St Fergus NSMP Sub-Terminal: Consultation Report on the preferred investment option to meet the future needs of the site

January 2023

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Contents

1. About this document

In September 2022 National Grid Gas (NGG) consulted with its customers and stakeholders to seek views on the preferred investment option to meet the future needs of the St Fergus NSMP (North Sea Midstream Partners) Sub-terminal[1]. We would like to thank those parties who took the time to respond.

The purpose of this document is to:

- Re-cap our reasons and background for consulting (Section 3)
- Summarise the responses we received and our views in response (Sections 4 and 5) and
- Present our conclusions (Section 6) and proposed next steps (section 7).

An Executive Summary is provided in Section 2.

If you require further details about any of the information contained within this document please contact mark.freeman1@nationalgrid.com

[1] https://www.nationalgrid.com/uk/gas-transmission/document/136381/download

2. Executive Summary

The consultation builds upon the extensive feedback we had from our stakeholders during RIIO-2 and more recently through the Autumn 2021 consultation[2] and forms part of a wider piece of work to establish:

- the most appropriate level of future entry capability at the St Fergus gas terminal and
- the most appropriate charging regime.

We have listened to your feedback and in this consultation we show how commercial options are not an efficient solution and ask for stakeholder input on the following:

- The needs case for investment
- The results of our feasibility studies on investment options and our preferred option including the underlying assumptions we've used e.g. constraints and wider market factors
- Next steps for charging options

We received 10 responses to the consultation, 8 of which were confidential, the conclusions from which are summarised below:

In terms of the **needs case** we welcome the recognition that there is a clear needs case for investment in compression at St Fergus NSMP sub-terminal but we also recognise that we should use the best available independent sources of information to support our case. We believe we have done this and tested the case against the extreme high and low supply/demand scenarios. In the Final Option Selection Report (FOSR) we will be including consideration against FES22.

With regard to the **optioneering** we welcome agreement that there should not be weighting of the FES scenarios as this would require a robust supporting methodology and believe that the preferred option should as far as possible be applicable across all scenarios. However, we are also cognisant that other factors can make futures lean towards some futures more than others and we are seeing that being played out currently where geopolitical factors presently point towards futures that show a longer reliance on gas supply than those that show a rapid transition.

For the **constraint** data used in the optioneering we agree with those that think that the cost of constraints based on the cost of capacity potentially undervalues the true value of constraints. As we are always looking to improve the methodology to provide a more appropriate value to the cost of constraints to supplement or improve the NPV analysis we will include consideration of this in the FOSR.

In terms of the **wider market factors** many stakeholders feel that these are potentially important in relation to how costs are recovered and this will be factored in to the charging methodology work going forward. Notwithstanding that some stakeholders feel there is a clear needs case without wider market factors we do feel these should be accounted for in a consistent manner across all our reopener projects and this will be considered in our FOSR submission.

We welcome the support for the **preferred option** of three new units with assessment of a fourth compliant unit at a later stage but we are conscious that we should make clear that this option has been futureproofed against a hydrogen and wider renewable future.

We have taken on board the comments in relation to the asset sharing options but we feel these have been ruled out for good reasons. Similarly, we are cognisant of considering one and two unit options and these will be given consideration in the FOSR analysis.

Users can be assured that we are involving both North Sea Transition Authority (NSTA) and BEIS in our proposals and making Ofgem aware of this. In terms of wider comments of who is best placed to make an investment decision we have articulated previously the wider options we have explored and the constraints we face through the contractual arrangements of the Network Entry Agreement.

In terms of **charging** on the treatment of interim costs incurred prior to the Ofgem's final investment decision in Jun-25 perhaps not unsurprisingly stakeholders tended to follow their preference for

[2] St Fergus Consultation | National Grid Gas

targeted or socialised charges both before and after Jun-25. In view of the almost unanimous support for charging discussions to start in earnest in early to mid-2023 this will be one of the topics to be considered in the NTS Charging Methodology Forum (NTSCMF) workgroup.

