff); (cathodic protection T-81922, as this risk is adequately covered by T-81944, as both relate to delivery delay during the build phase due to unforeseen complexity or the requirements of third parties at the Bacton gas terminal; retaining both risks would be double counting); and (valves T-82002 and low voltage assets T-82060, as the risk is within the control of NGT management, who are responsible for the timely delivery of outputs to ensure access to existing equipment).
- Reduce the F4 Delivery Stage risk value by 15.4% in relation to low voltage assets T-82027 and T-82056, and valves T-81969 and T-81998. We consider that the values assigned to these risks should be reduced by 50% to better reflect our assessment of their potential impact. In particular, materials are not a major component of project costs, will be purchased by the Main Works Contractor, are not bespoke, and can be secured well in advance of when they are required under the project delivery programme.

4.30 The result of these various adjustments is set out in Table 4 below.

Table 4: Proposed risk and contingency allowance (Redacted)

£m (2018-19 prices)	Cathodic protection system	Critical valves & actuators	Low voltage assets + control & instrumentation	Total
Total MWC Risk / Contingency	Redacted	Redacted	Redacted	Redacted
NGT Risks – F4 Delivery Stage	Redacted	Redacted	Redacted	Redacted
Total Risk / Contingency	Redacted	Redacted	Redacted	Redacted

5. Assessment of RIIO-GT2 Price Control Deliverable

Section summary

In this chapter we provide our assessment of whether NGT has fully delivered the relevant RIIO-GT2 Price Control Deliverable, and the proposed value for the associated licence term.

Question 3:	Do respondents agree with our assessment of the delivery of relevant RIIO-GT2 Price Control Deliverables and its value?

RIIO-GT2 Price Control Deliverable

5.1 At RIIO-GT2 Final Determinations we provided baseline funding of £10.50m to deliver a Bacton terminal redevelopment Final Option Selection Report. The parameters of this Price Control Deliverable (PCD) were set out in Appendix 2 of Special Condition 3.10.

5.2 In accordance with Special Condition 3.10.15 in the RIIO-GT3 licence (as applied by SpC 3.9.8 in the current licence), we have made an assessment as to whether the PCD has been fully delivered and whether we should direct an updated value for licence term BTRRAt. In making our assessment we are guided by our Price Control Deliverable Reporting Requirements and Methodology Document[14]

5.3 Our assessment is that the relevant RIIO-GT2 Price Control Deliverable was delivered in full. Also, that it was appropriate to use this funding to conduct studies into the condition of buried pipework and NTS Feeder Filtration to determine the appropriate strategic option for Bacton terminal site redevelopment.

5.4 NGT's actual expenditure (£6.90m) is less than its baseline funding. Based on our assessment of the costs incurred we propose reducing the allowance for expenditure to date to £6.80m. This is so that the uplift for NGT overhead costs is the same for the entire RIIO-GT2 period (5% as per the cost book).

5.5 To recover NGT's underspend, including the adjustment we are proposing to make as a result of our assessment, we propose reducing allowances for other outputs during Regulatory Year 2025-26 by £3.71m.

[14] Price Control Deliverable_Reporting_Requirements_and_Methodology_Document_v4.pdf, paragraph 7.4.

Our Proposed $BTRRA_t$ Value

5.6 Based on our assessment we do not propose to direct a new value for the $BTRRA_t$ licence term.

6. Proposed Bacton terminal site redevelopment Re-opener Direction

Section summary

In this chapter we set our proposed direction to modify the relevant licence term ($BTRO_t$), Appendix 2 of Special Condition 3.9, Bacton terminal site redevelopment Price Control Deliverable (BTR_t).

Question 4: Do respondents agree with our proposed draft direction?

Our Proposal

6.1 Based on our assessment of the evidence presented in the Re-opener application under Special Condition 3.10 (Bacton terminal site redevelopment Re-opener and Price Control Deliverable), submitted by NGT in October 2024 and updated in March 2026, we propose to modify by direction:

- The value of the relevant licence term (BTROt) in Appendix 1 of Special Condition 3.9 as set out in Table 5 below. This increases the revenue NGT may recover through the price control mechanism.
- The outputs, delivery dates and allowances in Appendix 2 of Special Condition 3.9 as set out in Table 6 below. This specifies the parameters of the Price Control Deliverable that NGT is required to deliver.

6.2 Although the Re-opener application was submitted under Special Condition 3.10 of the RIIO-GT2 licence which no longer generally applies from 1 April 2026, under Special Condition 3.9.8 of the RIIO-T3 licence, the Authority may, in respect of applications validly submitted under Special Condition 3.10, modify Appendices 1 and 2 of Special Condition 3.9.

