

National Grid Gas plc

Overview of Indexation Principles

For

Gas Operating Margins

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**Commercial Operations
National Grid Gas plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA**

Website:

<http://www2.nationalgrid.com/UK/Industry%20information/Gas%20transmission%20system%20operations/Balancing/Operating%20margins/>

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Indexation Principles Document

1. Introduction

National Grid Gas purchases Operating Margins (“OM”) on an annual basis in line with both the requirements of Section K of the UNC and obligations described in the National Grid Gas Safety Case (“the Safety Case”). The Safety Case places an obligation on National Grid Gas to maintain OM at levels and locations determined throughout the year.

Typically, OM will be used to maintain NTS system pressures in the period before other balancing measures become effective. Primarily, Operating Margins will be used in the immediate period following operational stresses such as a supplier alert as a result of a failure offshore, unanticipated demand changes or unexpected pipeline and/or plant unavailability. A quantity of OM is also kept in reserve to manage the orderly rundown of the system following the declaration of a Network Gas Supply Emergency.

A number of statements and market reports pertaining to the procurement and use of Gas Operating Margins are already published on our industry information web site;

<http://www2.nationalgrid.com/UK/Industry-information/Business-compliance/Procurement-and-System-Management-Documents/>

National Grid has undertaken to publish this Gas Operating Margins Indexation Principles Document to introduce flexibility and transparency in how National Grid bilaterally agrees specific indexation methodologies for the Indexed Delivery Charge of Gas Operating Margins.

During the Gas Operating Margins Contestability Project, National Grid tabled proposals for the optional application of Indexation to prices for tendered services specifically for deliverability contracts – industry feedback received was in favour of this option, however, due to the varying characteristics of Gas Operating Margins provision, it was difficult to introduce a single methodology that would suit all service providers.

1.1 Purpose of Gas Operating Margins Indexation Principles Document

The purpose of this Indexation Principles Document is to:

- Outline the purpose of indexation in specific contracts; and
- Publish the detail of indexation methodologies that National Grid are prepared to use.

This document will act as a transparent mechanism through which National Grid will list all indexation methodologies that National Grid has, and is prepared to use, in relation to Gas Operating Margins. This document will be published on the National Grid website and will be in the public domain for all

potential providers to observe. Should an interested party wish to choose an existing indexation methodology or propose a new one, they can approach National Grid to enter into discussions. Once an indexation methodology is agreed the indexation methodology will form part of Schedule 1 of the Gas Operating Margins Delivery Service Standard Contract Terms.

If the bilaterally agreed indexation methodology differs in any way from indexation methodologies already published in the Indexation Principles Document it will be added to the existing Indexation Principles Document and the document re-published on the National Grid website to replace the existing document.

The introduction of indexation is designed to remove some of the risks faced by providers of the services when submitting tenders for assessment, specifically for utilisation where the provider has limited options to hedge the risk as it is unknown when National Grid may utilise the service.

Providers would have the option to choose indexation or alternatively retain a fixed price tender for assessment. It should be noted that National Grid will assess the risk of any proposed indexation as part of the assessment of a tender.

1.2 Nature of information provided in this report

The information provided in this report is representative of indexation methodologies currently or previously agreed for the provision of Gas Operating Margins. Each methodology has been amended to remove commercially sensitive information as the intention of this document is to publish the principles that National Grid is willing to accept for indexation.

This document is designed not to be an exhaustive list but as a document that evolves as providers approach and agree indexation methodologies for the provision of this service prior to their tender submissions.

Each time a new or amended methodology is agreed, National Grid will within fifteen business days re-publish this document on its website with the updated set of agreed indexation methodologies.

Should an interested provider wish to propose amendments to an existing indexation methodology or choose a new methodology they can approach National Grid to enter into discussions based on their indexation preference. Please contact your nominated National Grid Account Manager directly or for new providers please contact the lead Account Manager as published for the Gas Operating Margins service on our website;

<http://www2.nationalgrid.com/UK/Industry%20information/Gas%20transmission%20system%20operations/Balancing/Operating%20margins/>

2. Principles of indexation methodologies agreed

There are certain principles that are based on the practicality of application – generally indexation methodologies will be calculated using daily price indices and will only be applied to the Indexed Delivery Charge. Proposed methodologies can suggest a range of indices for reference however the likelihood of acceptance is based on several factors as to whether or not an index is suitable such as;

- Robustness of index
- Our familiarity and expertise
- Appropriateness of index
- Scope of index

If you are considering proposing an indexation methodology please consult your Account Manager (contact details are published on the Gas Operating Margins section on our website) in the first instance to discuss the general principles on which the methodology can be based.

