Gas and electricity licensees,
consumer groups, and
any other interested parties

Promoting choice and value for all customers

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Dear colleague

Open Letter Consultation on National Grid proposal to commence generating electricity at Gas Distribution pressure reduction sites

Introduction

National Grid Gas plc (NGG) has entered into negotiations with blue-ng Limited (Blue-ng), a joint venture between National Grid plc (NG) and 2OC Limited. The negotiations between NGG and Blue-ng are aiming to agree terms whereby NGG permits Blue-ng, in two trial phases, to access certain sites to design, install and maintain environmentally sustainable electricity generation plant at NGG pressure reduction stations and to permit Blue-ng to generate electricity using such plant (the **"Electricity Generation Project"**).

We are seeking views on whether this trial project should go ahead, whether the Authority should consent to derogations from NGG's GT licence and in particular whether the expected project benefits outweigh the potential risks and costs to customers.

Project Overview

At present a simple throttling valve is used to reduce gas pressures at pressure reduction sites as gas flows from one part of the network to a lower pressure tier. However, since the pressure reduction lowers the temperature of the gas, it is pre-heated before it enters the valve to ensure appropriate operating conditions. The heat source is combustion of a small proportion of the gas.

Blue-ng are planning to install, in parallel with the existing arrangements, one or more expansion turbines (turbo expanders) in the gas flow to convert the energy present in the gas immediately prior to the turbine into electricity for export to the local electricity distribution network.

Blue-ng has identified eight trial sites they are looking to develop in two phases. The first phase will include the installation of a turbo expander and biomass engine at two existing pressure reduction sites. The biomass engines will provide the required preheat for depressurisation of the gas in place of using the gas-powered heaters and will generate additional electricity enhancing the ability of the site to supply electricity.

Further technical information related to this project is provided in Annex 1 of this letter.

NG's views on the benefits of the electricity generation project

NG has identified a number of stakeholders that they believe could realise benefits arising from this proposal. Their arguments are set out below:

United Kingdom as a whole (by supporting its Climate Change Objectives)

Following the Kyoto Protocol, the UK has a requirement to attain a greenhouse gas emission reduction of 12.5% on average in 2008-2012 compared to 1990 levels. In addition, the UK Government has set its own goal for CO2 emission reduction at 20% below the 1990 level by 2010 and through the Energy White Paper an ambition for a 60% cut in carbon emissions by 2050.

In support of these targets, the Renewables Obligation places a mandatory requirement for UK electricity suppliers to source a growing percentage of electricity from eligible renewable generation capacity; increasing under the current rules to 15% by 2015.

It is anticipated that Combined Cycle Bio Generator (CCBG) technology will be classed as renewable generation and thus the development of CCBG technology is in line with the Government's greenhouse gas emission reduction objectives and the technology could make an important contribution to renewable generation targets if it proves technically and commercially viable. The venture would offer up to 1GW of low carbon generation capacity.

The project would also support the Government's objectives to move towards a more distributed and diverse generation portfolio.

National Grid Gas (by reduced use of shrinkage gas)

It would not be appropriate for NGG, as a regulated business, to take the risks associated with the development of CCBG technology and as a result it does not expect to initially receive significant benefits from its development.

It is expected that the proposal will enable NGG to use less gas for pre-heating at sites where the technology is installed. Whilst Own Use Gas (OUG) is a very small component of the total level of LDZ shrinkage (roughly 2%), this will still help enable NGG to reduce its emissions of greenhouse gases. Over time, this could result in reduced gas shrinkage charges to shippers, which ultimately should be passed through to gas consumers.

It is anticipated that there will be future interest from multiple parties if the proposal demonstrates that there is additional value available from gas pressure reduction sites. This interest will enable NGG to realise the additional value through appropriate competitive and commercial arrangements.

Gas Consumers

The overall direct benefit to the customers of the GDN can only be determined when the outcome of the trials is known. However the gas customer will benefit both directly and indirectly from the benefits described above.

The greatest financial benefits could come from a successful demonstration and wide scale roll out of the proposal or some competing technology. The most direct way of allocating the benefits between the developer and the customer, as well as choosing between competing schemes for accessing the energy released in dropping the pressure, would be to auction the rights to place equipment at pressure reduction sites. In this way the customer would receive the highest price that a developer

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was willing to pay and the rights would be allocated to the party that valued them most highly.

If there is a period before such competition develops, then a regulatory solution could be required in the meantime. It is in the wider public interest that such arrangements should act to encourage other parties to enter the market and compete, thus promoting development and diversity in this market.

Timing

As this proposal is, as yet, unproven in the UK from both a technical and commercial perspective, it would be inappropriate to pre-judge the potential benefits for customers at this stage. NGG accepts that once the installations are generating electricity and the market potential becomes clearer and capable of expansion, an assessment should be undertaken to assess how and to what extent gas consumers should benefit. The first two sites to be commissioned for phase one of the project are due to be commissioned in September 2009.

