

## Standing Technical Committee Meeting #1 – Status of Action Items

Complete action items are attached.

### Action Items

ACTION ITEMS	STATUS
1. <b>Samantha Petticrew</b> to forward load profile for FO6 (and any other years that data exists) to the STC.	Complete
2. <b>Mahta Boozari</b> to check the age of equipment and conductors for the section between Masset and Port Clements.	Complete
3. <b>Mahta Boozari</b> to check that O'Brien's pole plant has soft starts on their motors.	Complete
4. <b>Alex Lam</b> to check into the availability of wind data for Haida Gwaii – in particular studies done for Mount Poole and Sandspit. Also to check into availability of wind data from Masset wind turbine and possibly a study for Tlell.	Complete
5. <b>Alex Lam</b> to investigate if there have been any co-generation studies done by BC Hydro for the islands.	Complete
6. <b>Samantha Petticrew</b> to provide population forecasts by community and by grid.	Complete
7. <b>Jacques Morin</b> to investigate providing a copy of his CityGreen report to the STC.	Complete
8. <b>Mike Rosten</b> to provide web link to Vera Tech information booklet.	Complete
9. <b>Innes Hood / Samantha Petticrew</b> to draft letter to BCH/BCUC re: Net Metering/Standing Offer	Complete
10. <b>Daryl Collerman-Russ</b> to provide details on landfills (including age, tonnes per year added to the landfill, and expected closure dates).	Complete
11. <b>Alex Lam</b> to track down study done by Nova Corporation and BC Hydro in the early 1980s.	Complete
12. <b>Gerry Johnson</b> and <b>Greg Wiggins</b> to help determine resource potential (back of envelope calculation based on amounts of roadside waste available).	In progress

**ACTION ITEM RESPONSES**

See attached pages for items 1, 6 and 7.

**2.** Mahta Boozari to check the age of equipment and conductors for the section between Masset and Port Clements.

Response:

The 3-phase line from Masset to Port Clements was built in 1978. Field operations are not aware of any reused conductors in Masset.

**3.** Mahta Boozari to check that O'Brien's pole plant has soft starts on their motors.

Response:

Mahta has asked the field manager to check with the pole yard. It will take couple of weeks till they do field check and get back to her.

**4.** Alex Lam to check into the availability of wind data for Haida Gwaii – in particular studies done for Mount Poole and Sandspit. Also to check into availability of wind data from Masset wind turbine and possibly a study for Tlell.

Response:

Alex cannot find any wind data in BC Hydro records. The Masset wind turbine was installed in the 70s, to Alex's knowledge there were no wind study in the formal way. It was just a project to test out the wind energy option only.

**5.** Alex Lam to investigate if there have been any co-generation studies done by BC Hydro for the islands.

Response:

Co-generation was suggested by few IPPs, only QCPC hydro plant materialized and supplies power to BC Hydro. Alex believes there is no coordinated detail study done for QCI by each IPP.

**8.** Mike Rosten to provide web link to Vera Tech information booklet.

Response:

Vera Tech website unavailable at this time. Web address

**9.** Innes Hood / Samantha Petticrew to draft letter to BCH/BCUC re: Net Metering/Standing Offer.

Response:

Innes discussed this item with Jacques Morin and it was decided not to pursue.

**10.** Daryl Collerman-Russ to provide details on landfills (including age, tonnes per year added to the landfill, and expected closure dates).

Response:

Daryl provided the following information:

- Established 1996. Located 19 km north of Port Clements.
- Estimated fill rate: 4,000 m<sup>3</sup>/year
- Landfill Capacity: 119,365 tonnes (249,420 m<sup>3</sup>)
- Fill-to-date (May 2007): 33,000 tonnes (66,000 m<sup>3</sup>)
- There has been a 25% reduction in waste going to landfill over the past two year due to recycling (primarily milk jugs and #2 plastics).
- Large appliances stored in landfill (e.g. fridges etc)

**11.** Alex Lam to track down study done by Nova Corporation and BC Hydro in the early 1980s.

Response:

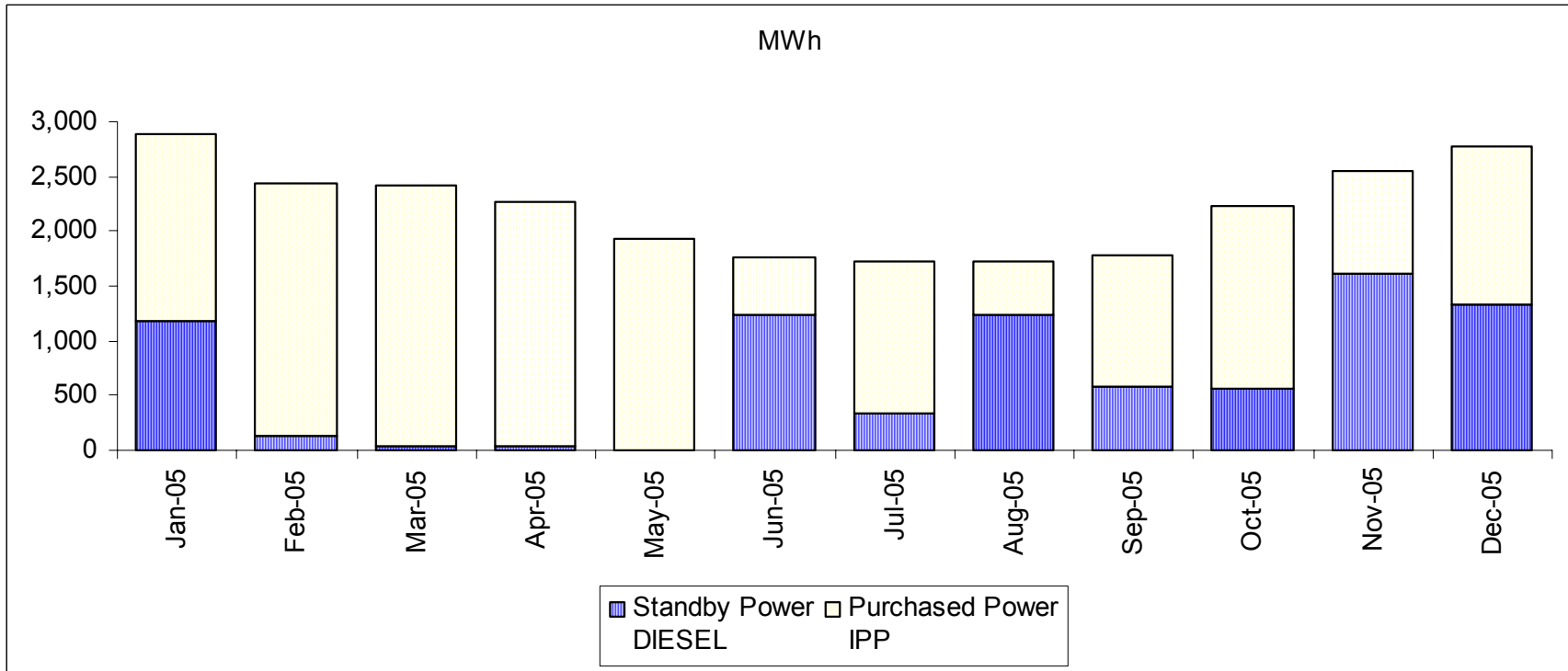
Nova Power Report most likely was funded by the Federal Government, BC Hydro does not have a copy.

