



To all interested parties

*Promoting choice and value for
all gas and electricity customers*

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Proposed disposal of part of NTS for Carbon Capture and Storage

National Grid Gas approached Ofgem with an outline proposal for the disposal and possible alternative use of some of its National Transmission System (NTS) assets for Carbon Capture and Storage (CCS) in Scotland. The proposal may have merit because it would allow testing of the feasibility of CCS as a means of abating carbon, and it could benefit customers if an alternative (or more valuable) use for network assets leads to lower transportation bills. However, there may also be downsides if the disposal of the assets leads to bottlenecks on the gas network in the event of new supplies. The Authority has a role in granting consent for this and other significant disposals of NTS assets.

The Department of Energy and Climate Change (DECC) is holding a competition to demonstrate commercial scale Carbon Capture and Storage (CCS). National Grid's involvement in Carbon Dioxide (CO₂) transportation is through offering onshore transportation services to one of the bidders in the DECC competition. National Grid has identified a possible opportunity to participate in the competition by using some of the current National Transmission System (NTS) assets to provide onshore transportation of CO₂ from a Scottish coal fired power station. The assets in question are currently used to provide gas network capacity at the St. Fergus entry point.

National Grid Gas's (NGG's) proposal requires the Authority's consent to go ahead. If consent for the disposal is granted then it is proposed that the assets cease to be used to transport natural gas and instead be used to transport CO₂. NGG is not proposing to change its existing network baseline capacity obligations to shippers following asset disposal.

We described the original proposal in our initial consultation in April 2009¹. Our initial consultation invited views on these issues and received a total of 28 responses. Non-confidential responses were published on the Ofgem website. Overall, respondents supported the proposal but some of this support was conditional on the impacts on shippers (and ultimately gas consumers) being nil or beneficial; support was also subject to verification that the assets were not required for future use. There was support for additional fuel costs, resulting from the higher loads on compressors, being funded by the CO₂ business. There was also support for independent analysis of NGG's modelling and forecast flows through St. Fergus to be performed before any decisions affecting the

¹ Proposed disposal of part of NTS for Carbon Capture and Storage (Ref:35/09), 8 April 2009

proposal were made. These responses were summarised as part of our second consultation and initial impact assessment.²

In order to address comments on forecast flows and network capacity modelling, NGG commissioned independent studies by Wood Mackenzie and Pöyry Energy Consulting. The views expressed by these reports support the views reached by NGG with regard to forecast future flows and network capability at St. Fergus. We published these reports in January 2010.³

NGG considered the views of respondents to the April 2009 consultation and developed a revised proposal with a simpler structure, which we described in our second consultation and initial impact assessment, published in May 2010. We sought views from all interested parties in relation to any of the issues set out in the document in order to inform a potential provisional view by the Authority.

We received a total of 20 non-confidential responses, all of which are published on our website. Respondents to our second consultation were broadly in support of the revised draft proposal, although there was recognition that some aspects needed to be clarified further and additional detail would need to be provided in due course. Respondents were generally positive regarding the independent forecasting and network analysis commissioned by NGG to validate their own analysis and a significant proportion also had a positive view regarding the proposed framework of revenue and growth sharing, subject to some clarification on certain aspects. A more detailed summary of responses is attached as an appendix to this letter.

Having considered the responses to the consultation we believe the proposal has merits, and includes measures to ensure that gas consumers are not left worse off and are not exposed to risk as a result of the disposal. If successful, the proposal will facilitate the demonstration of CCS by means which have a lower environmental and financial impact than the construction of a new purpose built CO₂ pipeline. The implementation of CCS could extend the lives of coal fired power stations, whilst reducing their carbon emissions. This could help to position the UK at the global forefront of CCS development, with the associated benefits in terms of early delivery of low carbon generation as part of a diverse and secure energy supply. In addition, once CCS is proven and developed in both scale and economics, it could allow the UK to use coal reserves at other power stations with minimal carbon emissions and thus provide security of supply whilst facilitating Government emissions reductions.

