

# Clean Power 2040

Powering the future



## BC Hydro 2021 Integrated Resource Plan Summary Notes: Public Consultation

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<b>Meeting</b>	Public Workshop about the Integrated Resource Plan
<b>Date</b>	January 14, 2021 – 7:00 p.m. to 8:30 p.m.
<b>Location</b>	Virtual Workshop (Webex)
<b>Participants</b>	17 public attendees from across the province Large Group Discussions Breakout Group Sessions
<b>Host services</b>	ACI Argyle Communications Inc. Tom Hovland; Darcy Vermeulen: Lead facilitators Taruni Sing; Group Session Driver
<b>BC Hydro Representatives</b>	Alex Tu; Presenter / Senior Strategic Technical Specialist Tony Chu; 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 Wasyluk; Notetakers

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

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### Workshop Objectives:

- Inform communities about the Integrated Resource Plan (IRP) process
- Garner feedback on the IRP objectives
- Grander 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.)
- Regional snapshot to better connect IRP process to participants at each session.

### 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 Goodgle Jamboard application or comments in the chat feature.

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

### Conservation and Energy Management

#### Tell us what matters to you in this topic?

Educating and heavier marketing focus (9 comments) during this workshop participants mentioned that BC Hydro's focus should center around education rather than focus on conservation programs such as PowerSmart as there is already a surplus of energy. BC Hydro should look at influencing fossil fuel users to make the switch to electricity and that would come from education and marketing efforts. There were a lot of questions from participants during this workshop that curious to how much BC Hydro spends on conservation and energy management and what the returns looked like.

Although, BC Hydro does share this information, through annual reports that are filed with the Commission on the past performance of demand side management activities, there was still a lack of knowledge of the available information. Participant were also unaware if BC Hydro has met its previous DSM targets, as the new proposed targets are very aggressive, there is an interest in knowing the reasoning for such aggressive targets.

Greater Conservation Initiatives (3 comments) participants from the workshop indicated that an increase of EVs within BC would inevitably cause energy consumption to rise, suggesting that BC Hydro should "balance this with solar energy, battery storage and the integration of smart home technology.

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Small scale customer level supply (6 comments) there was a sense of urgency of creating a portfolio of different types of renewables as participants are worried about having the traditional centralized power grid and how it will be impacted from unknown factors such as climate change. There was a push for a microgrid system that would provide resilience, and this would come in the form of solar, wind, storage, etc. Participants brought up Site C and how BC Hydro needs to avoid major capital investment into projects that will end up being costly to pay back. Individuals from this work shop want to see smaller scale projects that will cause the least damage to the environment.

### Time of Use Rates (TOU)

**Tell us what matters to you in this topic?**

Optimal rate structure (8 comments) there were participants that felt BC Hydro could improve the rate structures that are currently in place and it doesn't provide equity for BC Hydro Customers. Some felt that, for instance, there should be more tiers in place to penalize those large energy users. BC Hydro should look at benchmarking with other utilities that have found success for time of use. Some felt there needs to be a complete analysis done to show customers that are not familiar with the concept how to properly benefit from time of use rates; some may oppose the idea.

TOU for greater EV adoption (1 comment) there was a desire from individuals for BC Hydro to pursue time of use for EV adoption as it would provide affordability as users could charge EVs after peak hours.

Economic Opportunities (1 comment) one comment was made how BC Hydro could benefit from the increased revenue from customers that are willing to pay during peak hours; this in turn would provide economic opportunities.

### Home Automation

**Tell us what matters to you in this topic?**

Optimization of the power grid (8 comments) comments regarding this subject showed support for integrating smart home technology in order to optimize local generation, storage without overloading the system.

Privacy (1 comment) as smart home technologies become integrated into homes to optimize energy management there is also a need to invest into securities to mitigate against potential cyber threats and risks.

### Small BC Hydro Plants reaching end-of-life

**Tell us what matters to you in this topic?**

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Leveraging capabilities (4 comments) participants suggested BC Hydro should be leveraging their existing resources such as sites and infrastructure wherever possible to help reduce the environmental impacts and costs. In turn, this would provide distributed energy while adding resilience to the power grid.

