TRANSCO CONSULTATION REPORT ON PC38

Review of LDZ Transportation Charge Functions

1. TRANSCO'S INITIAL PROPOSAL

Pricing Consultation paper PC38 proposed a change to the methodology for calculating LDZ transportation charges. The revised methodology includes use of updated ABC information, revised demand distribution and a new model of low pressure system use. Transco has proposed that a phased approach be taken to the consequent rebalancing of LDZ charges.

2. SUMMARY OF RESPONSES

In total there were seventeen respondents to this consultation paper :

Of these responses five supported the proposals. Eleven respondents did not support the proposed changes.

2.1 Sample sizes

A number of respondents asked if the sample sizes used in the analysis could be increased. One respondent suggested that a more thorough sample of Daily Metered loads would be appropriate, while four other respondents asked if the sample for the low pressure analysis was representative. One respondent noted that the 1998 sample of connections to pressure tiers is larger than the original 1992 exercise that was used to establish the present methodology. This respondent asked if data from the earlier sample can be produced. One respondent noted that measurement of gas flows through the pressure tiers cannot be a precise science and another suggested that a more extensive survey and more detailed modelling still remained to be done. One respondent accepted that some large loads are connected to the medium and low pressure networks, but were concerned that the new methodology suggested that such connections were widespread.

Transco's response

Transco believes the analysis of loads connected to all tiers offers a thorough analysis of the tiers to which larger loads are connected. The extract from Appendix 2 of PC38 repeated below highlights the sample sizes for larger customers.

Summary of sample returns

Annual Consumption band (KWh)	Firm	Interruptible
2,931 - 14,654 MWh	7%	46%
14,654 - 58,614 MWh	31%	63%
58,614 - 293,071 MWh	67%	84%
> 293,071 MWh	100%	97%

This sample is larger than the original sample, where at least 10% of all contract customers (both firm and interruptible) by region had been sampled.

Analysis of the sample of connections to MP and LP systems indicates that more of the largest two load categories are connected to the medium and low pressure systems than had previously been assumed. It is noteworthy that this analysis is based on samples where the sample size is largest. It is in these load bands where the number of new connections since 1992 may have had the largest impact in changing the profile of connections. The second table in Appendix A shows the proportion of each consumption band that had been identified as being connected to the medium or low pressure systems in both the original and new sample.

The proposed model of gas flow on the low pressure system is intended to replace a theoretical model that was not supported by a sample of customer connections to the low pressure system. The new proposal is supported by such analysis and the sample used can be added to, and adjusted, over time as the LINAS analysis model is extended to other low pressure systems. At present the East London network is the only large area sample that is available on LINAS. Appendix A to this report contains a table of results of the individual samples used. It indicates that the results of the East London network are broadly similar to the results found in other areas.

2.2 Interaction between low pressure model and general LDZ flow model

A number of respondents appeared to be confused over the uses of the two models. One respondent suggested that it is wrong to apply the findings from the low pressure model to all loads connected to other tiers. Another industry representative was concerned that the low pressure model did not take into account the unique situation of large daily metered and very large daily metered customers connected to other pressure tiers.

Transco's response

The analysis of low pressure system use is not used to determine charges or use of other pressure tiers. It is a means of providing better definition of use within the low pressure system. As such it provides a means of sub-dividing the costs of the low pressure system and does not affect the assumed use of other tiers.

2.3 Greater cost reflectivity for LTS customers

Four respondents suggested that LTS charges should be made more cost reflective so that new customers will not be tempted to build direct connections to the NTS. One suggested that route specific charges for customers above ten million annual therms would be appropriate, another respondent supported route specific charges for daily metered and very large daily metered customers. One respondent also suggested that the data in Appendix Three of the consultation paper supported the contention that larger loads use fewer LDZ assets. One shipper asked if route specific charges could be carried out for VLDMCs only. Another respondent suggested that a number of large sites sit just within an LDZ, and that a more cost reflective charge should be

possible. One shipper proposed that the LTS tier should have a separate charging structure.

Transco's response

Transco does not believe that Appendix Three of the consultation paper provides conclusive evidence that directly connected loads on the LTS use a higher or lower proportion of the LTS on average than loads connected to lower pressure tiers. As a result Transco could not justify charges for LTS loads connections reflecting a lower level of LTS costs than charges for loads connected to other tiers. Analysis of larger loads in general (not just LTS connections) does suggest that the very largest loads use proportionately less of the LTS than other loads and Transco has consequently proposed a reduction in the minimum LDZ charge for the largest customers.

