

Clean Energy Association of BC

Response: BC Hydro Review - Phase 2 Review Interim Report

Clean Energy BC (CEBC) is pleased to provide this submission to the BC Ministry of Energy, Mines and Petroleum Resources on the Comprehensive Review of BC Hydro – Phase 2 Interim Report. CEBC and its members are committed to supporting CleanBC and the success of BC Hydro in achieving the objectives of this Review.

CEBC represents over 100 independent power producers (IPPs), developers, operators, service providers, First Nations, and academic institutions contributing to British Columbia's renewable energy sector. Together our membership operates 123 renewable energy projects representing tens of billions of dollars of direct, renewable energy investments throughout the province.

Independent power producers provide benefits to BC Hydro and to British Columbians by:

- Providing reliable, responsive, and affordable renewable power solutions in partnership with BC Hydro;
- Creating flexibility through the management of risks associated with infrastructure financing, development, operation, and maintenance. These risks are removed from BC Hydro and managed by IPPs, ultimately removing the financial responsibility associated with these risks from the ratepayers;
- Developing innovative power solutions by harnessing high quality and reliable domestic and international technologies to which IPPs have access and experience;
- Contributing to reconciliation and inclusion of First Nations through meaningful opportunities in the renewable energy sector;
- Generating tax revenues, regional/local economic investment, and high quality, family-supporting jobs; and
- Contributing low carbon solutions in support of provincial climate change objectives.

While the Phase 2 Interim Report discusses some of the challenges BC Hydro faces to achieve low carbon electrification, more assessment of these, including the effects of government policies on the renewable energy sector and British Columbians throughout the province, is needed. We provide our comments here in six sections, and answers to the questions posed in the Interim Report are attached.

1. Load-Resource Forecasting

Two key concerns of CEBC's members are the absence of a current Integrated Resource Plan to inform recommendations on BC Hydro's long-term load and resource needs, as well as the proposed removal of the self-sufficiency requirement contained in the *Clean Energy Act*.

Until the IRP is completed, BC Hydro should reserve making recommendations about its long-term load and resource options, including independent power production. BC Hydro currently projects that it will be in an energy surplus into the 2030s, however several analysts predict that changes resulting from CleanBC, electrification of the LNG industry, and other factors such as reduced Demand Side Management will result in an energy deficit. Although the COVID-19 crisis poses some immediate uncertainties in load forecasting, extensive electrification will be needed to achieve the objectives of CleanBC.

The CleanBC Plan predicts that 4,000 GWh per year will be needed by 2030 to achieve 75% of the GHG reduction target – an increase of roughly 8% above BC Hydro’s current supply.¹ The Phase 1 Final Report notes there will be a need for additional supply and additional capital projects to reach the 2030, 2040, and 2050 targets.²

2. Removing Self-Sufficiency

Removing the self-sufficiency requirement will have serious implications for both our members and for British Columbians throughout the province. While CEBC acknowledges the rationale posed in the report, we believe BC Hydro/Powerex already has sufficient and appropriate flexibility in place to import electricity.

Our main points of concern are as follows:

- At the invitation of BC Hydro, IPPs invested nearly \$9 billion into BC. Removing self-sufficiency and increasing reliance on imported power could depreciate investment values in the short term, as electricity purchase agreements (EPAs) expire and are either re-contracted at below-market rates or lie dormant if BC Hydro does not re-contract the generation.
- While the current prices of imported electricity are low, there is less certainty with price, supply, and profile of electricity in the medium to long term. This uncertain future of foreign electricity prices imported through Powerex and BC Hydro could pose a significant cost to British Columbians.
- Removing the self-sufficiency clause would diminish economic reconciliation opportunities for First Nations. Several First Nations are invested in renewable energy projects, most in partnership with other CEBC members. In addition to moving away from carbon-intensive and often dangerous energy options, these renewable energy projects create low carbon energy self-sufficiency for these communities that provide employment and revenue.
- Increasing electricity imports supports the economic wellbeing of international workers directly and indirectly involved in the production of renewable electricity to the detriment of our own workers, including First Nations. This can negatively impact economic opportunity, and lead to a loss of family-supporting employment and competencies that the renewable electricity sector relies on, as well as the spin-off benefits provided to provincial, municipal, and federal governments through taxation.
- Increasing reliance on other jurisdictions for electricity – some with higher carbon grids – reduces the ability of British Columbia to manage its GHG reduction targets and to invest in its long-term economic resiliency.

