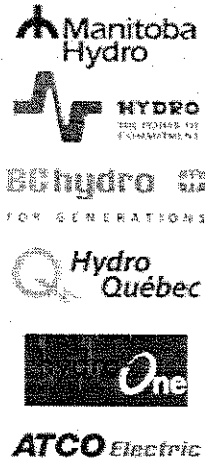


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Newfoundland and Labrador Hydro

Isolated Diesel Systems

Newfoundland and Labrador Hydro (NLH) operates a total of twenty-one (21) Isolated Diesel Plants. Six (6) of these are on the Island portion of the province and fourteen (14) are in Labrador. Twelve (12) of these plants are accessible by boat or aircraft only. The others can be accessed by the public highway system. The [system map](#) shows the location of these plants.

The plants range in size, the smallest being at Paradise River, Labrador with an installed capacity of ___KW. The largest plant is at Nain, Labrador with an installed capacity of ___MW. Typically the plants are steel framed metal buildings with three or four gensets in a central engine hall. The controls and control switchgear are enclosed in separate control rooms. Most of the committees have between 400 - 600 residents; so most of the plants have an installed capacity between x and x KW.

The larger plants such as Nain, Cartwright and Ramea have a full scaled automation load management system. The rest of the plants are semi-automated, that is, individual units are fully automated with automatic run-up and synchronizing etc. However, load management is done by the plant operators.

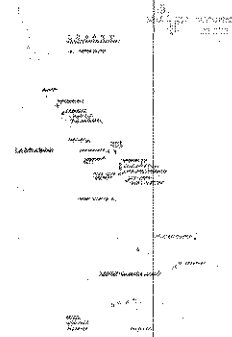
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Plant operators are full time NLH employees and residents in the community. Usually there are two full time operators who alternate on a three-week shift basis. During the shift, the operator is responsible for the plant for the full 24 hours per day. In most communities there is a resident relief operator. For the most part, major maintenance and repair work is done from the region offices at Bishops Falls, Port Saunders and Happy Valley, Goose Bay. In the larger plants (Cartwright & Ramea) there is also a full time mechanic on staff at the plant and resident in the community. Plant operators are also required to do limited line duty (switching, etc.) and some meter reading.

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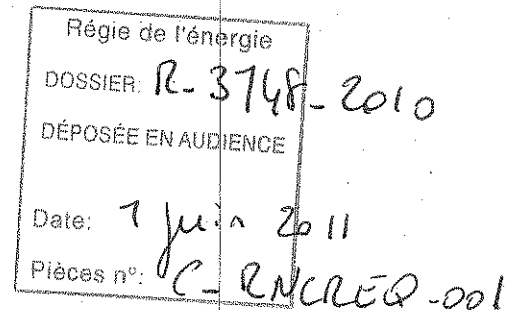
The customer base in the isolated communities is primarily residential and institutional with a minor industrial component. Energy

Newfoundland Labrador Hydro Click to enlarge



Provincial Grid Histories

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- [Northwest Territories Power Corporation](#)
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rates in all isolated communities are the same at ___¢ for the first ___KWH and ___¢ thereafter. By comparison, the provincial rates for interconnected customers is ___¢ per KWH.

All isolated plants are diesel fuel operated, and for the most part this is the only source of supply for the community. Fuel is purchased on a 5-year contract from local bulk fuel vendors. All deliveries are by marine tanker except for Ramea, which has daily truck deliveries. Fuel costs range from ___¢/L on the island to ___¢/L in Northern Labrador. In the Northern Labrador plants, artic grade fuel is used. NLH operates and maintains its own bulk storage systems at all plants.

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In the Northern Labrador communities a minimum storage of nine months supply is maintained because of the short shipping season. By contract, the plants in Newfoundland require as little as one month reserve supply.

NLH's isolated systems are not managed as a separate business unit. Operations, maintenance and staffing for the isolated plants are all part of the Regulated Operations Division of NLH. All costs for the isolated system are factored into the total cost of service for the utility. This total cost of service covers the net rural or isolated deficit of \$___/customer.

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Two of the isolated plants have secondary energy supplies. At Lanse Au Loup, in southern Labrador, secondary energy to a maximum of ___MW is purchased from Hydro Quebec, from the Lac Robertson system. This secondary supply satisfies the current load requirements, and the Lanse Au Loup plant is only required in occasional circumstances. At Ramea, a demonstration wind project totaling ___KW supplies a portion of the load. NLH is the controlling authority for this private wind IPP, and the amount of wind energy penetration to the system is a function of the operating limitations of the diesels. Ramea is also the site of a new wind/hydrogen demonstration project which will be put in service by NLH by the end of 2008.

The above is meant to be a very general description of NLH's isolated diesel systems. For more information on this topic, or NLH in general, refer to [Newfoundland and Labrador Hydro's website](#).

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