

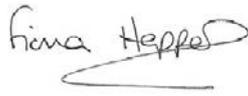
STRATEGIC OUTLINE CASE FOR EXTENDING THE NATURAL GAS NETWORK IN NORTHERN IRELAND

Project Title: Strategic Outline Case to determine the most suitable approach for extending the natural gas network in Northern Ireland

Sponsoring Department/Agency: Department of Enterprise, Trade and Investment (DETI)

Senior Responsible Officer: Fiona Hepper, Grade 5, Energy Division

Signed:



Date: 22 December 2011

Section 1: Project Overview

Briefly describe the basic project concept.

Natural gas was first introduced to Northern Ireland via the Scotland to Northern Ireland gas pipeline in 1996. Initially, natural gas was made available to customers in Greater Belfast, the immediate surrounding area and Larne where the gas distribution network in this area was developed by Phoenix Natural Gas (PNG). PNG's business model is based upon making natural gas available to as many industrial and commercial, public sector and domestic customers as possible where it is financially viable to do so. By the end of 2010, natural gas was available to circa 280,000 properties in this licensed area, with approximately 140,000 of these actually connected to natural gas.

firmus energy (firmus), a subsidiary of Bord Gáis Eireann (BGE), is engaged in work to develop the natural gas market outside Greater Belfast along the routes of the North-West gas transmission pipeline, which was completed in November 2004, and the South-North gas transmission pipeline, which was completed in October 2006. This covers rolling out the gas distribution network in the 10 towns and cities of Londonderry, Limavady, Ballymena, Ballymoney, Coleraine, Newry, Craigavon, Antrim, Banbridge and Armagh. To date, *firmus* has connected around 11,000 customers in the 10 towns/cities licence area, including taking gas to some additional urban areas such as Tandragee, and Warrenpoint. The *firmus* business model differs from the PNG business model in that it is based on connecting key gas loads, i.e. primarily businesses, but also public sector buildings; social housing as provided by the Northern Ireland Housing Executive or housing associations; and new private housing developments. Domestic customers in owner-occupied private housing may be connected to the gas network if they are adjacent to routes developed to meet business demand for gas.

A map illustrating the coverage of the current natural gas network is attached at **Annex A**.

The Department is now considering the potential for extending the natural gas network to the key remaining areas of Northern Ireland which are not yet connected to gas.

In August 2009, the Department and the Northern Ireland Authority for Utility Regulation (the Utility Regulator) jointly commissioned a study to determine the technical and economic feasibility of bringing natural gas to additional towns in the North-West and West of Northern Ireland, namely Dungannon, Cookstown, Magherafelt, Omagh, Enniskillen/Derrylin and Strabane. The feasibility study, which was completed in 2010, estimated that taking gas to all six towns as a single project could cost up to £170 million for transmission and distribution networks and that subvention of up to £51 million would be required for gas transmission, either from Government or from cross-subsidy by all natural gas customers in Northern Ireland. Gas distribution was considered to be self-financing overall.

Drawing upon the findings of the feasibility study, the Department recently carried out a 3 month public consultation, ending 30 September 2011, on the potential for extending the natural gas network. The consultation also considered the merits of extending the gas network to towns adjacent to the existing licensed areas, for example, to those in the east of County Down. The majority of responses to the Department's consultation, particularly those from the natural gas sector, local industry and the public sector, were strongly supportive of extending the natural gas network. In seeking to determine the best way forward, the Department is now considering a number of key issues, including: the key geographical area(s) which might form new or extended gas licensed areas; how any new gas networks may be financed; and the licensing model to be adopted.

While the focus of this particular project is on extending gas to the West, the Department, in liaison with the Utility Regulator, will also be giving consideration to:

- (i) how the natural gas network might be extended to towns to the east of County Down, such as Saintfield and Downpatrick, as a separate project and;
- (ii) as a separate future workstream, at maximising the potential gas connections within existing licensed areas. This would have to be taken forward through modifications to the Utility Regulator's existing gas conveyance licences with PNG and *firmus*.

Section 2: Aims, Needs, Objectives & Constraints

State the rationale for government intervention e.g. by reference to market failures or equity objectives.

Identify the relevant NI Government/Departmental strategic aims and policy objectives.

Outline the need for the project e.g. demand for services, deficiencies in existing provision etc

List the project objectives as specifically as possible at this stage.

Identify likely constraints e.g. timing issues, legal requirements, professional standards, planning constraints.

Objectives in respect of extending the natural gas network are summarised as follows to:

- bring greater consumer fuel choice;
- enhance security of energy supply;
- help to shift the dependence on coal and oil for household heating;
- help to alleviate fuel poverty;
- provide an option for businesses to use a cleaner and more efficient fuel;
- reduce CO₂ and other harmful environmental emissions.

The 2010 Strategic Energy Framework, which was approved by the NI Executive, recognised the scope for further extension of the natural gas network in Northern Ireland where it is economic to do so. Extending the provision of natural gas to new areas would bring greater consumer fuel choice, enhance security of energy supply and help shift the dependence on coal and oil for household heating. In addition, it could play a part in helping to alleviate fuel poverty and provide an option for businesses to use a fuel which is cleaner, more efficient, and generally much cheaper than oil. Natural gas can also contribute to reducing CO₂ and other harmful emissions.

Extending the natural gas network would also support a number of the key commitments in the draft 2011-15 PfG objectives, i.e. to continue to work towards a reduction in greenhouse gas emissions by at least 35% on 1990 levels by 2025, and to introduce and support a range of initiatives aimed at reducing fuel poverty across Northern Ireland. There remains an over-reliance on oil in Northern Ireland, with some 70% of homes heated by oil, hence, extension of the natural gas network would reduce emissions and help to lower energy costs for business, the public sector and domestic consumers. Without the Department taking the initiative on gas extension, there appears little likelihood of the energy industry taking this forward at present, and to the West of Northern Ireland in particular.

