

Haida Gwaii Community Electricity Plan Frequently Asked Questions

1. Is BC Hydro planning to replace the diesel generators currently supplying electricity to the Islands?

Currently there are seven gensets in Sandspit Diesel Generating Station (DGS) and seven at Masset DGS. BC Hydro's Five Year Plan has identified capital upgrades to replace the two oldest gensets at Sandspit and the four oldest gensets at Masset. The goals of the upgrades are to reduce emissions, lower fuel consumption and increase reliability.

There are many factors that come into play in deciding what size and how many will be required to best suit the application. This may mean one new genset at Sandspit and three new gensets at Masset but replacements for the aforementioned oldest gensets has not finalized at this time.

2. At present, how much does it cost BC Hydro to generate 1 kWh of electricity from the diesel generators? What does BC Hydro pay for diesel fuel (in \$/l)?

The cost of electricity production on the QCI system is approximately 26 cents/kWh. Specific contracts BC Hydro holds with independent power producers or for fuel provision and shipment are commercially confidential.

3. How much are BC Hydro ratepayers supporting (subsidizing) electricity production on the Islands at present?

The following table shows the "profit and loss" statement for 2006 for the Haida Gwaii / Queen Charlotte Island systems. The revenue from customers on HG/QCI does not meet BC Hydro's operational costs for electricity on-Islands.

PROFIT & LOSS STATEMENT - Actual 2006 (in 000's)

	Masset	Sandspit	Total
REVENUES	2,068.0	1,812.0	3,880.0
COST OF ENERGY	5,127.5	4,425.1	9,552.6
Other costs	971.0	926.0	1,897.0
	(4,030.5)	(3,539.1)	(7,569.6)
CONTRIBUTION MARGIN	(4,030.5)	(3,539.1)	(7,569.6)

Note: negative (loss) values shown in brackets.

4. Can the funds that BC Hydro is currently using to support or subsidize diesel generation be used for other sources of power or demand-side management?

Alternatives for electricity production and/or customer demand reduction that cost less than the triple-bottom line cost of diesel generation and off-set our current operating costs are options that BC Hydro would consider. Triple-bottom line costs factor in consideration for social, environmental and economic costs.

5. What percentage of diesel-generated electricity supplies the southern line?

This figure varies during the year (and from year to year) depending on rainfall, but it is generally an 80/20 ratio of diesel to hydro, based on annual energy usage.

6. Is it BC Hydro's responsibility to provide us with power?

BC Hydro serves customers solely in accordance with its Electric Tariff, including the Terms and Conditions and Rate Schedules. The condition under which BC Hydro is responsible for providing service is approved by the BC Utilities Commission. Individuals, persons or other entities who are eligible for service, must apply for service and pay for any connection costs as described in the Electric Tariff.

Once a customer begins to receive service, BC Hydro has an obligation to continue to serve that customer as long as the customer continues to pay for the services.

7. What will happen when an IPP builds a project to provide power to the island grid; can they charge us whatever they want? Will our rates increase?

Selected Independent Power Producers (IPPs) on Haida Gwaii / Queen Charlotte Islands would enter into a contract to sell power to BC Hydro. IPPs can not sell power directly to customers currently served by BC Hydro on the island.

BC Hydro rates are based on BC Hydro's revenue requirement and are set by the BC Utilities Commission. BC Hydro's revenue requirement may increase if an IPP sells power at a price greater than BC Hydro's current cost to generate the power. However these costs will be borne by all rate payers and not just those who receive electricity from a particular IPP.

8. What are the criteria for choosing an IPP?

The requirements for independent power producers will vary depending on the location and nature of a specific call for tenders (CFT) or request for expressions of interest (RFEI). As much as possible, the requirements for choosing an IPP provider through a call would be shaped by the outcomes of the values expressed in the Community Electricity Plan. In general, BC Hydro may evaluate IPPs based on a variety of criteria that support a Triple-Bottom Line business case and are not limited to the following:

- Expected Unit Energy Costs
- Dependable Capacity
- Reliability of energy supply
- Annual average energy produced
- Demonstrated consultation with, or plan for engagement with appropriate First Nations
- Previous Company Experience, demonstrated experience.
- Proponent Organization & Structure
- Project Understanding, Concept Plan and Viability
- Proponent Plan to Address Aboriginal Issues
- Proponent Plan to Address Environmental Issues
- Technical / Design Feasibility
- Maturity / Stage of Development
- Green or Clean Technology
- Other Environmental Impacts
- Other Social or Economic Benefits

9. Are Islanders eligible for all BC Hydro Power Smart programs? What incentives are there for conserving electricity?

BC Hydro's Power Smart programs are sometimes province-wide, where Islanders would be eligible, and sometimes region or customer base specific (e.g., commercial customer focused, Vancouver Island focused, etc). Certain programs and offerings are only available for a limited time. For current general Power Smart programs please go to www.bchydro.com.

