Consultation

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Western Gas Network – Funded incremental obligated capacity Reopener (FIOC) Project Direction

Subject	Details
Publication date:	26/06/2023
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We are consulting on a FIOC Project Direction under Special Condition 3.13.8 of the gas transporter licence held by National Gas Transmission to release Incremental Obligated Entry Capacity through the Western Gas Network Project. We are seeking views from all interested stakeholders, in particular network companies, gas shippers, consumer groups, environmental groups, and the public. This document sets out our proposed FIOC Project Direction and seeks responses to specific questions. The responses we receive will be considered before our final decision is issued.

We want our consultations process to be transparent. So we intend publishing the non-confidential responses on our website at Ofgem.gov.uk/consultations along-side our decision. If you want your response – in whole or in part – to be considered confidential, please tell us and explain why. Please clearly mark the parts of your response that you consider to be confidential. If possible, confidential material should be supplied in separate appendices.

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Executive summary

Western Gas Network Project – FIOC Project Direction

In December 2021 we published our decision to approve the needs case for significant investment in network assets between Milford Haven and Churchover, the Western Gas Network Project. This network upgrade will facilitate the release of 163GWh/d of Incremental Obligated Entry Capacity at Milford Haven Liquefied Natural Gas import terminal in South Wales, as requested by South Hook Gas Company Ltd.

Funding for network investments of this nature is secured through a two stage process set out in Special Condition 3.13 (Funded Incremental Obligated Capacity Re-opener and Price Control Deliverable). Following acceptance of the needs case National Gas Transmission may apply for a FIOC Project Direction specifying outputs, delivery dates and allowances necessary to release the requested level of Incremental Obligated Entry Capacity.

To secure the release of Incremental Obligated Entry Capacity, South Hook Gas Company Ltd is required to provide a financial commitment prior to construction.[1] In this case, the financial commitment represents a material contribution to the estimated cost of the Western Gas Network Project.[2] Increasing entry capacity at Milford Haven Liquefied Natural Gas import terminal will better facilitate security of supply for gas consumers in Great Britain.

National Gas Transmission submitted a FIOC Project Direction application for the Western Gas Network Project on 25 May 2023. This requested £67.09m (2018/19 prices) of additional allowances. The outputs to be delivered include 11 km of new pipeline, pressure uprating part of the Feeder 28 pipeline and related work at above ground installations and compressor stations. These outputs are to be delivered by 1 January 2026. The purpose of the project is the release of 163GWh/d of Incremental Obligated Entry Capacity at the Milford Haven Aggregated System Entry Point.

[1] Through the allocation of capacity prior to the start of construction (Planning and Advanced Reservation of Capacity Agreement Phase 3).
[2] This is calculated in accordance with National Gas Transmission's Entry Capacity Release Methodology Statement.

Our Decision

Having considered the evidence presented in the application submitted by National Gas Transmission on 25 May 2023, we propose issuing a FIOC Project Direction which will modify Appendix 2 of Special Condition 3.13 as follows.

Allowances £m (2018/19 prices)					
2021/22	2022/23	2023/24	2024/25	2025/26	Total
1.977	5.696	13.496	40.834	0.404	62.407

Funded incremental obligated capacity reopener allowances (FIOCOt) by Regulatory year

Project	Output	Delivery Date	Allowance £m (2018/19 prices)
Western Gas Network Pipeline	9km of 900mm diameter pipeline between Wormington Multijunction and Honeybourne Multijunction 2km of 900mm diameter pipeline between Churchover Compressor and Churchover Multijunction	1 January 2026	52.204
Western Gas Network Pressure Uprating	Increase the Maximum Operating Pressure along Feeder 28 between Felindre Compressor Station / Multijunction and Three Cocks Above Ground Installation	1 January 2026	10.203
Western Gas Network Felindre Compressor Station	Scope uncertainties listed in the Western Gas Network FIOC Project Direction published on 18 August 2023 necessary to increase Maximum Operating Pressure along Feeder 28.	1 January 2026	0.001

Funded incremental obligated capacity Price Control Deliverables

We propose identifying four specific Cost And Output Adjusting Events in the case of the Western Gas Network Pipeline element. National Gas may apply for a direction to modify the outputs, delivery dates and associated allowances in Appendix 2 if a Cost And Output Adjusting Event has caused expenditure to increase or decrease by at least 5% relative to the relevant allowance. These Cost And Output Adjusting Events are:

- Archaeological works that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Extreme Weather Events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Protestor action that result in the the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Prevention events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025

We also propose identifying a single Cost And Output Adjusting Event in the case of the Western Gas Network Felindre Compressor Station element. National Gas may apply for a direction to modify the outputs, delivery dates and associated allowances in Appendix 2 once

- Resolution of all outstanding scope uncertainty listed in the the Western Gas Network FIOC Project Direction published on 18 August 2023

Next Steps

We welcome views on our draft FIOC Project Direction and the contents of this consultation. Specific questions have been included in Chapters 4 and 5. Please send your response to: graham.craig@ofgem.gov.uk by 24 July 2023. We expect to publish our decision no later than 18 August 2023.

1. Introduction

What are we consulting on?

1.1. This consultation sets out our minded to position on the application for a Western Gas Network Project FIOC Project Direction, submitted by National Gas Transmission on 25 May 2023.

1.2. This consultation sets out our assessment of the evidence presented in the application for a FIOC Project Direction and the various factors we have considered when reaching our minded to position. We are seeking views from interested stakeholders on our assessment of the evidence and our proposed FIOC Project Direction for the Western Gas Network Project.

Consultation Process

1.3. Figure 1 shows the stages of this consultation process:

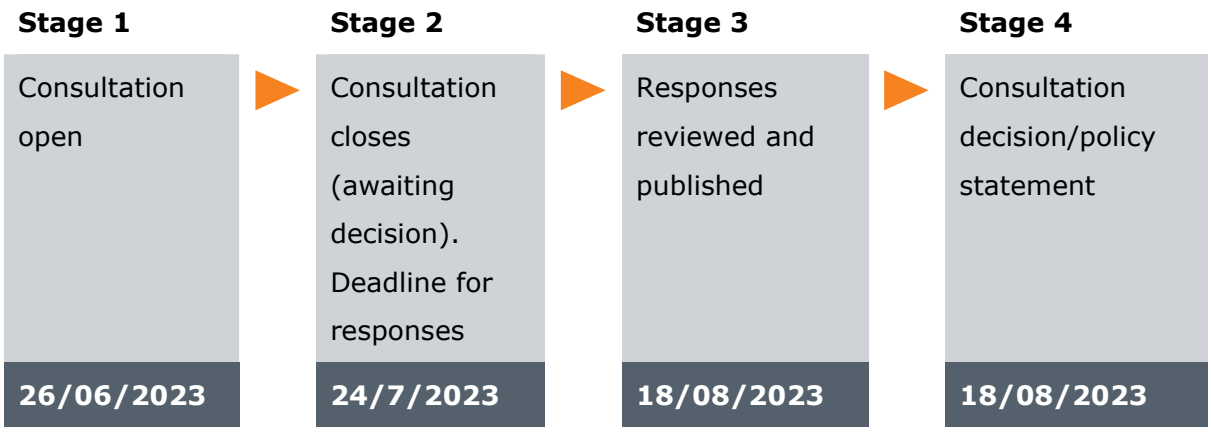


Figure 1 - Consultation Process Stages and Timings

How to respond

1.4. 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 on 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

1.5. 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.

1.6. 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 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.

1.7. 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 UK 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.

1.8. 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.

General feedback

1.9. We believe that consultation is at the heart of good policy development. We welcome any comments about how we have run this consultation. We would also like to get your answers to these questions:

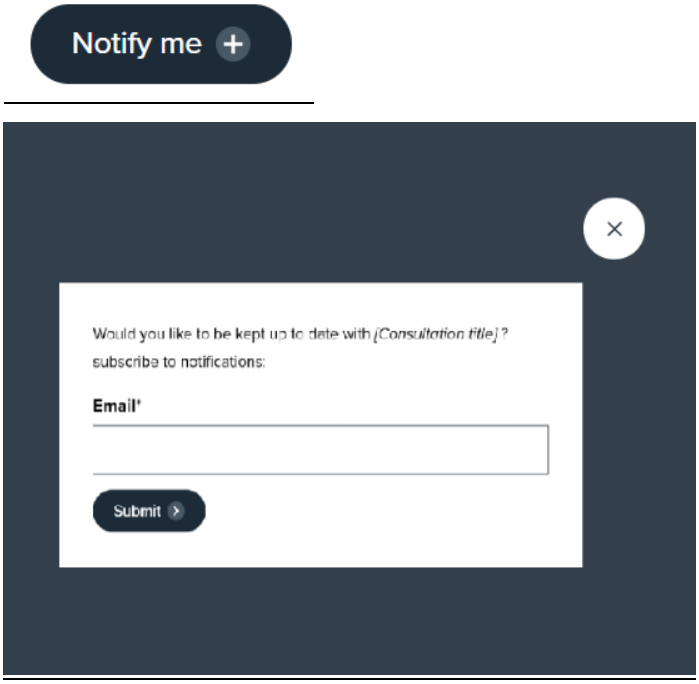
1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?

3. Was it easy to read and understand or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6. Any further comments?

Please send any general feedback comments to stakeholders@ofgem.gov.uk

How to track the progress of the consultation

You can track the progress of a consultation from upcoming to decision status using the 'notify me' function on a consultation page when published on our website. Ofgem.gov.uk/consultations.



Once subscribed to the notifications for a particular consultation, you will receive an email to notify you when it has changed status. Our consultation stages are:

Upcoming ▶	Open ▶	Closed (Awaiting decision) ▶	Closed (With decision)

2. Funded Incremental Obligated Capacity Re-opener and Price Control Deliverable mechanism

Section summary

This Chapter gives an overview of the RIIO-2 Re-opener mechanism and our assessment process.