3. Background

The consultation builds upon the extensive feedback we had from our stakeholders during RIIO-2 and more recently through the Autumn 2021 consultation and forms part of a wider piece of work to establish:

- the most appropriate level of future entry capability at the St Fergus gas terminal and
- the most appropriate charging regime.

We have listened to your feedback and in this consultation we show how commercial options are not an efficient solution and ask for stakeholder input on the following:

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Background to St Fergus Gas Terminal

The St Fergus gas terminal, which accepts gas from three sub-terminals, is currently one of the highest utilised sites on the National Transmission System (NTS). It is a site of fundamental importance to the UK as it provides security of supply and access to gas from the UK Continental Shelf (UKCS) and from Norway helping to minimise gas prices. Additionally, uninhibited transportation routes for UKCS gas at St Fergus enables offshore oil production, another benefit to the UK economy.

The terminal has been in continuous operation for over 40 years and requires a level of investment to both re-life a number of assets on the terminal and to make the compressors that receive gas from the NSMP sub-terminal compliant with environmental legislation[3]

The Investment Needs Case

The needs case for investment has been presented using independent supply/demand data from the 2021 Future Energy Scenarios (FES). The data was presented on the low and high case scenarios shows that even with a low case scenario (i.e. just based on connected flows at the NSMP sub-terminal and a low demand case under the Consumer Transformation FES) there is a strong case for compression out to 2040 and beyond.

Commercial Options

In our consultation in Autumn 2021 we set out commercial options that were alternatives to investing in compression. Stakeholders told us that those options weren't feasible but did ask us to look at other alternatives such as asset sharing with adjacent sub-terminals. After discussions with the sub-terminal parties this has also been ruled out for physical and commercial reasons. A summary of all commercial options considered and the rationale for discounting them were presented.

Investment Options

Screening

The feasibility study for options has been through a process of option identification, option development and finally option selection. This has resulted in 22 technologies being narrowed down to 4 with 14 discrete options being taken forward to the assessment phase.

The four technologies and their combinations shortlisted are:

[3] Industrial Emissions Directive https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm, and Medium Combustion Plant Directive https://ec.europa.eu/environment/industry/stationary/mcp.htm, see Section 3

- **Derogation** – running the existing Gas Turbines (GT) for less than 500 hours/year to keep within emissions legislation.
- **Control System Restricted Performance (CSRP)** – controls the compressor unit's power in relation to Exhaust Cone Temperature, to prevent NO_x emissions from exceeding the legal limit.
- **Dry Low Emissions (DLE)** – DLE emissions abatement technology injects air into the combustion chamber to create a lean air fuel ratio, which lowers the combustion temperature and reduces NO_x production.
- **New Gas Turbine units** – in an existing brownfield location or new greenfield location.
- **Combination** – combination of new Gas Turbine units and DLE retrofit or CSRP.

Assessment

The 14 discrete options have been put through a Cost Benefit Analysis (CBA) process and assessed against criteria and the counterfactual option of derogating the existing units. The assessment criteria are:

- **NO_x emissions**
- **Carbon Emissions**
- **Total installed cost**
- **Relative NPV**
- **Constraint cost**
- **Resilience**
- **Technical score**

Wider market impacts have not been included at this stage as accounting for these would only strengthen the case and we believe the current criteria provides a strong enough justification for an investment needs case.

Preferred Option

The results of the assessment including a High/Medium/Low status of the 14 options indicate that there is a clear need for new compressor units either in a brownfield or a greenfield location, the preferred option being the installation of 3 new Gas Turbine (GT) units on a brownfield location (Option 1) closely followed by either; 3 new GT units on a greenfield location; 3 new GT units (one large) on a brownfield location; or4 units either as new GT units or a combination option of 3 new GT units and one compressor unit with retrofit DLE technology.

