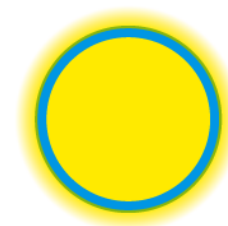


16 September 2011

Gas Industry Company  
Level 8  
The Todd Building  
95 Customhouse Quay  
Wellington 6143

[uploaded to GIC website: [www.gasindustry.co.nz](http://www.gasindustry.co.nz)]

**POWERCO**



Dear Ian,

**Consultation Paper: Proposed guideline for application of gas billing factors**

1. Powerco welcomes the opportunity to comment on the consultation paper: *Proposed guideline for application of gas billing factors, dated 19 August 2011*. Responses to the questions posed in the document are provided at Annex A. Powerco is the second largest gas distribution business in New Zealand supplying over 103,000 consumers; and is also a gas metering system (GMS) owner. There are nine retailers selling gas to consumers on our network and Powerco, as a prudent network operator, works closely with them to ensure that issues over information accuracy and availability are resolved.
2. Powerco welcomes consolidation of the finding of the various Performance Audit Reports in to a single consultation document and acknowledges the work the GIC and the Retail Gas Governance Forum (RGGF) have done in this area. To produce a document that deals with all the issues and is acceptable to all industry participants is a challenge and will always require refinement to gain majority support. In spite of this we are a little concerned that the GIC has taken a document with a heavy retailer focus and published it for public consultation when a number of the issues raised and solutions proposed have not yet been discussed more widely within the industry.
3. As a result the consultation document itself appears un-necessarily one sided in its approach to the issues raised and the solutions proposed. It is a worrying theme that recent consultations both from the GIC and ENA have tended to concentrate on retailer '*centric*' solutions, which are not necessarily the optimum solution for the industry or the consumer. For example, the requirement that "*Network owners ensure nominal operating pressures are correctly populated in the registry for all ICPs on their networks*" fails to acknowledge the fundamental variations in network pressure which are managed by gas distribution businesses. Similarly, whilst Powerco recognises the benefit of coherent, consistent information across the

industry, requiring exchange of information every six months will introduce further costs to consumers which may be greater than any benefit derived.

4. As we have outlined in Annex A, there are a number of technical issues with the contents of the paper and we believe it would have been more appropriate to invest time exploring and resolving, or at least socialising these within the industry before solutions were proposed. In particular there are serious questions around the materiality of a number of the issues identified. Without this analysis it is impossible to undertake any assessment of the cost-benefit. Given the resource implications and potential consequences of some of the proposed guidelines, a detailed materiality assessment is an important first step which should have been taken before publication of the consultation.
  
5. I hope that the responses provided are of use and please do not hesitate to contact me if you require any clarification of the points raised. Powerco looks forward to working with the GIC to further discuss and develop the proposals contained in the paper.

Yours sincerely,



Will Green  
Regulatory Analyst  
Powerco

## Annex A

Submission prepared by: William Green, [will.green@powerco.co.nz](mailto:will.green@powerco.co.nz), 06 757 3397

# Proposed guideline for application of gas billing factors

Q1: Please provide feedback on the above draft guideline note. The file is available as a Word document and you are invited to provide a marked-up copy with your changes.

### *Joule-Thomson Effect*

1. The GIC expectations around the Joule-Thomson effect are based on assumptions that Powerco believes require review and further consultation with all parties.
2. The Joule-Thomson effect is minor for the majority of ICP's. NZS 5259:2004 recognises this and states the application of the Joule-Thomson effect is optional (see 2.7.4.3 of NZS 5259:2004). Imposing requirements on retailers to account for the Joule-Thomson effect for all Installation Control Point's (ICPs) is thus beyond the scope of the Rules, see Rule 28.2, and the Gas (Safety and Measurement) Regulations 2010.
3. It is impossible for a Distributer to provide a meaningful figure for the network pressure in the Registry to allow the accurate calculation of the Joule-Thomson effect for each ICP in a network. At a macro level, nominal network operating pressures are not static but are managed dynamically i.e. District Regulating Station set pressures can be adjusted at any time for the purpose of managing network operations. In this case each time a distributor made a change they would have to find and adjust possibly hundreds of Registry records. More importantly the operating pressure of each network can vary over a range during normal operation, see *figure 1* below for an average example of pressure variation on a Powerco network with an operating pressure of 135 kPa; in this case the difference is 30%.

