Final Modification Report
Modification Reference Number
0236 / 0236a : Nationally Diversified Load Factors.

This Modification Report is made pursuant to Rule 8.9 of the Modification Rules and follows the format required under Rule 8.9.3.

1. The Modification Proposal:

The Network Code (section H4.3.3) lays down three Nationally Diversified Load Factors (NDLFs) for non-daily-metered loads, as follows:

0-2500 thms/yr (0-73.2 MWh/yr)	36%.
2500-25000 thms/yr (73.2-732 MWh/yr)	39%.
25000-75000 thms/yr (732-2196 MWh/yr)	43%.

Load factor estimates are generated each year from load analyses. The resulting NDM end user category (EUC) load factors within each of the three load bands are then scaled to the three factors above, on a national basis.

The three factors are based on estimates dating from before the Network Code.

Transco have carried out annual analyses of NDM loads and profiles based on data recorder data for small loads and datalogger data for larger loads. The average results from the last three years show that the NDLF for the 0-2500 thms/yr band is approximately correct, but that the 39% and 43% assumed for the 2500-25000 thms/yr and 25000-75000 thms/yr bands are too high.

British Gas Trading put forward three possible alternatives for addressing this :

a) updating the nationally diversified load factors to reflect the analysis performed since 1995.
b) removal of the nationally diversified load factors, leaving each year's best estimates to stand unscaled, or
c) some intermediate position

British Gas Trading recommended that the simplest option would be option b), leaving each year's best estimates to stand unscaled.

Removal of the Nationally Diversified Load Factors may lead to price volatility year on year, especially in the 25000-75000 thm/yr category. As an alternative, a proposal was put forward by Transco that each year the three nationally diversified load factors could be set to the average of the value used previously and the value estimated from the new analysis.

At the request of the Capacity workstream, the Demand Estimation Sub-Committee has investigated alternative values for the existing NDLFs. From the results of the analysis, the following revised values are proposed :

Consumption Range	NDLF
0-2500 thms/yr (0-73.2 MWh/yr)	36.5 %
2500-25000 thms/yr (73.2-732 MWh/yr)	34.0 %
25000-75000 thms/yr (732-2196 MWh/yr)	37.0 %

Further details of the supporting analysis and the charging impacts of these new values were set out in papers attached to the draft Modification Report.

2. Transco's opinion:

Removing the Nationally Diversified Load Factors and substituting the unscaled national average load factors from annual NDM analyses could lead to volatility in NDM supply point capacity bookings and also price volatility.

Setting the three nationally diversified load factors to the average of the value used previously and the value estimated from the new analyses would result in NDLFs changing from year to year, which in turn could also cause volatility.

Transco believes that the revised values of NDLFs developed by the Demand Estimation Sub-Committee are a better representation of the respective consumption ranges than the values of NDLFs currently in use.

The issues are :

should the current values be replaced ?

if so, should they be replaced in one step or on a phased basis ?

if phased, what phasing should be applied ?

how often should values of NDLFs be reviewed thereafter ?

Transco considers that the values developed by the Demand Estimation Sub-Committe are an appropriate target. A move to these new values in phases is proposed (to mitigate the commercial impacts on shippers adversely affected by the changes). Furthermore, Transco considers that the values of NDLFs should be reviewed at periodic intervals.

Specifically, Transco would propose that the following NDLF values should be adopted :

Consumption Range	NDLF 1999/00	NDLF 2000/01	NDLF 2001/02
0-2500 thms/yr (0-73.2 MWh/yr)	36.5 %	36.5%	36.5%
2500-25000 thms/yr (73.2-732 MWh/yr)	37.0 %	35%	34%
25000-75000 thms/yr (732-2196 MWh/yr)	41.0 %	39%	37%

The charging impacts of these restricted values were set out in the paper attached to the draft Modification report.