Overview of the Funded Incremental Obligated Capacity Re-opener

2.1. The gas transmission network in Great Britain is owned and operated by National Gas Transmission. Economic regulation of the network follows the RIIO (Revenue = Incentives + Innovation + Outputs) price control framework. The current RIIO-T2 price control period will last five years from 1 April 2021 to 31 March 2026. Prior to commencement of the price control period, we set out in our Final Determinations[3] our policy on the economic regulation of the network during the period. These policy decisions were given effect by new Special Conditions in Part C of the National Gas Transmission gas transporter licence, which came into force on 1 April 2021.

2.2. Special Condition 9.13 Capacity Requests, Baseline Capacity and Capacity Substitution stipulates the level of capacity that National Gas Transmission must make available at each entry and exit point on the National Transmission System.[4] Should a customer require additional capacity to be made available at any of these entry or exit points, it must make the request by submitting a Planning and Advanced Reservation of Capacity Agreement (PARCA) application to National Gas Transmission. A condition of the PARCA mechanism is that the customer must make a financial contribution in the form of advanced capacity bookings to secure the additional capacity. National Gas Transmission may meet this request by implementing some combination of the following:

- Network reinforcement

[3] Final Determinations - NGGT Annex Revised (10).pdf
[4] Licence Baseline Entry Capacity and Licence Baseline Exit Capacity

- Substitution with spare capacity from other entry or exit points
- Management of constraint cost risk associated with releasing additional capacity without reinforcement or substitution

2.3. If National Gas Transmission determines that network reinforcement is required, the necessary funding is requested using the Funded Incremental Obligated Capacity Re-Opener and Price Control Deliverable mechanism, provided for in Special Condition 3.13. This mechanism has two separate stages

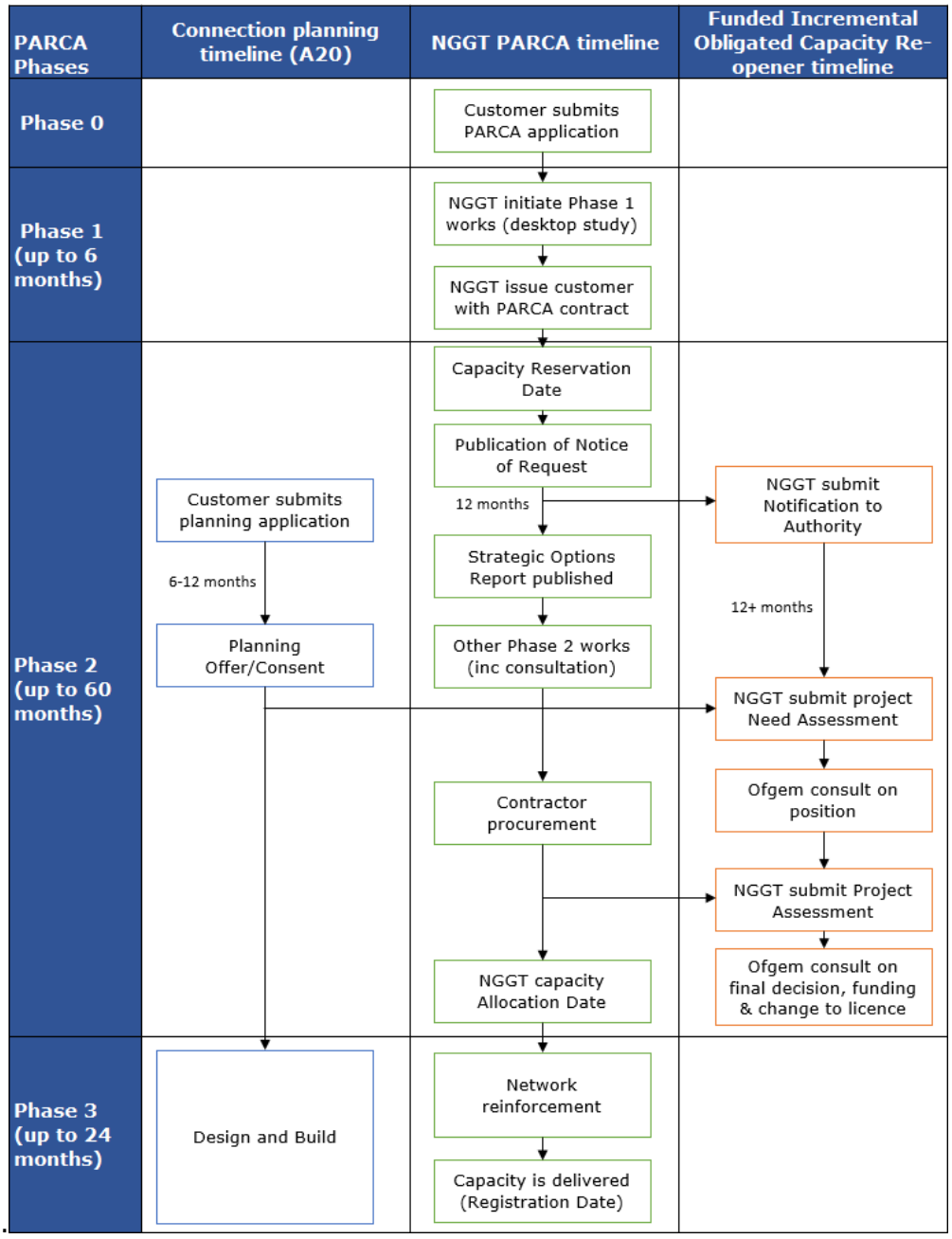
- **Stage 1 Needs Case Assessment[5] –** At this early stage of project development we decide whether network reinforcement is the best way to make the additional capacity available or whether some combination of the other options available would allow the additional capacity to be made available at lower cost. Approval of the needs case is required before National Gas Transmission can proceed to the next stage.
- **Stage 2 FIOC Project Direction Assessment** – At this stage we make our final decision as to the level of funding made available, the outputs to be delivered and the timing of output delivery. The FIOC Project Direction gives effect to this decision by creating a Price Control Deliverable, the parameters of which are set out in Appendix 2 of Special Condition 3.13. National Gas Transmission may only submit a FIOC Project Direction application once a needs case has been approved and any material planning consents have been secured.

2.4. Special Condition 3.13.20 requires that applications must be prepared in accordance with our FIOC Guidance and Submission Requirements Document.[6] In addition compliance with Special Condition 9.4 is required.

2.5. Figure 2 below sets out the interactions between the various stages of the PARCA. Funded Incremental Obligated Capacity Re-opener and National Gas Transmission's Application to Offer (A2O)[7] connection planning timetable.

[5] A needs case assessment can only be submitted 12 months after the submission of a notice under Part A of Special Condition 9.13 unless otherwise directed by the Authority
[6] FIOC Guidance and Submission Requirements Document
[7] National Gas Transmission Application to Offer (A2O) process overview

Figure 2: Overview of the FIOC Re-opener, PARCA and connection planning processes[8]



i.

[8] Reference to NGGT should be red as National Gas Transmission. PARCA Phase 3 duration can be extended by agreement between parties which has been the case for Western Gas Network Project

Western Gas Network Project

2.6. In April 2018 South Hook LNG Gas Company Ltd submitted a PARCA application to National Gas Transmission seeking an additional 163GWh/d of additional entry capacity at Milford Haven. In March 2019 National Gas Transmission published a PARCA Notice of Request for 163 GWh/d of Incremental Obligated Entry Capacity at Milford Haven by 1 January 2026 with zero being provided by capacity substitution.[9]

2.7. In December 2021 we published our decision to approve the needs case for the Western Gas Network Project[10] following the submission of a needs case assessment by National Gas Transmission in July 2021[11]. Approval of the needs case allowed National Gas Transmission to apply for a FIOC Project Direction once all material planning consents had been secured.

2.8. National Gas Transmission submitted a FIOC Project Direction application for the Western Gas Network Project in May 2023. In accordance with our indicative application assessment process, having determined that a valid application had been submitted, we proceeded to a detailed assessment of the application. We made our determination on the validity of National Gas Transmission's application because it was submitted.[12]

- Compliant with the requirements set out in Special Condition 3.13.9
- Compliant with the requirement set out in Special Condition 3.13.20 to prepare the application in accordance with our FIOC Guidance and Submissions Requirements Document.[13]
- Published on the National Gas Transmission website within five working days of submission with any redactions in line with our Re-opener Guidance and Application Requirements Document.[14]

[9] Milford Haven PARCA Notice of Request (RIIO-T1 obligation to publish a notice) Special Condition 9.13 Part A obligation took effect 1 April 2021
[10] Western Gas Network Project FIOC Needs Case Decision
[11] Western Gas Network Project National Gas Transmission Needs Case Assessment Submission
[12] Western Gas Network Project FIOC Project Direction application May 2023 - Appendix 10L – Mapping of Ofgem Requirements
[13] FIOC Guidance and Submissions Requirements Document
[14] Our RIIO-2 re-opener applications (2021-2026) | National Gas Transmission

- Accompanied by a letter of assurance that met the requirements set out in our Re-opener Guidance and Application Requirements Document.[15]

[15] Western Gas Network Project FIOC Project Direction application May 2023 - Appendix 10K Assurance Letter

3. Western Gas Network Project, FIOC Project Direction Application

Section summary

This chapter summarises the information included in the FIOC Project Direction application submitted by National Gas Transmission on 25 May 2023.

Context

3.1. There are currently three Liquefied Natural Gas terminals connected to the National Transmission System, one at Isle of Grain in Kent, and two at Milford Haven in Pembrokeshire South Wales (South Hook LNG and Dragon LNG). Special Condition 9.13 sets the Licence Baseline Entry Capacity for Milford Haven at 950 GWh/day.

