

Review Group Report
Review Proposal Reference Number 0176
"Review of NDM Profile Allocation Parameters"

This Review Report is presented for the UNC Modification Panel's consideration. The consensus of attendees at the Review Group is that the UNC should be modified to remove the SND from the definition that underpinned the algorithm and thereby remove some of the contention that occurred each year in response to the profiles.

Appendix 1 contains the Terms of Reference

Appendix 2 provides the final summary presentation accepted by the Review Group

1. Review Proposal

E.ON UK raised Review Proposal 0176, for which the Terms of Reference are in Appendix 1

2. Review Process

In accordance with the Modification Rules, at its meeting on 18 October 2007 the Modification Panel determined that the Review Proposal should be referred to a Review Group for progression. This Review Report was subsequently compiled by the Joint Office of Gas Transporters, and approved by Review Group attendees.

3. Areas Reviewed

The Review Group discussions focussed on a number of potential solutions which were suggested:

1. Derive a WCF from the difference between Seasonal Normal CWV and actual CWV (Composite Weather Variable) each day.
2. Derive a more neutral, bottom-up view of SND by taking the sum of all live AQs with the appropriate ALP applied, either as a daily, monthly or once-a-year calculation.
3. Demand Estimation processes to derive its own view of SND, incorporating climate change, which might require a Shipper vote to select the preferred option.
4. Completely overhaul the format of the NDM Algorithm.

Options 1 and 2 were developed in more detail and discussed, before the Review Group finally agreed that the AQ approach as further developed was the better replacement for SND.

4. Recommendations

The Modification Panel is invited to accept this report and the recommendations that:

1. No further work is required in respect of the Review Proposal
2. A Modification Proposal should be raised to:
 - Move to using AQ/365* ALP basis for WCF within allocation for the 2008/9 Gas Year.
 - Update WCF using AQ live on 01 October during September as "pseudo SND" within UK Link systems – no system change required.
 - Review AQ changes on a quarterly basis and amends the "pseudo SND" if aggregate AQ changed by more than 1% within an LDZ.
 - Calculate DAF using sample data but no scaling to Network forecast and fix for the year.

Appendix 1 Terms of Reference

Purpose

This review proposal seeks to establish the benefits and opportunities associated in respect of the NDM Profile Allocation Parameters.

Background

The current methodology for allocation of gas throughput post close out, and for estimation of NDM nomination values prior to and on the gas day, has been in place since work with Touche Ross during development of the network code regime. The formula used to allocate energy between shippers is defined in section H2.2 using the familiar parameters of AQ, ALP, DAF and WCF. Demand is derived in advance of the gas day using forecast total gas demand and shared to each shipper pro-rata using the formula. Post D+5 the allocation is scaled to ensure all gas transported on the day is allocated. The scaling factor necessary to balance the calculation should be close to 1.

The NDM parameters are calculated by xoserve on behalf of the gas transporters using sample information. To enable the parameters to apply to the population the DAF and WCF are scaled to a forecast Seasonal Normal Demand (SND). Historically the SND values were calculated by National Grid providing one view of the future. Since Network sale each Network has produced its own view of SND and National Grid Transmission has produced a second, sometimes different, view. The level set by the forecast SND impacts the DAF and WCF values, bias in which can feed through to the scaling factor and final allocation. This has potential to increase misallocation between market sectors directly influencing the level of reconciliation required.

Over the past two years there have been representations through DESC (Demand Estimation Sub Committee) on the annual "NDM Profile and Capacity Estimation Parameter" proposals as per H1.8. In each of the last two years there have been questions about the appropriateness of the SND levels for the future. UNC provides no route for Shippers to question the transporters SND forecasts. While forecasts for transportation purposes are clearly a transporters issue the impact on allocation ensures that Shippers have a vested interest.

The E.ON representation in July suggested that investigation take place to replace the use of SND to produce DAF and WCF variables with an alternative. This review proposal suggests that the decision on how an appropriate alternative would be derived should be determined through industry discussion involving experts from xoserve and shippers. This should allow a replacement WCF and DAF to be derived independent of SND. As the values are loaded into UKLink and Gemini systems there should be no system impact, unless a more radical change to the algorithm is proposed.

