TRANSCO PRICING CONSULTATION PAPER PC68
REVIEW OF LDZ TRANSPORTATION CHARGES

SUMMARY

In May 2000, Transco reviewed its LDZ charges and put forward proposals to rebalance the charges in order to improve cost reflectivity. Following consultation, LDZ capacity charges were fully rebalanced and commodity charges partially rebalanced from October 2000 with a view to reviewing the charges later.

The 2001 review of the data underlying the standard LDZ transportation charges has concentrated on the use of the low-pressure system by all loads and connection data for connected systems (CSEPs). In line with responses to the 2000 consultation paper, a more detailed analysis of the low-pressure system has been carried out breaking the low-pressure tier into more sub-tiers defined by pipe diameter ranges. A more comprehensive survey of the pressure tier data for connected systems has also been carried out.

Transco's conclusions from the review are that:

- Use of the low pressure system by different sized loads is in line with the initial results obtained in 2000, and so further rebalancing of the charges to improve cost reflectivity is justified;

- The present form of charging function may not accurately reflect typical system use for all load sizes. Charging functions based on a power of the peak demand represent the data better and are proposed for application from April 2002; and

- In line with the phasing proposal last year, it is proposed to move to the proposed fully rebalanced charge from April 2002.

Transco's conclusions from the review of LDZ transportation charges to CSEPs are:

- On average, CSEPs typically make less use of the LDZ system than other similar-sized loads. The difference is large enough to justify separate LDZ charging functions for transportation to CSEPs; and

- That the present form of the charging function may not accurately reflect the reduced system usage of connected systems across the range of consumption bands.

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Contents

1 Introduction

LDZ transportation charges consist of capacity and commodity charge functions related to supply point peak day consumption. The functions include maximum and minimum charges such that domestic loads and the largest LDZ loads attract fixed unit rates. The charge functions are based on the average use made of the system by loads of a given annual quantity (AQ) rather than the specific use of the system by each individual load.

In 2000, Transco reviewed the data underlying the LDZ and CSEP charging methodology and published the results in PC59. The review concentrated on the following areas.

- The robustness of the sample size for the sub tiers of the low-pressure system
- The transparency of the calculation
- The appropriateness of standard LDZ charging to CSEPs

Concerns raised by some of the respondents to PC59 last year, and addressed in this review, were:

- Appropriateness of the sub division of the Low Pressure (LP) system
- Transparency of calculations and regression analysis
- Appropriateness of using supply point numbers within the methodology
- Appropriateness of the consumption bands used for CSEP charges
- Data quality for CSEP charges

2 Methodology Issues Reviewed

2.1 Disaggregation of the LPS into Sub Tiers

The Low Pressure System (LPS) is the largest part of the LDZ system and is disaggregated into sub-tiers for the purpose of determining LDZ charges. The typical level of use of each sub-tier by loads of varying sizes is a key factor in determining the form of the LDZ charging functions.

Several respondents to PC59 expressed the view that the sub division of the low-pressure system into four sub-tiers was too crude and that more sub-tiers should be considered. For Transco's analysis this year, the LPS has therefore been disaggregated into six, rather than four, sub-tiers in order to assess the level of cost reflectivity.

The data collected as part of the PC59 analysis on the likelihood of connection to a particular diameter pipe main has been used but with the results applied to six sub-tiers.

2.2 Weighting of Connection Probabilities

LDZ charges are based on the average cost of using each tier and the probability that gas transported to a supply point of a given size will use each tier. These probabilities are in turn based on the probabilities of connection to each tier and the typical flow of gas through the system. The tier connection probability for a supply point has been based on the proportion of supply points connected to the tier, based upon a large sample.

LDZ loads are split into eleven consumption bands for the purpose of analysis. Several respondents to PC59 last year expressed the view that even within each consumption band the larger loads may typically be connected to higher tiers than the smaller loads. Since the ultimate purpose of the analysis is to calculate throughput and capacity charges, they argued that it was more appropriate to weight the connection probabilities by load size rather than by the number of loads.

For this year's analysis, data has therefore been collected to show how the demand is distributed within each consumption band and hence it has been possible to weight the data on load size rather than number of supply points.

2.3 Fit of Charging Functions to Cost Data

The results of the 1999 and 2000 reviews indicated that a log-log form of function did not represent the derived data particularly well, and a change to a single log function was implemented in October 2000. However, it was recognised that alternative functions may potentially fit the data better and thus be more cost reflective. For the analysis this year, several alternative forms of charging functions have been fitted to the underlying data. The details of this analysis and the proposed form of function for use from April 2002 are detailed in section 4.4.

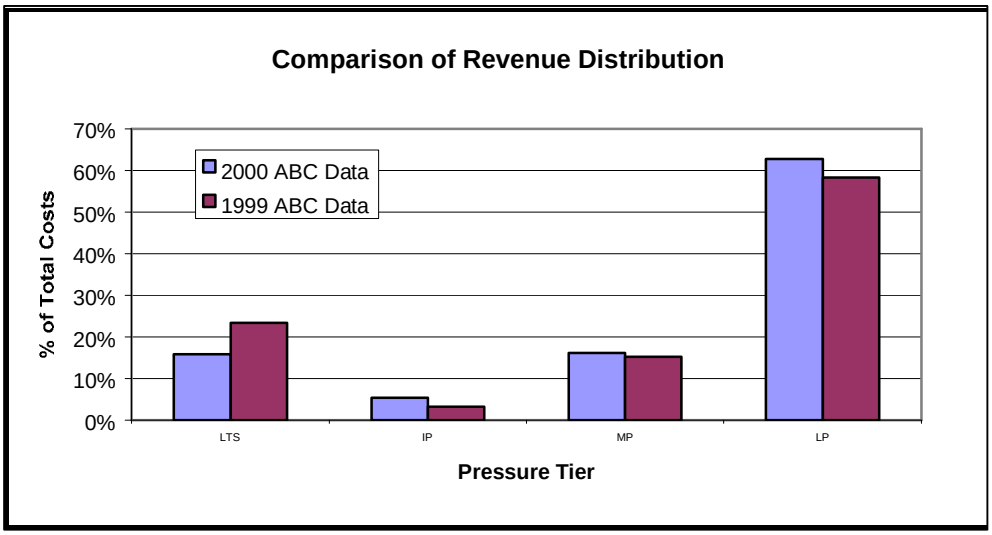
3 Data Items Reviewed

The derivation of the LDZ charges depends on a number of data items:

3.1 Cost of Pressure Tiers

The latest available data on Transco's costs associated with each LDZ pressure tier are provided by the 2000 Activity Based Costing (ABC) analysis. Compared to the previous year, there has been no significant change in the balance of costs between tiers.