A tension generally exists at the interface between one charging structure and another. Transco recognises that this tension potentially exists between the NTS and LDZ. The proposed reduction in charges for the largest customers will help to reduce any such charge discontinuity. Creating a separate LTS charging structure would not remove discontinuities; on the contrary a new set of discontinuities may be created at the LTS and medium pressure interface. In addition further complexity may be added because it will necessary to know the physical location of sites prior to determination of the appropriate charge.

Route specific charges present a number of problems that would have to be overcome before charges for any type of customer group could be carried out. Of particular concern is how diurnal storage could be accommodated in an LRMC type model, as used in setting NTS capacity charges. Simply put, LRMC requires route specific cost calculations for transporting an extra increment of gas over and above that planned. On the NTS this task is made simpler because gas is expected to be transported at an even rate throughout a gas day (hourly demand = 1/24th daily rate). This condition does not apply on the LDZ. On the LDZ gas may in most circumstances be received from the NTS at an even rate but is offtaken from the LDZ at a varying rate (for example, domestic peaks on a morning and early evening). Therefore gas supplies into the LDZ will tend to be either greater or less than the demand offtaken at any given moment in a typical day. The different between the input and offtake rates is handled through diurnal storage. The pipelines used for transportation are also used as the storage vessels for diurnal storage. Without the diurnal storage volume, the pipeline system would fail when demand exceeded the supply rate. The diurnal storage volume is typically 15% of demand on an LDZ, so the diurnal volume is much greater than the size of the present LRMC increment. It would therefore be necessary, if LRMCs were to be developed, for the problem of how to deal with diurnal storage to be solved.

2.4 Marginal and Average costs

One end user assumed that in the consultation paper that Transco had relied upon marginal costs, which the respondent thought to be notional and subjective. One shipper agreed with Transco that marginal cost analysis is impractical and therefore average costs should be used. Another shipper supported Transco's attempts to better allocate costs by applying ABC costs to each tier.

Transco's response
Transco continues to believe that insufficient data is available to provide a sound basis for marginal cost analysis across all the tiers and consumption bands. Transco therefore proposes that LDZ charging should, at present, continue to be based on average cost analysis but updated to reflect the latest cost data.

2.5 Average charge for LP system use
One shipper suggested that Transco should publish the present average charges for LP system use only, as set out on page eight of PC38, for comparison with the graphs on page nine. Another respondent was surprised to see on the diagrams on page nine that the size of loads projected to offtake from the LP system was up to one million megawatt hours annual consumption.

Transco's response
The average charges on page eight of PC38 are based on the new LP cost apportionment methodology, which sub-divides the consumption bands into three categories (domestic, 73·2 to 732 Mwh and above 732 MWh). The present methodology does not use such a concept, so there is no direct comparison available. The present methodology results in a cost apportionment for each consumption band which is represented in the graphs on page nine. The x-axis scale used on the graphs is identical to the scale for the graphs for the other tiers on page six of PC38, so that comparisons can be made easily.

2.6 Connected System Exit Points
Four respondents questioned the treatment of IPGTs in the LDZ review. One shipper noted that a domestic customer connected to an IPGT would not get the same level of charge as accrued to a domestic customer connected directly to Transco's system. In particular the respondent noted that domestic customers connected to Transco's system will, overall, receive a larger charge reduction than domestic customers within an IPGT, which they suggested is anti-competitive. One end user thought that the changes are biased towards domestic customers located in the low pressure system. Another respondent suggested that no consideration has been made for CSEPs. They suggested that the ABC review implies that users shipping to CSEPs would be paying twice for a single asset. They therefore requested that Transco should consider creating an additional offtake category. One respondent suggested that IGPTs are overcharged in part because of the structure of LDZ charges. In particular they considered that IPGTs should not be charged for Transco's low pressure system assets.

Transco's response
The proposed changes are put forward with a view to improving the cost-reflectivity of the charges. In the rebalancing of any charge there will typically be those who gain and those who lose. The proposals reflect the outcome of analysis, which is not designed to favour any particular customer group.
Previous analysis by Transco of CSEP connections indicates that, when compared with comparable peak-sized single supply points, CSEPs are slightly more likely, on average, to connect to lower presure tiers than single supply points. Thus, if CSEPs were categorised separately it could result in them in general paying higher LDZ

transportation charges than under the proposed methodology. Transco is not proposing such categorisation at present.

Transco does not consider the present charges for CSEPs reflect a double counting of any asset. On the basis of one of the respondent's own data, at least 85% to 90% of all IPGTs use Transco's low pressure system. On that basis it would seem appropriate that they continue to share the costs of using those assets.

