

COMMUNITY ENERGY AND EMISSIONS PLAN – PROGRAM DESCRIPTION

PROGRAM BACKGROUND (ELECTRICITY ELEMENTS OF A CEEP)

BC Hydro recognizes that many communities are developing Community Energy and Emissions Plans to support multiple community objectives, including: reducing GHG emissions, creating energy efficient, resilient, sustainable communities, and creating local economic development.

Through this Program Offer, BC Hydro is interested in advancing the development and implementation of these Plans as a means to achieve reductions in electrical demand compared to business as usual projections. Program participants are therefore expected to develop targets and strategies that specifically acknowledge electricity conservation and supply opportunities within the community. Electricity conservation and supply elements are meant to fit within the overarching CEEP that will address all community energy and emissions objectives.

The electricity elements required for BC Hydro funding are outlined in the Minimum Requirements section. In addition to these Minimum Requirements, we have also included some other helpful resources to consider during the development of a CEEP, including:

- A prototype Table of Contents for a CEEP
- Shortlist of potential evaluation criteria for recommended CEEP strategies

PURPOSE OF THE (OVERARCHING) COMMUNITY ENERGY AND EMISSIONS PLAN (CEEP)

The Community Energy and Emissions Plan (CEEP) will present a comprehensive long term framework to achieve breakthrough reductions in the use of energy and to reduce greenhouse gas emissions within the community. The CEEP will be integrated into all other municipal planning and infrastructure documents (ie. Sustainability Plans, Official Community Plans, Local Area and Neighbourhood Plans, Infrastructure Plans, economic development strategies).

The CEEP will be a high level framework with sufficient precision to clearly establish energy and emissions-related priorities for the community and define overall goals and direction against an established baseline. The CEEP should build upon previous work and become the primary or over-arching document for the community's energy and emissions planning process.

The CEEP should have a 25-year time horizon, with a clear, strong set of priorities for the first ten years that will set the course of action in a permanent direction. It will be a living document that can be updated as strategies are implemented and new opportunities arise.

The overall objective of the CEEP is to provide the local government with a clear plan of action in developing its land use patterns, energy infrastructure and utility systems into the future.

The CEEP should recognize the following legislation that has been adopted by the Provincial Government and local governments:

1. Bill 44 – Greenhouse Gas Reduction Targets Act:
 - a. Provincial GHG reduction target of 33% by 2020 and 80% by 2050 compared to a 2007 baseline.
2. Bill 27- Local Government (Green Communities) Statutes Amendment Act:
 - a. Requirement for local governments to include GHG emission targets, policies, and actions in their Official Community Plans (OCP).

3. 2010 Clean Energy Act (relevant objectives).
 - a. Take demand-side measures and to conserve energy, including the objective of the authority (BC Hydro) reducing its expected increase in demand for electricity by the year 2020 by at least 66%;
 - b. Use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;
 - c. Encourage communities to reduce greenhouse gas emissions and use energy efficiently; and
 - d. Reduce waste by encouraging the use of waste heat, biogas and biomass.

This legislation will be taken into account in the development of the CEEP, though the planning team should feel free to make alternative or extended recommendations in any of these areas.

MINIMUM REQUIREMENTS FOR BC HYDRO FUNDING

The following **electrical requirements** must be included as **Minimum Requirements** within the CEEP in order to be eligible for BC Hydro funding. The CEEP will be evaluated by BC Hydro according to the minimum requirements below. However, the overarching CEEP may address other community energy and emissions objectives.

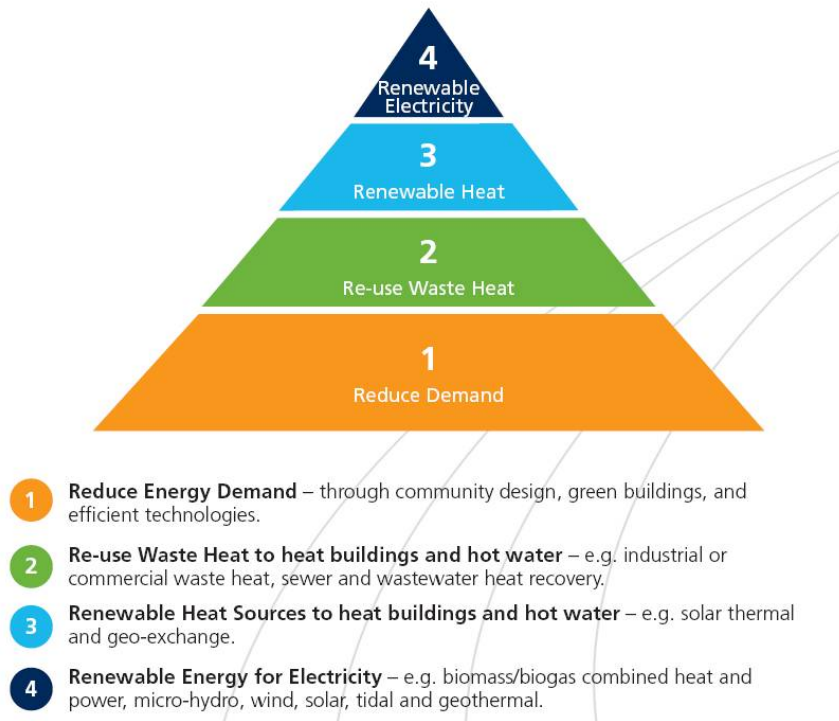
All background calculations supporting electricity data results (consumption forecast and electricity reduction/growth) must be provided. All data must be included in a table or summary that can be easily identified in the report.