3.2. In April 2018 South Hook LNG Gas Company Ltd submitted a PARCA application to National Gas Transmission seeking an additional 163 GWh/d of additional entry capacity at Milford Haven. National Gas Transmission have given notice that they will make this additional entry capacity available by 1 January 2026.

3.3. In December 2021 we published our decision to approve the needs case for the Western Gas Network Project to deliver the additional entry capacity at Milford Haven. Approval of the needs case allowed National Gas Transmission to apply for a FIOC Project Direction once all material planning consents had been secured.

3.4. As part of our needs case assessment, we approved the adoption of the preferred strategic option identified by National Gas Transmission. This allowed the development of a final preferred option for inclusion in any FIOC Project Direction. Our assessment was that National Gas Transmission had followed a robust option selection process to identify a preferred strategic option that represented an appropriate balance between delivering the required level of network capability whilst limiting investment costs.

3.5. A Cost Benefit Analysis was the primary tool used to identify the preferred strategic option from a shortlist of technically viable options including a counterfactual (do nothing). A separate analysis for each of four Future Energy Scenarios was provided. To reflect the level of uncertainty with respect to future gas demand,the time horizon for the main

analysis was limited to 2035. The sensitivity of the analysis to different assumptions on time horizons, constraint management costs and capital investment costs was tested.

3.6. The preferred strategic option required the least capital investment while delivering a similar reduction in constraint management costs as other more costly options. The design of the preferred strategic option facilitates future investment in response to developments in the gas industry. It involves a base level of network reinforcement that can be added to later, if necessary. The key features of the preferred strategic option were:

- Construction of additional high pressure pipeline between Wormington and Honeybourne (9km), also between Churchover Compressor Station and Churchover Multijunction (2km)
- Related works at existing Above Ground Installations to facilitate connection of new pipeline
- Uprating Maximum Operating Pressure of existing high pressure pipeline between Felindre and Three Cocks, also between Felindre and Cilfrew
- Related works at existing Above Ground Installations and Compressor Stations to facilitate uprating

3.7. National Gas Transmission submitted a FIOC Project Direction application for the Western Gas Network Project on 25 May 2023. This was based on the identification of a final preferred option from the further development of the preferred strategic option.

Project Option Selection

3.8. As noted above the project has been the subject of company and regulator stage gate type reviews during the RIIO-T2 price control period. Figure 2 below illustrates the key milestones and decision points for this project.

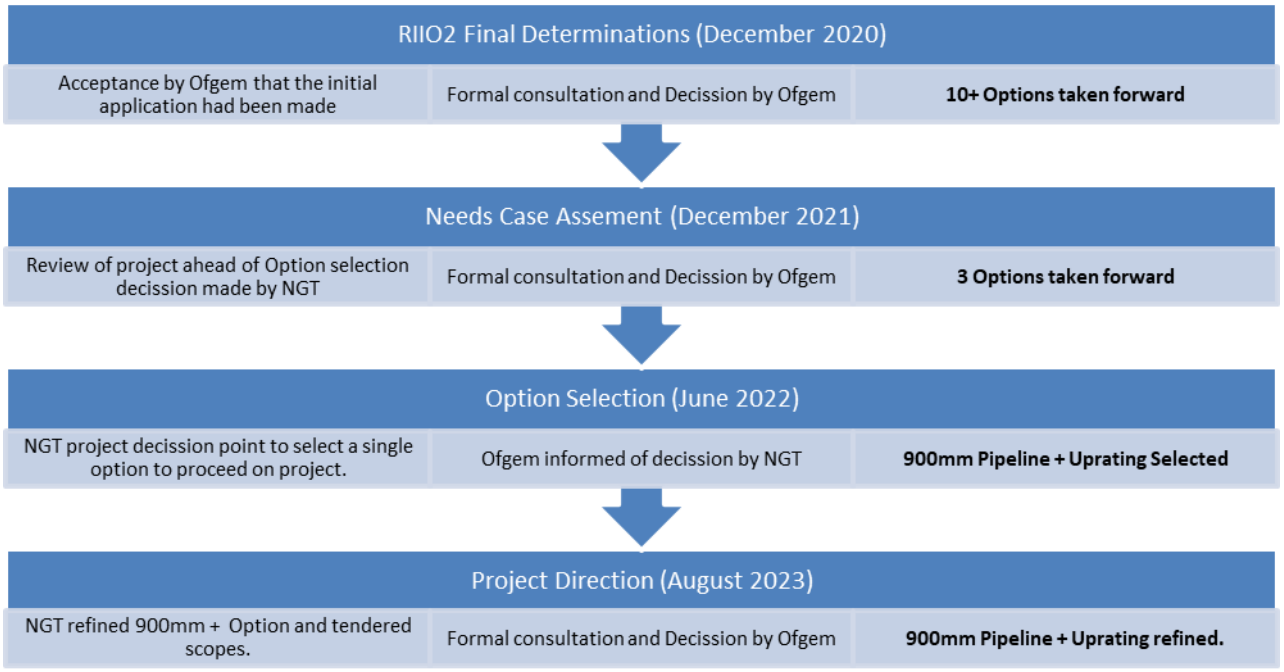


Figure 2 Project Milestones and Decision Points

3.9. Following the option selection decision made by National Gas Transmission in June 2022 the project team have been working on refining the scope of a single option that looks to install 900mm diameter pipelines at Wormington and Churchover with associated uprating modifications. This approach follows a typical project process and is in line with projects completed across the portfolio.

Post Option Selection Cost Benefit Analysis

3.10. As part of the project direction submission National Gas Transmission revisited the Cost Benefit analysis completed in earlier stages of the project using the most recent cost and Future Energy Scenario data. The purpose was not to revisit the option selection decision but to confirm that the business case for the selected option had not fundamentally changed.

3.11. As part of the Cost Benefit Analysis National Gas Transmission included options that considered installing 1200mm diameter pipeline alongside refinements of the selected option, installing 900m diameter pipelines. The 1200mm diameter pipeline options

included below are used to support the decision to proceed and are no longer options that are open to the project.

3.12. Table 1 below summarises the key components of the seven options included in the Cost Benefit Analysis.

Option	Descriptor	Pipeline	Uprating	Tirley	Churchover
a	Counterfactual		Counterfactual Existing Network		
c	F6.6 1200 Base	1200 Wormington to Honeybourne	All uprating	Biggest Tirley bypass	Churchover partial bypass
d	F6.6 1200 Light	1200 Wormington to Honeybourne	Uprating only downstream of Felindre	Existing bypass at Tirley	Churchover partial bypass
e	F6.6 900 Light	900 Wormington to Honeybourne	Uprating only downstream of Felindre	Existing bypass at Tirley	Churchover partial bypass
f	F6.6 900 Min	900 Wormington to Honeybourne	No Uprating	Existing bypass at Tirley	Churchover partial bypass
x	F6.6 900 Light. No Tirley bypass	900 Wormington to Honeybourne	Uprating only downstream of Felindre	No bypass at Tirley	Churchover partial bypass
y	F6.6 900 Min. No Tirley bypass	900 Wormington to Honeybourne	No uprating	No bypass at Tirley	Churchover partial bypass

Table 1 –Option summary

3.13. Table 2 below provides a summary of the estimated capital expenditure required to deliver each of the seven options included in the Cost Benefit Analysis. These estimates were derived by National Gas Transmission before the outcome of the competitive tenders for both pipelines and uprating were known. The cost confidence interval for these estimates is between -20% and +30%.

Option	Estimated Capital Expenditure £m (2018/19 prices)
a. Counterfactual	0.0
C. F6.6 1200 Base	104.2
d. F6.6 1200 Light	86.5
e. F6.6 900 Light	77.7
f. F6.6 900 Min	71.6
x. F6.6 900 Light. No Tirley bypass	75.7
y. F6.6 900 Min. No Tirley bypass	69.6

Table 2 - Options Estimate Capital Expenditure

3.14. The other cost included in the Cost Benefit Analysis is constraint management. Estimates are derived using a probability-based forecasting model and vary between options and between Future Energy Scenarios. The four Future Energy Scenarios as described in the National Grid ESO FES[16] provide different pathways to a net zero future. These range from Steady Progression, which falls just short of the net zero target, to Leading the Way which achieves net zero ahead of 2050. Each scenario is dependent on assumptions about changes to government policy and legislation, energy delivery and consumption, consumer behaviour, technological change, and government incentives and investment. The Future Energy Scenarios provide a broad envelope of energy backgrounds, against which the merits of alternative investments may be appraised.

3.15. The two lower natural gas usage scenarios (Consumer Transformation and Leading the Way) meet carbon reduction targets via electrification with changes in consumer behaviour and large improvements in energy efficiency. The use of hydrogen is considered in Leading the Way and System Transformation. Hydrogen is produced entirely using renewable electricity in Leading the Way whereas in System Transformation gas continues to be used to produce blue hydrogen.

[16] Future Energy Scenarios 2022 | National Grid ESO

3.16. Constraint management costs, capacity buy backs and locational balancing arise because of the commercial actions the gas system operator takes to match the requirements of network users with the physical capabilities of the network. Constraint management cost volumes are forecast using a network capability analysis model developed by National Gas Transmission to define the capability of the National Transmission System. Further details are given in the Gas Ten Year Statement (GTYS)[17] and Annual Network Capacity Assessment Report (ANCAR).[18]

3.17. Table 3 below sets out the output from the Cost Benefit Analysis. The option with the highest Net Present Value (in this case the lowest negative) is the one that delivers the additional entry capacity requested but minimises capital expenditure and constraint management costs. In alignment with our needs case decision, the period over which constraint management costs are forecast is limited to 2035 in this Cost Benefit Analysis.

