

Clean Electricity, Conservation and Climate Justice in BC

Meeting Our Energy Needs in a Zero-Carbon Future

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CANADIAN CENTRE
for POLICY ALTERNATIVES
BC Office

SUMMARY

ACTION ON CLIMATE CHANGE REQUIRES that BC eliminate the use of fossil fuels over the next few decades. This transition will place new demands on BC's electricity system. A growing population and the electrification of our homes, buildings, cars and other vehicles will all increase demand for electricity. Ambitious conservation measures and major efficiency gains in BC's use of electricity will be necessary, but won't be sufficient to meet all our future needs. Some new renewable generating capacity will also be required.

Complicating the challenge from a social justice perspective, as we bring new electricity capacity on stream, electricity prices will increase, due to the higher cost of acquiring new power. Without offsetting policy measures, these price increases will hit lower income households particularly hard.

In recent years, the government has directed BC Hydro to purchase additional electricity supply from private power producers to meet new demand. Paradoxically, BC's growing demand for electricity has not been coming primarily from efforts to reduce greenhouse gas emissions (GHGs) from fossil fuels, but rather, from the rapid expansion of the mining and oil and gas sectors, the dirtiest industries from a GHG perspective.



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Our alternative vision leverages BC's electricity assets as part of an aggressive climate action strategy. The central finding of this report: BC's energy and electricity needs can be met, even as we dramatically reduce our GHG emissions and ultimately become carbon-zero by mid-century. But not if we continue with current policies.

Aggressively pursuing the energy efficiency and conservation potential in BC, combined with support for small- and community-scale renewable technologies, can significantly reduce the need for new electricity supply. However, this will only happen if the government's energy-intensive resource extraction policies are dramatically scaled back.

RESOURCE INDUSTRIES ARE DRIVING THE DEMAND FOR NEW POWER

Natural gas and mining corporations are putting increasingly large demands on our electricity system—using clean, low-carbon electricity for the expansion of dirty, carbon-intensive industries. In the absence of significant policy changes, British Columbians will end up subsidizing industrial power use through steep rate increases. In addition, the construction of new power projects to meet rising demand from industry will constitute a major threat to BC's environment.

The three major components of BC's current economic development strategy—mines, natural gas projects, and liquefied natural gas (LNG) plants—are very energy intensive. As new electricity is far more expensive than existing supply, this will raise the overall price of electricity for all ratepayers. Much larger electricity loads plus major investments in new high-voltage transmission lines built specifically for industry add little long-term value to BC's electricity system.

A key finding of this report is that British Columbians are subsidizing mining, oil and gas companies through BC Hydro. Under the current electricity tariff, all ratepayers share the costs of new electricity even if BC Hydro acquires it for one specific class of ratepayers. Consequently, residential and commercial customers will face rate increases to fill the gap:

- By charging gas developers in the Montney shale gas region less than half the cost of new supply, BC Hydro could end up with a loss of up to \$150 million every year during its peak extraction period.
- The first LNG plant alone will likely benefit from subsidized electricity of about \$125 million per year, and several more plants are proposed.

The province plans to invest in new transmission lines to northern BC for the benefit of natural gas and mining companies.

- BC Hydro is planning a major upgrade to its transmission system, at a cost of \$255 million, which it needs only because of the Montney shale gas development.

