

Clean Power 2040

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BC Hydro 2021 Integrated Resource Plan Summary Notes: Public Consultation

Meeting	Public Workshop about the Integrated Resource Plan
Date	December 15, 2020 – 7:00 p.m. to 8:30 p.m.
Location	Virtual Workshop (Webex)
Participants	17 public attendees from across the province Large Group Discussions Breakout Group Sessions
Host services	ACI Argyle Communications Inc. Tom Hovland; Darcy Vermeulen: Lead facilitators Taruni Sing; Group Session Driver
BC Hydro Representatives	Alex Tu; Presenter / Senior Strategic Technical Specialist Kristen Hanlon; Subject Matter Expert – Conservation and Energy Management Anne Wilson; Subject Matter Expert – IRP Jen Walker-Larsen; Subject Matter Expert – Rev 6 Francis Tang-Graham; Group Facilitator Judy Dobrowolski, Shaka Baker, Sharon Wasylik; Notetakers

Legend	
Answer	BC Hydro Staff member response
Comment	Answer or comment from public attendee
EPA	Expiring Purchase Agreement
IRP	Integrated Resource Plan
IPP	Independent Power Producer
TOU	Time of Use
EV	Electric Vehicles
DSM	Demand Side Management
AI	Artificial Intelligence
PV	Photovoltaics
GHG	Green House Gas
GW	Giga Watt
MW	Mega Watt
kWh	Kilowatt Hour
PV	Photo-voltaic models (Solar Panels)



Workshop Objectives:

- Inform communities about the Integrated Resource Plan (IRP) process
- Garner feedback on the IRP objectives
- Garner feedback on key topic areas to inform future Draft Action for BC Hydro

Summary of presentation

Welcome and Introductory Remarks

The workshops began with Tom Hovland acknowledging the traditional meeting place and welcoming everyone to the meeting. Tom followed up by asking participants to type in the chat window where they were calling in from to acknowledge their territory as an exercise for attendees to familiarize themselves with Webex.

After the quick exercise of recognizing participants call-in locations, Tom then went into a tutorial of some of the virtual meeting tools and etiquette, followed by outlining the workshop agenda:

- Introductions and welcome
- What is Integrated Resource Planning?
- IRP objectives discussion
- Planning topic small group discussions
- Wrap up and next steps

Tom followed up this workshop agenda by introducing BC Hydro staff members. He welcomed the main speaker, Alex Tu, who would cover the next steps of explaining what an IRP is and the timeline for the IRP.

What is Integrated Resource Planning?

Alex then then provided an overview of what an IRP is and the timeline for the IRP. The items included:

- Outline considerations for first 10 years, and the next 10 years, (the foundations of the plan.)

IRP objectives discussion

Alex Tu provided an overview of what planning objectives mean for the IRP and explained BC Hydro's definitions of the five objectives.

- Keep costs down for customers
- Limit land and water impacts
- Limit greenhouse gas emissions through clean electricity
- Support reconciliation with Indigenous Nations

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- Support the growth of B.C.'s economy

After an overview of the five objectives from Alex, he welcomed Tom Hovland back to lead participants in the first exercise of providing input into the planning objectives. A poll was conducted to collect input from the audience on planning objectives followed by Tom discussing the results with plenary, having participants use the chat feature to add feedback. The Poll questions, discussions aids and responses are outlined in **Appendix 1**.

Planning Topic Group Discussion

Managing Resources in the near term: 2020-2030

After reviewing the IRP objectives, Alex then went into overview of how planning topics will share 2020 to 2030 and 2030 to 2040. Alex then instructed participants that the first part of the group discussion would be focused on 2020 to 2030, reiterating how the objectives guide how BC Hydro approaches the topics.

To help the workshop activities, ACI Argyle Communications used 'Google Jamboards' to help document the group discussion. The note takers would document any verbal input. Participants were asked to share their thought on the topics. This was a silent activity where attendees got a chance to provide notes directly into the Google Jamboard or comments in the chat feature.

Conservation and Energy Management

Further Education of the General Public (3 comments) The first comment that was posed was from an individual that stated there should be a public policy that could potentially display what BC residents are losing with large scale Hydro Dams already in existence and being built. This policy would help educate BC residents, keeping them informed so that they can make smarter choices regarding energy conservation. Another participant stated that BC Hydro should acknowledge the rise of A/C units, due to climate change, and influence BC residents to avoid purchasing A/C units if it isn't necessary or help influence individuals towards more efficient options.