Due to timescales any implementation for October 2008 will require agreement by January. Having discussed this issue at the September distribution work stream it is

felt that a review group is appropriate, although this can be run on the same day as DESC where DESC has meetings to minimise extra meetings for those involved.

Scope and Deliverables

The Group is asked to consider:

1. What change could be made to the WCF and DAF terms to remove or amend Transporter SND?
2. What historical evidence could be provided to show impacts on scaling factors?
3. What is the likely impact on allocation and reconciliation levels?
4. What the timescales and risks/benefits are related to each potential option, including financial implications and impacts on other Shipper/Transporter processes?
5. If alternative changes to the algorithm may provide benefit which need further development for longer term implementation?

A Review Group Report will be produced containing the findings of the Review Group in respect of the work identified above.

Limits

The Review Group will consider changes required to the following:

- Uniform Network Code

The Review Group in its initial phase will not concern itself with:

- Detailed changes required to processes and procedures
- Detailed changes required to existing systems
- Development of detailed business rules

Composition

The Review Group will comprise the following representation

Name	Organisation
Julian Majdanski (Chair)	Joint Office
Lorna Dupont (Secretary)	Joint Office
Sallyann Blackett (Proposer)	E.ON UK
Ed Rains	Total Gas & Power
Fiona Cottam	xoserve
Anna Taylor	Northern Gas Networks
Joel Martin	Scotia Gas Networks
Mo Rezvani	Scottish & Southern Energy
Mark Linke	Centrica

Steve Taylor	Centrica
Jonathan Aitken	RWE Npower
Hannah McKinney	EdF Energy
Euan Chisholm	Scottishpower
Stuart Cameron	Scottishpower
Mark Perry	xoserve
Alison Chamberlain	National Grid Distribution
Steve Coles	E.ON

A Review Group meeting will be quorate provided at least 1 Transporter and 2 User representatives are present.

Information Sources

- Uniform Network Code – TPD Section H
- Gas Transporter, Shipper and Supplier Licences
- Gas Act
- Various Industry legislation as appropriate – may include reference to:
 - Gas Safety (Installation & Use) Regulations
 - Gas Safety (Management) Regulations
 - Industry Codes of Practice as relevant.

Timetable

It is proposed that a total period of 6 months be allowed to conclude this review.

- Frequency of meetings – monthly. The frequency of meetings will be subject to review and potential change by the Review Group.
- Meetings will be administered by the Joint Office and conducted in accordance with the Chairman's Guidelines.

Appendix 2 final summary presentation



Review Group 176 Update

Feb 2008



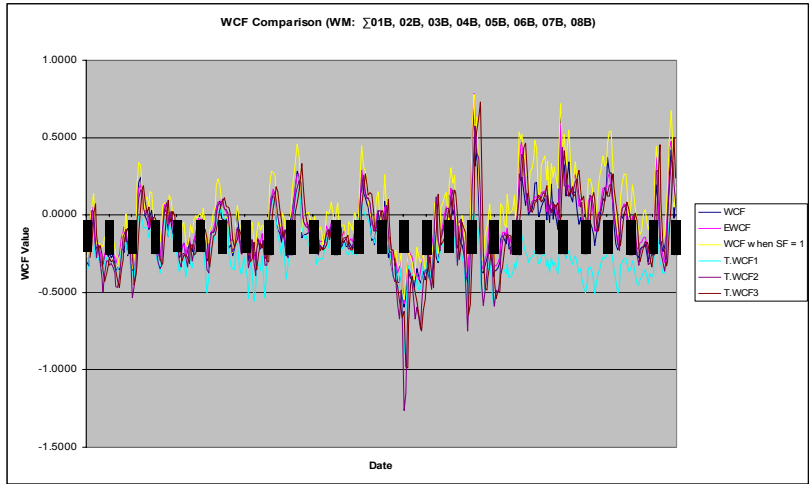
Summary to date

- Reminder on allocation
 - based on the formula defined in UNC H2.2.1
 - $SPD = AQ/365 * ALP_t * (1+DAF_t * WCF_t) * SF_t$
- The current WCF parameter is defined using
 - $WCF_t = (ASD_t - SNDN_t) / SNDN_t$
- The review group was asked to consider alternatives to SND for definition of the WCF parameter
- Two possibilities have been looked at, one using a weather based alternative, one using an AQ based alternative

