



# NEW CONSTRUCTION PROGRAM

CONSULTANT ORIENTATION MANUAL  
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NEW  
CONSTRUCTION  
PROGRAM

BChydro   
powersmart

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## INTRODUCTION

The purpose of the BC Hydro New Construction Program (NCP) is to create demand and increase the production of new high performance and energy efficient commercial, institutional and multi unit residential buildings in BC. A key Program's objective is to encourage the mainstream design and development industry to adopt integrated design process and building performance modeling as standard practices, and as a result, create higher performing and more energy efficient buildings at lower cost.

The program encourages developers and their design teams to adopt green and energy efficient design as an objective early in the design process and provides a range of tools and financial assistance to overcome financial barriers that might be associated with designing and constructing the energy efficient high performance building.

The New Construction Program has several different components:

- **WHOLE BUILDING DESIGN**

- Model building as a complete and integrated system
- Optimizes performance and energy consumption

- **SYSTEM DESIGN**

- Focus on specific systems where detailed energy modeling is not cost-effective
- Explores opportunities for a system(s) that has not been designed/defined yet in the project and there are opportunities for savings.

- **ENERGY EFFICIENT LIGHTING DESIGN**

- Design lighting layout to maximize efficiency
- Exceed the current standards by implementing high efficiency lighting technologies

## PURPOSE OF THIS MANUAL

This manual has been prepared to serve as a guidebook or reference point for consultants participating in the New Construction Program. Specifically, this manual meets the following objectives:

1. Orient consultants on the overall program concept, objectives, and approach.
2. Show consultants how to apply for pre-qualification.
3. Identify the required program process and deliverables.

## **NEW CONSTRUCTION PROGRAM: BC HYDRO CONTACTS**

To obtain further information on the program:

- Contact your BC Hydro Key Account Manager
- Call **604.522.4713** in the Lower Mainland or **1.866.522.4713** elsewhere in BC
- or visit **[bchydro.com/construction](http://bchydro.com/construction)**



**PART A**  
**WHOLE  
BUILDING  
DESIGN  
(WBD)**



# 1 INTRODUCTION

Through the Program, design teams will incorporate life cycle costing principles, which account for ongoing energy and maintenance costs when evaluating and choosing components and systems. The best context in which to make these decisions is through an integrated design process and by using energy modeling software as a design tools in earliest design stage. To this end, BC Hydro will co-fund the cost to conduct energy modeling studies that include the life cycle costing of various proposed design alternatives, and which will form the business case for inclusion (or exclusion) of those alternatives. Once the building design has been determined, cost effective electricity savings measures may be eligible for capital incentives to reduce the payback period.

## 2 ELIGIBILITY

### 2.1 PROJECT ELIGIBILITY

The following conditions must be met in order for the building to be eligible for this program offer:

- New Construction or Major Building Renovations<sup>1</sup>.
- Potential annual electrical energy savings of at least 50,000 kWh/yr.
- Located in the BC Hydro service territory, including New Westminster
- In conceptual/early design process.

### 2.2 CONSULTANT QUALIFICATION REQUIREMENTS

#### 2.1.1 LEAD CONSULTANT

All New Construction Program (NCP) lead consultants must be pre-qualified. A NCP lead consultant role is to coordinate NCP project's deliverables such as Energy Study Proposal and Energy Study Report. A lead consultant is usually a mechanical consultant in charge of building design, but can be also an architect, modeling consultant, and a consultant that acts as a project manager on behalf of client.

In order to qualify as a lead consultant, a company must:

- Be a Power Smart Alliance Member. This requires \$2M in liability, Worksafe BC and references for proven track record (Call 604.522.4713 in the Lower Mainland or 1.866.522.4713 elsewhere in BC to join)
- Complete the Lead Consultant Application Form as shown in the Appendix G, and receive BC Hydro approval.

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<sup>1</sup> Major Building Renovations: Defined as one of the following for which requires a building permits and certified buildings plans by a licensed professional.

- Change of use and reconstruction of an existing building space or space within; or
- Change Construction work of a nature requiring the building or space within to be out of service for at least 30 consecutive days; or
- The renovations are worth at least 50% of the existing building's value and impact the building envelope.

