APPENDIX 5.1
(referred to in paragraph 2.134 Vol 1 FTA, paragraph 2.89 Vol 1 GA, and paragraphs 5.23, 5.29, 5.32 and 5.53)

The development of the transportation service

1. The requirement for BG to provide a transportation service for third party shippers (common carriage) has its origins in the 1982 Oil and Gas (Enterprise) Act (the 1982 Act). Before this date, BG had voluntarily negotiated a common carriage arrangement with one company. The 1982 Act required BG's pipeline system to be available, subject to certain considerations, for the carriage of gas on behalf of other parties. The 1982 Act contained no specific guidance on pricing and left BG to negotiate with shippers on the prices charged.

2. The 1982 Act did not prompt any shipper to take advantage of access to the pipeline system. By the time of the Gas Act, no new common carriage arrangements had been finalized between BG and shippers. So it may be said that the 1982 Act did not lead to common carriage of gas on BG's network.

3. The Gas Act stated that BG, as a public gas supplier, was entitled to recover a proportion of its costs and a return on capital by way of changes for the use made of the pipeline system by third parties. Section 19 of the Gas Act set out a role for the Director to intervene where negotiations between BG and shippers encountered difficulties. BG's Authorisation (condition 9) required it to publish a statement of guidance for persons who might wish to have gas conveyed through BG's pipeline system. BG published a statement in November 1986, *Information for those wishing to have gas conveyed by British Gas*,[1] giving two examples of charges of 3.5p a therm and 4.0p a therm for firm gas transportation, depending on both distance and load factor on the RTS. These two examples were based on a pricing system which included both a capacity charge and a commodity charge.

4. In their 1988 report the MMC concluded that this statement did not provide sufficient guidance to prospective users of the pipeline system. The MMC viewed the two examples as being inadequate to enable determination of the relationship between price and distance, making it difficult for shippers to negotiate with their customers in the knowledge of the likely costs of transportation.

5. The MMC recommended that BG publish more detailed information about the principles used in calculating common carriage terms, to assist potential customers in estimating the likely charges sought by BG. The MMC regarded it as of the highest importance that third parties have access to the pipeline system on terms which enable effective competition to take place. BG's Authorisation was changed, as the MMC recommended, to require the publication of more information about the principles and assumptions used in calculating common carriage charges, with further examples of those charges, in sufficient detail to put a potential customer in a position to make a reasonable estimate of the charges that would be sought for using different parts of the system for common carriage.

6. BG's Authorisation was also modified to require that it should not allow information acquired during negotiations on common carriage to become available to those within BG concerned with the purchasing or marketing of gas. This reflected a recommendation of the MMC arising as a result of concerns expressed to them on the potential for abuse of such information.

7. The MMC were concerned about the method BG had used in its two published examples of common carriage charges. BG had used a different method of cost apportionment from that used for its own internal purposes and also different principles of calculating costs (for example, BG assumed a 20-year asset life, in contrast with a 48-year life assumption in its accounts). The MMC were also concerned that the Gas Act might be construed as requiring the Director to determine common carriage arrangements on the basis of average cost. This could be significantly above the incremental cost incurred by BG. If this were the case, the MMC saw the possibility of the Director needing to seek some amendment of the Gas Act to enable effective competition between shippers and BG to take place.

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[1] Appendix 3.1 of the MMC's 1988 report.

Developments after the 1988 MMC report

8. The MMC noted that, although a number of negotiations were taking place between BG and shippers during the period of their inquiry, no new contract had been signed by the time the report was completed in August 1988. After the report several shippers felt dissatisfied with the terms offered by BG and made applications to the Director under section 19 of the Gas Act (see Chapter 1).