6.3 Before determining the value of the relevant licence term (BTROt) the following adjustments are required:

- A reduction in the value of RIIO-GT2 allowances to take account of the Opex Escalator (Special Condition 3.18) which calculates a value for indirect company costs by uplifting allowances by 23.11% within the Price Control Financial Model.
- An increase in the value RIIO-T3 and RIIO-T4 allowances of 24.54% to convert from 2018-19 into 2023-24 prices.

6.4 Allowances in the licence are restricted to two decimal places.

Table 5: Proposed Modification by Direction to Licence Term ($BTRO_t$)

£m	RIIO-T2 2025-26[15]
Proposed Funding	1.21
$BTRO_t$ Direct Costs only (2018-19 prices)	0.98

£m	RIIO-T3 2026-27	RIIO-T3 2027-28	RIIO-T3 2028-29	RIIO-T3 2029-30	RIIO-T3 2030-31
Proposed Funding Decision (2018-19 prices)	11.03	31.16	28.98	22.57	21.39
$BTRO_t$ (2023-24 prices)	13.74	38.81	36.10	28.11	26.64

£m	RIIO-T4 2031-32	RIIO-T4 2032-33	RIIO-T4 2033-34	RIIO-T4 2034-35
Proposed Funding Decision (2018-19 prices)	16.10	3.87	2.37	1.68
$BTRO_t$ (2023-24 prices)	20.05	4.82	2.95	2.10

Table 6: Proposed Modification of outputs, delivery dates and allowances (£m)

Output	Delivery Date	RIIO-T2 2025-26
Cathodic protection	31 March 2029	0.37
Critical valves & actuators	31 March 2035	0.50
Low voltage assets + control & instrumentation	31 March 2035	0.11

Output	Delivery Date	RIIO-T3 2026-27	RIIO-T3 2027-28	RIIO-T3 2028-29	RIIO-T3 2029-30	RIIO-T3 2030-31
Cathodic protection	31 March 2029	5.86	7.26	1.98		
Critical valves & actuators	31 March 2035	4.68	17.61	20.25	16.46	15.75
Low voltage assets + control & instrumentation	31 March 2035	3.20	13.94	13.87	11.66	10.90

[15] Calculates as the sum of proposed allowances prior to 31 March 2026 (In Line Inspection Allowance £1.04m, Preliminary Spend (FOSR + FEED) £6.80m, Cathodic Protection £(Redacted)m, Critical Valves £(Redacted)m and Low Voltage Assets £(Redacted)m) less RIIO-GT2 baseline funding £10.50m.

Output	Delivery Date	RIIO-T4 2031-32	RIIO-T4 2032-33	RIIO-T4 2033-34	RIIO-T4 2034-35
Critical valves & actuators	31 March 2035	9.19	3.23	1.63	1.18
Low voltage assets + control & instrumentation	31 March 2035	10.86	1.59	1.32	0.91

Where:

Cathodic protection refers to the replacement of the existing cathodic protection system including:

- Existing transformer rectifier kiosks to be removed with new modular cathodic protection power sources installed within external kiosks
- Existing ground beds to be disconnected and abandoned, with new distributed ground beds installed
- Existing drain points to be abandoned with new drain points installed
- Full site test post coverage with permanent monitoring equipment installed. Existing posts upgraded where suitable and new posts installed at key locations including pit wall transitions and where significant measurement errors exist when making surface measurements
- Electric resistance probes installed at locations where historically it has been difficult to achieve effective cathodic protection to monitor corrosion rates in areas where there is known interference and accelerated corrosion events
- Existing bonds removed with new bonds installed
- Cathodic protection on pipework crossing Patson Road (B11599) up to Isolation Flanges on Shell and Perenco Incomers and the offtake to Great Yarmouth Power Station.

Critical valves & actuators refers to the replacement of 50 Critical valves and actuators as follows:

- Five Primary and Secondary Isolation valves for the over pressure protection systems. (A1/1; A1/2; A1/3; S4/1; S4/3)
- Three Flow Control Valves (A2/8A; A2/8B; A2/8C)
- Nineteen Mainline to feeder isolation valves (F2-6; F2-12; F2-13; F2-14; F3-6; F3/7; F3-12; F4-18; F5-7; F5-12; F5-18; F4-16; F5/13; F2/7; F4-13; A2-1; A2-2; A2-3; S4-2)
- Fourteen Stream to Feeder/s manifold isolation valves (S1-9A; S1-9B; S1-9C; S4/10A; S3/11A; S3/9C; A2-7A; A2/12A; A1/9A; S3/10C; S3/8A; S3/8B; S3/8C; S3/9A)

- Four Feeder meter stream isolation valves (F4-22A; F4-22B, F4-22C; F5-22B)
- Three Ring to Feeders isolation valves (R1; R5; R6)
- One Main incomer to stream valve (S3/1)
- One Link Valve between plant and Feeders (FM4-3)