Figure 1



3.2 Likelihood of Connection to Tiers

The likelihood of connection to each of the main tiers (LTS, IP, MP, LP) is based on a large sample of supply points conducted in 1998. Transco believes that this is robust and hence it has not been updated.

3.3 Typical Use of Main System Tiers

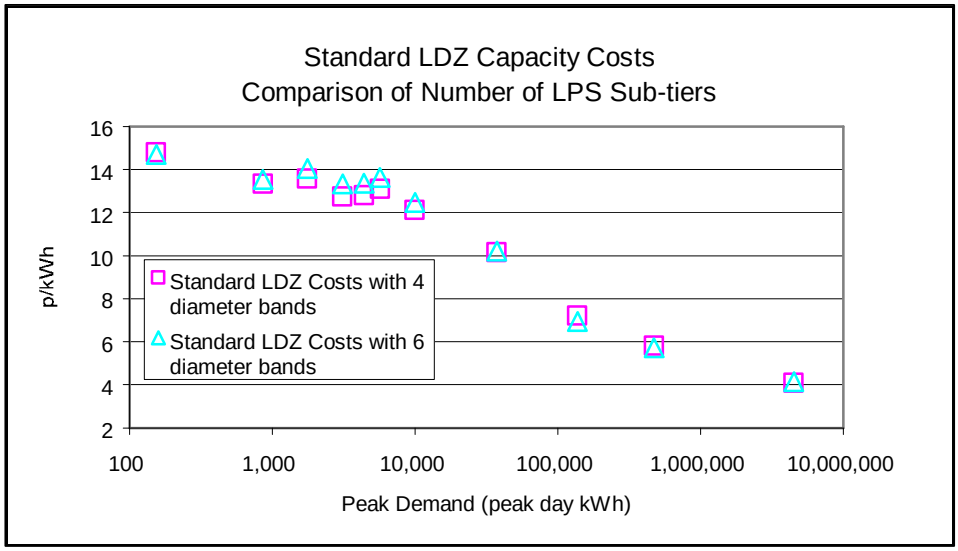
The typical use of main system tiers is based upon the connection likelihood (from above) and the typical flow of gas through the system. Again, Transco believes there is no reason to consider that the typical flow of gas from one tier to another has changed since this was initially determined, and so this has not been updated.

4 Impact of Proposed Changes on Standard LDZ Charges

4.1 Low Pressure System

A comparison of LDZ capacity cost results calculated using the original four Low Pressure sub-tiers and six newly defined sub-tiers is shown in Figure 2. Similar results are obtained for commodity costs. The results indicate that the change to using six LPS sub-tiers rather than four has only a very small impact, with a slight increase in costs for the lower consumption bands and a slight decrease for the higher bands. This change has been adopted in the subsequent analysis.

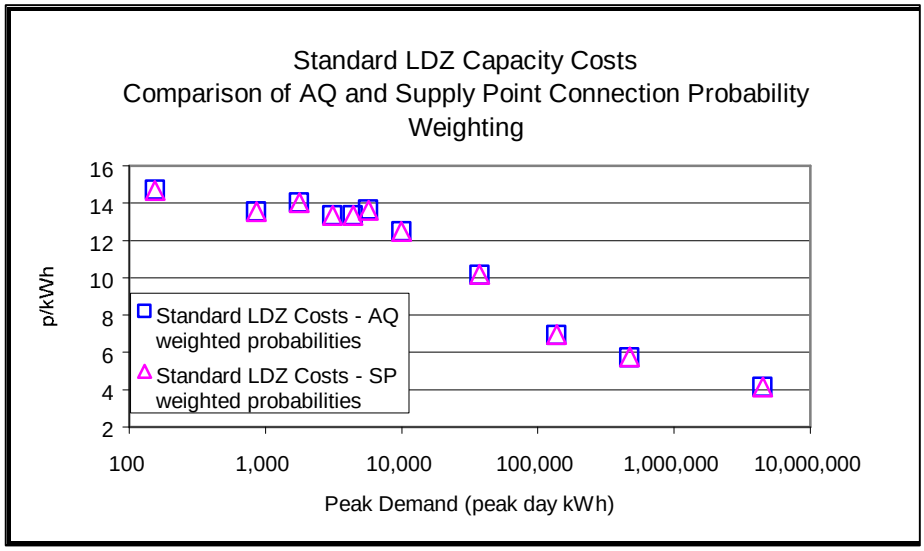
Figure 2



4.2 Connection Probability Data Weighted by AQ

A comparison of LDZ capacity cost results calculated using supply point weighted probabilities, the existing method, and using AQ weighted probabilities is shown in Figure 3. Similar results are obtained for commodity. The results indicate only very small changes for all consumption bands.

Figure 3



Given that LDZ charges are per unit of energy, it may be more appropriate to calculate the connection probability based on the total connected load within the survey rather than the number of supply points. This change has been adopted in the subsequent analysis.

4.3 Impact on Underlying Costs of Methodology and Data Changes

The combined impact of the proposed sub-tier and connection weighting methodology changes together with the latest cost data are shown in Figure 4 (capacity) and Figure 5 (commodity). Both sets of results are at the June 2001 revenue recovery level.

The biggest changes are for the larger loads, where the new analysis indicates that the underlying costs are slightly lower. This change is primarily due to the reduction in the relative level of the LTS tier costs rather than the methodology changes.

