

ABORIGINAL COMMUNITY ENERGY PLAN

for:

Temagami First Nation; Bear Island Community

Community Benchmarking Study



Box 2527, New Liskeard, Ontario
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June 30, 2016

ABORIGINAL COMMUNITY ENERGY PLAN

Temagami First Nation; Bear Island Community

Preamble

A community energy plan (or “CEP”) is a comprehensive long-term plan to improve energy efficiency, reduce electricity consumption and assess opportunities for renewable energy solutions.

The Temagami First Nation (TFN) is a small community based on Bear Island on Lake Temagami in Northeastern Ontario with a population of approximately 200. The Island is approximately 293 hectares in size.

The community is serviced by an ice road for a portion of the year, and otherwise is accessible only by water.

Due to the seasonal nature of access the Bear Island Community is considered to be “remote”.

In early 2015, the TFN applied for funding assistance from the Ontario Power Authority (now the “*Independent Electricity Systems Operator*” or “IESO”). In late 2015, the Band was notified that it had been successful with the application and work commenced on the project.

Project Team

A project team was formed to complete this undertaking that included:

Robin Koistinen; Lands and Resources Manager; Temagami First Nation
Doug McKenzie; Resource Advisory; Lands and Resources Dept. (TFN)
Courtney Saville; Administrative Assistant; Lands and Resources Dept. (TFN)
Jamie Friday; Administrative Support/Researcher; Lands and Resources Dept. (TFN)
Bill Touzel; Renewable Energy Expert; Touzel Business Solutions
Jeff Barton; Project Coordinator; Barton Consulting Services.

Project Overview

The Aboriginal Community Energy Plan consists of four distinct components.

They are:

- Part i) Community Benchmarking or Baseline Study
- Part ii) Identification of Current and Future Needs
- Part iii) Identification of Priorities and Opportunities
- Part iv) Development of an Implementation Plan

Part 1: Community Benchmarking Study

The first step in the development of the Community Energy Plan is the preparation of a Community Benchmarking or Baseline Study (i.e. an assessment of the Community's current energy performance). An accurate Community Benchmarking Study allows a Community to identify potential opportunities for energy savings in all areas of the Community.

As outlined in the Project Proposal, at a minimum, the benchmark should, to the extent possible, include:

- annual energy usage in the Community based on historical data;
- breakdown of energy consumption by end use and building type including electricity, wood, propane, diesel and transportation fuels;
- occupancy data that includes vacancy rate, space uses and operating schedules for the same period;
- building asset data that includes air conditioned square footage and system specifications; and
- a summary of the results of the Community Baseline Study research including a description of the data collection process, methodologies used for data analysis and any energy mapping undertaken.

Methodology

Background information on the community was collected with the assistance of Band staff as well as a review of the Canada Census 2011.

The Project Team (including both internal resources and external consultants) developed a community survey that was distributed to Band members and was accessible via *Survey Monkey*. The survey, (which is included in Appendix i) posed a range of questions that sought to identify the energy sources utilized by Bear Island Residents and the quantity of each type of energy.

Given that the community is water accessible for much of the year, the consumption of gas for use in boats was particularly important.

The consulting team also relied on information provided directly from Hydro One Networks Inc. (HONI) and from information gathered from the Band administration regarding energy used in band buildings, community (CMHC) houses, and for other public uses such as infrastructure maintenance and the Water Taxi.

The information was collected during a 5 month period between January 1, 2016 and May 30, 2016.

One of the limitations encountered during the Benchmarking phase of the project was the Team's inability to obtain an aggregated total electricity consumed on the Island directly from Hydro One Networks Inc (HONI).

Community Description

The Temagami First Nation (TFN) community is a small remote community primarily located on Bear Island (also referred to as Bear Island Reserve #1). The Island is situated on Lake Temagami and encompasses 293 hectares of land. Bear Island is located in the Nipissing District in the northeastern region of Ontario. Bear Island is located approximately 90 kilometres northwest of the City of North Bay and approximately 85 kilometres south of the City of Temiskaming Shores. The nearest urban centre is the Municipality of Temagami, 29 kilometres to the northeast of Bear Island.

Bear Island is located in the middle of Lake Temagami and is accessible via ice road in the winter or boat in the late spring, summer and fall months. Bear Island can be accessed in the summer by boat leaving the mainland Lake Temagami access points which are located 17 kilometers from Highway 11 at the end of the Lake Temagami Access Road.

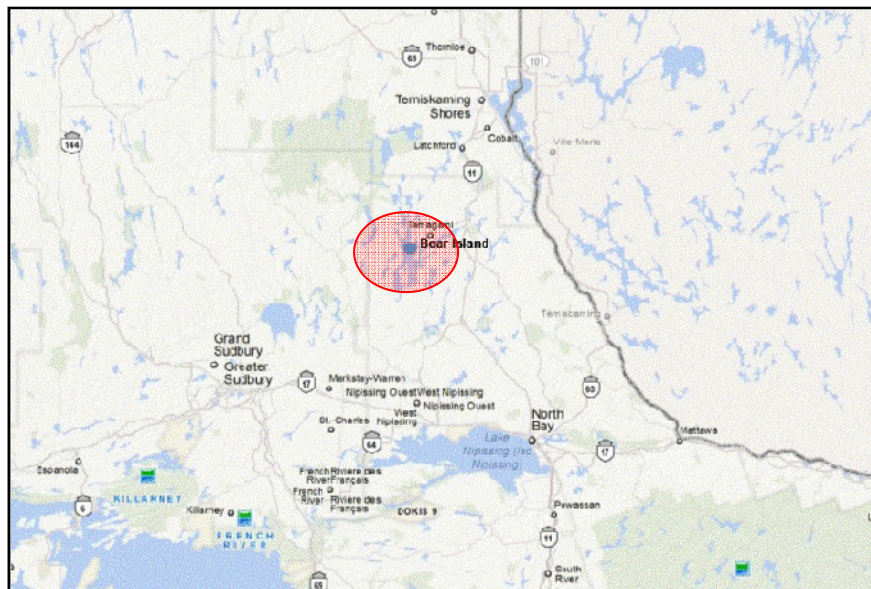


Figure 1.
Location of Bear Island within Northeastern Ontario



Figure 2.
Bear Island in Municipality of Temagami



Figure 3
Bear Island

Terrain analysis for Bear Island indicates that approximately 90% of the island is bedrock. Soil cover is very limited with most soils being fairly permeable sands. The deepest soil areas in the island's interior range to two metres. Slopes are generally bedrock controlled and reflect the steepness of the rock foundation. Much of the island contains slopes that are too steep to support development. It is concluded that there is very little land on Bear Island that is capable of supporting future development.

General Results

This benchmarking report is subdivided into 2 sections. The first of the two sections addresses energy use by the Band administration which includes the use of gasoline for use in the Shuttle (either the boat or the snowmobile shuttle.) It also includes consumption for use in Band vehicles on the Island including heavy vehicles used by the Public Works Department.

The second section address energy use by residents of Bear Island and addresses energy consumption both within the households and gasoline consumption for use in boats/snow machines and on-island private vehicles.

1. Administration

The Band Buildings are entirely heated by electricity. There are no secondary sources of power available for these buildings with the exception of portable generators that are used in the case of power outages.

i. Consumption of Electricity

The following table reflects electricity consumption in Band-owned buildings. The information was derived from the review of invoices from Hydro One Networks Inc. for the period of Jan 1, 2015-December 31, 2015.

| Building | Consumption |
|---|--------------------|
| Band Office Total | 8048 |
| Doreen Potts Health Centre | 134 |
| Eguana Road Garage | 1706 |
| Family Healing and Health Centre | 774 |
| Garage | 452 |
| LMLC Total | 970 |
| Lot 48 (Teacherage) | 14873 |
| Lot 964 (TMFC) Total | 3892 |
| Lands and Resources Department Total | 20429 |
| Police Station | 47735 |
| Program Building | 4033 |
| Rec Centre | 22342 |
| Skating Rink Total | 6350 |
| Skating Rink Total | 10115 |
| Teacherage | 15553 |
| Tillie Missabai Family Centre (Daycare) | 98994 |
| V Mck Old Apartment | 3226 |
| Warehouse | 34122 |
| Water Treatment Plant Total | 766 |
| Water Treatment Shed Total | 9905 |
| Band Office | 6355 |
| Subtotal Non-Residential | 302726 |

Table 1.
Electricity Use in Non-Residential Band Buildings (kWh annually, 2015)

The estimated consumption of electricity for non-residential Band buildings is 302,000 kWh annually (rounded to 300,000 kWh).

It should be noted that the information review by the Project Team was limited to Invoices from Hydro One Networks for 2015 only. This may not present an accurate assesment of typical usage patterns, so additional data should be reviewed if possible.

ii. Consumption of Firewood

No firewood is consumed in Band buildings

iii. Consumption of Gasoline

The Band administration consumes both gasoline and diesel for a number of purposes.

The project team tried to identify the consumption of both types of fuel, however records are aggregated and difficult to separate.

Among the biggest consumers of gasoline in the community is the shuttle that provides service to residents, workers and visitors on a regular basis to the Landing.