## 2.1.1 APPROVED MODELLER

A modeling (or mechanical engineering) consultant company must demonstrate that the modeller designated to perform energy modeling work has the appropriate training and experience. Approved modeller's company does not need to be a Power Smart Alliance Member.

The consulting company must submit to BC Hydro Power Smart Engineering department the following documents:

- Brief modeller's CV with his/her overall technical and building performance modeling experience.
- Brief (2-3 pages) summary that outlines 3 recent building performance modeling projects he/she has worked on. The project description shall include modeling scope and utilized modeling methodology / software.

Note: An approved modeller must review/supervise all modeling work prepared by a non-approved modeller. If approved modeller is not a Professional Engineer (P.Eng.), the modeling report must be read and signed by P.Eng. in charge for building design.

## 3 INCENTIVES

### 3.1 STUDY INCENTIVE

The study incentive will co-fund the cost of completing the required energy study. BC Hydro pre-approves the cost of the Energy Study based on the project scope as provided through the **Energy Study Proposal**.

The 50% of study incentive will be paid upon BC Hydro approval of the energy study. Customer must provide to BC Hydro a copy of valid building permit and copies of paid modeling invoices to consultants involved in the study.

An additional 50% of study incentive will be paid to building owner after BC Hydro verify that Energy Conservation Measures (ECMs), that provide more than 50% of approved electrical energy savings, have been installed.

### 3.2 CAPITAL INCENTIVE

A tiered capital incentive will be offered (for eligible projects) to reduce the incremental cost of the measure, or bundle of measures, if any, to reduce the payback to no less than 2 years. Incentives can be calculated as follows:

*Lesser amount of the total electrical energy savings over the life of the measures (to a 10 year maximum) x ~3.07 ¢/kWh (tiered rate)<sup>2</sup>, or amount required to reduce the payback to 2 years.*

A life cycle cost (LCC) analysis spreadsheet will be provided to assist with the economic calculations. Once the study is completed, any combination of measures may be included in the bundle.

Only measure bundles with electrical savings greater than 50,000 kWh will be eligible for capital incentives.

Completion of a study is not a guarantee of capital incentives. All capital incentives are subject to program funding and BC Hydro's internal cost effectiveness tests, and are solely at the discretion of BC Hydro.

100% of the capital incentive will be paid upon completion of the project site inspection.

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<sup>2</sup> Minimum incentive rate for whole building design that saves up to 20% of annual electrical energy over the approved baseline. The highest tier of 6.7 cents/kWh will be used for designs that save more than 50% of annual electrical energy over the baseline.

## 4 ENERGY STUDY

The purpose of the Whole Building Design Energy Study (WBDES) is to promote integrated design practises early in the design process and identify feasible, cost effective energy conservation measures. The study is also used to calculate the level of capital incentives that BC Hydro may offer (for qualifying projects) to reduce the incremental cost of the more energy efficient systems and technologies.

The WBDES does not necessarily need to look at new technologies or more expensive systems. It is quite possible that the study will show energy savings at lower capital cost, using only better design practises, or alternative systems. A WBDES should be comprehensive and occur early in the design.

WBDES is the primary type of study being encouraged under the New Construction Program, and all projects should attempt to participate in this manner if possible.

It must be performed using a 8,760 hour whole building computer simulation (list of approved simulation programs is provided in Appendix A).

### 4.1 PROJECT BASELINE

The project baseline must be agreed with BC Hydro. The baseline is the benchmark of standard practice that BC Hydro will measure the energy savings for a project against.

- Applicable Legislation – Any applicable building code energy requirements
  - ASHRAE 90.1 2007 for City of Vancouver municipality
  - ASHRAE 90.1 2004 for the rest of Province
  - Any other applicable legislation or By Law for the project
- BC Hydro's New Construction Baseline Table for HVAC Systems (Appendix E)
- Special Cases to be reviewed by BC Hydro

The baseline HVAC Systems will default to BC Hydro's Baseline Table (see Appendix E of this manual), which references (with some exceptions) ASHRAE 90.1, Appendix G performance method rating requirements.

Energy performance guidelines or building labelling targets (such as LEED) unless required by current legislation (Code or By Law) are considered voluntary guidelines to be followed and would not affect BC Hydro's approved project baseline.

