## Webex Session Details

## Two Different Ways to Join:

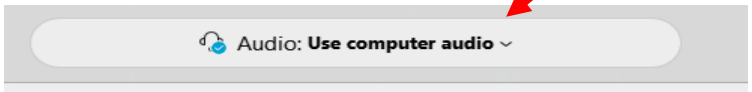
**Technical Issues?**

**Send email to:**
bchydroregulatorygroup@bchydro.com

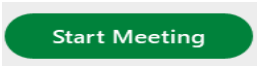
### **Choice 1**: Use your computer's audio and view our speakers

1. Click Join the virtual session link:
(embedded here or from your invitation)


2. Select Use Computer Audio:




3. Select Start Meeting:




4. Please mute and turn off video (**red icons = off**):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Call in number: 604-449-3026 (can adjust for long-distance)

- Meeting number (access code): 146 629 2460
- Meeting password: 8MqtKKSgE26

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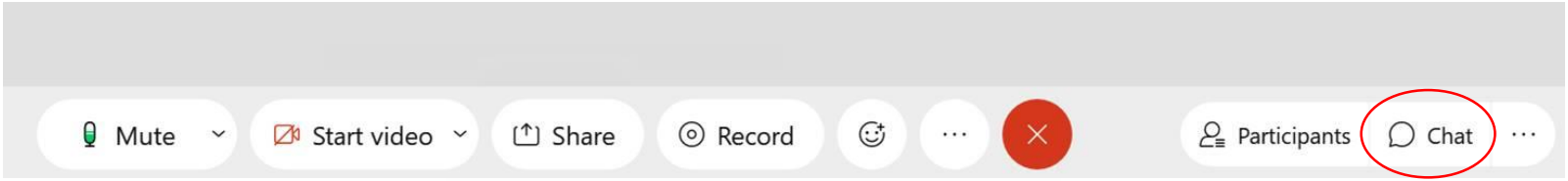
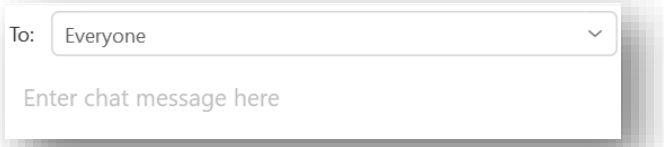
# HOW TO PARTICIPATE

## Please use the Chat Function to ask Questions and provide feedback

With the large number of registrants, we will not be able to take comments or questions through audio. Please click the **chat box icon shown** below and direct your question or comment to **"Everyone"** to ensure one of the moderators captures it. If you wish to send a question specifically to BC Hydro or one of the presenters that option is available as well. Confidential questions can be forwarded to the email below.

We will endeavor to answer questions in the session as time permits, additional or follow-up questions can be also be sent to bchydroregulatorygroup@bchydro.com. Thank you.




This session will not be recorded and we ask that all recording tools be turned off.

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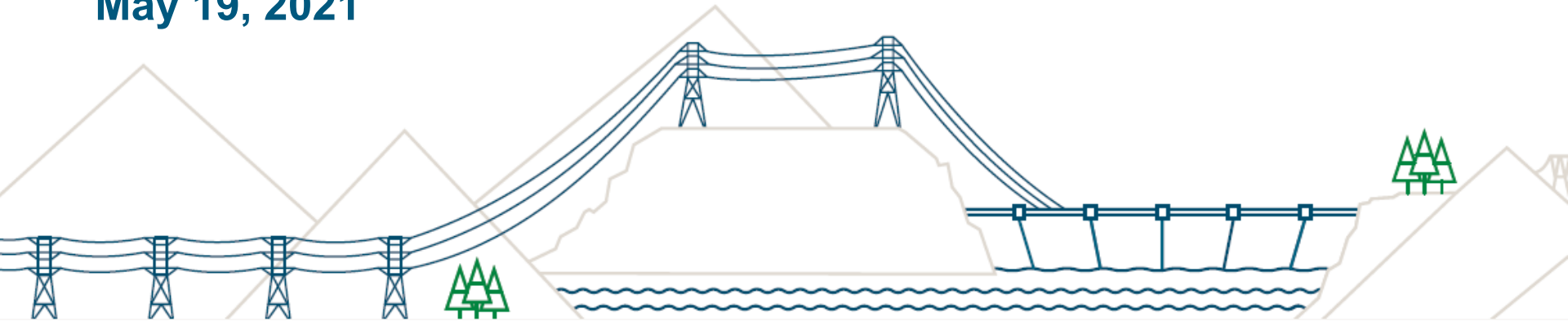
# Residential Rate Design Engagement Session

May 19, 2021



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# Workshop Agenda

| Approximate Time | Item | Presenter |
|---|---|---|
| 1:00 – 1:10pm | Virtual Workshop Procedures | Host |
| 1:10 – 1:20pm | Opening Remarks | Keith Anderson<br>Vice President, Customer Service |
| 1:20 – 1:40pm | Background and Context | Anthea Jubb<br>Senior Regulatory Manager, Tariffs |
| 1:40 – 2:00pm | Jurisdiction Review | Anthea Jubb<br>Senior Regulatory Manager, Tariffs |
| 2:00 – 2:30pm | BC Hydro Residential Customers | Shiau-Ching Chou<br>Rates and Program Manager |
| 2:30 – 2:55 pm | Rate Design Concepts and Pricing | Rob Zeni<br>Senior Regulatory Specialist |
| 2:55 – 3:00 pm | Next Steps and Closing Remarks | Chris Sandve<br>Chief Regulatory Officer |

# Welcome

## Keith Anderson

## Vice President, Customer Service

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# Today's Objectives

- Provide information on the rate concepts we're exploring around residential rate design.
- Collect feedback to help shape our future residential rate designs and inform our application to the BC Utilities Commission.

