

Shrinkage Methodology Review Consultation

Transmission Workgroup

3-Mar-16

Scope

- We gave a brief heads-up presentation at February Workgroup, and were invited back to present more detail.
- We are planning to publish our consultation document on 2 March, with responses requested by 30 March.
- This presentation gives an overview of the context and structure of the methodology review.
- These slides do not specify our position, as they were issued ahead of the consultation.
- We want to understand how we can help engage your input over the consultation period.

NTS Shrinkage Overview

- *2014/15 Total volume: 3618GWh**
- 0.4% of annual system demand
 - 41% Compressor Fuel Usage (mainly gas),
 - 59% Unaccounted for Gas
 - Less than 1% was Calorific Value Shrinkage.
- Cost of £80m - £100m per year
 - recharged to shippers though NTS commodity invoice.
- National Grid Gas is incentivised to minimise the costs incurred in its role as NTS Shrinkage Provider, in particular through
 - Price risk management, measured against a market benchmark
 - Volume efficiency, assessed post-year based on outturn conditions

* Gas equivalent in 2014/15 formula year

Shrinkage Methodology Statement - Purpose

■ ***Price risk management:***

- Achieved through forward purchases of baseline volumes of gas and electricity.
- Effectiveness of price hedging is influenced by baseline volumes forecast error.

■ ***Volume efficiency***

- Incentivised through target levels for Compressor Fuel Usage and CV Shrinkage against methodology calculations.
- Drives continuous improvement where NGG is able to influence.

■ ***Materiality (based on 2014/15):***

- A 10% reduction in error of baseline volumes would lead to around £0.3m less cost risk exposure for customers.
- A 1% lower volume of CFU and CVS would have led to around ~ £0.3m less cost for customers.

Baselines

- The aim of the methodology for calculating the CFU, CVS and UAG baselines is to minimise forecast error.
- This optimises price risk management through the hedging strategy for customers that was agreed for RIIO.
- For each component, we have reviewed the current performance and materiality, and explored options to reduce forecast error.

UAG baseline

- Performance: from Q213 to Q315, absolute error of quarterly UAG baseline averaged 167GWh (28% of average UAG).
- Error appears high, but reflects unpredictable nature of UAG.
- Materiality: associated cost risk exposure ~ £230k/yr per 1p/th price movement.
- Options explored: using shorter or longer term averages of historical UAG
- Initial assessment – limited added value due to nature of UAG

CFU baseline

- Performance: for Q213 to Q315, absolute error of quarterly CFU baseline averaged 68GWh (18% of average CFU).
- Materiality: associated cost risk exposure ~ £90k/yr per 1p/th price movement
- Options explored: other supply drivers, reduced historical range and sub-annual models
- Initial assessment – low added value, with modest improvement in forecast error

CVS baseline

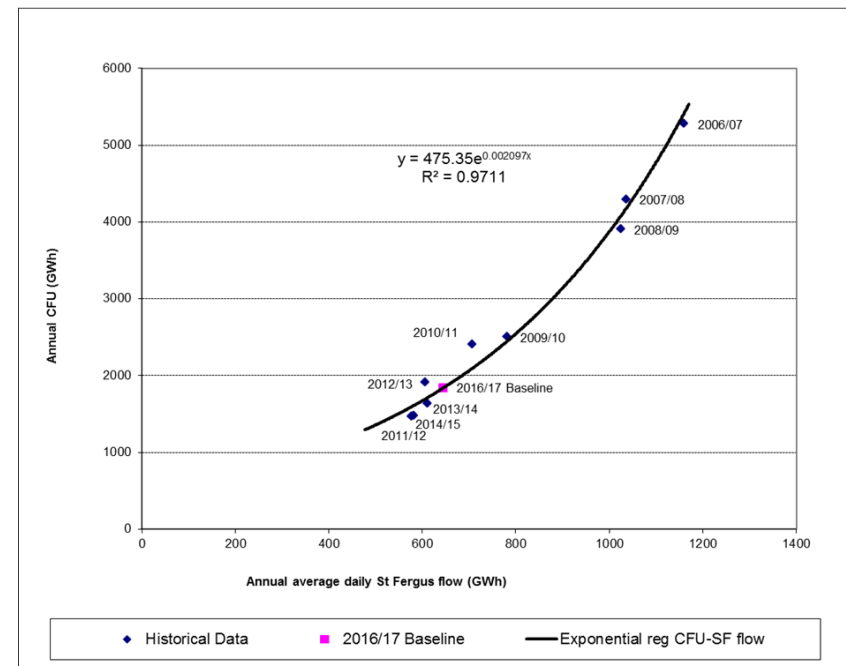
- Performance: from Q213 to Q315, absolute error of quarterly CVS baseline averaged 14GWh (187% of average CVS).
- Materiality: associated cost risk exposure ~ £20k/year per 1p/th price movement
- Options explored: using historical averages similar to UAG
- Initial assessment – low added value, with improvement in forecast error, but small volumes.

