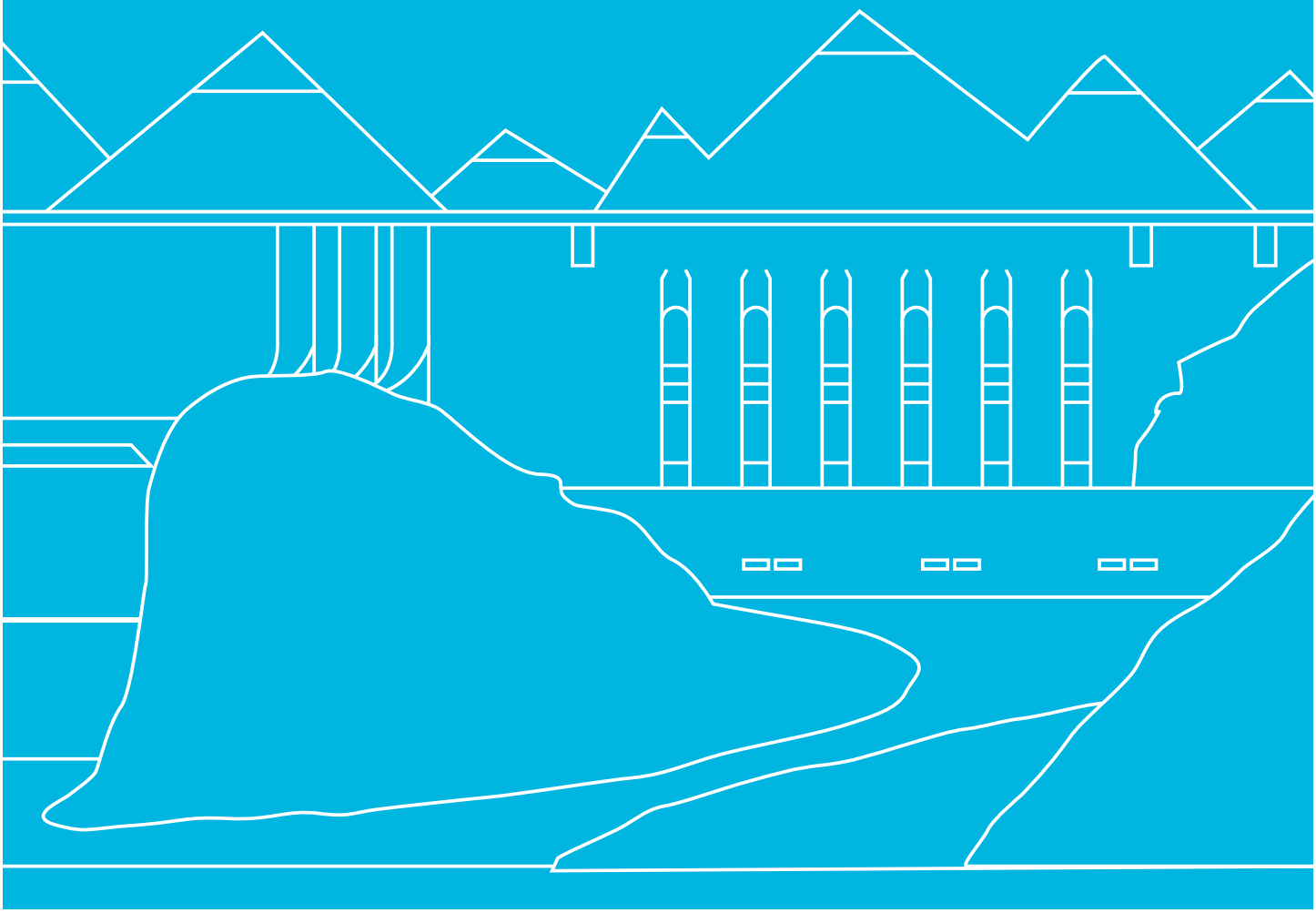
# Powering through uncertainty:

## Shifting habits since COVID-19 restrictions were eased and what that means for future electricity demand in B.C.



**Report**

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BC Hydro
Power smart

# Powering through uncertainty: Shifting habits since COVID-19 restrictions were eased and what that means for future electricity demand in B.C.