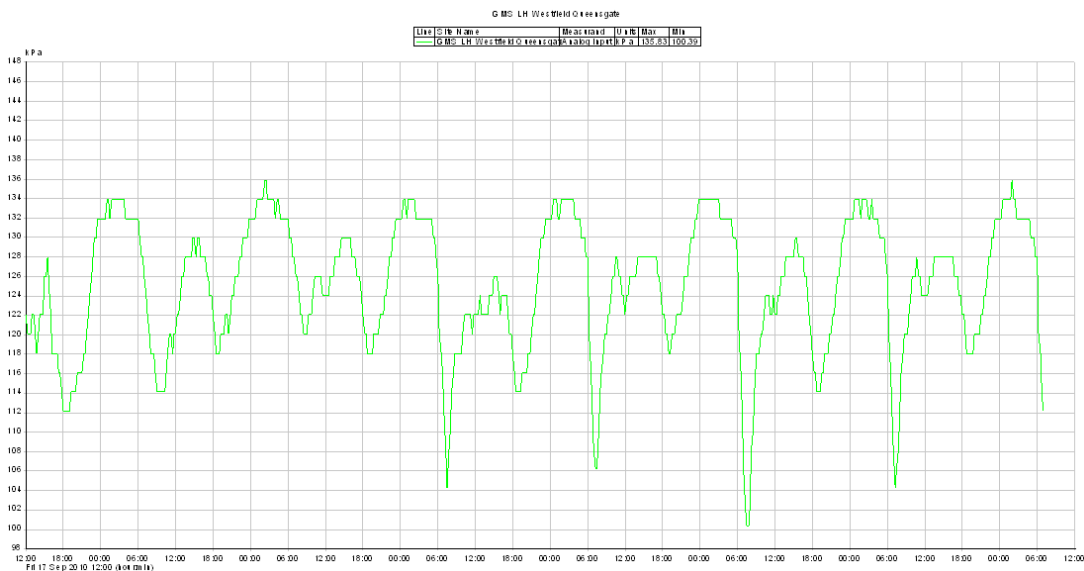


Figure 1: Example of daily pressure variation in a network

4. It is evident that during the periods of high demand, when there is maximum flow of gas through the GMSs, the actual network pressure will be at the lowest and therefore below any stated normal operating level in the Registry. Each sub-sector of the network will have its own unique operating range and profile that will vary with operational changes, and each ICP may have a profile different to the overall network (bakeries, swimming pools and other commercial and industrial sites are likely to exhibit such behaviour). So even if some average value could be derived, it could not be applied to ICP's without introducing significant inaccuracies.
5. Powerco has issues with the conclusions the author of "*The Event audit to identify sources of UFG in respect of Palmerston North gas gate for March 2009 - February 2010*" (The Palmerston North Event Audit) arrived at. We believe that a decision to amend the reconciliation process on the basis of these findings may therefore be materially flawed.

#### Ground Temperature

6. The Palmerston North Event Audit stated that ground temperature was 8.6°C (page 10), the average temperature of gas recorded in correctors at this time was 10.1°C (page 16), and the average temperature reduction due to the Joule-Thomson effect for a number of ICP's was determined by the author to be 1.6°C (page 11). The gas measured by the corrector had already been regulated, i.e. the expansion cooling had already lowered the temperature; therefore the approximate temperature of the gas in the network can be calculated to be  $10.1 + 1.6 = 11.7^{\circ}\text{C}$ . These temperatures are illustrated in the graph in *figure 2*.

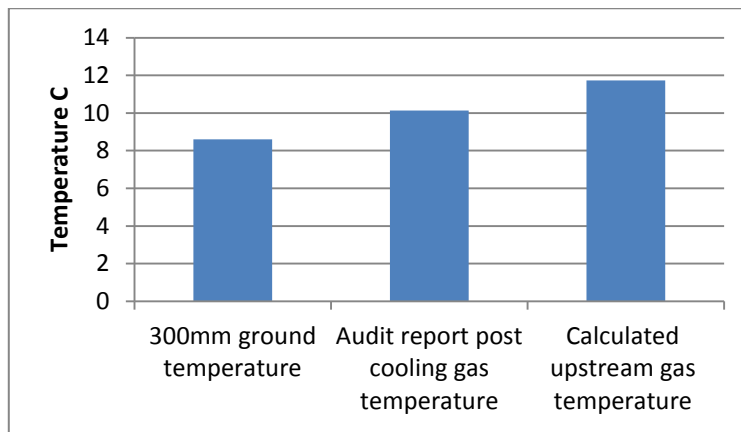


Figure 2: Graph of 300 mm ground temperature audit post cooling temperature, and calculated upstream gas temperature.

- The network gas temperature is 36% different to the ground temperature that is recommended for reconciliation; this will have a material impact on the accuracy of energy calculations. The GIC's stated requirement that 300 mm ground temperature should be used as a proxy for gas temperature needs to be re-examined. As should any suggestion that a ground temperature database be established for use in reconciliation.