¹ Government of British Columbia. (2019). Comprehensive Review of BC Hydro: Phase 1 Final Report, p. 22. Retrieved from https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/electricity/bc-hydro-review/final_report_desktop_bc_hydro_review_v04_feb12_237pm-r2.pdf

² Government of British Columbia. (2019). Comprehensive Review of BC Hydro: Phase 1 Final Report, p. 22. Retrieved from https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/electricity/bc-hydro-review/final_report_desktop_bc_hydro_review_v04_feb12_237pm-r2.pdf

3. Regional Investment, Jobs, and Local Tax Revenue

One objective of the Phase 2 Review is to develop recommendations that support quality economic development; however economic development is not addressed in the Interim Report. A summary of the economic development – including direct, indirect, and induced – created from independent power production should be included in the Review. This was one of four factors that the BCUC considered when assessing EPA renewals recently and is important to local communities.

The renewable energy sector, as represented by CEBC and its members, brings a diverse array of jobs and investment throughout all regions of British Columbia. Removing self-sufficiency and turning instead to foreign electricity markets would be detrimental to British Columbia's regional economies and First Nation economies. Direct jobs from the renewable energy sector include: engineering and design, environmental, construction and operations jobs (including the service industry) required in the planning and development, construction, and long-term operation of renewable energy facilities. Our sector currently operates projects in 23 districts, many outside of the lower mainland.

In 2016, CEBC commissioned a study to better understand the scope and magnitude of our industry's investments in the province.

- “Of the 175 suppliers [engaged for the project] more than 90% were from British Columbia and 78% of all monies spent remained in the Canadian supply chain” – Clean Power Producer.³
- The renewable energy industry has invested close to \$9 billion in renewable energy projects in British Columbia and is interested in stimulating more sustainable economic development for the benefit of all residents.⁴
- In 2016, 21,374 Direct Employment (FTE Person Years) were created in pre-planning, planning, and construction from renewable energy projects cumulatively.
- Annually, on average, there are 806 Direct Employment (FTE Person Years) in operational positions.

In addition to the findings of the 2016 report, CEBC members contribute to property and other taxes annually, to both local and provincial government.

4. Falling Cost of Renewables

Although the Interim Report acknowledges the falling cost of renewable technology including wind, solar, and batteries, the magnitude of this cost reduction is not articulated. The cost of renewable energy technology has dropped dramatically, and our members have the expertise to deliver these cost-competitive projects. BC has not had a competitive process to procure energy

³ Clean Energy Association of BC. (2016). *BC Clean Energy Projects: Investment, Job Creation and Community Contributions*, p. 9. Prepared by MNP LLP. Retrieved from <https://www.cleanenergybc.org/wp-content/uploads/2016/04/MNP-Report-April.pdf>

⁴ *BC Clean Energy Projects*, p. 3.

since 2010. As such, our local economy has yet to benefit from the significantly reduced cost of these technologies.

- Since 2009, the cost of wind has dropped by 70% on average. Please see Appendix 1 Figure 1: Lazard's Levelized Cost of Energy Comparison.⁵
- Since 2009, the cost of utility-scale solar PV has dropped by 89% on average. Please see Appendix 1 Figure 1: Lazard's Levelized Cost of Energy Comparison.
- Appendix 1 Figure 2 further illustrates the cost comparisons across conventional and renewable energy options. Solar and wind are now the cheapest. These costs are still declining and the quantities available will continue to increase over the next 10 years.
- In recent reports from April 28th, 2020, Bloomberg New Energy Finance stated that since the second half of 2019 the levelized cost of onshore wind energy projects has fallen a further 9% to \$44/MWh, and solar has also declined an additional 4% to \$50/MWh (listed in USD).⁶
- Pairing intermittent renewable energy with built-in battery storage is becoming increasingly popular due to the flexibility and ancillary services this offers to the grid. Many CEBC members are pioneers in designing and constructing innovative hybrid systems by pairing solar or wind generation with battery storage.