Low voltage assets + control & instrumentation output includes: Replacement** of the existing low voltage assets + control & instrumentation with

- Low voltage transformers (2 units)
- Standby generators (1 unit)
- Uninterruptible power supply and battery systems (3 units)
- Distribution boards (28 units***)
- Kiosks (6 units***)
- External lighting columns (100 units***)
- Control and Instrumentation equipment and associated cabling, (90 units)
  - ✓ Differential pressure transmitter (11 units)
  - ✓ Pressure transmitter (42 Units)
  - ✓ Temperature transmitter (31 Units)
  - ✓ Pressure switch (6 Units)

*** For these projects, replacement refers to the renewal of assets required to deliver the intended operational, safety and performance outcomes, including the safe decommissioning, isolation, retention or removal of existing assets where appropriate. It should not be interpreted as requiring the physical removal of all existing infrastructure in every circumstance.*

**** National Gas Transmission will confirm the final installed quantities through the Annual Regulatory Reporting Pack (RRP) process once detailed design has been completed and the scope has been finalised.*

6.1 The proposed text of the direction is set out in Appendix 1.

Consultation Bacton terminal site redevelopment – Re-opener Application

National Gas Transmission plc

Direct Dial: 0207 901 7000

Email: Graham.Craig@ofgem.gov.uk

Date: XX XXX 2026

Appendix 1. Proposed direction

Direction under Special Condition 3.9.8(b) of the gas transporter licence held by National Gas Transmission plc (the Licensee) amending the value of the relevant licence term in Appendix 1 of Special Condition 3.9 and the outputs, delivery dates or allowances in Appendix 2 of Special Condition 3.9

1. National Gas Transmission plc (the Licensee) is the holder of a gas transporter licence granted or treated as granted under section 7 of the Gas Act 1986.

2. On 31 October 2024 the Licensee submitted a Re-opener application for Bacton Gas Terminal under Special Condition 3.10.11 (Bacton terminal site redevelopment Re-opener and Price Control Deliverable (BTR_t and $BTRE_t$)). Special Condition 3.10 no longer applies, but under paragraph 8 of its successor Special Condition 3.9 (Bacton terminal site redevelopment Price Control Deliverable (BTR_t)) the Authority may, in respect of applications validly submitted under Special Condition 3.10, modify the term $BTRO_t$ and the Price Control Deliverables specified in Appendices 1 and 2 of Special Condition 3.9.

3. The Authority hereby issues a direction under Special Condition 3.9.8(b) to:

    - Modify the value of $BTRO_t$ in Appendix 1 of Special Condition 3.9 as specified in paragraph 5 of this direction; and
    - Modify the outputs, delivery dates and allowances in Appendix 2 of Special Condition 3.9 as specified in paragraph 6 of this direction.

4. Further details of the reasons for and effect of this direction and the modifications listed in paragraph 3 can be found in our decision document published alongside this direction on xx Month 2026.This decision constitutes notice of our reasons for the purposes of section 38A of the Gas Act 1986.

5. This direction increases the value of ($BTRO_t$) and amends Appendix 1 of Special Condition 3.9 as follows:

Bacton terminal site redevelopment ~~baseline~~ Re-opener allowances ($BTRO_t$) by Regulatory Year (£m)

2024/25 (2018/19 prices)	2025/26 (2018/19 prices)	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	~~2035/36~~
~~N/A~~	~~N/A~~ 0.98	~~N/A~~ 13.77	~~N/A~~ 38.81	~~N/A~~ 36.10	~~N/A~~ 28.11	~~N/A~~ 26.64	~~N/A~~ 20.05	~~N/A~~ 4.82	~~N/A~~ 2.95	~~N/A~~ 2.10	~~N/A~~

6. Further, this direction amends Appendix 2 of Special Condition 3.9 as follows:

Bacton terminal site redevelopment Price Control Deliverable by Regulatory Year (£m)

Output	Delivery Date	2024/25 (2018/19 prices)	2025/26 (2018/19 prices)	2026/27	2027/28	2028/29	2029/30	2030/31
Cathodic protection (as described in the Authority's decision dated xx 2027)	31 March 2029	~~N/A~~	~~N/A~~ 0.37	~~N/A~~ 5.86	~~N/A~~ 7.26	~~N/A~~ 1.98	~~N/A~~	~~N/A~~
Critical valves & actuators (as described in the Authority's decision dated xx 2027)	31 March 2035		0.50	4.68	17.61	20.25	16.46	15.75
Low voltage assets + control & instrumentation (as described in the Authority's decision dated xx 2027)	31 March 2035		0.11	3.2	13.94	13.87	11.66	10.90