# BC Hydro's Mandate

- BC Hydro is a Crown corporation. Our mission is to safely provide our customers with reliable, affordable and clean electricity throughout the province
- BC Hydro supports electrification, including CleanBC goals
- BC Hydro provides its customers with affordable, fair and stable rates.
- We strive for economic efficiency in our rate designs to reduce the total overall cost of electricity and maximize the overall benefits of the electricity system



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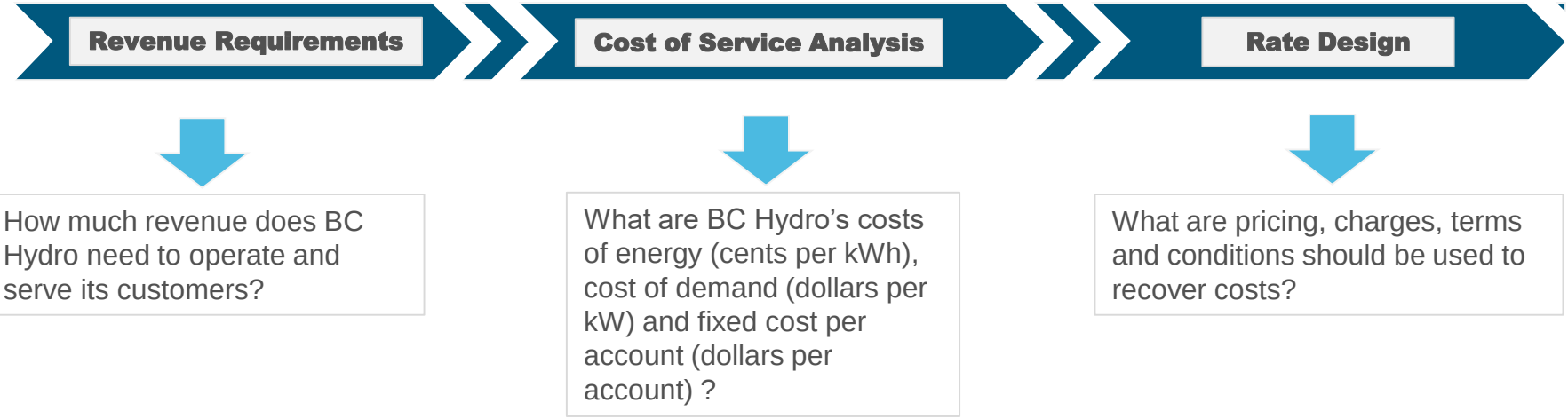
# What is Rate Design?

## Rate design refers to pricing, charges, terms and conditions of service



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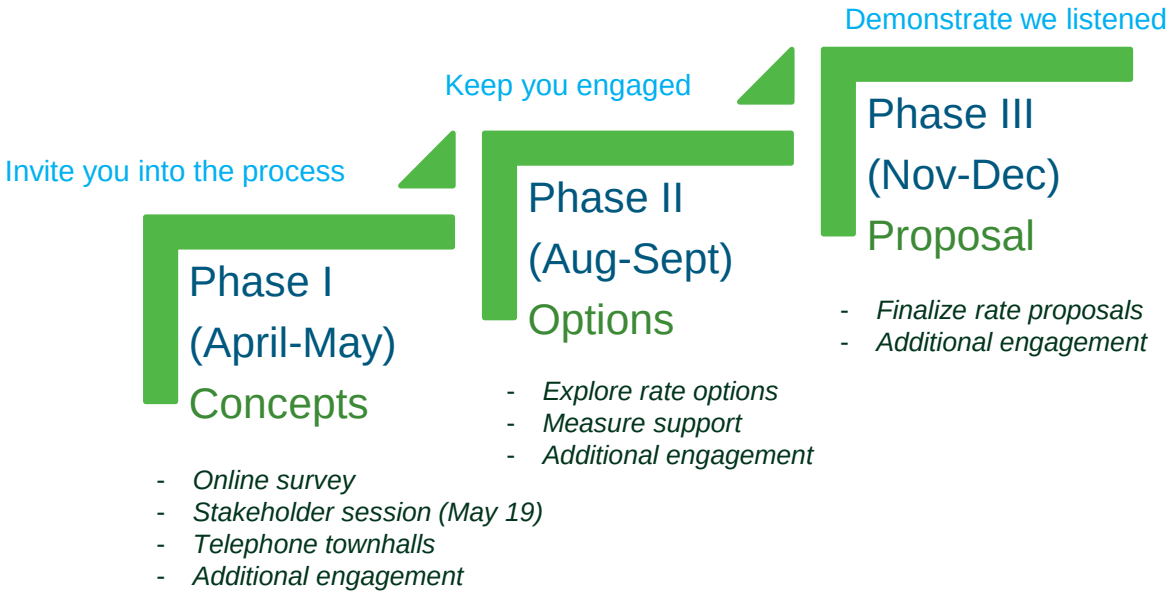
# Why are we reviewing rate designs now?

- Changes in customer energy needs and expectations
- Changes in climate policy
- Changes in BC Hydro's costs, such as a reduction in the cost of new energy supply, and the potential need to invest in transmission and distribution infrastructure.