5. Private Sector Advantage

The renewable energy industry is here to partner with BC Hydro and assist in providing reliable electricity to benefit all British Columbians. There are many ways that working together builds a robust and diverse electricity landscape.

- Private capital investments in renewable energy infrastructure enables the Province of BC to allocate more provincial budget into other important areas like healthcare, education, wildfire management, and road infrastructure.
- Innovation drives excellence and, together with competition, delivers cost-effective projects.

In the context of COVID-19, collaboration and partnership with the private sector should be thoroughly explored to find innovative, quick-to-market solutions that alleviate the cost burden of capital-intensive infrastructure to the ratepayer while still achieving CleanBC targets. Economic recovery post-COVID-19 can be enhanced through the broad range of clean tech jobs and services required in a vibrant retrofit and energy efficiency industry, attracting new industry and large electricity consumers by prioritizing BC's renewable electricity.

⁵ Lazard. (2019). *Lazard's Levelized Cost of Energy Analysis – Version 13.0*. Retrieved from <https://www.lazard.com/media/451086/lazards-levelized-cost-of-energy-version-130-vf.pdf>

⁶ Eckhouse, B. (2020). Bloomberg. "Solar and Wind Cheapest Sources of Power in Most of the World." Retrieved from <https://www.bloomberg.com/news/articles/2020-04-28/solar-and-wind-cheapest-sources-of-power-in-most-of-the-world?srnd=premium-canada&sref=knVfaD1R>

6. First Nations in the Renewable Energy Industry

CEBC maintains a core value of supporting and advocating for renewable energy projects that are First Nation owned, partnered, and operated. The process of reconciliation is underscored by the low environmental impact of these projects, which aligns with many First Nations' cultures and traditions, affirming Indigenous rights whilst strengthening the economic foundation for communities to prosper. Renewable energy projects including hydro, wind, solar, and biomass offer a platform for meaningful regional Indigenous economic development. BC's renewable energy industry has a long and proven track record of cultivating respectful and mutually beneficial partnerships with First Nations that advance sustainable economic development, energy security, and self-determination.

There is a growing body of evidence that the meaningful participation of First Nations in the renewable electricity sector in BC and across Canada results in long-term wealth generation that is essential to the reconciliation process. This includes the following:

- As of 2017 there is Indigenous participation in 152 medium-large scale solar, wind, hydro, and bio-energy renewable energy projects across Canada.⁷
- There is an estimated \$842 million of Indigenous employment income that comes from participation in Canada's renewable energy projects.⁸
- In 2017, feedback from 102 BC First Nations and three tribal councils illustrated that respondents had 78 operational projects with a total generation of 1,836 MW. Two-thirds of respondents had 48 projects in planning or construction. Overall, 98% of respondents indicated existing involvement or a desire to be involved with the renewable energy industry.⁹

While diesel fuel use makes up a relatively small proportion of BC Hydro's energy landscape, the economic, environmental, safety, cost, and social impacts of diesel reliance to communities are significant. The elimination of diesel reliance as a primary energy source in remote and end-of-line communities should be a priority for BC Hydro. CEBC members are ready to support remote communities based on their unique needs.

Numerous BC First Nations have persistently articulated a desire to participate in BC's electricity system as developers of renewable energy generation assets. This is largely because the sector aligns with many nations' deeply held values related to environmental stewardship and self-reliance. Restructuring the Standing Offer Program would create opportunity for self-determination, with many First Nations prepared to invest in the renewable energy sector.