NPV £m (2018 - 19 prices)	Steady Progression	Consumer Transformation	Leading the Way	System Transformation
a. Counterfactual	-£642 m	-£2,241 m	-£2,444 m	-£696 m
c. F6.6c 1200 Base	-£158 m	-£605 m	-£721 m	-£170 m
d. F6.6d 1200 Light	-£147 m	-£727 m	-£884 m	-£164 m
e. F6.6e 900 Light	-£141 m	-£719 m	-£869 m	-£158 m
f. F6.6f 900 Min	-£160 m	-£883 m	-£1,033 m	-£178 m
x. F6.6x 900 Light. No Tirley bypass	-£140 m	-£721 m	-£869 m	-£157 m
y. F6.6y 900 Min. No Tirley bypass	-£169 m	-£912 m	-£1,056 m	-£185 m

Table 3 - Cost Benefit Analysis Outputs

3.18. The lower Net Present Value figures for the low gas scenarios reflect higher constraint management costs. As gas demand declines, less of the gas entering the National Transmission System at Milford Haven is consumed in South Wales. This results in higher increased volumes of gas being transported out of South Wales into the heart of

[17] Gas Ten Year Statement (GTYS) | National Gas Transmission
[18] Network Capability | National Gas Transmission

the network. This imposes greater constraints on the transmission network between Milford Haven and Churchover Compressor Station.

Sensitivity Analysis

3.19. Several sensitivities were applied to understand how changes to key variables could impact the investment decision. A key uncertainty is the cost of constraint management. To test the impact of these costs, two scenarios were modelled to capture credible extremes . To find the lower limit for constraint management costs, all constraints were resolved using locational balancing actions.[19] To find the upper limit, a gas price of 300 pence per therm was assumed. This is in line with the highest constraint management cost observed at St Fergus in July 2006.[20] The outputs from these two sensitivity analyses are set out in Table 4 and Table 5 below.

NPV £m (2018 - 19 prices)	Steady Progression	Consumer Transformation	Leading the Way	System Transformation
a. Counterfactual	*-£129 m*	*-£721 m*	*-£778 m*	*-£125 m*
c. F6.6c 1200 Base	*-£102 m*	*-£235 m*	*-£257 m*	*-£104 m*
d. F6.6d 1200 Light	*-£88 m*	*-£264 m*	*-£297 m*	*-£90 m*
e. F6.6e 900 Light	*-£81 m*	*-£257 m*	*-£287 m*	*-£83 m*
f. F6.6f 900 Min	*-£80 m*	*-£309 m*	*-£337 m*	*-£82 m*
x. F6.6x 900 Light. No Tirley bypass	*-£79 m*	*-£256 m*	*-£286 m*	*-£81 m*
y. F6.6y 900 Min. No Tirley bypass	*-£80 m*	*-£317 m*	*-£343 m*	*-£82 m*

Table 4 - Cost Benefit Analysis Outputs (lower limit constraint management costs)

[19] 50% of these are modelled as sells, with all proceeds returned to consumers, resulting in zero impact. The other 50% require a buy action this is costed based on a 20% premium on the prevailing gas price.
[20] Constraints resolved 50% locational actions 50% capacity buy backs as per main Cost Benefit Analysis in Table 3

NPV £m (2018 - 19 prices)	Steady Progression	Consumer Transformation	Leading the Way	System Transformation
a. Counterfactual	*-£3,254 m*	*-£11,337 m*	*-£12,359 m*	*-£3,544 m*
c. F6.6c 1200 Base	*-£485 m*	*-£2,782 m*	*-£3,372 m*	*-£550 m*
d. F6.6d 1200 Light	*-£494 m*	*-£3,443 m*	*-£4,241 m*	*-£584 m*
e. F6.6e 900 Light	*-£492 m*	*-£3,437 m*	*-£4,198 m*	*-£581 m*
f. F6.6f 900 Min	*-£606 m*	*-£4,277 m*	*-£5,042 m*	*-£705 m*
x. F6.6x 900 Light. No Tirley bypass	*-£495 m*	*-£3,450 m*	*-£4,203 m*	*-£582 m*
y. F6.6y 900 Min. No Tirley bypass	*-£658 m*	*-£4,433 m*	*-£5,164 m*	*-£745 m*

Table 5 - Cost Benefit Analysis Outputs (upper limit constraint management costs)

3.20. Given the similarity in modelled investment costs between the options, order of magnitude increases or decreases were required to alter the ranking of options in the Cost Benefit Analysis.

Final Preferred Option

3.21. At the time of the needs case decision, the preferred option was Option F6.6e (900 Light) due to its consistent performance across all Future Energy Scenarios. This was subsequently confirmed as the selected option by National Gas Transmission in June 2022. This option included a 900mm diameter pipeline and pressure uprating downstream of Felindre Compressor Station. Refinements to the option selected in June 2022 have been made in the intervening period and based on the above analysis, Option F6.6x (900 Light. No Tirley bypass) has been identified as the final preferred option.

3.22. As noted above, options involving a 1200mm diameter pipeline are no longer valid but are included in the analysis to support the decision to proceed. The level of constraints anticipated in some Future Energy Scenarios require significant investments including parallel pipeline installation on much more of the route to resolve them. Installing a

1200mm diameter pipeline at this stage would not impact the level of future investment required.

3.23. Tables 6 and 7 provide a summary of project scope for the two parts of the Western Gas Network Project.

High Pressure Pipeline	Wormington to Honeybourne	Churchover Compressor Tee to Multijunction
Start Point	Wormington Multijunction	Churchover Compressor Tee
End Point	Honeybourne Multijunction	Churchover Multijunction
Design Pressure	75 Barg	70 Barg
Design Capacity	45 Million Standard Cubic Metres/Day	45 Million Standard Cubic Metres/Day
Pipeline Length (km)	9 km	2 km
Pipeline Diameter (nominal)	900 mm	900 mm
Expected materials of construction	API 5L X65 / ISO 3183 'L415' Steel	API 5L X65 / ISO 3183 'L415' Steel
Associated Works	Pipeline tie-ins at Wormington Multijunction and Honeybourne Multijunction	Pipeline tie-ins at Churchover Compressor Tee and Churchover Multijunction

Table 6 - Project Scope Summary – Pipelines

Pressure Uprating (Feeder 28) and other Associated Works	
Start Point	Felindre Compressor Station / Multijunction
End Poiint	Three Cocks Above Ground Installation (including works east as far as Tirley)
Design Pressure	102 Barg
Associated Works	Modifications to Felindre Compressor Station, Felindre Multijunction, Alltwern Compressor Recycle Facility, Llanwrda Block Valve, Three Cocks Above Ground Installation and Tirley Pressure Reduction Station

Table 7 - Project Scope Summary – Uprating and Associated Works

3.24. In developing the final preferred option, National Gas Transmission has removed a number of items from the scope of the preferred strategic option identified at the needs

case assessment stage[21]. Table 8 below lists the material changes in scope with a related justification.

Changes in project scope since needs case assessment	
Removal of Wormington Re-wheels	Wormington Compressor Emissions -Final Preferred Option Decision removes the need for gas turbine re-wheel. Variable Speed Drive re-wheel now included in this project.[22]
Removal of Felindre Re-wheel	No longer considered economic and efficient as doing so offers a small capability benefit that is uncertain.
Removal of Feeder 28 Felindre to Cilfrew and Cilfrew Pressure Reduction Station (PRS) Uprating	Uprating requires more extensive modifications to Cilfrew PRS than originally anticipated. The Gas System Operator has accepted reduced system flexibility to avoid the need for significant capital investment.
Removal of Tirley Bypass reconfiguration modifications	Updated network modelling and input from the Gas System Operator has highlighted that any potential benefit would be outweighed by investment required. This is supported by the Cost Benefit Analysis.

Table 8 - Project Scope Summary – Modifications since needs case assessment

3.25. With respect to pipelines, the proposed project design and associated construction techniques are not especially technically challenging or novel. Nor should they result in cost divergence from industry benchmarks. This is not the case with respect to the pressure uprating of Feeder 28, which is regarded as more challenging, since the maximum operating pressure will now exceed classification ratings for some equipment installed on the associated installations.

3.26. There remains significant ambiguity associated with detailed scope definition for the pressure uprating project. In particular at Felindre Compressor Station. This is attributable to delays with the Uprating Assessments and Original Equipment Manufacturer (OEM) Assessments on which they rely. National Gas believe that scope ambiguity does not undermine the business case for uprating or affect the fundamental viability of this approach.

3.27. National Gas Transmission have requested funding of £2.076m to assume this scope uncertainty . The inclusion of scope uncertainties within the risk register would mean the

[21] Western Gas Network Project FIOC Project Direction application May 2023 - Appendix 10I Project Scope Document Query Forms
[22] Wormington Compressor Emissions – Final Preferred Option

total risk percentage for pressure uprating was higher than would normally be acceptable. For this reason a specific pressure uprating Price Control Deliverable Output has been requested to allow the appropriate management of these risks. National Gas Transmission would then detail through the existing reporting requirements[23] those risks that had materialised and request allowance adjustments.

Project Delivery Plan

3.28. The project will be delivered as two distinct work packages: Pipelines and Uprating.

- The pipelines package of works has been tendered for a Detailed Design and Build New Engineering Contract 4 (NEC4) Option C (Target Cost) contract. The Main Works Contractor will develop the Conceptual Design Studies to detailed design, including all associated approval and appraisals before executing the construction works in 2024. In addition to this, two distinct packages of work are currently being tendered for archaeological and site investigations along the pipeline routes and associated above ground installations.'
- The uprating package of works currently consists of several separate technical studies at various stages of completeness.