Figure 4

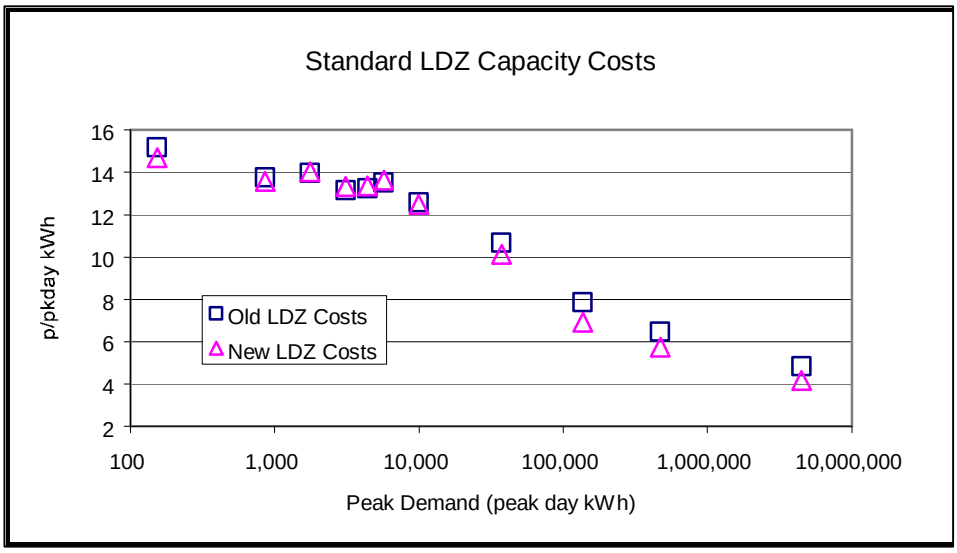
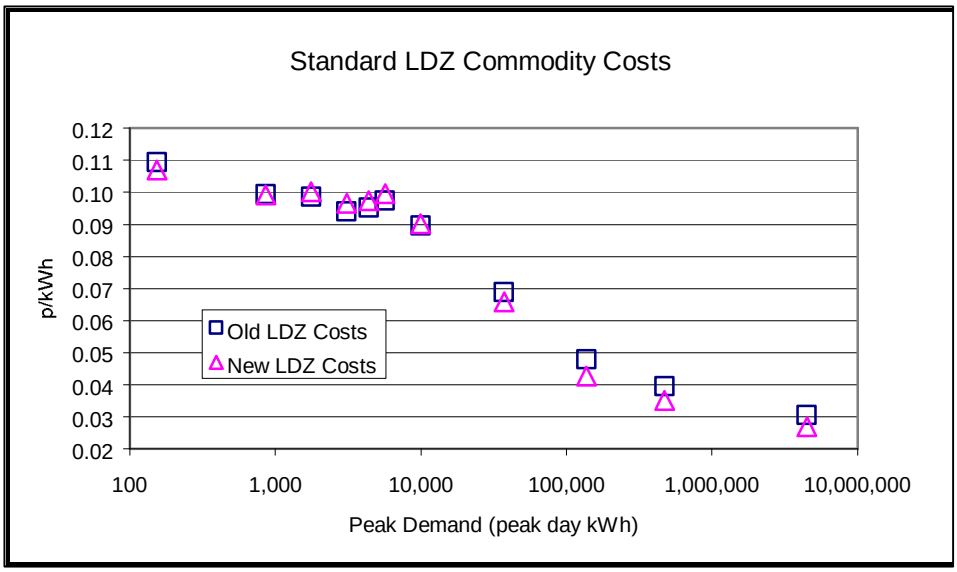


Figure 5



4.4 Form of Function

It was suggested, in response to PC59, that Transco's use of a Log function for LDZ charging did not provide a particularly good fit to the underlying data points and that other forms of function may fit better. The Log function was introduced last year as a result of the analysis carried out for PC59 and replaced the previous Log(Log) function.

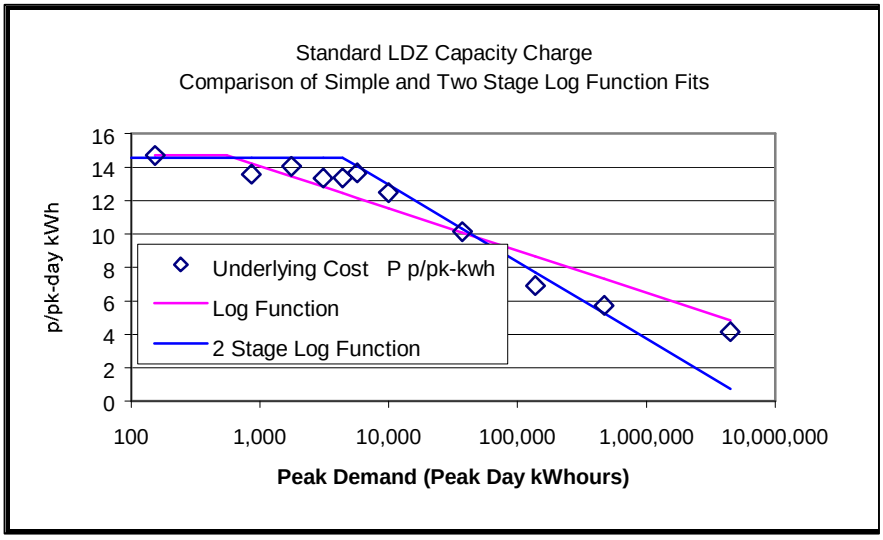
Transco noted last year, in PC59, that other function forms such as polynomial functions might fit the derived charge data better. The confirmation based on the latest data gives added emphasis to the need to use a charging function form that fits the data better than the log form.

Transco has therefore investigated various forms of function that may provide a better fit and still be practical to implement. The form of the function has previously been a simple function with a maximum, based on the domestic load band, and minimum based on use of the LTS. The investigation has included changing these maximum and minimum levels.

4.4.1 Log Functions

The following graph in Figure 6 shows the current log form of the function fitted to the underlying cost data and a modified form that has the maximum fixed unit rate extending to cover loads up to 732 MWh/annum. The underlying consumption band costs have been derived using the proposed methodology and data changes.

Figure 6



The current form of the function represents a reasonable fit with the underlying data. The revised form of the log function fits the smaller and mid range loads better but does not fit the highest load band well.

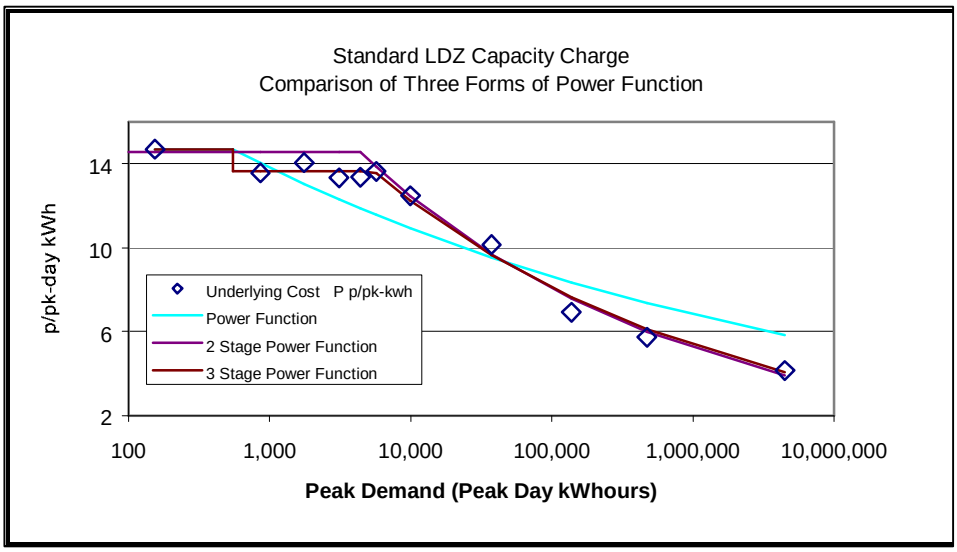
4.4.2 Power Functions

A slight curve to the data can still be seen when plotted on a log scale. To take this pattern into account three possible forms of power function (of the form A*Peak Demand to the power B) have been fitted:

a) Form similar to the present Log function with a fixed maximum unit rate charge for domestic loads and a power function covering the whole I&C range.
b) A two stage power function where the maximum unit rate charge applies to domestic loads and I&C loads up to 732 MWh/annum and a power function covering the remainder of the I&C range.
c) A three stage power function similar to the three stage function but with different fixed unit rate charges for the domestic loads and for I&C loads up to 732 MWh/annum.