No later than two years after adoption of the full revised values, the Demand Estimation Sub-Committee should be invited to investigate again whether the revised values of NDLFs are still applicable, and make proposals for any further modifications as may be required at that time.

3. Extent to which the proposed modification would better facilitate the relevant objectives:

Based on the Demand Estimation Sub-Committee's work, maintaining the current NDLFs for the non-domestic NDM load bands could result in Shippers supplying the domestic sector attracting relatively high capacity based transportation charges. Implementation of the revised NDLFs would better facilitate the relevant objectives by increasing the cost reflectivity of transportation charges.

4. The implications for Transco of implementing the Modification Proposal, including:

a) implications for the operation of the System:

Transco is not aware of any implications for the operation of the System.

b) development and capital cost and operating cost implications:

Transco is not aware of any development or capital cost implications.

c) extent to which it is appropriate for Transco to recover the costs, and proposal for the most appropriate way for Transco to recover the costs:

Not applicable.

d) analysis of the consequences (if any) this proposal would have on price regulation:

Adopting the new proposed values for NDLFs would have an impact on transportation charges. NDLF values are used to estimate supply point and exit capacity bookings for loads in these bands and hence to estimate how much revenue the capacity charges will recover.

Transportation charges are set with a view to recovering a certain level of revenue. Any changes to the NDLF values could therefore affect the level of price change and also the average level of price change within a load band. This impact is assessed in the attached paper.

In summary, if NDLFs are changed to the proposed values, this would require transportation charges to be reduced by 0.4% on average in order to recover the same revenue. However the NDLF changes would give increases in the typical transportation charges for loads in the two bands above 73.2 MWh per annum. The phasing proposals set out in this modification report should mitigate the potential adverse affects of this.

5. The consequence of implementing the Modification Proposal on the level of contractual risk to Transco under the Network Code as modified by the Modification Proposal:

Transco is not aware of any consequences of implementing this proposal on the level of contractual risk.

6. The development implications and other implications for computer systems of Transco and related computer systems of Users:

Transco is not aware of any implications for computer systems. Nevertheless, the scaling of NDM EUC load factors would need to be done to the newly adopted NDLF values and the charging computations would need to use the newly adopted values of NDLFs.

7. The implications of implementing the Modification Proposal for Users:

As discussed under section 4d, implementing the proposal could have an affect on transportation charges for Users.

8. The implications of implementing the Modification Proposal for Terminal Operators, Consumers, Connected System Operators, Storage Operators, suppliers, producers and, any Non-Network Code Party:

Implementing the Modification Proposal should reduce the potential cross-subsidy between non-domestic and domestic NDM customers.

9. Consequences on the legislative and regulatory obligations and contractual relationships of Transco and each User and Non-Network Code Party of implementing the Modification Proposal:

Transco is not aware of any consequences.

10. Analysis of any advantages or disadvantages of implementation of the Modification Proposal:

Advantages :

Evidence from analysis for the period 1996 to 1998 has shown that the NDLFs for the 73.2 to 732 MWh/a and the 732 to 2196 MWh/a sectors are overstated. This suggests that a degree of cross subsidy may exist.

Implementation of this proposal would result in more reflective NDM load factors and therefore more cost reflective gas transportation charges and a more reflective gas allocation basis.

Disadvantages :

The changes may have adverse impacts on shippers' commercial arrangements already in place with end-consumers, in terms of increased non-domestic transportation charges. To mitigate these effects the proposal is for a phased change from the current NDLFs to the revised ones.

11. Summary of the Representations (to the extent that the import of those representations are not reflected elsewhere in the Modification Report):

Eight representations were received on the draft Modification Report.

Of these, four respondents (British Gas Trading, the Chemical Industries Association, Eastern Natural Gas (Retail) Limited and United Gas Services Limited) expressed support, with British Gas Trading and the Chemical Industries Association proposing their immediate introduction and Eastern Natural Gas (Retail) proposing a minimum notice period.

