

SHAPE BC's ENERGY FUTURE

YOUTH INPUT WORKSHOPS AGES 14-18 | FEB 2, 2021 APPLY TODAY!

Youth Engagement Session Report CleanPower 2040

Feb 2021 | Report prepared for BC Hydro



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Event Summary

BC Hydro is in the process of developing an Integrated Resource Plan (IRP), commonly referred to as Clean Power 2040. BC Hydro's IRP will outline how BC Hydro plans to provide reliable, affordable and clean electricity to meet customers' demand now and into the future. It considers BC Hydro's 20-year projections of electricity demand in B.C., including high and low load ranges and scenarios, to account for a range of potential impacts from electrification to achieve greenhouse gas reductions through to the effects of economic downturns. The IRP sets out BC Hydro's plan to meet future electricity demand in areas such as demand side management, infrastructure investments and contracts with IPPs. The IRP will describe how BC Hydro's plans are aligned with Provincial energy objectives such as climate goals and economic development. It will also describe how BC Hydro is preparing for an evolving energy landscape like technological advances, changing customer preferences, uncertain demand growth and market conditions, and increasing climate change impacts.

A key component of this planning process is public consultation and engagement. Consultation with the Indigenous Nations, customers and the broader public on the IRP will begin on September 14th, 2020 and has allowed BC Hydro to receive customer input during the development of its long-term plans, an approach that is consistent with (BCUC) guidelines. BC Hydro is seeking input on options to meet future electricity demand considering several different scenarios of its customers' future for electricity. Surveys and web conferences will be used to ask members of Indigenous Nations, customers and the broader public what matters to them when it comes to these choices to prepare for the future. In Fall 2020, CityHive was contacted to lead targeted youth engagement for 14-18 year olds.

On February 2nd, 2021, CityHive facilitated a virtual workshop with almost thirty youth from across the province. The notes collected from that event have been compiled and are included in this report. The following pages will provide a basic overview of the event details, the demographics of the participants, as well as a full compilation of the raw data and notes that were collected during the session.



Session Details

Date: Tuesday, February 2nd, 2021 Time: 4:00-5:30pm Pacific Time Location: Zoom

CityHive Staff: 3 BC Hydro Staff: 6 Youth Attendees: 29

Attendee Demographic Details

Total Number of Attendees: 29

Category	Identifier	Number of Participants
Age	14	6
	15	12
	16	3
	17	6
	18	2
City of Residence	Burnaby	1
	Campbell River	5
	Coquitlam	1
	Nanaimo	1
	North Vancouver	1
	Powell River	1
	Prince George	6
	Richmond	1
	Sooke	4
	Surrey	4
	Vancouver	4



Event Data

The following notes are compiled from notes taken by CityHive facilitators, as well as those transcribed from the interactive Jamboards used during the breakout sessions. Photos of the Jamboards are included in the Appendix.

Plenary Notes

Questions asked:

- What is the process that BC Hydro takes when creating a new dam when considering the damage it may cause to nearby ecosystems?
- Is there any idea of a new product to generate even more power more efficiently?
- How is BC Hydro taking those efforts to protect and care for indigenous lands and to listen to Indigenous voices as you discussed? Do you folks have specific commitments to do this?
 - Response:
 - Acknowledge that these assets were built without regard for them, they are working to build those relationships as they move forward and create new plans at the leadership and working level
 - Wanting there to be mutual benefits for all parties involved
 - Work with FN companies to work on projects and be a part of the work
 - Work with the Kwantlen (sp) FN commissioned art panels for the dam, made by a community member
- Followup question: what are some tangible actions around site C and how you are leading coming from a place of privilege?
 - Response:
 - Working to create opportunities to learn from the nations at the bennett dam site to bring awareness to the way in which that project happened
 - Work with FN to understand ways to mitigate and minimize impact to the environment
 - The asset (site c) will bring tremendous benefits to all peoples
 - The commitment to climate action and power to reduce reliance on fossil fuels
- Can you share specific examples of how you are doing this?
- Would love to see decarbonized sources of power as a possible alternative (8 additional comments about supporting this idea from the youth on the call)



