

Dear Mr. Branston

I refer to the correspondence from Rachel Fletcher in respect to National Grid's proposal to commence generating electricity at Gas Distribution pressure reduction sites.

I would respond as follows:

1. I believe that the concept of replacing existing natural gas pressure reduction facilities that rely of throttling gas flow, with a system that captures the energy contained in the gas flow is environmentally sound.
2. However I further believe that the way it is being proposed, particularly with respect to the details that are available concerning the Beckton Gas Works site are a cynical use of subsidy. The availability to a Generator company of 2 Renewable Obligation Certificates for every 1 MW of electricity generated by a CHP engine when fuelled by a biofuel, will be at the expense of the UK consumer.
3. Furthermore the general use of biofuel can only impact on the poor of this world who will suffer more than others from rising food prices caused by the impact of "green policies" particularly the biofuel programmes of America and Europe.
4. Our own Chancellor, Alistair Darling has demanded an urgent review of all biofuel programmes and this has been re-stated by the Prime Minister, Gordon Brown in the House of Commons on the 16th April 2008. Additionally many multi-national companies are now uneasy about supporting the world market for this type of oil.
5. Biofuels are not a green panacea. Their use in the proposal under discussion, where they are delivered by road, merely creates the impression that carbon emissions are being cut when compared to the existing pre-heating methods used in the throttling system of gas pressure reduction.
6. In your **Project Overview** you make no mention of the fact that when using a turbo expander to replace a throttling device, the requirement to pre-heat the incoming gas is up to 40% higher due to the isentropic nature of the turbo expander.
7. Every hugely subsidised MW of electricity (2 ROC per MW), generated by the CHP engine and sold by the generating company at about £120 per MW (including ROC value) will impact in some way on the poor and hungry of this world.
8. It is becoming increasingly evident, especially when including all the factors like transportation and fertilisation that all the major biofuel production and use, causes massive increases in harmful emissions.
9. The only sustainable biofuel is recycled waste oil.
10. Blue-ng's proposal to create a plant at Beckton in East London will I understand use daily some 50 tonnes of road transported vegetable oil to fuel the pre-heating requirement of the incoming natural gas.
11. The interests of the United Kingdom in respect to Climate Change objectives and the Gas Consumer, leaving aside the wider impact resulting from biofuel use, would best be served by adopting a completely green process of natural gas pressure reduction, where the need to pre-heat is removed.
12. This can be achieved simply by applying technology that exists in every household where creating cold conditions is the result of gas expansion. This is present in every refrigerator and freezer worldwide.
13. Pressure reduction via a Turbo Expander can be a completely green process, no pre-heating, no emissions and a 50% increase in total energy output.
14. All it requires if for unheated natural gas to be allowed to enter the Turbo Expander therefore generating electrical power and achieving pressure reduction. The gas then

would enter a heat exchanger where its cryogenic properties would be extracted as cold energy output for refrigeration, air-conditioning and any other local cooling needs. This leaves the natural gas in the desired condition for consumption. Typically for every megawatt of electricity generated by the Turbo Expander .5 megawatts of cold energy would also be available. The saving in electricity consumption by displacement, when generating cold energy by this method is very significant and further contributes to environmental goals.

15. This nil emission process would enable National Grid to make a reduced use of "shrinkage gas" by elimination of "own gas use" and this in turn would further benefit the consumer.
16. Blue -ng, comprising the interests of National Grid plc and 2Oc Limited, are well aware of how to provide a nil emission process in natural gas pressure reduction. National Grid and their forerunners Transco and BG Group spent considerable time and money exploring the potential exploitation of the cold element of natural gas pressure reduction. However as they could not see a benefit for their shareholders in the regulated environment of gas distribution, it was never pursued
17. Adopting a completely green approach does not attract the hugely attractive subsidy that is now available via Blue-ng's so called "Patented Combined Cycle Bio Generator, i.e. 2 ROC's for every 1MWe output. In reality this CCBG is no more than a reciprocating engine or micro turbine running on biofuel.
18. Your report in your document that this CCBG is patented is incorrect, as the application made by Cryostar just months ago to the European Patent Office, is just the first stage to accreditation that I believe is unlikely to succeed as it has little if no novelty.

Given that the proposal to reduced the pressure of natural gas by utilising the current wasted energy in the flow of natural gas is sited in a regulated environment, does it not make sense both in the interests of the UK consumer and the world at large to ensure that the process is as sustainable as can be achieved.

The company 2Oc has consistently used the argument, when lobbying for subsidy, that the process uses geo- pressure, whereas in reality, most of the high pressure contained in the network is supplied by offshore and on-shore compressors fuel by gas or electricity.

Given that subsidy in respect to the electrical output of the turbo expander is only available on the well-head (geo-pressure) portion of the upstream pressure, it is not surprising, given the level of subsidy associated with biofuel when used to fuel CHP engines, that it is the choice over highly efficient natural gas that is already on site.

Yours truly,

D.W.Rayner