9. During 1989 there were 300 applications for directions under section 19 but only the one direction was actually issued during that year. This, in May 1989, was a request by Agas to the Director to make a determination on its application for transportation of gas to a power station in Manchester. The Director did not publish the direction, on the grounds that it contained matters which were commercially confidential between the parties concerned. At the same time, the Director issued a document[1] setting out the details of his approach to common carriage charges as a general response to this application. Subsequently OFGAS issued a `generic' contract to shippers which reflected the directed agreement (excluding details of load size and prices) and provided a base line for negotiation between BG and shippers. The Director proposed to compare the costs relevant to BG's charges to shippers. OFGAS used a method of average cost in its computations and, with the assistance of specialist external advisers, grouped costs by pressure tier on BG's pipeline system to establish overall cost levels. BG said that OFGAS did not disclose its calculations to BG, which was unable to verify them. Transportation charges were then based on the tiering costs so produced. In October 1989, at the time of a further section 19 application, the Director suggested an ROR on assets for transportation of 4.5 per cent (CCA).

10. BG accepted the approach adopted in the Agas direction. In March 1990 BG announced significant reductions to its transportation charges and 1990 saw the start of a growing number of contracts being signed between BG and shippers. The new prices served to break the deadlock then existing between BG and shippers, and the consequent applications for directions under section 19 did not have to be determined.

11. Following the 1988 MMC report and the change in BG's Authorisation, BG revised the statement of guidance about common carriage and provided much more detailed tables of indicative charges for the use of all parts of the transmission and distribution system. Since 1988 this has been reissued five times, in June 1989 (`the Blue Book'), in March 1990 (`the Black Book'), in September 1990 (`the Red Book'), in September 1991 (`the Green Book'), and in September 1992 (`the Purple Book'). The effects of these developments, and the changes in method that have led to them, are described below.

Changes in transportation charges

12. As indicated above, BG has revised its statement of guidance about common carriage charges on five occasions since 1989. Over this period, changes have been made to the formulae used, by calculating charges which have had the effect of substantially reducing the cost of transporting gas. Table 1 illustrates these changes with respect to four routes with differing load factor, offtake tier and gas volume assumptions.

13. The first full publication of transportation tariffs in June 1989, the Blue Book, reflected the recommendations that the MMC had made. This sought to give a fuller and clearer statement of guidance in the way the MMC had recommended. It also incorporated a number of changes to the cost allocation method. In particular, for each of four tiers of pipeline system (the NTS, RTS, MPS and LPS), BG changed the apportionment of costs between capacity and commodity from a ratio of 90:10 to 50:50. BG also changed the precise determination of capacity costs. It had previously apportioned 50 per cent on the basis of peak day and 50 per cent on the basis of firm annual demand. It decided to apportion capacity costs totally in relation to peak-day demand.

14. The first two revisions to the transportation tariff (the Black and the Red Books) involved considerable reductions in transportation charges. There were four principal changes in the Black Book charges:

(a) Depreciation charge. The depreciation calculation was brought into line with that in BG's published accounts, for example the depreciation charge for the NTS was rebased on a 43-year life and not the 20 years used in the previous calculation.

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[1] 'Paving the way for gas competition', *OFGAS News*, OFGAS, 1989.

TABLE 1 **Comparison of BG's gas transportation charges, actual and proposed, 1989 to 1993, specimen routes and loads at 60 per cent load factor**