Options			Relative Assessment								
Option #	Option type	Option description	emissions (tonnes NOx)	emissions ('000s tonnes carbon)	total installed cost	relative NPV	relative constraint costs	Resilience	Technical Score (BAT)	Preferred Option
0	Derogate	Counterfactual, derogate existing units	1046	2466	£90m	£0m	£0m			
1	New units	3 x new GT brownfield	561	1832	£148m	£396m	-£635m			1
2		3 x new GT greenfield	561	1832	£174m	£376m	-£635m			
3		2 x large new GT brownfield	482	1592	£127m	£289m	-£307m			
4		2 x large new GT greenfield	482	1592	£145m	£275m	-£307m			
5		3 x new GT (1 large) brownfield	500	1948	£157m	£374m	-£627m			
6		3 x new GT (1 large) greenfield	500	1948	£189m	£348m	-£627m			
7		4 x new GT brownfield	561	1832	£193m	£366m	-£655m			
8	Derated (CSRP)	4 x CSRP	1046	2466	£97m	£334m	-£641m			
9		3 x CSRP	1046	2466	£80m	£321m	-£592m			
10	DLE	4 x Avon 1533 DLE	561	2466	£112m	£316m	-£628m			
11		3 x Avon 1533 DLE	561	2466	£78m	£311m	-£560m			
12	Combination (new + DLE)	2 x new GT + 2 x Avon 1533 DLE	561	1990	£200m	£330m	-£648m			
13		1 x new GT + 3 x Avon 1533 DLE	561	2070	£162m	£342m	-£640m			
14		3 x new GT + 1 x Avon 1533 DLE	561	1885	£172m	£371m	-£653m			

In the long term we believe we will need the resilience that would be provided by four units, either as new units or as a combination of three new GT units and a retrofit technology or a derogated compressor unit but providing three for now leaves flexibility to choose the best method of getting capability once the required DLE trials are complete and the supply demand forecasts are updated each year.

In addition, we have engaged manufacturers to discuss scope to accommodate methane and hydrogen and we are confident that the preferred options will be future proof.

Charging Considerations

During the consultation in Autumn 2021 we received feedback which differed on whether cost recovery should be targeted or socialised, and on when any charges should start. At that time, we provided indicative charges based on the investment option in our 2019 Business Plan. Since then, having arrived at a preferred investment option we would like to update these indicative charges.

Scenario	Entry Rate p/kWh	Exit Rate p/kWh	Charging Base	Entry	Exit
A Pre-Modification	0.0004	0.0004	Costs split across Entry & Exit 50:50	Socialised Costs	Socialised Costs
A Post-Modification	0.0241	N/A	Entry Only	Targeted to NSMP	N/A
B	0.0003	0.0003	Costs split across Entry & Exit 50:50	Socialised Costs	Socialised Costs

Table detailing potential Entry and Exit Rates in p/kWh:

Detailed charging conversations have taken place at the NTS Charging Methodology Forum (NTSCMF) have taken us to the next stage of development but, prior to Ofgem's final decision on investment, we would like Stakeholder input into how costs of investment specifically related to the compression delivered to the NTS by the NSMP sub-terminal could potentially be recovered and we would like to understand at what stage stakeholders would like to formally engage in development of any potential Uniform Network Code (UNC) Modification.

Process

The consultation comes as part of a wider piece of work on our RIIO-2 price control and the need for a re-opener in June 2025 to agree the funding for the capability that is needed at St Fergus for customers and consumers.

As part of this process, we will submit a Final Option Selection Report (FOSR) to Ofgem in January 2023. The outcome of this consultation will form a key part of our FOSR, then the decision will be set out in an Ofgem consultation, which will provide further opportunity for stakeholders, customers and consumers to input into the decision. It is then anticipated that a decision on the final option will be made mid-2023 ahead of a price control reopener in June 2025.