The draft proposal was brought before the Authority at its July 2010 meeting. The Authority can only grant consent further to submission and consideration of a formal written notice of the licensee's intention to dispose of assets. We recognise that such formal written notice to the Authority is conditional upon success in the DECC competition and the outcome of this process is likely next year. As a consequence, the Authority cannot offer a formal "minded to" decision at this stage of the process but would expect to provide a formal view regarding consent after submission of a request by NGG.

However, without fettering its discretion to consider the formal written notice, the Authority recognises the importance of the CCS trial and merits of the current draft proposal. The Authority did not express any objections to a proposal which is consistent with the principles arising from the details described in our second consultation document, and taking account of the views of respondents. The principles are in keeping with the Authority's principal objective and general duties, including the Authority's duty to protect existing and future gas consumers. The principles are also in keeping with the fact that the

² Proposed disposal of part of NTS for Carbon Capture and Storage - Second consultation and initial impact assessment (Ref:56/10), 6 May 2010

³ Proposed disposal of part of National Grid's National Transmission System for Carbon Capture and Storage: Publication of independent studies by Wood Mackenzie and Poyry Energy Consulting (Ref: 7/10), 20 January 2010

Authority may, in carrying out any function under Part I of the Gas Act 1986, have regard to the interests of existing and future electricity consumers.

These principles are set out below:

1. National Grid should have the flexibility to strike a deal with participants in the DECC CCS trial and should be incentivised to secure the maximum appropriate receipts from the CO₂ transportation business that flow through to gas consumers.
2. The arrangements should ensure that gas consumers benefit from the disposal of the assets whilst recognising that National Grid's shareholders should be recompensed for their expenditure in the new venture and have sufficient upside to make their participation in the venture worthwhile. The level and way in which the benefits of the disposal should be split between NG and gas consumers will be agreed in the coming months.
3. As far as practical and appropriate, any terms agreed should reflect the operation of the CCS levy (recognising that the precise basis on which it will be set has yet to be determined)
4. For a defined period of time gas customers should not be exposed to the costs of investments in any new pipeline or infrastructure in response to an unanticipated signal for incremental capacity at St. Fergus, and necessary because of the disposal
5. Gas consumers should be protected and enjoy levels of service which are not materially adversely affected by the disposal, including the provision of assured pressures and the operation of linepack after the disposal, and should not be exposed to:
 - a) the costs of refurbishing the pipeline for CO₂ duty
 - b) the costs of separating the assets from the rest of the network to permit disposal
 - c) costs of incremental buyback
 - d) costs of additional maintenance and compressor utilisation resulting from disposal

(In the case of c) and d), NGG should consult on and develop suitable methodologies to ensure that all such costs were identified and that appropriate mechanisms were put in place to recover these costs from the Carbon business)
6. Fair terms should be agreed for the displacement of the gas in the pipelines onto the rest of the network.
7. NGG will assist Ofgem in the assessment of the relevant costs associated with the proposal and support Ofgem in its work to carry out due diligence so as to be able to agree the parameters which should be applied in determining the percentage sharing factors for the receipts to gas consumers.
8. National Grid would be required to provide visibility of the payments made by the consortium to NG and its subsidiaries.

9. Arrangements should be established that are expected to ensure gas consumers benefit in the event that a subsequent sale of the assets by NG Carbon revealed a materially higher valuation of the asset than implied at the time of the disposal. The Authority's initial thinking is that such subsequent disposals would require the Authority's approval, and would potentially be subject to conditions.

It is recognised that there remains considerable work to be done to clarify issues and further develop the detail of the principles set out above, ahead of any submission of a formal notice.

National Grid has commenced work on the development of detailed methodologies to identify incremental costs associated with potential buyback and operation of the network with a feeder removed, which were introduced at the August Transmission Workstream meeting. We continue to work with National Grid to clarify certain issues and we would expect National Grid to move ahead and bring forward a proposal which is aligned with the principles set out above.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Stuart Cook', with a long horizontal line extending from the end of the signature.

