Newfoundland and Labrador Hydro

2003 General Rate Application

Evidence of Mark Drazen

On behalf of the
Town of Labrador City
Town of Wabush

Project 031301
September, 2003

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Introduction and Overview

The "Labrador Interconnected System" (LIS) comprises two areas. The eastern area includes Happy Valley/Goose Bay (HV/GB) and Canadian Forces Base at Goose Bay (CFB-GB). The western area includes Labrador City/Wabush ("Labrador West")and Iron Ore Company of Canada (IOCC). Although both areas receive power from Churchill Falls, the nature and costs of the other facilities serving the two communities are different.

Newfoundland and Labrador Hydro (Hydro) has now proposed a five-year plan to consolidate and equalize the rates for the two areas on the assumption that both are part of a single interconnected system. However, Hydro has never tried to measure the differences in cost between the areas.

This evidence shows that the cost of service between two areas is different:

Table 1

Summary Cost of Service

	Happy Valley/Goose Bay		Labrador
	Version 1	Version 2	West
Cost of service	$8,845,130	$6,113,937	$3,663,140
Sales-MWh	232,100	232,100	275,700
Average Cost/MWh	$38.1	$26.3	$13.3

The cost of service for Happy Valley/Goose Bay customers has been calculated two ways, reflecting alternate treatments of the cost of the standby generators located there. Version 1 includes the cost of that standby generation in the cost of serving the HV/GB retail ("Rural Interconnected") customers. Version 2 excludes that cost. (The latter could be based on the view that the cost should be assigned to CFB-Goose Bay.)

While the east and west areas both receive power from Churchill Falls, the nature of the connection does not justify treating them as an interconnected single system.

Thus, Hydro's preference for having a single rate is at best a policy decision to ignore cost differences. But it has not given any justification for that policy.

Background

The issue goes back about 10 years. In 1992, Hydro first proposed that the Labrador City/Wabush and Happy Valley/Goose Bay rates be consolidated. At that time, it did not provide any analysis of the costs for the different areas. Labrador City and Wabush took issue with this proposal. The Board, in its 1993 report on Cost of Service Methodology, said:

> ***The Towns have not submitted any evidence or arguments to show that costs in Labrador Interconnected System are not appropriately allocated by means of a single cost of service study****, or that the rate class structure adopted by Hydro for that system is inappropriate. The Board is not aware of any instance where more than one embedded cost of service study has been deemed necessary for a single interconnected system and moreover considers that all customers served within the Labrador Interconnected System share common costs of generation, transmission and a variety of overheads. It therefore concludes that a single cost of service study is appropriate for that system.* (Page 10, emphasis added)

In fact, as discussed below, the premise for that conclusion–that there are common costs of generation and transmission–is not correct.

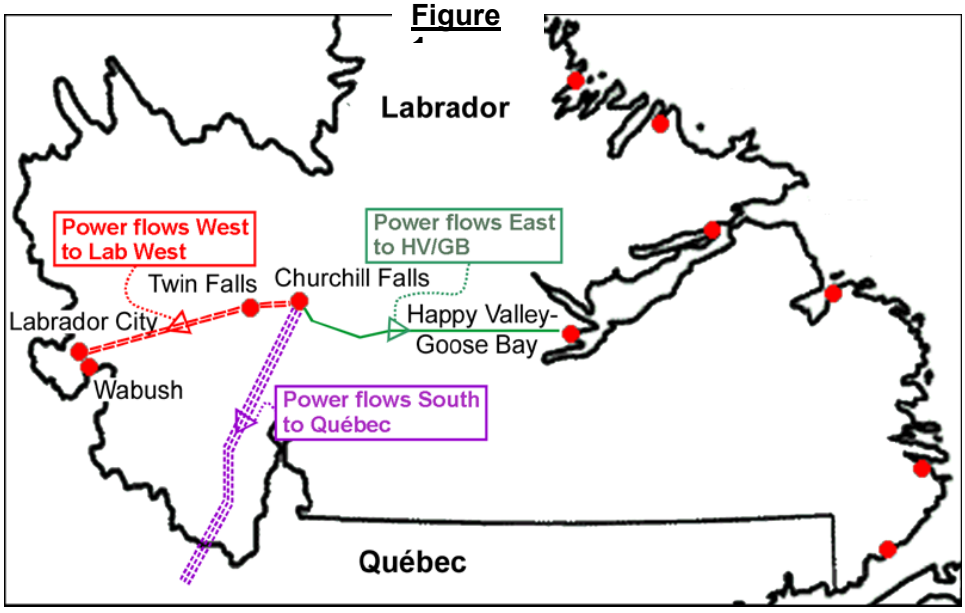
This evidence analyzes the costs in detail.