4. Consultation Responses Summary

We received 10 responses to the consultation, 8 of which were confidential. The 2 non-confidential responses were received from the following parties:

- Ancala
- Energy UK

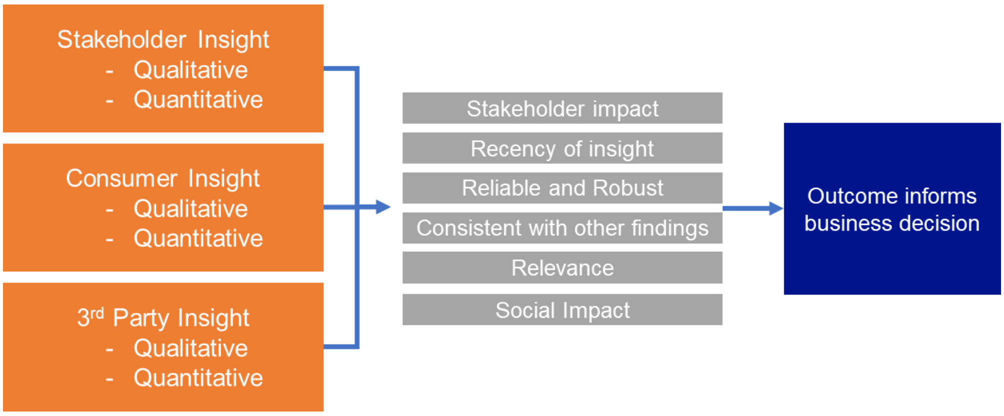
The 2 non-confidential responses have been published on our webpage and can be found here. The contents of these responses together with unattributed responses have been summarised in this report.

Four of the respondents did not answer the questions posed directly, providing general comments to the consultation. In those instances, where possible we have included the pertinent comments against the relevant question as a broad response.

We have triangulated the responses and set out how we intend to proceed based on the feedback.

Our approach took the feedback and insight we received from stakeholders and assessed it against a number of factors (please see below).

This process therefore allows us to weight insight to ensure a fair and transparent assessment of insight.



5. Consultation Questions and Responses

There was one question on confidentiality.

Do you wish your response to remain confidential (Y/N)?

Of the 10 responses received, 8 were confidential.

The following sections are split into themes for the consultation questions.

Theme: Investment Needs Case

Having presented out thinking around our preferred investment option we felt it was appropriate to share the latest information on the investment needs case and ask for feedback on whether we had used the correct independent assumptions for supply/demand for the investment needs case.

We asked one question

1. **Have we used the correct independent assumptions for supply/demand for the investment needs case? Please give reasons for your answer**

Respondents views:

There were six responses directly to the question and two other respondents provided pertinent comments.

- Almost all of the respondents felt that the most up to date data should be used in the analysis and whilst it was appreciated that the timing of the consultation and the release of the FES22 data that the FOSR should at least contain a sensitivity to FES22.
- There were some general comments on the transparency of the data particularly with respect to supply and there were also some queries on the independence of the data supply given that ESO is part of National Grid and responsible for collating the FES data and that the data should be verified by NSMP.
- One respondent felt that there was a danger that the Norwegian gas flows were overestimated.
- One respondent agreed that the Steady Progression and Consumer Transformation were the appropriate demand scenarios to provide the boundaries for the high and low demand cases respectively.
- One respondent made a general comment that the FES analysis should be performed at sub-terminal level.
- Another respondent made the point that the estimated demand forecasts over the next ten years show no evidence of decline and the investment will be needed to maintain 1 in 20 security of supply obligations in Scotland.

NGG Response:

We agree with respondents that the **best available data** should be used for the needs case. Our initial analysis of the FES22 data shows that the differences to FES21 are not material to the needs case at St Fergus and the sensitivity to this this will be included in the FOSR.

In terms of the **transparency** and **independence** of the data used, Users can be assured that this receives a great deal of scrutiny by Ofgem and in terms of supply there are a number of independent sources that are used and validated against the data provided by NSMP. Whilst at the time of this report the gas business and ESO are part of National Grid, there are significant controls in place to ensure compliance; going forward the separation of the gas business into a separate entity will further establish the independence of the source data.

In relation to the point on overestimation of **Norwegian gas flows** it is the reason why we presented the high and low supply cases and are able to demonstrate that even with the low supply/demand case the connected supply from UKCS and a low estimation of Norwegian gas flows presents a very good case for gas flows through the NSMP sub-terminal out to 2040 and beyond.