2.7 Connection history

One industry representative maintained that the position of many industrial customers on the low pressure tier in the LDZ was more often than not a decision made by what was then British Gas and not the customer. They suggested that these loads may have been more efficiently served if they had been connected to a higher pressure tier.

Transco's response

The fact that many connections were made prior to the present regime and possibly outside of the control of the customer is one of the reasons the present LDZ charging structure is based on the likely use of pressure tiers rather than actual usage, so that the present charges do not reflect individual accidents of history in terms of connection arrangements. Transco is not proposing to change this charging approach.

2.8 Link to Investment

One respondent indicated an expectation that costs should be associated with the provision of capacity rather than throughput.

Transco's response

These aspects of the transportation charging regime are covered by the capacity/commodity split in PD4. The LDZ charging methodology described in PC38 provides a means of determining the form of the capacity and commodity charges.

2.9 Interim charges

One respondent suggested that the interim charges on pages twelve and thirteen of PC38 are inconsistent when compared with the fully rebalanced charges on page eleven. One respondent was also concerned that the intercept of the charging function, with the minimum for one of the interim options, was 382 million kWh.

Transco's response

The impact analysis of fully rebalanced charges on page eleven of PC38 is based on a comparison of the new charging methodology with the existing methodology. This includes the assumption that the existing methodology, if it were to continue, would reflect the same new demand data, customer numbers and revenue target as used in determining the functions under new methodology. As such the existing methodology would result in slightly rebalanced (not just scaled) functions from those used at present. If such rebalancing were not done and a comparison is made with the charges as they stand at May 1999 then the percentage change for domestic customers would be a reduction of 8%. This basis is comparable with the interim charges presented on pages twelve and thirteen of PC38 which are both compared to the May 1999 charges.

Transco has taken into account concerns regarding the intercept. Of the two interim options set out in PC38, Transco proposes to implement the metric option. This has an intercept of 94 million kWh for the capacity function. The shape of the metric function is slightly different from that of the thermal based function and is more cost-reflective, particularly for large loads. The changes to LDZ transportation costs for larger firm customers are less, and in some cases it will result in LDZ charge reductions for interruptible customers. Revised graphs of the capacity and commodity functions on this basis are provided in Appendix B.

2.10 LogLog function

Two respondents urged Transco to adopt an alternative to the loglog function at the earliest opportunity.

Transco's response

Transco agree that the fit of charges to reported data points can be improved by changing the form of charging function. A significant part of the benefits of adopting the new methodology can be realised with the partial rebalancing that is proposed for October 1999. Prior to any further changes Transco will determine the most appropriate form of new function required to deliver further cost reflectivity.

3. TRANSCO'S FINAL PROPOSAL

Transco proposes that the revised methodology be accepted as appropriate for calculating LDZ transportation charges and that a partial rebalancing should be undertaken from October 1999 set out in PC38. Of the two alternative proposals for October 1999, Transco proposes that the kWh-based function be adopted since it is more cost-reflective, particularly for large loads.

Proposed changes in the balance of transportation charges detailed in the report on discussion paper PD4 and revised demand forecasts, result in a proposed average reduction in LDZ transportation charges of 2% compared to a 2.7% reduction in the previous indicative charges. On this basis, the proposed LDZ charges for implementation from October 1999 would be as shown below.

LDZ Capacity Charges	**p/pdkWh/a**
Up to 73,200 kWh per annum	20.81
73,200 kWh per annum up to 94,096,987 kWh per peak day	48.40 - 15.44 Ln[Ln(PL)]
94,096,987 kWh per peak day and above	3.47

LDZ Commodity Charges	**p/kWh**
Up to 73,200 kWh per annum	0.1420
73,200 kWh per annum up to 8,573,311 kWh per peak day	0.3652 - 0.1241 Ln[Ln(PL)]
8,573,311 kWh per peak day and above	0.0214