Cost Differences

There are cost differences between Labrador West and Happy Valley/Goose Bay in all three major components of cost: generation, transmission and distribution. These result from differences in the type of facilities providing service, the ownership and costs incurred by Hydro.

To understand the differences, it is useful to look at the facilities providing service. Figure 1 is a map showing the relevant electrical service facilities.

Figure 1



Transmission. Power from Churchill Falls is transmitted over separate (and separately owned) lines to three different areas: east to Happy Valley/Goose Bay; south to the Labrador/Québec border (connecting to Hydro Québec lines); and west to Labrador West.

Power from Churchill Falls to Happy Valley/Goose Bay is transmitted eastward over a 269 km single circuit 138 kV line owned by Hydro. According to Hydro, the original cost investment in

the line was $17,429,000[1] and the annual cost (for return on investment, depreciation and operating costs) is about $2,400,000.[2] This equates to $10/MWh of the power received in Happy Valley/Goose Bay.[3] Note that Hydro does not allocate any of the transmission cost to CFB-Goose Bay, although CFB receives power from Churchill Falls over the same line.

In contrast, power from Churchill Falls to Labrador West is transmitted westward over a double circuit 230 kV line that is owned by Twin Falls Power Corporation. There is no cost to Hydro for this transmission service. The only transmission facilities owned by Hydro to serve Labrador West are a small amount (13 km) of 46 kV subtransmission to provide emergency service to Labrador City from Fermont, Québec.[4]

Thus, although both Happy Valley/Goose Bay and Labrador West are connected to Churchill Falls (Labrador) Corporation, or CF(L)Co, the separate transmission lines coming out of Churchill Falls do not constitute an integrated system.

Generation. The supply (capacity and energy) to serve Labrador West comes from Churchill Falls. The total cost of supply from Churchill Falls is $2,433,927,[5] comprising $1,094,394 in demand charges and $1,339,533 in energy charges. Hydro does not allocate any of demand cost to CFB-Goose Bay (just as it does not allocate any of the transmission cost). The average cost of power per MWh delivered based on Hydro's estimate of losses is (details in Schedule 1):[6]

Table 2

CF(L)Co Cost of Power

Customer Group	Cost per MWh
CFB-Goose Bay	$1.6
IOCC	3.2
Happy Valley/Goose Bay	3.0
Labrador West	$2.9

In Happy Valley/Goose Bay, in addition to the CF(L)Co supply, Hydro maintains 38 MW of gas turbine and diesel capacity for standby generation.[7] The Happy Valley/Goose Bay area peak demand is over 50 MW. The annual cost of this standby generation in the 2004 revenue requirement is $2,731,000.[8] Hydro apparently considers this capacity to serve the domestic and general service customers. However, this standby capacity does not and cannot serve customers in Labrador West. An interruption in supply to Labrador West would occur only if the

[1] Response to LC-11.
[2] Exhibit RDG-1, Page 87, Column 5.
[3] $2,400,000 divided by HV/GB sales of 232,100 MWh.
[4] Decision P.U. 7, Pages 117-118.
[5] Exhibit RDG-1, Page 87, Columns 3 and 4, Line 5.
[6] Hydro assumes that percentage losses are the same for Labrador West as for Happy Valley/Goose Bay (and for IOCC and CFB-Goose Bay). Given that Labrador West is served over a higher-voltage (and somewhat shorter) line, it is more logical that the percentage losses to Labrador West should be lower than to Happy Valley/Goose Bay. However, this information is not yet available.
[7] J. R. Haynes, Schedule II.
[8] Exhibit RDG-1, Page 67, Column 5, excluding Line 5.