As long as early indications are positive on phase one of the project it is likely that work will start on the phase two roll out on a further six PRSs, with an expectation that these will be operational from around 2011/12. It is at that point that a clearer view of the enduring commercial arrangements will develop and therefore a better understanding of the potential for gas consumers to benefit from the arrangement.

Ofgem's views

In principle, Ofgem believes NGG's proposal has the potential to provide environmental and financial benefits for consumers. However, the magnitude of the benefits to consumers will not be clear until after the trials have been completed.

The energy sector is a significant contributor to the production of greenhouse gasses and has a key role to play in tackling climate change and delivering more sustainable and secure energy markets.

Customer benefits

A financial benefit to gas customers could arise from the reduction in the volume of OUG by National Grid in pre-heating which is a prerequisite to pressure reduction. OUG is a component of shrinkage and hence reductions in pre-heat gas will reduce the volume of shrinkage. Shrinkage costs are part of the costs taken into account in setting GDNs' allowed revenue, which in turn determines the level of transportation charges and hence a reduction in the volume of shrinkage will lead ultimately to a reduction in transportation charges for the consumer. However, as the GDNs have been set shrinkage allowances based on fixed volumes for the period 2008-13, the reduction in charges will only occur from 2013 onwards.

Further financial benefits could accrue to customers via a mechanism that allowed them to share in the income NGG receives from Blue-ng as a reduction in their distribution charges. One method of doing this would be to allocate costs associated with operating PRS sites to this new non-formula income steam in setting future price controls, which we already do with other non-formula income streams. Given that Blue-ng is a related party of NGG, we would have to ensure that the amounts Blue-ng were charged were competitive.

Environmental benefits include reduced carbon emissions for gas distribution, since gas will no longer be being burnt for pre-heating. Also, the electricity generated from the combined heat and power unit will provide low carbon generated electricity for export to the local electricity distribution network.

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Potential costs or risks for customers

Costs incurred by NG for the purposes of setting up or maintaining these arrangements will not be eligible for recovery through the price control. Neither will any additional operating expenditure incurred in the maintenance and operation of the pressure reduction stations as a result of the installation and operation of the Blue-ng assets. To ensure this will require careful monitoring by Ofgem of NGG's costs.

There are some potential downsides to consumers in terms of the incentive on NG to operate the gas distribution system in a way that maximises the returns from electricity generation.

Operational Issues

NGG have stated there will be no negative impact on the safety, reliability and security of the distribution system due to the installation of the turbo expander equipment. They will have to satisfy the Health and Safety Executive (HSE) that this is the case to be able to operate the sites.

The source pressures required at the inlet to the PRS sites are delivered by National Grid's NTS transportation activities that require the gas to be compressed to assist with Network flows and NTS operation. In reducing the pressure of the gas at the proposed sites NGG are reversing the compression process that they instigated at the entry point of the NTS. We do not want to create a perverse incentive on NGG to operate its NTS at higher pressures than required in order to maximise generation potential at its PRS sites.

Since the turbo expanders will be operated by a third party and contracts agreed with NGG there could be an incentive on NGG to operate their networks in a manner to maximise the revenue generated by the CHP engine rather than operating the networks in the most efficient manner. We do not currently monitor NGG's day-to-day operational decisions in a way that would facilitate detection of such practices. NG is not currently allowed to own electricity generation to avoid these kinds of conflict, based on its ultimate ownership of the England and Wales electricity transmission system and the GB electricity system operator.

Consents to derogate from NGG's GT licence

NGG have identified two licence conditions to which they require consent from the Gas and Electricity Markets Authority ("the Authority") as follows:

Standard Special Condition A27 Disposal of Assets (SSC A27)
Standard Special Condition A39 Indebtedness (SSC A39)

Under SSC A27, NGG requires consent from the Authority to relinquish operational control of assets since the additional apparatus to be installed at the pressure reduction sites including the turbo expander, generator and heat source will be assets owned and controlled by the third party.

Under SSC A39 NGG requires consent to enter into a contract that incorporates a cross default obligation.

There may be other regulatory constraints which will need to be considered in due course.

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Next Steps

We would welcome the views of any interested parties in relation to the issues raised in this proposal. Any comments on this proposal should be made by 29 April 2008.

In particular we would welcome respondents' views on the following questions:

Do respondents agree with NG's proposed environmental benefits associated with this technology?

Are there any potential benefits, costs or risks to consumers that have not been considered in this letter?

Are there any other licence conditions that could be affected by NGG's proposal?

Should this kind of arrangement be ruled out as it has the potential to dilute the incentive on NG to operate either the transmission or distribution networks efficiently?