- To produce clean energy, we need certain infrastructure. How will BC Hydro ensure that the resources for these things (ex. wind turbines) are produced ethically and without a big negative impact to the environment?
 - Response:
 - I'm Alex with BC Hydro. I can take a crack at the environmental impact question. The main means by which we reduce the environmental impact in our new resources is by choosing the ones that don't have any that means we evaluate the environmental impact (GHGs, footprint, water use etc) of different resource types (eg rates, conversation, solar...). We evaluate the environmental impact of these options and try to optimize environment impact and costs and reliability etc
- Will the future bring any change to how to people live currently?
 - Alex Tu: Hi -- how people live and consumer energy in the future is kind of the million-dollar question. We see trends already - more electric vehicles, a new relationship between economy and energy use, and we are trying to understand what are the big changes. I think some of the big drivers are what we do around climate action, what new technologies take off, and how we choose to travel
- (For Chris) Due to our dependence on independent plants, how can we ensure the decommodification of power? (as it is a demand inelastic good)
- Do you think that hydroelectricity-even with improvements-will be able to carry us into the future or will we have to find a new clean energy source?
 - Response:
 - Hi Sara another provocative question. Large hydro makes an excellent backbone for an electricity system - it is flexible and clean. But it gives us an opportunity to add on to the system using what is becoming really cheap sources of clean energy (wind and solar) that are a good match with large hydro. So I don't think hydro can carry us into the future on its own.

Reflections from BC Hydro Team:

- Considering how to think about the future consider the precautionary principles we need to be mindful of be careful to not make gentle mistakes that have lasting impacts
- Industries in the future will be leaving and potentially creating new jobs in the future as things change
- Sustainability is KEY in order for this to work it needs to be affordable and accessible and portable for it to be useful in the long term
- They heard LOUD and CLEAR things need to be enviro + socially responsible



- There is a recognition of the interconnectedness of everything
- Theme of respect for others and understand the impacts of interactions with others

Breakout Rooms: Jamboard Transcription (compiled)

The following notes are directly transcribed from the interactive Jamboards used in the breakout sessions. Photos of the Jamboards have been included in the Appendix for your reference. All responses are unedited, and the responses from all three breakout rooms have been compiled based on questions for your convenience. The questions were broken into three categories with corresponding Jamboards: Sustainability & Values "SUSTAINABILITY", Future Living "THE FUTURE", and Smart Technology "TECHNOLOGY".

Sustainability & Values

Question 1:

• What does sustainability mean to you?/What's your personal definition of sustainability?

- Sustaining, maintaining electricity supply
- Going above and beyond to make sure we're meeting environmentally targets; not just doing minimum
- Doing things that in the future, we'll be able to do things the way we do
- Ensuring that we have the resources we have now for future generations
- Using electricity in a way to ensure future generations will have the same
- Sustainability to me means that I never have to worry that my kids will go without
- Something that can be sustained for a long term. In terms of energy this means using environmentally friendly and rentable resources
- Sustainability to me is taking the full potential of something without impacting other things or itself.
- Meeting our needs without intruding the needs of future generations
- Sustainability to me is something like a defense or maintained at a certain rate
- Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs.
- Liveable for generations to come
- Making decisions that benefit more than just ourselves for the future
- Developing new and current systems moving towards net-zero emissions



Question 2:

• How can we make energy and electricity more sustainable in the future?