Twin Falls transmission lines were out of service. But, in this event, power could not come from the Happy Valley/Goose Bay generation. Accordingly, the Happy Valley/Goose Bay standby capacity cost is not incurred to provide service in Labrador West. Allocating the cost of this capacity as Hydro has done would mean that Labrador West customers would be overcharged by approximately $1,400,000. The cost of this standby capacity for serving the Happy Valley/Goose Bay area is about $11.8/MWh, making the total cost of supply $14.8/MWh.[9]

Distribution. The distribution systems in Wabush and Labrador City have a lower cost than that in Happy Valley/Goose Bay. This comes, in part, from the fact that Hydro acquired the Labrador West distribution systems for a nominal cost and received contributions to fund system upgrades. The capital-related cost for distribution facilities for the east and west areas are (details in Schedule 3):

Table 3

Distribution Capital Costs

	Net Investment	Annual Cost*	MWh Sold	Cost per MWh
HV/GB	$9,025,892	$1,556,534	232,100	$6.7
Labrador West	$6,400,569	$1,039,605	275,700	$3.8

*Depreciation, debt and equity return.

Analysis of Transmission Connection

As noted above, the nature of the connection between Labrador West and Happy Valley/Goose Bay is such that the transmission lines are not used in common to serve both areas. Power generated at Churchill Falls is stepped up to 230 kV. The separate transmission lines are both fed off the 230 kV bus at Churchill Falls, but that does not make them an "interconnected" system.

The 230 kV bus at Churchill Falls is: (1) directly connected to the 230 kV lines that serve Labrador West; (2) connected through a step-up transformer to the 735 kV lines to Hydro Québec; and (3) connected through a step-down transformer to the 138 kV line to Happy Valley/Goose Bay. These are shown on Schedule XVI of Mr. Haynes's evidence.

The fact that the lines are connected to a common source does not mean it is appropriate to allocate the costs as if they were a common system. For example, customers connected to a high voltage system (transmission or subtransmission) are normally not allocated costs of a low voltage distribution system, even though that low voltage system is also connected to the higher voltage facilities. For example, because they are served at transmission voltage, no distribution costs are allocated to Iron Ore Company of Canada in Labrador West nor to the Canadian Forces Base. If having a common source were taken a justification for spreading the cost of the

[9] Another possibility is that the standby capacity should be assigned to CFB-Goose Bay. In this case, neither Happy Valley/Goose Bay nor Labrador West customers would be charged for that cost. The generation cost for both would be the same, but the transmission cost would still be materially different.

eastward line to Labrador West customers, it would follow that the (much larger) load served over the 735 kV southward lines should also share in the cost.

Cost of Service Summary

Schedule 3 shows the overall cost of service for the two parts of the Labrador Interconnected System based on the facilities actually providing service.

Table 4

Cost of Service by Area (000)
Version 1

	Happy Valley/ Goose Bay	Labrador West	IOCC	CFB-Goose Bay
Generation-CF(L)Co	$704	$812	$795	$124
Generation-other	2,731	–	–	–
Transmission	2,386	74	–	–
Distribution	2,884	2,701	–	–
Tax	141	76	–	53
Total	$8,706	$3,663	$795	$126
Sales-MWh	232,100	275,700	251,700	77,200
Cost/MWh	$38.1	$13.3	$3.2	$2.3

The cost of Churchill Falls is divided between the two based on the relative usage and the cost of the power from that facility. The cost of the gas turbine and diesel standby capacity located in Happy Valley/Goose Bay is assigned entirely to Happy Valley/Goose Bay. The transmission costs for the CF(L)Co line incurred by Hydro to serve Happy Valley/Goose Bay are assigned to that area. An estimate is included for the short 46 kV line to Labrador West. Finally, the distribution cost of service capital cost is assigned to the two communities based on the investment.

Schedule 4 shows the details of Version 2, which treats the standby capacity as attributable to CFB-Goose Bay. In other respects, the calculations are the same as in Version 1.

Comparison of Cost and Rates

So far, this analysis has dealt with the difference in cost of service between Labrador West and Happy Valley/Goose Bay. This section concerns the proposed rates as compared to the cost of service for Labrador West.