Output	Delivery Date	2031/32	2032/33	2033/34	2034/35	~~2035/36~~

Cathodic protection (as described in the Authority's decision dated xx 2027)	31 March 2029	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
Critical valves & actuators (as described in the Authority's decision dated xx 2027)	31 March 2035	9.19	3.23	1.63	1.18	
Low voltage assets + control & instrumentation (as described in the Authority's decision dated xx 2027)	31 March 2035	10.86	1.59	1.32	0.91	

7. This direction will take effect immediately.

8. If you have any questions in relation to this direction, please contact: graham.craig@ofgem.gov.uk.

Yours sincerely,

……

Thomas Mackenzie

Deputy Director

Duly authorised on behalf of the

Gas and Electricity Markets Authority

Appendix 2. Option assessment

A2.1 Cathodic protection system

NGT considered four options including the counterfactual 'do nothing' option to address the issue for this work area:

- Do Nothing
- Rehabilitation or partial replacement of the cathodic protection system
- Remedial coating repairs to remove localised current drain defects
- Replace the cathodic protection system

The performance of each option against relevant assessment criteria is summarised in Table A below.

Table A: Option Assessment Summary cathodic protection system

Category	Do Nothing	Rehabilitation or Partial Replacement of CP System	Remedial Coating Repairs	Replace CP System
Meeting HSE Requirements	Fail - risk prohibition notice Could result in the through wall corrosion and failure of below ground pipework that results in a release of gas notifiable to the HSE under RIDDOR.	Fail - risk prohibition notice Could result in the through wall corrosion and failure of below ground pipework that results in a release of gas notifiable to the HSE under RIDDOR.	Fail – repairing coating defects with the CP system ineffective neglects the required redundancy.	Delivers in line with HSE expectations
Cost	Lowest	Medium	Highest	Medium
Deliverability	No work required	Would not resolve the protection levels on site leaving pipework at risk. It would also add to coating degradation.	Would cause major site disruption which would impact upon delivery of other planned investments across the site.	NGT program confirmed deliverability
Compliance	Fails on a compliance basis/prudent operator and would not comply with our COMAH Safety Case, which requires us to maintain effective cathodic protection	Fails on a compliance basis/prudent operator and would not comply with our COMAH Safety Case, which requires us to maintain effective cathodic protection	Fails on a compliance basis/prudent operator and would not comply with our MAPD Safety Case, which requires us to maintain effective cathodic protection	Compliant
Environmental Impact	High potential for unplanned gas release due to degradation of protection	High potential for unplanned gas release due to degradation of protection	Requires lots of outages which require venting.	Low carbon footprint
Maintenance **Ongoing OPEX**	High Opex cost associated with loss of containment events	CAPEX cost required with ongoing high OPEX cost.	CAPEX cost required with ongoing high OPEX cost.	CAPEX investment with lowest OPEX cost
Maintenance Risk	High risk - unsafe for personnel to work in vicinity of unmitigated defects	High risk - unsafe for personnel to work in vicinity of unmitigated defects	High risk - unsafe for personnel to work in vicinity of unmitigated defects which would continue to form in coming years	Sufficient protection in place to reduce formation of defects and adequately manage the risk
Security of Supply	Failure of station pipework could affect the terminals flow capability leading to a UK wide supply deficit	Failure of station pipework could affect the terminals flow capability leading to a UK wide supply deficit	Failure of station pipework could affect the terminals flow capability leading to a UK wide supply deficit	Ensures adequately protected pipework to minimise impact to security of supply
Overall viability	Not viable	Not viable	Not viable	Viable

Based on this assessment it was determined that the preferred option was the replacement of the existing cathodic protection system including:

- Existing ground beds to be disconnected and abandoned, with new distributed ground beds installed
- Existing Transformer Rectifier kiosks to be removed with new modular cathodic protection power sources installed within external kiosks
- Existing drain points to be abandoned with new drain points installed
- Full site test post coverage with permanent monitoring equipment installed. Existing posts upgraded where suitable and new posts installed at key locations including pit wall transitions and where significant measurement errors exist when making surface measurements
- Electric Resistance probes installed at locations where historically it has been difficult to achieve effective cathodic protection to monitor corrosion rates in areas where there is known interference and accelerated corrosion events
- Existing bonds removed with new bonds installed
- Cathodic protection on pipework crossing Patson Road (B11599) up to Isolation Flanges on Shell and Perenco Incomers and the offtake to Great Yarmouth Power Station.

A2.2 Critical valves & actuators

Four options including the counterfactual 'do nothing' were considered.

- Do Nothing
- Fix on Failure
- Valves Refurbishment
- Valves Replacement

The performance of each option against relevant assessment criteria is summarised in Table B below.