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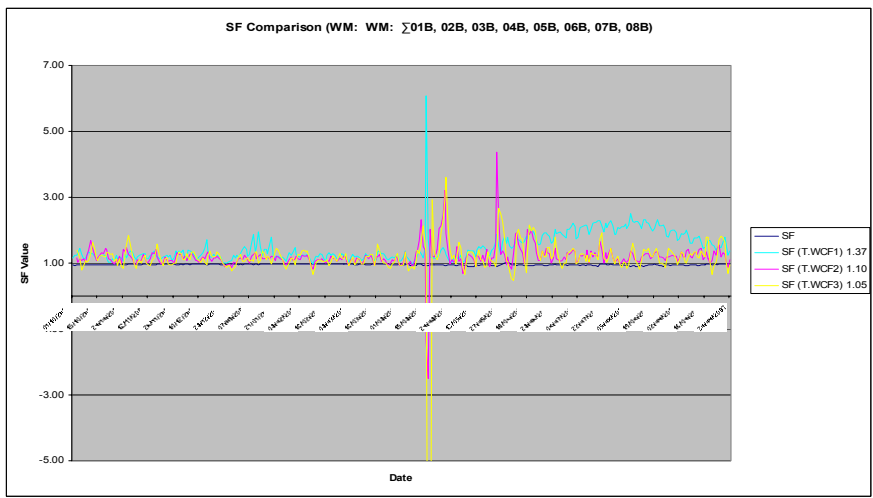
Gas Year 2006/7 – Weather based WCF.



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Gas Year 2006/7 – Implied SF



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Issues with weather based replacement

- WCF results in weather based effects being shown in the calculated values. 'Other' effects are highlighted in the SF value which therefore becomes more volatile.
- Are we comfortable as an industry in having a Scaling Factor that varies more than the historical values have?
- LDZ level largely show similar patterns to those observed in the E01B analysis.

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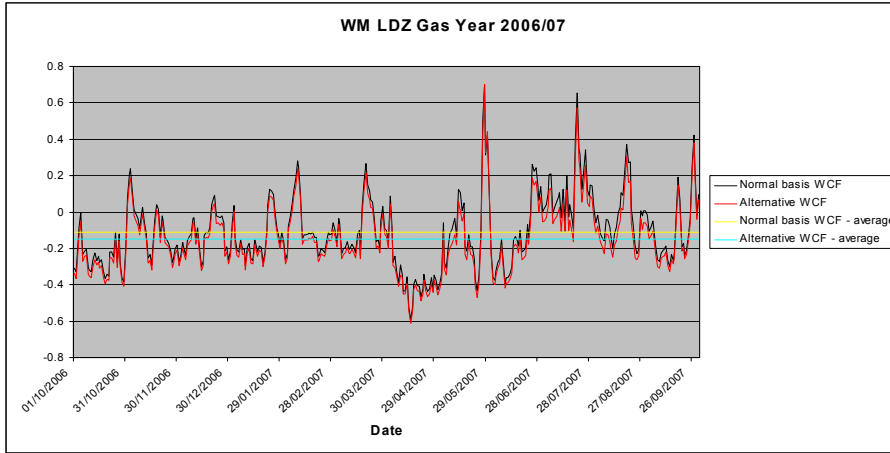
Modelled approach

- Use $WCF = \frac{\text{Actual LDZ NDM Demand} - \sum(AQ_{EUC}/365 \times ALP_t)_{LDZ}}{\sum(AQ_{EUC}/365 \times ALP_t)_{LDZ}}$
- i.e. Derive an approximation of Seasonal Normal Demand for the LDZ by applying the ALP for the day to total AQ/365 for each EUC
- No change made to daily DAF for this simulation
- Revised daily WCF and SF calculated using alternative view of a "normal demand"