The following graph shows a power form of the function fitted to the data and a modified form that has the maximum extending to cover loads up to 732 MWh/annum.

Figure 7



4.4.3 Analysis of Function Fit

The following table shows the fit for the various functions in terms of the R-squared measure. The R-squared shows the percentage of variation in the costs that can be accounted for with the fitted function with 100% being a perfect fit. The R-squared weighted by AQ shows how well the function fits the underlying throughput data.

Table 4.4.3a

	R-squared	
	91.3%	93.8%
	87.9%	95.0%
	85.1%	91.7%
	96.4%	96.0%
	99.1%	98.8%

Table 4.4.3b

	R-squared	
	90.9%	92.6%
	89.4%	81.8%
	79.6%	88.8%
	96.4%	97.3%
	99.0%	97.3%

The graphs and R-squared measures of fit indicate that the simple power function is a worse fit to the underlying cost data than the present Log function form. However, the two stage power function provides a better fit than the present Log function form. The more complex three stage power function gives an even better fit to the underlying data.

Transco believes that a three-stage power function is the most appropriate form of charge as it provides the best cost reflectivity and is still a reasonably simple form for billing purposes.

4.5 Proposed Standard LDZ Charges

The proposed charging functions, for implementation from April 2002, are (at present June 2001 price levels):

Table 4.5 Proposed LDZ Transportation Charging Function

Capacity	Pence per peak day kWh per day
Up to 73,200 kWh per annum	0.0403
73,200 kWh per annum up to 732,000 kWh per annum	0.0374
732,000 kWh per annum up to 1,109,014,147 kWh per peak day	0.1772 * PL ^(-0.1806)
1,109,014,147 kWh per peak day and above	0.0041
Commodity	Pence per kWh
Up to 73,200 kWh per annum	0.1070
73,200 kWh per annum up to 732,000 kWh per annum	0.0989
732,000 kWh per annum up to 384,998,812 kWh per peak day	0.6135*PL^(-0.2121)
384,998,812 kWh per peak day and above	0.0093

4.6 Impact of Proposed Standard LDZ Charges

The impact of the proposed three stage standard LDZ transportation charging functions is shown below.

Table 4.6a Standard LDZ Charges - Three Stage Power Function

Annual Demand (kWh)							**% Change from June 2001 Capacity**	**% Change from June 2001 Commodity**
Domestic	36.5%	150	0.0408	0.1079	0.0403	0.1070	-1.23%	-0.83%
100,000	35.0%	783	0.0399	0.1039	0.0374	0.0989	-6.37%	-4.82%
1,000,000	43.0%	6,371	0.0328	0.0834	0.0364	0.0957	11.00%	14.81%
10,000,000								-2.00%
50,000,000	56.0%	244,618	0.0204	0.0476	0.0188	0.0441	-7.67%	-7.26%
100,000,000	63.0%	434,877	0.0185	0.0420	0.0170	0.0391	-7.96%	-6.89%
1,000,000,000	80.0%	3,424,658	0.0114	0.0217	0.0117	0.0252	2.29%	16.01%

The largest increases occur for loads from 500,000 kWh/annum to 1,000,000 kWh/annum as a result of the improved fit of the three-stage power function. These loads have previously benefited from the fitting of a simpler function while the data has demonstrated that they utilise a similar proportion of Transco's system when compared with smaller Industrial and Commercial loads. The largest reductions are in the 10,000,000kWh/annum to 100,000,000kWh/annum range where the new form of the function allows for a more accurate fit without losing accuracy at the higher load bands.

The following table shows the impact of continuing to use a log function for the April 2002 charges.

Table 4.6b Standard LDZ Charges – Standard Log Function

Annual Demand (kWh)							% Change from June 2001 Capacity	% Change from June 2001 Commodity
Domestic	36.5%	150	0.0408	0.1079	0.0403	0.1070	-1.23%	-0.83%
100,000								-1.67%
1,000,000	43.0%	6,371	0.0328	0.0834	0.0329	0.0831	0.32%	-0.32%
10,000,000	56.0%	48,924	0.0259	0.0634	0.0268	0.0645	3.55%	1.83%
50,000,000								4.80%
100,000,000	63.0%	434,877	0.0185	0.0420	0.0203	0.0447	9.71%	6.40%
1,000,000,000	80.0%	3,424,658	0.0114	0.0217	0.0141	0.0259	22.89%	19.01%

5 Review of Data Underlying the Transportation to CSEPs Charging Methodology

5.1 Analysis

LDZ charges for transportation to CSEPs are determined using the standard LDZ charges methodology but using CSEP specific connection probability data. The only difference is that the SOQ on which the charges are based is the notional maximum supply point capacity, which is set to the forecast completed CSEP peak day load. This is calculated from the current load factor and the forecast ultimate AQ. Each shipper to the CSEP attracts identical LDZ unit charges, regardless of the proportion of gas shipped, an approach which seeks to avoid discouraging competition between shippers to CSEP supply points.

With the continuing high growth in the number of CSEP connections, the CSEP connection data, which enables the utilisation of the LDZ system for transporting to CSEPs to be assessed, has been updated. The pipe size and pressure tier to which the connection of every live CSEP is made has been determined.

The analysis then follows the standard LDZ methodology, as described in Appendix A, in obtaining unit rates for supply point utilisation of the distribution system both at peak and annually (capacity and commodity). The capacity and commodity costs for using each tier are taken from the standard LDZ analysis but the probability of connection data is unique for CSEPs.

For CSEPs some additional analysis has been carried out to investigate the suitability of the maximum AQ consumption bands used.

