

Determination of Daily Calorific Values Review Group (UNC0251) Minutes

Thursday 30 July 2009

Energy Networks Association, Dean Bradley House,
52 Horseferry Road, London SW1P 2AF

Attendees

Tim Davis (Chair)	TD	Joint Office
Lorna Dupont (Secretary)	LD	Joint Office
Belinda Littleton	BL	Ofgem
Brian Durber	BD	E.ON UK
Chris Wright	CW	Centrica
Dave Lander	DL	Dave Lander Consulting Ltd
Dave Tilley	DT	National Grid Distribution
Erika Melen	EM	ENA
Jeff Chandler	JC	SSE
Phil Hobbins	PH	National Grid NTS
Richard Pomroy	RP	Wales & West Utilities
Stefan Leedham	SL	EDF Energy
Steve Rowe	SR	Ofgem
Stuart Gibbons	SG	National Grid Distribution

1. Introduction

TD welcomed all to the meeting.

2. Review of Minutes and Actions from the previous meeting (26 June 2009)

2.1 Minutes

Subject to a couple of minor amendments, the Minutes were approved.

2.2 Actions

The actions from the previous meeting were reviewed:

Action RG0251/005: Check the Regulations and the reasoning for any calculations performed to more than one decimal place.

Update: PH reported that data was received from various offtakes; chromatographs were rounded to 4 decimal places but rounding was to 2 decimal places for storage in the systems. The FWA calculation is not mathematically correct to declare at 2 decimal places so this is declared at 1 decimal place. DL observed that the extra decimal places are due to the precision of the telemetry which is more apparent than real.

PH suggested that addressing the mismatch between the calculation and the Regulations would involve big system changes for little benefit - the effects balance out over time. RP pointed out that this 'miscalculation' was the only way that negative shrinkage was observed, and had been significant in the data presented at the last meeting. He therefore that this misleading perception should potentially be addressed. BD questioned whether the calculation was in line with the Regulations in any event, and

PH explained what was done in respect of the rounding. DL added that daily average CVs are rounded but the FWACV has to be truncated in line with the Regulations. To aid comprehension, SR suggested that an end to end worked example be provided, showing all the steps and their impact. **Action closed and new actions opened.**

NEW ACTION RG0251/005A: National Grid NTS (PH) to make available a worked example of the different calculations (walk through the calculations, including truncation and rounding).

NEW ACTION RG0251/005B: National Grid NTS (PH) to provide an indication of the magnitude of system change costs to amend the approach to rounding.

Action RG0251/006: Check if Grain 'boil off' gas is included.

Update: PH confirmed that it is included. **Action closed**

Action RG0251/007: Check the soundness of the results for Estimated Annual CV Shrinkage for 2010, and provide the underlying numbers/spreadsheet that derives the numbers.

Update: The spreadsheet has been published. PH reported that the results had been checked and a minor error had been identified (interaction of Barrow supplies/NW); one anomalous value had also been identified and corrected; the analysis had been rerun and the results still showed some values of negative CV shrinkage but not as much as before. PH also reported that a further error had been identified by Simon Trivella (Wales & West Utilities). Previously the results showed a low level of CV shrinkage for Wales North which should have been zero – this has been corrected (Malpas Offtake was incorrectly mapped to Wales North) and the analysis is now showing 0. Attendees agreed that the relevant slides should be corrected and provided for republication.

SL commented that Shippers still need daily numbers to be provided, ie daily flows into the Networks and the predicted CV on the day in order to estimate potential shrinkage; there were concerns that Customer/Shipper shrinkage was being ignored and that looking at NTS/Shipper shrinkage only will leave Shippers/Suppliers/Consumers exposed. SR was concerned that consideration was not being given to the wider picture. If daily figures were provided, SL offered to establish the scale of the issue for Suppliers. PH agreed to liaise with SL in order to support this analysis. BL suggested that more analysis around the extremes/margins and any sensitivities might be useful, which PH agreed to consider. **Action closed and new action required.**

NEW ACTION RG0251/007A: Develop analysis indicating the potential level of Shipper shrinkage

NEW ACTION RG0251/007B: Review any extreme scenarios in closer detail.

Action RG0251/008: Provide the results for the potential impact of biogas supply in South West LDZ.

Update: PH confirmed that it was within 5%. **Action closed**

Action RG0251/009: Produce a brief paper on the alternative options and potential solutions.