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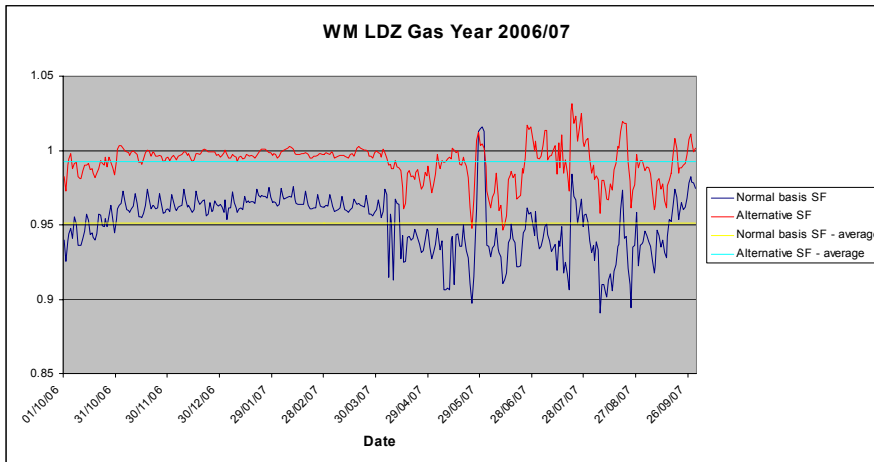
Comparison of current WCF and proposed WCF



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Comparison of SF under current and proposed conditions



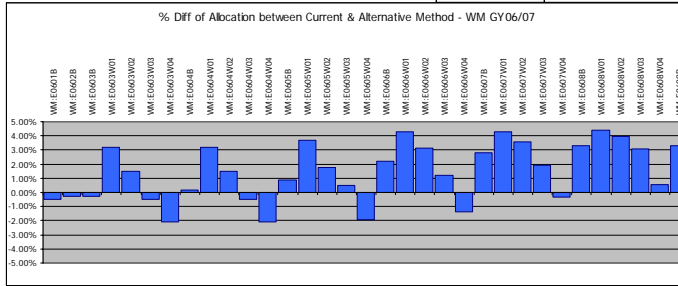
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Impact on allocation

- Figures based on WM for 2006/7

EUC	Alternative-current	
	KWh	% change
1	-145,411,352	-0.47%
2	-7,952,891	-0.29%
3	822,669	0.12%
4	7,497,935	1.07%
5	23,075,106	3.40%
6	35,624,144	5.55%
7	38,430,281	6.43%
8	38,932,418	6.73%
9	8,981,692	3.30%



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Extending the analysis to look at national results

Consumption Range (MWh pa)	Band	% Difference 2004/5 gas year	% Difference 2005/6 gas year	% Difference 2006/7 gas year	Average % Difference
0 - 73.2	1	0.16%	0.09%	-0.30%	-0.02%
73.2 - 293	2	0.10%	0.00%	-0.03%	0.02%
293 - 732	3	-0.20%	-0.13%	0.32%	-0.01%
732 - 2196	4	-0.32%	-0.19%	0.52%	0.00%
2196 - 5860	5	-0.53%	-0.29%	1.03%	0.07%
5860 - 14650	6	-0.79%	-0.41%	1.57%	0.12%
14650 - 29300	7	-0.95%	-0.46%	1.94%	0.18%
29300 - 58600	8	-1.25%	-0.54%	2.46%	0.22%
Avg SF		1.02	1.01	0.95	

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Way forward

- Weather only alternative emphasises the impact on demand for factors other than weather
- Scaling factor (one of the main monitors of allocation) would be increasingly variable
- Modelled approach using AQ is no more variable than current SND basis
- AQ is in the control of Shippers and is transparent in its calculation
- Some questions remain on how this may be implemented...

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Which AQ to use and when to update