As shown above, the cost of service for Labrador West is $13.3/MWh. For the purpose of setting rates, the practice heretofore has been to adjust the cost of service to include: (1) a credit for the surplus generated by CFB-Goose Bay, and (2) a charge to absorb the portion of the Rural Deficit. Hydro's calculations show a CFB-Goose Bay revenue credit of $2,748,588 that would apply to LIS customers. This is equal to 25.7% of the cost of service. As applied to

the Labrador West cost of service, this would be a credit of $3.4/MWh. The Rural Deficit allocated to the LIS is $4,760,039. This is classified and allocated on a customer, demand and energy basis. However, the effect can be approximated by looking at it on a per-MWh basis. That amount is $9.4/MWh (when spread over 507,800 MWh of sales).

Taking these into account, the adjusted cost of service and proposed rates are:

Table 5

Labrador West
Comparison of Rates and Cost

	Average $/MWh
Cost of service	$13.3
Less CFB Credit (25.7%)	(3.4)
Rural Deficit	9.4
Total	$19.3
Rates	
Current	$16.7
Proposed-2004	19.8
-2005	22.9
-2006	25.7
-2007	28.9
-2008	$32.2

This shows that the proposed rates for Labrador West are higher than the cost of service including the Rural Deficit burden. (Whether it is appropriate to recover the Rural Deficit on this basis is a separate issue.)

Policy

Hydro's proposal to equalize the costs of the two areas amounts to a policy decision to ignore the material cost differences between the two. The question, then, is: *What is the purpose or benefit of this policy?*

There is no general policy of rate equalization on the Hydro system. Hydro proposes five sets of rates, reflecting cost differences among five different subsystems: Island Interconnected, Island Isolated, Labrador Isolated, L'Anse au Loup and Labrador Interconnected. This "systemization", as Hydro's witness describes it, is based on the different facilities and cost of service among those five areas. Thus, there is no inherent policy that requires the LIS East and LIS West rates to be equalized.

Hydro describes the equalization as "a more equitable rate structure".[10] There is no explanation, though, of why this is "more equitable".

[10] Volume I, Corporate Overview, Page 29.

Experience of Mark Drazen

Mr. Drazen has worked since 1972 on economic analysis of energy and utility service, pricing in regulated and deregulated utility markets, contract negotiations, and strategic planning throughout the United States and Canada. His experience covers electric, natural gas, oil pipeline, telecommunications, transportation, waste and water utilities in seven Canadian Provinces (Alberta, British Columbia, Newfoundland and Labrador, Nova Scotia, Ontario, Québec and Saskatchewan) and in 40 states in the U.S. (Alabama, Alaska, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming).

He has appeared as an expert witness before courts, federal, state, and provincial regulatory agencies (including the Federal Energy Regulatory Commission, the National Energy Board, the Federal Communications Commission and the Canadian Radio and Telecommunications Commission) in most of the above jurisdictions.

Drazen Consulting Group offers economic, strategic planning and regulatory consulting services to clients that include industrial utility users, municipalities, schools, hospitals, utilities and government agencies. The founding firm (Michael Drazen and Associates) was established in 1937.

The firm's work covers all aspects of utility regulation (and deregulation), including revenue requirements, cost of capital, cost analysis, pricing, valuation, performance-based regulation and industry restructuring.

Mr. Drazen is a graduate of the Massachusetts Institute of Technology, with the degrees of Bachelor of Science in Mathematics, Master of Science in Electrical Engineering, and Electrical Engineer.

Schedule 1

NEWFOUNDLAND AND LABRADOR HYDRO

CF(L)Co Cost

Line		Energy Cost MWh* (1)	Energy Cost % (2)	Energy Cost $ (3)	Demand Cost Demand (4)	Demand Cost % (5)	Demand Cost $ (6)	Total Cost (7)	MWh @ Meter (8)	Cost Per MWh (9)
1	CFB - Goose Bay	87,442	9.23%	$123,595	0	0.00%	$0	$123,595	77,200	$1.6
2	IOCC	285,092	30.08%	402,964	70,231	35.83%	392,075	795,038	251,700	$3.2
3	HV/GB	262,893	27.74%	371,586	59,436	30.32%	331,810	703,396	232,100	$3.0
4	Lab West	312,277	32.95%	441,388	66,368	33.86%	370,509	811,897	275,700	$2.9
5	Total	947,704	100.00%	$1,339,533	196,035	100.00%	$1,094,394	$2,433,927	836,700	$2.9
	Source:	RDG-1 Page 97			RDG-1 Page 97 Haynes Sch. XII				Haynes Sch. XII	