**Interesting Websites:**

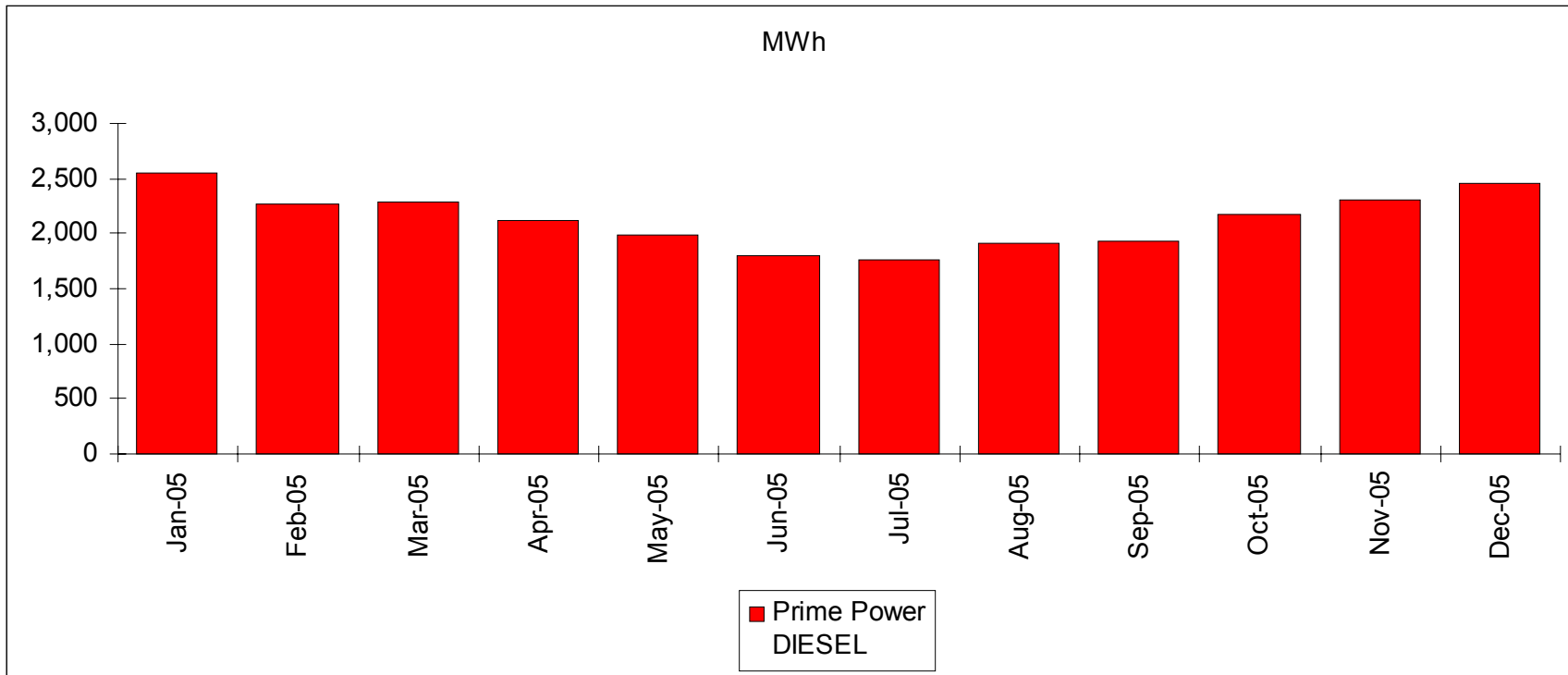
- Windmill (or solar) powered streetlights:  
[www.panasonic.ca/english/alternative/hybrid/index.asp](http://www.panasonic.ca/english/alternative/hybrid/index.asp)
- Tidal energy websites:
  - <http://oceanenergycouncil.com/faqcurrent.html>
  - <http://www.bluenergy.com/>
  - <http://www.tidalpowerenergy.ca/>
  - <http://oreg.ca/members.html>
  - <http://verdantpower.com/>
  - [http://www.electricaline.com/images/mag\\_archive/18.pdf](http://www.electricaline.com/images/mag_archive/18.pdf)
  - <http://www.rjbaker.com/Tidal%20Electric/index.htm>
- Waste to Bio-Oil Conversion:
  - <http://www.changingworldtech.com/index.asp>
  - <http://www.dynamotive.com/>
- Gasification Processes: <http://www.alternrg.ca/index.html>