Figure 4.
Medical Transportation Shuttle (also used for non-medical purposes)

The Team were able to review the following information provided by Band Staff for 2012 that indicated the following purchases of petroleum products (gasoline, diesel and heating oil):

| PETROLEUM PRODUCTS | |
|-----------------------------|--------------------------------|
| Description | 2012 Purchases (litres) |
| Police boat | 4000.00 |
| Shuttle boat gas | 13075.60 |
| Heavy Equipment gas | 11998.20 |
| Subtotal Gas | 29073.80 |
| Heavy Equipment Diesel | 7644.00 |
| Clear Diesel | 1900.00 |
| Subtotal Diesel | 9544.00 |
| DPHC Furnace fuel | 866.10 |
| Rec Centre furnace | 2350.00 |
| Healing and Wellness | 2900.00 |
| Subtotal Heating Oil | 6116.10 |
| TOTAL | 44733.90 |

Table 2
Consumption of Petroleum Products for Band Administration

Band staff also advised the project team that gas/diesel purchases for 2016 (January to May 31st) were approximately \$16,000 (\$16,073.90). By extrapolating on a straight-line basis, annual consumption for the full year might be estimated to be approximately \$40,000. We note that fuel prices in early 2016 were lower than in recent years due to the world-wide fall in oil prices recently, and so expectations for future costs should be tempered by this fact.

Of the consumption of gas, the Band estimates that the shuttle requires approximately 450 litres/week for the typical 32 weeks per year of open water (therefore 14,400 litres/year) or roughly half of the gas consumed by Band administration.

The website gasbuddy.com provides information about current and historic gas prices throughout Canada. The site provides the following chart related to average prices in Ontario.

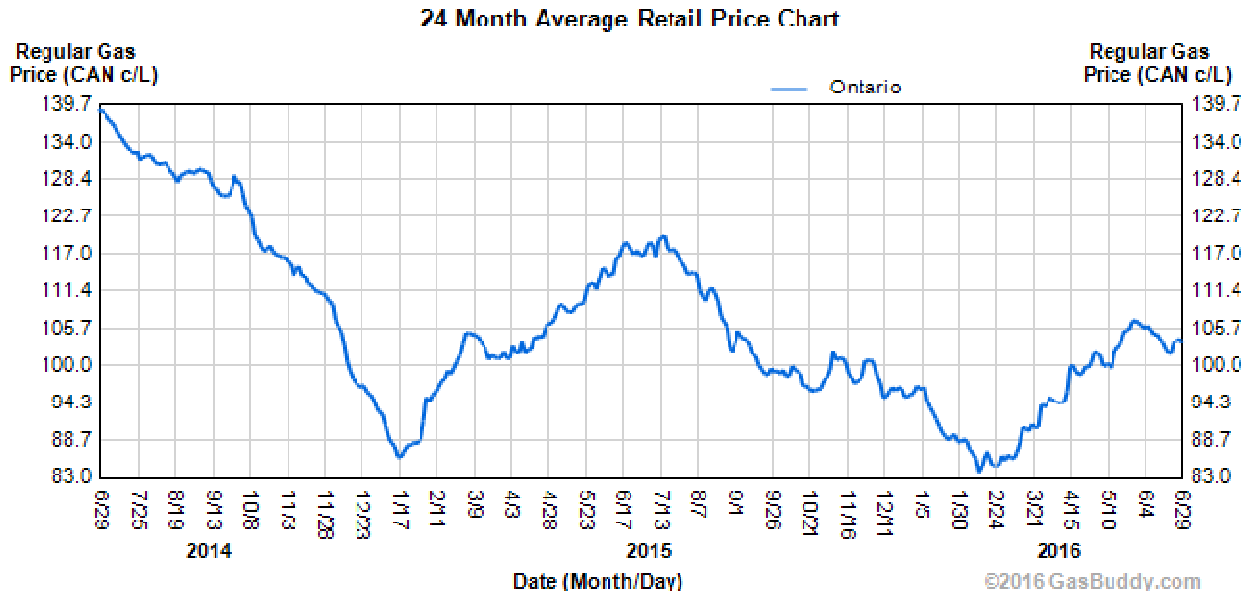


Figure 5.
Average Gasoline Prices in Ontario from June 2014-June 2016

The average Ontario gasoline price for this period is approximately \$1.05/litre, however there is typically a premium of approximately \$0.10/litre between the purchase price (Co-op Regionale) and the Ontario average in addition to bargaining costs that range from \$0.04-\$0.07/litre.

The effective cost of gasoline for Band purposes is \$1.19-\$1.22 / L (2016).

Based on projected 2016 purchases, the Project team estimates that approximately 31,000 litres of gasoline will be consumed by the Band annually.

The actual purchases in 2012 are a relatively close match to the estimate for 2016, therefore the Project team supports the estimate of 31,000 litres/year.

Projected diesel consumption is estimated at 9,500 litres/year.

Heating oil is projected at 6,000 litres/year.

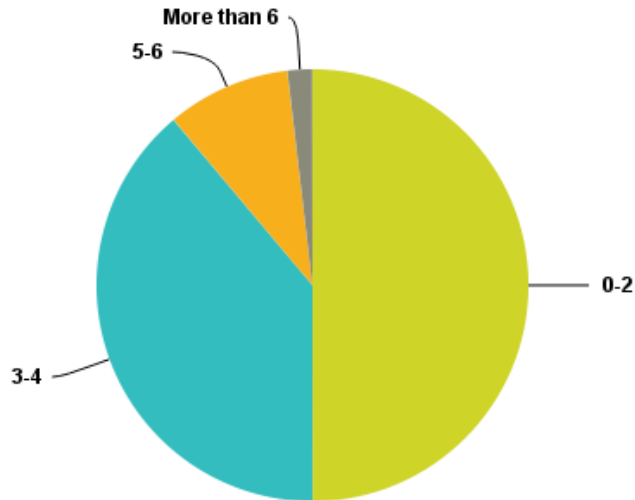
2. Residential

In the absence of the collection of individual billing records, the consulting team was reliant on the survey results, supported by anecdotal evidence.

The residents of Bear Island predominantly live in single family dwellings averaging 1000-1200 square feet in size. The median square footage is approximately 1000 square feet. As per the survey results, the median number of residents per household is 2.

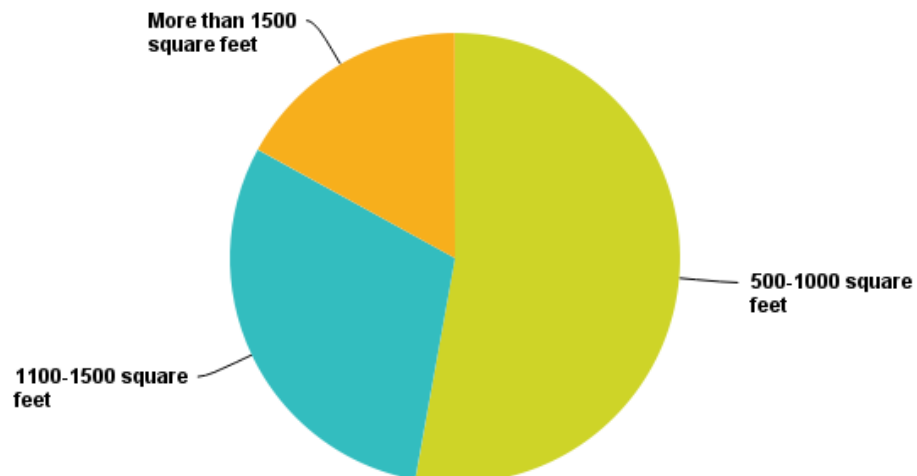
Q2 How many people live in your household?

Answered: 54 Skipped: 0



Q3 Please indicate the size of your house

Answered: 53 Skipped: 1



Typically, these homes are heated with electrical baseboard heaters. Most have standard electrical appliances (stove, refrigerator, washer, dryer, dishwasher and water heater).

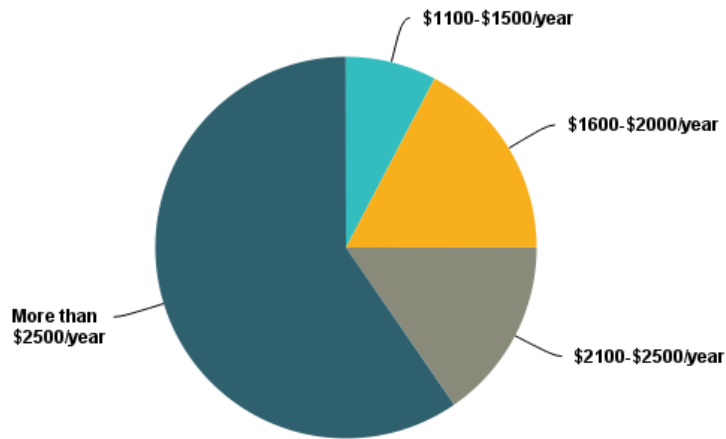
i. Consumption of Electricity

In the absence of the collection of individual billing records, the consulting team was reliant on the survey results, supported by anecdotal evidence.

The survey results indicated that nearly 60% of households spend more than \$2500/year for electricity.

Q9 What is your average yearly cost for electricity?

Answered: 52 Skipped: 2



Supplemental comments from residents and Band staff suggest that many people spend in excess of \$3500/year for electricity, therefore the average expenditures for the purpose of the benchmarking study has been adjusted accordingly.

Delivery Charges

In order to understand expenditures related to electricity and to translate annual residential expenditures into consumption, it is important to recognize the importance of delivery charges.

Bear Island is categorized as a low density jurisdiction, therefore delivery fees are applied as per the following table:

| Delivery Rates ² | Urban High Density | Medium Density | Low Density |
|--|--------------------|----------------|-------------|
| Distribution service charge (\$ / month) | \$22.86 | \$30.88 | \$43.32* |
| Distribution volume charge (metered usage - ¢ / kWh) | 1.60 ¢ | 2.98 ¢ | 4.27 ¢ |
| Transmission connection charge (adjusted usage - ¢ / kWh) | 0.49 ¢ | 0.48 ¢ | 0.46 ¢ |
| Transmission network charge (adjusted usage - ¢ / kWh) | 0.69 ¢ | 0.68 ¢ | 0.65 ¢ |
| Smart metering entity charge³ (\$ / month) | \$ 0.79 | \$ 0.79 | \$ 0.79 |
| Adjustment Factor | 1.057 | 1.076 | 1.105 |

For the purpose of estimating residential use, the fixed portion of the delivery fees were deducted from the annual estimated expense

= (i.e \$3,500.00 **minus** \$43.32 x 12)

= \$2,981.00/year.