Table B: Option Assessment Summary Critical valves & actuators

Category	Do Nothing	Fix on Failure	Valves Refurbishment	Valves Replacement
Cost	Low initial cost but results in high overall costs from expensive reactive maintenance works to keep site operational. Continuing to operate with defective assets will adversely impact RAM and can result in enforcement action.	Low initial cost but results in high overall costs from expensive reactive maintenance works to keep site operational	High costs associated with maintaining an excavation site for long periods of time. Refurbishment costs are unknown and have high risk as the state of the inner components and work required is only determined after valve investigation	Proactive maintenance and efficient delivery of works through bundling reduces costs associated with replacement and enables planning of future works

Category	Do Nothing	Fix on Failure	Valves Refurbishment	Valves Replacement
Meeting HSE Regulatory requirements	Non-compliant as the risk is not ALARP (All Measures Necessary have not been taken to manage risks)	Non-compliant as the risk is not ALARP (All Measures Necessary have not been taken to manage risks)	Compliant as all defected valves will be repaired	Compliant as all defected valves will be replaced
Deliverability	Will result in uncontrolled maintenance which are difficult to deliver and incur cost premium.	Will result in uncontrolled maintenance which are difficult to deliver and incur cost premium.	It is not certain that all the identified valves can be refurbished and put back into service within the planned outage. There is a risk of reverting to the replacement option in the likely event of this the project will incur additional costs and time.	The specified volumes can be delivered within the planned FOSR duration. Planned outages are more cost effective and controlled.
Compliance **PSR and GMSR**	Non-compliant	Compliant	Compliant	Compliant
Compliance PSSR	Non-compliant	Non-compliant	Compliant	Compliant
Maintenance **Ongoing OPEX**	High operational OPEX from increased leak, detection tests, and repair maintenance Complex isolations with increased turnaround time will be required to deliver maintenance works	High operational OPEX from increased leak, detection tests, and repair maintenance Complex isolations with increased turnaround time will be required to deliver maintenance works	Significant reduction in operational costs as the valves are in good condition.	Significant reduction in operational costs as the valves are in good condition. Availability of spares reduces turnaround time.
Maintenance Risk	High Valves are passing and cannot provide safe isolation when conducting maintenance works	High Valves are passing and cannot provide safe isolation when conducting maintenance works	Low Valves will be tested to prove capability to safely isolate an area when needed	Low Valves will be tested to prove capability to safely isolate an area when needed

Based on this assessment it was determined that the preferred option was the replacement of 50 Critical Valves and Actuators as.

- Five Primary and Secondary Isolation valves for the over pressure protection systems. (A1/1; A1/2; A1/3; S4/1; S4/3)
- Three Flow Control Valves (A2/8A; A2/8B; A2/8C)
- Nineteen Mainline to feeder isolation valves (F2-6; F2-12; F2-13; F2-14; F3-6; F3/7; F3-12; F4-18; F5-7; F5-12; F5-18; F4-16; F5/13; F2/7; F4-13; A2-1; A2-2; A2-3; S4-2)
- Fourteen Stream to Feeder/s manifold isolation valves (S1-9A; S1-9B; S1-9C; S4/10A; S3/11A; S3/9C; A2-7A; A2/12A; A1/9A; S3/10C; S3/8A; S3/8B; S3/8C; S3/9A)
- Four Feeder meter stream isolation valves (F4-22A; F4-22B, F4-22C; F5-22B)

- Three Ring to Feeders isolation valves (R1; R5; R6)
- One Main incomer to stream valve (S3/1)
- One Link Valve between plant and Feeders (FM4-3)

A2.3 Low voltage assets + control & instrumentation

Three options including the counterfactual 'do nothing' were considered for each component of the electrical network.

- Do Nothing
- Refurbishment
- Replacement

The performance of each option against relevant assessment criteria for several key components of the low voltage network is summarised in Tables C, D and E below.

Table C: Option Assessment Summary Transformers

Category	Do Nothing	Major Refurbishment	Replacement
Cost	No cost. However, the associated risk from failure of the assets and reliance on aged and defected assets for back up is high. This will result in high constraint costs if we are unable to meet our flow obligations.	Medium cost in the short term, but high Whole life cost	High cost. But since current assets are past design life from a whole life cost perspective replacement delivers the best value for money due to increased reliability of the asset and reduced maintenance costs
Compliance COMAH	Non-compliant	Compliant	Compliant
Compliance BS EN 60076-2018	Non-compliant	Non-compliant	Compliant
Compliance T/SP/EL/50	Non-compliant	Non-compliant	Compliant
Environmental Impact	High – High probability of failure resulting in a fire and air pollution.	Medium	Low
Maintenance Obsolescence	Low – no major obsolescence issues	Low – no major obsolescence issues	Low
Maintenance Risk	High - unsafe for personnel to work in the vicinity of highly unpredictable failures.	Medium - risk will be reduced through refurbishment	Low – Potential winding failure will be eliminated
Operational Resilience Single Point of Failure	High since the probability of failure is high and these assets have no direct redundancy	Medium since the probability of failure lower that Option 1	Compliant Transformers have very low probability of failure