## 5 PROGRAM PROCESS

### Step 1: Design Team Kick-Off Meeting

It is essential for the success of the study to have a design team kick-off meeting with client, key design team and BC Hydro NCP representatives to ensure a good understanding of program's requirements and smooth program's deliverables. This step is highly recommended before submittal of energy modeling study proposal to BC Hydro.

### Step 2: Application and Energy Study Proposal

If project meets program requirements, Customer must complete and submit a complete application along with an energy study proposal to BC Hydro Key Account Manager.

The purpose of the energy study proposal is to communicate to BC Hydro the project details, including design team to be involved in the study, building baseline, the study scope of work and the study cost breakdown for funding approval. Please refer to Appendix B for Energy Study Proposal template to be followed.

In whole building design studies, the mechanical consultant usually takes the lead consultant role in the study. Other members of the design team (such as energy modeller, architect, etc.) may also take the lead consultant role if approved by BC Hydro's Power Smart Alliance.

Once proposal is approved, BC Hydro will create an energy study agreement.

### Step 3: Energy Study

After the energy study proposal has been approved, and an energy study agreement with the building owner has been executed, work may begin on the energy modeling study.

**The New Construction program by default requires only one phase study** (submitted to Hydro during the project design development stage).

The energy study should include a description of the baseline building and systems, and the measures studied. A summary table should be provided with the energy savings, energy cost savings, maintenance cost, capital cost, and life expectancy for each measure. The selected measures should be bundled together to determine overall bundle energy savings. The study must include the analysis for all studied items, including energy consumption by end use breakdown for both, baseline and proposed case, details of other calculations, and details of incremental capital costs.

The lighting ECMs shall be coordinated with electrical consultant and modelled along with other measures.

The lighting energy savings shall be also confirmed by using the current version of BC Hydro New Construction Lighting Calculator. The lighting calculator can be downloaded from [www.bchydro.com/nclighting](http://www.bchydro.com/nclighting).

At the time when lighting design is finalized, the NC Lighting calculator shall be submitted along with lighting drawings and specification sheets. Preferably, this should be done as an appendix to the energy modeling study report, or can be submitted at the later date once lighting design is finalized, but not later than prior to project site inspection.

*Note: Submission of the completed BC Hydro New Construction Lighting Calculator (NC LC) along with a soft copy of the lighting drawings is a mandatory program's requirement.*

A Life Cycle Cost (LCC) analysis spreadsheet (Appendix H) will be provided by BC Hydro in order to assist with the life cycle cost calculations. Note that other economic indicators are provided in addition to simple payback. These additional indicators are not used by the program, but are provided as a starting point to facilitate a discussion within the design community that will help to redirect the perception of conservation measures away from costs towards one of investment. One of the entries in the financial analysis spreadsheet is “Life Expectancy”. Guidelines for various items are provided in Appendix C.

In addition to LCC spreadsheet qualified cost consultants shall provide more details about incremental capital cost of each measure by filling out Incremental Capital Cost Calculator (ICCC – provided by BC Hydro), or using their own spreadsheets that will provide costing information in similar format (the costs of baseline system/equipment and proposed energy efficient system/equipment shall be provided separately).

The completed energy study report, LCC and ICCC spreadsheets shall be submitted to BC Hydro in electronic format (study in pdf format and LCC and ICCC spreadsheets in Excel format).

A sample report is contained in Appendix D to illustrate the required study report components and level of details.

#### **Step 4: Review by BC Hydro**

The completed study will be reviewed by BC Hydro. At this time any additional information required will be requested. In certain cases BC Hydro may request actual modeling files for detailed modeling review. When BC Hydro is satisfied with the results of the study, an offer may be made for capital incentives when appropriate. Note that the project must meet internal BC Hydro cost/benefit criteria (calculated by BC Hydro), as well as minimum energy saving potential requirements (in terms of identified energy savings) in order to be eligible for capital incentives.

Upon approval of energy study report BC Hydro creates a Capital Incentive Agreement outlining the incentive amount and any other requirements that need to be met. Once a Capital Incentive Agreement has been completed, the customers can order and purchase any energy conservation measure eligible for capital incentives.