Update: Covered under Agenda item 3, see below. **Action closed**

Action RG0251/010: Produce a brief paper on the framework and legality under European law of removing the cap.

Update: BL reported that this was under discussion. **Action carried forward**

Action RG0251/011: Provide a perspective on how this is managed in Germany.

Update: BD had been provided with the following information from colleagues based in Germany and reported that:

“The gas quality is regulated in Germany under the DVGW standards G260 and G262. In addition to these standards, the DVGW standard G685 defines the technical rules for the billing of customers.

Whenever a certain local grid (similar to a LDZ) is fed by natural gas transmission grid with several injection stations, for each injection station the weighted average CV is determined for a defined period, usually one month. Based on these averages per station, the weighted average CV for the total grid (LDZ) is calculated. If the differences between the values for CV of all single injection stations and the average value of the grid (LDZ) is less than +/- 2%, the deviations are tolerated and the average value is used for billing customers in the grid (LDZ).

In the extremely rare cases where one injection station differs more than 2% from the average, ad hoc procedures for billing the customers have to be defined and agreed upon with the competent authorities.

As a consequence, grid operators will cut off injectors with excessive deviations from the CV.

In 70% of the German market high calorific gas of group H is distributed. In these cases, the 2%-band for the CV cannot be provided with bio-methane alone. In these cases, up to 5 volume% propane is added to the biogas to adjust the CV of the upgraded biogas to the CV of the gas in the grid. Under current German legislation this is the obligation of the grid operator, not of the biogas plant operator, because the grid operator is responsible for billing the right CV to the customers.”

BD added that France, Germany, Belgium and Holland each have separate networks with high wobble range and low wobble range gas. The following information relating to Germany was also provided:

“Germany

High range 46.10 MJ/m³ – 56.5 MJ/m³

Low range 37.8 MJ/m³ – 46.8 MJ/m³

Relative Density range 0.55 – 0.75

Biogas injection is allowed on an unlimited (Austauschgas) and limited (Zusatzgas) basis depending on the particular circumstances of the injection point i.e. volume, flow rate, pressure etc.”

This perspective was briefly discussed and BD then pointed out that the key point was that propane was used and paid for by the operator; therefore the obligation was placed upon the Network Owner not to allow entry. It was noted that the cap is asymmetrical

and allows gas in at a much higher CV, and this was similar to Network Entry Agreements. **Action closed**

Action RG0251/012: Provide a brief synopsis of Licence Condition D12.

Update: RP summarised the paragraphs of Licence SSC D12, drawing attention to the requirement 'not to discriminate unduly', and which would fall to Ofgem to establish. In response, SR identified two issues, one of compliance relating to injections (low CV) and one relating to the obligation to co-operate to reduce CV shrinkage. It was observed that although this crystallised the issues, answers had yet to be found.

On the last slide of the presentation RP noted there were other documents to consider, a journey through which in reverse order highlighted that it would be increasingly difficult to effect any changes. SR also pointed out that in the UNC OAD Section D Measurements, metering requirements would also be affected in terms of the objectives. **Action closed**

3. Alternative Options and Potential Solutions

DL gave a presentation on various options for potential consideration if low CV gas were to enter a network – such as through biogas development. Each option was described, together with its perceived benefits and disadvantages, and some additional observations were made.

Option 1 - It was pointed out that there would be additional unconsumed energy to the current level.

Option 3 – It was assumed that any necessary mixing would take place within the facility.

Option 4 – It was questioned whether the charging area could be shrunk low enough.

Option 5 - TD suggested that there may also be a sub option, ie to keep the FWACV cap process for Suppliers but remove it from the Transporters, thereby meeting the objective of customers not being billed for energy not consumed.

DL then went on to make clear his modelling assumptions, and demonstrated the CV Shrinkage in a model LDZ together with the costs, and consumption and enrichment examples. The numbers were expressed as p/kWh of gas consumption. In respect of propane enrichment, DL had thought it fairer to allocate the cost across all LDZ consumers - who pays for the biomethane may impact how the cost could be recovered. There was, however, a cost to protecting downstream consumers from the impact.

A comparison of costs for Options 1, 2, and 5 was then displayed and briefly discussed. DT wanted to know if the shrinkage mechanism was producing a real cost to the consumer, ie to move consumers closer to the energy that they consume, rather than a redistribution. DL responded that the cap increases costs and these are recovered from the consumer in some form or other; it just adds cost and is not necessarily fair or efficient.

