

# Ofgem Review Group on Energy Market Issues for Biomethane Projects (EMIB) Minutes

**Tuesday 27 September 2011**

**at the National Grid Office, 1-3 The Strand. London WC2N 5EH**

## Attendees

Tim Davis (Chair)	(TD)	Joint Office of Gas Transporters
Mike Berrisford (Secretary)	(MiB)	Joint Office of Gas Transporters
Adam Baisley	(AB)	Agri Energy
Andrew Moore	(AM)	Northumbrian Water
Chris Bielby	(CB)	Scotia Gas Networks
Chris Phillips	(CP)	CRS BIO
Dave Lander	(DL)	Dave Lander Consulting
David Pickering	(DP)	National Grid
Jim Lewis	(JL)	Calor Gas Ltd
Joanna Ferguson	(JF)	Northern Gas Networks
John Baldwin	(JB)	CNG Services / REA
John Cornes	(JC)	Atlas Copco
John Williams	(JW)	Poyry
Lesley Ferrando	(LF)	Ofgem
Mark Bugler	(MB)	British Gas
Matt Hindle	(MH)	ADBA
Pat Howe	(PH)	SSE
Richard Fairholme	(RF)	E.ON UK
Richard Lewis	(RL)	Arup
Richard Pomeroy	(RP)	Wales & West Utilities
Steve Rowe	(SR)	Ofgem
Steve Sherwood	(SS)	Scotia Gas Networks
Stuart Bennett	(SB)	Heat and Power Services
Tim Slaven	(TS)	AMEC

## 1. Welcome / Introductions

*Copies of all papers are available at: [www.gasgovernance.co.uk/emib/270911](http://www.gasgovernance.co.uk/emib/270911).*

TD welcomed all to this inaugural meeting of the Ofgem Review Group on Energy Market Issues for Biomethane Projects (EMIB).

## 2. Terms of Reference (ToR)

TD reviewed the terms of reference appended to the Ofgem invitation letter dated 16 September 2011. The ToR envisage monthly meetings with a view to finalising a report to Ofgem by the end of the year. It is intended that this should contain the group's recommendations and, for each recommendation, to suggest next steps and proposed owners/sponsors. SR emphasised that Ofgem also hope the group will provide evidence based recommendations, with quantification of costs and benefits wherever feasible, as well as risk identification.

The terms of reference were accepted with no proposed amendments.

## 3. Background to the Review - Ofgem

SR presented an update on the background leading up to EMIB, which follows on from previous industry initiatives and discussions between interested parties. The recent interest in biogas network connections has triggered consideration on the appropriateness of the current Gas Distribution Network (GDN) Provisions. Additionally, the DECC 2020 anaerobic digestion strategy targets has sparked the debate. In essence, Ofgem is seeking views on the lessons learnt from

recent projects in this area; the addressing of any potential regulatory issues; and consideration of the DECC 2020 renewable energy targets amongst other things.

In response to a question on Gas Act implications and constraints, including the gas quality requirements of the Gas Safety (Management) Regulations (GS(M)R), SR suggested that issues relating to the various potential regulatory and legal barriers need teasing out during the course of EMIB.

DP was of the view that it may be beneficial to consider some form of RIIO financial incentive to assist the introduction of biogas to the grid.

#### **4. GDN Connection Policy for Biomethane Projects**

On behalf of Ofgem, LF suggested that biomethane issues need to be developed within the framework of the RIIO-GD1 proposals. That said, aspects of the existing GDN connection policy may need to be modified. RP then provided a brief explanation of the current GDN connection policy.

Currently, parties seeking connection to the network face charges that reflect all of the entry reinforcement requirements. In anticipation of the demand to accommodate emerging technologies, the GDNs have raised Uniform Network Code (UNC) Modification 0391 “Distributed Gas Charging Arrangements”<sup>1</sup>. This modification is seeking to develop charging arrangements for any gas directly entering a GDN rather than entering via the National Transmission System (NTS). Assessment of the modification is also expected to consider the options for removal of potential barriers to the development of distributed gas, including biomethane. RP suggested that it could prove beneficial for interested parties to attend the Workgroup 0391 meetings.

DP advised that, under the present arrangements, grid injection equipment is owned by the GDNs although they are considering prospective third party ownership of this plant. It remains to be established whether or not biomethane developers would wish to take responsibility for procurement, installation - in close liaison with the GDN concerned - and ownership of this equipment. Following discussion, the consensus of the group was that it would be appropriate for biomethane producers to own the necessary assets for bringing gas to the grid, with the GDNs operating a minimum connection policy. This was, however, caveated regarding the level of costs.