Stuart Cook
Senior Partner, Smarter Grids and Governance

Appendix 1 – Summary of Responses to Second Consultation and Initial Impact Assessment

1.1. This appendix provides a summary of the responses received to our second consultation and initial impact assessment, together with responses to the queries raised. It follows the same structure as the questions asked in each chapter of the document. The second consultation and initial impact assessment was published on 6 May 2010, and closed on 4 June 2010. We received 20 non-confidential responses and these have been published on Ofgem's website⁴.

CHAPTER 4: Future flows at St Fergus and pipeline capability

Question 1: What is your view of the conclusions drawn about future flows and capability based on the consultants' reports?

2.1. 11 respondents had a positive view of the consultants' reports, although two of these requested further analysis:

2.1.1. One respondent stated their support for further analysis of the impact of LNG flows upon St Fergus flows. The respondent also requested further analysis on the impact upon current within day variation of flows, as most analysis has been done at peak day.

2.1.2. NGG is currently updating its models to reflect the latest 2010 demand and supply statements. NGG have confirmed that analysis has been conducted at demand levels below peak and feed into the models that encompass a number of distributions around supply, demand, capability, prices etc. NGG believes that the results of this analysis therefore provide a robust indication of network capability under the most severe circumstances.

2.1.3. Another respondent requested further independent analysis on the ability to blend gas at Lupton, and potential subsequent impacts on future projects in the Barrow area. Lupton is the point at which off-spec gas from the Morecambe fields is blended in order to meet gas quality standards.

2.1.4. NGG has confirmed that their analysis conducted to date has shown no adverse impact in the ability to blend Barrow Morecombe gas at Lupton to meet the gas quality requirements of the NTS. NGG believes that there is sufficient gas sent down the remaining west transmission lines from St Fergus to facilitate blending at Lupton. Ofgem has seen no evidence to suggest that there would be a significant change in the pattern of flows as a result of the disposal. NGG's commercial obligations are unchanged.

2.2. Three respondents disagreed with the consultants' findings. They made the following further comments:

2.2.1. One respondent was concerned that the reports did not reference potential future Norwegian connections to the UK.

2.2.2. We have not received any information to suggest that the assumptions underpinning the analysis carried out by both NGG and Wood Mackenzie do not adequately represent the best view of potential future flows coming to St Fergus. NGG expect that the level of Norwegian flows currently anticipated for the future will be adequately accommodated post disposal. We also note the recent public statements by Gassco, Statoil and Shell, who have recommended that gas from new

⁴ See: 'Proposed disposal of part of National Transmission System (NTS) for Carbon Capture and Storage - 2nd consultation and initial impact assessment - (Ref: 56/10) - Associated Documents' www.ofgem.gov.uk

Norwegian developments should be exported through the Langeled pipeline to Easington⁵. This suggests that potential future Norwegian connections are unlikely to require capacity at St Fergus.

2.2.3. Another respondent felt that the use of long term entry capacity bookings to assess future flows was inappropriate. This was due to the number of participants who rely on within-day firm and interruptible entry capacity which is typically available at zero cost. A further respondent had concerns that NG's ten year statement was subject to NG's discretion, and so should not be used as the sole method of forecasting future flows.

2.2.4. The forecasts of future utilisation of entry capacity at St Fergus have been assessed by looking at a combination of a range of supply forecasts, capacity bookings and actual flows. NGG's own analysis of forecast supplies has been independently verified by Wood Mackenzie's analysis, and as such, we believe the forecasts produced provide an accurate depiction of future flows. They are not based exclusively on capacity bookings, but have taken a wider range of factors into account.

2.2.5. One respondent noted the large range of forecasts and considered it possible that higher than forecast flows could be delivered.

2.2.6. We believe that both NGG's forecasts and Wood Mackenzie's independent analysis provide a comprehensive view of potential future flows.

CHAPTER 5: NGG's revised proposal

Question 1: What is your view of the structure of the revised proposal overall?

3.1. 14 respondents had a generally positive view of the overall revised proposal. Five specifically commented favourably on the fact that baselines would be maintained. Of these 14 respondents, eight had specific concerns upon which their support was conditional. Six respondents had issues regarding the proposed method of asset valuation.

3.2. We acknowledge these issues, and note that work relating to asset valuation is ongoing. We continue to seek ways to incentivise NGG to reveal the 'true' value of the asset.