5.2 CSEP Connection Survey

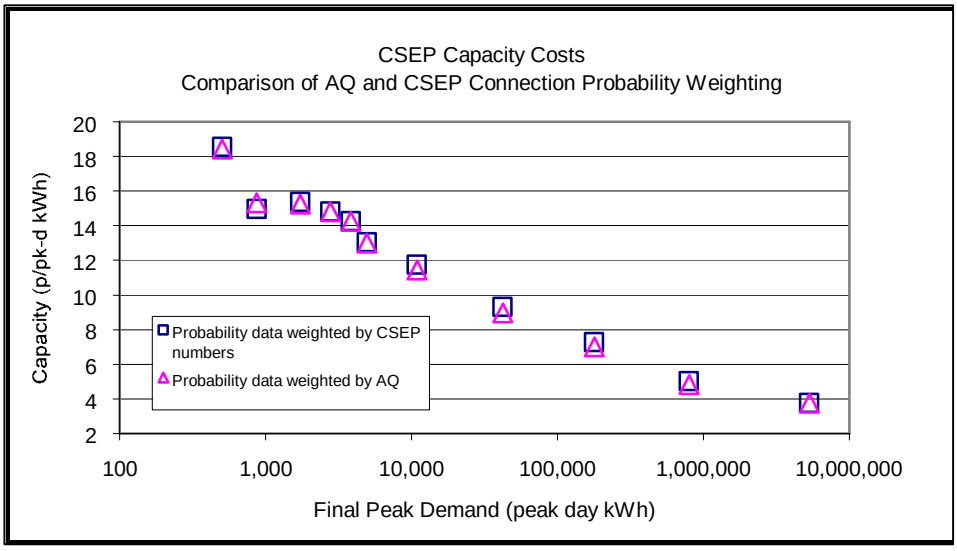
The survey of CSEPs provides information, specific to CSEPs, on the connection tier and the Low Pressure System sub-tier connection diameter where appropriate. The updated survey this year has been based on 4,218 CSEPs. Further details are given in Appendix B.

The number of loads within a CSEP often develops over a number of years and it has been recognised that the connection point on Transco's system will be based on the ultimate size of the completed CSEP. For this reason, the forecast maximum AQ for each CSEP (rather than the present AQ) is used to allocate the CSEPs to consumption bands for the purpose of the analysis.

5.3 CSEP Connection Probability

The methodology change to AQ weighting of the likelihood of connecting to each tier, from the present connection number weighting, has been applied to the derivation of average costs for each consumption band, in the same manner as for the standard LDZ charges. Figure 8, which shows the impact for capacity costs, shows that this change has only a small impact. The impact on the commodity costs is similarly small.

Figure 8



5.4 Number of Consumption Bands

It was suggested, in response to PC59, that the number of load bands used for the analysis of connected systems might not be appropriate. Half of all CSEPs fell into one consumption band (732-2,931 MWh/annum). Within a consumption band, loads at the higher end could be expected to use less of the system than loads at the lower end. This should however be reflected in the function fitted to the underlying costs data.

To investigate this concern, the most heavily weighted CSEP consumption bands were sub-divided so as to provide seventeen consumption bands with a more even split of the CSEP loads between them, as indicated in the table below.

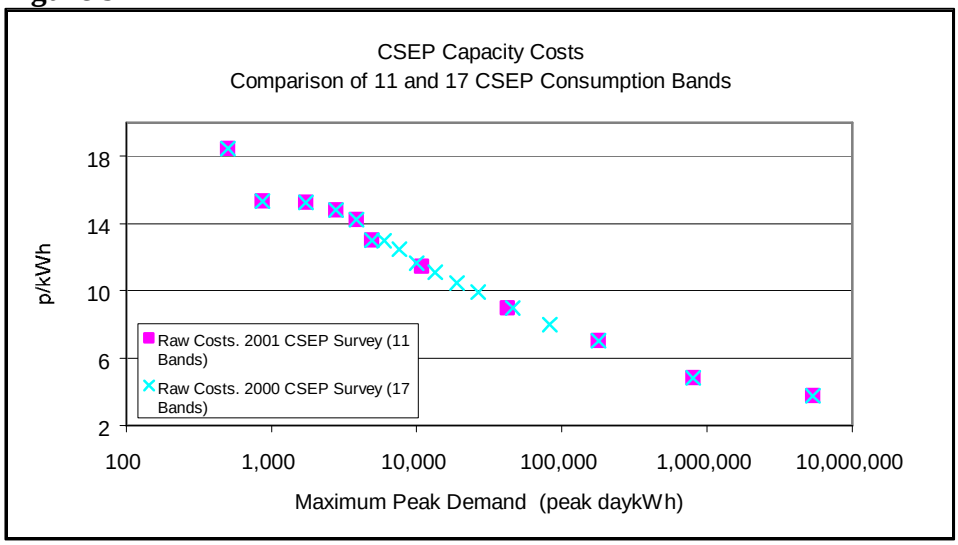
Tables 5.4a & 5.4b

0.0 - 73.2	0.0%
73.2 - 146.4	1.2%
146.4 - 292.8	6.2%
292.8 - 439.2	8.7%
439.2 - 585.6	8.3%
585.6 - 732.0	8.3%
732.0 - 878.4	7.5%
878.4 - 1171.2	11.9%
1171.2 - 1464.0	9.2%
1464.0 - 2196.0	14.4%
2196.0 - 2928.0	7.4%
2928.0 - 4392.0	7.1%
4392.0 - 8784.0	5.9%
8784.0 - 14640.0	1.8%
14640.0 - 58560.0	1.8%
58560.0 - 292800.0	0.3%
> 292800.0	0.0%
All loads	100.0%

0-73.2	0.0%
73.2 - 146.5	1.2%
146.5 - 293	6.2%
293 - 439.6	8.7%
439.6 - 586.1	8.3%
586.1 - 732.7	8.3%
732.7 - 2,931	50.5%
2,931 - 14,654	14.8%
14,654 - 58,614	1.8%
58,614 - 293,071	0.3%
> 293,071	0.0%
All loads	100.0%

Figure 9 shows the derived capacity costs by band based on both 11 and 17 consumption band groupings. This indicates that the pattern of costs is unaffected by increasing the number of bands and hence eleven bands are sufficient. The proposed charging functions have been fitted to the analysis based on eleven consumption bands for consistency with the standard LDZ charges.

Figure 9



6 Impact of Updating CSEP Data

6.1 Survey

The latest results indicate only small changes from the previous analysis for most of the consumption bands. For the consumption bands covering loads between 73.2 MWh/annum to 293 MWh/annum (the second and third points on the graph) the analysis indicates that the LDZ transportation charges to CSEPs should be slightly higher than previously indicated, with this change being driven by the updated connection data.

The analysis indicates a large change in the derived cost for CSEPs in the lowest consumption band (up to 73.2 MWh/annum). However, there are very few CSEPs of this size and this estimate is sensitive to each new CSEP connection of this size. The large majority of CSEPs are between 732 MWh/annum and 14,600 MWh/annum, where there is little change in the derived costs.