3.29. Other contracts are in place to support both work packages. These include:

- Purchase of long lead items such as valves and actuators, line pipe and fittings
- Legal services for land purchase and procurement support
- Environmental services
- Community relations
- Land agency / referencing
- A range of other specialist services

3.30. Installation and commissioning of the pipeline in 2024 provides essential pipeline capability which facilitates outage of Felindre Compressor Station. This outage permits

[23] Price Control Deliverable Reporting Requirements and Methodology Document

Control System replacement in 2025 that is necessary to deliver pressure uprating before entry capacity release at Milford Haven on 1 January 2026. Early commissioning of the pipelines also affords National Gas Transmission the opportunity to provide some no-obligated entry capacity before the PARCA deadline.

3.31. Table 9 below is an indicative project plan showing progression through the ND500 stage gate process,[24] purchasing of long lead items, commissioning dates and key operational milestones.

[24] The ND500 process manages and defines the end-to-end lifecycle of projects from inception to closure, for all the investments that National Gas Transmission wants to make in its regulated business. It is a sequential governance and control process, with technical and financial checkpoints.

Cycle	Network Development Stage Gates		Indicative Dates
Pre-FEED Stage 4.0 and 4.1	T0	Generation of Need Case	May 2018 - January 2019
	T1	Accept Need Case	May 2019
	F1	Initial Sanction	May 2019 Re-sanction Feb 2020
	T2	Define Strategic Approach & Outputs Required to Deliver GT Handover to Delivery Unit	April 2020 Revalidated October 2020 and June 2021
FEED Stage 4.2	F2	FEED Sanction and Feasibility Sanction	April 2020 Re-sanction November 2020 and June 2021
	T3	Agreement to Proceed to Conceptual Design	May 2022
	F3	Conceptual Design Sanction and Sanction of long lead items	June 2022
Tender Award Stage 4.3	T4	Scope Freeze	June 2023
Project Execution Stage 4.4	F4	Detailed Design AND Build Sanction (T4-F4-T5)	July 2023
	T5	DDS Challenge, Review & Sign off Maintenance Requirements Identified	February 2024
Acceptance Stage 4.5	T6	Post Commissioning Handover to GT; Operational & Maintenance Complete or Planned	November 2025 – Pipelines November 2026 - Uprating
	F5	Project Closure	May 2027

Table 9 - Project Plan

Risk Management Strategy

3.32. The risk management process adopted by National Gas Transmission is based on ISO 31000:2009, Risk Management – Principles and Guidelines. The process runs throughout the life of the project identifying potential risks and managing their mitigation to reduce the likelihood of them negatively impacting on cost, time, or quality. The risk management process sets out a framework to manage reasonably foreseeable risks in a manner which is proactive, effective, and appropriate. The objective is maximising the likelihood of the project achieving its expected outputs, while maintaining risk exposure at

an acceptable level. The risk management process enables stakeholders to focus attention on those risks potentially able to exert the greatest positive or negative influence on achievement of project outputs. The risk management process is summarised in Figure 3 below

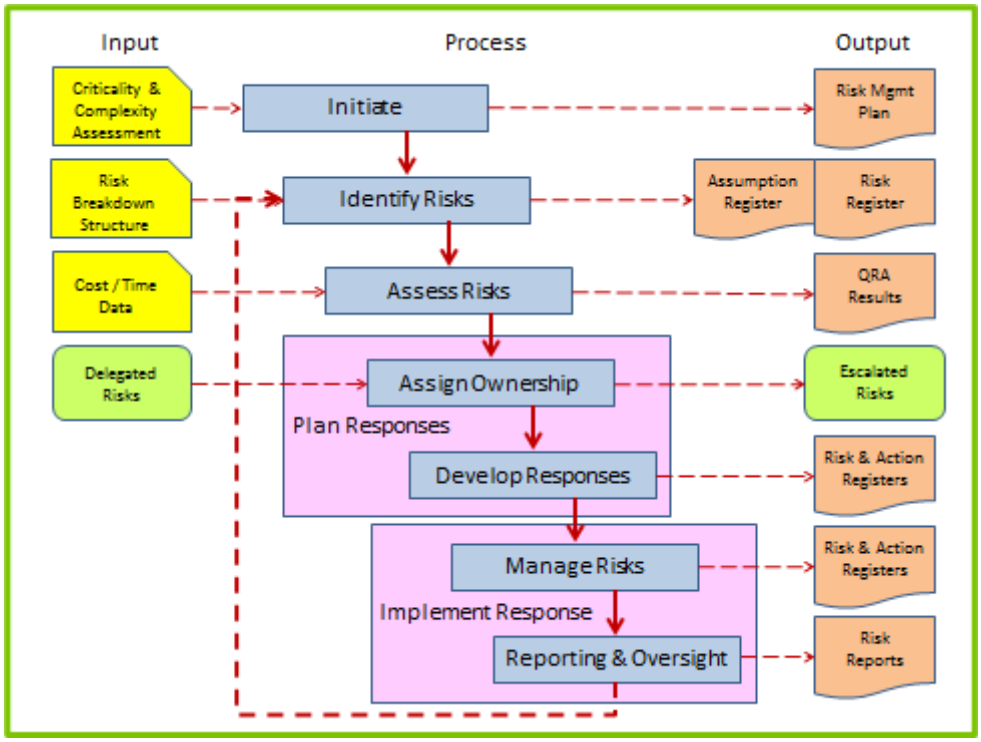


Figure 3 - Risk Management Process (ISO 31000:2009

Procurement Strategy[25]

3.33. The procurement processes followed by National Gas Transmission is set out in its Strategic Sourcing Process which has been developed to be compliant with the principles included in the Utilities Contracts Regulations 2016.[26] The key Western Gas Network Project packages of procurement and their respective routes to market are shown in Table 10 below.

[25] Western Gas Network Project FIOC Project Direction application May 2023 - Appendix 10A Tender Information
[26] Utilities Contracts Regulations 2016

Route to Market	Description
Framework Call Off	• Long Lead Items
	<u>AGI Modifications & Uprating of FEEDER 28:</u> • Detailed Design (Altwern, Llanwrda, Three Cocks, Tirley) • Build (Altwern, Llanwrda, Three Cocks, Tirley)
	• FEED (Felindre) • Detailed Design & Build (Felindre)
Strategic Sourcing Event (Negotiated Procedure)	Detailed Design & Build new Pipelines and associated works

Table 10 - WGN package route to market

3.34. In the case of the contract for the Detailed Design and Build of the new pipeline, a NEC4 Option C (Target Price) was adopted. The Prequalification Questionnaire was issued on 22 August 2021 to over 200 qualifying Achilles[27] registered economic operators. Six questionnaires were received with the four highest scoring respondents proceeding to Invitation To Tender which was made up of two separate stages.

- Stage 1 (29 November 2022 to 27 February 2023): Issue tender documents including draft contract to bidders. Invite exceptions and deviations both legal and technical. Make accepted changes to the draft contract and documentation. This stage was used to market test the risk allocation between National Gas Transmission and the Main Works Contractor.
- Stage 2: Issue final contract at Final Tender stage at which no further exceptions and deviations are accepted.

3.35. The appropriate allocation of risk to the party best able to manage that risk, whether the contractor or National Gas Transmission, is key to effective risk management and

[27] Achilles is the initial qualified vendor route National Gas – along with many other utilities use as the initial route to market

delivering value for consumers. In line with their usual policy National Gas Transmission aligned the Main Works Contract to the standard NEC4 risk allocation position but made adjustments to reflect project specific requirements. Table 11 below summarises the adjustments to the standard NEC4 risk allocation position made to the Main Works Contract. These adjustments were made following feedback from tenderers gained through market testing during the Invitation to Tender process.

Ref*	Risk Description	Contractor	NGT
X1	Inflation - Tender Validity	X	
	Inflation - X1 Contract		X
X2	X2 Change of Law	X	
60.1 (12)	Physical Conditions - General including Ground Conditions	X	
	Physical Conditions - Archaeology		X
	Physical Conditions - Contaminated Ground		X
	Physical Conditions - Environmental		X
	Physical Conditions - Services	X	
60.1 (13)	Weather - Up to 1:10 weather	X	
	Weather - Above 1:10 weather		X
60.1 (19)	Prevention Event		X
60.3	Ambiguity, Inconsistency, illegal or impossible requirement	X	
37	Acceleration where there is culpable delay		X
61.4	Minor CEs (Under 2.5k)	X	
81	Protestor Action		X

Table 11 - Final Tender risk allocation (NEC contract clauses for compensation events)*

3.36. Final tender submissions were received from two bidders. These submissions were marked against the scheme set out in Table 12 below.

Question No.	Section Heading	Pass Mark	Contribution to Final Score
4-8	Price		40.00%
11	Programme	5% PASS/FAIL	10.00%
12-18	Technical Assurance & Methodology		30.50%
17-22	Biodiversity, Sustainability & Stakeholder		8.00%
23-25	Health & Safety		7.50%
26-29	Social Value	0.25% PASS/FAIL (Q26)	4.00%

Table 12 - Tender Assessment Marking Scheme

Funding Request

3.37. Table 13 below summarises the funding request submitted by National Gas Transmission. In addition to any funding provided through the FIOC Project Direction, National Gas Transmission will receive an additional allowance to cover the cost of Closely Associated Indirect costs (engineering design and project management). This is calculated in accordance with Special Condition 3.18 Opex Escalator.

Funding Request £m (2018/19 prices)			
Cost Category	**Pipeline**	**Uprating**	**Total**
Materials / OEM Packages Main Works Contractor Specialist Services Lands & Easements Direct Company Costs Risk / Contingency (Contractor) Risk / Contingency (NGT) Scope Uncertainty			
Funding Request - Direct Cost (£m)	**54.504**	**12.582**	**67.087**

Table 13 – Funding Request Build Up.