SR noted that FWACV is composed of flow and CV and was keen to see whether flow metering at Offtake level is a key contributor. He pointed out that the type of meters used are overstating throughput and therefore are over inflating, resulting in smear across the community; this was very variable depending on the charging area. TD questioned the cost implications – was it a resource cost as opposed to transfer costs. If no real resources were being consumed, this should be reflected in any cost benefit analysis with only amelioration of distribution impacts as a benefit.

SR thought there may be an issue with the data going into the cap calculations, and pointed out that metering was being done at very different standards; a 'disconnect'

between entry and exit was apparent in this area which may be a major source of any overstatement. RP suggested the balance between efficiency and equity should be borne in mind when considering solutions - the redistribution effect between categories of users could be significant

SL observed there was a mismatch between what Shippers are billed for and what they in turn bill their customers. CV capping actually reduces Shipper cost and SL explained how this was so. Capping at a lower rate may reduce CV shrinkage, but there would still be some customers who were over/under billed.

The cost of Option 3 (blending) was then reviewed. RP questioned whether this arrangement could then be regarded as a short term storage facility; DL thought this might depend on who was operating it. If it was a Transporter it would effectively become just another part of the Network, like at Lupton, with gas not deemed to be withdrawn. If gas was put in and withdrawn it may then be treated as storage or a small network.

It was noted that depending on what option(s) were pursued definitions may needed to be reviewed and agreed.

The cost of Option 4 (embedded charging zones) was then reviewed. DL thought that this might operate in a similar fashion to Wet Gas areas, and postcodes might change daily. In response to questions DL said that 99% of an LDZ would not have a cap triggered in the embedded charging zone (there may be some shrinkage but entirely within the zone). The lowest source CV of the day would operate in the embedded zone, and FWACV in the rest of the zone; or there might be an option to use a declared CV. Networks could carry out some modelling to work out the zones of influence for the biomethane (rather like the wet gas scenarios in the past). Ofgem would then have the power to direct a CV for each zone.

SL suggested that a systems cost of £0.5 million per year may be an understatement (allowing for wet gas areas was no longer part of Shipper systems). A daily assessment of billing requirements for a post code would add significantly to costs, whether as an offline process or requiring changes to existing systems.

SR observed that this option might be one of the easiest, so far, to implement. BD thought it would cost more for the consumer because of the additional administration costs, etc. There would also be no choice as to whether a consumer would prefer to take the biomethane or not, although Shippers would have a choice as to which party to direct costs. JC pointed out that anaerobic digestives were sensitive to contamination, resulting in scrubbing out and lengthy downtimes, and expressed concern relating to the potential frequency/speed of exchange between the two. There was then a short discussion on complexities relating to the CVs used and post codes in embedded charging zones and whether major users could vary their offtakes. The costs for Option 4 were then summarised and it was noted that it was difficult to make comparisons in terms of equity and efficiency.

A summary of costs for all options was then presented. DT still sought the answer to his original question: From the consumer's perspective, which were 'real' costs as opposed to a redistribution. Does the cap make the position fairer or should it be removed?

SR questioned why the UAG element had not been captured in the exploration of the options, to which TD responded that the focus (as set out in the agreed Terms of Reference) was the daily determination of CVs and this was therefore more limited in scope and deliverables. SR then pointed out that metering contributes to billing and shrinkage and that he felt there would be some merit in considering potential impacts alongside this work. DT responded that this would create a far larger task, and that end to end metering would be a better way of considering this. SR rejoined that an Offtake meter was affected and the part it plays in CV shrinkage is pertinent; entry operates on a different standard to Offtake and the imbalance results in over registration in general and that affects NTS shrinkage, ie there is a difference in specification at Offtakes and

associated accuracy. DL observed that it starts with the NTS entry point and its metering and everything is referenced back to that point; changing the intermediate process does not really have an effect on the volume; over reading would affect CV shrinkage. It is really an allocation issue and who is being billed accurately. SR still felt that the different standards between entry and exit should be considered, and that further analysis was required. RP asked if it was possible to identify which costs were just distributional. PH agreed to consider whether National Grid NTS could undertake any further analysis to illuminate SR's concerns.