The annual expense was then divided by the sum of the variable rates as follows:

\$2,981.00/year divided by:

(Average Rate for Time of Use + Distribution Vol. Charge + Transmission Connection Charge + Transmission network Charge + smart metering entity charge + Adjustment Factor)

= \$2981.00/year divided by
(13.3cents + 4.27cents + 0.46cents + 0.65cents + 0.79cents + 1.105cents)

= \$2,981.00 / 20.575cents per kWh

= 14,488 kWh/year

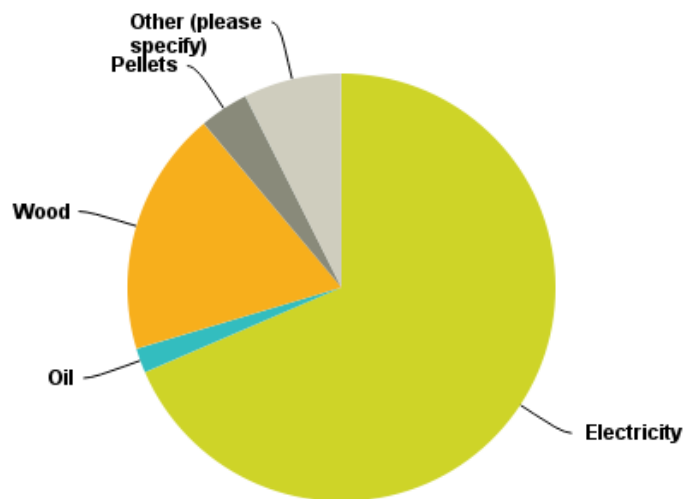
For 95 residences, this equates to the consumption of approximately 1.3 million kilowatt hours per year (kWh / yr) in total for all the residences in the community combined.

ii. **Consumption of Firewood**

The survey results indicated that almost 60% of the residences burned firewood as either their primary or secondary source of heat.

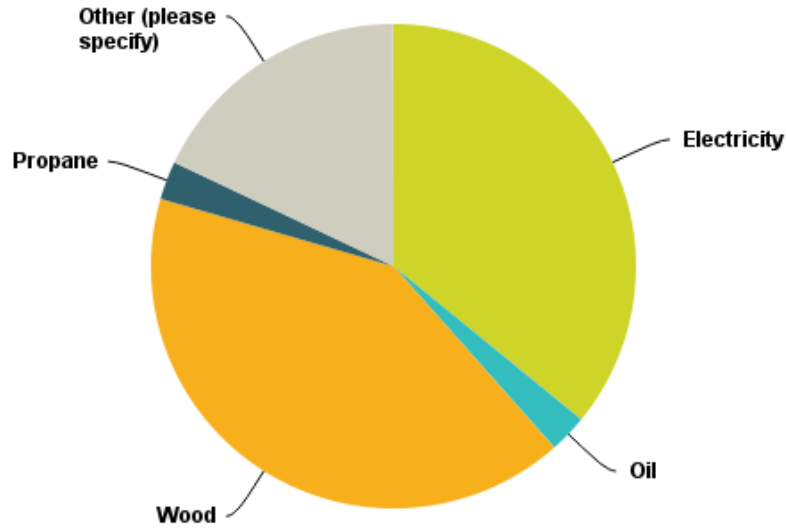
Q6 What is the main source of your household heat?

Answered: 54 Skipped: 0



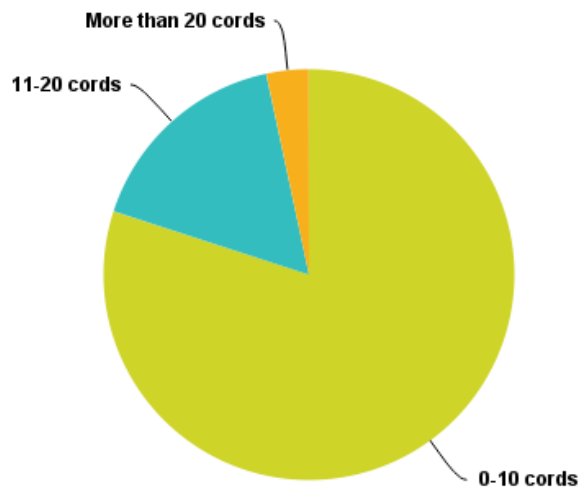
**Q7 Do you have secondary source of heat?
If so please indicate**

Answered: 39 Skipped: 15



**Q12 If you use wood, please indicate how
much you burn per year**

Answered: 30 Skipped: 24



Based on approximately 60% of the households using wood as a primary or secondary source of heat, the project team estimates the following:

60% of 95 households = 57 households x 10 face cords¹ per house

= 570 face cords/year

One respondent indicated that their household used propane as a secondary source of heat, and another respondent indicated that oil was used as a secondary source.

iii. Consumption of Gasoline

Residents of Bear Island consume gasoline for two primary purposes.

Firstly, as an island community, many residents are dependent on the use of small or mid-sized watercraft to commute to the mainland. The closest mainland access point is referred to as “the Mine Landing” located at the end of the Lake Temagami Access Road which is approximately 5.5 kilometres from the Bear Island community dock.

¹ Although a “Face Cord” is not a recognized unit of measure according to Measurement Canada, it is commonly used in Northeastern Ontario for the sale and purchase of firewood. A “face cord” is considered to be 1/3 of a full cord or in other words, 1/3 of 128 cubic feet or 42.6 cubic feet. A face cord measures 4 feet by 8 feet by 16 inches (or equivalent). In international units, a “face cord” is the equivalent of 1.2 stacked cubic metres



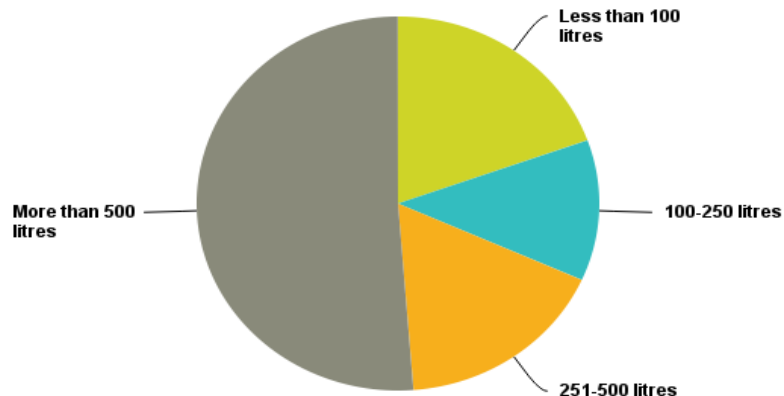
Figure 6.
Shuttle Route from Mine Landing to Bear Island (approximately 5.5 km)

Although certainly not conclusive, the largest proportion of households own and operate a boat with 35-70 hp, 4-stroke outboard motors for this purpose.

The survey results indicated that respondents use approximately 500 litres/year for commuting purposes and for use in “on-island” vehicles.

Q18 If you use your own boat and/or snow machine for commuting or for other purposes, please indicate how much fuel (litres) you consume on a yearly basis. (Note: 5 gallons = approximately 25 litres)

Answered: 41 Skipped: 13



Based on the 95 households, this equates to approximately 47,500 litres of gasoline.

Most of the gasoline is purchased from retailers outside of Bear Island and outside of the Temagami area altogether. This means that significant quantities of fuel are being transported from outlets in North Bay, Orillia (Rama) and other locations. The fuel is transported in 5-10 gallon (approximately 25-50 litre) containers.

Community Meeting

A Community Meeting was held on June 16, 2016, during which some of the preliminary findings from the survey were presented to a small group of individuals.

The Project Team outlined the purpose and the work plan associated with the project and heard a number of concerns related to energy (particularly electricity) costs experienced by Bear Island residents. Concern was also expressed by the audience that Hydro costs are excessive and that there is a suspicion that Smart Meters actually contribute to the problem in some way as opposed to helping to address issues.

In general, the Band Administration has recognized the importance of the issue of energy costs, and continue to look for opportunities to address the issue.

Energy Audit

During the meeting there was some discussion about the merits and the process through which energy audits could be conducted on some proportion of houses and other buildings on Bear Island. The project team outlined some of the advantages of conducting an energy audit on some of the residences in the community. An audit carried out by a certified inspector will provide insight as to the most effective ways of becoming more efficient with respect to energy consumption. This may include recommendations related to renovations (insulation, for instance), replacement of appliances and/or upgrades to heating systems.

The Team will investigate the feasibility of conducting audits during the term of the project.

Alternative Energy

Three residences on the Island have installed solar panels and take advantage of the IESO's microFIT program. One of the installations has a capacity of approximately 7 kW at peak output in full sun, while the other two have capacities of 10 kW each.

The microFIT Program was launched in 2009 as part of the Ontario government's efforts to increase renewable energy in the province. The program provides homeowners and other eligible participants with the opportunity to develop a small or "micro" renewable electricity generation project (10 kilowatts (kW) or less in size) on their property.

Under this program, homeowners are paid a guaranteed price over a 20-year term for all the electricity produced and delivered to the province's electricity grid.