For more information about current Power Smart for Islanders, including the ongoing development of Power Smart focused on non-integrated areas, please contact Janie Hutchings in the Remote Community Electrification Program at 604-528-3108.

10. Will BC Hydro fund alternative energy options on the customer side of the meter?

At this time, BC Hydro does not fund alternative energy options on the customer side of the meter. However BC Hydro currently offers a "net metering" option to customers who would like to produce some electricity on the customer side of the meter. The Electric Tariff outlines the requirements and limitations of this program. Also see details at www.bchydro.com/netmetering.

A customer interested in producing more power than they consume would be considered an Independent Power Producer. An IPP would be welcome to bid through competitive processes for providing additional Island power.

11. Can the small hydro plant that supplies the southern grid be 'turned off' and the water stored to use at a later date? (i.e. if other intermittent supplies are added).

The small hydro plant operates as the prime power supply while the diesel generating plant operates primarily as the standby power source. However, if the small hydro plant could not provide adequate output capacity to carry the demand load at a given time, the diesel generating plant will operate also as prime power (in parallel with small hydro) to carry partial or all of the load. The current contract terms of the small hydro (IPP) do not enable BC Hydro to dictate the IPP when to turn off its output and store the water for latter usage.

An alternative power source could be explored to replace the diesel generating plant but this would require a thorough feasibility study to review its technical, financial and sustainability merits. BC Hydro currently has a contract agreement for the small hydro plant (IPP) who has the mandate to supply prime power to the Sandspit area. If there are more than two power generating sources to serve the system, the question on which generating unit will act as the prime power or standby would further need electrical system stability studies, including a dynamic load analysis study, in addition to the required feasibility study.

12. Does BC Hydro restrict power to Island customers?

No, BC Hydro has not imposed any electrical energy or capacity limitation on the island facilities. Different rates apply to different types and sizes of customers. These rates can be found in BC Hydro's Electric Tariff (http://www.bchydro.com/rx_files/policies/policies1459.pdf).

Any large increase in size would require major diesel upgrades and that customer might end up paying capital contributions to upgrade our system. This is consistent with our approach to line extension policy. In the line extension policy, the customer will pay the amount of the upgrade less revenue generated by BCH on the added load. The difference between Non-Integrated (Zone II) and Integrated (Zone I customers connected to the main BC grid), is that there is no

positive revenue in the Zone II areas, and therefore the customer pays the full cost of the line extension or upgrade.

13. Can the two grids (north and south) be tied together? What is required to make this technically feasible?

The answer to this question would depend on the findings of a power systems planning study. The feasibility of connecting the two grids (north and south) is affected from several fronts: technical, financial, social, and environmental impacts. On the technical side, if the two systems (north and south) are interconnected, it has to be determined whether present power sources will have adequate capacity to support partial or all of the connected loads and that the distribution system will not degrade in reliability, motor starting capability and voltage stability. Particularly, connecting the long length and low voltage lines of the existing systems could lead to degradation in voltage stability and reliability.

Any additional infrastructure or power source being added must address these criteria. A dynamic load stability studies is necessary to support such feasibility study.

14. Can the Islands tie into the mainland grids? What would be the cost estimate of doing this, and what is the feasibility given the length of the line?

To tie the Islands to the Mainland grid, a transmission line solution is required, not a distribution system solution. An undersea transmission line of the required length, and at the high voltage required, could cost in the hundreds of millions of dollars (based on cost estimates for the extensions and upgrades to Vancouver Island).

Other Questions not directly related to CEP Supply and Demand Issues

15. Is it possible to bury the distribution lines underground? What would the cost be?

Choosing between overhead primary distribution lines versus primary underground distribution would require a systems study on the relevant feeder(s) that will involve the review of technical, financial, social and environmental impacts. Underground primary distribution including secondary system normally costs much higher than for overhead primary distribution; by 2.5 to 3 times or more. In some cases, an overhead distribution line may not be feasible, or an underground line more economical, if an overhead route is non accessible or through a sliding cliff where landslide is prevalent. The cost is dependent on the conditions of the route. In cases where the business case support an overhead line, additional underground line installation costs would be borne by the customer.

Under normal BC Hydro distribution line secondary standards, if secondary underground service is to be provided to the customer, the customer must supply the required underground ducts (conduits) within the customer's site or property. BC Hydro provides the secondary service conductors within the property site.

16. Can we get three - phase power over the entire grid?

Three-phase power normally applies only to the trunk or header section of a system. Providing three phase power over a certain feeder segment or lateral depends on the needs and load characteristics of the connected customers. Simply for economics, there is no need to provide three-phase power if there are primarily residential customers to be connected on a lateral.

It is more expensive to install three-phase than single-phase power distribution system. However, where there are large clusters or significant number of single phase loads on several laterals, providing three-phase power to a long header or trunk segment may be preferred to address load balancing, voltage stability and power quality for customers satisfaction.