Operational Resilience Security of Supply	Very high risk of failure. Site currently running on plant back up assets	Medium. As the site has been returned to run as designed with redundancy in each plant	Low – the impending failure risk will be reduced to ALARP
Overall viability	**Not viable**	**Not Viable**	Viable

Table D: Option Assessment Summary Standby Generator

Category	Do Nothing	Major Refurbishment	Replacement
Cost	Lowest in short term but greater overall due to the envisaged constraint costs	Medium cost in the short term, but high Whole life cost	High in short term, but low from the whole-life cost perspective and addresses all investment drivers
Compliance COMAH	Non-compliant due to maximum risk of imminent failure and risk posed to site staff and equipment	Non-compliant	Compliant
Maintenance Obsolescence	High - obsolete spares will affect the maintenance function	High - obsolete spares will affect the maintenance function	Low
Maintenance Ongoing OPEX	High - continuous OPEX challenge to maintain the generators	Medium – reduces requirement for ongoing OPEX to maintain	Low – significantly reduces requirement for any ongoing OPEX to maintain
Operational Resilience Single Point of Failure	High since the probability of failure is high and these assets have no direct redundancy	Medium since the probability of failure lower that Option 1	Compliant Standby Generator have very low probability of failure
Operational Resilience Security of Supply	High risk - Any loss of electrical mains supply has high likelihood of loss of terminal capacity	High risk - Any loss of electrical mains supply has high likelihood of loss of terminal capacity	Low – A new generator will significantly improve the reliability and security of supply
Overall viability	**Not viable**	**Not Viable**	Viable

Table E: Option Assessment Summary Distribution Assets / Uninterruptible Power Supplies

Category	Do Nothing	Major Refurbishment	Replacement
Cost	Lowest	Medium	High in short term, but low from the whole-life cost perspective and addresses all cost drivers

Compliance COMAH	Non-compliant because of the risk associated with aged assets	Non-compliant because of the risk associated with aged assets	Compliant
Compliance BS7671	Non-compliant	Non-compliant	Compliant
Compliance T/SP/EL/50	Non-compliant	Non-compliant	Compliant
Maintenance Obsolescence	Very high as its already confirmed and is one of major cost drivers	Very high as its already confirmed and is one of major cost drivers	Low
Maintenance Risk	High - unsafe for personnel to work in the vicinity of highly unpredictable failures.	High – due to recurring defects.	Low – Recurring defects are resolved through this intervention
Operational Resilience Single Point of Failure	High since the probability of failure is high and these assets have no direct redundancy	Medium since the probability of failure lower that Option 1	Compliant DBs have very low probability of failure
Operational Resilience Security of Supply	Recurring maintenance activities would require continuous plant outages	Recurring maintenance activities would require continuous plant outages	Low - addresses all age-related defects and provides maximum availability
Overall viability	**Not viable**	**Not Viable**	Viable

Based on this assessment it was determined that the preferred option was the replacement of the existing low voltage electrical system as set out in Table F below.

Table F: Low voltage assets + control & instrumentation in Scope

Asset	Units
Low voltage transformer	2
Standby generator	1
Uninterruptible Power Supply	3
Distribution Boards	28
Kiosks	6
External lighting columns	100
C&I Differential Pressure transmitter	11
C&I Pressure transmitter	42
C&I Temperature transmitter	31

C&I Pressure switch	6

Appendix 3. NGT's request for funding per cost category

The data presented in this appendix has been taken from the updated cost book submitted by NGT in March 2026 replacing the cost book submitted alongside the Re-opener application in October 2024.

Table A below provides detail on the various components within the Main Works Contractor (excluding MWC risk and contingency) estimate. The estimate is based on a Cost Assurance Report provided by (Redacted) (July 2024) with adjustments for additional outputs (valves, metering and decommissioning) not included in the Cost Assurance Report. NGT expect that this estimate should be close to the Best and Final Offer that would be delivered by a competitive tender process.