**From going to the office and cooking less, to dining out and showering (a bit) more, new BC Hydro data shows B.C.'s economic restart has increased overall power consumption in the province after an unprecedented drop earlier this year due to COVID-19 as result of more people heading back to work and businesses reopening. While load is still below normal and forecast to be down for about two years, BC Hydro is predicting load growth across all sectors over the long term.**

## Highlights

- After an unprecedented drop in electricity demand due to the COVID-19 pandemic, new BC Hydro data shows overall power consumption across the province is trending upwards as a result of more people heading back to work and businesses reopening.
- A recent survey[1] commissioned by BC Hydro found about 40% of British Columbians' daily routines have changed since stay-at-home measures were lifted in mid-June. And of this group, about 20% indicated that their routines have changed dramatically.
- More than 20% are now working from home less, and that has them waking up earlier (23%) and going bed earlier (11%)something they were not doing when stay-at-home measures were in place.
- They also indicated they are showering more (10%), watching less TV and streaming (about 15%).
- The biggest shift has been dining out — about 70% are eating out again, with around 40% indicating they are eating out at least once a week.
- With more British Columbians back at work and spending less time at home, commercial and industrial electricity use has also steadily increased since mid-June as many businesses reopened.
    - At the end of March, overall electricity use declined by nearly 10%. Despite the large drop, this was less significant than what was happening in other parts of the world. The United Kingdom, France and Spain experienced 15 to 20% drops in overall power consumption.
    - With businesses reopening, overall demand was back to about 7% below BC Hydro's pre-COVID-19 load forecast by August.
- While the COVID-19 pandemic has reduced overall electricity demand in the province in the short term, electricity demand is expected to recover over time.
- BC Hydro is forecasting population growth over the next 20 years will increase the demand for electricity. Additional increases could come from B.C.'s efforts to reduce its greenhouse gas emissions by encouraging fuel switching through future electrification of the transportation, home heating, and the industries dependent on fossil fuels.
- If the provincial economy rebounds as expected to pre-COVID-19 levels within one to two years, BC Hydro's current forecast shows load growth over the next 20 years.

## Solutions

- BC Hydro is putting together the long-term plan called Clean Power 2040 to inform how it will deliver safe, clean electricity to customers over the next 20 years.
- Although BC Hydro has enough electricity to power the province for several years, it needs to be prepared for what comes next and make contingency plans if demand is lower or higher than expected. The COVID-19 pandemic reconfirms how important it is to be prepared for a variety of scenarios.
- BC Hydro recommends that customers get involved by:
    - Sharing their vision—Take the quick **online survey** and provide insights.
    - Staying informed—Sign up for email updates about the Clean Power 2040 process.
    - Keeping engaged—Participate in deeper discussions with industry experts—online or by phone—about B.C.'s future energy needs and how BC Hydro can meet the various challenges.

[1] Online survey conducted by Majid Khoury of 627 British Columbians who have experienced changes in their lifestyle since BC entered Phase 3 between August 27 and September 3, 2020.

## The 'new' new normal

In mid-June B.C. public health officials eased some of the stay-at-home measures designed to slow the spread of COVID-19. This resulted in a shift in routine for many British Columbians that had been staying home since mid-March as some offices, businesses and restaurants reopened.

From going into the office to cooking a bit less to dining out and showering a bit more, this report examines how British Columbians' habits and electricity use are shifting as B.C. navigates through the COVID-19 pandemic, and what that means for future electricity load.

## Economics and energy use

While BC Hydro experienced an overall decline in electricity use of nearly 10% at the end of March driven by lower demand from the commercial and industrial sectors, it has slowly crept back up since then. In fact, as of August, demand increased to 7% below pre-COVID-19 forecasted levels.

Overall demand for electricity is still below what it was; however, the pattern over the past several months does indicate a steady increase as businesses have reopened. The Conference Board of Canada is predicting that British Columbia will experience less severe economic damage from the virus than most provinces because of key advantages, including a better fiscal position heading into the pandemic. As B.C. entered into Phase 3 of its Restart Plan in June, the Conference Board predicted that B.C.'s real Gross Domestic Product (GDP) will decline by about 5.5% this year before rebounding and expanding by 6.7% in 2021.[1]

When it comes to overall electricity usage, BC Hydro has seen a less severe decrease and a similar rebound when compared to other utilities. For example, the United Kingdom saw about a 15% drop initially, and France and Spain experienced around a 20% decrease [2]. In July, most European Union countries had seen an increase to about 5% lower than 2019 levels. [3] While load is still below normal in B.C. and may be for the next two years, BC Hydro is predicting load growth over the long-term.