On the point of the **FES analysis** being at sub-terminal level we can confirm that the modelling is performed at sub-terminal level but that this data cannot always be published because of commercial reasons.

We welcome the supporting comments in terms of the **demand forecasts** over the next ten years and realise the importance of the 1 in 20 security of supply obligations in Scotland.

Theme: Investment Options

In presenting our preferred investment we felt it was appropriate to test our assumptions used for our demand scenarios and for the constraints calculation used in the cost benefit analysis. Similarly we sought views on whether it was appropriate not to use a quantitative analysis of wider market impacts in our assessment and ultimately whether stakeholders agreed with our preferred option.

There were four consultation questions on this theme, one on the use of demand scenarios (Q2), one on the assumptions for constraint costs (Q3), one on the wider market impacts (Q5) and one on whether or not there was agreement with our preferred option (Q6).

2. For the purposes of making long term investment decisions on critical national infrastructure do you believe there should be a weighting of FES demand scenarios? if so, what do you believe is best?

Respondents views:

There were 5 direct responses to this question of which 4 respondents agreed that there should not be a weighting of FES scenarios used in the analysis. The other respondent felt that given the current geopolitical situation more weight should be given to those scenarios that show a longer reliance on gas supply than those that envisage a rapid transition.

Supporting rationale given for non-weighting FES scenarios were:

- FES scenarios are intended to articulate the boundaries of possibility for the future energy system, they are not predictions about any particular path (mentioned by two respondents)

- There appears to be limited difference between the FES scenarios in the short to medium term so weighting may not result in a material difference from an NPV perspective

NGG Response:

We welcome agreement that there shouldn't be weighting of FES scenarios for analysis, for weighting to occur there would have to be a robust methodology to support it. We agree that the FES scenarios are intended to articulate boundaries. Having said that FES doesn't always provide plausible pathways and in some instances other factors such as geopolitical factors need to be considered and necessarily dictate that future supply/demand will lean more towards certain scenarios than others which presently points towards futures that show a longer reliance on gas supply than those that show a rapid transition.

3. Have we used the appropriate assumptions for calculation of constraint costs? Please give reasons for your answer

Respondents views:

Six respondents responded directly to this question.

- Three respondents said that they had no issue or question with the technical validity of the methodology and it was appropriate for comparison purposes. However, there was a recognition that the outputs from the methodology rely on the inputs. One of these respondents also said that the methodology does not reflect the wider cost of constraints which undervalues the cost to consumers of a constraint.
- Another respondent had a similar argument articulating that by not using energy prices to calculate constraint costs this doesn't reflect the true value of constraints to producers and governments.
- Two respondents said that they would require more detail on the assumptions underlying the constraint cost methodology and would like to see detailed analysis of the impacts of units running on 500 hours and/or options considered with one or two units with a third running under a derogation of 500 hours. They weren't sure when the constraints were predicted to occur i.e. were they at low flows or in the summer when alternative supplies might be available.

NGG Response:

We find these comments helpful in terms of either improving the presentation of the constraint data or indeed improving the methodology to provide a more appropriate value to the cost of constraints to supplement or improve the NPV analysis.

We too believe that the cost of constraints based cost of capacity potentially undervalue the true value of constraints to the energy industry and governments. This is discussed in a bit more detail in the response to question 4.

In terms of more detail required on options involving derogation, or smaller numbers of units, some further options have been added to the list to be subject to NPV and wider assessment and these will be included in the FOSR. This is also discussed further in the response to question 5 on the preferred option.

4. Having focussed on gas consumer value in our analysis do you think our omission of wider market factors is appropriate? Please give reasons for your answer

Respondents views:

There were six responses to this question.

- One of the respondents recognised that the quantitative analysis of the wider market factors was difficult and an unnecessary complication because the needs case for investment is clear
- The remaining respondents felt that it would be very useful to understand the wider market factors in relation to charging. One of the respondents went further and suggested it would be useful to understand how incentivising further Norwegian supply via St Fergus may help dilute costs for all users or maintaining supply liquidity and influence on market prices although it was recognised that it might be difficult in deriving an incremental impact
- Many of the respondents mentioned the potential impact on security of supply and of benefit to the oil industry and indeed whether a charge could be levied to the oil industry if this benefit could be quantified.