# Engagement Plan for Rate Design



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# Background and context


## Anthea Jubb

## Senior Regulatory Manager, Tariffs


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# Regulatory Context

- Under the Utilities Commission Act, the BC Utilities Commission sets rates
- The current Residential Inclining Block Rate (i.e. residential conservation rate) design is approved by the BC Utilities Commission as part of Order No. G-62-20 until March 31, 2022
- As directed by the BC Utilities Commission, BC Hydro filed a report on March 26, 2021 with our progress and plans on residential rate design
- In that report, BC Hydro committed to filing a residential rate design application by February 2022, that will be informed by customer and stakeholder input

# Residential Rate Design History

- BC Hydro  has changed our residential rate design only three times:
  - a declining block energy charge from 1958 to 1994, then
  - a flat energy charge from 1995 to 2008, then
  - an inclining block energy charge from 2008 to present.

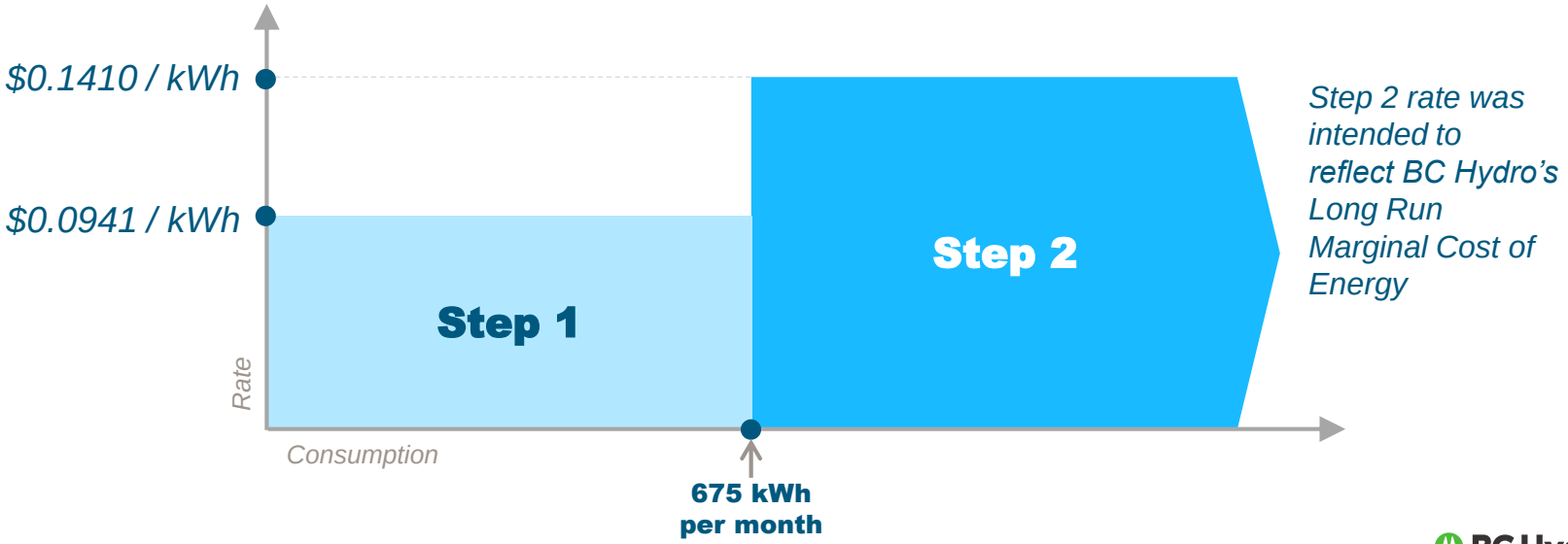
# Residential Inclining Block (RIB) Rate Background

- RS1101 Residential Inclining Block Rate, (RIB rate) accounts for 40% of BC Hydro's domestic revenue, 94% of residential sector revenue
- The 2002 Energy Plan provided policy direction for BC Hydro to introduce default rate designs with the overriding objective to promote energy conservation
- At that time, BC Hydro was facing an energy supply deficit, and new sources of energy were expensive
- The RIB Rate was implemented in 2008 to achieve energy conservation, by increasing bills for higher usage customers and decreasing bills for lower usage customers

# Residential Inclining Block Rate Design

**Residential Inclining Block Rate Schedule 1101 =**

Basic Charge *($0.2080 / day)*
+ Step 1 Energy Charge
+ Step 2 Energy Charge




*Step 2 rate was intended to reflect BC Hydro's Long Run Marginal Cost of Energy*



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# Residential Inclining Block Rate Performance