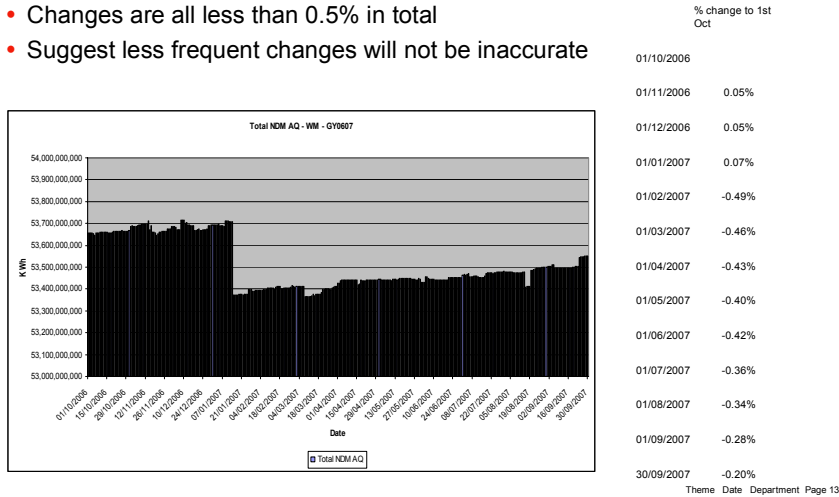
- If WCF is redefined we need to consider whether the AQ used is updated through the year
 - Do we update the AQ values?
 - What frequency
 - Is a tolerance applied
- Although WCF cannot be published before actual demand is known DAF can be calculated and fixed
- EWCF is used in AQ calculations

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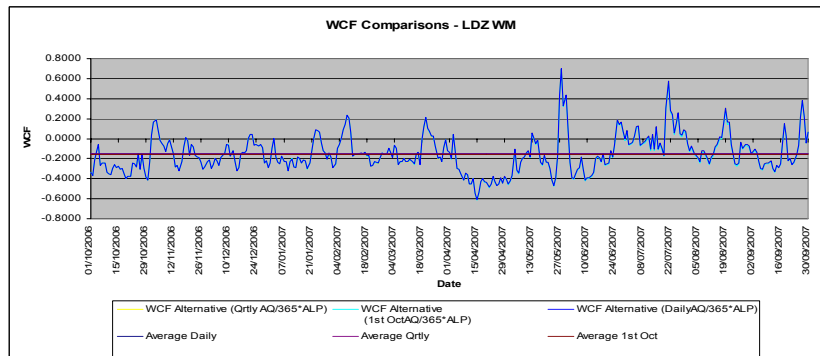


Looking at aggregate AQ changes..

- Changes are all less than 0.5% in total
- Suggest less frequent changes will not be inaccurate



How frequently to update



- Supports view updates need not be frequent
- Suggest quarterly review with update only if AQ changes are greater than 1%



Current code timescales

- H1.8.1 (b) Transporters will publish not later than 30th June Derived Factors
 - H 1.9.3 defines Derived Factors as ALP, DAF, peak load factor and peak load scaling factor
- H1.9.1 Transporters will submit to the authority the final proposals (including Derived Factors) not later than 15th August
- H1.9.2 states that the models and Derived Factors used in a gas year will be those submitted under 1.9.1

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DAF Impacts

- DAF is defined as
$$\frac{WSENS_{EUC} / SND_{EUC}}{WSENS_{LDZ} / SND_{LDZ}}$$
- would have to be recalculated in time for publication as per H1.9.3
- WSENS and SND in these cases are used from the sample and relate to known demand levels
- Historically the EUC and LDZ models are scaled to ensure they sum to the Network forecasts – this would not be done but should impact numerator and denominator equally removing the need to change the DAF

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Recommendations to be agreed

- Move to using AQ/365 * ALP basis for WCF within allocation for the 2008/9 gas year
- Update WCF using AQ live on 1st October during September as "psuedo SND" within UKLink systems – no system change required
- Review AQ changes on a quarterly basis and amend the "psuedo SND" if aggregate AQ changes by more than 1% within an LDZ
- Calculate DAF using sample data but no scaling to Network forecast and fix for the year

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Code Changes

- Only one reference will need changes in section H
- **H2.5**

Amend WCF formula as

$$WCF_t = \frac{ASD_t - (\sum AQ_{EUC} / 365 * ALP_t)_{LDZ}}{(\sum AQ_{EUC} / 365 * ALP_t)_{LDZ}}$$

Where for Day t:

AQ_{EUC} is the aggregate Annual Quantity for the End User Category, fixed at 1st October for the relevant gas year and amended by quarterly review where the total AQ within the EUC changes by more than 1%

\sum_{LDZ} is the summation over the relevant LDZ

Remove reference to $SNDN_t$

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