⁷ Lumos Clean Energy Advisors. *Powering Reconciliation: A Survey of Indigenous Participation in Canada's Growing Clean Energy Economy*, p. 3. Retrieved from https://mma.prnewswire.com/media/571359/Lumos_Energy_Powering_Reconciliation_Survey_of_Indigenous_part.pdf?p=pdf

⁸ *Powering Reconciliation*, p. 6.

⁹ Cook, D., Fitzgerald, E., Sayers, J., and Shaw, K. (2017). "Survey Report: First Nations and Renewable Energy Development in British Columbia," p. 3. Prepared for B.C. First Nations Clean Energy Working Group. Retrieved from https://dspace.library.uvic.ca/bitstream/handle/1828/7919/Shaw_Karena_First_Nations_Renewable_Energy_BC-2017.pdf?sequence=1&isAllowed=y

With the adoption of UNDRIP, the provincial government now must reevaluate any policy that impacts or restricts Indigenous Nations' opportunities to pursue self-determination. As noted in its recent Indigenous Utilities Regulatory Inquiry Final Report, the BCUC advised against restricting Indigenous utilities' access to the transmission system. It also recommended evaluating opportunities for First Nations to participate in exporting energy beyond British Columbia with the assistance of Powerex.¹⁰

Elimination of the self-sufficiency provision in the *Clean Energy Act* is another impediment to First Nations' ability to develop and manage their economies. It threatens to shut the door for good on the promise of the renewable energy sector as a viable opportunity for First Nations to pursue sustainable economic development.

Conclusion

The Comprehensive Review of BC Hydro – Phase 2 Interim Report is foundational for British Columbia's economic prosperity in the coming years. Fostering sustainable economic development to the benefit of all British Columbians throughout the province can be done with the assistance of the renewable energy sector.

CEBC members are poised to provide low carbon electricity production and electrification, innovation, First Nations partnerships, regional economic diversification and stable job opportunities all backed by low-risk, private investment in partnership with BC Hydro and in support of the Government of BC's sustainable objectives.

We appreciate the opportunity to contribute to the development of this report. Please contact Laureen Whyte, Executive Director at laureen.whyte@cleanenergybc.org for more information.

¹⁰ British Columbia Utilities Commission. (2020). "British Columbia Utilities Commission – Indigenous Utilities Regulation Inquiry – Project No. 1598998 Final Report," p. 75. Prepared for the Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources. Retrieved from https://www.bcuc.com/Documents/Proceedings/2020/DOC_57958_2020-04-30-BCUC-IUR-Inquiry-Final-Report-Web.pdf

Appendix 1

Figure 1: Levelized Cost of Energy Comparison – Historical Renewable Energy LCOE Declines