Target the biggest energy users (4 comments) the first comment was related to ecological impacts from advancing new capacity options. Another comment was made stating that with the production of clean energy would offset the amount of Carbon Dioxide (CO₂) within BC and could influence carbon intense industries move towards clean, renewable energy. The second comment was regarding how Heat Pumps and EVs rebates should be intensified as they are a cleaner technology than fossil fuel technologies.

Simplify Programs (2 comments) one participant mentioned that BC Hydro should make the process for applying for rebates more user friendly, specifically for heat pumps, hot water heat pumps, and solar panels. The second comment that was made was a suggestion for BC Hydro to extend the period of some of the programs available.

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Greater Conservation Initiatives (4 comments) a participant mentioned that conservation should always be at the forefront and the retrofitting existing building will help reduce GHG. Other participants suggested the BC Hydro should incorporate artificial intelligence and deep learning with conservation technologies.

Small scale customer level supply (3 comments) participants were interested in the idea of becoming a purchases and seller of electricity. Another comment was made stating that BC Hydro should intensify their influence on BC residents to move towards energy generation and fairly compensate the individuals that produce energy.

Time of Use Rates

TOU for greater EV adoption (3 comments) participants suggested that TOU rates could help with the adoption of EVs by making overnight charging affordable and balancing the load.

Rates that fit consumers lifestyles (4 comments) A participant mentioned that they TOU in California, “coupled with solar and an EV,” mentioning that it optimized her consumption, production and reduced costs. Finding a friendly approach for consumers to monitor their consumption was also mentioned. New technologies such as distributed home batteries, vehicle to grid technologies, smart homes/charges could be included in Conservation initiatives.

Education on TOU (1 comment) Participants mentioned that BC Hydro should find a strategy to educate the public on TOU to make better informed decisions on the subject.

Customer Recognition (2 comments) participants voiced their opinion, stating that if EV takes off, it would be important to recognize those individuals that manage demand better. Other comments, such as giving customers a choice for TOU rates, was also voiced.

Small BC Hydro Plants reaching end-of-life

Decommissioning to restore natural habitat (3 comments) was mentioned by a participant, suggesting that old facilities that are 70+ have environmental impacts on natural habitats.

Develop a small-plant strategy (3 comments) participants suggested that many small plans still have strong business cases for operability, and that there should be an option for a Request for Proposal. Another comment was made regarding how each region has its own considerations, there shouldn't be “an overarching policy for all small plants.”

Education on Small Plants vs Large scale projects (1 comment) One comment was posed to the group, stating that ordinary citizens may not be able to give a useful opinion on cost-benefit analysis. Further education will help citizens to make more informed decisions.

Refurbish old plants (2 comments) participants also indicated that some plants should be refurbished considering that the damage has already been done to the environment and that BC Hydro should make the most from what we can.

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Importing Energy (1 comment) One individual suggested that BC should be an importer of clean electricity from other jurisdictions such as solar from California.

Expiring EPAs

Keep costs low (4 comments) Keeps costs low was a common theme throughout the workshop, participants mentioned multiple times that BC Hydro should focus on renegotiating expiring contracts with the intent on keeping costs low as possible.

Maintain current and expiring contracts (3 comments) a common theme that was brought up in the subject of expiring EPAs, was how BC Hydro shouldn't let these EPA expire, as it would leave BC with "mothballed projects."

Support Economic Opportunities with Indigenous Nations (3 comments) comments were made stating that, BC Hydro should support Indigenous communities by building infrastructure to support energy generation.

Grid resilience and reliability (5 comments) participants in general thought that BC Hydro should be focusing on grid resilience by having a large portfolio of power sources, having all these options when renewing EPA will provide resilience and reliability. A common theme that was mentioned was how BC Hydro should encourage IPPs versus large scale, centralized systems.

Engaging different industries in BC (1 comment) there was one comment from a participant that suggested that BC Hydro engage different industries that could specialize and further develop skills in different types on energy generation.

Following the Planning Topic Group Discussion regarding managing resources in the near term from 2020 to 2030, Alex Tu reviewed the three broad ways of meeting electricity needs, leading the presentation to new sources of power supply from 2030 to 2040.

Tom Hovland then explained to attendees that they would be placed into three separate breakout rooms for the next exercise. This exercise would allow participants to provide feedback on each of the topics, where attendees could share their thoughts on the Google Jamboard.

The comments and input for the following activities have minorly edited for spelling and clarity.

Conservation and Customer Involvement

Heavier Government involvement (3 comments) participants suggested that there should more government involvement in terms of incentives. If there were more incentives for residents of BC to make the switch from Natural Gas to Electricity, people would be more inclined to make the switch. Another comment was added, stating that BC Hydro should push for more strict building codes, "embracing green design principles."