Schedule 2

NEWFOUNDLAND AND LABRADOR HYDRO

Distribution Capital Cost

Line	Area	Gross Investment Amount (1)	Gross Investment % (2)	Depreciation Expense (3)	Net Investment Amount (4)	Net Investment % (5)	Debt + Equity Cost (6)	Total Cost (7)	Mwh Sold (8)	Cost Per MWh (9)
1	HV/GB	$14,720,493	62.7%	$626,296	$9,025,892	58.5%	$940,239	$1,566,534	232,100	$6.7
2	LW	8,763,480	37.3%	372,849	6,400,569	41.5%	666,755	$1,039,605	275,700	$3.8
3	Total	$23,483,974	100.0%	$999,145	$15,426,461	100.0%	$1,606,994			
	Source:	NP-147		RDG-1, p. 87 Line 7	NP-147		RDG-1, p. 87 Lines 21-22			

NEWFOUNDLAND AND LABRADOR HYDRO

2004 Cost of Service
Labrador Interconnected
Cost of Service

Line	Cost Category	Total (1)	HV/GB (2)	Lab West (3)	IOCC (4)	CFB (5)
	Expenses					
	Production - Demand					
	Operation and maintenance					
1	CF(L)Co purchased power	$1,094,394	$331,810	$370,509	$392,075	$0
2	Diesel and turbine	572,139	572,139	0	0	0
3	Credits and disposal gain/loss	52	52	0	0	0
4	Depreciation	1,004,888	1,004,888	0	0	0
5	Return	1,154,114	1,154,114	0	0	0
6	Subtotal	$3,825,587	$3,063,003	$370,509	$392,075	$0
	Production - Energy					
7	CF(L)Co purchased power	1,339,533	371,586	441,388	402,964	123,595
8	Diesel and turbine	0	0	0	0	0
9	Subtotal	1,339,533	371,586	441,388	402,964	123,595
	Transmission					
10	Operation and maintenance	420,358	407,747	12,611	0	0
11	Credits and disposal gain/loss	2,119	2,055	64	0	0
12	Depreciation	585,356	567,795	17,561	0	0
13	Return	1,452,226	1,408,659	43,567	0	0
14	Subtotal	2,460,059	2,386,257	73,802	0	0
	Distribution					
15	Operation and maintenance	3,239,830	1,480,828	1,759,002	0	0
16	Credits and disposal gain/loss	(261,140)	(163,691)	(97,449)	0	0
17	Depreciation	999,145	626,296	372,849	0	0
18	Return	1,606,994	940,239	666,755	0	0
19	Subtotal	5,584,829	2,883,672	2,701,157	0	0
20	Municipal tax & PUB assessment	269,519	140,630	76,266	0	52,623
21	Total cost of service	$13,479,527	$8,845,148	$3,663,123	$795,038	$176,218
22	MWh sales	836,700	232,100	275,700	251,700	77,200
23	Cost per MWh	$16.1	$38.1	$13.3	$3.2	$2.3

