



**BRITISH
COLUMBIA**

Ministry of Energy, Mines
and Petroleum Resources

BC CLEAN ELECTRICITY GUIDELINES

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BC Clean Electricity Guidelines

BC Clean Electricity

Electricity acquired or generated by electricity distributors in British Columbia may be reported as BC Clean Electricity if it meets the following requirements:

- 1) The electricity is generated from a new facility that started commercial production in British Columbia after November 25, 2002 and:
 - Uses a renewable energy source,
 - Can demonstrate to the satisfaction of the reporting electricity distributor that the facility meets the certification criteria for "electricity - renewable low-impact" as defined by Environment Canada's Environmental Choice^M Program; and,
 - Has a British Columbia Environmental Assessment Certificate, if its capacity is greater than or equal to 50 MW.

OR

- 2) The electricity is generated as a result of the installation of a supplemental process and/or equipment that alters and/or adds to the processes of an existing British Columbia facility specifically to generate electricity and:
 - Uses a renewable energy source, or captures and uses waste heat or steam from the process,
 - Can demonstrate to the satisfaction of the reporting electricity distributor that the facility meets the certification criteria for "electricity - renewable low-impact" as defined by Environment Canada's Environmental Choice^M Program; and,
 - Has a British Columbia Environmental Assessment Certificate, if its capacity is greater than or equal to 50MW.

AND

- 3) The facility maintains Environmental Choice^M Program certification for the duration of the plant's operation or can demonstrate to the satisfaction of the reporting electricity distributor that the facility continues to satisfy certification criteria.

Or notwithstanding items 1), 2) and 3):

Electricity is generated using a process or technology that is not recognized or has not been incorporated into the certification criteria for "electricity - renewable low-impact" as defined by Environment Canada's Environmental Choice^M Program but receives recognition from the Minister of Energy, Mines and Petroleum Resources as BC Clean Electricity.

Introduction

In November 2002 the Province released *Energy For Our Future: A Plan For BC* (the Energy Plan), which establishes a framework for energy development throughout British Columbia. The Energy Plan is built on the following four cornerstones:

- Low electricity rates and public ownership of BC Hydro;
- Secure reliable energy supply;
- More private sector opportunities; and
- Environmental responsibility and no nuclear power sources.

The Province supports environmentally responsible development of its diverse and abundant energy resources as a means of improving energy security, encouraging private sector energy development opportunities and stimulating economic growth throughout British Columbia.

Policy Action #20 in the Energy Plan requires electricity distributors to pursue a voluntary goal to acquire 50 percent of new supply from BC Clean Electricity over the next 10 years. The Energy Plan states that:

"BC Clean Electricity refers to alternative energy technologies that result in a net environmental improvement relative to existing energy production. Examples may include small/micro hydro, wind, solar, photovoltaic, geothermal, tidal, wave and biomass energy, as well as cogeneration of heat and power, energy from landfill gas and municipal solid waste, fuel cells and efficiency improvements at existing facilities."

The BC Clean Electricity energy classification is intended to promote the development of a wide range of energy resources and technologies throughout British Columbia.

These guidelines are provided to assist electricity distributors, the British Columbia Utilities Commission (BCUC), and other interested parties by clarifying and expanding upon the definition of BC Clean Electricity (also referred to as "BC Clean" in this document). The guidelines may be amended from time to time in response to requests for clarification or as a result of circumstances unforeseen at the time the initial document was prepared in March 2004.

Defining BC Clean Electricity

BC Clean Electricity refers to electricity generated from resources and facilities built in British Columbia that have a lesser environmental impact relative to conventional generation sources and technology. The definition is intended to be dynamic and incorporates an expectation of continuous improvement in energy development -- economically, environmentally and socially.

Generally, an electricity producer generates BC Clean Electricity if the facility is certified or certifiable under Environment Canada's Environmental Choice^M Program, and for facilities of 50 MW or more, if the plant receives an Environmental Assessment Certificate from the British Columbia Environmental Assessment Office.

The Environment Canada program defines “Renewable Low-Impact Electricity” as electricity from renewable energy sources that are likely to have relatively low impacts on the environment and produce potential benefits including among others, low net greenhouse gas emissions, limited or no depletion of non-renewable resources, reduced emissions of other pollutants and reduced impacts on aquatic, riparian and terrestrial ecosystems and species.

The Energy Plan emphasizes development of provincial energy resources, stimulating private sector opportunities and encouraging employment growth within the province. For the purposes of meeting the Energy Plan target of acquiring 50 percent of new supply from clean energy sources, BC Clean Electricity includes only those energy resources developed within British Columbia.

The BC Clean Electricity Guidelines are a policy standard. This document does not constitute a legislative or regulatory interpretation, and does not affect the application of the *Environmental Management Act*, *Environmental Assessment Act* or any other relevant environmental protection statutes and regulations. Further, the electricity output of a BC Clean facility, that is, the attributes associated with the resource, are not required to be allocated to the Province to be recognized as BC Clean Electricity. The output and attributes remain with the facility and generator, subject to commercial negotiation, unless otherwise sold or transferred to another party.