Figure 7.
Bear Island Residence with 7 kw Solar Installation

Summary

The following table summarizes the energy use on Bear Island based on the survey results, information provided by Band Administration and supplemental information from individuals.

| TOTAL ANNUAL ENERGY USE -- BEAR ISLAND | | | |
|---|---|-----------------|---|
| Source | Residential | Administration | Total |
| Electricity | 1.3 million kwh | 0.3 million kwh | 1.6 million kwh |
| Firewood | 570 face cords (approximately 685 cubic metres) | 0 | 570 face cords (approximately 685 cubic metres) |
| Fuel Oil | 0 | 6,000 litres | 6,000 litres |
| Diesel | 0 | 9,500 litres | 9,500 litres |
| Gasoline | 47,500 litres | 31,000 litres | 78,500 litres |
| Pellets | 6-7 tonnes/year per household | 0 | 6-7 tonnes/year per household |
| Propane | no data available | | |

Table 3
Summary of Energy Use on Bear Island

Capacity for New Generation

The Independent Electricity Systems Operators (IESO) “guides the province's electricity conservation efforts by supporting programs that foster a culture of conservation, build market capability and promote innovation.” The IESO offers incentive programs for small and large projects to encourage new generation of renewable energy in the Province.

At this time, much of Northeastern Ontario is constrained with respect to the capacity to accept new sources of power therefore any new large initiatives would need to ensure that transmission capacity is available.

The Band has expressed interest in investigating opportunities for the generation of renewable energy either on Bear Island or on other sites within n’DakiMenan to generate revenue that could be directed to residents and businesses on Bear Island to offset their costs.

It is also noteworthy that the Province currently has a “Net Metering” option available to consumers, which it apparently intends to expand in the next few years. Under this initiative, electricity consumers (residential, commercial, etc.) install small solar

generation systems which feed some or all of their own electricity demand, and electricity is only purchased from Hydro One when the consumer's demand is higher than his/her generation; any electricity generated in excess of the consumers own use at any point in time is fed back into the grid, and the consumer receives credit for this at the same rate as they would be charged for consumption. Hence the term Net Metering, whereby the energy bill from Hydro One is based on the net difference between a consumer's usage and their own generation over time. This option is currently limited to individual installations < 10 kW, however it is understood that this limitation may be expanded to larger capacities in the near future. A program to encourage and/or support both the band and its individual members investing in net metering equipment could be explored.

Current Band Initiatives Related to Renewable Power Generation

Temagami First Nation is currently one of four partners of ***The Communities of the Montreal River (CMR)***. The entity was incorporated in 2015 for the purpose of applying for a Feed In Tariff contract for generation of power under the IESO's Small Renewable Energy Program for a project at the Latchford Dam Site.

The project did not proceed under the ***FIT 4.0*** project but the partnership expects to proceed under the terms of ***FIT 5.0*** in late 2016.

The partners of the CMR are:

- Temagami First Nation
- Timiskaming First Nation
- Coleman Township
- Town of Latchford

Interim Conclusions and Recommendations

- As noted in the discussion related to Electricity consumption in Band buildings, the data reviewed was limited to 2015 invoices from Hydro One Networks Inc. In order to make more reliable conclusions, the Team will review data from previous years and identify average consumption over multiple years
- Work toward greater completion rates of surveys to gain a more accurate assessment of total residential energy use
- Confirm the number of households with smart meters and the number with smart meters that are not connected due to internet limitations
- Recommend that Band staff identify gasoline and diesel consumption by equipment for future analysis

- Consider engaging a Certified Energy Auditor to begin audits of residential and Band buildings and investigate potential sources of funding for priority residential renovations
- Continue to engage with Hydro One Networks to determine total electrical demand on the Island and to identify historical peak and lull patterns.

Next Steps

As identified in the project proposal, over the next 12 months, the project team will supplement and verify the information contained in the Benchmarking Study, and will also complete the remaining four components of the Aboriginal Community Energy Plan which include:

- Part ii) Identification of Current and Future Needs
- Part iii) Identification of Priorities and Opportunities
- Part iv) Development of an Implementation Plan

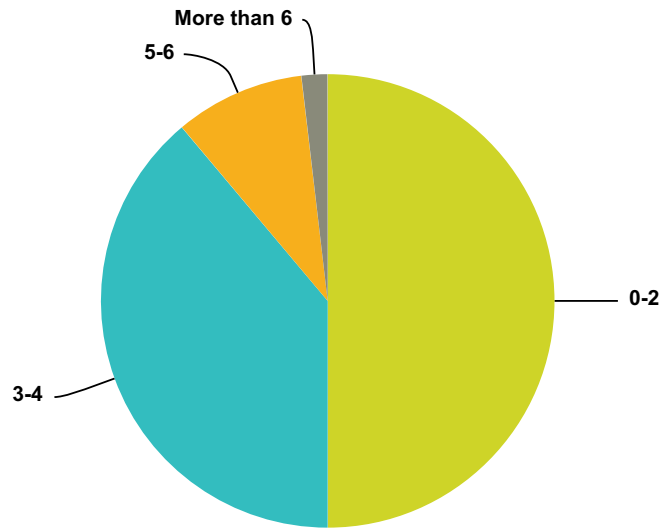
Appendix i
Survey Results

Q1 Name: (optional)

Answered: 47 Skipped: 7

Q2 How many people live in your household?

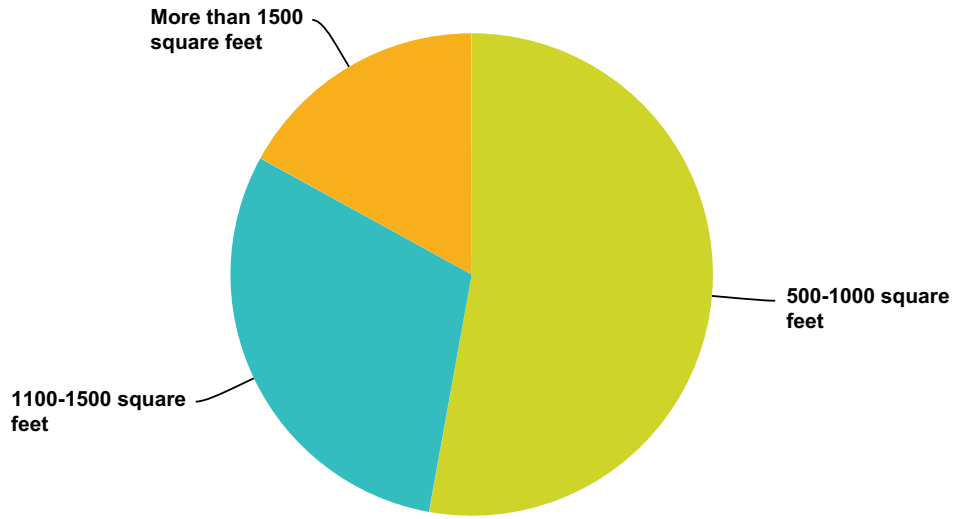
Answered: 54 Skipped: 0



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| 0-2 | 50.00% | 27 |
| 3-4 | 38.89% | 21 |
| 5-6 | 9.26% | 5 |
| More than 6 | 1.85% | 1 |
| Total | | 54 |

Q3 Please indicate the size of your house

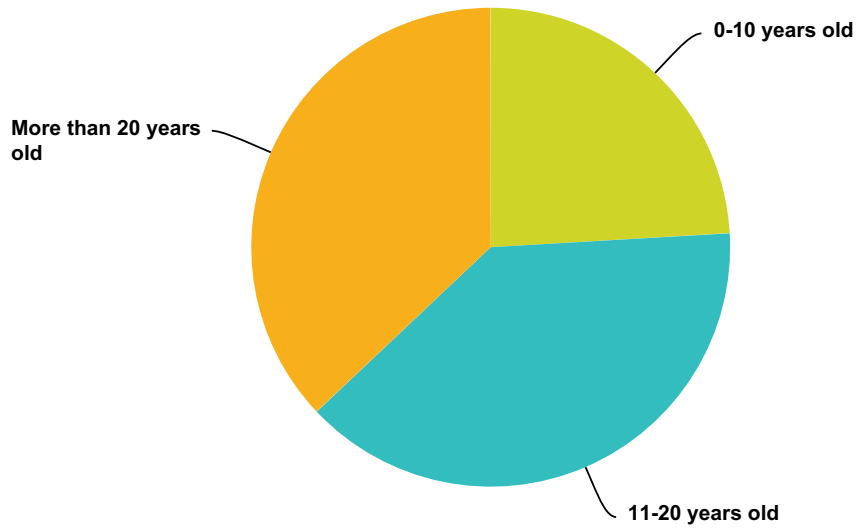
Answered: 53 Skipped: 1



| Answer Choices | Responses | |
|----------------------------|-----------|-----------|
| 500-1000 square feet | 52.83% | 28 |
| 1100-1500 square feet | 30.19% | 16 |
| More than 1500 square feet | 16.98% | 9 |
| Total | | 53 |

Q4 Please indicate approximate age of your house

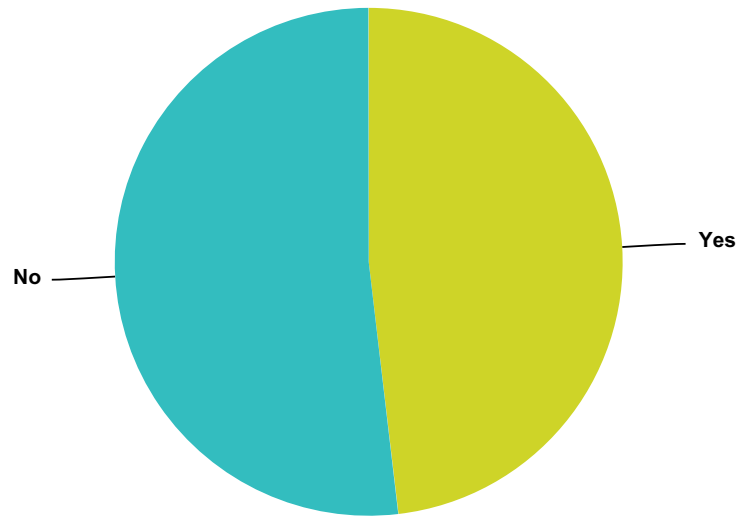
Answered: 54 Skipped: 0



| Answer Choices | Responses | |
|------------------------|-----------|-----------|
| 0-10 years old | 24.07% | 13 |
| 11-20 years old | 38.89% | 21 |
| More than 20 years old | 37.04% | 20 |
| Total | | 54 |

Q5 Does your house have a basement?