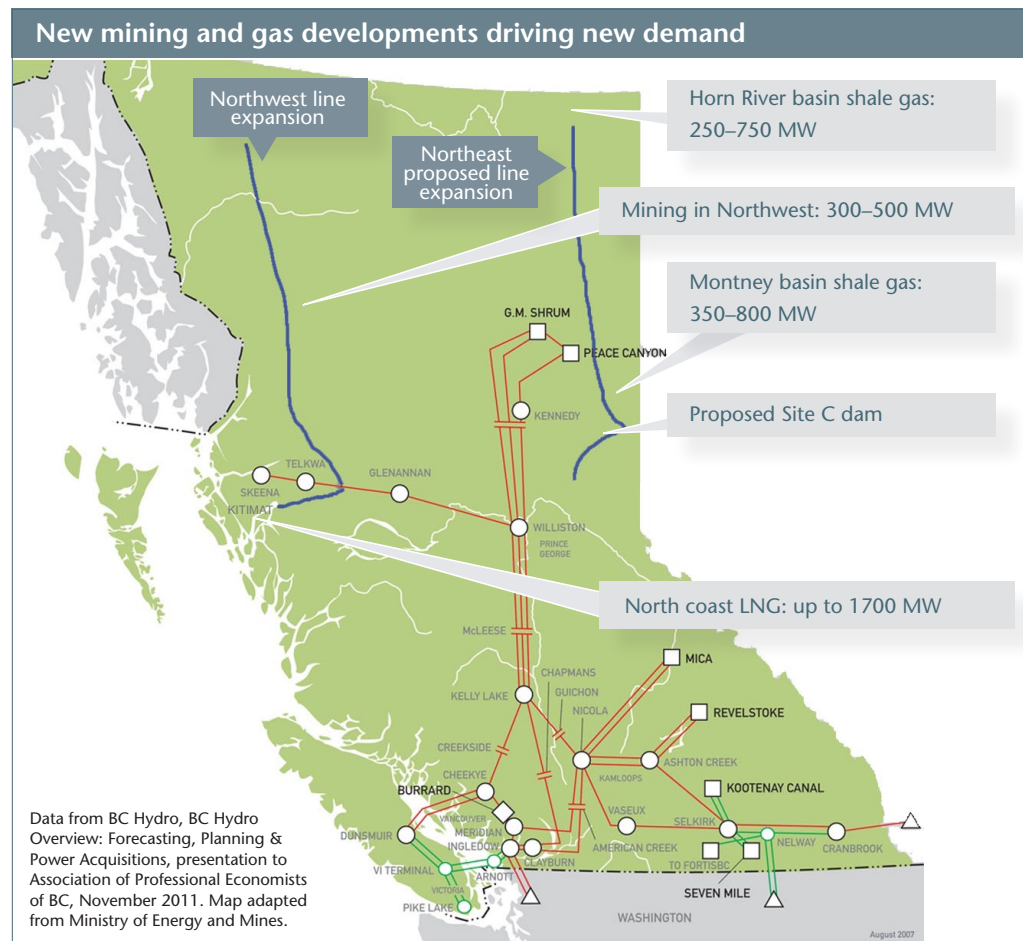
- The Northwest Transmission line, projected to cost \$561 million, is being built specifically to service new mines and private power projects.
- Further north, BC Hydro is planning a \$1.5 to \$2 billion Northeast transmission line to service shale gas development in the Horn River basin near Fort Nelson.

In addition to the adverse price impact on BC households and small businesses, providing subsidized electricity to new resource projects undermines the incentive for industry to conserve electricity. Support for oil and gas companies also conflicts with BC's GHG reduction targets because they produce massive amounts of greenhouse gases.

PRIVATE POWER PRODUCTION IS INFLATING THE COST OF NEW GENERATION

Over the past decade, BC Hydro has issued a series of contract tender calls to purchase electricity, primarily from run-of-river and wind sources within BC, supplemented by major purchases of biomass energy from pulp mills. To meet its goal of increasing the role of the private sector in BC's electricity system, the government has also restricted BC Hydro from developing new, small-scale renewable electricity supply.

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To create demand for new private power projects, the government directed BC Hydro to meet an arbitrary “self-sufficiency” requirement (now partially rescinded) while proposing that it promote the export of renewable electricity to the US. These policies have resulted in BC Hydro signing over \$40 billion in long-term contracts to purchase private power at unreasonably high prices.

Due to time lags, ratepayers are only just beginning to experience the higher electricity costs arising from these contracts.

- In 2006, BC Hydro paid \$87.50 per MWh for new supply. By 2009, the average price had risen to \$124 per MWh.
- According to the 2011 *BC Hydro Review*, private power projects supplied 16% of BC’s total domestic electricity requirements, but accounted for 49% of overall domestic energy costs.
- In 2003, BC Hydro spent \$290 million on private power contracts. Since then the amount has increased substantially, with the projected bill for fiscal 2014 reaching \$1.1 billion.
- BC Hydro now has contractual agreements that amount to approximately \$40 billion for energy purchases from private power developers.

Much of the electricity BC Hydro has contracted to purchase is not well suited to BC’s existing hydro-based system. Run-of-river comes during the spring freshet when BC least needs additional power, but is largely unavailable in the winter when demand is highest.

AT WHAT COST?

Mining, oil and gas companies have a growing appetite for electricity, but pay much less than the cost of new supply.

In the absence of significant policy changes, British Columbians will subsidize BC's dirtiest industries with steep rate increases.



The one notable exception to the emphasis on private power generation is the proposed development of the Site C dam on the Peace River. The need for this dam, however, is driven by the electricity demands of the expanding resource sector—and yet, the energy demands of new mines, gas projects and proposed LNG plants would, if completed, far outstrip the power produced by a new Site C dam.

MEETING NEW DEMAND THROUGH CONSERVATION, EFFICIENCY AND SOME NEW RENEWABLE SUPPLY

The high cost of new power generation points to the need to make much better use of the electricity we currently produce. Conservation and energy efficiency measures (also known as “demand side management” or DSM because it reduces the underlying demand for energy) are generally accepted as the least expensive, lowest impact form of meeting new energy demand.

Other alternatives include small- and neighbourhood-scale energy projects. These are a complementary approach that can reduce demand for electricity from BC Hydro. Installation of solar hot water heaters (and to a lesser extent, photovoltaic panels) is a good example. District energy systems offer considerable potential for reducing electricity demand and for reducing GHG emissions (provided they use renewable sources).