Within this context, the Department's aim is to extend the availability of natural gas to more energy consumers in Northern Ireland, particularly in the West and North West, with specific towns to be identified and targets for gas volumes and new connections established. The Department would propose to develop a detailed business case for Government subvention to support the project, along with a timeline for the roll-out of new gas networks.

However, it is recognised that there are a number of important issues still to be considered as part of extending the gas network. Further discussion with the Utility Regulator and the natural gas industry will be needed, with the Regulator having an important role, particularly in respect of licensing arrangements, which could see the launch of a licence competition by November 2012. Given the need for a licence competition(s) and award, network design, consideration of environmental issues, and obtaining planning and other consents, it is unlikely that construction works for any gas network extension could commence until 2015/16.

It is also important to note that the success of any plans to extend the natural gas network would be dependent upon gas companies coming forward to apply for new gas transmission, distribution, and supply licences. As outlined in Section 3 below, a

recent consultation exercise¹ has revealed strong support for gas network extension from the gas industry, including PNG and *firmus energy*, although the level of interest in actually providing new infrastructure is difficult to gauge in advance of an actual competition for new licences. Companies are likely to raise a number of issues, such as rates of return, geographical scope, business model to be adopted etc, as part of any licence negotiation process with the Utility Regulator. All of these issues would have to be resolved before any firm commitments are made.

The viability of any project to extend natural gas to the West would also be dependent upon business, public sector and domestic customers in new licensed areas being prepared to switch to natural gas in sufficient numbers to make the project viable. Responses to the consultation indicated strong support from a number of companies in the food sector; from public sector bodies such as Cookstown District Council, Dungannon and South Tyrone Borough Council and the Western Health and Social Care Trust; and from the NI Housing Executive for whom natural gas is their fuel of choice when heating boiler replacement is required.

Section 3: Stakeholder Issues

*Identify the key stakeholders and explain their involvement.
Indicate their level of commitment to the project as specifically as possible.
Describe any consultations held or still required.
Are there any outstanding stakeholder issues?*

Key stakeholders are the natural gas companies who would develop new gas networks, for which they would receive a regulated return over an agreed period within their licence. The Utility Regulator, in its role as the independent energy regulator, would be involved in holding a licence competition and granting licences to gas companies involved in constructing and operating new gas networks. Business and domestic consumers, along with public sector organisations, would be potential new natural gas consumers, and their acceptance of natural gas as an alternative fuel source would be very important for the success of the project,

In June 2011, the Department issued a consultation paper seeking the views of key stakeholders and the wider community. The 3 month consultation closed on 30 September 2011 with 29 responses received. The majority of responses, particularly those from the natural gas sector, local industry and the public sector, were strongly supportive of extending the natural gas network and agreed that the areas outlined in the consultation, i.e. the main towns to the West and North West of Northern Ireland and in East Down, represent the key remaining areas in which the natural gas network might feasibly be developed.

The Phoenix business model in their Greater Belfast gas licensed area seeks to maximise the number of gas connections for all business and domestic consumers. The business model used in the *firmus energy* gas licensed area has its focus on connecting businesses, public sector, social housing and new build homes, but not specifically existing privately owner occupiers, ie. it is the lower uptake model compared to Phoenix.

¹ All non-confidential responses to the consultation paper on the 'Potential for Extending the Natural Gas Network in Northern Ireland' are available on the DETI website at www.deti.gov.uk.

The majority of respondents believed that, for the full benefits of natural gas to be realised, particularly in relation to helping to eradicate fuel poverty, any new gas network must aim to reach as many domestic households as possible rather than focusing upon connecting industrial and commercial properties, new housing and social housing, i.e. a preference for the Phoenix business model in the Greater Belfast licensed area as opposed to the more limited roll-out within the *firmus energy* business model in the 10 towns licensed area.

Many respondents also expressed the view that the project should be supported by a level of subvention from government which would eliminate or reduce the need for higher gas bills for all gas customers in order to fund the development of new transmission networks. CBI Northern Ireland, for example, while 'strongly' supportive of gas network extension, was concerned that, without Government subvention, the potential increase in gas transmission costs might be too much for consumers to bear.

The consultation paper asked stakeholders to comment on how other energy technologies, such as renewable heat, might impact upon the potential extension of the natural gas network. Responses to this question varied with some stating that other forms of energy should not be supported as this time, as they could damage the up-take of natural gas, whilst others thought renewable heat could be a viable alternative to natural gas, particularly for those in rural areas who are unlikely to ever be connected to the gas network.

Section 4: Management & Implementation

Give a preliminary indication of the proposed project management structure and key personnel.

Is any consultancy support likely to be required?

Identify accommodation, staff and TUS issues.

Describe any legal, contractual or procurement issues.

Are there any important outstanding management/Implementation considerations?

Gas network extension will be advanced through the gas team within DETI's Energy Markets Branch under the supervision of the Head of Energy Division (Grade 5) and in liaison with the gas team within the Utility Regulator's office. When key decisions have been made, the competition for new gas conveyance and supply licences will be managed by the Utility Regulator who will remain in close contact with any successful companies, and the Department, during the network design, construction and implementation stages of the project. Subject to views on this SOC, consultancy support, estimated at £25k, would be necessary for development of a full business case if Government subvention is to be pursued to financially support the project(s).

Section 5: Consideration of Options

Provide an initial list of options identified that could meet the objectives and briefly describe their main features.

(Consider variations in scale, quality, technique, location, timing etc).

NB A preferred option should not be identified before options have been developed and appraised more fully at OBC stage.

The Department is considering a number of options in respect of extending the natural gas network:

Option 1: Do nothing

Under this option, the natural gas network in Northern Ireland would not be extended beyond the current licensed areas, i.e. Greater Belfast and the 10 towns areas. This would mean that natural gas will never be available to a sizeable section of the Northern Ireland population, limiting fuel choice for business, public sector and domestic customers in large areas, leaving them to pay higher prices for energy than customers in natural gas licensed areas, and accepting that some 70% of energy consumers will remain dependent on oil. This option would also mean that potential reductions in CO₂ and other emissions would not be realised as energy consumers remain committed to using oil and other more polluting fuels.