**NOTE: Customer must not have ordered or purchased any of ECMs prior to signing Capital Incentive Agreement.**

#### **Step 5: Post-Tender Energy Study Update (if applicable)**

Post-tender modeling update will be required in case that building design and/or building size has been significantly changed after the approval of pre-tender energy study, and in cases where some of approved energy conservation measures (ECMs) have been excluded by the building owner after the tender. The additional modeling fee can be submitted to BC Hydro with a proper justification and estimate of additional modeling hours required for study update.

The results of the updated energy study will be used to adjust any capital incentives that were offered, if applicable, using the same LCC spreadsheet and process as was used to identify the incentive during the preliminary energy study, but updated with final values.

After review and approval of the final energy study, BC Hydro will complete a Capital Incentive Agreement Addendum with the owner, incorporating the adjusted incentive amount based on the final energy study results.

## Step 6: Project Site Inspection

The following project completion documents must be submitted within 36 months of the date the applicant signed the capital incentive agreement:

- A completed Installation Completion Document, (BC Hydro's Schedule B);
- Equipment and contractor invoices with proof of payment for the installed Energy Conservation Measures;
- Occupancy permit.

Once the project completion documents have been reviewed and accepted by BC Hydro, BC Hydro will perform a site inspection. Prior to the inspection, the following documents must be provided on the building site:

- As built drawings and specifications (architectural, mechanical and electrical).
- Commissioning documents associated with the installed ECMs.
- Operations and Maintenance Manuals

Upon satisfactory completion of the site inspection, BC Hydro will issue a cheque for the Capital Incentive. If the energy savings are less than the proposed savings, the incentive funding will be adjusted accordingly.



**PART B**  
**SYSTEM**  
**DESIGN**  
**(SD)**



# 1 INTRODUCTION

System design option focuses on specific systems where detailed energy modeling is not required, or not cost-effective. This could be for reasons of timing, building type, or systems where the detail of a computer simulation is not needed.

## 2 ELIGIBILITY

The following conditions must be met in order for the building to be eligible for this program offer:

- New Construction or Major Building Retrofit<sup>3</sup>
- Potential annual electrical energy savings of at least 50,000 kWh/yr.
- Located in the BC Hydro service territory, including New Westminster

The project application must be submitted before deciding on the system (before ordering or purchasing system).

### 2.1 CONSULTANT QUALIFICATION REQUIREMENTS

A qualified consultant (a company) must:

- Be a Power Smart Alliance Member. This requires \$2M in liability, Worksafe BC and references for proven track record (Call 604.522.4713 in the Lower Mainland or 1.866.522.4713 elsewhere in BC to join).

This program option does not require an approved modeller.

In system design studies, the lead should be taken by either an energy consultant, or a design professional most closely connected with the systems being examined.

For system design studies/analysis, the responsible technical individuals must demonstrate experience in energy efficiency calculations in that particular area.

## 3 INCENTIVES

### 3.1 STUDY INCENTIVE

There is no study incentive for system design study option.

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<sup>3</sup> Major Building Renovations: Defined as one of the following for which requires a building permits and certified buildings plans by a licensed professional.

- Change of use and reconstruction of an existing building space or space within; or
- Change Construction work of a nature requiring the building or space within to be out of service for at least 30 consecutive days; or
- The renovations are worth at least 50% of the existing building's value and impact the building envelope.

## 3.2 CAPITAL INCENTIVE

A capital incentive will be offered (for eligible projects) to reduce the incremental cost of the measure, or bundle of measures, if any, to reduce the payback to no less than 2 years. In other words, the customer must be willing to invest an amount in the project, to achieve a 2 year simple payback. Incentives can be calculated as follows:

*Lesser amount of the total electrical energy savings over the life of the measures (to a 10 year maximum) x ~3.07 ¢/kWh (fixed incentive rate), or amount required to reduce the payback to 2 years.*

A life cycle cost (LCC) analysis spreadsheet will be provided by BC Hydro to assist with the economic calculations.

Completion of a study is not a guarantee of capital incentives. All capital incentives are subject to program funding eligibility, BC Hydro's internal cost effectiveness tests, and project size requirements, and are solely at the discretion of BC Hydro.

100% of the capital incentive will be paid upon completion of the project site inspection.