		Blue Book	*Black Book*	*Red Book*	*Green Book*	*Purple Book*	*Consultation*	*Consultation*
	Publication date:	*June 1989*	*March 1990*	*Sept 1990*	*Sept 1991*	*Sept 1992*	*March 1992*	*Feb 1993*
	Prices as from:	*Sept 1988*	*March 1990*	*March 1991*	*March 1992*	*March 1993*	*March 1992*	*March 1993*
					Pence per therm transported			
RTS, 50m therms	Bacton-Sheffield	4.6	4.2	3.9	3.7	3.7	2.8	2.7
RTS, 50m therms	St Fergus-Newcastle	4.3	3.4	3.3	3.2	3.2	3.5	3.5
RTS, 50m therms	Easington-Wolverhampton	4.1	3.1	3.0	2.8	2.9	3.3	3.2
RTS, 4m therms	Bacton-Wolverhampton	3.7	3.0	2.9	3.1	3.3	4.9	4.9
MPS, 300,000 therms	Bacton-Sheffield	6.3	6.3	6.1	6.1	6.3	6.5	6.9
MPS, 300,000 therms	St Fergus-Newcastle	6.0	5.5	5.6	5.7	5.9	7.2	7.7
MPS, 300,000 therms	Easington-Wolverhampton	5.8	5.1	5.2	5.3	5.5	7.0	7.5
MPS, 300,000 therms	Bacton-Wolverhampton	5.4	5.0	5.1	5.1	5.4	6.8	7.3
LPS, 62,500 therms	Bacton-Sheffield	12.9	9.5	7.9	7.9	8.2	8.1	9.2
LPS, 62,500 therms	St Fergus-Newcastle	12.6	8.7	7.3	7.5	7.7	8.8	10.0
LPS, 62,500 therms	Easington-Wolverhampton	12.5	8.4	7.0	7.1	7.4	8.6	9.7
LPS, 75,000 therms	Bacton-Wolverhampton	11.6	7.8	6.6	6.8	7.1	8.2	9.2
					Pence per therm, restated at March 1993 prices			
RTS, 50m therms	Bacton-Sheffield	5.6	4.7	4.1	3.8	3.7	2.9	2.7
RTS, 50m therms	St Fergus-Newcastle	5.3	3.8	3.5	3.3	3.2	3.6	3.5
RTS, 50m therms	Easington-Wolverhampton	5.0	3.5	3.2	2.9	2.9	3.4	3.2
RTS, 4m therms	Bacton-Wolverhampton	4.5	3.4	3.1	3.2	3.3	5.0	4.9
MPS, 300,000 therms	Bacton-Sheffield	7.7	7.1	6.4	6.3	6.3	6.7	6.9
MPS, 300,000 therms	St Fergus-Newcastle	7.3	6.2	5.9	5.9	5.9	7.4	7.7
MPS, 300,000 therms	Easington-Wolverhampton	7.1	5.7	5.5	5.4	5.5	7.2	7.5
MPS, 300,000 therms	Bacton-Wolverhampton	6.6	5.6	5.4	5.2	5.4	7.0	7.3
LPS, 62,500 therms	Bacton-Sheffield	15.8	10.6	8.3	8.1	8.2	8.3	9.2
LPS, 62,500 therms	St Fergus-Newcastle	15.4	9.7	7.7	7.7	7.7	9.0	10.0
LPS, 62,500 therms	Easington-Wolverhampton	15.3	9.4	7.4	7.3	7.4	8.8	9.7
LPS, 75,000 therms	Bacton-Wolverhampton	14.2	8.7	7.0	7.0	7.1	8.4	9.2
			Percentage change on previous year		*(for consultation cases compared with current year actual charges)*			
RTS, 50m therms	Bacton-Sheffield		-16.3	-12.4	-7.8	-2.6	-22.3	-27.0
RTS, 50m therms	St Fergus-Newcastle		-27.5	-8.4	-5.8	-2.6	12.3	9.4
RTS, 50m therms	Easington-Wolverhampton		-30.7	-8.7	-9.3	0.9	16.8	10.3
RTS, 4m therms	Bacton-Wolverhampton		-25.6	-8.8	3.8	3.7	52.4	48.5
MPS, 300,000 therms	Bacton-Sheffield		-8.3	-8.6	-2.9	0.6	5.9	9.5
MPS, 300,000 therms	St Fergus-Newcastle		-15.9	-3.9	-1.1	0.9	25.2	30.5
MPS, 300,000 therms	Easington-Wolverhampton		-19.4	-3.8	-1.0	1.1	30.6	36.4
MPS, 300,000 therms	Bacton-Wolverhampton		-15.1	-3.8	-2.9	2.4	29.2	35.2
LPS, 62,500 therms	Bacton-Sheffield		-32.5	-21.5	-2.9	1.1	1.4	12.2
LPS, 62,500 therms	St Fergus-Newcastle		-36.7	-20.8	-0.2	0.0	17.3	29.9
LPS, 62,500 therms	Easington-Wolverhampton		-38.4	-21.4	-1.5	1.6	19.3	31.1
LPS, 75,000 therms	Bacton-Wolverhampton		-38.3	-20.2	0.1	1.7	18.5	29.6