### STC Meeting #1 – Action Item 1

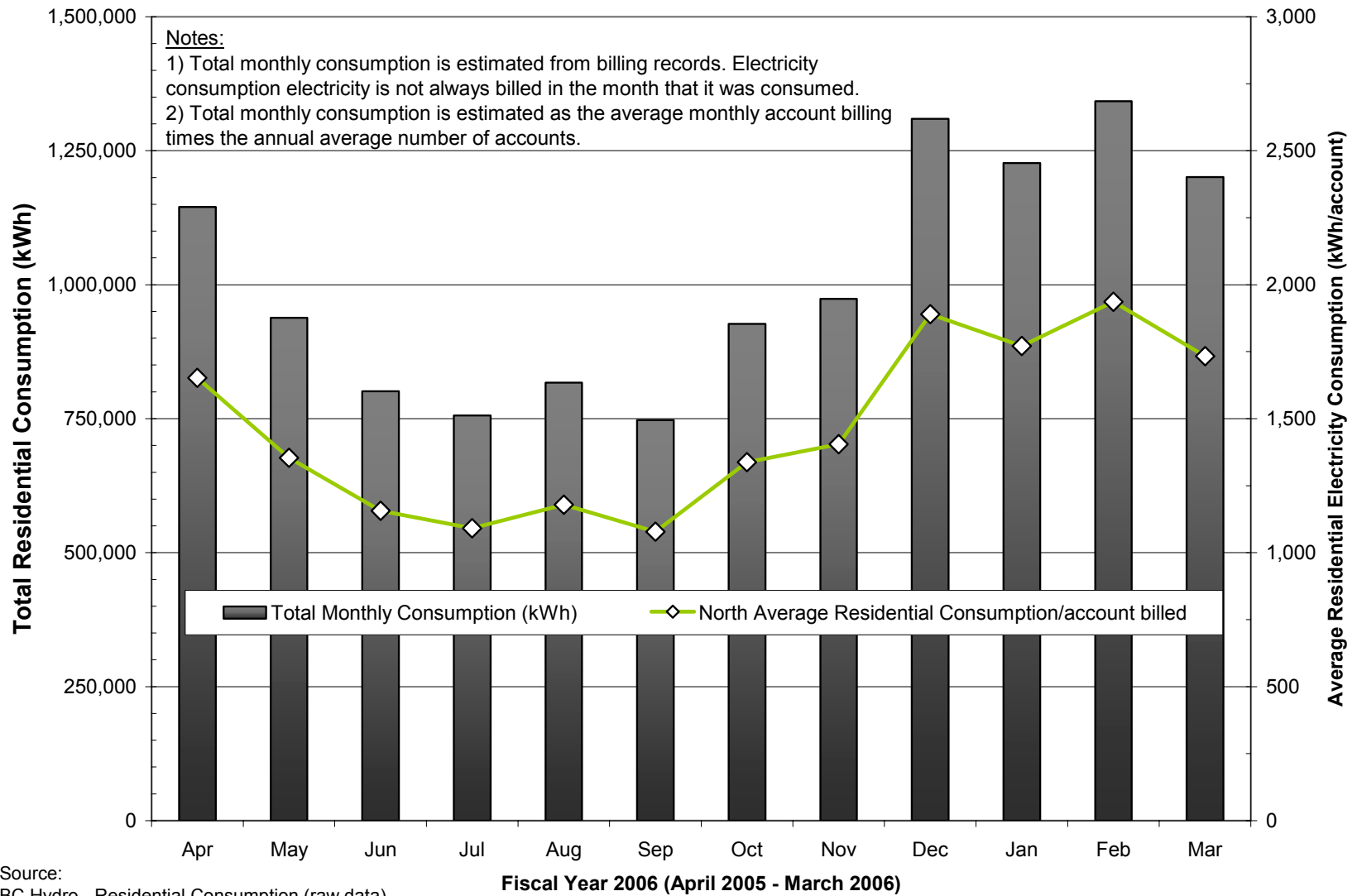
### Sandspit DGS – Energy Generated for 12 Months ending December 2005