## 4 ENERGY STUDY

The system design energy study (SDES) provides a method of capturing energy savings from projects where whole building performance modeling analysis is not applicable or cost effective (e.g. refrigeration systems). The SDES purpose is to optimise systems design without requiring a WBDES.

A SDES can be done using specific calculation programs and/or spreadsheet calculations. Whatever method is chosen, it must be appropriate for the situation, and the analysis must be rigorous and comprehensive. The proposed manner of performing the analysis must be outlined in the study application.

### 4.1 PROJECT BASELINE

The project baseline must be agreed with BC Hydro. The baseline is the benchmark of standard practice that BC Hydro will measure the energy savings for a project against.

- Applicable Legislation – Any applicable building code energy requirements
  - ASHRAE 90.1 2007 for City of Vancouver municipality
  - ASHRAE 90.1 2004 for the rest of Province
  - Any other applicable legislation or By Law for the project
- Standard Market Practice (Special Cases to be reviewed by BC Hydro).

## 5 PROGRAM PROCESS

### Step 1: Project Saving Potential Review

It is essential for the success of the project to have a design team kick-off meeting (or conference call) with client, key design team and BC Hydro New Construction program representatives to ensure a good understanding of program's requirements and smooth program's deliverables. This step is highly recommended before submittal of

System Design application to BC Hydro.

## Step 2: Application and Energy Study

If project meets program requirements, Customer must complete and submit a complete application along with an energy study to BC Hydro Key Account Manager.

Energy study should include:

- Background information
  - Overview of the project
- Building Information
  - Building size, use, location and hours of operation
- Study Methodology
  - Outline how the study will be conducted (calculation methods and software tools used)
  - Baseline system selection / description

The energy study should include a description of the baseline system, and the measures studied. The selected measures should be bundled together to determine overall system energy savings. The study must include the analysis for all studied items, including calculation details, copies of catalogue cut sheets with performance data and details of incremental capital costs (the costs of baseline system/equipment and proposed energy efficient system/equipment shall be provided separately).

A Life Cycle Cost (LCC) analysis spreadsheet will be provided by BC Hydro in order to assist with the life cycle cost calculations.

The completed energy study report and LCC spreadsheet shall be submitted to BC Hydro in electronic format (study in pdf format and LCC and energy saving calculation spreadsheets in Excel format).

## Step 3: Review by BC Hydro

The completed study will be reviewed by BC Hydro. At this time any additional information required will be requested. When BC Hydro is satisfied with the results of the study, an offer may be made for capital incentives when appropriate. When BC Hydro is satisfied with the results of the study, an offer may be made to customer for capital incentives when appropriate. Note that the project must meet internal BC Hydro cost/benefit criteria (calculated by BC Hydro), as well as minimum energy saving potential requirements (in terms of identified energy savings) in order to be eligible for capital incentives.

Upon approval of energy study report BC Hydro creates a Capital Incentive Agreement outlining the incentive amount and any other requirements that need to be met. Once a Capital Incentive Agreement has been completed, the customers can order and purchase any energy conservation measure eligible for capital incentives.

**NOTE: Customer must not have ordered or purchased any of ECMs prior to signing Capital Incentive Agreement.**

#### **Step 4: Project Site Inspection**

The following project completion documents must be submitted within 36 months of the date the applicant signed the capital incentive agreement:

- A completed Installation Completion Document, (BC Hydro's Schedule B);
- Equipment and contractor invoices with proof of payment for the installed Energy Conservation Measures;
- Occupancy permit.

Once the project completion documents have been reviewed and accepted by BC Hydro, BC Hydro will perform a site inspection. Prior to the inspection, the following documents must be provided on the building site:

- Commissioning documents associated with the installed ECMs.
- Technical documents of the installed ECMs.

Upon satisfactory completion of the site inspection, BC Hydro will issue a cheque for the Capital Incentive. If the energy savings are less than the proposed savings, the incentive funding will be adjusted accordingly.

## PART C

# ENERGY EFFICIENT LIGHTING DESIGN (EELD)



# 1 INTRODUCTION

Energy Efficient Lighting Design option focuses on implementation of specific lighting design and technologies systems that exceeds current standards and save electricity.