Source: BG.

(b) *Rate of return*. The ROR on assets was reduced from 6.1 to 4.5 per cent (CCA).

(c) *LPS costs*. BG had applied a 50:50 capacity:commodity cost apportionment to the LPS, whereas OFGAS required that LPS costs be apportioned on the basis of unweighted customer numbers. The BG approach would have resulted in a cost of over 5p a therm to firm contract customers. The OFGAS approach of an equal charge for all customers on the LPS would effectively give contract customers a cost per therm of a fraction of a penny. This issue was referred by a shipper to OFGAS for direction in 1989. No direction was ever made, but as a compromise BG implemented, as an interim measure for carriage-charging purposes, a cost of 1p a therm (at 65 per cent load factor but varying with load factor), this being the BG understanding of the level of charge which would be acceptable to OFGAS. BG then derived an apportionment methodology to reflect this approach, by using a weighted customer basis.

(d) *Distance capping*. BG introduced the distance capping previously described. This had a fairly minor effect on the overall level of transportation charges compared with the three changes above.

15. The September 1990 Red Book also brought further significant decreases in transportation charges. There were three principal changes to the basis of costs and charging:

(a) *Headquarters costs*. Previously certain Headquarters costs which had been allocated to the NTS tier were found not to be specific to the NTS and were distributed over all tiers.

(b) *Site charges*. Part of the site-specific costs, relating to service pipes and meters, was load-related, to reflect increases in costs with customer size.

(c) *Back-hauling*. The back-hauling discount, previously described, was introduced. This brought significant reductions but only on appropriate routes.

16. The 1991 and 1992 revisions (the Green and Purple Books) were smaller. Real transportation tariffs fell again in 1991. The 1992 changes largely served to maintain tariffs constant in real terms.

17. The 1992 Purple Book included, for the first time, transportation tariffs for between 2,500 and 25,000 therms a year. These have been previously described. There was, however, one significant difference for the LPS compared with BG's cost allocation. OFGAS wanted to retain a charge based on 1p a therm (as described above). BG continued to maintain that this would significantly under-recover costs and would have implied subsidization of other shippers' customers. As a compromise, BG agreed with OFGAS a charge based on a customer and commodity approach. The interim charge agreed is a standard £30 per customer plus 2.5p a therm. This leaves a discontinuity in the charges to shippers for customers above and below 25,000 therms a year and the position is not considered to be satisfactory in the long term. Neither OFGAS nor BG sees this solution as final and hopes to resolve it as an outcome of further discussions on future transportation charges.

18. It is difficult to estimate the overall annual change in transportation tariffs, given the wide variance of load, offtake, distance and load factor applicable. Table 1 is, therefore, intended to give only a general view of the history of transportation charges (for completeness it also includes comparisons with BG's latest `consultation' proposals-these are discussed further below). The examples given have been chosen at random but a similar pattern of changes would apply to other routes. The changes have not necessarily had a uniform impact and vary with the particular components of each route. For instance, in the examples, the route from Bacton to Sheffield incorporates a considerable distance through the RTS (almost three times greater than the other two examples) and a much shorter NTS distance. Therefore, changes to the treatment of those elements of the charge will have a larger proportionate effect on this route compared with the others.