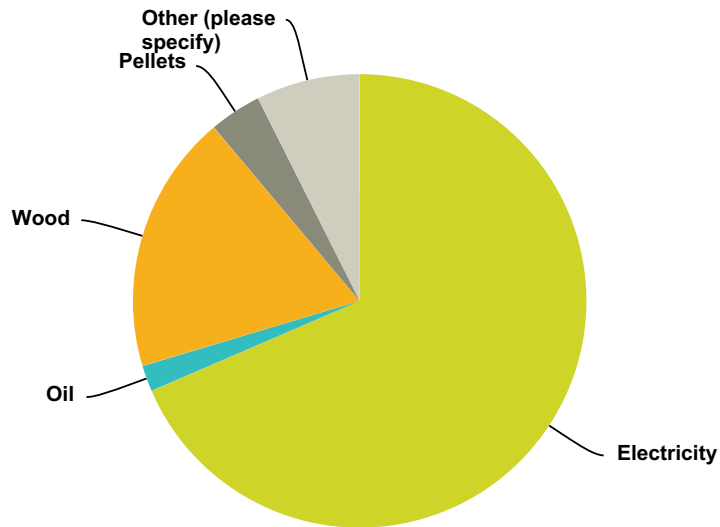
Answered: 54 Skipped: 0



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 48.15% | 26 |
| No | 51.85% | 28 |
| Total | | 54 |

Q6 What is the main source of your household heat?

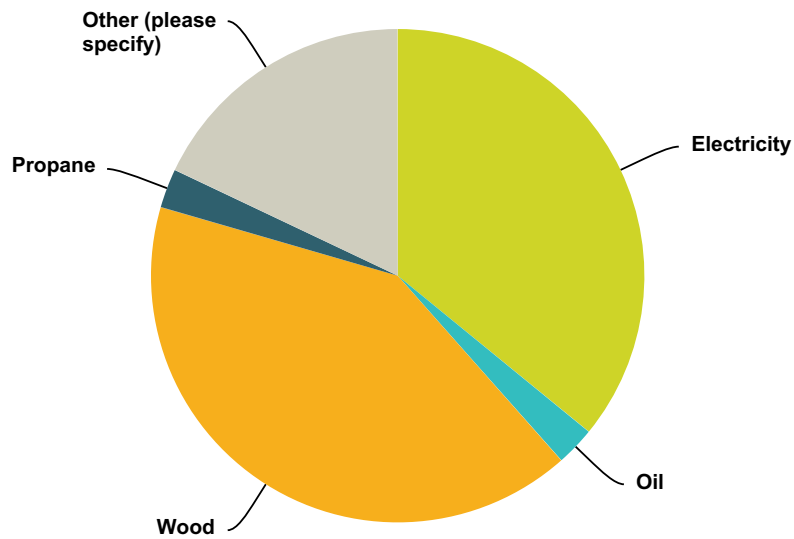
Answered: 54 Skipped: 0



| Answer Choices | Responses | |
|------------------------|-----------|-----------|
| Electricity | 68.52% | 37 |
| Oil | 1.85% | 1 |
| Wood | 18.52% | 10 |
| Pellets | 3.70% | 2 |
| Propane | 0.00% | 0 |
| Other (please specify) | 7.41% | 4 |
| Total | | 54 |

Q7 Do you have secondary source of heat? If so please indicate

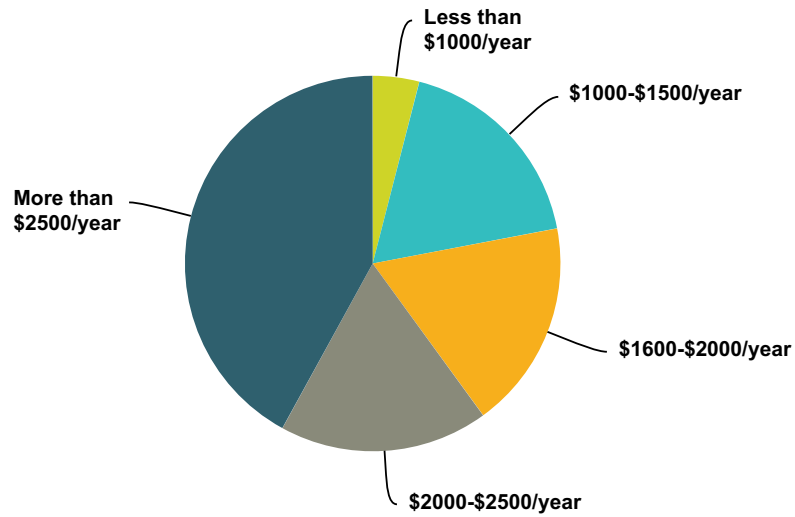
Answered: 39 Skipped: 15



| Answer Choices | Responses | |
|------------------------|-----------|-----------|
| Electricity | 35.90% | 14 |
| Oil | 2.56% | 1 |
| Wood | 41.03% | 16 |
| Pellets | 0.00% | 0 |
| Propane | 2.56% | 1 |
| Other (please specify) | 17.95% | 7 |
| Total | | 39 |

Q8 What is your average yearly cost for heating?

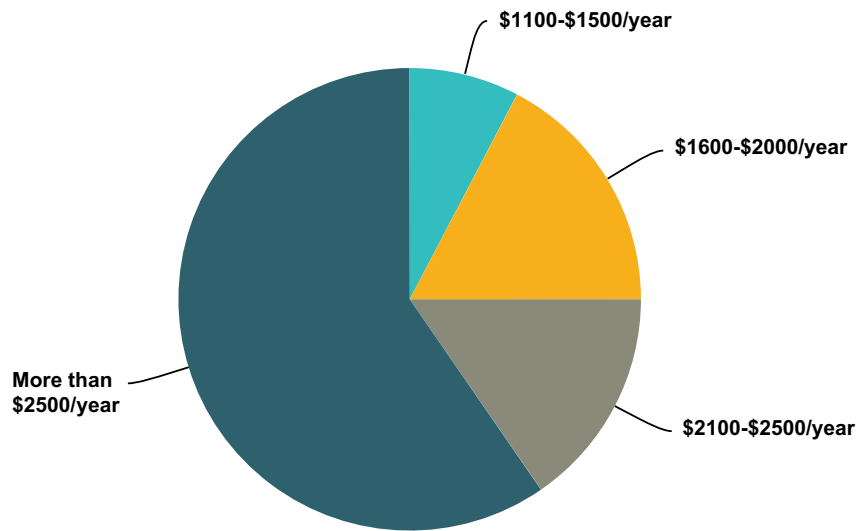
Answered: 50 Skipped: 4



| Answer Choices | Responses | |
|-----------------------|-----------|-----------|
| Less than \$1000/year | 4.00% | 2 |
| \$1000-\$1500/year | 18.00% | 9 |
| \$1600-\$2000/year | 18.00% | 9 |
| \$2000-\$2500/year | 18.00% | 9 |
| More than \$2500/year | 42.00% | 21 |
| Total | | 50 |

Q9 What is your average yearly cost for electricity?

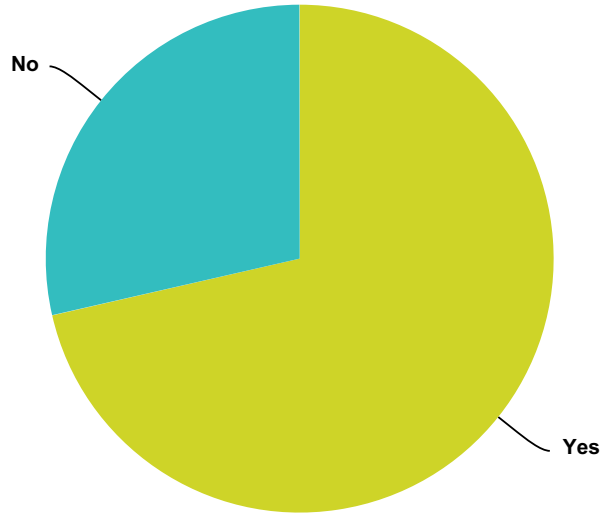
Answered: 52 Skipped: 2



| Answer Choices | Responses | |
|-----------------------|-----------|-----------|
| Less than \$1000/year | 0.00% | 0 |
| \$1100-\$1500/year | 7.69% | 4 |
| \$1600-\$2000/year | 17.31% | 9 |
| \$2100-\$2500/year | 15.38% | 8 |
| More than \$2500/year | 59.62% | 31 |
| Total | | 52 |

Q10 Would you provide a copy of your bills from Hydro One for the past year to the Lands and Resources Department?

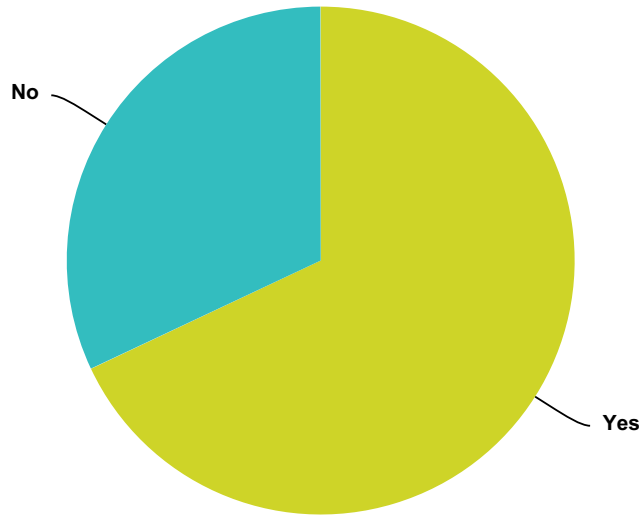
Answered: 49 Skipped: 5



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 71.43% | 35 |
| No | 28.57% | 14 |
| Total | | 49 |

Q11 Would you consider signing a release to allow the Lands and Resources Department to access your billing records directly from Hydro One?