NGG Response:

The responses to this question indicate the difficulty there is in quantifying the wider market factors but there is clearly a read across to the cost recovery aspects of the investment and this will be taken forward as part of the charging discussions (see questions 6 and 7).

However, whilst we welcome the comment that the needs case is already clear at St Fergus, and that quantitative analysis may be a complication at St Fergus we do want to ensure that the best possible assessment methodology is used across all our reopener projects. This is discussed further in question 5.

5. Do you agree with our proposed preferred investment option? Please give reason for your answer

Respondents views:

Six respondents provided direct responses and two other respondents provided comments that were pertinent.

- Three respondents agreed with our preferred option and one other felt there was no reason to believe our considerations were in any way flawed
- None of the respondents disagreed with our preferred option but three respondents felt that greater reasoning could be given for why asset sharing as an option could not be considered further and on a related point two other respondents felt Ofgem should consider more closely where options have been dismissed that require agreement between parties. These same respondents felt that more detail was required on option selection and that the preferred option should be futureproofed against a hydrogen future requiring transportation of 100% hydrogen or a hydrogen blend. One other respondent made similar comments in relation to planned investments for CCS or other renewable activities and another on the potential impact of the ACORN project that was currently in flight.
- One respondent felt that options with one or two units or 500hrs scenarios should be included in the NPV analysis.

Other more general comments included:

- Given the risk of potential of early cessation of offshore production assets both the NSTA and BEIS should be included in the decision on investment in conjunction with the Maximising Economic Recovery (MER) UK strategy.
- Two respondents re-iterated that they felt that NSMP was best placed to make the decision on the investment on the compression at the NSMP sub-terminal although both recognised the contractual position that NGG is in and this was supported by another respondent in relation to comments on the Network Entry Agreement.

NGG Response:

NGG welcomes the support for the preferred option of three new units with assessment of a further fourth compliant until at a later stage.

With regard to why asset sharing options have been discounted we can only re-iterate we have had discussions with the parties involved and have been told this is not feasible. This has also been made clear to Ofgem.

We support the comments from respondents that the preferred option should be futureproofed against a hydrogen, CCS or renewable future in general and in conjunction with manufacturers and supply/demand analysis we believe the new units provide the best opportunity to futureproof the requirements at St Fergus.

Since the consultation was published we have included some 2 unit options in the NPV analysis that will form part of the FOSR submission together with 500hrs options have also been given consideration.

In terms of the NSTA and BEIS being involved in the decision on investment at St Fergus, Users can be assured that we have kept in close consultation with both the NSTA and BEIS on this issue but ultimately it will be Ofgem who make the decision on the preferred option.

We understand the comments in relation to who may be best placed to make the decision on investment but as we have articulated previously, we have explored a number of commercial options, including bespoke arrangements or those involving changes to the Network Entry Agreement and these have been ruled out for the reasons given.

Theme: Cost Targeting

In order to build on the good progress on topic of potential cost targeting we wanted feedback from stakeholders on how to take charging discussions forward and on the treatment of costs ahead of Ofgem's final investment decision.

There were two consultation questions on this theme; one on whether costs should be socialised ahead of Ofgem's final investment decision (Q6) and one on when discussion should start in earnest on any targeting of charges (Q7).

6. Should any costs incurred following the decision on the Final Option Selection Report (due mid-2023) but prior to Ofgem's final investment decision, (late-2025), be socialised?

Respondents views:

- Of the 6 respondents that answered the question directly one respondent felt that the costs should be targeted, three respondents felt that the costs should be socialised, one respondent was broadly supportive of socialisation but was unclear on the precise mechanics of this, and the remaining respondent felt that it was unclear what had already been funded as part of RIIO-2 and therefore this should be included in Ofgem's decision on the investment decision in mid-2023, articulating how the costs should be recovered
- Of the three respondents that just made general comments on cost targeting, 2 respondents felt that costs should be targeted to NSMP Users and one was generally in favour of socialisation.