The variation in BG's current transport charges

19. The transportation charge per therm varies considerably, depending on the precise circumstances of carriage. Using the example in Chapter 5, the charge for transportation from Bacton to Wolverhampton is shown in Table 2, with allowance for variation in load, load factor and offtake. Charges vary from 2p to 11p a therm, compared with the 7.8p a therm calculated for the initial example. Generally, loads that avoid using the LPS save about 1p a therm, avoiding the MPS saves about 1.2p to 2.0p a therm and avoiding using the RTS saves about 0.9p to 1.2p a therm. There is up to 3p a therm difference between a 4 million therm annual load and a 25,001 therm load (though this difference may, in practice, be larger as larger loads will also tend to have higher pressure offtakes and higher load factor so that the effects are not independent). Variations in load factor between 35 and 75 per cent can lead to transport charges varying by up to 3.5p a therm (the former being a very weather-sensitive load, such as domestic and commercial space heating, and the latter being more typical of industrial process use). For small sites (loads below 25,000 therms a year) a typical charge would be 11.75p a for a 15,000-therm load with monthly meter read (though this falls to 10.9p a therm for a 25,000-therm load with six-monthly meter read-the basis for this is discussed below).

20. Distance is a further factor affecting transportation charges: the lower part of Table 2 shows the effects of distances travelled on the NTS/RTS of 25, 252 and 750 km (252 km being the Bacton to Wolverhampton total distance). A longer distance of 750 km (for which the excess distance above 692 km is charged at 25 per cent of the NTS variable rate) is 3p to 6.5 a therm more than that for a 25 km route.

TABLE 2 **Sensitivity of 1992/93 transportation charges to variation in charging parameters**

Bacton to Wolverhampton: 220.8 km NTS, 31.1 km RTS

Load size therms a year	*Offtake tier*	*Load factor*	*pence per therm*	
		75%	*50%*	*35%*
10 million	NTS	1.83	2.30	2.76
	RTS	2.83	3.49	4.20
4 million	NTS	1.93	2.44	3.07
	RTS	2.93	3.63	4.51
	MPS	4.30	5.27	6.49
1 million	RTS	3.14	3.91	4.87
	MPS	4.51	5.55	6.85
	LPS	5.45	6.68	8.24
300,000	RTS	3.42	4.27	5.33
	MPS	4.80	5.91	7.31
	LPS	5.74	7.05	8.70
75,000	MPS	5.41	6.65	8.20
	LPS	6.35	7.79	9.59
25,001	MPS	6.49	7.87	9.57
	LPS	7.43	9.00	10.96
15,000	11.80 (with monthly meter read, independent of offtake tier and load factor)			

With distance variation

		Total NTS/RTS distance (km)			
4 million	NTS	25	1.13	1.45	1.84
	NTS	252	2.05	2.59	3.27
	NTS	750	4.08	5.11	6.41
	MPS	25	2.86	3.51	4.33
	MPS	252	4.30	5.27	6.49
	MPS	750	7.13	8.72	10.75
300,000	RTS	25	1.98	2.52	3.17
	RTS	252	3.42	4.27	5.33
	RTS	750	6.25	7.73	9.59
	MPS	25	3.35	4.16	5.15
	MPS	252	4.80	5.91	7.32
	MPS	750	7.62	9.37	11.57
75,000	MPS	25	3.97	4.90	6.04
	MPS	252	5.41	6.65	8.20
	MPS	750	8.24	10.11	12.46
	LPS	25	4.91	6.03	7.43
	LPS	252	6.35	7.79	9.59
	LPS	750	9.18	11.24	13.85
25,001	LPS	25	5.99	7.25	8.80
	LPS	252	7.43	9.00	10.96
	LPS	750	10.26	12.46	15.22

Source: MMC study.

Note: Where the offtake is not directly from the NTS 10 per cent of the NTS/RTS distance is assumed to be on the RTS.