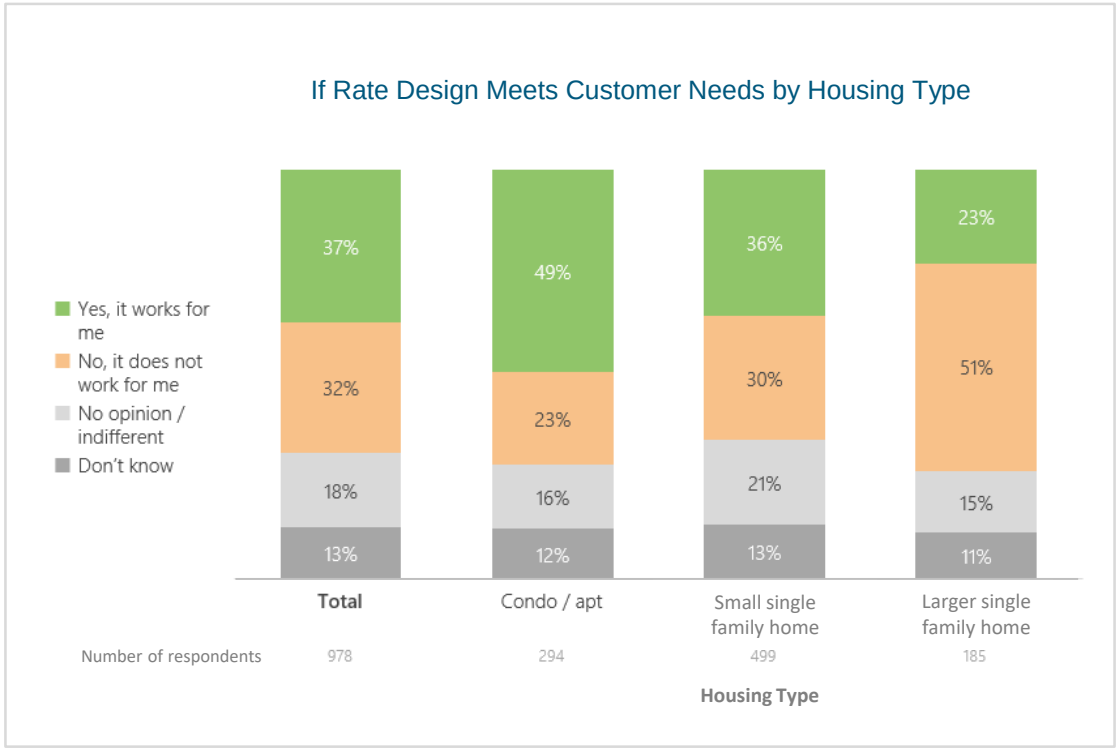
- The Residential Inclining Block Rate Design met its objective of achieving energy conservation
- 2013 evaluation verified energy savings from the RIB Rate of up to 200 GWh/year in F2010, equivalent to 1% savings across the Residential Class
- A 2017 evaluation verified that by 2016 the RIB rate was no longer achieving new energy conservation

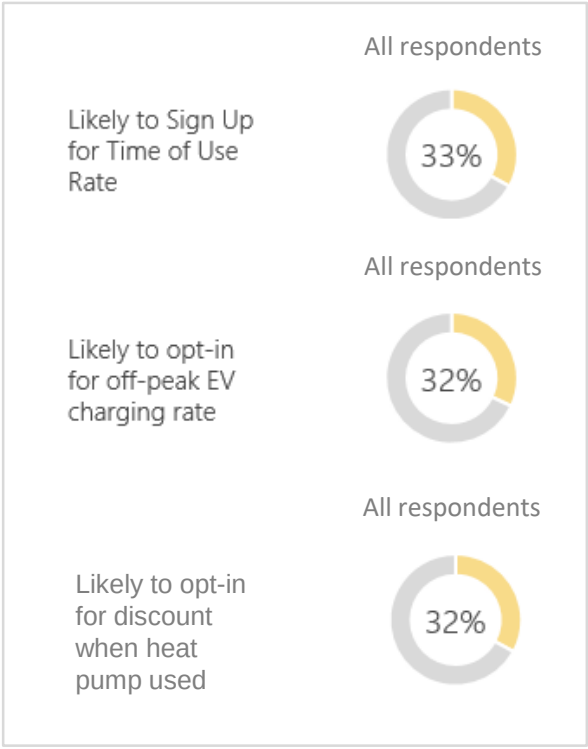
Sources: Appendix C-3B of BC Hydro's 2015 Rate Design Application
Appendix AA of BC Hydro's F2021-F2022 Revenue Requirements Application

# Customer and Stakeholder Feedback

- 2019 Union of BC Municipalities Resolution B73 to change the two-tier pricing due to its impact on home heating costs
- Letters from customers encouraging rate redesign to support electric vehicle charging and reduce the cost of electric home heating

# December 2020 Customer Survey






This email-to-online survey was sent to a random sample of 8,427 residential customers who previously provided consent to be contacted

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# Rate Design Costs and Economics