Figure 10

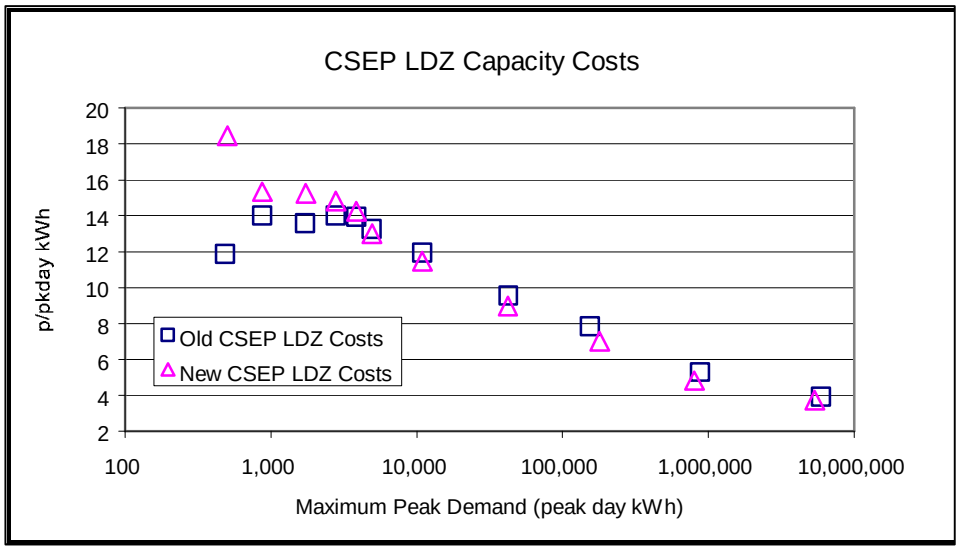
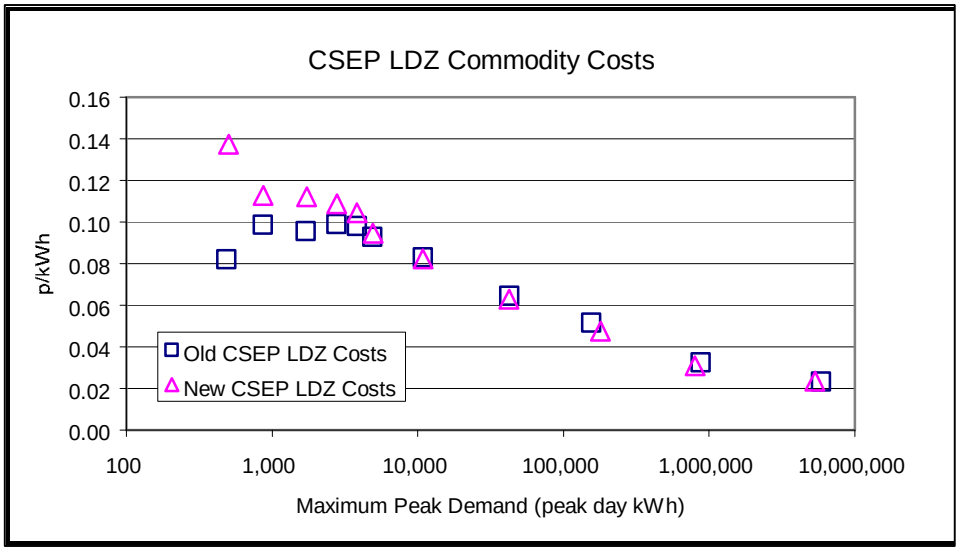


Figure 11



6.2 Load Factors

For last year's CSEP analysis, the load factors used to calculate peak demands from the AQs were the standard LDZ load factors applicable for each consumption band. These load factors are not necessarily representative of CSEP load characteristics and hence may produce charges that are not fully cost reflective. For this year's analysis, the load factors used are the surveyed CSEP load factors.

6.3 Form of Function

The same forms of charging function, as fitted for standard LDZ charges, have been fitted for the LDZ transportation charges to CSEPs.

Since there are so few CSEPs within the smallest consumption band (up to 73.2 MWh/annum) which leads to a cost estimate which is not robust, it is proposed that the LDZ charges to CSEP loads within this category are set at the same rates as standard LDZ charges.

6.3.1 Log Function

Figure 12 shows the current log form of the function fitted to the data and a modified form that has a flat unit rate for loads up to 293 MWh/annum. Neither of the functions is a particularly good fit for all the consumption bands.