3.3. Six respondents expressed concern about the effect of the next Transmission Price Control Review on baselines.

3.4. Whilst we recognise the concerns of the respondents, baselines are one of many elements within a price control. As stated in the second consultation document, it would not be realistic to express a view about a particular aspect of the overall package of measures which will be considered during a future price control review.

3.5. Seven respondents made their support conditional upon the development of acceptable methodologies for determining incremental buyback and incremental opex.

3.6. We addressed these concerns in our second consultation. An agreed methodology will need to be developed and consulted on to address these costs. NGG has commenced work on this, and the methodologies were introduced at the August meeting of Transmission Workstream.

3.7. One respondent was concerned about the potential distortionary effect on the DECC CCS competition.

⁵New fields could flow via Langeled', *Platts European Gas Daily*, 23 July 2010 (Volume 15 / Issue 140)

3.8. We recognise this concern, and it is one of the reasons we are seeking to incentivise NGG to reveal the 'true' value of the asset.

3.9. Five respondents held a negative view of the revised proposal. Four respondents objected on the basis that the proposal could affect security of supply. Of these respondents, their further comments included the following. One respondent was concerned about adverse impact to shippers, terminal operators or gas consumers. Three of these respondents were concerned with both the adequate provision of capacity at St Fergus, and the impact of reduced linepack on system flexibility.

3.10. We addressed these issues in both of our consultation documents and also in our initial impact assessment. We have not received any new information to suggest that we should revise our initial views.

3.11. One objection was due to the lack of evidence that it is technically and economically feasible to re-use the pipeline sections for a carbon dioxide transportation business. This was specifically related to concerns that the existing pipelines lacked sufficient pressure rating to support dense phase transport of CO₂ and thus allow commercial scale flows.

3.12. We note the concerns expressed but these are issues which fall outside Ofgem's remit and should be addressed to the relevant bodies, such as the Health and Safety Executive (HSE), DECC and Office of Carbon Capture and Storage (OCCS). Concerning technical issues, we note that National Grid Carbon (NGC) is currently conducting Front-End Engineering Design (FEED) studies due to be completed in early 2011.

Question 2: What is your view of the treatment of incremental buyback, opex, CFU and other costs identified?

4.1. All 14 respondents who stated a view were positive about the treatment of incremental buyback opex, CFU and other costs. They expressed strong support for the proposal that any additional cost resulting from the disposal would be met by NG Carbon.

4.2. Five of these respondents had some concerns relating to the determination of these costs and who is liable to pay them. All of these five called for a process of industry-wide consultation to develop transparent methodologies for the determination and treatment of incremental costs.

4.3. We welcome the comments and the support for the development of these methodologies by NGG. We would encourage relevant parties to engage in the process and contribute to the development. Respondents made the following further comments:

4.3.1. One respondent requested Ofgem conduct an independent audit to verify potential increases in costs.

4.3.2. The proposed methodologies will address this issue and provide a mechanism for identifying such potential cost increases.

4.3.3. One respondent queried whether there would be a cap on NG Carbon's liabilities, or whether they would be unlimited.

4.3.4. We have commented on this matter in our consultation documents, and remain of the opinion that National Grid Carbon (NGC)'s liabilities should not be limited by any cap.

4.3.5. One respondent questioned whether NG Carbon's buyback liabilities would only begin when the buyback cost cap is exceeded. They felt that this could potentially

lead to gas consumers cross-subsidising NG Carbon up to the value of the buyback cap.

4.3.6. The methodology will identify the incremental costs which fall to NGC, and those which fall to NGG, preserving the balance of the incentive. NGC will be liable for all buyback costs that are determined as incremental by the methodology. To the extent that incremental buyback costs are higher than forecast (and exceed the payments received by NGC from the DECC CCS competition consortium), this risk will be carried by NGC, backed by its parent – National Grid Holdings One plc. It is not proposed that NGC would seek any indemnity from consumers for high incremental buyback costs.

4.3.7. One respondent thought that regulatory oversight would be important in avoiding inappropriate use of Terminal Flow Advices (TFAs) by NGG to minimise the buyback costs that NG Carbon face.