NEWFOUNDLAND AND LABRADOR HYDRO

2004 Cost of Service
Labrador Interconnected
Allocation Factors

Line		Basis	Allocation Units HV/GB	Lab West	IOCC	CFB	Total	Allocation Factors HV/GB	Lab West	IOCC	CFB	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Expenses											
	Production - Demand											
	Operation & maint.											
1	CF(L)Co power	Demand @ CF	59,436	66,368	70,231	0	196,035	30.319%	33.855%	35.826%	0.000%	100.000%
2	Diesel and turbine	Assigned to HV/GB	1.000	0.000	0.000	0.000	1.000	100.000%	0.000%	0.000%	0.000%	100.000%
3	Credits and disposal	Assigned to HV/GB	1.000	0.000	0.000	0.000	1.000	100.000%	0.000%	0.000%	0.000%	100.000%
4	Depreciation	Assigned to HV/GB	1.000	0.000	0.000	0.000	1.000	100.000%	0.000%	0.000%	0.000%	100.000%
5	Return	Assigned to HV/GB	1.000	0.000	0.000	0.000	1.000	100.000%	0.000%	0.000%	0.000%	100.000%
	Production - Energy											
6	CF(L)Co power	Energy @ CF	262,893	312,277	285,092	87,442	947,704	27.740%	32.951%	30.082%	9.227%	100.000%
7	Diesel and turbine	Assigned to HV/GB	1	0	0	0	1	100.000%	0.000%	0.000%	0.000%	100.000%
	Transmission*											
8	Operation & maint.	Assigned to HV/GB	0.970	0.030	0.000	0.000	1.000	97.000%	3.000%	0.000%	0.000%	100.000%
9	Credits and disposal	Assigned to HV/GB	0.970	0.030	0.000	0.000	1.000	97.000%	3.000%	0.000%	0.000%	100.000%
10	Depreciation	Assigned to HV/GB	0.970	0.030	0.000	0.000	1.000	97.000%	3.000%	0.000%	0.000%	100.000%
11	Return	Assigned to HV/GB	0.970	0.030	0.000	0.000	1.000	97.000%	3.000%	0.000%	0.000%	100.000%
	Distribution											
12	Operation & maint.	MWH sales	232,100	275,700	0	0	507,800	45.707%	54.293%	0.000%	0.000%	100.000%
13	Credits and disposal	Gross plant ($000)	14,720	8,763	0	0	23,484	62.683%	37.317%	0.000%	0.000%	100.000%
14	Depreciation	Gross plant ($000)	14,720	8,763	0	0	23,484	62.683%	37.317%	0.000%	0.000%	100.000%
15	Return	Net plant ($000)	9,026	6,401	0	0	15,426	58.509%	41.491%	0.000%	0.000%	100.000%
16	Muni. tax & PUB assessm	Revenues ($000)	7,798	4,229	0	2,918	14,945	52.178%	28.297%	0.000%	19.525%	100.000%

* Split based on length of lines (269 km for HV/GB, 13 km for LW), assuming 46 kV line costs half as much as 138 kV line.

NEWFOUNDLAND AND LABRADOR HYDRO

2004 Cost of Service
Labrador Interconnected
Allocation of Costs

Expenses			
	Production - Demand		
		Operation and maintenance	
			CF(L)Co purchased power 1094394
			Diesel and turbine 572139
		Credits and disposal gain/loss	52
		Depreciation	1004888
		Return	1154114
	Production - Energy		
			CF(L)Co purchased power 1339533
			Diesel and turbine 0
	Transmission		
		Operation and maintenance	420358
		Credits and disposal gain/loss	2119
		Depreciation	585356
		Return	1452226
	Distribution		
		Operation and maintenance	3239830
		Credits and disposal gain/loss	-261140
		Depreciation	999145
		Return	1606994
	Municipal tax & PUB assessment		269519
	Total cost of service		13479527

NEWFOUNDLAND AND LABRADOR HYDRO

2004 Cost of Service
Labrador Interconnected
Cost of Service - Version 2

Line	Cost Category	Total (1)	HV/GB (2)	Lab West (3)	IOCC (4)	CFB (5)
	Expenses					
	Production - Demand					
	Operation and maintenance					
1	CF(L)Co purchased power	$1,094,394	$331,810	$370,509	$392,075	$0
2	Diesel and turbine	572,139	0	0	0	572,139
3	Credits and disposal gain/loss	52	0	0	0	52
4	Depreciation	1,004,888	0	0	0	1,004,888
5	Return	1,154,114	0	0	0	1,154,114
6	Subtotal	$3,825,587	$331,810	$370,509	$392,075	$2,731,193
	Production - Energy					
7	CF(L)Co purchased power	1,339,533	371,586	441,388	402,964	123,595
8	Diesel and turbine	0	0	0	0	0
9	Subtotal	1,339,533	371,586	441,388	402,964	123,595
	Transmission					
10	Operation and maintenance	420,358	407,747	12,611	0	0
11	Credits and disposal gain/loss	2,119	2,055	64	0	0
12	Depreciation	585,356	567,795	17,561	0	0
13	Return	1,452,226	1,408,659	43,567	0	0
14	Subtotal	2,460,059	2,386,257	73,802	0	0
	Distribution					
15	Operation and maintenance	3,239,830	1,480,828	1,759,002	0	0
16	Credits and disposal gain/loss	(261,140)	(163,691)	(97,449)	0	0
17	Depreciation	999,145	626,296	372,849	0	0
18	Return	1,606,994	940,239	666,755	0	0
19	Subtotal	5,584,829	2,883,672	2,701,157	0	0
20	Municipal tax & PUB assessment	269,519	140,630	76,266	0	52,623
21	Total cost of service	$13,479,527	$6,113,955	$3,663,123	$795,038	$2,907,411
22	MWh sales	836,700	232,100	275,700	251,700	77,200
23	Cost per MWh	$16.1	$26.3	$13.3	$3.2	$37.7