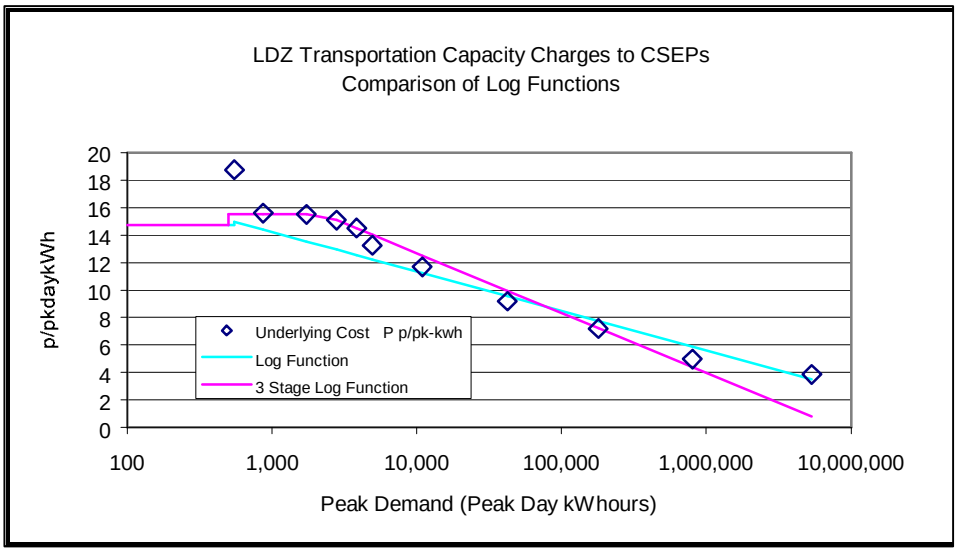


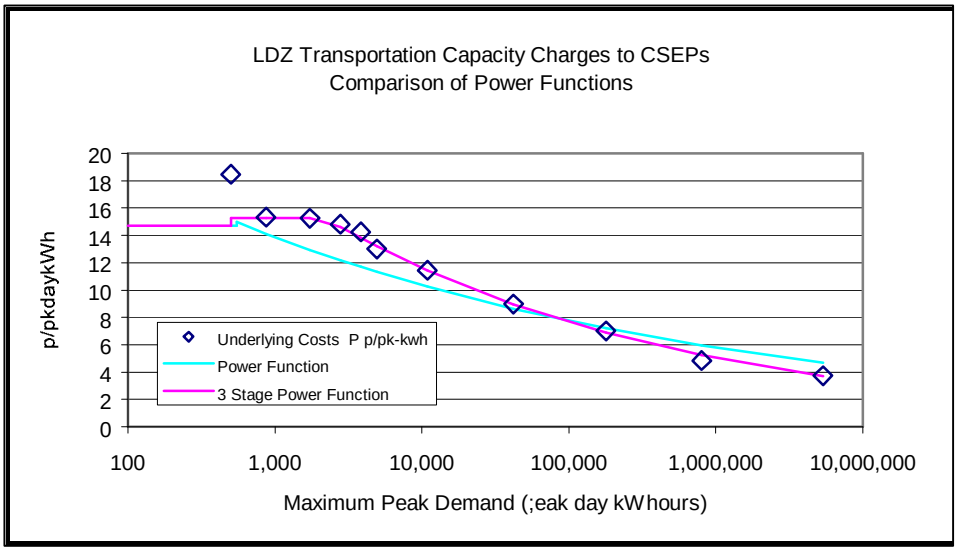
Figure 12

The fit of the log function to the CSEP costs does not result in the appropriate discounts for CSEPs in the mid range consumption bands when compared to the standard LDZ function. The implied discounts would be too low for the mid range consumption bands which cover the majority of connected systems.

6.3.2 Power Function

Figure 13 shows a power form of the function fitted to the data and again a modified form that has a flat unit rate for loads up to 293 MWh/annum. The three stage power function provides a noticeably better fit than the simpler functions. This form of function is proposed for use from April 2002 since it provides the best cost reflectivity and is consistent with the form of function proposed for the standard LDZ charges.

Figure 13



6.3.3 Analysis of Function Fit

The following table shows the fit of the various function forms in terms of the R-squared measure. The R-squared shows the percentage of variation in the costs that can be accounted for with the function with 100% being a perfect fit.

Table 6.3.3a Capacity Analysis

Capacity Analysis Summary		
	R-squared	
	92.6%	
	90.5%	
	84.9%	
	95.4%	

Table 6.6.3b Commodity Analysis

Commodity Analysis Summary		
	R-squared	
	88.1%	
	90.2%	
	78.4%	
	95.3%	

The graphs and R-squared measure of fit indicate that the present simple Log function is a worse fit to the underlying cost data than the power functions.

6.4 Proposed Charges for Transportation to CSEPs

The proposed charging functions, for implementation from April 2002, are (at present June 2001 price levels):

Table 6.4 Proposed CSEP Transportation Charging Function

Capacity	Pence per peak day kWh per day
Up to 73,200 kWh per annum	0.0403
73,200 kWh per annum up to 293,000 kWh per annum	0.0418
293,000 kWh per annum up to 812,164,814 kWh per peak day	0.1698*PL^(-0.1817)
812,164,814 kWh per peak day and above	0.0041
Commodity	Pence per kWh
Up to 73,200 kWh per annum	0.1070
73,200 kWh per annum up to 293,000 kWh per annum	0.1124
293,000 kWh per annum up to 570,589,818 kWh per peak day	0.5292*PL^(-0.2005)
570,589,818 kWh per peak day and above	0.0093

6.5 Impact of Proposed Charges for Transportation to CSEPs

The impact of the proposed LDZ charging functions for transportation to CSEPs is shown below. The indicated increases are a result of the more accurate fit of the function to the underlying data and the use of CSEP load factors rather than the standard load factors used in last year's analysis.

Table 6.5a Impact of CSEP Power Function Charges

Domestic Properties							% Change from June 2001 Capacity	% Change from June 2001 Commodity
1	36.5%	154	0.0408	0.1079	0.0403	0.1070	-1.23%	-0.83%
10	36.5%	1540	0.0366	0.0982	0.0418	0.1124	14.07%	14.50%
30								13.67%
100	36.5%	15400	0.0281	0.0721	0.0294	0.0766	4.71%	6.13%
300	36.5%	46200	0.0241	0.0597	0.0241	0.0614	0.25%	2.84%
1,000								4.61%
10,000	36.5%	1540000	0.0111	0.0201	0.0128	0.0304	15.06%	51.25%

The increases seen for CSEPs across the range of AQs are due to the improved fit of the new power function, the updated CSEP connection survey data and increases in planned final CSEP AQs.

The following table shows the impact of continuing to use a log function for the April 2002 charges.

Table 6.5b Impact of CSEP Log Function Charges

Domestic Properties							% Change from June 2001 Capacity	% Change from June 2001 Commodity
1	36.5%	154	0.0408	0.1079	0.0403	0.1070	-1.23%	-0.83%
10								-2.19%
30								0.31%
100	36.5%	15400	0.0281	0.0721	0.0296	0.0751	5.08%	4.04%
300	36.5%	46200	0.0241	0.0597	0.0257	0.0651	6.85%	8.92%
1,000								17.30%
10,000	36.5%	1540000	0.0111	0.0201	0.0134	0.0331	21.19%	64.88%

6.6 Comparison with Standard LDZ Charges

The following table shows a comparison between the transportation charges, based on the power functions, for CSEPs and the standard LDZ transportation charges.

Table 6.6 Comparisons of CSEP and Standard LDZ Charges

Premises (expected)		Reduction compared with Standard LDZ Charges	
Number	SOQ (kWh)	Capacity	Commodity
10	1,530	-11.76%	-13.65%
27		-0.01%	-0.79%
29	4,437	1.28%	0.65%
50	7,650	5.11%	4.31%
100		5.19%	3.54%
200	30,600	5.26%	2.76%
1000	153,000	5.43%	0.93%
3500	535,500	5.56%	-0.52%

The differential between LDZ transportation charges to standard supply points and to CSEPs for the April 2002 charges is lower than the June 2001 Charges differential. This is mainly because the CSEP charging functions fitted to the 2000 data were based on peak consumption data calculated from annual consumption data using the standard LDZ load factors. This use of standard load factors resulted in the peak loads within each load consumption band being understated.

For the 2001 analysis, CSEP load factors have been calculated for each load consumption band based on the average load factors of the CSEPs within each band. The calculated CSEP load factors are close to the domestic load factor due to the high domestic load content within most CSEPs.

Figures 14 and 15 show the final proposed form of transportation charges for Standard LDZ supply points and CSEPs.