4.3.8. We agree that it is important to monitor how NGG manages constraints. [We note that TFAs are only issued in certain, well-defined, circumstances. We do not foresee that this will be an issue.]

4.3.9. Two respondents expressed concern that NG Carbon would not be liable to pay for additional compression were it to become necessary. They felt that NG Carbon should bear all costs arising from the disposal. One respondent queried the investment lead times should a new compressor be built.

4.3.10. NGG has an obligation to provide capacity up to baseline, though any incremental opex (from, for example, increased compressor fuel usage) will be captured by methodology and assigned to NGC. Current analysis indicates that additional compression will not be required. NGG have confirmed that the costs of a new compressor, should it be built to mitigate the incremental buyback costs and restore capability to near the current baseline, will be recovered from NGC. However, should the investment be required to release incremental capacity then NGG may, where appropriate, apply to be remunerated for this through the revenue driver mechanism.

4.3.11. Concerning lead times, NGG believe that 2-3 years would be adequate for additional compression on an existing site. The lead time for a completely new site is expected to be 5-6 years. We note that NGG is obligated to release entry capacity up to baseline, and that incremental capacity is subject to a lead time of 36-48 months.

4.3.12. One respondent had specific questions relating to compression at St Fergus terminals. They wanted to know whether additional compression would be provided to all gas exiting the St Fergus complex, or whether each sub-terminal would have to provide new compression.

4.3.13. At present both Ofgem and NGG, do not envisage the need arising for construction of additional compression at St Fergus. NGG have confirmed that the reduced capability is a function of larger pressure drops down the remaining feeders to the central system and not due to compression arrangements at St Fergus.

Question 3: What is your view of the suggested approaches to asset valuation?

5.1. Seven respondents were in favour of the suggested approach, providing a lump-sum transfer plus a share of future revenues. They saw it as a balanced approach allowing a one-off transfer value with potential upside.

5.2. Five respondents had a negative view of the suggested approaches to asset valuation. These respondents felt that the proposed valuation of the asset was too small, and made the following additional comments:

5.2.1. One respondent commented that a low initial transfer value acts as a cap on NGC's risk. If the CCS demonstration is unsuccessful, they would be subject to no additional revenue liabilities. The respondent noted that a larger transfer value reduces the risks to consumers.

5.2.2. We acknowledge this concern. We note our comments in the previous consultation that there exists a trade off between the size of the initial payment and the size of any future revenue sharing. Given the uncertainty surrounding valuation, it is arguable that some form of sharing mechanism ensures that the 'true' value of the asset is realised by gas consumers.

5.2.3. One respondent queried the approach used to arrive at a residual value. They stated that, since the expected lifetime for a CO₂ pipeline is greater, the most recently installed pipelines should be used for determining the residual value. They felt that using a first-in, first-out approach would lead to the process being biased to arrive at a low valuation.

5.2.4. One respondent was concerned that the asset value should reflect the condition of the feeder relative to those remaining in NTS service.

5.2.5. Due to confidentiality concerns, National Grid cannot release information at this time on which feeder is to be transferred. NGG will confirm to Ofgem which pipelines are to be disposed of when it submits its formal notice.

5.3. Three respondents thought that the asset valuation should be market-based, and reflect the full commercial value of the asset.

5.4. Two respondents commented that the valuation should be reflective of the value of a new asset. One of these respondents argued strongly in favour of a Modern Equivalent Asset (MEA) approach to reveal the 'true' market value. They argued against the use of Historic Cost Accounting (HCA) measures of valuation should an MEA method not be feasible. They also stated that consumers should be protected in the event that the valuation chosen is subsequently revealed to be below the 'true' market value. They suggested that disposal could be conditional on NGG agreeing for their RAB to be adjusted once evidence of the true market value has emerged.

5.5. One respondent suggested inviting non-binding expressions of interest from the market to assist in determining valuation.