3.38. The National Gas Transmission risk contingency allowance request (£[redacted]m) was set at a P50 level. This means that there is a 50% chance of spending above or below the allowance during the delivery of this project.[28]

Cost And Output Adjusting Events

3.39. There may also be low probability high impact events for which it is appropriate that consumers assume the risk rather than National Gas Transmission. Requiring National Gas Transmission to carry such risks would result in a much higher contingency allowance being necessary. This is recognised in Special Condition 3.13 Part D Cost And Output Adjusting Events. This permits National Gas Transmission to apply for an adjustment to allowances and outputs. National Gas Transmission has requested that four events be defined as Cost And Output Adjusting Events in advance. And that the materiality thresholds for these should be set at zero percent of the relevant allowance. These are

- Major or medium archaeological events
- Extreme Weather Events[29]
- Major protestor action
- Major prevention events[30]

3.40. National Gas Transmission estimate that a one year delay to the pipeline project would add between £[redacted]m and £[redacted]m, with the most likely cost being £8.12m. This aligns with the market test which indicated additional contractor costs as being between £[redacted]m and £[redacted]m.

[28] Western Gas Network Project FIOC Project Direction application May 2023 - Appendix 10B Cost Workbook
[29] As defined in Special Condition 1.1 Definitions and Interpretation
[30] Events that an experienced contractor could not reasonably have foreseen or allowed for such as acts of God, War, pandemic (etc)

4. Our assessment and proposed FIOC Project Direction

Section summary

In this chapter we offer for consideration our assessment of the evidence set out in the FIOC Project Direction application and the reasons for our proposed FIOC Project Direction

Questions

Question 4.1: Do respondents agree with our assessment of the evidence presented and our proposal to issue a Western Gas Network FIOC Project Direction?

Question 4.2: Do respondents agree with our proposals with respect to Cost And Output Adjusting Events?

Question 4.2: Do respondents agree with our proposal with respect to Scope Uncertainty relating to Pressure Uprating?

Our assessment of the 'needs case'

4.1. In December 2021 we published our decision to approve the needs case for the Western Gas Network Project to deliver the additional entry capacity at Milford Haven. The evidence presented in the FIOC Project Direction application by National Gas Transmission on 25 May 2023 supports our previous decision.

Our assessment of shortlisted options

4.2. Our assessment is that National Gas Transmission has appropriately refined the previously approved preferred strategic Options to define a final preferred option. We are content with the changes in project scope since the needs case assessment as set out in Table 8. We believe that these changes will reduce project cost without materially reducing the increase in network capability delivered.

Our assessment of key Cost Benefit Analysis parameters

Base Assumptions

4.3. Our assessment is that all the key parameters used in the construction of the Cost Benefit Analysis and set out in Table 14 below are appropriate with a sound rationale. They were taken from the existing regulatory framework or published Government guidance. As set out in our decision on Wormington Compressor Emissions – Final Preferred Option[31] we are not convinced that constraint management method should assume a 50:50 split between capacity buy backs and locational balancing actions. Our concerns have been addressed by National Gas Transmission who have provided a Cost Benefit Analysis assuming 100% locational balancing actions as a sensitivity.

4.4. The assessment period of 10 years is shorter than would normally be used for investments of this nature. However, given the level uncertainty that exists around the future of gas demand and supply, we approved this reduced assessment period at the time of the needs case assessment.

[31] Wormington Compressor Emissions – Final Preferred Option

Category	Assumption	Base Assumption	Rationale
CBA parameters	WACC	2.81%	Defined in RIIO-T2
	Social Time Preference Rate	3.5% (Years 0 – 30) / 3.0 % (30+)	Defined in Green Book
	Regulated Asset Life	45 years	Defined in RIIO-T2
	Assessment Period	10 years	Consistent with Strategic Option selection
	Depreciation	SOTYD	Defined in RIIO-T2
	Capitalisation	75.00%	Defined in RIIO-T2
Constraints	Supply Demand Scenario	FES 2022 – All Scenarios	
	Constraint management pricing	BEIS Gas Price	As defined by Commercial Constraint Price Methodology
	Constraint management method	method 50% buy backs / 50% locational actions	Reflective of tools available to manage constraints

Table 14 - Cost Benefit Analysis Assumptions

Capital Expenditure

4.5. Our assessment is that the capital expenditure estimates included in the Cost Benefit Analysis have been arrived at using appropriate data sources and assumptions that are consistent with the needs case assessment. These estimates were arrived at before the outcome of the competitive tenders for both pipelines and uprating were known. Our assessment is that the outcome of the tenders is in line with what was assumed in the Cost Benefit Analysis.

Constraint Management Costs

4.6. Our assessment is that constraint management cost estimates have been derived using the established probabilistic network capability forecasting methodology that underpins both the Gas Ten Year Statement (GTYS) and Annual Network Capacity Assessment Report (ANCAR). It is outside the scope of this consultation to review this methodology.

Future Energy Scenarios

4.7. Our assessment is that the appropriate Future Energy Scenarios have been used in the Cost Benefit Analysis.

Our assessment of final preferred option

4.8. The Cost Benefit Analysis supports the decision to proceed with the project. Of the valid options considered Option F6.6x (900 Light. No Tirley bypass) has been identified as the final preferred option. We approve Option F6.6x as the final preferred option. The scope of the two parts of this option is set out in Table 6 (pipeline) and Table 7 (pressure uprating) above

4.9. We note that outstanding design activities relating to the pressure uprating scope for the preferred option create some uncertainty within the cost estimate. but we support the approach being taken as a prudent alternative to extensive new build pipelines in the region. With this context we do not believe that the proposed pressure uprating or the outstanding uncertainty about detailed scope undermine the underlying robustness of this part of the final preferred option. In recognition of the uncertainty, we are content with the proposal to create a separate Price Control Deliverable for the pressure uprating project to reflect the uncertainty in the cost estimate. This is a pragmatic approach that will give certainty about project delivery within a timeline that will facilitate entry capacity release at Milford Haven by 1 January 2026.

Our assessment of the Project Delivery Plan[32] and Risk Management Strategy

4.10. Our assessment is that an appropriate project delivery plan has been developed that will meet the capacity release date of 1 January 2026, as required by the PARCA. We note that delivery of the new pipeline before October 2025 will permit a significant proportion of

[32] Western Gas Network Project FIOC Project Direction application May 2023 - Appendix 10J Detailed Delivery Plan

the requested entry capacity at Milford Haven to be made available over winter 2025-26 as non-obligated entry capacity.

4.11. Our assessment is that an appropriate risk management strategy has been adopted

Our assessment of the Procurement Strategy

4.12. Our assessment is that an appropriate procurement strategy has been followed. The procurement process followed National Gas Transmission's Strategic Sourcing Process, which has been developed to ensure compliance with the with the principles included in the Utilities Contracts Regulations 2016. These principles are designed to deliver value for consumers.

- Transparency - contract procedures must be transparent and contract opportunities should generally be publicised
- Equal treatment and non-discrimination - potential suppliers must be treated equally
- Proportionality - procurement procedures and decisions must be proportionate

4.13. The various tender processes aimed to test the ability of potential suppliers to meet the Western Gas Network Project requirements robustly and effectively. All tenders must be evaluated on the basis of Most Economically Advantageous Tender (MEAT), and both price and other factors must be converted into a score, such that the combination of factors add up to determine the winner.

4.14. We believe that NEC4 Option C (Target Price) was an appropriate contract for the Detailed Design and Build of the new pipeline. The NEC4 is the latest set of NEC terms and conditions, which is widely used in the UK construction market. The choice of pricing option, Option C rather than Option A – Priced Contract, was selected early in the tender strategy process after engagement with the market. Option C contains a pain /gain mechanism that provides the contractor with important incentives. Through the Totex Incentive Mechanism an element of any gain will be passed back to consumers.

4.15. We believe that the marking scheme set out in Table 12 is appropriate and likely to identify the Most Economically Advantageous Tender as it:

- Gives the greatest likelihood of delivering the desired results; and

- Ensures the weighting of each aspect of the evaluation criteria mirrors the relative value that each of those elements brings to the business and the Western Gas Network Project.

4.16. The ratio of available marks between cost (40%) and technical ability (60%) in the marking scheme is appropriate for a project of this nature. This ratio should be viewed alongside the sensitivity of an individual bidder's cost mark to their position in the bid stack, which is judged to be medium. A bidder with a cost 1% above the lowest bid, will achieve 1.5% fewer marks. It is difficult for bidders of similar or equal experience, quality and understanding of the requirements to achieve a very large lead in the technical scores,in which case the determination of Most Economically Advantageous Tender is determined mainly by cost competitiveness, without compromising technical ability.

4.17. We believe that there has been an appropriate allocation of risk within the contract between National Gas Transmission and the contractor based on a market test of the sums potential bidders would require to assume particular risks.

Our assessment of funding request

Materials, Main Works Contractor, Specialist Services, Land & Easements, Risk / Contingency (Contractor)

4.18. In making our assessment of the funding request we sought further information on how much of it was based on actual cost data from providers of goods and services and how much was based on National Gas Transmission estimates. Table 15 below shows that 97% of relevant costs are derived from competitive procurement processes. The remainder have been estimated. National Gas Transmission has indicated that, by the time of our final determination, a significant proportion of the outstanding Specialist Services contract value will be known. Our assessment is that no adjustment to the funding request with respect to these cost categories is necessary at this time. Before making our final determination, we will ask National Gas Transmission to update their funding request so that it reflects the most up to date information. This will further increase the proportion of costs derived from competitive processes.