## Changing residential electricity use patterns

When stay-at-home measures were implemented, BC Hydro data showed that residential electricity use on weekdays began to resemble a pattern typical of a weekend load with later morning peaks and earlier evening peaks. This is likely the result of more British Columbians working from home and making dinner or doing chores earlier.

With a return to school in September and continued increases in business activity, it is expected that British Columbians daily routines and electricity consumption patterns will revert back towards normal. However, it may not look exactly the same as it did pre-COVID-19 as many businesses are considering a shift to have more of their employees work from home if possible.

## How British Columbians habits shifted—and then sort of shifted back

In June, BC Hydro released a report titled "**Powering the new normal: How COVID-19 has changed British Columbians' daily habits and electricity use**" that found from mid-March to June, nearly 90% of British Columbians drastically shifted their daily routines, including nearly 40% that were working at home five days a week. This had nearly 40% of British Columbians waking up later on weekdays, 45% eating breakfast later and 24% showering less often and for shorter periods of time than they did before stay-at-home measures were put in place. The report also found about half were cooking more than they would have pre-pandemic, 60% were watching more TV and about 30% were going to bed later.

A recent survey conducted on behalf of BC Hydro found about 40% of British Columbians have changed their daily routines since stay-at home measures were lifted in mid-June. And of this group, about 20% indicate that their habits have shifted dramatically.

[1] **Conference Board of Canada**

[2] **World Economic Forum**

[3] **IEA COVID-19 electricity use report**

The survey commissioned on behalf of BC Hydro found more than 20% of those who said their habits have changed are working from home less than they were when the stay-at-home restrictions were in place. This has about 23% of them waking up earlier and 11% going to bed earlier. It also has about 10% showering more and about 15% watching less TV and streaming less than they were a few months ago.

The survey found the return to workplace has led to some returning to old habits, such as about 10% buying more takeaway coffee and not eating breakfast at home.

**20%** are working from home

**23%** are waking up earlier

**11%** are going to bed earlier

**10%** are showering more

**15%** are watching less TV/ streaming

**10%** buying more takeaway coffee

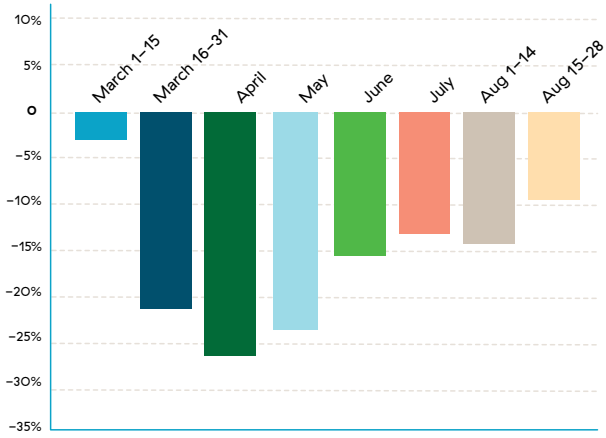
## Shopping and dining out on the rise

With many workplaces reopening at full or limited capacity, the biggest reason for the shift in electricity use is businesses reopening. The shift can be directly tied to British Columbians heading back to work or heading out to enjoy some the of the activities, like shopping, that they enjoy.

The RBC spending survey [4] corroborates this, finding that consumers seem to have hit their stride into July, with spending hovering at levels similar to last year, as many parts of the country continue to slowly reopen. While online spending remained prevalent in some areas (e.g., groceries), in-person transactions continued to recover and spending indicates Canadians were comfortable going out for dinner. Restaurant spending was kept afloat by Canadians seeking in-person dining experiences, and was down just over 4% from last year.

The survey commissioned on behalf of BC Hydro also found British Columbians were comfortable dining out. About 70% indicated that they are eating out again—with around 40% saying they are eating at a restaurant at least once a week.