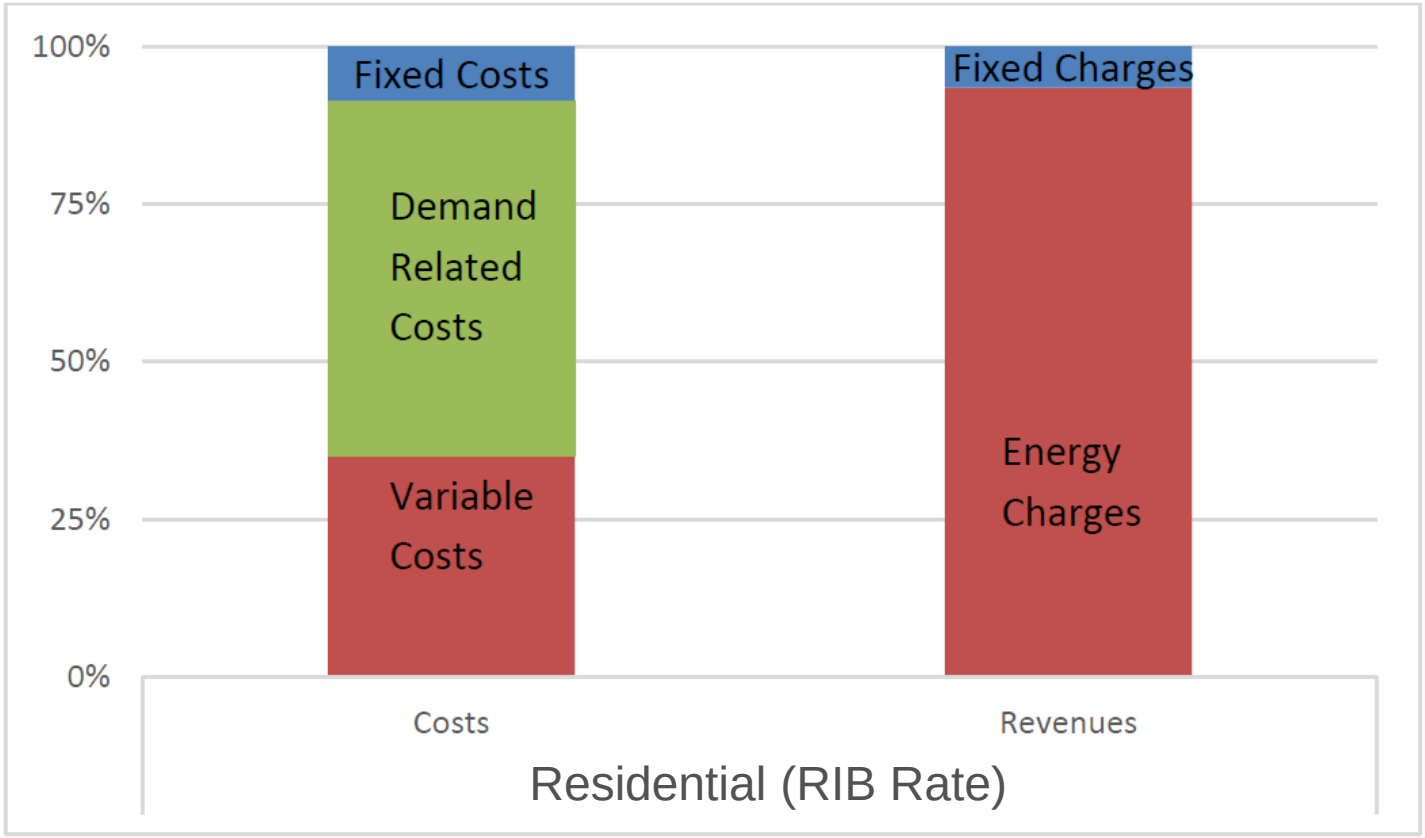
- In addition to customer feedback, cost of service and economics are a foundational input to electric utility rate design
- Rate design applications to the BCUC must be justified on a cost of service and/or economic basis
- Aligning rate design with cost of service and economics is important to BC Hydro because it provides a framework to:
  - Ensure rates are fair to all customers
  - Provide economic benefits to ratepayers
  - Support financial sustainability and recovery of the revenue requirement

# Fully Allocated Cost of Service Study and Rate design

## Helps us understand our costs for each customer class

- These studies estimate how much of our total costs are associated with energy, demand and customer care
- In rate design, the concept of fairness relates to how well pricing reflect the utility cost of service
- Fully allocated cost of service studies help us assess fairness

# BC Hydro's Costs of Service




F20 cost of energy:
3.9 c/kWh

F20 cost of demand:
219 $/kW-yr



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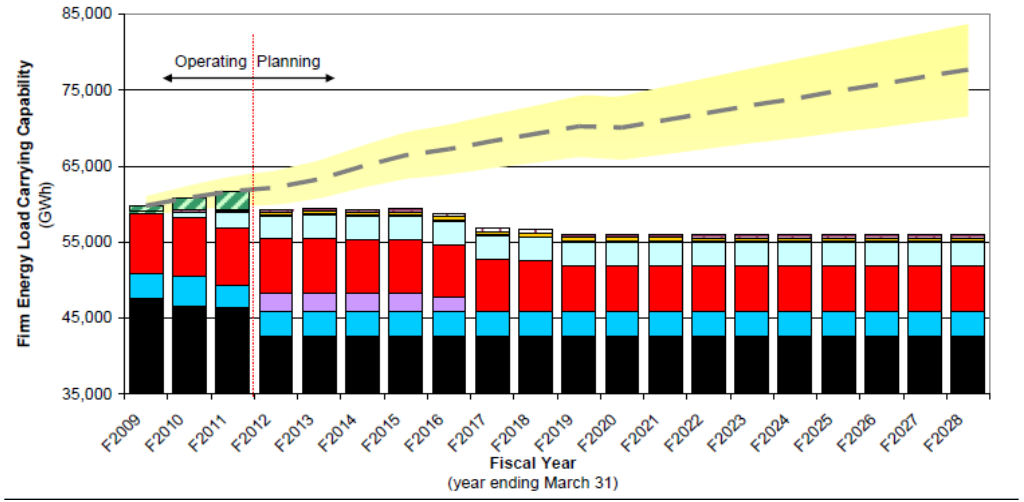
# BC Hydro's Economic Environment

## Helps us assess economic efficiency

- Marginal costs provide an estimate of the cost (or savings) of one additional unit of output (energy or capacity)
- Rate design principles  of economic efficiency call for the customers marginal price to reflect the utility's marginal costs
- Economically efficient rate design should reduce the overall cost of electricity and maximize the overall benefits of the electricity system