Pipeline Funding Request £m (2018/19 prices)			
Cost Category	**NGT Estimate**	**Funding Request**	**% NGT Estimate**
Materials / OEM Packages			5%
Main Works Contractor			0%
Specialist Services			72%
Lands & Easements			0%
Risk / Contingency (Contractor)			0%
Funding Request - Direct Cost (£m)	**1.973**	**48.990**	**4%**
Uprating Funding Request £m (2018/19 prices)			
Materials / OEM Packages			8%
Main Works Contractor			0%
Specialist Services			0%
Lands & Easements			0%
Risk / Contingency (Contractor)			0%
Funding Request - Direct Cost (£m)	**0.060**	**9.650**	**1%**
Funding Request - Direct Cost (£m)	2.034	58.640	3%

Table 15 – Sources of Funding Request data

Direct Company Costs

4.19. Our assessment of the funding request for Direct Company Costs is that these should be adjusted to remove one activity, Watching Brief, which accounted for 18.4% of the funding request for the Pipeline project. We do not believe it is appropriate to fund this activity. Table 16 below set out our proposals for Direct Company Costs.

Direct Company Costs £m (2018-19 prices)			
	Pipeline	**Uprating**	**Total**
Technicians	0.441	0.143	0.584
Safety Inspection	0.514	0.075	0.589
Funding Request	**0.955**	**0.219**	**1.173**
Technicians	0.265	0.143	0.408
Safety Inspection	0.514	0.075	0.589
Our Proposal	**0.779**	**0.218**	**0.997**

Table 16 – Direct Company Costs

Scope Uncertainty (Uprating only)

4.20. We do not propose including the funding request relating to scope uncertainty associated with Pressure Uprating (£2.076m)should be included in our assessment of Risk / Contingency. We do not propose addressing this uncertainty in the way suggested by National Gas Transmission, that is through adjusting the Price Control Deliverable in accordance with the Evaluative PCD Assessment Principles set out in Special Condition 9.3.

4.21. Instead, we propose creating a specific Felindre Compressor Station Price Control Deliverable with zero value, alongside a specified Cost And Output Adjusting Event that can be triggered once the existing scope uncertainty has been resolved. We believe that this approach provides certainty to all stakeholders as it will ensure the appropriate allowance (including risk and contingency) is in place before delivery of the relevant output commences. We believe that, given the nature of scope uncertainty, the list of outputs to be delivered and their cost is subject to such a divergence of possible outcomes that relying on adjusting the Price Control Deliverable in accordance with the Evaluative PCD Assessment Principles would not be appropriate.

4.22. The scope uncertainties subject to this mechanism are set out below. While the majority ar at Felindre Compressor Station they are not limited to that site. The application should be made once all the uncertainties have been resolved, in which case we would expect to limit our assessment of the application to cost efficiency.

- T-65963 NG specifications review findings
- T-65965 Purchase additional Central Emergency stock
- T-65970 Surge control and recycle loop modifications at Felindre CS
- T-65971 New meter at Felindre CS
- T-65969 New fuel gas skids and air intake modifications at Felindre CS
- T-65026 Felindre Compressor Noise
- T-65968 Power Mechanical valves and actuators (CS) replacement
- T-65972 Pipework support reinforcement
- T-65973 Pipework stress analysis exception resolution
- T-66613 Felindre Vent Stack Replacement

Risk / Contingency (NGT)

4.23. In making our assessment of the funding request for Risk / Contingency, we were mindful of our Final Determination that we had capped risk allowances at 10% of project costs and that we had not included a risk allowance, where cost evidence was based on contracted information. We did however recognise that the appropriate level of risk should reflect project maturity and complexity, amongst other things. While we are not reviewing contractor risk and contingency values included in Table 15 above, these will be included when assessing whether the 10% has been exceeded.

4.24. National Gas Transmission based their funding request on a P50[33] analysis. This this is a recognised and appropriate methodology for calculating a Risk / Contingency allowance. In making our assessment we sought further information on the individual items included in the build-up of the request and the associated probabilities. We set out in Table

[33] A probability analysis where the requested value is at the point where there is a 50% change that actual out-turn will be above or below that value

17 below a summary of our bottom up analysis. For reasons of brevity the table only gives detail for those items for which we propose an adjustment.

Description	Risk Reference		Proposal
	Pipeline	Uprating	
Defective Materials	T-67757	T-67758	Reduce by 50% as NGT has systems to manage
Untimely provision of free issue materials to Contractor	T-66113	T-65975	Reduce by 50% as NGT has systems to manage
Untimely provision of outages to Contractor	T-41626	T-65974	Disallow as under NGT control
Untimely access to operational sites for contractor	T-67654		Disallow as under NGT control
Prevention Event	T-65939	T-65947	Reduce by 50% to reflect COAE (pipelines only)
Physical Conditions - Archaeology	T-66082		Reduce by 50% to reflect COAE
Pipe Import Duty	T-54049		Disallow as under NGT control
Detailed design problems (including Client Element)	T-65940		Disallow as under NGT control
Change in Law		T-65957	Disallow in line with Final Determinations[34]
Uprating Scope Uncertainty		T-58306	Disallow as separate uncertainty PCD

Table 17 – Proposed Adjustment to Risk / Contingency Funding Request

4.25. Implementing these adjustments would reduce the Risk and Contingency funding request by 46% in the case of the Pipeline element and by 48% in the case of the Pressure Uprating element of the project. Risk / Contingency, both contractor and National Gas Transmission for the Western Gas Project (excluding scope uncertainty) would be 8.5%.

Our Proposal

4.26. Table 18 below sets out our minded to allowances for each part of the Western Gas Network Project.

[34] Final Determination SGN Annex

Proposed Allowances £m (2018/19 prices)						0
Project	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**Total**
Pipeline	0.484	4.943	10.868	35.571	0.338	52.204
Pressure Uprating	1.493	0.753	2.628	5.263	0.066	10.203
Scope Uncertainty	0.000	0.000	0.000	0.000	0.001	0.001
Total Allowance	**1.977**	**5.696**	**13.496**	**40.834**	**0.404**	**62.407**

Table 18 – Proposed Allowances

Cost And Output Adjusting Events

4.27. We propose to make a direction with respect to the four events identified by National Gas Transmission and, for the purposes of Special Condition 3.13.11, to direct a percentage increase or decrease. Of 5%.

- Archaeological works that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Extreme Weather Events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Protestor action that result in the the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Prevention events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025

4.28. The estimated maximum cost of any of these four events is below the threshold required by Special Condition 3.13.11 (C), 20% of relevant allowance . It is also below the materiality threshold of £10.7m defined in Special Condition 1.1 Interpretations and Definitions. We do not propose to set the threshold at the requested 0%. We believe this would provide an inappropriate incentive. We propose a figure of 5% the relevant allowance

being that for the Pipeline Price Control Deliverable. Based on Table 18 above this equate to a value of £2.610m. This is below the minimum estimated cost of £4.39m. Under the Totex Incentive Mechanism consumers would bear 61% of any increase in costs should the threshold not be met.

4.29. In making our assessment we took account of the allocation of risk between the various parties as set out in Table 19 below.

Risk	MWC – Risk Owner (incl. in funding request)	NGT – Risk Owner (incl. in funding request)	Consumer – COAE (to be triggered following Special Condition 3.13 Part D)
Physical Conditions – Archaeology	The contractor takes the risk of archaeology that they can reasonably foresee from the information available to them or which takes two or less weeks to mitigate.	NGT take the risk of all other archaeology that could not have been reasonably foreseen and takes more than two weeks to remediate, up to major archaeological finds (see consumer risk). **T-66082 (pipelines)** on the risk register.	The consumer takes the risk of major finds such as a Roman Villa and or archaeology which would cause an impact to the programme so that works cannot be complete in the 2024 construction window and the project/contractor has to re-mobilise to complete the works in 2025.
Weather	The contractor takes the risk of weather (as defined – mainly rain) up to the 1 in 10 value.	NGT take the risk of weather above the 1 in 10 to the extent that the weather impact does not cause a delay of construction works into the following delivery season. **T-66089 (pipelines)** on the risk register.	The consumer takes the risk of extreme weather events that would cause an impact to the programme so that works cannot be completed in the 2024 construction window and the project/contractor has to re-mobilise to complete the works in 2025.
Protestor Action	The contractor takes the risk of protestors/protestor action on the site (defined) only insofar as they have complied with the Scope, the Security Annex and the Applicable Law and taken reasonable actions to	NGT takes the risk of all other protestor action to the extent that it does not cause a delay of construction works into the following delivery season. **T-42223 (pipelines) and T-65952**	The consumer takes the risk of protestors/protestor action would cause an impact to the programme so that the works cannot be completed in the 2024 construction window and the project/contractor has to re-mobilise to complete the works in 2025.

	prevent protestor/protestor action.	**(uprating)** on the risk registers.	
Prevention Event (Pandemic (other than in respect of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)), acts of God, fire, explosion, flood, acts of terrorism, war, rebellion, riot, acts of Government, sabotage, official strike or similar official dispute (other than a strike or official dispute by contractor personnel) or shortage of fuel on a national level)	The contractor takes the risk up the position where the Prevention Event stops the contractor completing the whole of the works or stops the contractor completing the whole of the works by the date of planned completed shown on the accepted programme.	NGT take the risk above this to the extent that the delay does not cause a delay of construction works into the following delivery season. **T-65939 (pipelines) and T-65947 (uprating)** on the risk registers.	The consumer takes the risk where the works cannot be completed in the 2024 construction window and the project/contractor has to re-mobilise to complete the works in 2025.

Table 19 – Allocation of risk between parties

Discussion

4.30. We set out in paragraphs 4.4 and 4.5 of our FIOC Guidance and Submission Requirements Document the various considerations we would take account of when reaching a FIOC Project Direction Determination. Table 20 below sets out our minded to position on each consideration.