SS suggested that the Renewable Heat Incentive (RHI) documents are unclear on whether or not funds were included to cover part, or all of the cost of a GDN connection. JB understood that DECC believes that the producers should cover the costs – with circa £500k being one estimate. Questioning this figure, MB advised that he had received a quote in the region of £1.5 million in one instance.

Seeking a way forward, JB suggested that several key aspects need to be addressed:

- Identification of a standardised equipment list to enable accurate identification of costs and requirements;
- Identification and agreement over who pays for the equipment; and
- Identification and agreement on suitable CV measurement equipment and standards.

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<sup>1</sup> Modification 0391 documentation is available at: [www.gasgovernance.co.uk/0391](http://www.gasgovernance.co.uk/0391)

It was additionally suggested that there are tensions between the respective project timelines of biogas developers and GDNs which can create a barrier, and this would also benefit from consideration.

Moving on to consider potential geographical network connection constraints, CP noted that biogas developers considering gas to grid initiatives could be put off by potentially high upfront connection costs. High charges could drive parties towards an electricity based solution, or they may seek to deal directly with local consumers rather than connect to the grid.

When asked if GDNs would have an issue with adopting a minimum connection approach, SS did not think that this would be a problem – the key was that any biogas should meet GS(M)R requirements. DL concurred that gas quality obligations sit with the Transporter and, from a legal viewpoint, GS(M)R clearly states the requirements. He believes that as measurement is directed by Ofgem (inc. the measurement equipment specification) the real issue would relate to how, and what aspects, of the current obligations are effectively passed on to the producer. DL suggested that, for Transporters, it is relatively easy to ramp up scale, but biogas producers may prefer a different solution. LF noted that Ofgem would prefer to see a holistic approach, addressing any wider legislative issues in addition to regulatory concerns.

## **5. Capacity for Biomethane**

LF noted that issues surrounding potential network seasonal capacity and associated contractual constraints (i.e. interruptible capacity) had been identified in previous industry debates. RP pointed out that a preference for a firm contract based approach had been expressed. However, that potentially places a strain on the available network capacity. Some biogas production and delivery to network issues may be addressed via flaring rather than GDNs investing in compression based solutions to deliver firm capacity. AM advised that it may also be able to offset the need for gas compression equipment by utilising CHP to alleviate contractual and/or cost tensions.

JB observed that it is extremely difficult for the GDNs to confirm capacity availability because it is not catered for under RIIO, and that potentially leaves two issues to resolve, namely:

- Provision of suitable incentives on the GDNs to provide firm capacity; and
- Adoption of clear contractual obligations for capacity provision – banks are reluctant to fund projects without these in place.

When asked about the provision of network demand and capacity information, DP advised that, whilst capacity information is available, it is not always the case for demand information - although he would question if having better demand information would necessarily help. MB questioned whether improvements to GDN capacity modelling need to be considered since the current approach does not assist parties in addressing financial risk. JF explained that the GDN licence objectives relate to meeting peak demand, and modelling is therefore necessarily focussed on peak conditions.

Noting that producers may want to enter gas at a steady rate throughout a day, DP emphasised that there may not be sufficient demand to burn the gas. For example, it is hard to guarantee sufficient demand at 0300 on a summer day. Equally it may be problematic to guarantee firm capacity being available where demand comes from a large local consumer – if this consumer ceases to take gas, the capability to accept gas into the network would be correspondingly reduced. JB acknowledged that, where a key load stops using gas, it may no longer be feasible to accept biogas into the grid. This was one reason why he saw GDN utilisation of compression as potentially the most appropriate means of addressing demand for firm entry capacity.

TD summarised that the underlying issue surrounds how to provide firm off-peak capacity and who would fund any investment necessary to provide this. AM indicated that he had no problem with the concept of compression. It is the funding of the capital costs that concerns him, with information transparency being crucial for all concerned.

There was consensus that the key to addressing network capacity issues was likely to be the development of appropriate incentives for the GDNs. However, LF counselled caution since RIIO-GD1 had already concluded regarding incentives and any proposals would need to sit within the established framework - re-opening debates would not be beneficial. LF added, however, that provision had been made for reopening the GDN incentive arrangements in 2015 and 2018. When challenged on the prospects of creating an additional incentive, LF agreed to set out the rationale for Ofgem's RIIO-GD1 at the next meeting.

TD questioned whether, if incentives through RIIO-GD1 are ruled out, there would be merit in looking at unregulated approaches. SS did not see this as being a viable solution since any assets would be part of the network. RP also noted that Ofgem had already raised concerns around potential development of discriminatory incentives for biogas.

