

Project Specification

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Project:	BC Hydro Conservation Potential Review 2004: Residential & Commercial Capacity Reduction Study	
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BC Hydro Conservation Potential Review 2004 Residential & Commercial Capacity Reduction Study

1.0 Background

BC Hydro is seeking consultants to perform a study of the potential for capacity reduction in its residential and commercial sectors. The corporation is considering major new initiatives in its demand-side management program, Power Smart, and wishes to ensure that it has comprehensive and reliable estimates of the potential reduction of electricity capacity requirements.

Consultants are referred to the following documents, which may be obtained from BC Hydro.

- *BC Hydro Conservation Potential Review 2002: Summary Report*
- *BC Hydro Conservation Potential Review 2002: Commercial Sector Report*
- *BC Hydro Conservation Potential Review 2002: Residential Sector Report*
- *Vancouver Island Assessment of Possible Residential and Commercial Time-of-Use, Conservation, and Interruptible Programs.*
- *BC Hydro Load Forecast, October 2004*

2.0 Objective

Identify and estimate the potential of demand-side management options impacting BC Hydro's peak capacity requirements in fiscal 2011 and 2016 for four geographic areas (Vancouver Island, Lower Mainland, South Interior, and Northern) for the residential and commercial customer sectors.

3.0 Study Approach – Overview

Consultants are asked to provide figures for the residential and commercial sectors to reduce capacity requirements at peak times in each of the four geographic areas and in total for BC Hydro's integrated system.

The study is to include options that are viable today, and options that are expected to be viable by 2015. Estimated costs for each option are to be provided, but no economic analysis is required.

The study is to include technological savings, but no program design or costing is required. The base year for the study is BC Hydro's fiscal 2003/04. The study years are 2010/11 and 2015/16.

Results within the two study years are to be presented monthly.

Potentials are to be estimated separately for the residential and commercial sectors. All assumptions and data used in the studies are to be clearly documented in the final reports.

4.0 Acceptable Scope of Bids

Consultants' proposals must include both the residential and commercial study sectors. It is not acceptable to bid on this study for only one sector.

5.0 Study Approach – Detailed

5.1 Unconstrained Technological Potential

Unconstrained technological potential is defined as the savings in electrical capacity requirements at BC Hydro's peak, if existing technologies are totally implemented (100% penetration) with the most efficient technically viable options expected to be market ready by 2010, and 2015. Behavioral practices are assumed to be unchanged. Fuel substitution and self-generation are not to be included.

5.1.1 Residential sector

Capacity reduction potential is to be provided for BC Hydro's service area based on BC residential housing stock dis-aggregated by region, by housing type, and by electric and non-electric space heating. This is to be based on BC Hydro's customer information, housing statistics and growth forecasts. Housing types include single family/duplex, low-rise apartments, high-rise apartments, and mobile/other.

5.1.2 Commercial sector

Capacity reduction potential is to be estimated for commercial floor space area in BC Hydro's service area, broken down by region into the following categories as used in the CPR 2002: Large Office, Medium Office, Large Non-food Retail, Medium Non-food Retail, Food Retail, Large Hotel, Medium Hotel/Motel, Hospital, Nursing Home, Large School, Medium School, Universities and Colleges, Restaurant/Tavern, Warehouse/Wholesale, Mixed Use, Small Commercial, Other Commercial Buildings, and Non-Buildings.

5.2 Relationship to CPR 2002 Results

The CPR 2002 looked at potential energy savings in BC Hydro's service area and from this, calculated the resulting capacity savings. In this new study, consultants are to consider potential capacity savings for actions specifically aimed at capacity reduction. These capacity reductions would be in addition to those calculated in the CPR 2002, which resulted from actions specifically aimed at electricity conservation.

5.3 Impact on Energy Use

Some actions taken for capacity reduction will also impact energy use either as an increase or decrease. The consultant is to estimate and tabulate these impacts by sector, building type and region.

6.0 Data & Assumptions Provided to Consultants

Assumptions used in the CPR 2002 are expected to be used in this study unless there is good reason to vary them. All changes and additions to assumptions and data are to be clearly documented and contained in all final reports.

The following will be provided to the consultants by BC Hydro staff: monthly peaks by region and building type; assumptions concerning economic and demographic activity in the sectors (residential and commercial); electricity service levels and activity; and typical weekday load shape for each month for each building type.