FIOC Guidance paragraph 4.4 and 4.5	Our Assessment
Final Preferred Option	As set out above we approve the final preferred option identified by National Gas Transmission, Option F6.6x
Consumer Value	As set out above the updated information provided by National Gas Transmission supports our decision published in December 2021 to approve the Western Gas Network Project needs case
Delivery Readiness	As set out above we believe that National Gas Transmission are implementing an appropriate Project Delivery Plan and Risk Management Strategy. These will ensure that the Western Gas Network Project is completed to in time to facilitate the release of entry capacity at Milford Haven by 1 January 2026 as required by the relevant PARCA agreement.
Cost Efficiency	As set out above the level of funding requested by National Gas Transmission, subject to our proposed adjustments, represents an efficient level of costs to deliver the Western Gas Network Project.
Procurement Strategy	As set out above we believe that National Gas Transmission have followed an appropriate Procurement Strategy

Table 20 – FIOC Guidance Assessment

4.31. Based on this assessment we propose to issue a Western Gas Network FIOC Project Direction. Our proposed draft FIOC Project Direction is set out in Chapter 5 below.

5. Proposed FIOC Project Direction

Section summary

In this chapter we set our proposed Final Preferred Option

Questions

Question 5.1: Do respondents agree with our draft FIOC Project Direction?

Our Proposal

5.1. Having considered the evidence presented in application submitted by National Gas Transmission on 25 May 2023. We propose issuing a FIOC Project Direction which will modify Appendix 2 of Special Condition 3.13 as follows.

Allowances £m (2018/19 prices)					
2021/22	2022/23	2023/24	2024/25	2025/26	Total
1.977	5.696	13.496	40.834	0.404	62.407

Funded incremental obligated capacity reopener allowances (FIOCOt) by Regulatory year

Project	Output	Delivery Date	Allowance £m (2018/19 prices)
Western Gas Network Pipeline	9km of 900mm diameter pipeline between Wormington Multijunction and Honeybourne Multijunction 2km of 900mm diameter pipeline between Churchover Compressor and Churchover Multijunction	1 January 2026	52.204
Western Gas Network Pressure Uprating	Increase the Maximum Operating Pressure along Feeder 28 between Felindre Compressor Station / Multijunction and Three Cocks Above Ground Installation	1 January 2026	10.203

Western Gas Network Felindre Compressor Station	Scope uncertainties listed in the Western Gas Network FIOC Project Direction published on 18 August 2023necessary to increase Maximum Operating Pressure along Feeder 28.	1 January 2026	0.001

Funded incremental obligated capacity Price Control Deliverables

5.2. We propose identifying four specific Cost and Output Adjusting Events in the case of the Western Gas Network Pipeline element. National Gas may apply for a direction to modify the outputs, delivery dates and associated allowances in Appendix 2 if the event has caused expenditure to increase or decrease by at least 5% relative to the relevant allowance.13. These Cost and Output Adjusting Events are:

- Archaeological works that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Extreme Weather Events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Protestor action that result in the the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025
- Prevention events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025

5.3. We also propose identifying a single Cost And Output Adjusting Event in the case of the Western Gas Network Felindre Compressor Station element. National Gas may apply for a direction to modify the outputs, delivery dates and associated allowances in Appendix 2 once

- Resolution of all outstanding scope uncertainty listed in the the Western Gas Network FIOC Project Direction published on 18 August 2023

5.4. The proposed text of the Direction is set out in Appendix 1

Appendix 1 – Draft Direction

Direction under Special Condition 3.13.8 of the gas transporter licence held by National Gas Transmission plc to specify the outputs, delivery dates and allowances required to allow the licensee to release Incremental Obligated Entry Capacity that cannot be provided by Entry Capacity Substitution, through the Western Gas Network Project and to specify Cost And Output Adjusting Events in relation to particular outputs together with related percentage thresholds.

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

2. Special Condition 3.13 (Funded incremental obligated capacity Re-opener and Price Control Deliverable (FIOCt and FIOCREt)) of the Licence provides a mechanism, by which the Licensee may apply for an adjustment to its allowed expenditure, required to release Incremental Obligated Entry Capacity or Incremental Obligated Exit Capacity that cannot be released by Entry Capacity Substitution or Exit Capacity Substitution; specifying the outputs, delivery dates and associated allowances for the Price Control Deliverable. It also provides for the Authority to direct Cost and Output Adjusting Events in relation to particular outputs together with related percentage thresholds.

3. Special Condition 3.13.8 provides that the Licensee must apply to the Authority for a FIOC Project Direction amending the outputs, delivery dates or allowances in Appendix 2 of Special Condition 3.13, only:
    a) once it has obtained the Authority's approval of the need for the proposed output, to which the application relates; and
    b) once it has secured any material planning consents in relation to the proposed output, unless the Authority otherwise directs.

4. These conditions have been met because:
    a. the Authority has approved the FIOC Need Case Submission for the Western Gas Network (WGN) project on 14 December 2021; and[35]
    b. as detailed in the WGN FIOC Project Direction application:
        i. the permitted development rights have been secured; and
        ii. Town and Country Planning Act planning applications have been approved.

5. On 25 May 2023, the Licensee submitted a FIOC Project Direction application under Special Condition 3.13.8, which complied with the FIOC Guidance and Submissions Document.[36]

6. This direction is issued pursuant to Parts C, D and F of Special Condition 3.13 (Funded incremental obligated capacity Re-opener and Price Control Deliverable (FIOCt and FIOCREt)). It sets out amendments to Appendix 2 specifying:
    a. the outputs, delivery dates and associated allowances necessary to allow the licensee to release Incremental Obligated Entry Capacity that cannot be provided by Entry Capacity Substitution;
    b. Cost And Output Adjusting Events related to particular outputs

[35] Western Gas Network Project FIOC Needs Case Decision
[36] FIOC Guidance and Submissions Requirements Document

c. a percentage, , other than that specified in Special Condition 3.13.11 (c) , by which a Cost And Output Adjusting Event must have caused expenditure to increase or decrease, relative to the allowance in Appendix 2, before the Licensee may apply to the Authority for a direction under Special Condition 3.13.11

FIOC Project Direction

7. The Authority hereby directs that the licence modifications set out in Annex 1 are to take effect from 18August 2023, as required by Special Conditions 1.1 (definition of "Cost and Output Adjusting Event", paragraph (d) and Special Condition 3.13.8, and 3.13.17.

8. Details of the reasons for the licence modifications directed by the Authority are set out in our decision document published alongside this direction on xx August 2023.

9. This direction constitutes notice of our reasons for the purposes of section 38A of the Gas Act 1986.

Annex 1: Funding value and Price Control Deliverables
This Annex sets out the amendments and inclusions to be made to NGT's licence. The figures below are expressed in 18/19 values.

Special Condition 3.13 Appendix 2

Funded incremental obligated capacity reopener allowances (FIOCOt) by Regulatory year

Allowances £m (2018/19 prices)					
2021/22	2022/23	2023/24	2024/25	2025/26	Total
1.977	5.696	13.496	40.834	0.404	62.407

Funded incremental obligated capacity Price Control Deliverables

Project	**Output**	**CostAnd Output Adjusting Events**	**Percentage Threshold for Cost And Output Adjusting Events (Special Condition 3.13.11 (c))**	**Delivery Date**	**Total Allowance (all years) (£m)**
Western Gas Network Pipeline	Nine kilometres of new 900mm diameter pipeline between Wormington Multijunction and Honeybourne Multijunction with associated pipeline tie ins. Two kilometres of new 900mm diameter pipeline between Churchover Compressor and Churchover Multijunction with associated pipeline tie ins.	Archaeological works that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025 Extreme Weather Events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025 Protestor action that result in the the re-mobilisation of the	5% 5% 5%	1 January 2026	52.204

		project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025 Prevention events that result in the re-mobilisation of the project / contractor delaying completion of the pipeline (Part 4 completion of T/PM/RE/18 Operational Acceptance Certificate) until 2025	5%		
Western Gas Network Pressure Uprating	Increase the Maximum Operating Pressure Feeder 28 between Felindre Compressor Station / Multijunction and Three Cocks. Above Ground Installation Requiring works to be carried out at the following sites: • Felindre Compressor Station, • Felindre Multijunction, • Alltwern Compressor Recycle Facility, • Llanwrda Block Valve, • Three Cocks Above Ground Installation • Tirley Pressure Reduction Station			1 January 2026	10.203

Western Gas Network Felindre Compressor Station	Scope uncertainties listed in the Western Gas Network FIOC Project Direction published on 18 August 2023 necessary to increase Maximum Operating Pressure along Feeder 28.[37]	Resolution of all outstanding scope uncertainty listed in the the Western Gas Network FIOC Project Direction published on 18 August 2023		1 January 2026	0.001

[37] While the majority are at Felindre Compressor Station they are not restricted to that site

Appendix 2 – Privacy notice on consultations

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.

3. With whom we will be sharing your personal data

(Include here all organisations outside Ofgem who will be given all or some of the data. There is no need to include organisations that will only receive anonymised data. If different organisations see different set of data, then make this clear. Be a specific as possible.)

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

Your personal data will be held for ***(be as clear as possible but allow room for changes to programmes or policy. It is acceptable to give a relative time e.g., 'six months after the project is closed')***

5. 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.

6. Your personal data will not be sent overseas (Note that this cannot be claimed if using Survey Monkey for the consultation as their servers are in the US. In that case use "the Data you provide directly will be stored by Survey Monkey on their servers in the United States. We have taken all necessary precautions to ensure that your rights in term of data protection will not be compromised by this."

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

8. Your personal data will be stored in a secure government IT system. (If using a third-party system such as Survey Monkey to gather the data, you will need to state clearly at which point the data will be moved from there to our internal systems.)

9. More information For more information on how Ofgem processes your data, click on the link to our "Ofgem privacy promise".