Option 2: Limited further roll-out of the natural gas network

This would entail extending the natural gas network on a limited basis to those towns in the West and North West deemed likely to provide the highest gas loads, e.g. Dungannon, Cookstown and Magherafelt in Mid-Ulster. The 2010 feasibility study estimated that this could deliver a potential gas load of up to 12.9 million therms and up to 12,627 customers depending upon the business model adopted. A limited roll-out would restrict the cost of providing new gas transmission networks to a level which is likely to require less Government subvention but which might be met instead from cross-subsidy by all natural gas customers in Northern Ireland, i.e. a small increase on gas transmission tariffs of less than 1%. It would, however, still leave a substantial geographic area of Northern Ireland without access to natural gas and therefore remaining dependent on oil which is a more polluting fuel.

Option 3: Full roll-out of the natural gas network

This would entail extending the natural gas network to all six towns identified in the 2010 feasibility study, i.e. Dungannon, Cookstown, Magherafelt, Omagh, Enniskillen/Derrylin and Strabane. The 2010 feasibility study estimated that this could deliver a potential gas load of up to 27.6 million therms and up to 31,387 customers depending upon the business model adopted. This would provide greater fuel choice to as many energy customers in Northern Ireland as possible and would make a greater contribution towards helping Northern Ireland to meet its carbon emission reduction targets. However, some £44-51 million of subvention would be required for gas transmission or the full cost would be borne by all gas and electricity customers in Northern Ireland (as gas is used extensively for electricity generation). Gas transmission costs for the project are estimated at £85 million, and at 35% funding, government subvention of some £30million would greatly impact on the economic shortfall in the project noted above.

It is considered that for Options 2 and 3, broadly similar timescales would apply to deal with the licensing, design, and pre-construction consents required, with Option 3 taking a longer period of time to build new gas networks than option 2 given its more limited roll-out.

In relation to options for the respective business models, as noted in Section 3, the higher uptake model which is operated in Greater Belfast by Phoenix ensures that gas availability is maximised for all consumer groups, while the *firmus energy* business model operated in their 10 towns licence area outside Greater Belfast does not specifically target domestic households, other than social housing and new build privately owned homes. In order to maximise the benefit from investment in new gas transmission infrastructure, the Phoenix business model is considered more attractive as greater gas volumes, due to a higher number of gas consumers, should act to provide lower gas transmission charges compared to where a lesser number of gas consumers are connected. The *firmus* model, as used in the 10 towns area, has the benefit of reduced investment in gas distribution networks, and the potential for a reduced rate of return due to a lower risk profile for developing gas networks in towns with lower gas volumes, however fewer customers connected would result in lower gas volumes which is likely to result in higher gas transmission charges compared to a higher gas uptake model such as that operated by Phoenix. These issues will be explored further within a more detailed business case.

Further options based on geographical scope could be considered and options within a more detailed business case will be derived taking account of the optimal configuration of the gas network. This will include the relative cost/benefit implications for each town to be connected. It is also likely that the respective business models would be factored into the options considered, given that the number of gas connections will impact on the level of subvention required.

Section 6: Costs, Benefits & Risks

*Provide broad estimates of the capital and revenue costs of the project.
If financial savings are anticipated, explain their nature and quantify them broadly.
Describe the non-monetary costs and benefits that are expected to arise.
Explain the key risks that the project is likely to face and any potential mitigation measures.*

Costs

The 2010 DETI/ Utility Regulator feasibility study estimated that providing new natural gas transmission networks to Dungannon, Cookstown, Magerafelt, Omagh, Enniskillen/Derrylin and Strabane (Option 3) would cost around £85 million and require subvention of some £44 million to £51 million. The study also estimated that gas distribution networks for the six towns would cost between £26 million and £86 million, depending on the licensing model adopted, and should overall be self-financing. Altogether, taking gas to all six towns identified in the study as a single project could cost up to £170 million for both transmission and distribution networks.

A more limited roll-out of the natural gas network to Mid-Ulster only (as per Option 2) would cost around £25 million for new transmission networks and require subvention in the range of £19 million to £21 million. Distribution networks would cost between £13 million and £37 million depending on the licensing model adopted and, again, should be self-financing.

Benefits

The benefits of extending the provision of natural gas to new areas may be summarised as follows:

- provide consumers with an additional fuel choice;
- offer significant cost benefits over oil;
- help shift dependence on coal and oil for household heating;
- offer a choice of using pre-payment gas meters which would help domestic customers with budgeting for energy costs;
- increase the potential for businesses and domestic consumers to use a cleaner, more efficient fuel;
- benefit the environment through reduction of harmful emissions; and
- provide both short and long-term employment opportunities for the construction and engineering sectors.

Risks

However, the risks associated with extending the natural gas network must also be considered, particularly:

- requirement for Government subvention, or cross-subsidy by all Northern Ireland gas consumers, to fund transmission networks;
- competing Renewable Heat Incentive policy and other renewable technologies generally;
- availability of realisable gas loads, e.g. failure of public sector or businesses to commit to gas;
- impact on other gas users of no Government subvention – higher transmission and distribution charges could render gas uneconomic, and also impact on electricity prices;
- renewable energy lobby is against further roll-out of fossil fuels;
- potential for gas industry to not be interested in higher risk/ low gas load areas; and
- difficulty in forecasting world gas prices - increases could make the fuel uneconomic.

Other Costs

It is estimated that some £25k of resource funding would be necessary to prepare a more detailed business case if completed by external consultants. Additionally, a

natural gas extension project may require completion of a Strategic Environmental Assessment with external consultancy costs estimated at up to £200k.

Section 7: Funding & Affordability

Outline the estimated phasing of cash/DEL requirements.

Identify the expected sources of funding and the degree to which the funders are committed.

Indicate the current cash/DEL provision for the project (if any) and the additional resources that are likely to be required.

State any particular concerns over affordability.

