

Gas Distribution Networks and
other interested parties

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Proposed modification to the Shrinkage and Leakage Model including a direction to approve it pursuant to Special Condition 1F of the Gas Transporter Licence

On 15 May 2014, National Grid Gas Distribution (NGGD), on behalf of all four Gas Distribution Networks (GDNs)¹, submitted to the Authority² a modification report relating to the Shrinkage and Leakage Model (SLM),. Modification No.04 Report (the "Modification Report"). This reports sets out a proposed modifications to the Gas Shrinkage and Leakage Model (the "Model") under Special Condition 1F of the Gas Transporter Licence (the "Licence"). The report follows a consultation³ which sought respondents' views on the revised Shrinkage and Leakage Model and details the proposed implementation of the modifications to the Model.

The modification proposes two main changes to the Model:

- 1) Alterations to the Low Pressure Service leakage calculations in the Model to account for the impact of service replacement that has taken place since the original model assumptions were established; and
- 2) Insertion of the definition of "Theft of Gas" and "Own Use Gas" into the Model.

The Authority, following consideration of the Modification Report and associated documents, has decided to approve the proposed changes to the Model, subject to amendments to the Shrinkage Allowance and Environmental Emissions Incentive (EEI) baselines under the Licence.

This letter outlines the background to Modification No. 04 and provides the reasons for the Authority's decision. It also contains a direction to approve the proposed amendments to the Model, which will be implemented by all GDNs for the reporting year 2014/2015.

Background

The 2008-2013 Gas Distribution Price Control Review (GDPCR) included incentives on Gas Distribution Network Operators (GDNs) to reduce leakage and natural gas emissions and introduced new controls around the estimation of emissions and other losses from gas

¹ National Grid Gas Distribution (NGGD), Scotia Gas Networks (SGN), Northern Gas Networks (NGN) and Wales & West Utilities (WWU).

² The terms 'the Authority', 'Ofgem', 'we' and 'us' are used interchangeably in this document. Ofgem is the Office of the Gas and Electricity Markets Authority.

³ [Shrinkage and Leakage Model Consultation No. 04](#)

distribution systems. The Leakage Incentive was modified and a new Environmental Efficiency Incentive (EEI) was introduced.

For the new RIIO-GD1 price control period (2013-2021), the governance arrangements of the shrinkage model were expanded to cover theft and own use gas. As a result, the former leakage model is now known as the Shrinkage and Leakage Model.

Special Condition 1F Part D of all four GDN licences requires the Licensees to establish and maintain the Shrinkage and Leakage Model. Special Condition 1F Part E requires all GDNs to annually review the Model and propose modifications where necessary to ensure that it facilitates the accurate calculation and reporting of gas shrinkage and leakage.

The modification proposal

The modification proposes to:

- i) Update the estimate of the pipe populations using mains and service replacement data from the 2008/09 – 2010/11 formula years (the original estimate of service populations was established in the early 1990s);
- ii) Amend the Model calculations to facilitate the inclusion of the impact of service transfer activity;
- iii) Revise the shrinkage and leakage volume allowances within the Gas Transporter Licences, as a result of the proposed changes above; and
- iv) Insert the definitions of “Theft of Gas” and “Own Use Gas” into the Model.

Subject to our approval, the GDNs will implement the revised Low Pressure methodology in respect of calculating leakage for 2014/15 and subsequent formula years.

History of Modification No. 04

In February 2012, NGGD consulted on Modification No. 02⁴, which proposed a change to the Low Pressure Service calculation for its licence areas. In March 2012, SGN consulted on Modification No. 03⁵, which proposed similar changes to the Model. Given the impact of the proposed changes to the RIIO-GD1 shrinkage and leakage baselines, NGGD and SGN agreed not to proceed further with the proposed changes at that time. All GDNs agreed to pursue the change in 2013/14.

In July 2013, National Grid on behalf of all GDNs jointly issued Model Modification Consultation No.04.⁶ This consultation sought views on the revised Shrinkage and Leakage baseline volumes for all GDNs in line with the revised methodology consulted upon as part of NGGD’s Modification No. 02 and SGN’s Modification No. 03. It also included baseline volumes for NGN and WWU.