**Action EMIB 09/01: Ofgem (LF) to set out the rationale for Ofgem's RIIO-GD1 incentives decisions.**

## **6. Technical Standards Associated with Calorific Value Measurement for Biomethane Flows**

SR presented 'The Regulatory Regime Calorific Value'. He advised that governance is mostly related to Section 12 of the Gas Act, whilst guidance for the time and place for undertaking CV measurements comes from Ofgem letters of direction. He went on to point out regular auditing is undertaken by SGS, Ofgem's appointed contractor.

SR advised that the regime requires the GDNs to act as sponsor if any different measuring equipment is to be put forward for testing and approval. However, this does not present a barrier to a third party undertaking independent testing of equipment and putting forward the test results as supporting evidence for their case. Furthermore, Ofgem have previously stated that they are willing to consider an appropriately justified case for alternative measuring equipment, notwithstanding that this may deliver lower standards than the existing approved equipment.

DL then presented 'Accuracy of CV Determination'. In his view, the key issue is that Ofgem has not defined a clear performance standard expectation for CV measurement equipment. However, he felt it would be relatively easy to address this and define a set of standards. DL emphasised that decisions are typically based on a 95% probability factor whereas the Ofgem letter of approval specifies the calibrated CV requirements. Asked what would constitute an appropriate performance level, DL responded that options had not been modelled to establish the implications. In essence, any reasonable level would suffice subject to the 1MJ/m<sup>3</sup> cap. If required, he would be happy to undertake some CV modelling with a view to reporting at a subsequent meeting.

Asked to provide an opinion on the possibility of measurement equipment costing in the region of £5k, DL suggested that inferential type measurement devices might suffice for biogas entering the grid. However, the issue that remains is how to determine the lowest CV value entering any given area. Asked if modelling based on 4% offtake volumes would make a significant difference, DL confirmed that it would be unlikely to. SS added that GS(M)R compliance remains the issue for GDNs, not the equipment deployed.

DL noted that the Ofgem letter of direction dictates the CV performance that is required and, therefore, attaining a specification based around this should be reasonably easy to achieve. Following a request from JB, DL agreed to prepare a list of suitable CV measurement devices along with their performance specification.

To consider instrumentation and accuracy requirements, it was agreed that an expert group should be established to investigate the options with a view to reporting progress at the next EMIB meeting.

**Action EMIB 09/02: DL to prepare a list of CV measurement devices along with their performance specification**

**Action EMIB 09/03: Joint Office (TD) to establish an Expert Group.**

## **7. Gas Quality Analysis at Biomethane Entry**

JB presented issues regarding gas quality analysis. He noted two possible points for measurement of biomethane quality which could be adopted: at source or at the network gateway. Any out of specification gas could either be flared or returned to source, given that the GDNs are not permitted to transport this.

Considering potential risk assessment requirements of either approach, and whether formal HSE sign off would be required for the chosen option, DL did not think that the HSE would seek to do so - believing GQ8<sup>2</sup> would provide the necessary assurances. TD observed that he would not expect this to require any change to the GDN Safety Cases since they would continue to only accept GS(M)R compliant gas.

It was agreed that the options should be considered by the proposed Expert Group, with a view to identifying the issues to be addressed and a preferred way forward. It was suggested that a GDN should sponsor any proposed change, with the aim being to achieve resolution by December. Whilst not adverse to the idea of sponsoring any proposal, SS was concerned that the proposed timescale was not achievable. However, JB countered that this was not starting from a blank page but could utilise existing biogas producer data - although commissioning a separate analysis exercise could prove beneficial. DL added that understanding the specification requirement and what it is you are trying to protect is paramount.

It was agreed that this should be taken forward by the Expert Group, starting with establishment of the requirements.

## **8. Transmission of Data to the GDNs Agent**

DP provided an overview of the data transmission process between entry points and the GDN agent – currently Xoserve.

In considering the off-site requirements, DP observed that it may not be necessary to have such a sophisticated solution (with regards to HPMIS inputs and outputs) for low flow rate entry points. JB suggested that cost considerations should drive the solution. If the GDNs could indicate generic costs to accommodate biogas entry, that would help to indicate whether the existing architecture should be retained, or if it appropriate to develop a tailored approach.

JB suggested that information provision solutions might reasonably cost circa £10–15K, although some reports suggest costs as high as £200k are being seen. In response, SS was more circumspect; he felt the development of a

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<sup>2</sup> GQ8 requirements cover all aspects of the potential impacts associated with regulatory, commercial and safety considerations and seek to identify and assign the appropriate risk classification.

suitable solution was likely to carry a material cost, depending upon the level of information flows required. SS also suggested that the Didcot project does not provide a realistic indicator as the project was not approached from a cost perspective rather than falling in with existing arrangements.

SS accepted that some cost saving potential exists but suggested that the arrangements would need detailed consideration before any conclusion could be reached on the level of system solution complexity required to accommodate biogas. Additionally, care is needed when setting appropriate specifications, as biogas will not be the only embedded network entry point in the future.