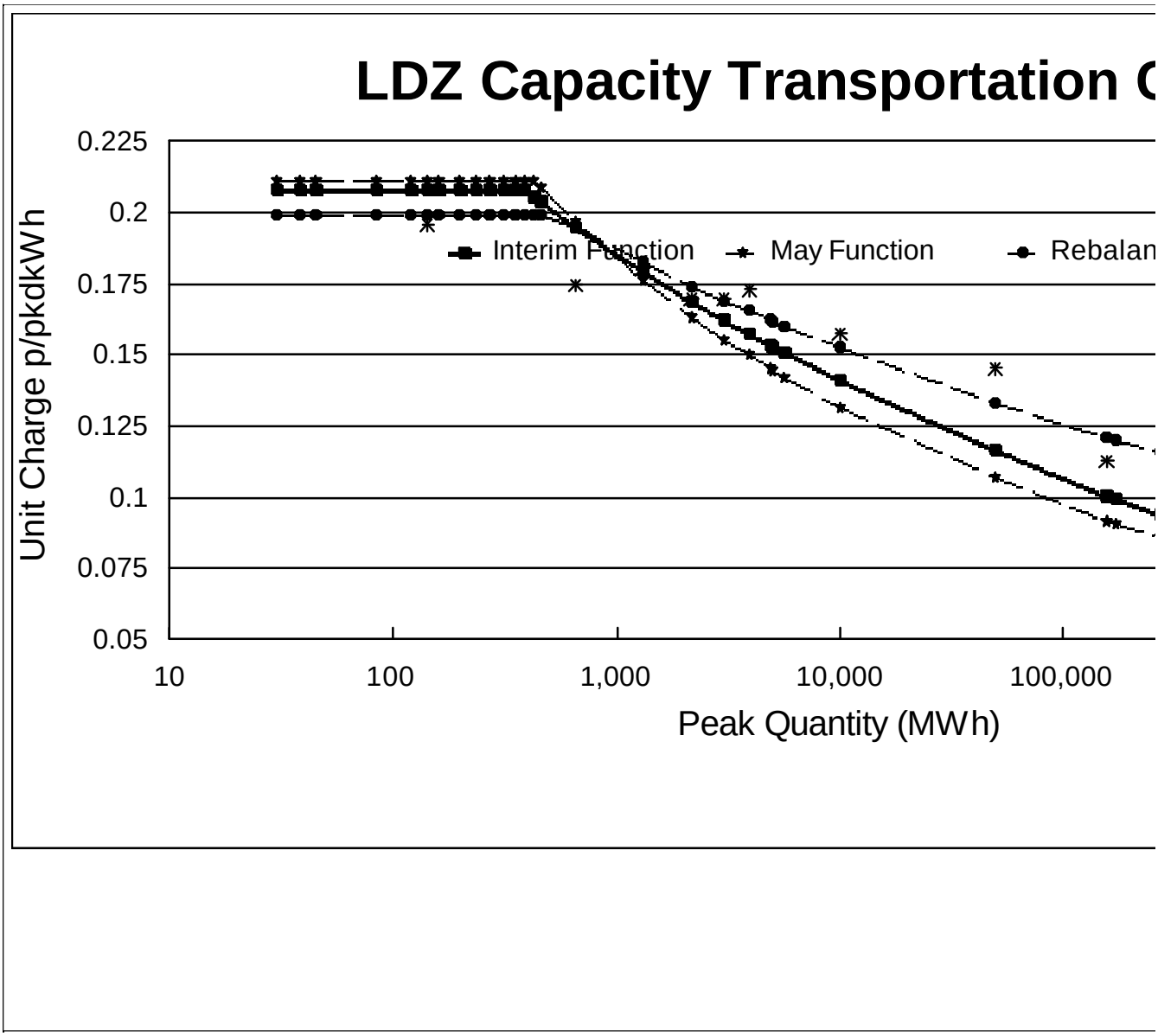
Appendix A

LP System Sample for each area considered

Pipeline Group		Domestic	73.2 - 732 MWh	>732 MWh
<=100	Gloucester	60.6%	38.2%	28.8%
	Wolverhampton	59.9%	48.0%	23.7%
	Ross-on-Wye	68.5%	73.6%	100.0%
	Cardiff	57.8%	48.9%	41.8%
	E London	56.6%	38.4%	20.6%
101-200	Gloucester	31.6%	33.4%	40.0%
	Wolverhampton	31.2%	28.2%	26.2%
	Ross-on-Wye	26.0%	20.3%	0.0%
	Cardiff	29.3%	23.4%	37.4%
	E London	32.6%	34.8%	43.4%
201-300	Gloucester	3.6%	12.5%	21.7%
	Wolverhampton	8.0%	21.2%	49.4%
	Ross-on-Wye	5.5%	6.1%	0.0%
	Cardiff	11.2%	19.4%	14.6%
	E London	7.7%	16.2%	29.8%
>300	Gloucester	4.2%	15.9%	9.5%
	Wolverhampton	0.9%	2.6%	0.6%
	Ross-on-Wye	0.0%	0.0%	0.0%
	Cardiff	1.7%	8.3%	6.3%
	E London	3.1%	10.7%	6.2%