# Energy Load Resource Balance in 2008

## When the RIB rate was introduced, BC Hydro was in an energy deficit



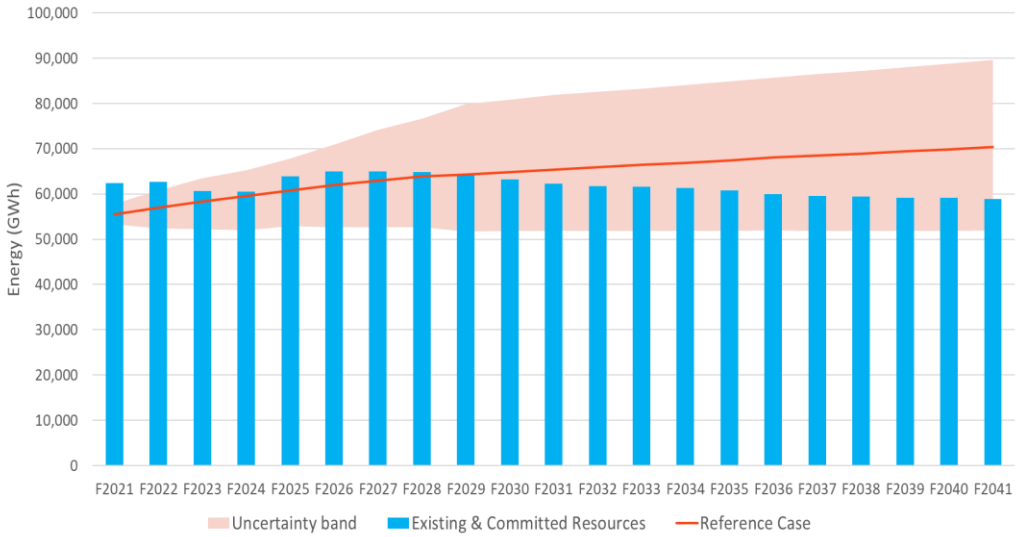

- Bars represent existing and committed energy supply resources
- Dashed lines represent the load forecast
- Yellow area represents load forecast uncertainty band



Source: BC Hydro's 2008 Long Term Acquisition Plan

# BC Hydro's Current Load Resource Balance Energy

## We now expect to be in an energy surplus to about 2030



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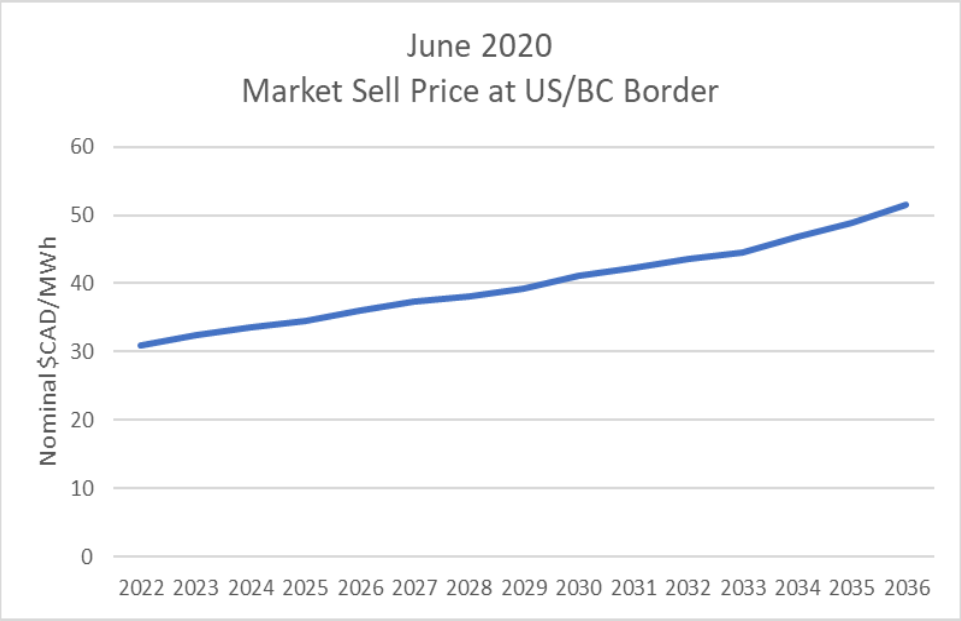
# BC Hydro's Marginal Cost of Energy

## Our reference price for energy is 3 to 5 c/kWh



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# BC Hydro's Rate Design Objectives

## 1. Affordability

- Measured by bill impacts associated with a rate design

## 2. Economic Efficiency

- Measured by how closely the energy charge reflects our marginal cost

## 3. Decarbonization

- Measured by how much the rate design encourages fuel switching from fossil fuels to clean electricity

## 4. Flexibility

- Measured by ability to respond to changes in the economic and policy environment and anticipate the need for greater product and service differentiation in rate design.

**Feedback form question #1:** What measures should we consider in assessing rate designs against our objectives?

# Jurisdictional review


## Anthea Jubb

## Senior Regulatory Manager, Tariffs


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# Rate Designs and Benefits

| Design | Benefits |
|---|---|
| Flat energy charge plus fixed basic charge<br>• Same energy charge applies for all usage | • Bill, revenue and rate stability<br>• Flexibility to introduce additional voluntary rates |
| Declining Block Energy Charge<br>• Lower energy charge applies for usage above a threshold | • Economic efficiency during energy surplus<br>• Encourage additional use |
| Inclining Block Energy Charge<br>• Higher energy charge applies for usage above a threshold | • Economic efficiency during energy deficit<br>• Encourage energy conservation |
| Time varying energy charges<br>• Energy charge varies over the day | • Economic efficiency during capacity deficit<br>• Shift usage out of peak demand times |
| Demand charge<br>• Demand charge applies for highest power draw in the month | • Fair allocation of costs<br>• Improves utility fixed cost recovery |