NEWFOUNDLAND AND LABRADOR HYDRO

2004 Cost of Service
Labrador Interconnected
Allocation Factors - Version 2

Line		Basis	Allocation Units HV/GB	Lab West	IOCC	CFB	Total	Allocation Factors HV/GB	Lab West	IOCC	CFB	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Expenses											
	Production - Demand											
	Operation & maint.											
1	CF(L)Co power	Demand @ CF	59,436	66,368	70,231	0	196,035	30.319%	33.855%	35.826%	0.000%	100.000%
2	Diesel and turbine	Assigned to CFB	0	0	0	1	1	0.000%	0.000%	0.000%	100.000%	100.000%
3	Credits and disposal	Assigned to CFB	0	0	0	1	1	0.000%	0.000%	0.000%	100.000%	100.000%
4	Depreciation	Assigned to CFB	0	0	0	1	1	0.000%	0.000%	0.000%	100.000%	100.000%
5	Return	Assigned to CFB	0	0	0	1	1	0.000%	0.000%	0.000%	100.000%	100.000%
	Production - Energy											
6	CF(L)Co power	Energy @ CF	262,893	312,277	285,092	87,442	947,704	27.740%	32.951%	30.082%	9.227%	100.000%
7	Diesel and turbine	Assigned to CFB	0	0	0	1	1	0.000%	0.000%	0.000%	100.000%	100.000%
	Transmission											
8	Operation & maint.	Assigned to HV/GB	0.97	0.03	0	0	1	97.000%	3.000%	0.000%	0.000%	100.000%
9	Credits and disposal	Assigned to HV/GB	0.97	0.03	0	0	1	97.000%	3.000%	0.000%	0.000%	100.000%
10	Depreciation	Assigned to HV/GB	0.97	0.03	0	0	1	97.000%	3.000%	0.000%	0.000%	100.000%
11	Return	Assigned to HV/GB	0.97	0.03	0	0	1	97.000%	3.000%	0.000%	0.000%	100.000%
	Distribution											
12	Operation & maint.	MWH sales	232,100	275,700	0	0	507,800	45.707%	54.293%	0.000%	0.000%	100.000%
13	Credits and disposal	Gross plant ($000)	14,720	8,763	0	0	23,484	62.683%	37.317%	0.000%	0.000%	100.000%
14	Depreciation	Gross plant ($000)	14,720	8,763	0	0	23,484	62.683%	37.317%	0.000%	0.000%	100.000%
15	Return	Net plant ($000)	9,026	6,401	0	0	15,426	58.509%	41.491%	0.000%	0.000%	100.000%
16	Muni. tax & PUB assessm	Revenues ($000)	7,798	4,229	0	2,918	14,945	52.178%	28.297%	0.000%	19.525%	100.000%

NEWFOUNDLAND AND LABRADOR HYDRO

2004 Cost of Service
Labrador Interconnected
Allocation of Costs

Expenses			
	Production - Demand		
		Operation and maintenance	
			CF(L)Co purchased power 1094394
			Diesel and turbine 572139
		Credits and disposal gain/loss	52
		Depreciation	1004888
		Return	1154114
	Production - Energy		
			CF(L)Co purchased power 1339533
			Diesel and turbine 0
	Transmission		
		Operation and maintenance	420358
		Credits and disposal gain/loss	2119
		Depreciation	585356
		Return	1452226
	Distribution		
		Operation and maintenance	3239830
		Credits and disposal gain/loss	-261140
		Depreciation	999145
		Return	1606994
	Municipal tax & PUB assessment		269519
	Total cost of service		13479527