5.6. We note all the concerns expressed above about asset valuation and the lack of a consensus view about the approach to adopt. It is difficult to determine the market value given that different techniques produce a wide range and that the market for CO₂ transportation has yet to be developed. As such, there is a risk that today's market value may not reflect the 'true' market value which will be revealed in the future. We have noted the concerns about the possibility of undervaluing the assets and continue to seek ways to incentivise NGG to reveal the 'true' value of the assets and identify appropriate sharing factors to ensure that gas consumers are fairly remunerated. NGG agrees that the valuation of the assets should be based on the commercial value to any new user.

Question 4: What is your view of the proposal for sharing the benefits of increased CO₂ throughput?

6.1. Nine of the respondents expressed a positive view of the proposal for sharing benefits of increased CO₂ throughput. Of these, two respondents had slight reservations regarding

the upper limit on flows of CO₂ subject to revenue sharing of 6 Mt/yr. The following points were made:

6.1.1. One respondent believed that revenue sharing should continue above 6 Mt/yr, although weighted more in favour of NGC to take account of the substantial capex needed to increase flows above this level.

6.1.2. One respondent requested independent verification that 6 Mt/yr is indeed the point that substantial capex is necessary to further increase flows.

6.1.3. We note the views expressed and have asked NG to re-consider the potential revenue sharing mechanism.

6.2. One respondent had a preference for a one-off transfer at the MEA value and no subsequent revenue sharing. However, they did regard revenue sharing as a potential hedge against the risk that the asset is undervalued, but only in the event that it was not possible to establish some form of ex-post value adjustment.

6.3. We are considering the potential for a proposal to incentivise NGG to negotiate sharing factors in their deal with NGC that will deliver positive benefits to gas consumers.

6.4. One respondent requested that gas consumers were removed from exposure to any downside cost risk.

6.5. The current proposal does not expose gas consumers to any cost risk associated with increases in buyback or opex caused by the removal of the feeder (the aforementioned 'incremental' costs). The risk borne by consumers in relation to these costs is one of a potentially lower level of benefits from a profit sharing mechanism. All costs of the disposal (including incremental costs relating to the NTS) will be borne by NGC, and backed by a guarantee from its parent company National Grid Holdings One plc.

6.6. One respondent did not express an opinion, but commented that the risk level, and so degree of revenue sharing, should reflect the current risk reward balance.

6.7. We agree with this statement, and are considering incentives that would encourage NGG to reflect this in the deal between NGG and NGC.

Question 5: What is your view of the suggested mechanism for returning value to gas consumers?

7.1. Seven respondents had a positive view of the suggested mechanism. Three of these respondents had issues with the timing of 'dividends'. They questioned why they were to be paid over a 5 year period, and why there was a gap between disposal and payment to customers. The respondents sought clarification on this issue, and assurances that at least the RAV would be adjusted and liabilities transferred on the date of disposal.

7.2. This area of the proposal is still to be developed, and is linked to the structure of the deal between NGG and NGC. We note the concerns and further work is being done to clarify the detail about the timing of such payments.

7.3. One respondent argued that the proposal to use deficits in one year to fund surpluses in following years breaks from incentive principles by essentially setting a five year incentive.

7.4. We note this point, although the structure of any deal is currently under negotiation. This will need to be looked at in further detail before any formal view is taken by the Authority.

7.5. Two respondents held a negative view of the proposed mechanism. One believed that the pipeline may not be capable of transporting CO₂ at sufficiently high pressures to allow dense phase transport. As a result, the respondent queried whether the pipeline would be able to flow sufficient volumes to operate on a commercial scale. There was doubt that flows could exceed 2Mt/yr and so doubt about whether financial gains for gas consumers would be realised.

7.6. We note the concerns and further work is being done to look at the relevant sharing factors across a range of potential flow scenarios. Whilst the technical capability of the pipeline is not a direct concern for Ofgem, we note that NGC's ongoing FEED studies will provide greater clarity on the technical issues.

7.7. Another respondent stated their belief that NGC should be allowed to keep any gains from CCS, but should bear all the cost risk and pay a higher transfer value.

7.8. We agree with this point in principle; however, we note the difficulty in finding an appropriate valuation given the future uncertainty around CCS as a technology and commercial activity. We view the proposed profit sharing mechanism as a potential alternative method of ensuring that gas consumers receive appropriate remuneration for the asset.