## 2 ELIGIBILITY

The following conditions must be met in order for the building to be eligible for this program offer:

- New Construction or Major Building Retrofit<sup>4</sup>
- Located in the BC Hydro service territory, including New Westminster

### 2.1 CONSULTANT QUALIFICATION REQUIREMENTS

A qualified consultant (a company) must:

- Be a Power Smart Alliance Member. This requires \$2M in liability, Worksafe BC and references for proven track record (Call 604.522.4713 in the Lower Mainland or 1.866.522.4713 elsewhere in BC to join).
- The responsible technical individuals must demonstrate experience in energy efficient lighting design.

## 3 INCENTIVES

### 3.1 STUDY INCENTIVE

BC Hydro will pay an incentive of up to \$1,000 for the creation of an Energy Efficient Lighting design.

### 3.2 CAPITAL INCENTIVE

A capital incentive will be offered (for eligible projects) to reduce the incremental cost of the measure. Incentives can be calculated as follows:

*A Lesser amount of the total electrical energy savings over the life of the measures (to a 10 year maximum) x ~3.07 ¢/kWh (fixed incentive rate)*

100% of the capital incentive will be paid upon completion of the project site inspection.

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<sup>4</sup> Major Building Renovations: Defined as one of the following for which requires a building permits and certified buildings plans by a licensed professional.

- Change of use and reconstruction of an existing building space or space within; or
  - Change Construction work of a nature requiring the building or space within to be out of service for at least 30 consecutive days; or
- The renovations are worth at least 50% of the existing building's value and impact the building envelope.

## 4 LIGHTING CALCULATOR

Lighting calculator is a tool developed by BC Hydro that provides a method of capturing lighting energy savings. BC Hydro lighting calculator will also help consultant to determine incentive amount. The lighting calculator can be downloaded within [www.bchydro.com/nclighting](http://www.bchydro.com/nclighting).

### 4.1 PROJECT BASELINE

For most areas, the energy efficient lighting design baseline is ASHRAE/IESNA Standard (90.1)

## 5 PROGRAM PROCESS

### Step 1: On-line Application

The online application can be started (by the customer) by going to [www.bchydro.com/nclighting](http://www.bchydro.com/nclighting) and clicking "Register Now." The first step will be entering in the company profile after which the customer will receive a confirmation email and link to the company's new profile page. Within this profile the customer may start one or more applications. It is important to keep the link as this is the only way to access the application(s).

### Step 2: Lighting Calculator

The lighting calculator can be downloaded within [www.bchydro.com/nclighting](http://www.bchydro.com/nclighting). Complete all sections, as well as submit electronic versions of the lighting drawings and a copy of the building permit.

### Step 3: Review by BC Hydro

BC Hydro will review all the submitted documents, but may request additional information such as lamp and ballast specifications.

Customer must not have ordered or purchased any of the Energy Conservation Measures prior BC Hydro's approval of capital incentive.

### Step 4: Project Site Inspection

Once the project completion documents have been reviewed and accepted by BC Hydro, and prior to building occupancy, the measures will be inspected. Prior to the inspection, the following documents must be provided on the building site:

- As-built lighting drawings and specifications
- Operations and Maintenance Manuals

Once the site inspection is complete, the incentive amount will be paid to the building owner.

## ENERGY STUDY Q&A

### Who should I contact if I have technical questions?

If you have any technical questions, or are unsure how a measure or system should be simulated, contact BC Hydro's program engineer appointed to the project. It is important that simulation issues be resolved early, to avoid additional work later on. Do not hesitate to call or e-mail with any questions or clarifications.

### How should we account for energy interactions between measures?

By using a computer simulation program, the interactions between systems will be accounted for. But the inclusion or exclusion of individual measures will impact the savings of other measures. Although the analysis procedure will be left up to the consultant, it is recommended that measures to be analyzed first are building envelope measures, then lighting measures, and at the end HVAC system measures. This will lead to more accurate savings analysis for individual measures. At the end, the final bundle, or bundles of recommended measures will be simulated together to assess the combined savings impact.

### Do we need to provide total capital costs, or just the incremental cost of the measure?

The LCC analysis conducted for the studies will use the incremental costs. When submitting completion documents, we require total capital costs for both the baseline and the energy efficient measure, where these have been explicitly identified in the tender documents.