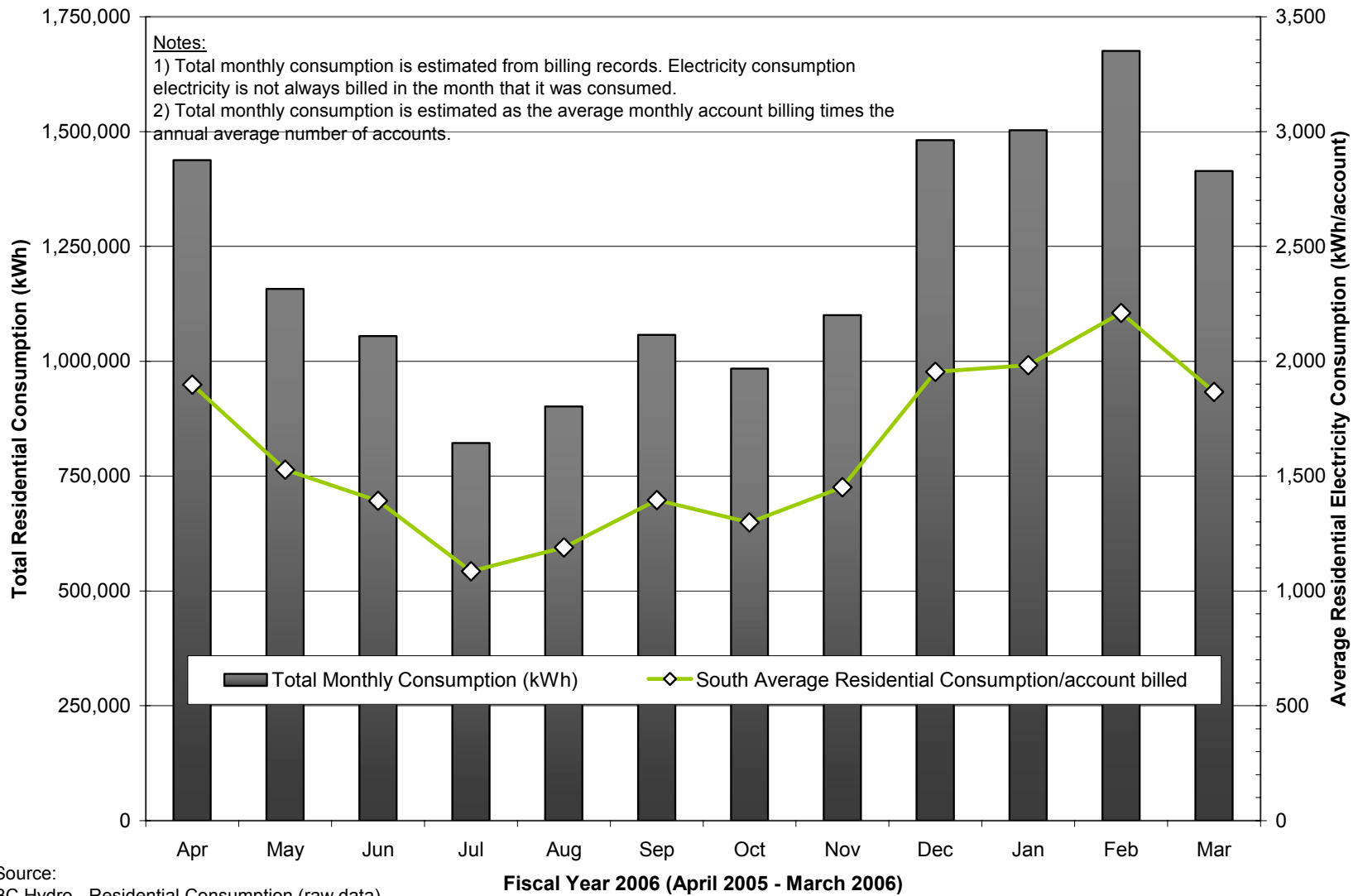
### Masset – Energy Generated for the 12 Months Ending December 2005



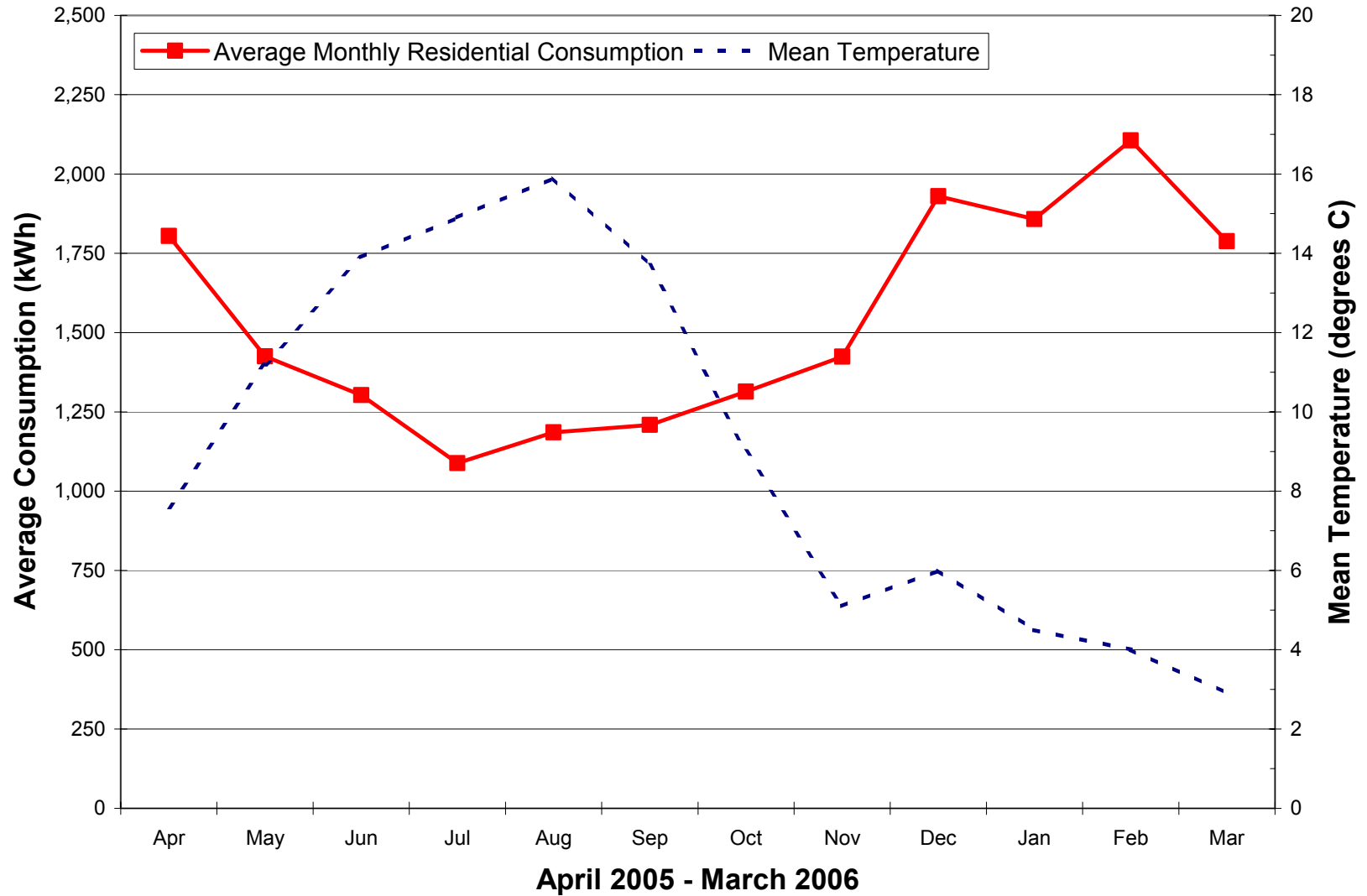
### Haida Gwaii Residential Consumption – Northern Distribution System