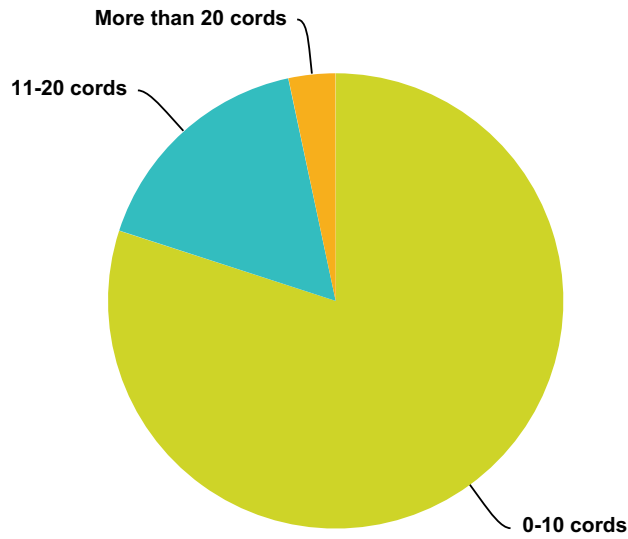
Answered: 50 Skipped: 4



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 68.00% | 34 |
| No | 32.00% | 16 |
| Total | | 50 |

Q12 If you use wood, please indicate how much you burn per year

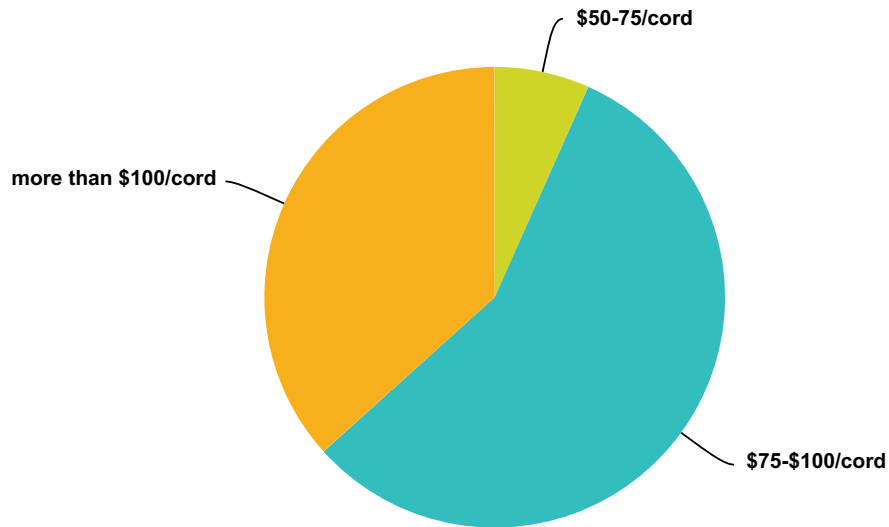
Answered: 30 Skipped: 24



| Answer Choices | Responses | |
|--------------------|-----------|-----------|
| 0-10 cords | 80.00% | 24 |
| 11-20 cords | 16.67% | 5 |
| More than 20 cords | 3.33% | 1 |
| Total | | 30 |

Q13 If you burn wood, please indicate how much you pay

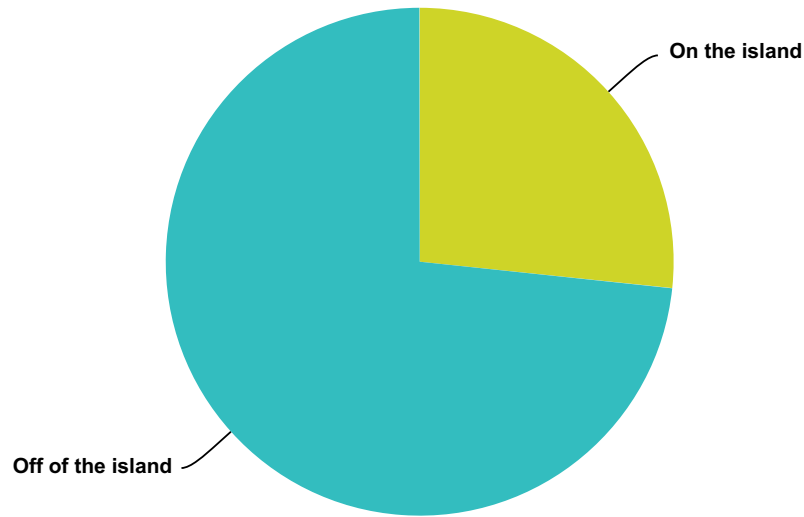
Answered: 30 Skipped: 24



| Answer Choices | Responses | |
|----------------------|-----------|-----------|
| \$50-75/cord | 6.67% | 2 |
| \$75-\$100/cord | 56.67% | 17 |
| more than \$100/cord | 36.67% | 11 |
| Total | | 30 |

Q14 If you purchase or cut wood, does it come from

Answered: 30 Skipped: 24



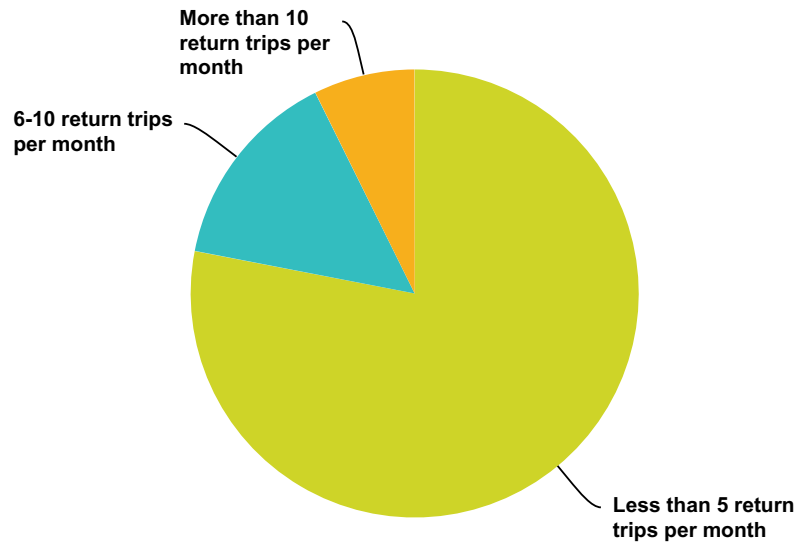
| Answer Choices | Responses | |
|-------------------|-----------|-----------|
| On the island | 26.67% | 8 |
| Off of the island | 73.33% | 22 |
| Total | | 30 |

Q15 Do you operate a business or any other enterprise that might have an impact on your energy use? If so, please explain

Answered: 12 Skipped: 42

Q16 Do you use the shuttle service to commute to the Lake Temagami Access Road landing? If so, please indicate approximately how often you use it (total household) during the open water season

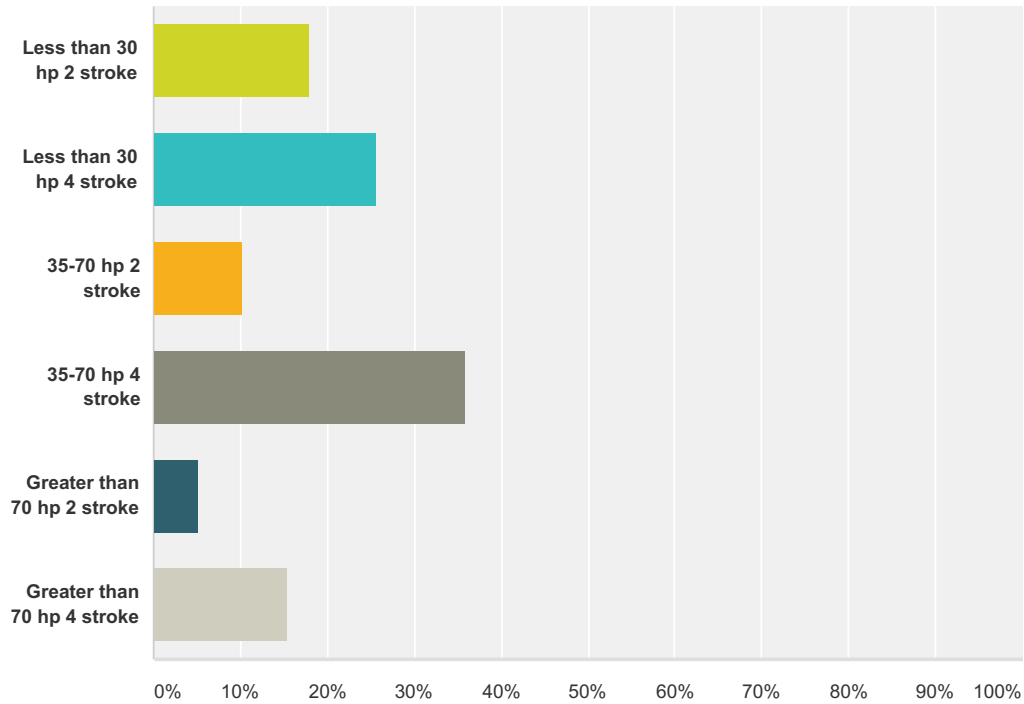
Answered: 41 Skipped: 13



| Answer Choices | Responses | |
|-------------------------------------|-----------|-----------|
| Less than 5 return trips per month | 78.05% | 32 |
| 6-10 return trips per month | 14.63% | 6 |
| More than 10 return trips per month | 7.32% | 3 |
| Total | | 41 |