Based on BC Hydro’s own estimates, an aggressive approach to DSM could offset most of the projected increase in demand due to population increase and economic growth.

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The remaining planning challenge comes from two areas of new demand on the system: conversion of homes currently using fossil fuels (space and water heating, primarily), and electrification of transportation:

- To accommodate electricity demand for transportation, a structural shift towards “complete communities” —that would see people living closer to where they work, shop and access public services and amenities—is required.
- For homes, similarly aggressive DSM policies, including a major retrofit program for BC housing in conjunction with fuel switching renovations, will be needed.

Some expansion of renewable sources of electricity in BC could also make a further contribution to BC’s future supply, although it will prove expensive due to the much higher cost of small-scale projects, particularly those located in remote areas.



NEXT STEPS

We recommend the following measures for a balanced supply and demand planning framework for BC, anchored in public power, and refocused on meeting BC’s GHG reduction targets.

1. RETHINK BC HYDRO’S INTEGRATED RESOURCE PLAN

BC Hydro’s current planning approach must look at all aspects of energy use in BC, in the context of a multi-decade shift to a zero-carbon BC. Rather than using our Crown corporation as a vehicle for promoting private power interests and subsidizing resource projects, the government should direct BC Hydro to plan for the province’s future electricity system based on the central role it must play in furthering BC’s climate objectives.

2. RAMP UP EFFICIENCY AND CONSERVATION MEASURES

BC Hydro has modeled plans for next generation demand side management (DSM) programs. It should commit to enacting the most aggressive options and developing a culture of conservation. In addition to incentive and retrofit programs, the government should make much more use of its regulatory powers to require commercial and residential buildings to meet high energy-efficiency standards.

3. DO NOT SUBSIDIZE HIGH-GHG INDUSTRIES

The government should reassess its policy commitment to expand capital-intensive resource industries. Minimally, BC Hydro should charge new resource projects the full marginal cost it is paying to acquire the additional power they require, as well as the full costs of transmission extensions, upgrades and related infrastructure investments that are built specifically to supply their projects.

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4. COMMIT TO RENEWABLE PUBLIC POWER

To the extent that we need additional energy supply, future electricity generation should be 100% renewable and developed in the public sector. The government should direct BC Hydro to cancel further tendering for new private power.

5. PRICE CARBON

Another way to shift towards renewable energy and encourage conservation is to put a higher price on carbon emissions. Revenues should be used to fund energy efficiency and conservation and other needed climate action investments like public transit.

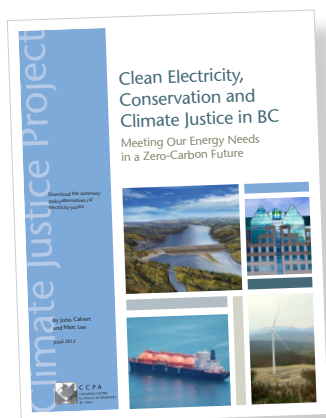
6. ASSESS REGIONAL IMPACTS

BC should develop a regionally-based screening process to determine areas in British Columbia where the development of renewable electricity, if it is truly needed, is appropriate and areas where it is not. This type of regional assessment must be transparent and allow for the full participation of local communities and First Nations.

7. CONFRONT ENERGY POVERTY

Regardless of changes in government policies in the future, BC Hydro is now saddled with a cost structure that will mean substantial rate increases over the next decade. The government should develop new policies to cushion the impact of rate increases on low-income residents. This includes income transfers, concentrating price increases on the biggest consumers, and investing in retrofit programs for low-income households.

The preceding analysis points to the need for fundamental change in the government's overall electricity policies and its power-intensive resource development strategy if it is to meet its climate objectives. BC can incorporate more renewable energy into the system, and increase spending on conservation initiatives. But without a basic change in the government's broader economic policies, these initiatives will be quite inadequate to compensate for the large amount of new energy needed by industrial customers. Maintaining the present policy direction, even for a few more years, will also make it much harder to address global warming in the future.



Download the full report at policyalternatives.ca/electricity-justice

ABOUT THE AUTHORS

JOHN CALVERT is an Associate Professor who teaches public policy in the Faculty of Health Sciences at Simon Fraser University. He is currently a co-investigator on a five-year SSHRC research project, *Work in a Warming World (W3)*. The project is examining the impact of climate change on work and employment in Canada and internationally. He is also the author of *Liquid Gold: Energy Privatization in BC*, which critiqued the provincial government's policy of promoting the development of privately-owned electricity generation in BC.

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THE CLIMATE JUSTICE PROJECT

The Climate Justice Project is a multi-year initiative led by CCPA and the University of British Columbia in collaboration with a large team of academics and community groups from across BC. The project connects the two great “inconvenient truths” of our time: climate change and rising inequality. Its overarching aim is to develop a concrete policy strategy that would see BC meet its targets for reducing greenhouse gas emissions, while simultaneously ensuring that inequality is reduced, and that societal and industrial transitions are just and equitable.

www.climatejustice.ca



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