Following the consultation, in September 2013, NGGD on behalf of all GDNs, submitted the first version of Modification Report No. 04 to us. We raised two issues with the Modification Report that we asked GDNs to address:

1. *The lack of independent verification of NGN’s and WWU’s revised shrinkage and leakage volume allowances*

Under paragraph 1F.24 of Special Condition 1F, the Modification Report must include an independent expert’s opinion on the extent to which the proposed modifications to the

⁴ [Shrinkage and Leakage Model Modification Report No. 02.](#)

⁵ [Shrinkage and Leakage Model Modification Report No. 03.](#)

⁶ [Shrinkage and Leakage Model Consultation No. 04 \(Version 1.0\).](#)

Model better facilitate the accurate calculation and reporting of gas shrinkage and leakage⁷. While an independent expert had assessed NGGD's and SGN's figures as part of Modification No. 02 and Modification No. 03 respectively, no such independent assessment had been made of NGN's or WWU's figures. In response to these concerns, the impact on WWU and NGN has subsequently been independently verified.

2. The differences in the way the proposed modification impacts different networks

We also sought clarification on why there are differences in the way the proposed modification impacts on different Local Distribution Zones (LDZs). This question was also raised by one respondent in response to Consultation No. 04. In response to this concern, NGGD produced detailed analysis explaining the reason behind these variances. This analysis is included as Appendix C of Modification No. 04 (Version 2.0).

In summary, the modification proposes:

- to reduce the number of service connections to the metallic mains in the Model;
- the result of which is a general reduction in the calculated service leakage in the Model.

Due to historic differences in policy for replacing services, by some GDNs the impact of this reduction will be different across different GDN areas..

Having reviewed the analysis provided, we are content that the differences across different networks have now been explained.

Consultation responses

As part of Consultation No. 02 and No. 03, NGGD and SGN had already consulted on changes to the Model. They have also commissioned a report by an independent expert⁸ (as required under the terms of the licence), who supports the case they have presented for the modification. Modification Consultation No. 04 sought respondents' views on the revised Shrinkage and Leakage baseline volumes for all GDNs in line with the revised methodology previously consulted upon.

Modification Consultation No. 04 received two responses from British Gas and Scottish Power. British Gas was supportive of the principle of changing Low Pressure Service Leakage calculations to improve the Model but felt that there had been a lack of transparency over the calculations used to assess the baselines. Scottish Power stated that it was not able to verify whether the volumes presented in the tables were a reasonable estimate of shrinkage. Subsequently, the report for Modification No. 04 provided more detail on the methodology used.

British Gas agreed that the definitions of "Theft of Gas" and "Own Use Gas" should be inserted into the Model. Scottish Power felt that, as it was unable to verify the assumptions made in the Model, it could not comment on the definitions.

⁷ Set out in paragraph 1F.13 of Special Condition 1F of the Gas Transporter Licence.

⁸ GL Industrial Services UK Ltd

Reasons for our decision

We support any modification to the GDNs' Shrinkage and Leakage Model that results in its output being more closely aligned with the likely actual shrinkage and leakage from distribution networks.

We note that we supported the original modifications (No. 02 and No. 03) to the Model proposed by NGGD and SGN in 2012. However, we did not want to be in a position where an unapproved model was used as a basis to set shrinkage and leakage baselines and subsequent allowances for RIIO-GD1. Therefore, we expected NGGD and SGN to resubmit the changes after RIIO-GD1, which they have done in the form of Modification No. 04.

When the modification was originally submitted to us in September 2013, we had some concerns about the process that had been followed. We are satisfied that these issues have now been addressed in the updated Modification Report submitted in May 2014. This change to the model will apply from the 2014/15 reporting year (year 2 of RIIO-GD1). The modification will alter the baseline volumes from this year onwards. The baseline volumes for reporting year 13/14 (year 1 of RIIO-GD1) will remain as they are currently. We agree that the proposed changes to the Low Pressure Services methodology provide a more accurate assessment of shrinkage and leakage volumes. Therefore, we consider that the implementation of this proposal would better achieve the objective set out in paragraph 1F.13 of Special Condition 1F of the Gas Transporters Licence.

Shrinkage and Leakage Smart Metering (SLSM) Report

We recognise the development work that has been carried out to develop the proposed modification. However, we expect licensees to work to understand how smart meter data can inform the development of the model. Special Condition 1F sets out the requirements of the SLSM Report. We have reviewed the report against these requirements. We consider licensees could have done more to understand the potential benefits with respect to the use of smart meter data in the future development of the model.

Authority's Decision

Following consideration of Modification Report provided by NGGD and SGN pursuant to paragraph 16 of Special Condition 1F and for the reasons set out above the Authority hereby approves Modification No. 04 to the Shrinkage and Leakage Model to apply from reporting year 2014/15. A direction issued in accordance with paragraph 1F.26 of Special Condition 1F of the Gas Transporter Licence to this effect can be found in the Annex to this letter.

Yours faithfully



Dora Guzeleva