7.9. One respondent commented that, as proposed in the two previous consultation documents, a licence condition would be a consistent way forward.

Question 6: Are there any other considerations which have not been taken into account?

8.1. One respondent believed that insufficient account had been taken of the effect of substitution. They noted that capacity substituted away from St Fergus could result in a physical reduction in the ability to enter gas at St Fergus. They also remarked that higher utilisation of remaining capacity at St Fergus could result in a less favourable exchange rate being applied under a substitution mechanism.

8.2. Substitution does not change the physical capability of an entry point, since it only moves commercial capacity rights between entry points. However, the effect will be to reduce the ability to bring more gas onto an entry point which is a donor for substituted capacity. This may result in a different exchange rate being applied as a result of the subsequent changing patterns of flow; however, this is true for all instances of entry capacity substitution and is accounted for in NGG's substitution methodology.

8.3. Two respondents requested clarification on NGC's financing. One was concerned that, in the event of financial difficulties, NG Carbon's liabilities would fall to National Grid Holdings One Plc and not to NGG. The other wanted assurances on how significant or unexpected costs would be financed.

8.4. NGC have confirmed they will ensure sufficiently robust financial backing so that gas consumers will not be exposed to additional liabilities from the transfer of the assets.

8.5. One respondent queried whether NG Carbon had considered the full costs associated with transferring the use of the pipeline from natural gas to CO₂. They also queried whether consideration had been given to returning the pipeline to natural gas use should CCS prove not to be viable.

8.6. It is for NGC to satisfy itself that it has considered all relevant costs, and therefore has a viable proposal for converting the pipelines from natural gas to CO₂ transportation. The ongoing FEED studies will provide NGC with this. Returning the pipeline to gas use would need to be linked to a needs case for the pipeline. Forecasts of future flows (particularly declining UKCS production) will likely mean that the pipeline would not be needed by the time of the conclusion of the CCS project. Had the pipeline remained in NTS use, it would

likely have become redundant by this time. As such, barring any unforeseen increases in future flows, it is unlikely that there will be a case for returning the pipeline to NTS use.

8.7. One respondent had specific concerns regarding the impact on flows at the Lupton point, which is the blending point for off spec gas travelling through Barrow terminals. The respondent was concerned that the removal of the feeder may affect the route of flows heading south from St Fergus. Concern was also raised about the effect of loss of linepack on NTS ability to manage within-day flows. The respondent felt that interruptions to supply at the Lupton point could have implications for landing gas at Barrow, both in terms of current operations and potential future investment. In addition, the same respondent expressed surprise that initial CCS investment was taking place in Scotland when there is a greater concentration of CO₂ emitters in the Midlands.

8.8. We have commented on the question of flows at Lupton above.

8.9. We commented on the likely effects on linepack in our second consultation and initial impact assessment and we have not received any new evidence to suggest that our initial view should be revised.

8.10. One respondent queried whether the disposal would lead to a re-evaluation of NGG's Shrinkage and Emissions incentive and funding arrangements. Given that compressor operation is likely to change, the respondent argued for an adjustment in NGG's Shrinkage allowance which was based on the NTS as it currently stands. Similarly, the respondent argued that the Emissions incentive may also require adjustment.

8.11. We note that the current incentives will not be in place at the proposed time of disposal. When these incentives are next considered, the potential disposal will be taken into account, as appropriate. In addition, we note that a methodology will be introduced to determine whether compressor usage is 'incremental' or not. As stated above, the methodology will calculate the amount of compressor usage that would have occurred with four feeders in place, and identify the additional compressor usage that is a result of the asset disposal. This will allow account to be taken of any such incremental costs; for instance, the SO incentive and funding arrangements may be set to take account of the operation of the methodology. Such an adjustment could be used if it proved necessary to prevent 'double counting' of any revenue recovered by NGG from NGC, whilst preserving the incentive for NGG to operate the system with an efficient level of shrinkage.