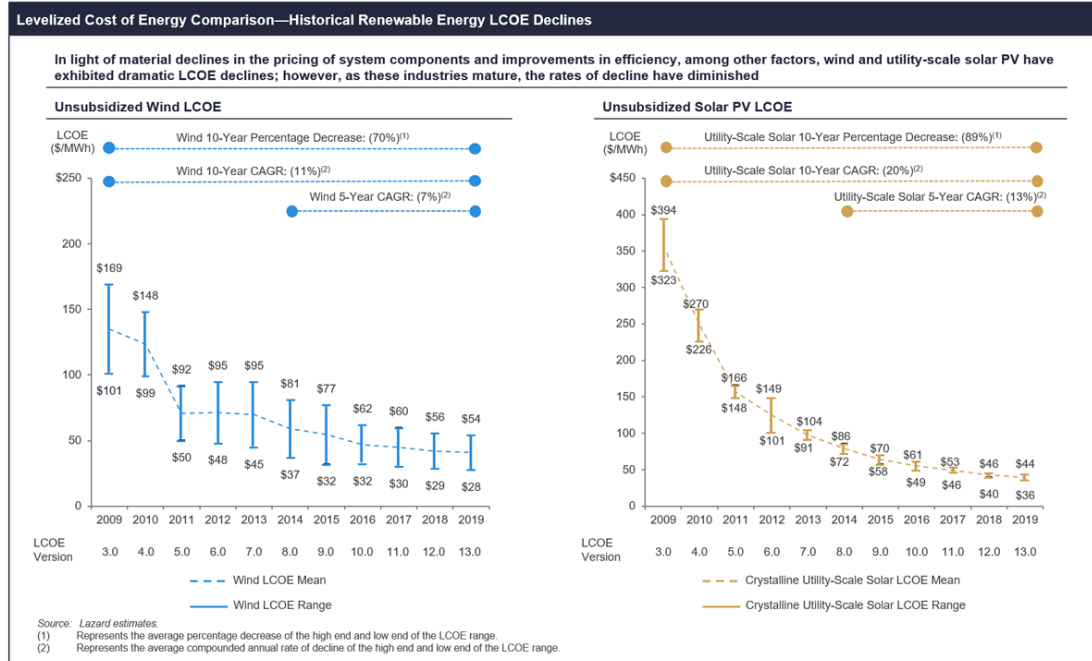
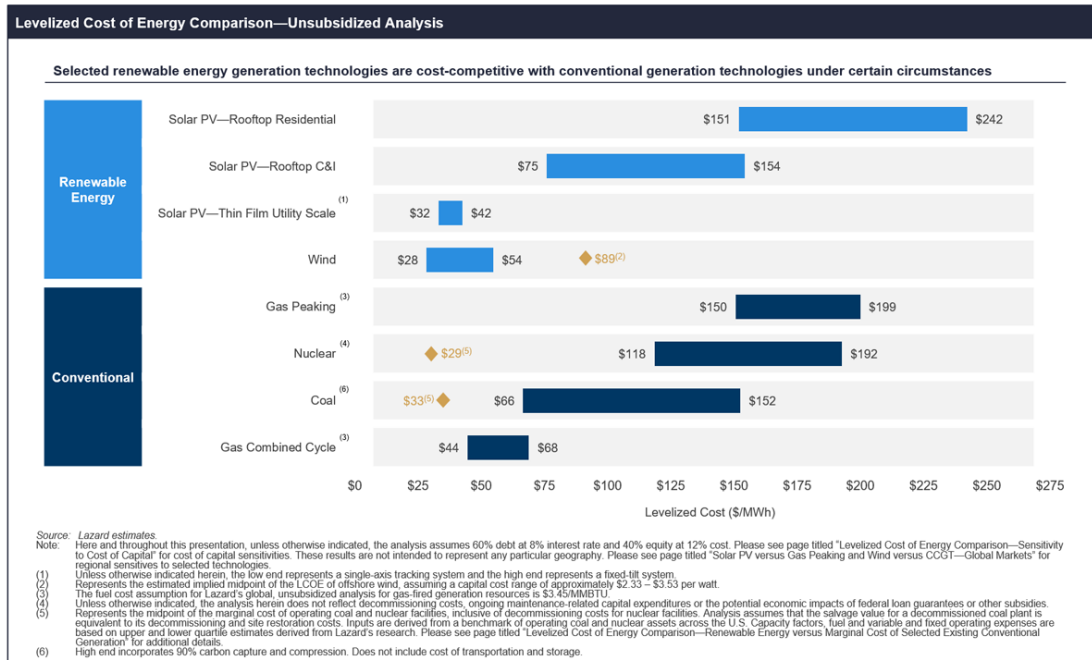


Figure 2: Levelized Cost of Energy Comparison – Unsubsidized Analysis



(Prices are noted in USD)

Appendix 2

CEBC Responses to Questions, Phase 2 Interim Report

Supporting CleanBC

*What factors are important to consider when looking at optional rates to support electrification?
(pg. 17)*

Important factors to consider when looking at optional rates to support electrification include the following:

- Rates should be structured to provide clear price signals to consumers about the cost of supplying electricity so that consumers may make informed choices about their energy usage and investments.
- Rates should not be artificially lowered to attract load growth, as doing so creates future liabilities for ratepayers and disadvantages to the private sector that could offer alternative solutions to customers.
- Rate designs that incentivize electrification and avoid overcharging customers for increased electricity use will be critical to achieving the goals of CleanBC. Rate structures should not disincentivize electrification.