Responses (unedited):

- Increasing energy capacity while minimizing environmental damage
- Use ethically sourced, green materials for projects.
- Or even locally sourced materials.
- Using less fossil fueled powered machines
- Nuclear power is better
- Saving power
- Moreso than individual action; legislation and restricting use that way (about kinds and how much energy is used. Spec. residential)
- Corporations, transportation put emissions into air; need to look at clear alternatives especially as they get cheaper and further research (ie. tidal)
- Diversity the way we get electricity; make it different so we don't just have to rely on one form of energy
- I feel that you should continue to promote sustainable habits in BC communities (outreach) as well as finding new ways to produce clean energy.
- Infrastructure & legislation would be most effective
- Make more local energy
- Home owner incentives to use less energy (lowering demand)
- Decarbonize energy
- Decarbonize! Include intersectional, inclusive, justice-driven-practices
- Since summers are getting hotter and winders are more dangerous. I think that each house can have their own affordable source of energy (Example: solar panels built into each house to provide energy event when power lines are down)
- Leader the charge in efficiency and equitable distribution
- Sustainability
- Has BC Hydro considered using marine current power as renewable energy?
- Inventing more technologies that increase energy efficiency!
- With current situation of pandemic, there are lots of online meeting, maybe solar charger can reduce electricity demands a little more.

Question 3:

• What other values should we be thinking about when we're thinking about our energy future?

- Striving to do better, not just enough
- Environmentally friendly



- Continue to improve
- Balance of demand and cost
- Respect for diversity
- Accessibility
- Affordability
- Equity
- Considerate of the future
- Portability
- Accessible to all incomes, households, etc.
- Making sure everyone is heard and their thoughts are considered
- Keep costs down; many folks won't be able to afford if costs go up
- Take into consideration impacts not just on humans, but also on wildlife and those that can't advocate like us
- To help with people who can't pay and really help even if they want
- Cultural considerations
- Methods of production that uphold responsible practices, or green washed marketing
- Long term plans built with the community

Future Living

Question 1:

- Think of BC in the future:
 - What are the big industries of the future?
 - What industries are gone?
 - What sort of work are they doing?
 - What do neighbourhoods look like?

- Electric transport (cars, skytrain, public transport, etc.)
- Less use of fossil fuels and more use of renewable resources
- Solar panels, waste management (saw some current new innovations of using waste as an energy source)
- Green marking, as more people are noticing about climate change
- Electric cars
- Schools! Starting from the earliest education being able to model sustainable changes immediately will inspire others to follow suit
- Invest in gamestop
- Hopefully we are not longer fossil fuel dependent and driven
- More electric utensils
- Lack of fresh air



- Hopefully our society and ecosystems will not collapse and there is a just transition to green jobs, and clean energy
- Hopefully we are centering marginalized voices in energy
- Hopefully our food and oceans will not be poisoned by pollution
- Cybersecurity
- Oil and gas will be bigger
- Lack of job security
- Data detective will be a new job
- Hopefully, big grounds of trees would not be cut down
- Huge city growth
- Tech and film industry's growing
- Logging and fishing industry's diminishing
- I think there will be a bigger gap between the rich and the poor (more poverty)
- Everything might touchscreen and use electricity
- Electric cars
- Electric cars are a great point once they are very popular that will increase the demand on power and that's a preparation that needs to be made
- Tesla; building electric vehicles
- Tech secor; ie apple
- Offshore wind and
- Change in massive amounts of funding from government for specific energy sectors, and the decision making processes that go into those
- Agriculture
- Hope that one-time use products like batteries will be gone, and that renewable will be the future
- +<u>]</u>!
- •

Question 2:

• Where will these industries and people get their electricity from? (prompts: hydroelectric power, oil, gas, solar, wind)

- Solar portable charger
- carbon/greenhouse gases absorbing concrete on roads, sidewalks, etc.
- Increased solar dependent homes
- Nuclear power is better
- Tidal power
- Wind and solar
- Solar panels
- Solar farms, wind turbines