For Option 3, as already stated, the 2010 DETI/ Utility Regulator feasibility study estimated that some £85 million would be required for new gas transmission pipelines to the six towns in the West and North West as a single project and that this would require subvention of some £44 million to £51 million.

If funded entirely by gas customers, i.e. without Government subvention, this would result in a 14.7% increase in the postalised gas transmission tariff. As gas transmission costs are around 6-8% of final retail gas tariffs, the full cost of the shortfall is estimated to add approximately 1%-1.5% to gas prices for consumers throughout Northern Ireland. This increase in the "postalised" or common gas transmission tariff is also estimated to lead to an increase of around 0.5%-1% in electricity costs as natural gas is used by two of our three power stations.

Government subvention, and in some cases European grant aid, has been provided in the past for new gas transmission projects in Northern Ireland. Financial support from government for new gas transmission pipelines to towns in the West would reduce the cost of transmission to gas consumers throughout Northern Ireland from what it might otherwise have been without subvention.

If Government were to provide up to 35% of the funding required for the new gas transmission pipelines to all six towns considered in the 2010 feasibility study (as was the case for the North-West and South-North gas transmission pipelines), this would amount to some £30 million of subvention. This would greatly reduce the necessary increase in the postalised gas transmission tariffs to perhaps 6% and would also reduce any increase in electricity prices to around 0.2-0.4%.

The tables attached at **Annex B** provide further high-level estimated figures on the potential impact of Government subvention on the amount of customer cross-subsidy required, and therefore on gas and electricity prices for Option 2 as well as for Option 3. The tables also provide further information on the impact of a limited roll-out versus full roll-out of the gas transmission network on estimated gas volumes and the potential number of customers connected under two different business models, i.e. the high domestic uptake model versus the lower domestic uptake model.

Providing some level of Government subvention would have the benefit of giving the Department greater authority to set the parameters for gas network extension, i.e. allowing input to decisions about towns to be connected and the business model to

be adopted. Without Government subvention and a central policy decision on how natural gas should be rolled-out, the Department would have limited input into the decision-making process, with the project being taken forward by the Utility Regulator on purely economic terms which could result in a more restricted roll-out of natural gas, i.e. gas might therefore be taken to Dungannon, Cookstown, and possibly Magherafelt, on the basis of a gas volume-based business model which would limit not only the new areas in which natural gas would be available, but also the availability of gas to domestic customers in those areas.

DETI Energy Division

22 December 2011

Detailed guidance on project appraisal, evaluation, approval and management is available at the Northern Ireland Guide to Expenditure Appraisal and Evaluation ('NIGEAE') website: <http://www.dfpni.gov.uk/index/finance/eaq.htm>

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Natural Gas Availability in Northern Ireland



OPTIONS FOR GAS NETWORK EXTENSION TO THE WEST AND ASSOCIATED COSTS

FIRMUS BUSINESS MODEL (low domestic uptake)

Option 3 - All 6 towns in the West connected to gas (Dungannon, Cookstown, Magherafelt, Omagh, Starbane and Enniskillen/Derrylin)

Potential gas load: 16.3 million therms of gas and 7658 customers

Level of Govt Support	Overall transmission costs	Subvention required	Impact on postalised transmission tariff (assumed @6-8% of retail gas costs)	Impact on retail gas prices (assuming a retail price of 115-135 ppt)	Impact on retail Electricity Prices (based on high level calculation and pro-rata application)
No Govt Support	£85 m	£51m	14.7% increase in transmission costs	1.0 -1.5% on retail gas tariffs	0.5-1.0% increase
Govt Support at 35% of gas transmission costs	£85 m	£51m	35% of £85m = £30m Govt. subvention. Transmission shortfall now only £21m = 6% increase in transmission costs	0.5-0.75% on retail tariffs	0.2 – 0.4 % increase

FIRMUS BUSINESS MODEL (low domestic uptake)

Option 2: Only Dungannon, Cookstown and Magherafelt connected to gas

Potential gas load: 8.4 million therms of gas and 3230 customers (52% of total potential gas volumes for *firmus* model)

Level of Govt Support	Overall transmission costs	Subvention required	Impact on postalised transmission tariff (assumed @6-8% of retail gas costs)	Impact on retail gas prices (assuming a retail price of 115-135 ppt)	Impact on retail Electricity Prices (based on high level calculation and pro-rata application)
No Govt Support	£25 m	£22 m	6.3 % increase in transmission costs	0.5-0.75% on retail gas tariffs	0.2 - 0.4% increase
Govt Support at 35% of gas transmission costs	£25 m	£22 m	35% of £25m = £9m Govt. subvention. Transmission shortfall now only £13m = 3.7% increase in transmission costs	0.25 -0.5% on retail tariffs	0.15 – 0.25% increase

PNG BUSINESS MODEL (high domestic uptake)

Option 3: All 6 Towns in the West connected to Gas (Dungannon, Cookstown, Magherafelt, Omagh, Starbane and Enniskillen/Derrylin)

Potential gas load: 27.6 million therms of gas and 31,387 customers

Level of Govt Support	Overall transmission costs	Subvention required	Impact on postalised transmission tariff (assumed @6-8% of retail gas costs)	Impact on retail gas prices (assuming a retail price of 115-135 ppt)	Impact on retail Electricity Prices (based on high level calculation and pro-rata application)
No Govt Support	£85 m	£44m	14.7% increase in transmission costs	1.0 -1.5% on retail gas tariffs	0.5 – 1.0% increase
Govt Support at 35% of gas transmission costs	£85 m	£44m	35% of £85m = £30m Govt. subvention. Transmission shortfall now only £14m = 5% increase in transmission costs	0.5-0.75% on retail tariffs	0.2-0.4% increase

PNG BUSINESS MODEL (high domestic uptake)

Option 2: Only Dungannon, Cookstown and Magherafelt connected to gas

Potential gas load: 12.9 million terms of gas and 12,627 customers (47% of total gas volumes for PNG model)