How can competitiveness for business and industry be prioritized in an electrified future?

BC's long-time competitive advantage has been low power prices. As we launch into an increasingly carbon conscious reality, BC can leverage our abundant low carbon electricity resources by attracting energy-intensive industries that can boost local economic development. Our competitive advantage comes from abundant storage that enables the integration of renewables, a politically stable jurisdiction, an educated workforce, and close proximity to some of the world's largest markets like the United States and Asia.

Minimizing regulatory constraints in achieving climate targets, revitalizing economic development, and Indigenous economic reconciliation offers opportunities to enhance competitiveness. The renewable energy sector is well positioned to provide solutions to facilitate competitiveness for business and industry, given the availability of market opportunities. Private capital creates the competitiveness needed to stimulate economic growth and industrial revitalization in BC.

How can BC Hydro reduce barriers to electrification for existing and new customers?

BC Hydro can reduce barriers to electrification for existing and new customers by enabling the private sector to provide the cost-effective and timely new infrastructure to advance electrification. Support for renewable energy projects is rising, and these projects attract investors. Further, given the ambitious climate goals that the Government of BC has set out in the CleanBC plan, the renewable energy industry is eager to partner with BC Hydro and to support the future demand anticipated from electrifying transportation, buildings, and industry.

What are key considerations for programs to reduce reliance on diesel for non-integrated communities?

Reducing diesel reliance in off-grid communities is important for low carbon energy security, economic self-reliance, and community safety. In addition to the many benefits of clean electricity, renewable energy projects also enable communities to participate in meaningful economic development.

The communities themselves are best positioned to identify the energy solutions and partnerships that are most appropriate to their circumstances. The renewable energy sector has a long and proven track record of successfully collaborating with communities to provide unique solutions to reduce reliance on diesel.

There would be additional benefit to First Nation communities from expansion of the electricity efficiency programs that BC Hydro already has in place.

Are there new types of community projects or education programs that should be considered as part of an offering for new services either at or behind the meter?

BC Hydro can leverage the shift to cleaner electricity by educating consumers about our clean and locally sourced electricity advantage here in BC that is both environmentally ethical and sustainable. The private sector should be leveraged to invest in incremental energy needs in order to free up BC Hydro resources to focus on the evolution of the utility model to support the objectives of CleanBC and the province's climate targets.

Should BC Hydro use a value for greenhouse gas emission reductions (for example, a carbon price) in its evaluation of investments?

The cost of carbon is a crucial factor in the long-term viability of investments and managing climate-related business risks. The price should be set at a suitable level to influence business and resource decisions if it is to successfully incentivize fuel-switching to electricity.

Adoption of an internal carbon price at BC Hydro would support the objectives of CleanBC and secure BC's competitive advantage in a carbon-constrained world. If BC Hydro were to implement an internal carbon tax to evaluate business decisions, transparency in the methodology and application would be crucial. Transparency on the process will ensure that industry understands and supports the rationale behind investment decisions.

Thriving in an Evolving Electricity Sector

What are important considerations to empower BC Hydro to make the most cost effective decisions on resource options, under the oversight of the BCUC, with respect to clean electricity? (pg. 20)

Considerations for BC Hydro to take may include:

- Global trends such as the falling costs of renewables and utility-scale battery storage,

- The renewable energy sector's access to cost-effective innovative technologies,
- Risk reduction for BC Hydro's ratepayers on renewable energy projects that are funded by the private sector,
- Diversifying the supply of renewable energy which reduces supply risk thus increasing energy security,
- Advancing First Nations' self-determination and economic reconciliation,
- The creation and retention of local and rural jobs and taxes, fostering prosperity in times of low commodity prices in other resource industries like forestry or mining, and
- Reducing greenhouse gas emissions to help the province achieve its climate target goals.