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Focus on EVs (2 comments) a strong support was shown from the group, suggesting that BC Hydro should focus their efforts on influencing BC Hydro customers to move towards EVs. Other topics that were brought up on the subject of EVs was how BC Hydro should be “influencing building owners towards retrofitting buildings to accommodate the uptick in EVs and EV charging within BC.”

Small scale customer level supply (4 comments) participants were adamant on BC Hydro having a wider portfolio for generation. Customer generation would provide more distributed power. A common point was raised how BC Hydro should go back to net metering.

Invest in Technology and security (1 comment) participants raised a point that suggested that if BC Hydro is going to invest into smart technology to optimize the conservation of energy, then they should also invest into securities to reduce the number of attacks from hackers. BC Hydro pushing for solar panels was another area that was brought up several times. There should be a bigger emphasis on this subject.

New Local Power Sources

Battery and pumped storage (4 comments) this workshop saw comments that both supported the use of batteries and pumped storage and individuals that were opposed. Individuals supported how these options do provide diversity for the power grid. Another point that was brought up from participants was how battery and pumped storage has less of an impact on the environment compared to large capital infrastructure. Renewables provide geographic diversity, which is what BC needs so that there isn't just one large central grid that could fail from many external factors.

Large Hydro Dams (1 comment) there were also opposing views towards diversifying local power sources, participants also indicated that considering BC residents are moving towards solar PV, EVs and other technologies, BC Hydro must find a balance, there is a need for large scale projects.

Small Scale Projects (15 comments) support was shown from participants regarding BC Hydro's “interconnecting and contracting process,” stating that BC Hydro should facilitate more small-scale projects. Decentralizing energy sources in BC was a theme brought up numerous times throughout the workshop. Some participants also mentioned that if BC residents had access to rooftop solar PV, then there would be less of a need to transmit energy from distant regions within BC, saving on capital costs from transmission lines. Participants were excited about the potential of “vehicle-to-grid” opportunities and how BC can utilize current buildings to help build resilience for the power grid.

Equality (1 comment) there was a strong theme that power generation is very expensive and shouldn't only be available to the “privileged individuals that can afford it.” “BC Residents are less likely to invest in clean renewables if they aren't able to afford it.” Individuals should have the option to choose their power sources.

Education on new power generation options (5 comments) participants thought that BC Hydro should focus on educating BC residents on the subject of new power sources. Knowing the ‘pro's and con's' for each type of technology, the product life cycle. Having a deep understanding of each new technology will only make

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for better and more informed decisions. Points were raised about global warming and how BC Hydro shouldn't just rely on Hydro Dams as this type of generation could see dramatic fall-off due to less rain fall and snow pack which means less water to pump. Diversification of power generation is a must.

Bi-lateral Negotiations (4 comments) participants felt that BC Hydro needs to work closely and BCUC and hold a hearing to run through every single option and aspect of BC's power generation options. Economic opportunities that come from working with Indigenous Nations should be a factor when considering new local power sources. BC Hydro should work closer to "advance relationships, ensuring there are land acknowledgements to help share benefits."

Upgrading BCH System

Build resilience to the power grid (13 comments) A large portion of participants thought that building resilience to the power grid was 'must' considering how rapid climate change and other external factors that can affect the power grid system. Building security measures and resilience to the grid will significantly reduce the impact from potential risks such as wildfires, floods, storms, cyber security threats. A high number of comments from participants suggested that costs need to be reduced, with a strong desire for renewable power such as wind, solar, battery storage and the potential for geothermal.

Leveraging capabilities (1 comment) some individuals thought that leveraging some of BC Hydro's capabilities to industries or small IPPs could help improve building the resilience and distribute generation. This would also help build relationships with Indigenous Nations as there would be more involvement from other groups within BC as well.

Transparency (1 comment) some participants thought it was important to be transparent in terms of BC Hydro's supply chain, individuals want to know where the solar panels, and wind turbines are coming from. Individuals may show more support behind BC Hydro's decisions, regarding upgrading the system and new power sources, if they knew that the materials needed to produce wind turbines, and solar panels for example, were being produced in an ethical manner.

Lowering Costs for BC Residents (2 comments) Although, lowering costs for BC residents was part of BC Hydro's IRP objectives, participants wanted to ensure that they were heard. Lowering costs was brought up throughout the workshop on numerous occasions. Participants felt that reducing costs would influence individuals to become more ethically responsible in terms of power generation choices.

Adaptability (1 comment) as time progresses, so will technology. Participants mentioned that "utility companies in BC need to be able to adapt to new technologies and not focus on a specific technology." "Rather, BC should look at other priorities like cost, grid compatibility, and climate change."