JF explained Xoserve's role, including the role of the Gemini system for network balancing and the energy reconciliation processes. To maintain these processes, data would need to be fed into the systems within the appropriate timescales. The quality of information flowing into the Gemini system is crucial to the gas allocation processes and a better understanding of actual biogas requirements is needed. Furthermore, whilst close out for gas allocation is at D+5, energy is allocated on a daily basis, and hence information has to be provided, or derived, on a daily basis.

Concluding, the GDNs agreed to discuss with Xoserve the minimum information requirement from a small entry point, in terms of both the required content and the scale of facility involved.

**Action EMIB 09/04: GDNs to consider the minimum information requirement from a small entry point, in terms of both the required content and the scale of facility involved.**

## **9. REA / ADBA – Update on Issues**

MH presented on behalf of ADBA. Regarding potential exemption from the 1% Oxygen GS(M)R requirement, RP explained that Wales & West Utilities, in conjunction with GL, are looking at a specification for mains replacement that is intended to address corrosion issues. The evidence will be presented to the HSE on completion of the investigation, and may help to inform decisions regarding Oxygen levels. MH indicated that he would provide feedback on progress at a future meeting.

CP raised the continuing concern regarding enrichment to avoid CV capping, with propane enrichment being counter to the fundamental aims of biogas production. While some felt this issue had been settled, it was agreed to revisit this at a future meeting. SR mused whether there is a direct link between this and compression (i.e. compress, blend and thereafter inject into the network). RP suggested that care would be needed to avoid discrimination with regard to how CV requirements are established for any entry point.

MH agreed to provide some analysis of options, taking into account the range of positive and negative impacts from propane enrichment.

**Action EMIB 09/05: ADBA (MH) to provide analysis of options, taking into account the range of positive and negative impacts from propane enrichment.**

## **10. Learning from Existing Projects**

JB presented 'Didcot Biomethane to Grid project Learning Points', focussing on points that had not emerged earlier in the meeting. He observed that, whilst Xoserve are interested in total energy, Ofgem appear to be interested in the total energy minus propane.

## **11. AOB**

Ofgem Clarification on Measuring Energy for Producing Heat for Digestors

MB was keen to understand what Ofgem's position is with regard to the production of heat for digestors (based on RHI recommendations) and potential netting off (heating the feedstock prior to input into the digester).

#### Issues Surrounding the Capacity/Commodity Charges Impacting Biomethane Producers

In response to MB's question, RP advised that the 0391 Workgroup is looking into this potential issue.

#### Update on the GDN Odorant Connection Policy

On behalf of Thames Water, JB sought clarification of the GDN view on their connection policy with regard to odorant injection: he felt that a statement may need to be added to the GDN licence to cover this matter. SR advised that he would invite an Ofgem colleague involved in RHI issues to the next meeting to provide a view.

It was also noted that there would be a need to engage with other regulatory bodies (including Environment Agency, DEFRA and SEPA) to successfully move the biogas initiative forward, especially the end-of-waste aspects such as sludge to land.

**Action EMIB 09/06: Ofgem (SR) to invite an Ofgem RHI representative to the next meeting, to provide in particular a view on possible modification of the GDN Licence.**

## **12. Diary Planning for Workgroup**

*Details of planned meetings are available at: [www.gasgovernance.co.uk/Diary](http://www.gasgovernance.co.uk/Diary).*

It was agreed to meet again in late October/early November, subject to room and resource availability, in the London area. A meeting start date of 10:00am was suggested. An Expert Group will be established and aim to meet in the interim, in time to report to the next EMIB meeting.

Suggested agenda items for future meetings would be welcome.

**EMIB Action Log**

<b>Action Ref</b>	<b>Meeting Date(s)</b>	<b>Minute Ref</b>	<b>Action</b>	<b>Owner</b>	<b>Status Update</b>
EMIB 09/01	27/09/11	5.	Set out the rationale for Ofgem's RIIIO-GD1 incentives decisions.	Ofgem (LF)	
EMIB 09/02	27/09/11	6.	Prepare a list of CV measurement devices along with their performance	Dave Lander Consulting (DL)	
EMIB 09/03	27/09/11	6.	Establish an Expert Group	Joint Office (TD)	
EMIB 09/04	27/09/11	8.	Consider the minimum information requirement from a small entry point, in terms of both the required content and the scale of facility involved.	GDNs	
EMIB 09/05	27/09/11	9.	Provide analysis of options, taking into account the range of positive and negative impacts from propane enrichment.	ADBA (MH)	
EMIB 09/06	27/09/11	11.	Invite an Ofgem RHI representative to the next meeting, to provide in particular a view on possible modification of the GDN Licence.	Ofgem (SR)	