

Network Innovation Competition Full Submission

Supplementary Answer Form

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	NGGDGN01	Question Number	16
Question date	5/9/13	Answer date	9/9/13
Submission section question relates to	2.1		
Topic	Aims and Objectives		
Question	Have you engaged with The Committee on Climate Change, the Energy Technology Institute and similar bodies on the issue of gas for heating pathway and, within that, gasification of biomass? Please provide a justification for your answer. Where possible, summarise the discussions.		
Notes on question			
Answer	<p>The Consortium and its members have engaged with a number of key bodies with regard to the role of low carbon gas for heating and gasification of biomass.</p> <p><u>DECC's Technology Innovation Needs Assessment (TINA) Bioenergy</u></p> <p>The TINAs are a collaborative effort of the Low Carbon Innovation Co-ordination Group (LCICG), which is the coordination vehicle for the UK's major public sector backed funding and delivery bodies in the area of 'low carbon innovation'. Its core members are the Department of Energy and Climate Change (DECC), the Department of Business, Innovation and Skills (BIS), the Engineering and Physical Sciences Research Council (EPSRC), the Energy Technologies Institute (ETI), the Technology Strategy Board (TSB), the Scottish Government, Scottish Enterprise, and the Carbon Trust.</p> <p>The Consortium is engaged with this body with regard to the Bioenergy sector. In their last summary report (September 2012) they highlighted the role for BioSNG and gasification:</p> <p><i>Innovation has significant value for each of the possible conversion routes within bioenergy, to overcome the challenges of converting these</i></p>		

sustainable feedstocks (as well as wastes) reliably, efficiently and at scale. Highest value is identified for early stage conversion routes: i. Earlier stage conversion technologies **particularly gasification systems** (for either **biomethane**, power and transport fuels, not heat) and advanced biofuel conversion technologies – have the highest potential for cost reduction of 48-80% by 2050, cumulatively saving the UK energy system £23 (0-78) bn.

And also identified the strategic need for public sector intervention to unlock the opportunities:

*Public sector activity is required to unlock these opportunities. There are significant market failures to innovation and the UK cannot rely on other countries to develop the technologies for us..... In select cases it is not expected that other countries will drive the innovation that the UK could need, to the timelines required, specifically for: **biomethane from gasification**.*

Technology Innovation Needs Assessment (TINA) Bioenergy Summary
Report (September 2012)

Committee for Climate Change

CCC are engaged with the role of gasification and biomethane injection, as shown in their bioenergy review 2011. The following quotations highlight this, which are a result of their analysis:

*"More generally, it suggests the need to develop a range of bioenergy options, and to pursue bioenergy paths that offer flexibility regarding their future role (e.g. **biomethane injection into the gas grid, gasification pathways for ligno-cellulosic feedstocks**)"*

*"**Biogas can be produced through AD plants or other gasification technologies** making use of a range of feedstocks, including carbon-rich waste streams. It can be used locally in small-scale power and/or heat generation or, where feasible, upgraded and injected into the gas grid and used where this has most value Analysis for this report supports our previous conclusions (e.g. in the context of advice on the fourth carbon budget) that **biogas is a cost-effective low-carbon option, and should form part of low-carbon strategy in both the near and longer terms.**"*

Committee on Climate Change Bioenergy Review December 2011

Energy Technologies Institute

APP are currently lead partner at the concept design competition phase of the ETI project "*Integrated Gasification and Gas Clean-Up for UK Waste Project (Waste gasification)*", which supports the design, installation and operation of a waste to energy plant to achieve this and to demonstrate the improved efficiencies offered by gasification over other technologies. To encourage development of the best system designs, the project is funded in two phases: a design competition followed by the construction of the winning design in the UK. The primary focus of the proposed 18MWth demonstration facility, that APP would deliver under phase 2, will be on the commercial development of high efficiency power generation. Indeed two industrial members of the ETI are part of the consortium. However, a further important aspect of the project, which was specified in ETI's original Request for Proposal (RFP), was that the syngas should be of a quality that

	<p>would make it suitable for alternative applications in the future. In this context, it is possible that a stream of the syngas produced by this plant could subsequently be used for the commercial proving of alternative applications, most especially in the production of Bio-SNG. Given the expected economic production of Bio-SNG as shown in the experimental proving stage of the NIC supported bio-SNG programme, the ETI facility could be modified, to enable commercial generation of SNG, which will expedite commercial roll-out of the Bio-SNG technology.</p>
Attachments	
Verbal Clarifications (Consultants)	