Level of Govt Support	Overall transmission costs	Subvention required	Impact on postalised transmission tariff (assumed @6-8% of retail gas costs)	Impact on retail gas prices (assuming a retail price of 115-135 ppt)	Impact on retail Electricity Prices (based on high level calculation and pro-rata application)
No Govt Support	£25 m	£19 m	6.3 % increase in transmission costs	0.5-0.75% on retail gas tariffs	0.2 -0.4% increase
Govt Support at 35% of gas transmission costs	£25 m	£19 m	35% of £25m = £9m Govt. subvention. Transmission shortfall now only £10m = 3.3% increase in transmission costs	0.25 - 0.5% on retail tariffs	0.15 - 0.25% increase

Notes:

1. Transmission costs and subvention figures have been rounded to the nearest £ million.
2. Wholesale gas costs are subject to change hence impacting on transmission costs as a proportion of overall retail tariffs.
3. Impact of gas transmission costs on retail electricity prices is based on a high level calculation of impacts on PSO and SEM SMP and is therefore indicative only.
4. Calculations based on data in 2010 feasibility study, and above information is pro-rata figures calculated from study results, and based on a 40 year licence period.
5. Gas uptake assumptions for both Business Models are as follows:
 - Large I and C = 80%
 - SME = 70%
 - New Domestic = 50%
 - Existing Domestic: = 1.25% (*firmus* business model)
= 70% (PNG business model)

From: Fiona Hepper
Head of Energy Division

Date: 2nd October 2012

To: 1. DETI Accountability and Casework
2. DFP Supply

BUSINESS CASE FOR PROVIDING GOVERNMENT SUBVENTION TO SUPPORT EXTENSION OF THE NATURAL GAS NETWORK IN NORTHERN IRELAND

1. Please see attached, for your consideration, the following documentation which relates to a proposal for providing government subvention of £32.5 million towards extending the natural gas network to selected towns in the West and North West of Northern Ireland (35% of the estimated £92.9 million construction costs):
 - DFP business case template
 - Outline Business Case (OBC) for providing government subvention to support extension of the natural gas network in NI.
 - Risk Register
 - Strategic Outline Case (SOC)
 - Executive Summary 2010 Feasibility Study
2. You will be aware that DFP approval for the Strategic Outline Business Case (SOC) was sought and subsequently secured in January 2012.
3. The proposal has been approved by the DETI Casework Committee and endorsed by the Departmental economists. The Department is therefore content to support the proposal.
4. For ease of reference, a brief synopsis of the background to the business case and its conclusions and recommendations is provided below. A completed DFP proforma is attached.

Background

5. Natural gas was first introduced to Northern Ireland in 1996 when Premier Transmission Ltd (then known as Premier Transco) constructed an undersea gas pipeline between Scotland and Northern Ireland (SNIP). SNIP supplies the requirements of both Ballylumford Power Station and the downstream retail gas markets. Initially, natural gas was made available to customers in Greater Belfast, the immediate surrounding area and Larne where the gas distribution network has been developed by Phoenix Natural Gas (PNG). By the end of 2011, natural gas was available to circa 280,000 properties in this licensed area, with over 140,000 of these properties actually connected to natural gas.
6. *firmus energy (firmus)*, a subsidiary of Bord Gáis Eireann (BGE), is engaged in work to develop the natural gas market outside Greater Belfast along the routes of the North-West gas transmission pipeline, which was completed in November 2004 and which supplies Coolkeeragh Power Station, and the South-North gas transmission pipeline, which was completed in October 2006, both constructed by BGE(UK). This work involves rolling out the gas distribution network in the 10 towns and cities of Londonderry, Limavady, Ballymena, Ballymoney, Coleraine, Newry, Craigavon, Antrim, Banbridge and Armagh. To date, *firmus* has connected around 15,000 customers in their “10 towns/cities” licence area, including taking natural gas to some additional urban areas, such as Tandragee and Warrenpoint. *firmus* would anticipate connecting up to 60,000 customers in total within their 30 year licence period.

(A map illustrating the coverage of the current natural gas network is attached at **Appendix A**)

7. The North-West and South-North gas transmission pipelines were provided with £38million of NI Executive funding which included an £8.5million contribution from the Irish Government. In addition, the North-West pipeline was partly funded by European Regional Development Fund (ERDF) grant finance. The earlier construction of natural gas infrastructure in Northern Ireland was also provided with funding support in the mid 1990’s, including ERDF grants for the Belfast Gas Transmission Pipeline constructed by PNG, support for the conversion of Ballylumford Power Station to gas from oil, and construction of the Scotland to Northern Ireland gas pipeline which, combined, attracted almost £69m of ERDF support. [Note: EU funding for gas infrastructure is no longer an option as EU priorities are now focused on supporting renewables.]
8. The Department, in liaison with the Northern Ireland Authority for Utility Regulation (the “Utility Regulator”), proposes to extend the natural gas network to additional towns in the West and North West of Northern Ireland (namely Dungannon, Cookstown, Magherafelt, Coalisland, Omagh,

Enniskillen/Derrylin and Strabane) and to towns in East Down (namely Hillsborough, Ballynahinch, Downpatrick, Crossgar and Saintfield) in order to significantly increase the availability of gas to energy consumers, both business and domestic, in areas of Northern Ireland where natural gas is not currently available. Aims include:

- bringing greater fuel choice to some 45,000 consumers in these areas;
 - providing an option for businesses to use a cleaner, more efficient and cheaper fuel;
 - helping to shift the dependence on coal and oil for household heating;
 - helping to alleviate fuel poverty;
 - enhancing security of energy supply;
 - reducing CO₂ and other harmful environmental emissions.
9. The Department's Strategic Energy Framework 2010 (SEF), which was fully endorsed by the Northern Ireland Executive, recognised the scope for further extension of the natural gas network in Northern Ireland where it is economic to do so. Extending the natural gas network will also support a number of the NI Executive's key commitments in the 2011-15 Programme for Government objectives, i.e. to continue to work towards a reduction in greenhouse gas emissions by at least 35% on 1990 levels by 2025, and to introduce and support a range of initiatives aimed at reducing fuel poverty across Northern Ireland.
10. At present, a significant area of Northern Ireland (predominantly in the West and East Down) is outside the reach of the existing natural gas network and, as a result, consumers in these areas have a more limited fuel choice compared to other energy consumers in Northern Ireland. There remains an over-reliance on oil, with some 70% of homes using oil for heating, along with significant oil usage by businesses and the public sector in the absence of alternative fuel sources. As natural gas is the least polluting fossil fuel, extending the natural gas network would help to reduce greenhouse gas emissions as well as helping to lower energy costs for business, the public sector and domestic consumers, and improving the diversity and security of energy supply throughout Northern Ireland.
11. Gas network extension sits alongside and complements the Executive's renewable energy strategy, especially in relation to renewable heat, as both are needed given that certain geographic areas will always remain off the natural gas network. Furthermore, as any new gas pipelines will also be able to transport biogas, gas network extension will have a useful synergy with the renewable agenda and will be 'future-proofed' in this regard.

Feasibility Study (2010)

12. In August 2009, the Department and the Utility Regulator jointly commissioned a study to determine, at a strategic level, the technical and economic feasibility of bringing natural gas to additional towns in the North-West and West of Northern Ireland, namely Dungannon, Cookstown, Magherafelt, Omagh, Enniskillen/Derrylin and Strabane. The feasibility study, which was completed in 2010, estimated that taking gas to all six towns as a single project could cost up to £170 million for gas transmission and distribution networks. It also estimated that subvention of up to £51 million would be required for gas transmission (larger pipelines between towns), either from Government or from cross-subsidy by all natural gas customers in Northern Ireland. Gas distribution networks within the listed towns were considered, overall, to be self-financing. These costs have been considered in more detail in the recently completed Outline Business Case.

Public Consultation (2011)

13. Drawing upon the findings of the feasibility study, the Department carried out a three-month public consultation during summer 2011 on the potential for extending the natural gas network. The consultation considered the merits of extending the gas network not only to additional towns in the West and North West, but also to towns adjacent to the existing licensed areas, specifically, in the east of County Down. The majority of responses to the Department's consultation, particularly those from the natural gas sector, local industry and the public sector, were strongly supportive of extending the natural gas network to both the West/North West and East Down. Businesses who are large energy users were particularly supportive with one company estimating that switching from heavy fuel to natural gas would result in savings of £1.75 million.

Outline Business Case (2012)

14. Following DFP approval of a Strategic Outline Business Case in January 2012, the Department engaged a KPMG-led consultancy team in April 2012 to prepare an Outline Business Case (OBC) for extending the natural gas network to selected towns in the West and North-West of Northern Ireland and in East Down. The aim of the OBC was to identify the preferred economic option for developing and financing extension of the natural gas network in line with the following strategic objectives:
 - To promote the development and maintenance of an efficient, economic and co-ordinated gas industry in Northern Ireland;
 - To extend the availability of natural gas, as a more efficient and potentially cheaper fuel, providing additional fuel choice, thus enabling businesses to improve their competitiveness in an increasingly global market place;

- To extend the availability of natural gas as a lower carbon fuel, displacing more polluting fossil fuels, thus providing environmental benefits; and
 - To enable domestic consumers within the towns considered to connect to natural gas, thus contributing to reducing fuel poverty.
15. The OBC, which was finalised in September 2012, has been completed in accordance with HM Treasury's Green Book ("The Green Book: Appraisal and Evaluation in Central Government") and Department of Finance and Personnel (DFP) guidelines on economic appraisals as defined within "Northern Ireland Guide to Expenditure Appraisal and Evaluation" (NIGEAE). Its recommendations are briefly outlined below.

West/North-West:

16. The OBC considered a total of 13 route options for bringing natural gas to the West/North West. Apart from 'Do Nothing', the options ranged between extending the natural gas network to only one or two additional towns and extending the network to all the major towns identified. The route options also considered use of Liquefied Natural Gas or Compressed Natural Gas as an alternative to constructing major gas transmission pipelines between towns. This long list of options was narrowed down to four route options which were then subject to detailed analysis using two business models for developing gas distribution networks within towns and two options for funding the project (i.e. with or without government subvention at 35% of the capex cost of constructing new transmission pipelines).
17. The preferred economic option which was identified would extend the natural gas network as follows:
- from the South-North gas transmission pipeline near Portadown to Dungannon, Coalisland, Omagh, Enniskillen and Derrylin;
 - from Dungannon to Cookstown and Magherafelt; and
 - from the existing North-West Pipeline near Londonderry to Strabane.
18. The OBC further found that the preferred business model for developing distribution networks within the above listed towns should be based upon making gas available to as many industrial and commercial, public sector and domestic customers as possible where it is financially viable to do so. That is, the business model adopted for gas distribution should be similar to that adopted by PNG in the Greater Belfast licensed area (the "pipe in every street" model) rather a volume-based business model based primarily on connecting key gas loads such as businesses, public sector buildings,

social housing and new private housing developments (similar to the model adopted by *firmus* in the 10 towns licensed area). The main difference in the two gas distribution models is that a much higher proportion of domestic properties are connected to gas in the PNG gas licensed area while a relatively small proportion (less than 10%) of domestic properties are routinely connected in the *firmus energy* licensed area outside Greater Belfast.