- Natural gas
- Adding onto tidal power off the west coast we could use tidal power on our energy grid
- I really like that idea ^^^
- Affordable, and clean sources such as geothermal energy and as mentioned decommodifying energy for private users such as homes
- More technologies that will increase energy efficiency, such as, exercise bicycles and treadmill in gym, can produce energy. As we exercise more energy gets produced!
- Offshore wind and tidal
- Electricity boxes & poles → underground (thinking about safety or possible issues caused by storms/natural elements/other events)
- Access is parks & public spaces
- self-generated energy -- ie subsidies from government
- Diversity of energy sources -- solar in sunny places, wind where it's windy, tidal and hydroelectric generators
- Reliable sources that we can depend on

Question 3:

• What new technology does BC Hydro need to be in that future?

- How will BC Hydro accommodate growing population and rising sea levels on the BC coastline?
- Increasing access to public energy
- I hope we find a new type energy that we can produce enough of that isn't bad for the environment
- Remaining affordable
- Have a good image and impression to society.
- Distribute energy storage
- Eco friendly
- Decentralising funding, not have profits guiding decisions or concentrated wealth for leaders
- More support for regular people who might not have the resources themselves
- Wouldn't necessarily like to see more dams -- damages the natural ecosystems in my community
- More local energy; making use of local region's climate
- Think you should focus on developing more of the possible locations on the pacific ring of fire into geothermal plants



Smart Technology

Question 1:

• Imagine your future home - What in that home will use electricity?

- Would like my energy use/home to be dictated by laws; building codes; energy codes. Would like to see those improved to be more sustainable
- heating/AC
 Lights, wifi, and 75% of things in my house
- The issue I have with relying on energy too much is that there are big consequences if the power goes out. Maybe we need a back up power storage for every house or neighborhood for when the power goes out.
- Lighting, infrastructure, maintenance, tech
- I'd like to build a tiny house that can produce enough energy (from solar panels) that it can power itself
- Community solar grids or something
- Important that we encourage conscious decision making while also not eco-shaming or placing blame on individuals when 71% of global GHG emissions from the last 3 decades
- The over the fridge heating and the washing machine (plus outlets for charging) other than that I want to remain low energy is energy is not yet sustainable to a standard
- Generator for each house using natural energy
- Cell phone
- Previously mentioned: exercise equipment that charges batteries, phones, etc.
- Usage of most rooftops for solar panels
- Increased solar dependent homes
- Appliances like the over, but use less lights. Honestly I would use candles
- Mini wind turbines to power small things like your phone charger
- Central heating/AC
- Nuclear power is better
- Increasing home insulation to prevent heat/energy loss and gain to improve energy efficiency
- Sized down wind turbines for community, area, town could be great alternative to a lot of fossil fuel based electricity in communities
- Community composting systems for localized spaces
- Multipurposing singular pieces of technology
- Solar powered homes
- Increase access to local public transportation
- Solar portable charger
- More efficient water heating systems



- More clean public transit, and try to phase out personal cars entirely
- Sidewalks that charge batteries via kinetic energy from people walking on them
- Bird scooters (e-scooters) more available fo less dependence on motor vehicles for shorter distance travel

Question 2:

- How much automation do you see in your home of the future?
 - How important is it for you to be able to set it / tweak it / program it?
 - Or would you rather set high level goals for your home systems to achieve like low medium or high savings or minimize environmental impact?
 - Or do you want both?

- Smart home devices that would regulate for you to lower your energy use (ie so heating isn't on all the time, using smart technology)
- One thing to take to consideration with smart tech: is it using more energy? What's the intent of the companies
- Also, data privacy issues
- Want to make sure there's oversight for companies of these smart technologies
- Both
- Id want it to to be completely transparent, have me to be have me to be able to see what's in it, oversee what it does and have a killswitch if necessary
- Both! Customization should always be an option but having those options for less techie ppl is also important
- I would rather have it personally set
- Voice recognition
- I hope in the future my house can make me breakfast
- I want my house to be one big Alexa that does what I ask



Appendix - Jamboards



