Q17 Do you use your own boat(s) to commute to the Lake Temagami Access Road landing and for other purposes? If yes, please describe your boat and motor plus indicate 2 stroke versus 4 stroke

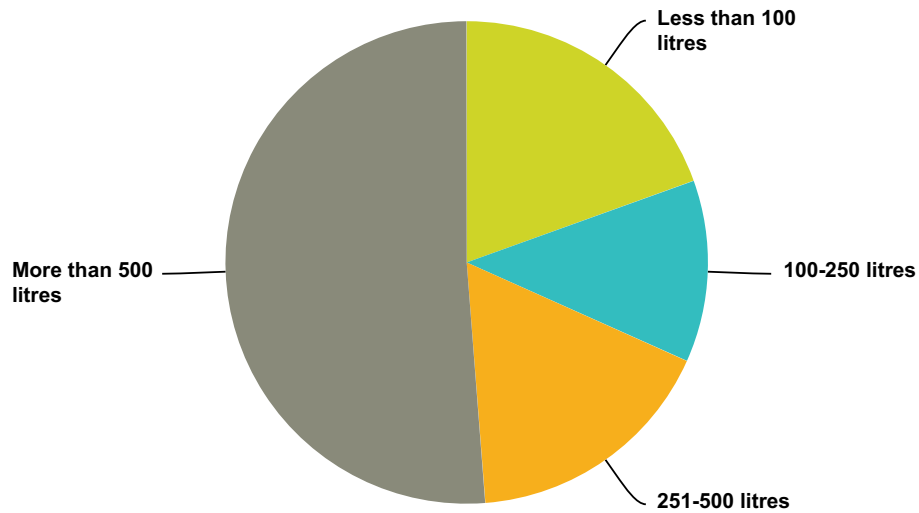
Answered: 39 Skipped: 15



| Answer Choices | Responses |
|------------------------------|-----------|
| Less than 30 hp 2 stroke | 17.95% 7 |
| Less than 30 hp 4 stroke | 25.64% 10 |
| 35-70 hp 2 stroke | 10.26% 4 |
| 35-70 hp 4 stroke | 35.90% 14 |
| Greater than 70 hp 2 stroke | 5.13% 2 |
| Greater than 70 hp 4 stroke | 15.38% 6 |
| Total Respondents: 39 | |

Q18 If you use your own boat and/or snow machine for commuting or for other purposes, please indicate how much fuel (litres) you consume on a yearly basis. (Note: 5 gallons = approximately 25 litres)

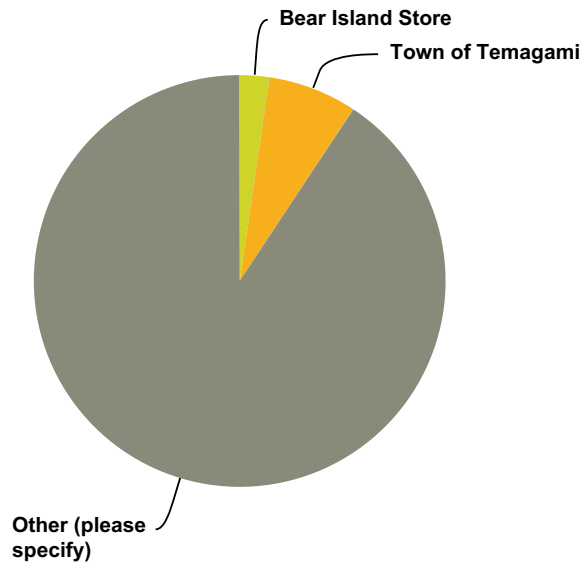
Answered: 41 Skipped: 13



| Answer Choices | Responses |
|----------------------|-----------|
| Less than 100 litres | 19.51% 8 |
| 100-250 litres | 12.20% 5 |
| 251-500 litres | 17.07% 7 |
| More than 500 litres | 51.22% 21 |
| Total | 41 |

Q19 Where do you purchase the majority of your gas for your boat(s) ?

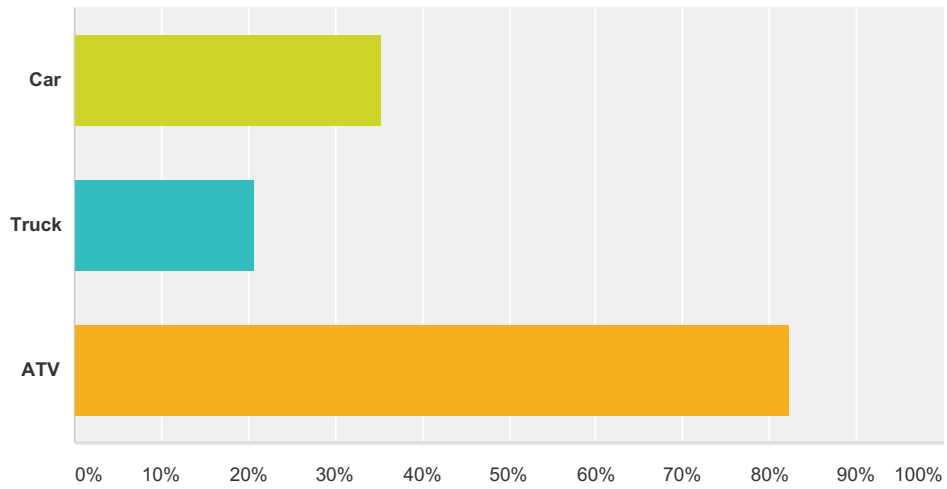
Answered: 43 Skipped: 11



| Answer Choices | Responses | |
|-------------------------------|-----------|-----------|
| Bear Island Store | 2.33% | 1 |
| Temagami Access Road location | 0.00% | 0 |
| Town of Temagami | 6.98% | 3 |
| Other (please specify) | 90.70% | 39 |
| Total | | 43 |

Q20 Do you keep any of the following types of vehicles on Bear Island (for use on-island only)

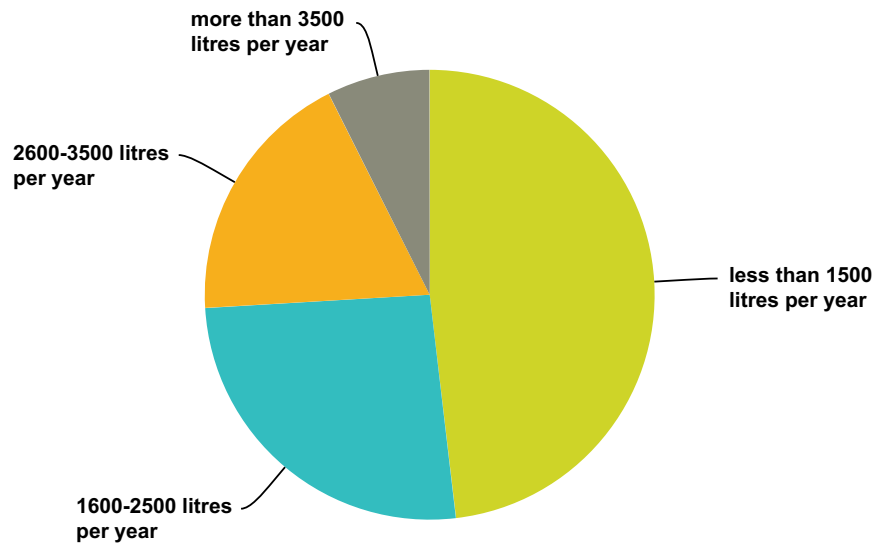
Answered: 34 Skipped: 20



| Answer Choices | Responses |
|------------------------------|-----------|
| Car | 35.29% 12 |
| Truck | 20.59% 7 |
| ATV | 82.35% 28 |
| Total Respondents: 34 | |

Q21 Estimate your average yearly gas purchases for your car

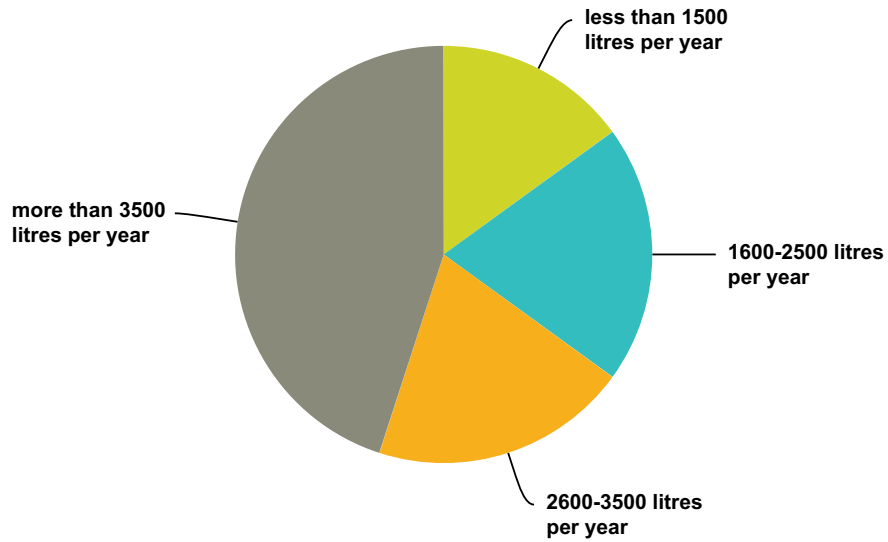
Answered: 27 Skipped: 27



| Answer Choices | Responses | |
|--------------------------------|-----------|-----------|
| less than 1500 litres per year | 48.15% | 13 |
| 1600-2500 litres per year | 25.93% | 7 |
| 2600-3500 litres per year | 18.52% | 5 |
| more than 3500 litres per year | 7.41% | 2 |
| Total | | 27 |