1. **Title of Plan** MUST include the term “Energy”.
2. **Electrical Consumption Baseline** - Summary of actual 2007 (Bill 44 baseline) and current electrical consumption by sector (Residential, Commercial, and Industrial)*.
3. **BAU Forecast** - Forecast of expected electrical consumption under “business as usual” by sector (industrial, commercial, residential, transportation) for 10, and 25 year horizons. (The BAU forecast should include all senior government policies and regulations.)
4. **Goals and Targets** - Energy demand and supply elements (MUST specifically acknowledge electricity demand and supply):
 - a. Include energy vision, goals, and targets[†] for 10 and 25 year horizons.
 - i. Vision must include both locally-owned/generated energy supply (where appropriate) and demand elements.
 - b. Include a high level map (visual locator) of energy demand and supply resource options including land use options.
5. **Strategy Development** - List of strategies selected to meet the goals above.
Note: strategies should be considered in the following priority order (see figure 1)
 - i. Reduce consumption (energy conservation)
 - ii. Re-use of waste heat
 - iii. Renewable district energy
 - iv. Renewable electricity supply (wind, solar, micro hydro, etc.)

* CEEI data is sufficient, but it is recognized that industrial data is not always available.

[†] Targets must be **Specific, Measurable, Achievable, Realistic/Relevant, Time-bound**. For example, include an overarching electricity reduction target - XX% below BAU projected levels by 20XX.

Figure 1 – Community Energy Planning Hierarchy



6. **Strategy Evaluation** - Include a high-level evaluation of major strategies being considered (quantitative where possible), including implementation costs for the Local Government and electrical savings and growth. Evaluation to include:
 - a. Estimate of the electricity savings / growth resulting from each recommended strategy.
 - b. Estimate of the total electricity savings / growth in the CEEP scenario(s) relative to BAU.
 - c. List of criteria linked to community objectives. **See Appendix A for a list of sample evaluation criteria**
7. **Electricity Forecast** - Forecast of the electricity consumption in the scenario(s) recommended by the CEEP. Scenario(s) refers to the forecasted electricity consumption for the entire community if the strategies/measures recommended by the CEEP are implemented.
8. **Graph** - Include a graphical / visual summary of final planned strategies. This is a presentation tool to be used to communicate the key plan strategies to the community. (e.g. “CEEP at a glance” or “CEEP on a page”)
9. **Implementation** - Prioritized Implementation Plan, including actions for chosen strategies that will meet targets and that are in alignment with the OCP.
 - a. Schedule and resources required (costs, human resources etc.)
 - b. Roles and responsibilities
 - c. Partnerships and stakeholder engagement
 - d. Council adoption
 - e. Progress reporting

APPENDIX A – ADDITIONAL RESOURCES

SAMPLE TABLE OF CONTENTS FOR A CEEP

BC Hydro recognizes that there are many different ways in which a CEEP can be organized. This sample Table of Contents is included in this document to provide guidance to communities on elements that should be included in a CEEP. CEEPs **are not** required to conform to this Table of Contents in order to participate in the Program.

- A. Executive Summary
- B. Background
 - a. Identify the current energy and emissions profile (using Community Energy and Emissions Inventory or other method).
 - b. Document the planned growth in the community.
 - c. Map current and future energy density.
 - d. Identify and map local energy sources and infrastructure.
- C. Vision, Goals, Targets
 - a. Develop community energy and emissions vision, goals, and targets.
- D. Strategies
 - a. Identify strategies for integrated land use, energy, and transportation planning.
 - b. Identify and recommend strategies to REDUCE energy (including electricity) use and emissions in existing and new development areas, including:
 - i. conservation behaviour (ie. strategies to increase Power Smart program participation in the community - including the industrial, commercial business and residential sectors).
 - ii. green buildings (ie. retrofits and new construction).
 - iii. land use (ie. land use densities and mix).
 - c. Identify, map and recommend strategies to REUSE waste resources, including:
 - i. waste heat from industrial and commercial sources.
 - ii. resource recovery from existing waste streams (ie. biogas generation from agricultural or municipal waste).
 - d. Identify, map and recommend strategies to use RENEWABLE energy sources to heat and power the community, including district energy opportunities.
 - e. Assess local electricity generation opportunities – summary level.
 - f. Identify sustainable transportation strategies and their electricity implications.
 - g. Quantify projected energy (including electricity) and GHG savings from each strategy.
 - h. Forecast energy (including electricity) and emissions trends under 'business as usual' scenario, and under alternative scenarios being considered by the plan.
 - i. Identify and prioritize policies local government can leverage to reduce energy use and GHG emissions in new and existing buildings (ie. connection to district energy systems).
- E. Stakeholder Engagement
 - a. Develop and implement a stakeholder and public engagement strategy to gain support for the CEEP.