What should BC Hydro be aware of when considering partnerships for behind the meter services?

BC Hydro should leverage partnerships with the renewable energy industry in order to mutually benefit from collective expertise and innovation in a variety of different services and technologies. Many renewable energy companies have decades of expertise that span these renewable energy technologies. Collaborating to best utilize this knowledge would be beneficial for all British Columbians.

How can BC Hydro best position itself to drive innovation? What is the best way to fund these efforts?

BC Hydro can best position itself to drive innovation by partnering with the renewable energy industry and being open to a program that leverages the renewable energy industry to assist in the supply of electricity. The renewable energy sector can provide technology agnostic solutions to help meet the energy needs as defined by BC Hydro. Partnerships with the private sector are a cost-effective means for the public sector to access and continue to push innovation while protecting ratepayers from increased costs. The competitive nature of the renewable energy industry forges innovation and speed.

Leveraging Our Strengths

What are important considerations for a 100% clean electricity energy standard for BC Hydro's integrated system? (pg. 22)

CEBC supports the creation of a 100% clean electricity energy standard that aligns with BC's climate target goals. Such a standard should be coupled with robust and transparent attribute tracking, particularly if greater volumes are procured on the open market.

What factors should be considered if BC Hydro looks to expand its business interests including considering new opportunities outside of B.C. via Powerex or a new subsidiary?

BC Hydro and Powerex's operations should primarily serve to benefit British Columbian ratepayers. The impacts and risks of removing the self-sufficiency provision and pursuing greater participation in external markets should be considered. Such risks would include a loss of job opportunities and economic growth through local generation projects, especially for rural communities; lost opportunities to advance economic reconciliation with First Nations peoples (many of whom have already made significant investments in renewable energy projects); and open market energy sources conflicting with the goals of CleanBC and the low carbon advantage promoted by BC's businesses.

Advancing Reconciliation through New Partnerships with Indigenous Nations

What emerging issues and trends will BC Hydro need to address in the Phase 2 Review and beyond? (pg. 25)

- Supporting the development of IPPs in BC and supporting the distributed, geographical diverse nature of energy is advantageous when considering First Nations' role in the renewable energy sector.
- Inclusion of Non-Integrated Areas should be considered, especially if the adoption of a 100% clean electricity target is pursued. Many remote or end-of-line First Nation communities do not currently have energy security.
- Acknowledgement that there is a growing base of First Nation renewable energy leaders who have built capacity in their respective communities through the economic development stimulated by the renewable energy sector over the last four decades. BC Hydro should recognize the intersection between highly skilled First Nation renewable energy professionals and the continued evolution and flexibility as new technologies, and business models become more common in the electricity sector.
- Many First Nations have projects that are approaching the end of their EPA; there needs to be contract renewal to ensure that these investments and assets continue to bring economic prosperity to the community.

What do you think are the key issues and trends for Indigenous and non-Indigenous communities related to electricity and BC Hydro?

Indigenous and non-Indigenous communities benefit from advancing their own energy solutions and generating economic wealth for their constituents. The renewable energy industry can provide cost-effective energy and timely projects to enable electrification and energy security throughout the province.

Additional transmission infrastructure will be needed in BC to achieve further industrial electrification; there is an opportunity to develop transmission projects with private sector partnerships and First Nations, and/or community ownership that can advance reconciliation

and expedite transmission development. Through these partnerships, renewable energy projects have proven to be an effective tool for First Nations' self-determination and energy sovereignty, developing power in and for their own communities.

Economic self-sufficiency for Indigenous peoples can be advanced through the provision of stable and long-term revenues that come from renewable energy projects. Supporting BC's renewable energy industry to collaborate on the design of electrification solutions will result in ingenuity, innovation, and overall economic stimulation — particularly for rural communities.