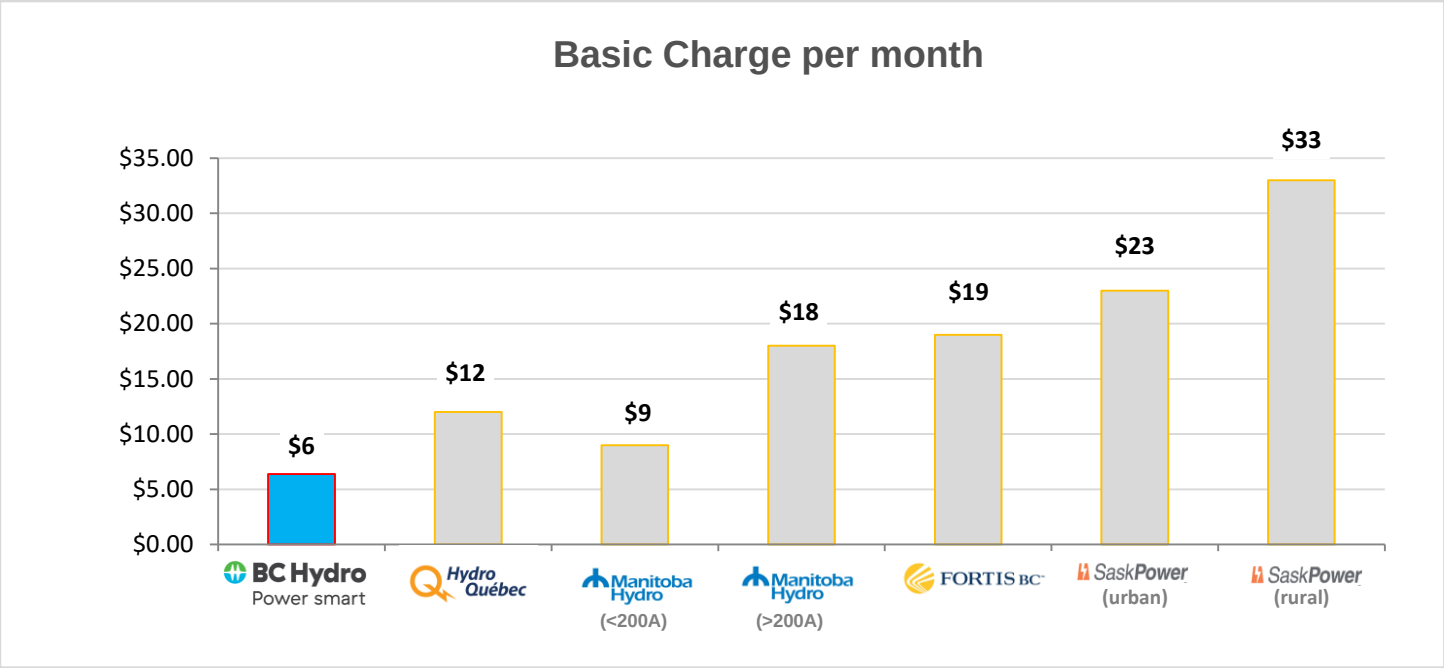
# Comparable Canadian Utility Residential Rate Designs

| Utility | Default Rate Structure | Energy Charge | Fixed Charge |
|---|---|---|---|
| **BC Hydro** | Residential Inclining Block Rate (RS 1101/2) | Inclining Block<br>Step 2 threshold is 675kWh/ month | Approx. $6/month |
| **Hydro Quebec** | Residential and Farm Rate D | Inclining Block Rate<br>Step 2 threshold is 900 kWh/month | Approx. $12/month |
| **Manitoba Hydro** | Residential Standard Rate | Flat rate | Approx. $9/month for service below 200A, and $18/month for service above 200A |
| **Sask Power** | Residential Rate | Flat rate | $23/month for urban accounts, $33/month for rural accounts |
| **FortisBC** | Residential Rate | Half-way thru 5-year transition from tiered to flat rate.<br>Currently stepped rate with threshold of 800 kWh/month | Approx. $19/month |



Information as of April 2021

# Comparable Canadian Utility Basic Charge Comparison




Information as of April 2021

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# Residential Rate Designs in the US Pacific Northwest

| Utility | Default Rate Structure | Energy Charge | Fixed Charge |
|---|---|---|---|
| **Pacific Power** | Residential | Inclining Block Rate<br>Step 2 threshold is 1000 kWh/month | $9.50/month |
| **Portland General Electric** | Basic service for residential and small business customers | Inclining Block Rate<br>Step 2 threshold is 1000 kWh/month | $11/month |
| **Idaho Power Company** | Residential Service Standard Plan | Inclining Block Rate<br>Step 2 threshold is 800 kWh/month<br>Step 3 threshold is 2000 kWh/month | $5/month |



Information as of April 2021

# US Example of Segmentation: Arizona Power Residential Service

| Plan | Basic Charge ($/month) | Energy Charge | Demand Charge | Availability |
|---|---|---|---|---|
| Time of Use choice | 13 | Seasonal and Daily Time of Use Peak pricing up to 24 c/kWh | N/A | • Higher usage accounts, e.g. larger single family homes (> 999 kWh/month)<br>• Accounts with customer side solar generation |
| Time of Use Plus | 13 | Seasonal and Daily Time of Use Peak pricing up to 13 c/kWh | 8 $kW | |
| Time of Use Max | 13 | Seasonal and Daily Time of Use Peak Pricing up to 9 c/KWh | 17 $/kW | |
| Premier Choice | 15 | Flat energy Charge of 12.4 c/kWh | N/A | 601-999 kWh/month, e.g. smaller single family homes |
| Lite Choice | 10 | Flat energy Charge of 11.7 c/kWh | N/A | < 600 kWh per month, e.g. apartments |