Four respondents (Yorkshire Energy Limited, Quantum Energy Distribution Limited, The Gas Light and Coke Company and Enron Direct Limited) did not support the modification, although Yorkshire Energy expressed support for some of the principles.

a. General Proposals

(i) Implementation of Revised NDLFs

United Gas Services agrees with the proposed NDLFs and supports the phasing in over three years.

British Gas Trading strongly supports introduction of the revised NDLFs. However, it recommends that a move to the new NDLFs should be made in a single stage, with the new values being introduced on 1 October 1999. **The Chemical Industries Association** is also in favour of introducing revised NDLFs and argued against the phased implementation. However, it did not support the methodological basis for calculating the revised NDLFs.

Eastern Natural Gas (Retail) also proposed that there should be a minimum notice period of twelve months before any changes are made to the current NDLFs, in order to mitigate the commercial impact.

Yorkshire Energy is not in favour of the implementation of the proposal, although expressing support for some of the principles involved, believes that further work should be carried out with a view to implementing revised NDLFs from October 2000. It proposes that there should be a minimum notice period of twelve months before any changes are made to the current NDLFs and also indicate that it is not in support of the phasing in of revised NDLFs, arguing that by the time the phasing in is complete the data could again be out of date, resulting in the same problems as those which are currently faced.

Quantum Energy Distribution recommended that the Modification Proposal is not implemented until a greater understanding of the implications of the proposal is gained.

Enron Direct suggest that data to calculate revised NDLFs should be collected once the EUCs have been corrected and is not in favour of changes to NDLFs before October 2000.

The Gas Light & Coke Company (GLACC) does not support a change in the values of the current NDLFs. It considers that if a change to the values is justified it should be phased in and at least fifteen months notice should be given of the change. GLACC also proposes that Shippers are informed of the net change in charges which would result from the proposed change in load factors in each market sector.

Transco Response:

Transco considers that the revised values for the NDLFs recommended by the Demand Estimation Sub-Committee are more representative than the existing levels and proposes their implementation. Having considered the comments raised opposing their introduction, Transco does not believe there to be sufficient argument to continue with the use of the existing NDLF values and takes the view that the phased introduction of the revised values better reflects the costs of transportation in charges.

Transco recommends a move to the new values in three phases, as illustrated in Clause 2, to avoid any sudden change in transportation charges, allow shippers sufficient time to adjust to the new charges and mitigate the commercial impacts on shippers. This will also allow the proposed charges to be reviewed if new evidence comes to light, mitigating the risk of year on year instability in the values.

(ii) Future Reviewing of NDLFs

United Gas Services recommends that NDLFs should be reviewed every five years.

British Gas Trading recommends that the NDLFs should be reviewed annually to ensure that the figures being used are as close as practicable to "reality".

Eastern Natural Gas is also in favour of an annual review, with the values proposed in the draft Modification Report adopted as "bottom stop values".

Transco Response:

Transco does not believe that an annual update of NDLFs is desirable because this would tend to lead to greater consequential instability in transportation charges. Transco agrees, however, that there would be merit in keeping the evidence under review, and amending NDLFs again if it were clear that they had ceased to be representative. A biannual review of the NDLFs would seem appropriate.

b. Impact of AQ / EUC Review Process

Concerns were raised by **Eastern Natural Gas, Enron** and **Yorkshire Energy** over the miscalculations in the AQ Review Process and the EUC categories and the impact these may have on the new proposed values for NDLFs.

Transco Response:

AQs and EUC categories are assessed primarily using UK-Link, whereas the computations to derive the revised NDLFs used separate systems. They are not therefore subject to problems as described by respondents.

c. Data Quality / Methodology Concerns

Quantum and **Enron** raise concerns over whether analysis of three years of data, which have included mild winters, may provide too little data from which to draw reliable conclusions. Quantum suggest that the data used to derive the current NDLFs is used together with the three years of post Network Code data used to derive the proposed NDLFs.