Action RG0251/013: SR and PH to specify and procure analysis to illustrate the impact of metering issues on FWACV

4. Review Group Process

TD reiterated that, given the Proposal as raised, the group's focus was the consideration of the effects and impacts of delivering relatively low CV gas into a relatively high CV LDZ and whether the rules associated with FWACV require changing.

There was a short discussion as to whether to rule out any of the options put forward, but no agreement to discount any option at this stage. Further actions were then identified and allocated to take work forward.

Action RG0251/014: DT to commission DL to perform more work on embedded charging zones (Option 4).

Action RG0251/015: BD to investigate payments relating to offline IGT systems.

Action RG0251/016: DT to investigate what happens for different flow ratio scenarios (Option 4 and Option 5)

Action RG0251/017: RP to further explore Option 3.

Action RG0251/018: SR to explore Option 2, and any related issues of discrimination, and socialisation of costs. (For example, if low CV was delivered into an area that had high CV and where a Transporter was adamant that propane should be added; also to clarify the acceptability of socialising costs within a Network).

5. Any Other Business

None raised.

6. Diary Planning for Review Group

The next meeting will be held at 10:30 on Monday, 21 September 2009, at the Energy Networks Association, 6th Floor Dean Bradley House, 52 Horseferry Road, London SW1P 2AF.

ACTION LOG - Review Group 0251: 30 July 2009

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
RG0251/005	26/06/09	3.0	Check the Regulations and the reasoning for any calculations performed to more than one decimal place.	National Grid NTS (PH)	Closed – see new action 005A
RG0251/005A	30/07/09	2.0	Make available a worked example of the different calculations, (walk through the calculations, including truncation and rounding).	National Grid NTS (PH)	
RG0251/005B	30/07/09	2.0	Provide an indication of the magnitude of system change costs to amend the approach to rounding.	National Grid NTS (PH)	
RG0251/006	26/06/09	3.0	Check if Grain 'boil off' gas is included.	National Grid NTS (PH)	Confirmed included - Closed
RG0251/007	26/06/09	3.0	Check the soundness of the results for Estimated Annual CV Shrinkage for 2010, and provide the underlying numbers/spreadsheet that derives the numbers.	National Grid NTS (AS/PH)	Provided – Closed – see new action 007A
RG0251/007A	30/07/09	2.0	Develop analysis indicating the potential level of Shipper shrinkage	National Grid NTS (PH) and EDF Energy (SL)	
RG0251/007B	30/07/09	2.0	Review any extreme scenarios in closer detail.	National Grid NTS (PH) and Ofgem (BL)	
RG0251/008	26/06/09	3.0	Provide the results for the potential impact of biogas supply in South West LDZs.	National Grid NTS (AS/PH)	Provided - Closed
RG0251/009	26/06/09	3.0	Produce a brief paper on the alternative options and potential solutions.	National Grid NTS (DT)	Presentation provided - Closed

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
RG0251/010	26/06/09	3.0	Produce a brief paper on the framework and legality under European law of removing the cap.	Ofgem (BL/LM)	Carried Forward
RG0251/011	26/06/09	3.0	Provide a perspective on how this is managed in Germany.	E.ON UK (BD)	Provided - Closed
RG0251/012	26/06/09	3.0	Provide a brief synopsis of Licence Condition D12.	DNs (AR and RP)	Provided - Closed
RG0251/013	30/07/09	4.0	Specify and procure analysis to illustrate the impact of metering issues on FWACV.	Ofgem (SR) and National Grid NTS (PH)	
RG0251/014	30/07/09	4.0	Instruct DL to perform more work on embedded charging zones (Option 4).	National Grid NTS (DT)	
RG0251/015	30/07/09	4.0	Investigate payments relating to offline IGT systems.	E.ON UK (BD)	
RG0251/016	30/07/09	4.0	Investigate what happens for different flow ratio scenarios (Option 4 and Option 5)	National Grid NTS (DT)	
RG0251/017	30/07/09	4.0	RP to further explore Option 3.	Wales & West Utilities (RP)	
RG0251/018	30/07/09	4.0	Explore Option 2, and any related issues of discrimination, and socialisation of costs. (For example, if low CV was delivered into an area that had high CV and where a Transporter was adamant that propane should be added; also to clarify the acceptability of socialising costs within a Network).	Ofgem (SR)	