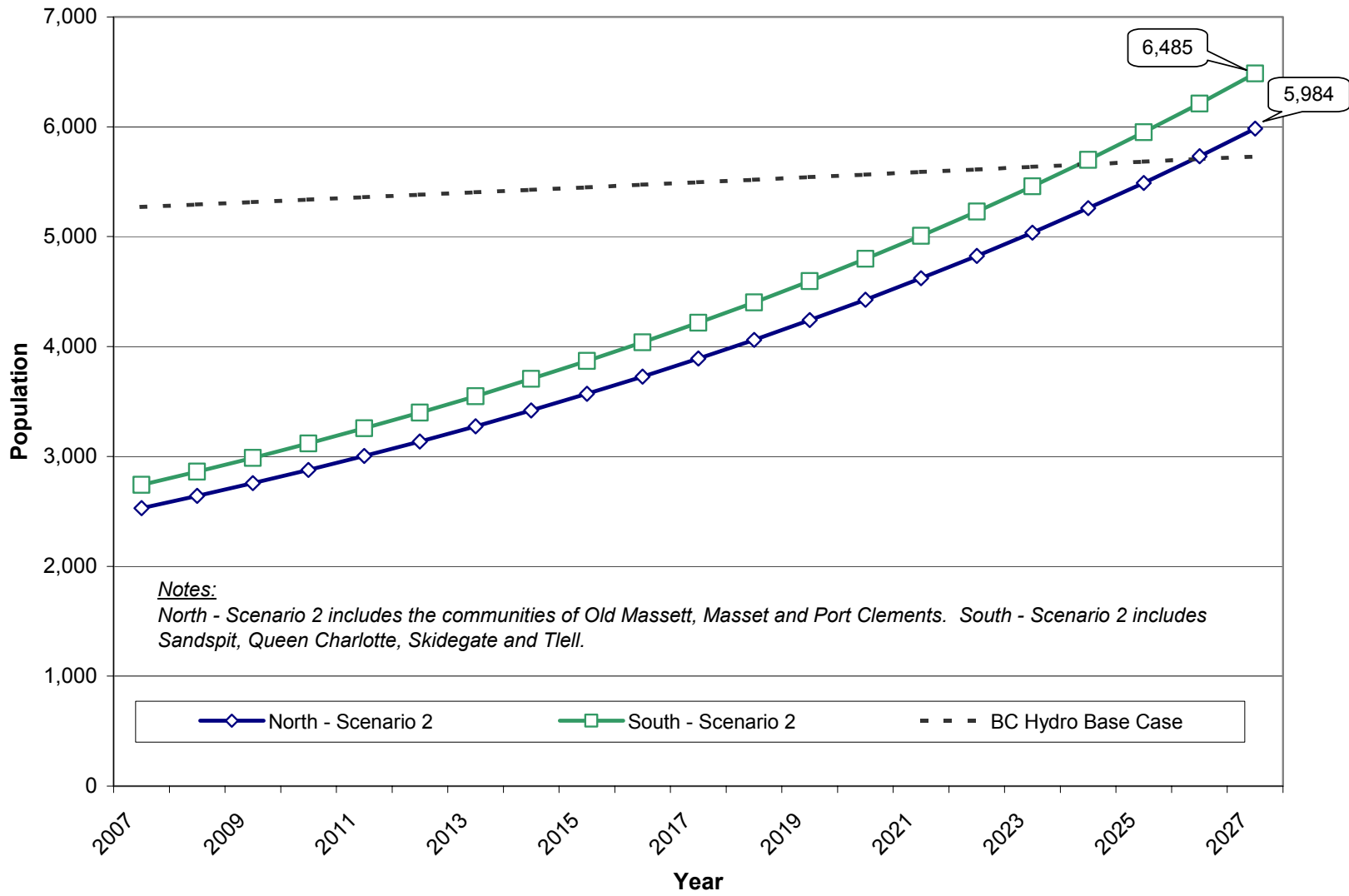
### Haida Gwaii Residential Consumption – Southern Distribution System