Should NGG be looking at the opportunities to reduce pressures on the National Transmission System to prevent the need for excessive pressure reduction at these sites?

Given that NG also owns the England and Wales electricity transmission network, and is therefore not allowed to generate electricity itself, are there any concerns regarding this proposal from this perspective?

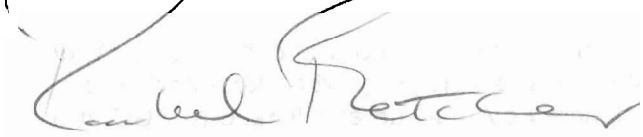
Are there any other issues Ofgem should be considering in reviewing NGG's proposal?

Should Ofgem be considering the proposal to reduce own use gas for pre-heat using biomass generators separately from the proposal to convert the energy lost in depressurisation into electricity using turbo-expanders?

Are there any modifications to NGG's gas transportation licences that would be appropriate to safeguard consumers if the Authority grants the relevant consents?

Responses should be sent to paul.branston@ofgem.gov.uk. If you have any queries in relation to the issues raised in this letter please do not hesitate to contact Paul Branston on 020 7901 7105.

Yours faithfully,



Rachel Fletcher
Director – Gas Distribution
Signed on behalf of the Authority and authorised for that purpose by the Authority

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Annex 1

Project Description

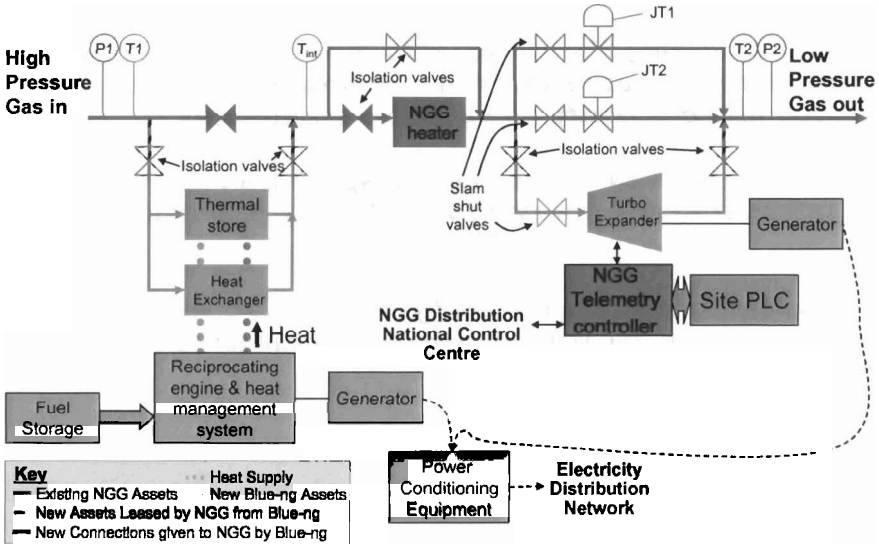
Natural gas being conveyed in the distribution system is not an ideal gas and so there is a small drop in its temperature as it passes through the throttling valve at a GDN pressure reduction site. NGG currently uses gas powered heaters to compensate for this temperature drop and prevent the outlet temperature dropping below a predetermined point; below which unsatisfactory conditions would exist for the efficient conveyance of gas to consumers.

To provide the necessary pre heat for two of the first eight trial sites, Blue-ng will use biomass engines to deliver the necessary heat to the gas-stream prior to passing through the turbo-expander. This reduces the need for NGG to operate its existing gas-fired pre-heaters at those sites. The engine and heat management plant will also generate electricity to increase the overall efficiency of the system. Blue-ng calls this patented technology solution Combined Cycle Bio Generator (CCBG) because it combines Combined Heat and Power technology and heat recovery cycles with a fuel comprising 100% biomass.

Due to design and operational constraints a pressure reduction station cannot operate with a single expansion turbine and hence the system is being designed to co-exist with all the existing infrastructure so that gas flow parameters outside the efficient operating range of the expansion turbines will be met through the existing throttling valves.

The following diagram provides a detailed schematic of how the technology could connect to NGG's existing assets on a gas pressure reduction installation.

A schematic of CCBG technology on a gas distribution pressure reduction installation



The eight trial sites will comprise of the CCBG, which will be owned and controlled by Blue-ng, together with a heat exchanger, thermal store, radial turbine (turbo expander) and associated pipes and valves, which will be constructed by Blue-ng and leased to NGG at a nominal rent.

The expansion turbine will be operated by NGG as though it was another throttling valve and its sole purpose, from an NGG perspective, is to deliver the flow rate and pressure reduction required. In this way NGG remains in sole operation of the gas pipeline system for which it has a licence to operate.

Blue-ng's responsibility is therefore restricted to the generation of electricity, provision of heat and fuel management.

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