**ABOUT TWO-THIRDS OF THE RESTAURANT LOAD REDUCTION HAS RECOVERED**




[4] **RBC COVID Consumer Spending Tracker**

### Planning for a powerful future

The COVID–19 pandemic has reduced overall electricity demand in the province in the short term, but demand is expected to recover over time. According to provincial statistics,[5] B.C.'s population is expected to increase 25% by 2041, which could increase electricity demand. In addition to population growth, electricity demand will likely increase in the province over the long term as British Columbia reduces its greenhouse gas emissions by encouraging fuel switching through future electrification of the transportation, home heating, and the industries dependent on fossil fuels. For example, by 2032, every new building constructed in B.C. will be mandated 'net zero energy ready,' and in about 20 years, every new car sold in B.C. will be a zero–emission vehicle. [6] These major changes, along with others, would require plenty of clean, affordable electricity.

If the provincial economy rebounds to pre–COVID–19 levels within one to two years, BC Hydro's current forecast shows load growth over the next 20 years. BC Hydro will continue to revise the load forecast and develop a new long–term forecast to be completed in December 2020.

## Solutions

BC Hydro is putting together a long–term Integrated Resource Plan called Clean Power 2040 to determine how it will deliver safe, clean, reliable power through the next two decades. The plan will consider uncertainties, such as the COVID–19 pandemic, as well as changes in technology and energy demand so it can make decisions that inform how it should power the province.

BC Hydro has enough electricity to power the province to meet the predicted growth until around 2030. To be ready for the province's electricity needs beyond that, decisions need to be made to ensure it is prepared for what comes next and make contingency plans if demand is higher or lower than expected.

In order to do this, BC Hydro looks at the supply of electricity in two ways: making sure it has enough energy and enough capacity. While the concept of energy is a familiar one of how much water is stored behind our hydro electric dams, capacity is a different concept. It is the ability to meet what's known as peak demand for electricity

### Capacity explained

To understand the concepts of energy and capacity and the role they play in BC Hydro's future planning, it's helpful to think of B.C.'s electricity system as a 10–lane freeway. The number of lanes on the freeway determines how much space is available for cars at any time, this is capacity. The number of cars on the highway at a specific time is demand. While not all lanes are needed all the time, they are needed during the morning and evening rush hour. Like that 10–lane freeway, the capacity of B.C.'s electricity system is limited by the amount of power BC Hydro's facilities can generate at one time.

Even as it meets predicted day–to–day electricity demand, BC Hydro also needs to ensure its system has enough capacity to meet the province's demand for power during peak periods. BC Hydro's infrastructure — generating stations, substations and power lines—must be able to support that additional demand. As demand for energy grows, the systems' capacity must grow with it.

As a winter peaking utility, BC Hydro's highest demand for electricity (peak demand) happens in the winter when British Columbians turn on more lights and turn up the heat. It is able to meet demand at a moment's notice because of its flexible hydroelectric system, powered by water, which generates 98% clean electricity. Hydroelectricity is unique in its flexibility — the storage of water behind its dams allows for power to be used when it is needed most, such as during a cold snap. This is unlike wind and solar that are intermittent with no practical storage ability for cold winter days when the sun is not shining and the wind is not blowing.

[5] **PEOPLE 2019: BC Sub–Provincial Population Projections**
[6] **CleanBC Climate Change Action Plan**

BC Hydro wants to understand what matters most to its customers so it can make informed, strategic decisions that will become part of Clean Power 2040—its next Integrated Resource Plan to meet future electricity demand. Customers can get involved by:

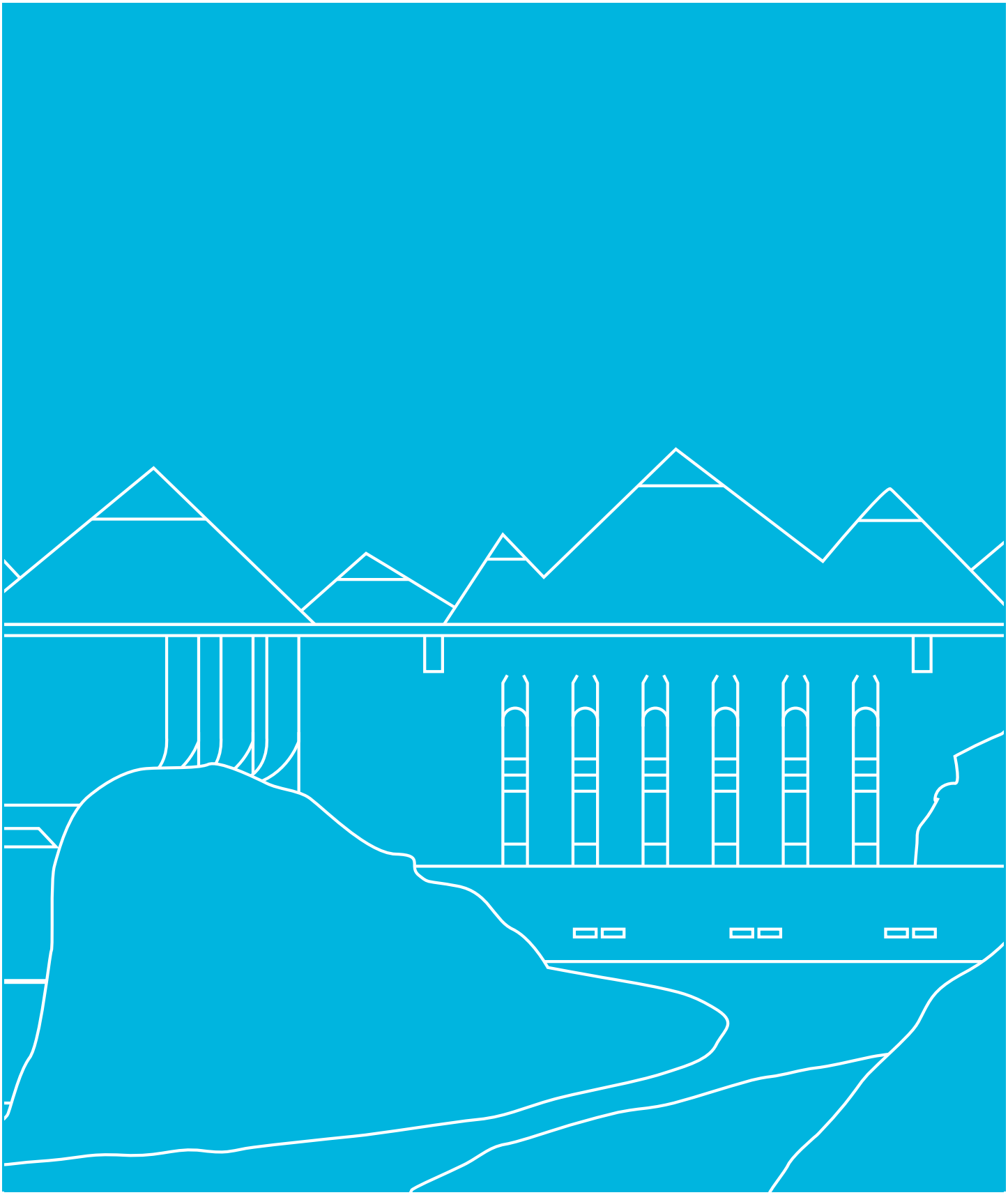
- Sharing their vision—Take the quick **online survey** and provide insights and concerns.
- Staying informed—By signing up for email updates about the Clean Power 2040 process.
- Keeping engaged—Join deeper discussions with industry experts—online or by phone—about B.C.'s future energy needs and how we can meet various challenges.

Due to the COVID-19 pandemic, all consultation will be conducted through online engagement surveys or regional web conferences:

- The first round of consultation, including the online survey will launch on Sept. 14, 2020.
- Web conferences will run from Sept. 22 to Oct. 20, 2020.
- A consultation summary report will be developed and shared in mid-December, and the second round of consultations will run from April to July 2021.

BC Hydro plans to release a draft plan in February 2021 followed by three months of further public consultation, after which it expects to finalize and file the 2021 IRP with the BCUC no later than September 2021.

For more information visit **bchydro.com/cleanpower2040.**



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