APPENDIX 2: Initial impact assessment

Question 1: Do you agree with our initial assessment of the impacts of the proposal for the disposal of assets?

9.1. Five respondents stated that they agreed with Ofgem's initial impact assessment. One respondent suggested that a different approach to asset valuation would produce a more realistic result that represented better value to gas consumers.

9.2. We have addressed concerns relating to asset valuation above (see paragraph 5.5).

Question 2: Are there any quantitative benefits or costs that have not been included in our assessment?

10.1. Six respondents commented that there were some benefits and costs that had not been included in Ofgem's assessment. Their specific comments were:

10.1.1. One respondent felt that the impact of substitution had not been taken into account. The same respondent also called for assurances that the maintenance programme can be operated without any additional disruption to capacity available.

10.1.2. We addressed the concerns around substitution above. NGG have confirmed that they do not envisage disruption due to maintenance, as most maintenance is carried out during the summer months, when there has historically been sufficient capacity to accommodate the flows at St Fergus during maintenance.

10.1.3. Two respondents expressed concern that the impact of reduced linepack had been discounted, believing that there would be an impact on flexibility. One was concerned that, in the event of the introduction of a linepack product, NGC should compensate NGG for potential lost revenues.

10.1.4. As stated above, we have already addressed the issue of linepack and flexibility in previous consultation documents, and have received no new information to change our view. Regarding a linepack service, NGG do not consider that it is practical or wise to alter the conditions of an asset sale based on hypothetical changes to the industry commercial framework.

10.1.5. Two respondents referred to potential technical cost considerations. One made points related to the conversion of the pipeline, whilst the other had comments regarding the conversion of compressors.

10.1.6. NGC are currently conducting Front-End Engineering Design (FEED) studies due to be completed in early 2011. This will further inform their understanding of the technical issues. We note that NGC will pay all the pipeline conversion costs and these will not fall to NGG. NG have confirmed that there are no compressors associated with the proposed asset disposal, since the only asset to be disposed of is the pipeline between St Fergus and Avonbridge only, and so all existing compressors will remain a part of the NTS. As such, there is no compressor conversion cost, and any necessary CO₂ compression will be newly built by NGC.

10.1.7. Two respondents queried whether the installation of a new additional compressor should be included in the impact assessment. They also questioned which party would bear the cost of this.

10.1.8. Given the very low probability that a new compressor will be needed, the cost has not been included in the impact assessment. As stated above, in the event that the need for an additional compressor did materialise in order to allow NGG to meet fully its baseline capacity obligations, this would be funded by NGC. Such costs would not fall to consumers and we would not grant NGG any increase in revenue allowance for such costs.

Question 3: Are there any qualitative benefits or costs that have not been included in our assessment?

11.1. One respondent commented that the disposal may create an indication of lower capability, even though the current baseline will be maintained. They commented that the effect is unquantifiable, but may influence the sentiments of actual and potential capacity holders at St Fergus.

11.2. Given that baselines will be maintained, we see no potential impact on shipper behaviour since the commercial arrangements will be unchanged and NGG's obligations remain.

Question 4: Are there any other considerations that have not been included in our assessment?

12.1. No respondents were aware of any other considerations that had not been included in the assessment.

Other comments

13.1. Two respondents commented on Ofgem's timelines. One hoped for a speedy decision. The other queried our reasoning for delaying the publication of a formal decision until the outcome of the DECC CCS competition is known.

13.2. National Grid cannot formally request consent for disposal until they know if they have been successful in the DECC CCS competition. As a result, Ofgem cannot offer a formal view until the outcome of the competition is known.

13.3. Two respondents expressed concerns that fall outside Ofgem's current remit. One had safety concerns which would be the responsibility of the Health and Safety Executive (HSE). They also commented on the future need for regulation of the CO₂ network, which currently would fall to the Department of Energy and Climate Change (DECC) and the Office of Carbon Capture and Storage (OCCS).

13.4. One respondent had comments about the nature of the competition proposal itself, and argued in favour of a phased demonstration that focuses on the less proven elements of capture and storage rather than the more proven technology of CO₂ transportation. This is also outside Ofgem's remit, and thus a matter for DECC.