Local IPPs (5 comments) there were some participants that felt there should be a portfolio of small, medium and large-scale projects with a “proper evaluation considering the triple bottom line.” Some individuals felt that BC Hydro should also keep some of these old plants to keep costs low. BC Hydro should be looking at Indigenous utilities that are willing build for economic opportunities.

Decommission old plants (1 comment) there was a small group of participants that would like to see these old facilities be decommissioned and see BC Hydro invest into new plants.

### Expiring EPAs

#### **Tell us what matters to you in this topic?**

Grid resilience and reliability (6 comments) during this section of the virtual workshop, participants were curious to know what BC Hydro’s plan was for small local solar generation, specifically regarding PV and how it plays in BC Hydro projections. Participants from this workshop want to see BC Hydro contract more IPPs and Indigenous Nations as it would provide amends with Nations and provide economic opportunities for all

Equitable Rates (3 comments) there were participants in this workshop that mentioned they are IPPs with small solar farms, stating that over the years the rates have been lowering their rates. “IPP’s would like to see better treatment of their efforts.”

Lower Costs (2 comments) frustration was shown regarding Site C and how it has been poorly managed. There were participants that felt BC Hydro should move away from being power producers and become managers of the grid instead. Individuals want to see prices go down and think sourcing out their capabilities is something that should be considered.

Maintain current and expiring contracts (7 comments) there was some desire from participants to see current and expiring contracts get renewed to continue to support local communities and to ensure that the current facilities don’t become wasted. A suggestion was made that new technologies should be used to help refurbish old plants.

Reviewing regional reliability impacts (2 comments) a couple of individuals from the workshop mentioned that once an expired contract with an IPP has run its course, “BC Hydro should assess and get an understanding of regional reliability impacts,” which, would mean assessing the restraints and opportunities. This would allow better planning of future projects and effectively distribute resources where they are needed.

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### **New Power Supply: 2030-2040**

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 been minorly edited for spelling and clarity.

### **Conservation and Customer Involvement**

#### **Tell us what matters to you in this topic?**

Equitable Rates (2 comment) there was a theme during this workshop that BC Hydro tend to have a “command and control” type of framework in place when it comes to customer level generation. Participants from this workshop want to see IPPs and Indigenous be fairly compensated for the energy that is generated and distributed. Individuals want to see a push for net metering as there are no incentives for net metering.

Target the biggest energy users (3 comments) some individuals want to see BC Hydro “pivot” PowerSmart to focus on the electrification of transportation, industrial and heating of large buildings. Participants from this group have mentioned that their local communities have turned down the heating temperatures in large buildings and noticed significant savings.

Small scale customer level supply (11 comments) as mentioned previously in the workshop, individuals want to see smaller scale projects to provide a more resilient and distributed power grid, leading to more job opportunities. Participants feel the need to be more involved in decision making, suggesting there should be a “citizen lead board as British Columbia Utilities Commission is too opaque.” There needs to be a push towards battery storage.

Move away from incentivizing businesses (1 comment) an idea was brought forth to the group suggesting that BC Hydro should move away from incentivizing businesses and use the funds to expand generation aggressively while supporting aggressive carbon pricing.

Introduce new Conservation programs (6 comments) creating rebates or offering credit to BC Hydro customers that build a new home with net zero standards was a desire from one individual that supported having a greater conservation push. Looking at new incentives for industrial and commercial for switching to rooftop solar and wind was another suggestion from a few participants. There was also a desire to incentivize IPPs as there are currently no programs in place.



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### New Local Power Sources

**Tell us what matters to you in this topic.**

Battery and pumped storage (17 comments) integrating small and medium storage into current facilities was a suggestion that came forth. Additionally, BC Hydro could look at using EV battery storage when the technology has advanced enough. There were also opposing views to pumped storage, stating that BC Hydro should look at IPPs instead. There was a large push from participants wanting BC Hydro to be able to adapt quickly to market changes in technology and integrate into infrastructure.

Education on new power generation options (7 comments) there were participants curious to know the potential of geo-thermal generation and if it has been fully assessed. Other areas of interest were shown in solar PV, wind, tidal, hydrogen and battery storage. There was a mention that BC Hydro needs to assess the full life-cycle of renewables such as batteries. Ensuring that the materials are produced in an ethical manner as well as the disposal of old batteries.