- The reasons given for targeting or socialisation of costs were similar to those given in the previous consultation and are summarised below.

Arguments for targeting costs	Arguments for socialisation of costs
Anti-competitive; adjacent sub-terminals funding own compression	Potential impacts on Norwegian gas flows
Barrier to investment in new gas fields	Potentially damaging to commercial operations
Costs should be borne by parties benefiting from the investment	Interim costs likely to be insignificant
Impacts of environmental legislation should be borne by specific Users – 'polluter pays'	Market distortions, security of supply should be funded by all consumers

NGG Response:

Perhaps not unexpectedly the responses to the question tended to follow the respondents preference for either socialisation of costs or targeting of costs in general rather than treatment of the interim costs between the Ofgem decision on the Final Option Selection Report (due mid-2023) but prior to Ofgem's final investment decision, (late-2025).

In terms of the point about the precise mechanics of socialisation for the interim costs it is expected that without a change in charging methodology then the cost recovery mechanism would be as now. Ofgem have been made aware of all the responses and we expect their consultation in 2023 to include the treatment of interim costs.

Given the responses to this question and that in the following question 7, where there was almost unanimous support for discussions on cost targeting to start in earnest in 2023 it is anticipated that the treatment of the interim costs will be picked up as a topic in NTSCMF forum.

7. **At what stage in the submission process should we further explore targeting of these charges to ensure a balance between informed debate and expedience?**
    a. **Feb-2023: Based on the details in the January 2023 FOSR submission**
    b. **c. Q3-2023: Following publication of an Ofgem decision on the FOSR.**
    c. **c. Q4-2024: Using a version of the timetable proposed in the NTSCMF discussions which aligns the end of the UNC Modification process, and submission to Ofgem for decision, with the final UM submission to Ofgem.**
    d. **Another date/time (please state).**

Respondents views:

- There were 5 direct responses to this question and one other respondent providing applicable comments. All of these were in support of the charging discussions starting in 2023 broadly split between Feb-2023 and mid-2023 including two respondents suggesting that mid-2023 should tie-in with a steer given by Ofgem in the decision on the FOSR.
- Other reasons given for the urgency were that a decision on the treatment of costs may influence NSMP's support for the type of investment and that it could have a significant impact on the longevity of oil and gas field in the UK and therefore security of energy supply.

NGG Response:

Given the strong steer from respondents it is the intention that the charging discussions will start in earnest early-mid 2023 and will be timed around the Ofgem decision on the FOSR. The NTSCMF will be the forum for this work.

6. Conclusions

The conclusions are centred around the three key themes of needs case, optioneering and charging.

In terms of the **needs case** we welcome the recognition that there is a clear needs case for investment in compression at St Fergus NSMP sub-terminal but we also recognise that we should use the best available independent sources of information to support our case. We believe we have done this and tested the case against the extreme high and low supply/demand scenarios. In the FOSR we will be including consideration against FES22.

With regard to the **optioneering** we welcome agreement that there should not be weighting of the FES scenarios as this would require a robust supporting methodology and believe that the preferred option should as far as possible be applicable across all scenarios. However, we are also cognisant that other factors can make futures lean towards some futures more than others and we are seeing that being played out currently where geopolitical factors presently point towards futures that show a longer reliance on gas supply than those that show a rapid transition.

For the **constraint** data used in the optioneering we agree with those that think that the cost of constraints based on the cost of capacity potentially undervalues the true value of constraints. As we are always looking to improve the methodology to provide a more appropriate value to the cost of constraints to supplement or improve the NPV analysis we will include consideration of this in the FOSR.

In terms of the **wider market factors** many stakeholders feel that these are potentially important in relation to how costs are recovered and this will be factored in to the charging methodology work going forward. Notwithstanding that some stakeholders feel there is a clear needs case without wider market factors we do feel this these should be accounted for in a consistent manner across all our reopener projects and this will be considered in our FOSR submission.