#### *Altitude Information*

- Powerco is undertaking a review of altitude information and we are currently updating all altitudes identified as zero. This review process will further review the remaining altitude information and ensure that it is in line with 5259:2004.
- Powerco notes that whilst the "guidance note" in Part 2 of 5259:2004 suggests altitude is reported to within 10m; this is not only a note in a means of compliance and has no force, it also produces results to a significantly higher level of accuracy than needed to meet the requirements of Part 1. Accordingly the GIC expectation is beyond the scope of the Rules. Powerco notes that if you instead apply altitude within a 50 m accuracy limit, this also produces results well within the maximum permissible error detailed in Part 1. The industry needs further consultation on imposing a requirement on altitude accuracy that may have little cost benefit. If the GIC believes that the Rules need amending to levels beyond that set in Part 1 of NZS 5259:2004 then a Pan Industry Group should be set up to look into this.
- The use of Google Earth as the reference in the recent audits presents some challenges and we would welcome referencing of the 'recent studies' described in the audit reports that suggest accuracy of +/-10m. A number of sources state that +/-10m is the **maximum** level of accuracy for altitude **in the US**; the nature of Google Earth mapping means accuracy in New Zealand is likely to be significantly lower than this. It would therefore be more instructive to see the range of error found during analysis in metres, rather than just the number outside the 20m band. Altitude data is inherently sensitive to the mapping tool used and Powerco has been working with Terralink since 2008 to update altitude data for our gas network.

It would be helpful if both the materiality of altitude and a single source of reference for altitude data could be established.

11. Powerco notes that ICP altitude, while assigned as a distributors' function in the Rules, may be more appropriately defined as a Meter Owner function; as the ICP is, in most cases, defined at the outlet of the GMS, which is often not the distributor's asset. Similarly NZS 5259:2004 and the Regulations (in relation to metering) impose requirements on the Retailers and Meter Owners, not the network operators.

#### *Information Exchange and Compliance*

12. The need to ensure information is accurate is in line with NZS5259:2004 requirements and Powerco are committed to this. Powerco undertakes a five yearly cycle of review on all domestic meter details, providing a validation process for domestic meter set up information. This process will provide assurance of meter set up information in the future. Requiring information exchange for all metering information every six months may not be in the best interests (cost benefit) for the end user.
13. Powerco proposes an initial one off exchange of information to ensure a consistent baseline is established. Subsequent to this data exchange provisions should maintain the flow of updated information from Meter Owners to Retailers. Each party must ensure they have systems in place to ensure accurate and timely transfer of this information and processes to ensure it is appropriately incorporated in calculations. Each party must ensure that they have an audit programme in place to review processes around capture transfer and input of data and demonstrate compliance with NZS 5259:2004.
14. Part 2 of NZS 5259:2004 offers a means of compliance with Part 1, and this allows Meter Owners to best assess how they should manage their assets. It is important that detailed discussion is entered into prior to the GIC formalising any means detailed in Part 2 as an industry requirement.
15. The proposed guideline notes do appear to use slightly different wording to that in NZS 5259:2004, which may legally cause issues. As an example, on page 18:

*The 2009 amendment to NZS 5259 included a note that "To minimise uncertainty due to altitude factor the aim should be to determine the altitude within 10m where practicable."*

Whereas on Page 19 the guide states:

*"Distributors populate the registry with altitude information to within 10 m for each ICP on its network"*

16. In the latter case a means of compliance on all parties in the industry is inferred. Powerco's view is that any changes of Rules should be driven by industry consultation leading to a change in NZS 5259:2004. NZS 5259:2004 is based on providing accuracy requirements for individual ICPs, improving the reconciliation process should look beyond the Standard. Any changes should be the result of comprehensive and well documented analysis that is supported by the whole industry.

*Q2: Do you support the addition to the gas registry of further meter set-up parameters, such as meter pressure, meter multiplier and number of dials, as meter owner maintained fields?*

17. The meter industry is a competitive environment and as such having data available for review by other parties who are not the current retailer, meter owner, customer or network operator, will need some industry discussion to ensure the right balance between cost, benefit and confidentiality is met.

*Q3: Do you agree that a common ground temperature dataset should be established for use in energy conversions by retailers?*

18. Powerco notes that any project should have a cost benefit analysis undertaken to ensure a benefit exists for the customer in developing this data set and maintaining it. It does seem prudent that at least all parties use the same approach and methodology in calculating temperature and it is demonstrated that the ground temperature allows the accuracy requirements of the Rules and Regulations to be met. Any development should involve all affected parties.

*Q4: If so, do you have any comments or suggestions as to how the database should be configured?*

19. Please see response to question three.