Table A: Main Works Contractor Cost Build-Up (Redacted)

£m (2018-19 prices)	Cathodic protection system	Critical valves & actuators	Low voltage assets + control & instrumentation	Total
Direct Fee	Redacted	Redacted	Redacted	Redacted
MWC Delivery Execution	Redacted	Redacted	Redacted	Redacted
Preliminaries / Documentation	Redacted	Redacted	Redacted	Redacted
Civils / Pre Works / Access / Site Investigation	Redacted	Redacted	Redacted	Redacted
Materials	Redacted	Redacted	Redacted	Redacted
Decommissioning	Redacted	Redacted	Redacted	Redacted
Total	Redacted	Redacted	Redacted	Redacted

Table B below provides detail on the various components within the direct company costs estimate. NGT has based the funding request on experience gained from previous projects of a similar nature. This request is the product of the volume of direct employee input into the project (Full-Time Equivalents) and the full cost of employment for different staff grades.

Table B: Direct Company Cost Build-Up (Redacted)

£m (2018-19 prices)	Cathodic protection system	Critical valves & actuators	Low voltage assets + control & instrumentation	Total
Shift Officer +Operator	Redacted	Redacted	Redacted	Redacted
Project Set up Risk Engineer + Planner	Redacted	Redacted	Redacted	Redacted

Operations Supervisor + Technician + Representative	Redacted	Redacted	Redacted	Redacted
Design Co-ordinator	Redacted	Redacted	Redacted	Redacted
Delivery Manager + Lead + Supervisor	Redacted	Redacted	Redacted	Redacted
Delivery Quantity Surveyor + Document Controller	Redacted	Redacted	Redacted	Redacted
Delivery Subject Matter Expert	Redacted	Redacted	Redacted	Redacted
NRO Officer + Recompression Rig	Redacted	Redacted	Redacted	Redacted
Total	Redacted	Redacted	Redacted	Redacted

Table C below provides detail on the various components within the indirect company costs estimate. The majority (NGT Overheads) of which has been calculated as an uplift to total project costs. With additions for other specific activities.

Table C: Indirect Company Cost Build-Up (Redacted)

£m (2018-19 prices)	Cathodic protection system	Critical valves & actuators	Low voltage assets + control & instrumentation	Total
NGT Overheads	Redacted	Redacted	Redacted	Redacted
NGT (timesheet) Indirect	Redacted	Redacted	Redacted	Redacted
MWC – Design	Redacted	Redacted	Redacted	Redacted
Total	Redacted	Redacted	Redacted	Redacted

Table D below provides detail on the various components within the risk and contingency estimate

- The NGT risk and contingency estimate was derived using a probabilistic P50 Monte Carlo simulation such that there is an equal chance that actual contingency costs will be either above or below the central estimate.
- The MWC risk and contingency estimate was set at the feasibility stage of the project before completed design. It is anticipated the contingency percentage is reduced as design is further developed and certain risks have been overcome.

Table D: Risk / Contingency Cost Build-Up (Redacted)

£m (2018-19 prices)	Cathodic protection system	Critical valves & actuators	Low voltage assets + control & instrumentation	Total
MWC Specified Risks	Redacted	Redacted	Redacted	Redacted

MWC – Unspecified Risks	Redacted	Redacted	Redacted	Redacted
Total MWC Risk / Contingency	Redacted	Redacted	Redacted	Redacted
NGT Risks - F3 Design Stage[1]	Redacted	Redacted	Redacted	Redacted
NGT Risks – F4 Delivery Stage	Redacted	Redacted	Redacted	Redacted
Total NGT Risk / Contingency	Redacted	Redacted	Redacted	Redacted
Total Risk / Contingency	Redacted	Redacted	Redacted	Redacted

[1] NGT Allocation adjusted to include (Low voltage assets T-82024) - (Cathodic protection T-81953, T-81930, T-81940, T-81924) – (valves T-82014, T-82000, T-82013) and to exclude (Low voltage T-82039)

Table E below provides detail on the various components within the FOSR – FEED expenditure incurred value.

Table E: Expenditure on FOSR + FEED 2021-25 (Redacted)

£m 2018-19 prices	Staff Time	NGT Overheads	Third Party	Total
Final Option Selection Report & Re-opener Application including FEED Study	Redacted	Redacted	Redacted	Redacted
Buried Pipework Condition (ER Probes)	Redacted	Redacted	Redacted	Redacted
NTS Feeder Filtration	Redacted	Redacted	Redacted	Redacted
Total	Redacted	Redacted	Redacted	**6.90**

Table F below provides a summary of the current status of the various contracts through which the three separate work packages will be delivered.

Table F: Contract Delivery Status Summary as of September 2026 (Redacted)

Activity	Contract Type	Cathodic protection	Critical valves & actuators	Low voltage assets + control & instrumentation
FOSR Preparation	NEC4 Type E	(Redacted) Complete	(Redacted) Complete	(Redacted) Complete
Conceptual Design	NEC4 Type E	(Redacted) Complete	(Redacted) In Progress	(Redacted) Complete
Detailed Design	NEC4 Type E	(Redacted) Complete	(Redacted) In Progress	(Redacted) In Progress
Enabling Works	NEC4 Type A		(Redacted) In Progress	

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Build	NEC4 Type C	(Redacted) In Progress	(Redacted) to be Awarded	(Redacted) to be Awarded

Appendix 4. Analysis of NGT direct and indirect company costs funding request

Table A below sets out our analysis of the funding request and our proposed allowances converted into Full-Time Equivalents.