19. The cost of constructing gas distribution networks in the West and North West based on the PNG-type model was estimated at £110.75 million, however, it is anticipated that this would be self-financing. Based on the preferred business model for distribution, it is estimated that, after 40 years, the new gas infrastructure in the West/North West could serve some 34,000 consumers using around 43 million therms, including almost 25 million therms for industrial and commercial customers (84% of the latter demand relates to the top 27 industrial and commercial customers).
20. While distribution networks were deemed to be self-financing, the OBC identified an overall financial shortfall of £75.45 million in respect of the transmission element of the West/North West project (including capex, opex and using a 4.25% regulated rate of return which has been based on current rates of return in GB). It considered whether the shortfall should be funded by gas consumers through increases of up to 12.08% in the postalised gas transmission tariff, or by part-government subvention of £32.5 million (35% of the estimated cost of £92.9 million to construct the gas transmission network) coupled with a smaller increase of up to 7.6% in transmission tariffs. Both of these options are aimed at addressing the £75.45 million commercial gap identified for the overall project.
21. The suggested government subvention figure of £32.5 million reflects the precedent of earlier gas transmission networks, unlocking the provision of gas in other parts of NI, having been funded at 35% of total construction costs which could be seen as the minimum level of subvention required to ensure that such projects are able to proceed. The OBC concluded that the second funding option is more closely aligned to the project's strategic objectives, which in turn are closely associated with the obligations and expectations placed upon this Department through legislation.

East Down:

22. The OBC also considered a range of options for bringing natural gas to East Down and identified a preferred economic option which would extend the natural gas network from Lisburn to Downpatrick via Hillsborough and Ballynahinch; and from Ballynahinch to Saintfield and to Crossgar at a total construction cost of £56.57 million.

23. As with the West/North West extension, the OBC has determined that new gas distribution networks within the towns listed should be self-financing but that the overall project will require some form of financial support. In East Down, projected gas volumes are not high enough to warrant laying the larger gas transmission pipelines which would be used between towns in the West/North West. Only gas distribution pipes would be required and historically subvention funding has not been provided for distribution pipelines. Therefore, it is recommended that Government subvention is not provided in East Down, and so DETI is **not** seeking approval from DFP to incur any expenditure in relation East Down. This approach has been endorsed by the DETI Casework Committee. Instead, the OBC has outlined a number of alternative funding options which the Utility Regulator, in liaison with DETI, will wish to analyse further in order to identify the optimal solution.

Rationale for Government Subvention for West/North West Project

24. The OBC report found that the overall project would not be commercially viable for a private sector gas network operator without government subvention and/or subvention through the "postalised" gas transmission tariff. In the absence of either, it is unlikely that a private sector operator would apply for a licence to develop the gas transmission network in this new area in the short to medium-term. This market failure is borne out by the fact that, to date, no gas company has expressed any proactive interest in extending the natural gas network to any of the listed towns in the West and North West, with no formal licence applications having been submitted to the Utility Regulator for this area since natural gas was introduced to Northern Ireland in 1996.
25. The OBC concluded that Government subvention of £32.5 million (based on previous subvention levels of 35% of the cost of BGE (UK) constructing new gas transmission networks), coupled with an increase in postalised gas transmission tariffs, is the funding option which is more closely aligned to the project's strategic objectives.
26. Without Government subvention, the entire commercial shortfall of £75.45 million would have to be met by gas consumers across Northern Ireland through an increase in the postalised gas transmission tariff. This increase has been estimated at up to 12.08% over the repayment period of the 25-year transmission licence. With Government subvention of £32.5 million, the estimated rise in gas transmission tariffs would be pegged to up to 7.60%.
27. In terms of actual impact on consumers, a business using 75,000 therms per annum, for example, would have a gas bill might be in the region of £80,000 to £90,000 per year depending on the terms of their contract with their supplier. A 12.08 increase in the transmission tariff would translate

into an overall increase of 1% in the business' gas bill, representing an additional cost of almost £800-900 per year. For larger energy users the additional costs would be even greater, with responses to the 2011 DETI consultation suggesting savings from conversion to gas of up to £1.75million for some larger energy users.

28. Government subvention would minimise increases to gas tariffs across NI as a result of the project and thus help to minimise the burden of energy costs not only on businesses but also on households suffering from fuel poverty. It is important that the project should seek to minimise the impact of gas network extension on gas prices in order to mitigate the risk that the retail price of natural gas could become less favourable in future compared to alternative fuels. At present, home heating oil is some 35% more expensive than natural gas but less favourable comparisons could deter new connections and seriously impact the success of the project. Should oil and coal continue as primary fuel sources for domestic and business customers in the West and North West, this would mitigate against attempts to reduce CO2 emissions and air pollution and make it more difficult to achieve Northern Ireland and UK targets regarding emissions reduction.
29. The Confederation of British Industry (CBI) is strongly supportive of extending the natural gas network to the West and North-West (and to East Down) and, in its response to the Department's 2011 public consultation, has said that the financial burden must not be placed solely on domestic consumers and businesses. The CBI believes that Government must contribute financially to this project as any additional costs would add another burden to businesses that already face a challenging economic climate. The Consumer Council has also stated that the Department should explore every avenue to fund the additional costs of this project before deciding to add additional costs to hard pressed consumers.
30. Any Government subvention should also be seen in the context of the wider benefits of the project and the distribution of those benefits. Very significant benefits are projected in relation to the reduction in greenhouse gas emissions. With these being benefits to all of Northern Ireland, as opposed to just any new gas users, it is important to note that the projected CO2 savings, at some £43m, are well in excess of the proposed levels of assistance from Government.
31. Government subvention would also be in line with the principle set out in the UK Government's Carbon Plan (December 2011) which proposes that Government should tackle market failures and unblock barriers to investment, particularly where technology deployment relies on the creation of new infrastructure. It is important to note that, while the OBC identified a commercial funding gap of some £75 million in respect of gas network extension to the West/North West, the preferred option produced an overall

net economic benefit of around £193 million, including the above mentioned carbon savings estimated at £43 million.

Cost Profile and Timelines

32. The process to deliver gas network extension will involve the Utility Regulator awarding new licence(s); completion of detailed network design by a new licensee; finalisation of planning approvals; and completion of the wayleave process. This means that construction of new gas transmission networks for the listed towns in the West and North West is unlikely to commence before spring 2015. The Department's target is for the gas transmission infrastructure and main distribution pipelines to be constructed by 31 December 2015.

