

1 **Q. Cost of Service**

2 What is the system load factor used in the cost of service study and what is the
3 basis for using this system load factor? Please provide a comparison of the amounts
4 allocated to each customer class on the Island Interconnected System in dollars and
5 average cents/kWh based on the proposed system load factor and the forecast
6 system load factor averaged over the period January 1, 2015 through December 31,
7 2017.

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10 **A.** The system load factor used in classifying hydraulic generation in the 2015 Test Year
11 Cost of Service Study is 55.08%. The calculation of the system load factor is
12 provided in Exhibit 13, Schedule 4.2, Page 1 of 1 of the Evidence to Hydro's
13 Amended Application.

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15 The use of system load factor was approved in the Board's February 1993 report on
16 the Cost of Service Methodology to be used by Hydro. The Board's report with
17 respect to the method of classification of hydraulic generation states:

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19 Re-examination of cost of service methodology has been an infrequent
20 occurrence in Newfoundland and in anticipation that this may hold in the
21 future as in the past, the Board is concerned that the methods of
22 classification will reflect changes in load patterns and use of generating
23 facilities. Neither the equivalent peaker nor the specific facilities method
24 have this ability, since both rely totally on past investment decisions.

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26 The Board therefore finds it necessary to consider classification methods
27 based on operating parameters; namely, system load factor and plant
28 capacity factors. Such classification methods would be more flexible with
29 the dynamic nature of the system.

The system load factor is the ratio of average demand to peak demand, and average demand is the amount of capacity required to supply the system energy requirement under ideal conditions, i.e., constant demand throughout the year. It is therefore logical to regard the system load factor as the fraction of plant investment necessarily incurred to meet the energy requirement and to classify this portion as energy-related.

As shown in Table 1 below, an estimate of the average system load factor for the period January 1 2015 to December 31 2017 period is 55.49%. Applying this updated value of 55.49% instead of the 55.08% which has been used in the 2015 Test Year proposed Cost of Service, would, in Hydro's opinion, have an immaterial impact on the amounts allocated to the Island Interconnected System customer classes as illustrated in Table 2 below.

Table 1: Calculation of Three-Year Average System Load Factor

	2015 Test Year	2016 Forecast	2017 Forecast	Three-Year Avg
Sales + Losses (MWh)	7,238,900	7,523,800	7,610,900	
Hours in Year	8,760	8,760	8,760	
Average Demand (kW)	826,358	858,881	868,824	
CP @ Generation (kW)	1,500,405	1,532,400	1,569,700	
System Load Factor	55.08%	56.05%	55.35%	55.49%

Table 2: 2015 Test Year Island Interconnected Revenue Requirement

	Revised Load		
	As Filed	Factor	Variance
Allocated Revenue Requirement			
Newfoundland Power	463,656,437	463,630,634	(25,803)
Industrial - Firm	42,621,127	42,644,644	23,517
Industrial - Non-Firm	7	7	
Rural			
1.1 Domestic	23,068,558	23,068,830	-
1.12 Domestic All Electric	26,797,575	26,797,483	-
1.3 Special	66,301	66,291	271
2.1 GS 0-10 kW	-	-	(92)
2.2 GS 10-100 kW	13,257,327	13,258,327	(10)
2.3 GS 110-1,000 kVa	9,274,376	9,274,862	-
2.4 GS Over 1,000 kVa	4,950,547	4,951,245	1,000
4.1 Street and Area Lighting	1,337,567	1,337,500	485
Subtotal Rural	78,752,250	78,754,536	698
Total	585,029,821	585,029,821	(66)