Transco Response:

The present NDLFs were not derived from a consumption band analysis as has been used to derive the NDLFs proposed in the draft Modification Report. This method of analysis was not possible at the time that the present NDLFs were derived because daily consumption data for different market sectors was not generally available and different techniques were therefore used. Transco does not therefore believe it would be possible to include the basis of the present NDLFs in the analysis of the new proposed NDLFs. Transco believes that the revised NDLFs are more soundly based because of the availability of daily consumption data which did not exist when the present NDLFs were set.

Although the last three years have included mild winters, Transco propose that a review of NDLFs in two years time would be a more favorable approach, rather than waiting for varying winter conditions to acquire more data.

Yorkshire Energy raised concerns that three different methodologies had been used and the proposed NDLFs calculated from the average of these. It was felt that this method did not provide enough "confidence" in the data.

Enron also highlighted perceived weaknesses in each of the five methodologies used for recalculating the NDLFs and also commented that the method of taking an average of the results from the five different methodologies implied that there was little confidence in any of the models used.

The Chemical Industries Association do not support the methodological basis and suggest that NDLFs should be based on the "last year available data" instead of the methodology put forward in the draft Modification Report.

Transco Response:

Five different models were used to calculate NDLFs in order to test whether current NDLFs were potentially inaccurate regardless of which method was used. It was felt that, given the possibility of deficiencies of each method, it would be prudent to adopt an averaging approach to arrive at the proposed NDLF values. The five different approaches yielded estimates of NDLFs that are all within one percentage point of the figures now proposed. In Transco's view this tends to confirm the robustness of the figures rather than suggest any significant deficiency.

d. Further Items

Yorkshire Energy draw attention to the variations in load factors in particular LDZs and a suggestion is made that future analysis should assess the impact of any proposed NDLFs on individual load factors

The Gas Light and Coke Company also raised concerns that the debate regarding NDLFs had mostly taken place between Transco and BGT. It also suggests that the proposed NDLFs are based on erroneous Winter Annual Ratios. It proposes that validation procedures are carried out to check datalogger readings against actual meter reads and also take into account invoice queries.

Transco Response:

The proposals for the revised NDLFs have been discussed within the Demand Estimation Sub-Committee. Transco is of the opinion that further analysis would not be helpful at this stage. However, Transco would be pleased to discuss the scope of future analysis, with the Demand Estimation Sub-Committee providing a suitable forum should Shippers wish to put forward views.

Population Winter Annual Ratio band AQs are not included in the calculation of NDLFs.

Transco believes that the validation of datalogger readings would only have a minor impact on the proposed values of NDLFs and would be statistically insignificant.

GLACC also raised concerns over the size of the samples used and queried how representative the samples were, especially for higher load bands where sample numbers were very low. The impact of using different periods of analysis for the I & C market (thirteen months) and the domestic market (seventeen months) was queried and a request made that the effect of these differing periods of analysis be evaluated.

Transco Response:

Analysis of the impact of sample sizes is currently being carried out under the forum of the Development Workgroup for Modification 0262.

Where the sample sizes in individual LDZs are very small, appropriate levels of LDZ aggregation are used to derive the relevant EUC models. The extent of aggregation is debated and agreed at the Demand Estimation Sub-Committee as part of the annual NDM profiling process.

EUC modeling is almost always carried out on a twelve (or thirteen) month basis. For "domestic" only, with Demand Estimation Sub-Committee agreement, a seventeen month period has been used in previous years.

Transco believes that the impact of different analysis periods will have a minimal impact on the final calculations of the NDLF values.

GLACC also commented that the large NDM and simulation methodologies for determining peaks are biased and that this will reduce domestic charges at the expense of non-domestic.

Transco Response:

Transco acknowledged in the draft Modification Report that different methods used to compute revised NDLFs should be expected to yield marginally different results and the approach which based the new NDLFs on an average of the methods attempts to strike a fair balance.