Efficiencies

- The aim of the methodology for calculating the CFU and CVS efficiencies is to minimise the uncertainty of the models that are used for ex-post assessment.
- The methodology should incentivise volume reductions while mitigating windfall cost variances. There is tension between these two criteria.

CFU efficiency

- Performance: outturn CFU is assessed within the uncertainty of the regression model, which is around +/-140GWh.
- Materiality: valuing this at say 50p/th, there is a risk of windfall cost variances of around £2.4m.
- Options explored: assessing against expected range of model.
- Initial assessment: medium/high value, with mitigation of windfall cost variances, and trade-off with continuous improvement



CVS efficiency

- Performance: outturn CVS is assessed within the uncertainty of the model (network analysis of sample days), which is around +/-85GWh.
- Materiality: as for CFU, valuing this at say 50p/th, there is a risk of windfall cost variances of around £1.5m.
- Options explored: assessing against expected level or range, based on historic performance.
- Initial assessment: as for CFU, options have medium/high value, with mitigation of windfall cost variances, and trade-off with continuous improvement

Summary of Review

Component	Current Method	Relative materiality	Options explored	Added value of options – initial assessment
UAG baseline	Ex-ante, using 90 day historical average	Medium	Using shorter or longer term averages of historical UAG	Limited - due to nature of UAG
CFU baseline	Ex-ante, using regression model of historical CFU and St Fergus supply	Low	Other supply drivers, reduced historical range and sub-annual models	Low – modest improvement in forecast error
CVS baseline	Ex-ante, using network analysis of forecast supply and demand for seven representative days	Low	Using historical averages similar to UAG	Low – improvement in forecast error, but small volumes
CFU efficiency	Ex-post, using baseline model with outturn St Fergus supply	High	Assessing against expected range of model	Medium/High – mitigation of windfall cost variances, trade-off with continuous improvement
CVS efficiency	Ex-post, using network analysis of actual supply & demand for seven representative days	High	Assessing against expected level or range, based on historic performance	Medium/High – mitigation of windfall cost variances, trade-off with continuous improvement

Next steps

- We plan to publish the consultation document on 2 March, and seek responses by 30 March.
- We will then report on the consultation and propose modifications to Ofgem.
- We want your views both on our specific proposals, and where priorities lie.
- We are happy to talk to any stakeholders in your organisation over the consultation period.
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Appendix - NTS Shrinkage components

- NTS Shrinkage is energy used in operating the system and other energy which can't be charged to consumers or accounted for in the measurement and allocation process
 - Compressor Fuel Usage (CFU) - energy used to run compressors to manage pressures within the gas transmission system. This can either be gas or electricity, depending on the power source for the specific compressor.
 - Calorific Value Shrinkage (CVS) - gas which cannot be billed due to application of the Gas (Calculation of Thermal Energy) Regulations 1996 (amended 1997).
 - Unaccounted for Gas (UAG) - remaining quantity of gas which is unallocated after taking into account all measured inputs and outputs from the system.