Table A: Analysis of Labour Input (Redacted)

£m (2018-19 prices)	Cathodic protection system	Critical valves & actuators	Low voltage assets + control & instrumentation	Total
NGT Direct (Timesheet) (£m)	Redacted	Redacted	Redacted	Redacted
NGT Indirect (Timesheet) (£m)	Redacted	Redacted	Redacted	Redacted
NGT Total (Timesheet) (£m)	Redacted	Redacted	Redacted	Redacted
Total Hours (Timesheet)	64,272	241,280	222,040	527,592
Total FTE (Timesheet)[1]	38.6	144.9	133.4	316.9
Project Length (years)	4	10	10	10
Annual FTE (Timesheet)	9.7	14.5	13.3	31.7
Cost (£) per FTE (Timesheet)	Redacted	Redacted	Redacted	Redacted
NGT Overheads (£m)	Redacted	Redacted	Redacted	Redacted
MWC – Design (£m)	Redacted	Redacted	Redacted	Redacted
NGT Total (Non-Timesheet)	Redacted	Redacted	Redacted	Redacted
Total FTE (Non-Timesheet)[2]	Redacted	Redacted	Redacted	Redacted
Total FTE	53.9	228.6	198.3	480.8
Proposed Direct Allowance (£m)	Redacted	Redacted	Redacted	Redacted
Proposed Indirect Allowance (£m)	Redacted	Redacted	Redacted	Redacted
Proposed Total Allowance (£m)	Redacted	Redacted	Redacted	Redacted
Total FTE based on Proposed Allowance	**42.5**	**164.1**	**136.7**	**343.3**

1. Assumes 1,665 hours per FTE
2. Calculating using average FTE cost for Bacton project overall

Table B below sets out a comparison of the ratio of Main Works Contract and Company Costs observed from capital projects funded and delivered during RIIO-GT2 alongside the Bacton site terminal redevelopment project.

Table B: Ratio of Main Works Contractor and NGT Capital Project Costs (Redacted)

£m (2018-19 prices)	ERP3 (RRP)[3]	Hatton (RRP)	St Fergus (Asset Health)[4]	Peterborough (MCPD)[5]	Bacton (Funding Request)	Bacton (Minded-to)
MWC Costs [1]	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
NGT Costs	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
Total	Redacted	Redacted	Redacted	Redacted	Redacted	Redacted
MWC %	77%	72%	82%	82%	72%	77%
NGT %	23%	28%	18%	18%	28%	23%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

1. Includes Main Works Contractor, Specialist Services and Original Equipment Manufacturer but excludes risk and contingency allowances.
2. Includes direct and indirect costs but excludes risk / contingency allowances.
3. Actual costs as reported in Regulatory Reporting Pack.
4. Decision Asset Health Re-opener January and June 2023.
5. Decision Peterborough Compressor Emissions Re-opener.

Appendix 5. Privacy policy

Personal data

The following explains your rights and gives you the information you are entitled to under the General Data Protection Regulation (GDPR).

Note that this section only refers to your personal data (your name, address and anything that could be used to identify you personally) not the content of your response to the consultation.

1. The identity of the controller and contact details of our Data Protection Officer

The Gas and Electricity Markets Authority is the controller, (for ease of reference, "Ofgem"). The Data Protection Officer can be contacted at dpo@ofgem.gov.uk

2. Why we are collecting your personal data

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

3. Our legal basis for processing your personal data

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest. i.e. a consultation.

4. With whom we will be sharing your personal data

We will not share your personal data.

5. For how long we will keep your personal data, or criteria used to determine the retention period.

Your personal data will be held for three months after publication of the decision.

6. Your rights

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data
- access your personal data
- have personal data corrected if it is inaccurate or incomplete
- ask us to delete personal data when we no longer need it
- ask us to restrict how we process your data
- get your data from us and re-use it across other services
- object to certain ways we use your data

- be safeguarded against risks where decisions based on your data are taken entirely automatically
- tell us if we can share your information with 3rd parties
- tell us your preferred frequency, content and format of our communications with you
    - to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at https://ico.org.uk/ or telephone 0303 123 1113.

7. Your personal data will not be sent overseas.

8. Your personal data will not be used for any automated decision making.

9. Your personal data will be stored in a secure government IT system.

10. More information. For more information on how Ofgem processes your data, view our Ofgem privacy policy.