Proportion of each consumption band connected to the MP and LP systems

Annual Consumption band (KWh)	Sum of MP and LP connections in 1992 sample	Sum of MP and LP connections in 1998 sample
0-73.2 MWh	99%	100%
73.2 - 146.5 MWh	100%	100%
146.5 - 293 MWh	100%	100%
293 - 439.6 MWh	100%	99%
439.6 - 586.1 MWh	100%	99%
586.1 - 732.7 MWh	97%	100%
732.7 - 2,931 MWh	99%	99%
2,931 - 14,654 MWh	98%	98%
14,654 - 58,614 MWh	93%	93%
58,614 - 293,071 MWh	58%	80%
> 293,071 MWh	19%	41%


LDZ Capacity Transportation C
Unit Charge p/pkdkWh
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
Interim Function
May Function
Rebalan
10
100
1,000
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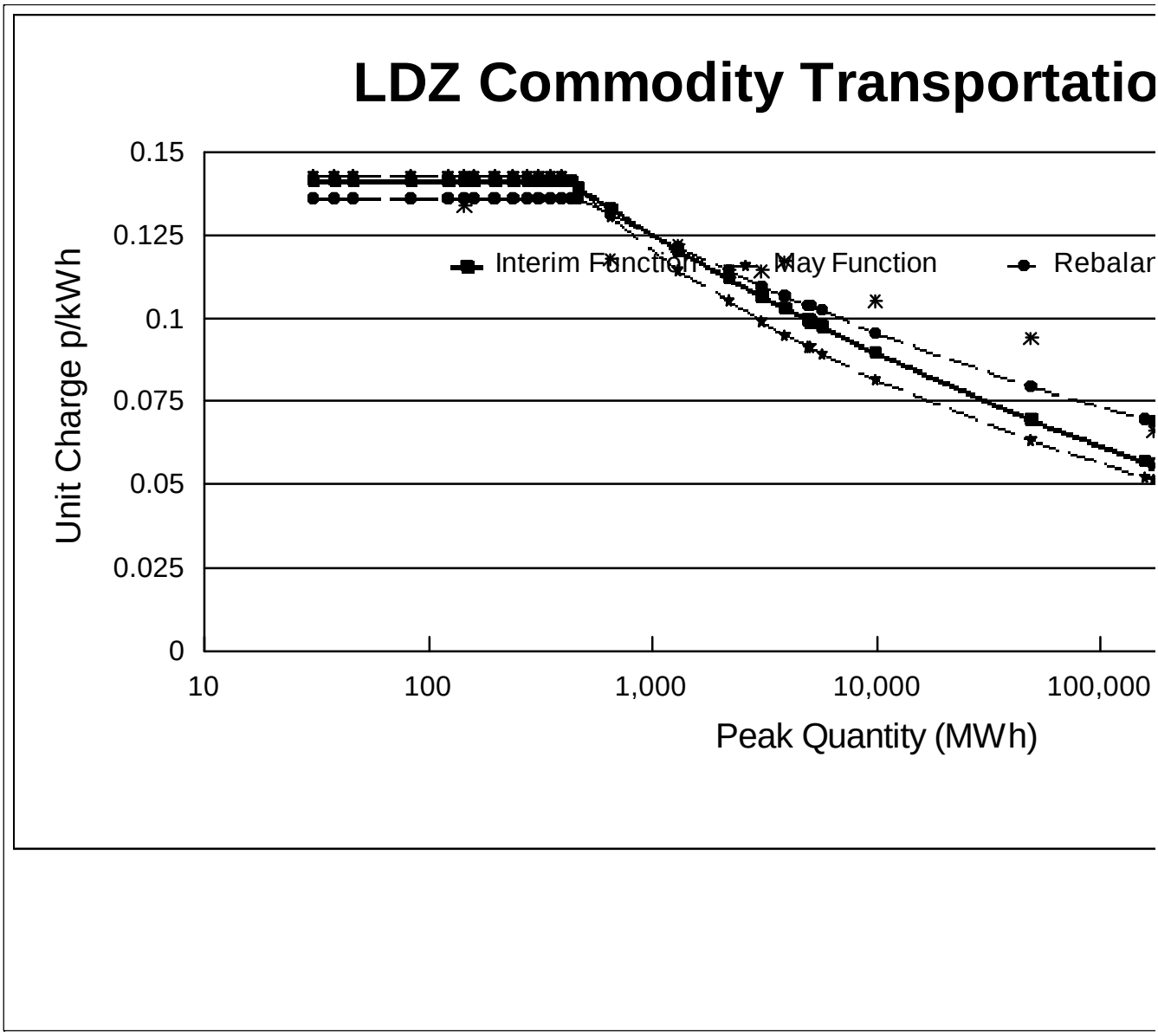
Peak Quantity (MWh)


LDZ Commodity Transportatio
0.15
0.125
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0.075
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Unit Charge p/kWh
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10
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Peak Quantity (MWh)