12. The extent to which the implementation is required to enable Transco to facilitate compliance with safety or other legislation:

Implementation is not required to facilitate compliance with safety or other legislation.

13. The extent to which the implementation is required having regard to any proposed change in the methodology established under Standard Condition 3(5) of the statement; furnished by Transco under Standard Condition 3(1) of the Licence:

Transco does not believe that implementation is required as a result of a methodology change.

14. Programme of works required as a consequence of implementing the Modification Proposal:

There are no modifications required to the UK-Link Systems and therefore a programme of works will not be required as a result of implementing this Modification Proposal.

15. Proposed implementation timetable (inc timetable for any necessary information systems changes):

It is proposed that revised NDLFs should be adopted for application in the gas year 1999/2000. This would require the Modification Proposal to be implemented by the end of March 1999, in order to allow the revisions to be reflected in both the Pricing and Demand Estimation proposals, due to be published in May and June 1999.

16. **Recommendation concerning the implementation of the Modification Proposal:**

Transco proposes that if NDLFs are amended this should be implemented as set out in this Final Modification Report.

17. **Restrictive Trade Practices Act:**

If implemented this proposal will constitute an amendment to the Network Code. Accordingly the proposal is subject to the Suspense Clause set out in the attached Annex.

18. **Transco's Proposal:**

This Modification Report contains Transco's proposal to modify the Network Code and Transco now seeks direction from the Director General in accordance with this report.

19. **Text:**

Legal text will be provided upon Ofgas' direction regarding the proposal.

Signed for and on behalf of Transco.

Signature:

Tim Davis
Manager, Network Code

Date: 22/3/99

Director General of Gas Supply Response:

In accordance with Condition 7 (10) (b) of the Standard Conditions of Public Gas Transporters' Licences dated 21st February 1996 I hereby direct Transco that the above proposal (as contained in Modification Report Reference 0236/0236a, version 1 dated 22/3/1999 be made as a modification to the Network Code.

Signed for and on behalf of the Director General of Gas Supply.

Signature: - Tahir Majid - Head of Gas Balancing

Date: 15/6/99

The Network Code is hereby modified, with effect from , in accordance with the proposal as set out in this Modification Report, version 1.

Signature:

Process Manager - Network Code
Transco

Date:

ANNEX

Restrictive Trade Practices Act - Suspense Clause

For the purposes of the Restrictive Trade Practices Act 1976, this document forms part of the Agreement relating to the Network Code which has been exempted from the Act pursuant to the provisions of the Restrictive Trade Practices (Gas Conveyance and Storage) Order 1996. Additional information inserted into the document since the previous version constitutes a variation of the Agreement and as such, this document must contain the following suspense clause.

1. Suspense Clause

1.1 Any provision contained in this Agreement or in any arrangement of which this Agreement forms part by virtue of which this Agreement or such arrangement is subject to registration under the Restrictive Trade Practices Act 1976 shall not come into effect:

(i) if a copy of the Agreement is not provided to the Director General of Gas Supply (the "Director") within 28 days of the date on which the Agreement is made; or

(ii) if, within 28 days of the provision of the copy, the Director gives notice in writing, to the party providing it, that he does not approve the Agreement because it does not satisfy the criterion specified in paragraph 2(3) of the Schedule to The Restrictive Trade Practices (Gas Conveyance and Storage) Order 1996.

provided that if the Director does not so approve the Agreement then Clause 1.2 shall apply.

1.2 Any provision contained in this Agreement or in any arrangement of which this Agreement forms part by virtue of which this Agreement or such arrangement is subject to registration under the Restrictive Trade Practices Act 1976 shall not come into effect until the day following the date on which particulars of this Agreement and of any such arrangement have been furnished to the Office of Fair Trading under Section 24 of the Act (or on such later date as may be provided for in relation to any such provision) and the parties hereto agree to furnish such particulars within three months of the date of this Agreement.