

Appendix B: CSEP Connection Survey

B1 Overview

As part of the 2001 review of data underlying the Methodology covering LDZ Transportation charges to CSEPs, Transco has undertaken a new survey of CSEPs connected to the LDZ systems.

B2 Connection Survey

The 2001 CSEP connection survey involved the collation of connection data for all CSEPs registered on the Transco CSEP database at 1st March 2001.

B2.1 Results

The following table shows the number of CSEPs falling into each category defined by the maximum annual quantity (AQ) and the connection tier. The low-pressure system has been broken down into six sub-tiers in order to more accurately reflect costs. The low-pressure system represents the highest cost pool within the LDZ distribution system.

B2.1.1 – Number of CSEP connections by tier and consumption band.

Consumption (MWh)	LTS	IP	MP	LP1	LP2	LP3	LP4	LP5	LP6	TOTAL
0-73.2	0	0	0	0	0	1	2	1	3	7
73.2 - 146.5	0	0	5	2	5	17	17	32	20	98
146.5 - 293	0	0	17	7	32	40	82	109	88	375
293 - 439.6	0	1	15	9	28	48	117	97	86	401
439.6 - 586.1	0	2	24	7	26	48	109	125	70	411
586.1 - 732.7	0	0	13	8	28	68	96	100	38	351
732.7 - 2,931	0	4	132	33	177	452	604	400	140	1942
2,931 - 14,654	0	9	121	6	87	156	119	43	18	559
14,654 - 58,614	0	1	39	0	5	8	5	4	1	63
58,614 - 293,071	0	3	5	0	1	0	0	0	0	9
> 293,071	0	2	0	0	0	0	0	0	0	2
All loads	0	22	371	72	389	838	1151	911	464	4218

B3 Connection Probability Data

The connection survey data is used to calculate the probability of a load within a given consumption band being connected to each of the LDZ tiers or, if connected to the low-pressure system, the probability of being connected to one of the six defined sub-tiers.

B3.1 CSEP Weighted Probability

The following table shows the probability of connection to each LDZ tier for CSEPs within each consumption band. The probabilities are calculated from the number of connections per tier divided by the total number of connections per consumption band.

B3.1.1 – CSEP Weighted Connections Probability by Consumption Band.

The following table shows the AQ weighted probability of connection to each LDZ tier for each consumption band. The probabilities are calculated from the total AQ of connections per tier divided by the total AQ of the consumption band.

B3.1.2 – AQ Weighted Connections Probability by Consumption Band.

B4CSEP Load Factors

An argument, which had been put forward for applying a higher load factor for CSEPs, is that the load characteristic of a CSEP is already fully diversified whereas the load for a single domestic property is only diversified when it co-mingles with the loads for many other properties and so, in reflecting the level of costs for part of the LDZ, it may be more appropriate to use a less diversified load factor. This argument is true when considering daily load factors, i.e. the ratio of the peak daily flow to twenty-four multiplied by the peak hourly flow (SOQ: $24 \times \text{SHQ}$), but not true of annual load factors, i.e. the ratio of the annual consumption to 365 multiplied by the peak daily flow (AQ: $365 \times \text{SOQ}$).

The design peak hourly flow rate is a key design parameter and is taken into consideration when deciding upon suitable connection points within the LDZ. Loads of the same SOQ may have different diurnal profiles and hence different SHQs and it is this attribute of CSEPs that has contributed to the requirement for a separate charging function.

The present diversified load factors for domestic properties (strictly those below 73.2 MWh/annum) are based on analysis of the average recorded load data from a sample of 150 to 200 domestic properties within each LDZ. At present the national average LDZ domestic load factor is 36.5%.

For CSEPs, consisting solely of domestic properties, the SOQ used to determine the level of both the LDZ capacity and commodity functions is derived from the maximum AQ for the CSEP and the relevant domestic load factor. The charging functions have been set based on the load factors found from the CSEP survey, which take into account the mix of domestic and non-domestic loads within CSEPs. The following table shows the average AQ, SOQ and Load Factor within each consumption band.

B4.1.1 CSEP Average AQs, SOQs and Load Factors.

0-73.2	64,816	502	35.4%
73.2 - 146.5	114,976	869	36.2%
146.5 - 293	226,951	1,728	36.0%
293 - 439.6	368,859	2,780	36.4%
439.6 - 586.1	511,978	3,838	36.5%
586.1 - 732.7	655,964	4,923	36.5%
732.7 - 2,931	1,450,797	10,882	36.5%
2,931 - 14,654	5,604,705	42,164	36.4%
14,654 - 58,614	25,802,485	179,241	39.4%
58,614 - 293,071	117,300,613	801,052	40.1%
> 293,071	788,405,647	5,351,164	40.4%
All loads	940,507,789	6,399,142	40%