### Average Residential Consumption



## Scenario 2 – Population Growth by Grid



## Energy Savings Plan Analysis For Haida Gwaii (2006-07)

Prepared by: *Energy Quest Services*  
*Jacques Morin (certified energy evaluator)*  
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### 1) *Brief Overview of local marketing*

- Observer (three weeks half page and story providing overview and success of the ESP program.) [Check with Peter on this](#)
- Distribution of the ESP program through the Queen Charlotte Villages utility bill
- Distribution of the ESP program in the Haida Nation's quarterly news "Haida Laas"
- Presentation of the ESP program to the Skidegate Band Council and to administrators of all other villages of the Islands
- Presentation of the ESP program during the Sierra Club Energy Film Festival
- BC Hydro did provide the ESP program description during their Power Smart program initiative in each communities

### 2) **Summary of ESP program**

#### *A) Scope of recommendations made in EGH report; type of upgrades completed*

- Air leakages were in average predominantly one of the main inefficiency for pre 80's homes. Some of the most leaky areas usually found in the building envelope were around poorly framed new additions; attic hatch ; wooden doors and sliding glass doors; and poorly sealed vents, stove pipes or drainages. Many homes managed to reduce their air leakages by over 30%.
- A great percentages of the homes assessed had ventilated crawl space with no slabs . In many instances, the floor above crawl space or walls in the crawl space had less than recommended insulation or no insulation, allowing substantial air infiltration through the envelope.  
For the most part the ground in the crawl space had either no vapour barrier or the poly was inadequately installed, therefore potentially increasing moisture in the envelope of the building. Many of those homes did add or increase the insulation and fixed their vapour barrier, providing them with substantial grants.

In general insulation in crawl spaces and attics were below BC building code. Upgrading these areas was followed through by most clients, providing them with substantial pay back in energy efficiency and grant opportunities.

- Most of the homes evaluated in Haida Gwaii had very inefficient/old Space heating appliances. Wood and oil heat were the most common space heating systems found. Ducting was often found not insulated in crawl spaces, reducing drastically the efficiency of the system. Upgrades on heating systems were often recommended. Six high efficient wood stoves and four heat pumps managed to be retrofitted during the program.

### **3) Recommendations made by EGH but not acted upon by homeowners**

- All military housing assessed had oil furnace over thirty years old and foundation walls were not insulated. Due to the shortage of the program and the lack of heating contractors on Islands, most furnaces were not replaced and few managed to insulate their basement walls.
- Most first nations homes assessed (13) during the program were built after 1985 and built to code. However, these homes had very little mechanised ventilation despite their low ACH, and most of them had combustion appliances and smoked. HRV and fans were suggested in their reports. Unfortunately the housing coordinator quit her job early in the program, which delayed contractors to perform any retrofits before the program deadlines. Only one of them managed to finish on time. Cost of upgrades with no incentives provided may have contributed to this!
- Many of the buildings had leaky windows and single pane windows but could not be changed due to program timeframe - Takes over six to eight weeks in average to receive any ordered windows-.
- Bathroom fans and range hood fans were often absent or non functional. Explaining to home owners structural and health importance of these fans to be present and used was very frequent in my home assessments. Very few did manage to deal with this within the timeframe of the program; one of the reason's being that their was no grant attached to this upgrade!
- Water jackets for hot water tanks were missing in many homes and few followed through to the recommendations. Lack of incentives may be the reasons for these home owners not to follow through!