F. Recommendations

- a. Rate the strategies and identify viable short, medium, and long-term strategies to be pursued by the plan.
- b. Quantify estimated energy (including electricity) and emissions savings from the final recommended strategies.

G. Implementation Plan

- a. Identify a clear set of prioritized actions to be undertaken to achieve vision, goals and targets.
- b. Identify an appropriate oversight structure for ensuring successful implementation.

SAMPLE EVALUATION CRITERIA

CEEPs attempt to achieve multiple objectives as stated in the Program Description. Our funding requires that strategies / scenarios recommended in CEEP be evaluated at a high level in order for them to be effectively prioritized and to provide the community with a clear rationale behind the recommended strategies. The following is a sample consequence table with some *potential* evaluation criteria and *possible* measures. Consultants / Communities are welcome to use their own frameworks and to develop their own evaluation criteria and measures.

Table 1. Sample Consequences Table for CEEP Strategy Evaluation

Potential Objective / Criteria	Possible Measures	Alternatives		
		BAU	Strategy / Scenario 1	Strategy / Scenario 2
Minimize Community GHG Emissions	Community GHG Emissions in 2020			
	Community GHG Emissions in 2030			
Minimize % of planned residential floor space heated with electric resistance heating	% of residential floor space heated with electric resistance heat in 2020			
	% of residential floor space heated with electric resistance heat in 2030			
Minimize energy intensity of new buildings	Energy intensity of new residential buildings (kWh / occupant / year)			
	Energy intensity of new commercial buildings (kWh / sq. m / year)			
Maximize % of community's energy consumption expenditures that remain in the community	% of annual community energy expenditures from residents / businesses that remain in the community			
Minimize costs of implementation	Capital and material costs for implementation of CEEP (per tonne CO2e or per GWh)			
	Number of FTE required to implement CEEP actions			

APPENDIX B – TIMELINE, DELIVERABLES, FEES, and ELIGIBILITY

TIMELINE

The CEEP, including associated outreach meetings, should normally be completed in six months. Include a schedule with dates for major milestones.

DELIVERABLES

1. DRAFT Report
2. Final Report

STEERING COMMITTEE

The CEEP should be led and managed by a local government, cross-departmental steering committee. Other relevant stakeholders may also be included on the Steering Committee.

POWER SMART ALLIANCE

Consultant undertaking the work must be a member of the Power Smart Alliance.

FEES

List all tasks along with hours and hourly rates according to the following:

- Research and Analysis
- Stakeholder Engagement
- Report Preparation
- Expenses

PAYMENT

BC Hydro will pay up to 50% of the total cost of the CEEP to a maximum threshold as per Agreement. Payment will be made upon delivery and approval of the invoices and Final Report.

FUNDING ELIGIBILITY*

This Power Smart Program applies to communities in the Province of British Columbia that meet the following criteria:

- located within the BC Hydro service territory
- a population greater than 20,000
- official endorsement of municipal council to undertake a CEEP
- plans to redevelop a minimum of 5 million square feet of land within 10 years
- have the potential for a district energy system

*NOTE: The above eligibility requirements apply unless otherwise agreed upon with BC Hydro.

Minimum Requirements for a Community Energy and Emissions Plan

LEAD CONSULTANT'S DECLARATION	
I, the undersigned, declare: <ul style="list-style-type: none"> that we are an approved BC Hydro Power Smart Alliance consultant to do a CEEP (If more than one consultant is used, the consultant named below will assume the lead role for the CEEP and incorporate all information into one report). that I have read and will comply with the CEEP Minimum Requirements, and the Terms and Conditions that are contained in this document. I also understand that the CEEP and accompanying documents will be reviewed by BC Hydro engineers and consultants. 	
Company Name:	
Authorized signature:	Date:
Print Name:	
Mailing Address (Street):	Phone:
City:	Fax:
Postal Code:	Email:

BCH-QMS-9462-C-080-Rev 000 Community Emissions and Energy Plan Minimum Requirements.

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