Q22 Estimate your average yearly gas purchases for your truck

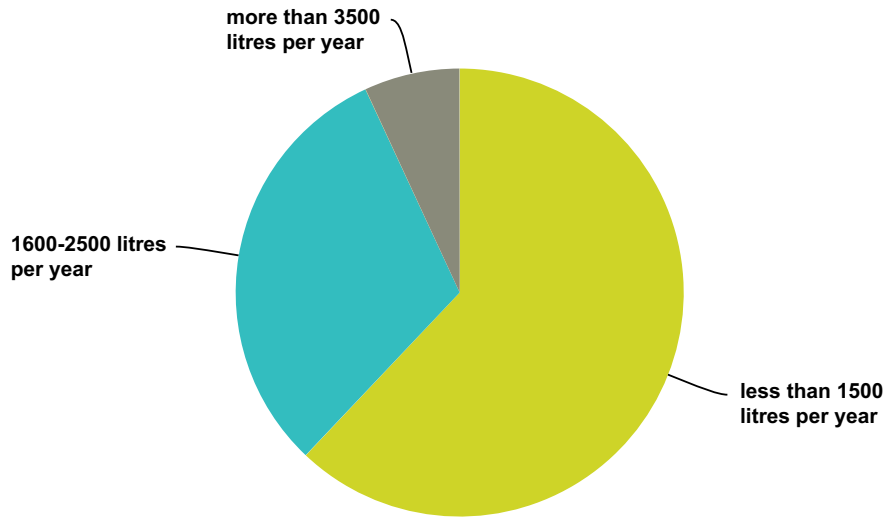
Answered: 20 Skipped: 34



| Answer Choices | Responses | |
|--------------------------------|-----------|-----------|
| less than 1500 litres per year | 15.00% | 3 |
| 1600-2500 litres per year | 20.00% | 4 |
| 2600-3500 litres per year | 20.00% | 4 |
| more than 3500 litres per year | 45.00% | 9 |
| Total | | 20 |

Q23 Estimate your average yearly gas purchases for your ATV

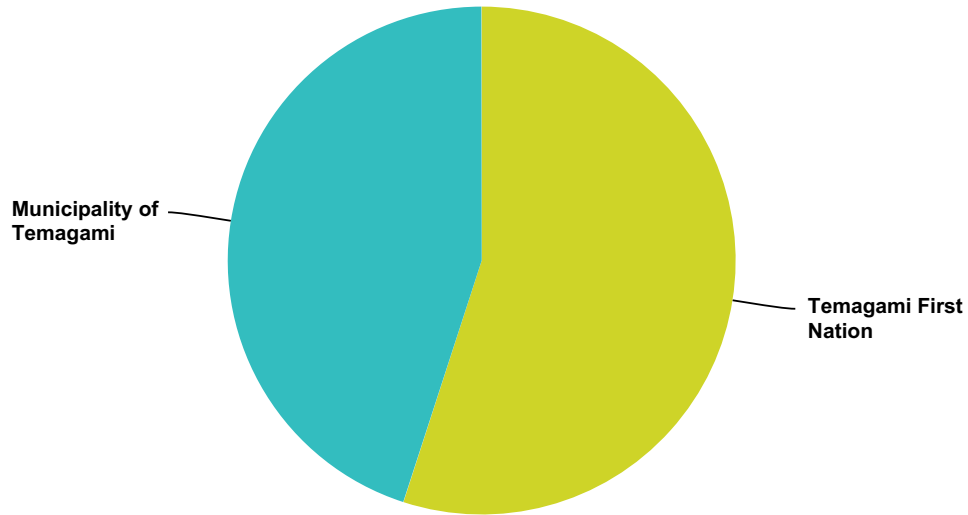
Answered: 29 Skipped: 25



| Answer Choices | Responses | |
|--------------------------------|-----------|-----------|
| less than 1500 litres per year | 62.07% | 18 |
| 1600-2500 litres per year | 31.03% | 9 |
| 2600-3500 litres per year | 0.00% | 0 |
| more than 3500 litres per year | 6.90% | 2 |
| Total | | 29 |

Q24 If you keep a vehicle or more than one vehicle at the Lake Temagami Access Road landing please indicate which parking area(s) you use

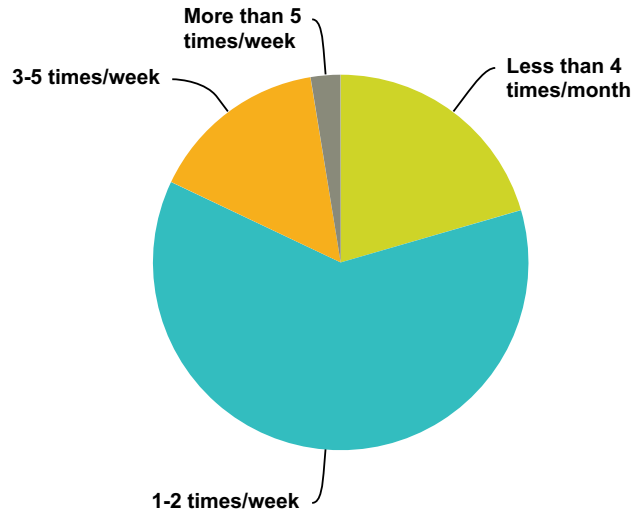
Answered: 40 Skipped: 14



| Answer Choices | Responses | |
|--------------------------|-----------|-----------|
| Temagami First Nation | 55.00% | 22 |
| Municipality of Temagami | 45.00% | 18 |
| Total | | 40 |

Q25 If you keep a vehicle at the Lake Temagami Access Road landing, how often do you use it (for all purposes)?

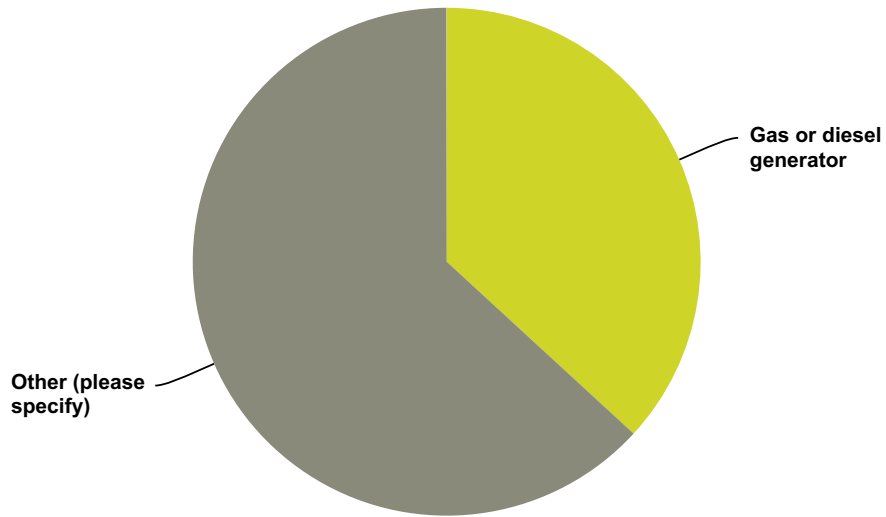
Answered: 39 Skipped: 15



| Answer Choices | Responses | |
|-------------------------|-----------|-----------|
| Less than 4 times/month | 20.51% | 8 |
| 1-2 times/week | 61.54% | 24 |
| 3-5 times/week | 15.38% | 6 |
| More than 5 times/week | 2.56% | 1 |
| Total | | 39 |

Q26 Do you use any other sources of electricity?

Answered: 19 Skipped: 35



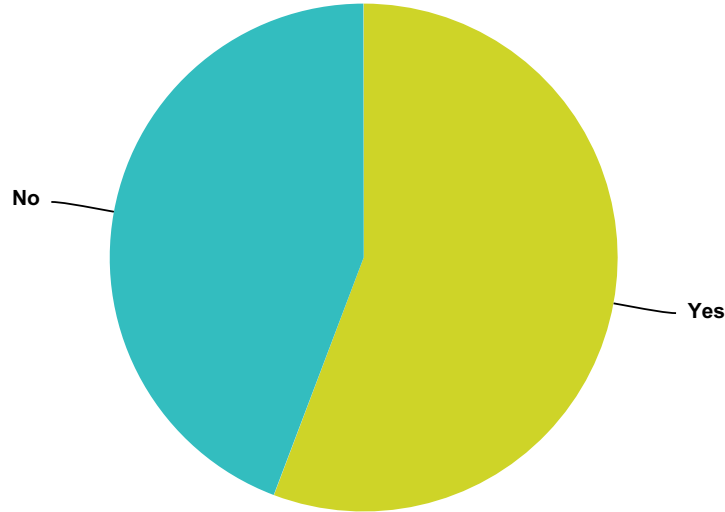
| Answer Choices | Responses | |
|-------------------------|-----------|-----------|
| Gas or diesel generator | 36.84% | 7 |
| Solar panels | 0.00% | 0 |
| Wind turbine | 0.00% | 0 |
| Other (please specify) | 63.16% | 12 |
| Total | | 19 |

Q27 Do you expect your energy consumption to change in the future (for instance, are you planning to start a business that might change your use, or are you planning on changing your heating system?)

Answered: 31 Skipped: 23

Q28 Would you be interested in having a home inspection done to identify ways to improve the energy efficiency of your house?

Answered: 52 Skipped: 2



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 55.77% | 29 |
| No | 44.23% | 23 |
| Total | | 52 |