#### *Reasons for home owners not acting upon recommendations*

- Two to three months before getting products over on Islands such as windows, reducing the availability to retrofit within the timeframe.
- Few trades available to provide services; many home owners ended up doing the job themselves. This means that only homeowners with skills and time could benefit from the program.
- Housing coordinator from Skidegate Band Office quit her job

- Program available only during the winter, therefore reducing changes for type of retrofit (ex: exterior retrofit such as windows, walls, roof, etc)
- Limited timeframe for the program; did not allow sufficient time for other homeowner to see the benefit of the program. (\$\$ and energy audit)
- Only one fully licenced heating contractor on Island and another heating contractor starting to provide heat pumps (only split systems so far). One contractor from Prince Rupert managed to come for an installation on Islands.
- Local suppliers and retailers are slow to change to energy efficient components. Programs and other energy efficiency grants such as “Home Power Smart” “Energy Star” and NRCAN were not familiar by most retailers. Takes time for them to make appropriate changes.
- Difficult from home owners to prioritize their upgrades and to follow through when grant amounts are not very clear within HOT 2XP.\reports; Or grants not available for specific upgrades (fans; hot water tank; water jacket; humidistat; etc)
- Very few trades’ people doing the work on Islands. There are only two electricians, one plumber and 1.5 heating contractor; and no building inspectors on Islands!
- Mild climates found in our region may be a big reason for home owners to procrastinate when it comes to energy efficiency and retrofit.
- Huge subsidies of our energy supply have deterred many homeowners not to act adequately to energy retrofit.

#### **4) Overview of local housing quality and condition**

- The local housing industry on Islands has weaknesses. Most by-laws found in some communities are not enforced due to a lack of building inspectors on Islands. Port Clements , Queen Charlotte ,Sandspit and rural areas are such communities
- To date, only one local retired, part time building inspector is providing services to the village of Masset and two other contractors coming from off-Islands provides a service for the village of Skidegate and Old Masset.
- Some communities such as Queen Charlotte and Sandspit have yet an OCP that is legislated and enforced, providing home owners to build at their own leisure.
- Very few by-laws are found in OCP’s when it comes to energy efficiency for homes and other buildings. This has created within the local housing industry very low standards.
- Moisture and mould growth has been an important issue for first nation’s communities. This problem has been found for most post-80’s homes, where natural ACH was substantially decreased and inadequate mechanised ventilation. It was found also in other communities but again no as much as a large scale issue.
- First Nation’s communities housing sector seems to have important limitations when it comes to provide affordable healthy and efficient houses to their people. Budget allocation per households seems to be one limitation; but

other factors such as having an efficient “housing coordinator” and Band Council may also play an important role to the long term quality and conditions of first nation’s homes

- Lack of competition between heating and building contractors may bring to the overall local building industry lower quality levels when it comes to provide new state-of-the-art building practices.
- Most of the new houses built in the last fifteen to twenty years have been in First Nation’s communities. Despite important mould issues found in these homes, lot of money has been invested from the NRCAN to remediate this issue. Therefore, the best overall local quality and condition of homes is best found in the both local reserves (village of Skidegate and Old Masset), where most other communities have had poor quality construction practices

#### **5) .Brief analysis of most cost effective measures for future program**

- Many gas heating systems found in homes are over twenty years old and have not been serviced for a long time, reducing the efficiency and overall health of the occupants. There are huge opportunities in this sector to reduce local energy consumption.
- Education program on energy efficiency to home owner, building contractors and suppliers could provide significant benefits to communities in reducing their overall energy consumption.
- Providing resources on energy efficiency measures and appliances to building suppliers and contractors would help speed up the transition towards reducing overall energy consumptions.
- Providing support to home owners on low cost measures such as water jackets for hot water systems, digital thermostat, low flow shower heads, would help reduce significantly our overall energy consumption
- Most homes have appliances over 10 years of age; initiatives such as “Power Smart Program” would be effective measures
- Insulating crawl spaces and attics can be an effective measure in reducing energy.
- In many homes air leakages were found around older patio doors and older windows; some initiatives in this area would help reducing heat loss.
- Most military housing units in Masset has very old oil furnaces and basement wall and headers not insulated. This would be a good idea to target these homes
- There are big advantages and opportunities to work more with first nation’s housing department (new and existing houses) as most of the construction on Islands is occurring in these two communities (Skidegate and Masset).