Exporting excess power (3 comments) an area of interest for participants was the desire to export excess power to different provinces in Canada. If BC Hydro is going to consider a more distributed approach for power generation, then BC Hydro should consider selling its excess power to provinces across Canada so



that BC isn't the only province leaning towards clean renewable energy. It will would help in terms of economic opportunities from the revenue generated.

Summary and Wrap-up

Following the workshop's conclusion, BC Hydro employees remained available for 15 minutes so that attendees had a chance for questions and answer with Anne Wilson thanking attendees for participating in the virtual workshop.

Attendees were informed that they would be sent an email that allow participants to garner feedback on the presentation and the content.

Appendix 1: Poll results – questions on objectives

A poll was conducted so participants could provide input on BC Hydro's IRP objectives. The poll results were as follows:

Select the most important Objective to you (**Pick 2**)

A. Keep costs down for customers	7/34 (21%)
B. Limit land and water impacts	5/34 (15%)
C. Limit greenhouse gas emissions through clean electricity	12/34 (35%)
D. Support reconciliations with Indigenous Nations	3/34 (9%)
E. Support the growth of B. C's economy	7/34 (20%)
F. No Answer (BC Hydro Staff)	11/28 (39%)

Verbatim comments from the workshop were provided verbally or through the chat function in Webex. Answers have been minorly edited for spelling and clarity.

Is anyone surprised/not surprised about how an objective was ranks by the group?

- Not surprised, C: was my priority
- Not surprised by results. We have declared climate emergency
- I am not surprised, it is a great planning objective
- Not surprised.
- Pleasantly surprised that keeping GHG emissions stands out as the main priority
- I am surprised
- Happy that a key focus is reducing GHG
- I'd like some clarification on that objective

Tom then opened the floor to participants and asked if anyone would care to share why they chose the objective they did. Each objective had a response from multiple participants. Answers have been minorly edited for spelling, clarity and categorized by the type of IRP objective

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Keep Costs down for Customers

- Reducing GHG should be overarching theme for BCH going forward.
- Electricity should be cheap for users as there are competition from Fortis from residential heating and if we want to encourage clean power we need to keep it affordable for people to use it.
- What does limit GHG mean? Expanding on electrification initiatives?
- We must examine the opportunities to reduce GHGs across BC. BC Hydro is key to that.
- I'm surprised that people think that hydro is GHG free.
- It is imperative that BCH reduce GHG. We are in a climate emergency. Need to remove GHG by 50% by 2030. BCH can't pat itself on the back for reaching 93%. Need to reduce GHG in every sector of the economy otherwise BC can't reach its part in the national climate initiative that have been signed.
- BCH Needs to account for GHG emissions from reservoirs and make that a part of the discussion
- The question is, what we do with all the green electricity for other parts of the emitter value chain?
- BC Hydro has an important role to play helping with the electrification of mobility, and work towards reducing GHG emissions through electrification in other industries.
- BC Hydro should play more of a leading role in climate action the question is, what we do with all the green electricity for other parts of the emitter value chain?
- I am surprised that people think that hydro is greenhouse gas free.
- I think that hydro needs to account for greenhouse gas emissions from their reservoirs and make that part of this discussion.
- I agree with this sentiment.
- I'd be interested in talking more about how BC Hydro could further support electrification of building HVAC, another important facet of CleanBC.
- BC hydro can sell subsidized power to the LNG industries to make them green. Except that Hydro power is not clean so it actually makes the solution worse than the problem.

Limit land and water impacts

- So long as Hydro refuses to acknowledge the loss of riverine and valley values in their analysis any talk of prudence is a sad example of Hydro still wanting to go in the wrong direction. Away from overall sustainability.
- BC hydro can sell subsidized power to the LNG industries to make them green. Except that Hydro power is not clean so it actually makes the solution worse than the problem.

Limit greenhouse gas emissions through clean electricity

- Reducing GHG should be overarching theme for BCH going forward.
- Electricity should be cheap for users as there are competition from Fortis from residential heating and if we want to encourage clean power we need to keep it affordable for people to use it.
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Support reconciliations with Indigenous Nations

- Open the door to new IPPs controlled by Indigenous communities. So much of their land has been stolen and it is time make amends.
- Indigenous consideration and land and water, those are equally as high as is limiting GHGs. It's hard to rank one above the other.

Support the growth of BC's economy

- Electricity is a commodity and should be sold to other jurisdictions.
- Electricity has the potential for being BC's biggest export.

General

- One thought about the planning objectives is that doesn't address equity. Equity needs to be considered within existing rate structures as they can often be regressive and exacerbates existing inequalities.
- All five are important.
- Suggested grid security/reliable supply should also be on the list.
- Trade-offs involved with satisfying objectives.