### What level of costing detail is required?

The costing for the identified energy conservation measures should be broken out in sufficient detail that BC Hydro can review it and assess its accuracy. At a minimum, major equipment should be broken out, as well as labour and materials. Incremental cost estimates must be provided by either; 1) submittal from registered Quantity Surveyor, or 2) qualified contractor selected by customer.

### What information is required in the summary table?

The summary table should include gas and electric savings, energy cost savings, maintenance savings, capital costs, equipment life, and paybacks. The best bet is to follow the format of the sample report.

### What rate should we use for electricity?

All energy cost savings must be based on current rates for gas and electricity. This must include energy charges, demand charges, taxes, and any other applicable components of the rate structure.

### What is the purpose of the LCC spreadsheet?

The spreadsheet provides a simplified life cycle cost analysis that allows the building owner to evaluate economic returns over the life of the building. This is the way energy efficient measures should be examined, although in practise they rarely are. Since the New Construction program aims to change the way buildings are designed, it is important that design teams at least see the life cycle cost analysis results.

## GENERAL Q&A

### My building is too small to qualify for an energy study. Can I still participate in the New Construction Program?

No, but you may be able to apply for Energy Efficient Lighting Design incentive, or for prescriptive (product) incentives through other BC Hydro Power Smart programs.

### What simulation program can be used for whole building analysis?

Any programs, that use 8760 hour simulations and have been tested according to ASHRAE Standard 140, can be used. The list of the approved modeling software is provided in Appendix A.

### Can multi-family buildings apply?

Yes, multi-unit residential buildings (MURBs) can apply under the NCP, but in-suite energy saving measures such as energy star appliances, fans and compact fluorescent lamps are not eligible for capital incentives under NCP. In-suite energy saving measures may be eligible under the PS residential New Homes Program, and can be applied for in addition to NCP. MURBs must also meet the NCP's minimum 50,000 kWh electrical energy saving threshold.

### Are gas saving measures eligible?

For energy modelling (Energy Study), the customer can study all potential efficiency measures, including gas-only energy saving measures. However, for the Capital Incentive Application and for the 2-year payback calculation, the bundle must only include energy saving measures that have some electrical energy savings (eg: cannot include gas-only energy saving measures in the incentive bundle). All associated maintenance cost savings of combined gas and electrical energy saving measures shall be included in the Capital Incentive application for calculating the 2-year payback.

### Can fuel switching be considered an energy saving measure?

No, it cannot. As per current provincial and BC Hydro policy fuel switching is not allowed.

### Are we asking for an ASHRAE 90.1 or MNECB reference building as the baseline?

The acceptable WBD baseline will refer to BC Hydro New Construction Baseline table and ASHRAE 90.1 mandatory and Appendix G requirements.

### Why do we not use the same baseline/reference as LEED Canada?

One of the LEED Canada approved reference standard is MNECB, which current version is considerably out of date. We wish to have more accurate savings, as determined by comparison with current design practice and BC Building Code. If project is located in City of Vancouver area and LEED baseline reference standard is ASHRAE 90.1 2007, LEED Canada and NC program baselines may be the same.

### Can someone apply to our program if they are applying for LEED?

Yes. NC Program requires whole building modeling and provides study funding early in the design process, which LEED does not. BC Hydro encourages and supports LEED, but does not provide incentives for.

### Can a project apply for both NC Program and prescriptive incentives?

No. It has to be one or the other. The only exception is in the case of multi-family residential, which can apply for in-suite New Homes product incentives through residential program.

## **THE RECOGNITION YOU DESERVE**

We believe in giving credit where credit is due. When your new high-performance building is complete, you'll receive a recognition package that includes:

- Acknowledgment of your accomplishment on BC Hydro's website, including the names of the developer, owner and design team
- Signage to identify your completed building as a Power Smart project
- The opportunity to leverage the Power Smart brand in your marketing materials.

## **LEED-COMPATIBLE ENERGY STUDY**

A BC Hydro-funded energy modeling study could be used towards your LEED certification — saving you energy modeling cost and time (some restrictions may apply).

For more information on Power Smart's New Construction Program, call us today.

604 522 4713 Lower Mainland

1 866 522 4713 elsewhere in BC.

[bchydro.com/construction](http://bchydro.com/construction)