33. Timelines for the project are therefore anticipated as follows:

- Completion of Outline Business Case – September 2012
- DFP consideration of subvention request – October 2012

Subject to the outcome of DFP consideration:

- NI Executive consideration of project and funding – November 2012
- Consultation by the Utility Regulator on the proposed licence competition for new gas networks – December 2012
- Licence award to private sector gas company to construct and operate new gas networks – April/ May 2012
- Network design, planning, wayleaves, and contract procurement by the developer – Spring 2012 to end of 2014.
- Construction of new gas transmission networks and main distribution pipelines – Spring 2015 to December 2015.
- Roll- out of lower pressure gas distribution pipelines and connection of customers to natural gas – 2016 onwards over the licence period.

34. Assuming that the design, wayleave and procurement processes are commenced in 2013/14, and the main gas transmission pipelines installed during 2015, the OBC estimates the following cost profile relevant to possible grant funding:

- 2013/14: £2.3 million - (e.g. for pre-planning and design work)

- 2014/15: £11.8 million - (e.g. for pre-construction works, pipes, AGIs)
- 2015/16: £17.4 million – (e.g. completion of construction works)
- 2016/17: £1.0 million - (e.g. for outstanding wayleaves and reinstatement work)

This profile is, of course, indicative and will be subject to the Utility Regulator undertaking a licence competition, awarding a licence to the successful applicant in 2013, and agreement with the gas company on a programme for the project, including a profile of expenditure.

35. The Department has not formally allocated a capital budget to the project but there are indicative funds of £95 million identified for energy projects in the period 2015/16 to 2020/21 in the updated Investment Strategy for Northern Ireland 2011-2021 (ISNI) which was agreed by the NI Executive on 3 September 2012. ISNI also contains a general commitment to gas network extension: *“We will encourage extension of the natural gas network, where it is technically possible and economically feasible to do so, to enhance diversity of fuel supply and customer choice and bring about reductions in CO₂ emissions.”* As regards funding for the earlier stages of the project, DETI currently has £10m in its current energy budget which is earmarked for electricity but which, subject to the necessary approvals, might be moved across to help fund gas network extension in the early years of the expenditure profile for government subvention.
36. Subject to receiving necessary outline approval for government subvention of £32.5 million from DFP, DETI would propose to prepare a paper for NI Executive consideration before Christmas 2012.
37. The Department is aware that the provision of government subvention for the project would require State aid approval and, again subject to receipt of outline funding approval from DFP, this will be sought from Brussels.

Viability/Key Risk Assessment

38. The Department is working with the Utility Regulator who is planning to launch a public consultation exercise by end-December 2012 on the proposed method for conducting a competition for new gas licence(s) in the West and North West and arrangements for East Down. This timing is subject to NI Executive agreement on subvention as the Utility Regulator will not take forward these workstreams until a decision on this issue has been made.
39. In line with our current timetable, the Utility Regulator’s consultation would be followed by an actual competition and award for new gas licences during 2013. Until new gas transmission and distribution licences are awarded, it

is not possible for the Department to comment on the appointed licensee's financial strength and expected profitability but such issues would be part of the key criteria to be considered by the Utility Regulator as part of the licence competition process. The provision of gas transmission and distribution infrastructure is highly technical and subject to planning, regulatory, health and safety, and environmental consents. Such a project could not be undertaken by anyone other than an established, suitably experienced, and financially sound energy company, and only such a company could be awarded a licence by the Utility Regulator to develop new gas networks.

40. The OBC has identified a number of general risks associated with developing and operating an extension of the natural gas network to the West and North West (and to East Down). These are detailed in the Risk Register along with proposed mitigating actions.

Conclusions

- (i) Extending the natural gas network in Northern Ireland will support the Department's Strategic Energy Framework 2010 (SEF), which was fully endorsed by the Northern Ireland Executive.
- (ii) The OBC on extending the availability of natural gas to the West/North West and to East Down concluded that constructing the new gas transmission and distribution networks would require a combined cost of £203.7 million and £56.6 million respectively. It is estimated that this would deliver natural gas to some 45,000 new customers.
- (iii) The overall commercial aspect of the West/North West project produced a negative NPV of £75.45 million showing that it would not be commercially viable without some form of subvention and recommended government support of £32.5 million (based on 35% of transmission construction costs as provided for earlier gas transmission projects in NI).
- (iv) However, the OBC further found an overall net economic benefit in the region of £193 million for gas network extension to towns in the West and North-West, including carbon savings estimated at £43.2 million.
- (v) Government subvention in respect of gas transmission in the West and North West would minimise increases to gas tariffs for all gas and electricity consumers as a result of gas network extension, thus helping to minimise the burden of energy costs on households suffering from fuel poverty as well as maximising the potential for businesses in the new gas licence areas to improve their competitiveness.

- (vi) Without subvention, oil and coal could continue as primary fuel sources for many domestic and business customers in the West and North West if consumers consider the price differential between gas and oil as insufficiently attractive to convert to gas. This would mitigate against attempts to reduce CO2 emissions and air pollution generally and make it more difficult to achieve Northern Ireland and UK targets regarding emissions reduction
 - (vii) DETI Casework Committee met on 25 September 2012 and agreed that there is a strong economic case for gas network extension to the West/North West. The Committee recommended that the case for government subvention of £32.5 million should be submitted to DFP. Ministerial approval together with NI Executive and EU State aid approval for government subvention remain to be secured. The project will not be taken to the next stage until all necessary approvals are in place.
 - (viii) Subject to securing all necessary approvals, a full PRINCE Board chaired by a senior DETI official will be established to manage the project. A risk register has already been prepared and will developed and updated as necessary. An EQIA has been started and DETI is considering legal advice as to whether a Strategic Environmental Assessment is required.
 - (ix) The Department has been working with the Utility Regulator on this project. An official from the Utility Regulator's office has been closely involved in the development of the OBC and the Utility Regulator is supportive of the project.
41. I should be grateful if DFP Supply would consider the Outline Business Case in respect of government subvention for gas network extension to the West and North West. DETI officials would be happy to engage in further discussions if that would be helpful and to answer any queries you may have.

(signed)
Fiona Hepper