Measuring and Reporting the 50 Percent Clean Electricity Target

The 50 percent BC Clean Electricity target is measured as the percentage of total net, new electricity supply acquisitions made over the ten-year period beginning November 25, 2002 through to March 31, 2013. Net electricity supply means total new supply requirements less demand-side management efficiency savings.

Electricity distributors are requested to provide a report by July 1st of each year for the preceding fiscal year ending March 31st to the Ministry of Energy, Mines and Petroleum Resources highlighting progress made in acquiring BC Clean Electricity supply.

BC Clean Electricity Resources and Technologies

Resources and technological applications that may qualify as a source for BC Clean Electricity production are listed below:

Biogas Energy - means electricity generated from a system that captures biogas for combustion or conversion. Biogas means the gaseous products (primarily methane and

carbon dioxide) produced from organic waste material that has no other commercial use or is the alternative with the lowest environmental impact. Facilities producing biogas include landfill sites, sewage treatment plants and anaerobic digestion organic waste processing facilities.

Biomass Energy - means electricity generated from the combustion or gasification of clean biomass. Clean biomass is derived from organic waste material that has no other commercial use or is the alternative with the lowest environmental impact and with no other higher-order use. It includes wood-wastes and agricultural wastes that are solid residues arising from the harvesting and processing of agricultural crops or forestry products that fall into the following types:

1. Dedicated energy crops;
2. Liquid fuels derived from biomass including bio-oil, ethanol, methanol and diesel; and,
3. Clean organically sourced material separated from municipal solid waste (MSW) and processed to serve as a combustion fuel.

Clean biomass does not include organic material that has been treated with organic and/or inorganic substances to change, protect or supplement the physical properties of the materials.

Cogeneration - Cogeneration aims to maximize the efficiency of energy resource combustion by producing electricity and heat from one or more boilers, combustion turbines or engines at a single facility. Host facilities typically include industrial plants, and large commercial and institutional buildings. While the electricity can be used within the facility, it can also be made available to the grid. Similarly, the heat (i.e., liquid or steam) can be used for processes within the facility or for applications in neighbouring facilities. To qualify as BC Clean Electricity, the fuels used must have no other commercial use or have the lowest environmental impact compared to other alternatives and have no other higher-order use. Such fuels include biomass and municipal solid waste.

Portions of energy from a cogeneration project may be considered BC Clean Electricity if:

- The calculated proportion of energy output (thermal and electrical) is attributable to a fuel source or technology defined as BC Clean; **or**
- An existing simple-cycle or combined-cycle generation facility is retrofitted and the incremental energy produced meets the BC Clean criteria for supply-side efficiency gains.

Energy Recovery Generation (ERG) - means electricity produced from the recovery of waste energy from an industrial process, either in the form of heat or steam that would otherwise have been vented or emitted into the atmosphere. Eligible processes use a closed-loop system and do not use fossil fuels as an input source within the ERG technology process. The only product of ERG is electricity.

Geothermal Energy - means electricity produced using the natural heat of the earth and all substances that derive an added value from it, including steam, water and water vapour heated by the natural heat of the earth and all substances dissolved in the steam, water or water vapour obtained from a well. This does not include hydrocarbons or water that has a temperature less than 80°C at the point where it reaches the surface.

Hydrocarbon Energy - means electricity produced from a facility combusting or converting fossil fuel using a closed-loop process whereby all air and water emissions from the operation of the facility are either deemed to be zero, negligible, or subject to long-term sequestration from the immediate receiving environment. Such a system requires approval of the Minister of Energy, Mines and Petroleum Resources for classification as BC Clean Electricity.

Hydro Energy - means electricity generated from a system or technology that uses a mechanical method to capture and convert the potential energy of water.

Hydrogen - Usually recognized as an energy currency, hydrogen can also be used as a primary fuel source for internal combustion engines. Hydrogen produced from a renewable resource and combusted in an internal combustion process or otherwise converted into electricity is considered BC Clean.

Solar Energy - means electricity generated by converting the radiant light or heat energy of the sun through the use of photovoltaic and concentrating solar thermal technologies.

Supply-Side Efficiency Gains – means an upgrade to an existing facility that uses or results in the use of a renewable energy source and creates an incremental supply of electricity.

Tidal Energy - means electricity produced by harnessing the natural rise and fall of a tide in an estuary or bay of the ocean, provided the system does not use technology that results in negative impacts to marine life and ecosystems.

Wave Energy - means electricity produced by harnessing the natural rise and fall of waves in the ocean, provided the system does not use technology that results in negative impacts to marine life and ecosystems.

Wind Energy - means electricity produced from a system of airfoils or blades that spin a drive shaft to capture the kinetic energy of the wind.

Other Potential BC Clean Electricity Sources – can include a project where the proponent or electricity distributor can demonstrate to the satisfaction of the Minister of Energy, Mines and Petroleum Resources that a project or application of technology, otherwise excluded by this guideline or not qualifying for certification under the Environmental Choice^M Program should be recognized as producing BC Clean Electricity.