Utilisation costs can vary considerably dependent upon each provider's provision of the service. Typically the largest factor a provider will consider is the cost of fuel or lost opportunity in providing a Gas Operating Margins service. Therefore, the general principle for indexation is to apply indexation indices linked to fuel price – this in turn minimises the risks the provider face when opting to tender for this service. Equally, a provider could opt for a methodology linked to wholesale energy price for Indexed Delivery Charge.

Please refer to Appendix A where specific indexation methodology terms are referenced in relation to services where indexation has been previously agreed.

Appendix A - Indexation methodologies previously agreed

The following table sets out indexation methodologies applicable to the Indexed Delivery Charge;

<p>Indexed Delivery Charge (1)</p>	<p>The Indexed Delivery Charge payable in pounds sterling shall be the greater of:</p> <p>(a) (Oil Price + Carbon Price) * []; and</p> <p>(b) £[].</p> <p>Where:</p> <p>“Oil Price” means the cost of the distillate fuel oil in pounds sterling required to generate the same amount of electrical power as the Actual Utilisation Quantity (MWh), determined as follows:-</p> $\text{Oil Price} = \text{Oil Quantity (Mt)} * [\text{Oil Price}(\$/\text{Mt})] * \text{Exchange rate} (\$ \text{ to } \pounds)$ <p>“[Oil Price(\$/Mt)]” means the arithmetic average of the previous day’s high and low prices for the daily [Oil Price(\$/Mt)] Gasoil [%] CIF CRG NWE under the heading Product Price Assessments (\$/MT) as reported [daily] in [Oil Price(\$/Mt)] Market Report.</p> <p>“Carbon Price” means the cost of additional carbon dioxide (CO₂) produced as a result of burning oil instead of natural gas, determined as follows:-</p> $\text{Carbon Price} = (\text{Oil Quantity (MWh)} * \text{Oil Emissions Factor}) - (\text{Actual Utilisation Quantity (MWh)} * \text{Gas Emissions Factor}) * \text{ICEECX} * \text{Exchange Rate} (\pounds \text{ to } \pounds)$ <p>“Oil Quantity (MWh)” means the quantity of distillate fuel oil measured in MWh required to generate the same amount of electrical power as the Actual Utilisation Quantity (MWh), determined as follows:-</p> $\text{Oil Quantity (MWh)} = \text{Actual Utilisation Quantity (MWh)} * \text{Gas Fuel Efficiency Factor} \div \text{Oil Fuel Efficiency Factor}$ <p>“Oil Quantity (Mt)” means the quantity of distillate fuel oil measured in metric tonnes required to generate the same amount of electrical power as the Actual Utilisation Quantity (MWh), determined as follows:-</p> $\text{Oil Quantity (Mt)} = \text{Oil Quantity (MWh)} * [] * [] \div []$ <p>“Gas Emissions Factor” means [] tonne CO₂ per MWh</p> <p>“Oil Emissions Factor” means [] tonne CO₂ per MWh</p> <p>“Exchange rate (€ to £)” means the daily Euro to pounds</p>
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	<p>sterling interbank exchange rate published on []</p> <p>“Exchange rate (\$ to £)” means daily US dollar to pounds sterling interbank exchange rate published on []</p> <p>“Gas Fuel Efficiency Factor” means [%];</p> <p>“Oil Fuel Efficiency Factor” means [%];</p> <p>“ICEECX” means the arithmetic average of the previous day’s high and low prices for the daily ICE Closing Price ECX EUA (€/Mt)</p>
<p>Indexed Delivery Charge (2)</p>	<p>The Indexed Delivery Charge payable in pounds sterling shall be:</p> $\sum_i \text{Max}[SBP_i \times [X]\%, 0] \times Q_i$ <p>Where:</p> \sum_i <p>represents the sum over all Hours within the Gas Day in which the Service has been delivered</p> <p>SBP_i = the average System Buy Price for electricity determined by the two relevant settlement periods within the Hour i as published in the final settlement report (£/kWh)</p> <p>Q_i = the amount of the Actual Utilisation Quantity delivered in the Hour i (kWh)</p> <p>([X]% is a fixed percentage representing the efficiency of the power station)</p> <p>Note: In the template Gas Delivery Agreement published for the 2017/18 annual tender, there is no longer a separate “Contract Price” payment for the gas delivered. Therefore this formula for the Indexed Delivery Charge has been amended to remove the deduction for the gas price.</p>
<p>Indexed Delivery Charge (3)</p>	<p>The Indexed Delivery Charge payable in pounds sterling shall be [] % of the System Marginal Buy Price for gas for the Gas Day.</p>

In each case, the Indexed Delivery Charge may be subject to a minimum charge (in £).