Small Scale Projects (12 comments) participants want to see BC residents have access to rooftop solar PV, and other region-specific renewables as it could potentially remove the need to transmit energy from distant regions within BC, saving on capital costs from transmission lines. BC Hydro could use the money to invest in infrastructure to combat against threats such as wildfires, building up resilience and reliability.

### Upgrading BCH System

**Tell us what matters to you in this topic.**

Build resilience to the power grid (10 comments) as this closely ties into many different subjects from the workshop, participants were very stern on providing resilience to the power grid through new forms of generation. Partnering with IPPs and Indigenous Nations to provide new renewables. Building security measures and resilience to the grid will significantly reduce the impact from potential risks such as wildfires, floods, storms, cyber security threats.

### 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	1/34 (3%)
B. Limit land and water impacts	2/34 (6%)
C. Limit greenhouse gas emissions through clean electricity	13/34 (38%)
D. Support reconciliations with Indigenous Nations	7/34 (21%)
E. Support the growth of B. C's economy	7/34 (21%)
No Answer ( <i>BC Hydro Staff + 2 Public Attendees</i> )	13/28 (46%)

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 ranked by the group?

- Doesn't surprise me
- No surprise in terms of what the objectives should be.
- Climate change is the most critical emergency.
- No. Pleased that many shared same.
- Not surprised.
- I would have clicked more than one but had to choose.
- Province is very worried about cost, perhaps they need to listen to stakeholders.
- Surprised that costs were last.
- They are all very much appealing to everyone.
- With 'keeping costs down' as option 5, it's clear this group prioritizes GHGs, reconciliation, clean economy over costs.
- The GHG response does not surprise me. The second choice is a difficult one with competing interests between land, water, indigenous.

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

### Keep Costs down for Customers

- I think we will keep the costs low by following the highest ranked priorities as seen here. Too often we are presented with the fear of costs increasing but I'm not sure that will actually happen.
- With new construction projects becoming increasingly low energy consumption, the cost of electricity will become less or a priority for homeowners of newer buildings.



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- I see a lot of debt and issues related to raising rates and meet revenue requirements. How can you recover costs more effectively? TV rates has proven itself.
- Cost is crucial because as we move into the next regime and if we're serious about reducing GHGs, those costs will be enormous. If we do 10% of building retrofit a year, we will see billions in costs.

### Limit land and water impacts

- Like the "objectives." Given an uncertain future I believe we need all of them.
- What causes the large energy load growth between Fiscal 2022 and F2025?
  - Answer: That is the COVID-19 recovery. There is a near term dip and then a recovery.
- One of the objectives needs to be using clean electricity to displace high GHG intensity energy.

### Limit greenhouse gas emissions through clean electricity

- Does GHG reduction mean below what the references are? Clarify: is it above what the regulators have established?
  - Response: Can think about it as BCH and their own operations; extend to other users to replace natural gas use to electricity; next level up is for BCH exports to replace less clean sources in neighboring provinces. Interested in what feedback is.
- We have low energy costs, happy to pay a bit more for the benefit of the environment.
  - Comment: climate change costs will be much greater.
  - Answer: there are staff in generation planning/environment who are looking at long term impacts of climate change on inflows. That will be considered as part of this IRP (i.e. what are the results of that modelling/study and what does it mean for the long-term plan.)
  - Comment: SFU studies have indicated that long term critical low levels in reservoirs are likely.
  - Answer: Thanks, I'll ask if our planners have seen the SFU study. (I expect they have - but I will certainly pass this along.)

### Support reconciliations with Indigenous Nations

- No comments or questions

### Support the growth of BC's economy

- The benefit of IPP is that they are in the rural areas of the province. Why are we letting LNG generate electricity from natural gas when we can use IPPs? IPPs shouldn't be edged out by larger power producers such as LNG.
- Have you considered the likely loss of water levels in reservoirs due to climate change droughts?

### General

- I like the "objectives." Given an uncertain future I believe we need all of them.
- What causes the large energy load growth between Fiscal 2022 and F2025?

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- Answer: That is the COVID-19 recovery. There is a near term dip and then a recovery.
- One of the objectives needs to be using clean electricity to displace high GHG intensity energy.