Figure 14

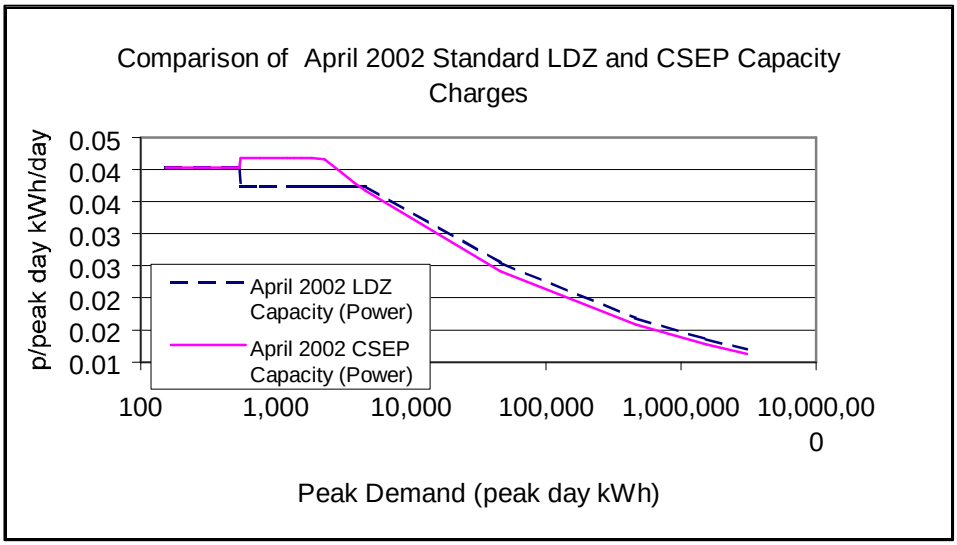
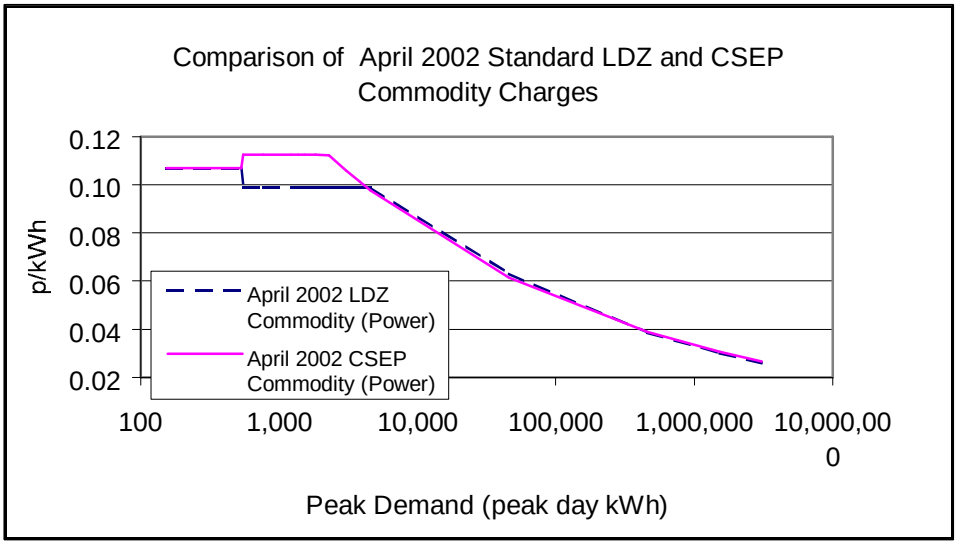


Figure 15



7 Conclusions

The review of LDZ transportation charges to directly connected supply points and to CSEPs examined several potential changes to the methodology.

- Use of six LPS sub-tiers rather than four
- Use of AQ connection probability weighting rather than weighting by connection numbers
- Use of seventeen rather than eleven consumption bands for the CSEP analysis

None of these changes has a large impact on the derived cost data. Updating the total tier costs also has only a small impact on the derived cost data.

The pattern of derived costs for the consumption bands appears to be stable when comparing the analysis undertaken in 2000 to that undertaken this year. However, the present log form of charging function does not fit this underlying data particularly well. Several alternative forms of charging function have been examined and the three-stage power function form offers a better fit to both the standard and CSEP underlying cost data.

For LDZ directly connected loads the proposed form of the function is a constant unit rates for the 0 - 73.2 MWh/annum and 73.2 - 732 MWh/annum ranges and a power function for loads greater than 732 MWh/annum.

For CSEPs the proposed form of the function is constant unit rates for the 0 - 73.2 MWh/annum and 73.2 - 293 MWh/annum ranges and a power function for loads greater than 293 MWh/annum.

7.1 Indicative Charges

The indicative LDZ and CSEP transportation charges for application from April 2002, scaled to recover the target revenue, are:

Table 7.1a Indicative LDZ Transportation Charges for April 2002

LDZ Capacity	Pence per peak day kWh per day
Up to 73,200 kWh per annum	0.0471
73,200 kWh per annum up to 293,000 kWh per annum	0.0437
293,000 kWh per annum up to 1,135,373,585 kWh per peak day	0.2073*PL^(-0.1806)
1,135,373,585 kWh per peak day and above	0.0048
LDZ Commodity	Pence per kWh
Up to 73,200 kWh per annum	0.1259
73,200 kWh per annum up to 293,000 kWh per annum	0.1164
293,000 kWh per annum up to 385,814,322 kWh per peak day	0.7221*PL^(-0.2121)
385,814,322 kWh per peak day and above	0.0109

Table 7.1b Indicative CSEP Transportation Charges for April 2002

CSEP Capacity	Pence per peak day kWh per day
Up to 73,200 kWh per annum	0.0471
73,200 kWh per annum up to 293,000 kWh per annum	0.0489
293,000 kWh per annum up to 792,584,990 kWh per peak day	0.1987*PL^(-0.1817)
792,584,990 kWh per peak day and above	0.0048
CSEP Commodity	Pence per kWh
Up to 73,200 kWh per annum	0.1259
73,200 kWh per annum up to 293,000 kWh per annum	0.1323
293,000 kWh per annum up to 579,033,606 kWh per peak day	0.6228*PL^(-0.2005)
579,033,606 kWh per peak day and above	0.0109

QUESTIONS FOR CONSULTATION

Transco proposes to adopt the revised methodology described in this paper as the basis for calculating LDZ capacity and commodity charges. The indicative charges, for application from April 2002, reflect updated data for low-pressure system use and revised charging functions for Transco supply points and charges for transportation to CSEPs.

Transco would welcome respondents' views on all the issues discussed in this consultation paper, and specifically:

1. Should the sub-division of the Low Pressure System into six sub-tiers for the purposes of charge calculation be adopted?

2. Should the use of AQ weighted connection probabilities within the charging calculation be adopted?

3. Should a three stage power function, rather than the present single log function, be used for the LDZ transportation charges to directly connected supply points and to CSEPs.