We welcome the support for the **preferred option** of three new units with assessment of a fourth compliant unit at a later stage but we are conscious that we should make clear that this option has been futureproofed against a hydrogen and wider renewable future.

We have taken on board the comments in relation to the asset sharing options but we feel these have been ruled out for good reasons. Similarly we are cognisant of considering one and two unit options and these will be given consideration in the FOSR analysis.

Users can be assured that we are involving both NSTA and BEIS in our proposals and making Ofgem aware of this. In terms of wider comments of who is best placed to make an investment decision we have articulated previously the wider options we have explored and the constraints we face through the contractual arrangements of the Network Entry Agreement.

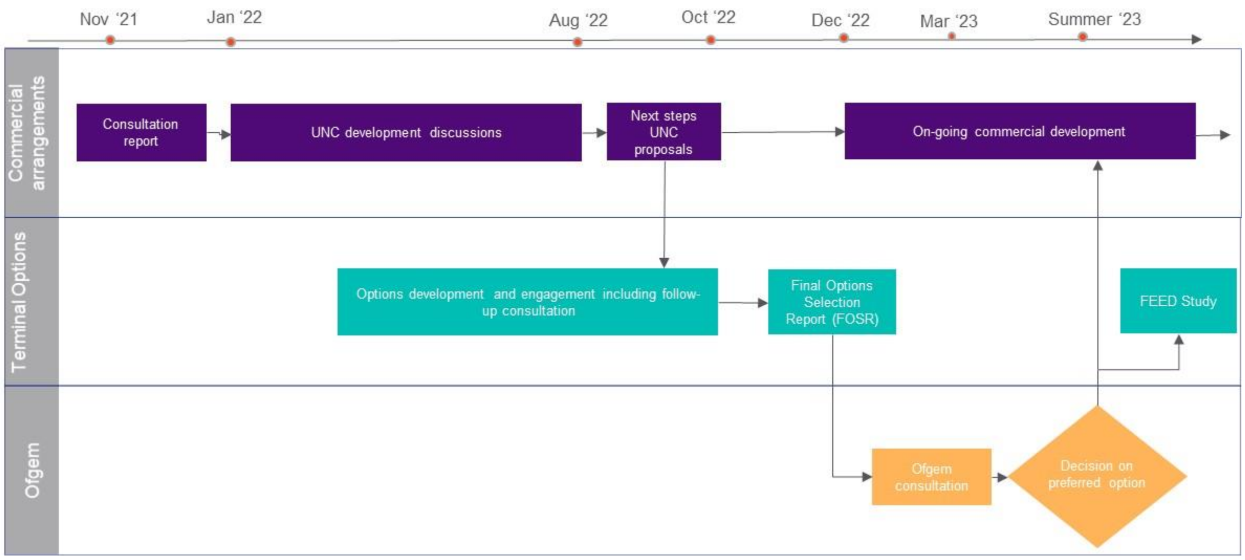
In terms of **charging** on the treatment of interim costs incurred prior to the Ofgem's final investment decision in Jun-25 perhaps not unsurprisingly stakeholders tended to follow their preference for targeted or socialised charges both before and after Jun-25. In view of the almost unanimous support for charging discussions to start in earnest in early to mid-2023 this will be one of the topics to be considered in the NTSCMF workgroup.

7. Next Steps

We would like to thank those parties who took the time to respond to our consultation. The information we have received, both in bilateral meetings as well as in written responses, has allowed us to consider and explore the topics from the consultation in more detail. We are encouraged by the positive tone of the responses and the new ideas we have heard has helped our thinking about how to design the requirements at St Fergus in the most appropriate way.

As we have indicated we will build the feedback from this consultation in to our FOSR submission which will in turn no doubt form part of the Ofgem consultation in mid-2023.

Here is the estimated timeline for next steps out to the FEED study in 2023:



Whilst this formal period of consultation has now closed, we are keen to hear industry views on our proposed next steps and as we move forward with the potential changes that we have identified. If you would like to discuss this project further please contact mark.freeman1@nationalgrid.com. We welcome your engagement at any time.