Information as of April 2021

# US Example of Providing Rate Options: Georgia Power Residential Service

| Plan | Description | Availability |
|---|---|---|
| Flat Bill<br>Rate Schedule<br>Flat-5 | Fixed monthly bill = [Expected Monthly kWh * (Energy Charges) * (1+ Risk Adder %)] + Basic Service Charge<br><br>Risk adder <=10 %<br>No true up at end of years<br>Fixed bill reset annually | Individually metered account with more than 12 months of history and a monthly flat bill > 25 $/month |
| Plug in EV | Time of use pricing with super off peak price of 1 c/kWh, off peak price of 7 ck/kWh and on-peak price of 20 c/kWh<br>Basic charge of $12/month | Any residential service customer |
| Pre pay | No deposit, credit check or reconnection fees<br>Basic charge of $18/month<br>Seasonal energy charge: 7.7 c/kWh summer, 5.4 c/kWh winter | Any residential service customer |
| Residential Service | Winter season: three step declining block energy charge<br>Summer season: three step inclining block energy charge<br>Basic charge of $12/month | Any residential service customer |



Information as of April 2021

# US Example of End Use Rate: Southern California Edison

| Plan | Description | Availability |
|---|---|---|
| Time of Use Rate D-Prime | Seasonal and Daily time of use energy charge with lowest price after 9 pm<br>Fixed monthly charge of $12<br><br>Offers the lowest energy charges of any of this utility's four residential rate plans<br><br>Intended to encourage decarbonization through electrification | Exclusively for high usage accounts with one or more:<br>• plug in electric vehicle,<br>• electric heat pump for space conditioning and water heating,<br>• residential battery<br><br>Requires verification of ownership or lease of the above |



Information as of April 2021

# Examples of Time Varying Rates

| Jurisdiction | Type of Rate | Deployment |
|---|---|---|
| Arizona, US (Arizona Public Service) | Time-of-day | Opt-in |
| Arizona, US (Arizona Public Service) | Three-part rate | Opt-in |
| California, US (PG&E, SCE, SDG&E) | Time-of-day | Default (2020) |
| Colorado, US (Fort Collins) | Time-of-day | Mandatory |
| Illinois, US (ComEd, Ameren Power Illinois) | Real-time pricing | Opt-in |
| Michigan, US (Consumers Energy) | Time-of-day | Default (2021) |

Information as of fall 2020

# Examples of Time Varying Rates - Continued

| Jurisdiction | Type of Rate | Deployment |
|---|---|---|
| Michigan, US (Consumers Energy) | Time-of-day | Default (2021) |
| Oklahoma, US (OGE) | Variable peak pricing | Opt-in |
| Ontario, Canada | Time-of-day | Default |
| Québec, Canada (Hydro-Québec) | Peak-time rebate & Critical peak pricing | Opt-in |
| France | Time-of-day | Opt-in |
| Italy | Time-of-day | Default |

Information as of fall 2020

# Residential Customers


## Shiau-Ching Chou

## Rates & Program Manager


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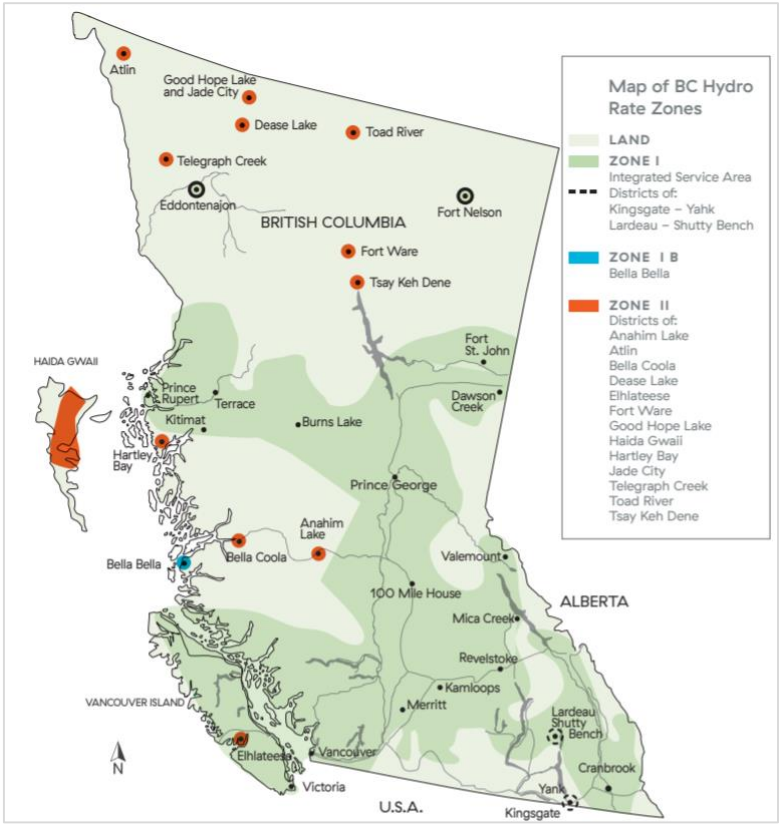
# Demographic Analysis

## We've taken a customer centric view

- **Use our customer data to inform our rate design process**
- **This information is helpful to:**
  - Understand the unique needs of our customers
  - Measure our customer and business objectives
  - Understand how rate options impact customer segments differently

# BC Hydro Territory




| Rate Zone | # of Customers |
|---|---|
| Zone I | ~1.9M |
| Zone IB | ~500 |
| Zone II | ~5,000 |



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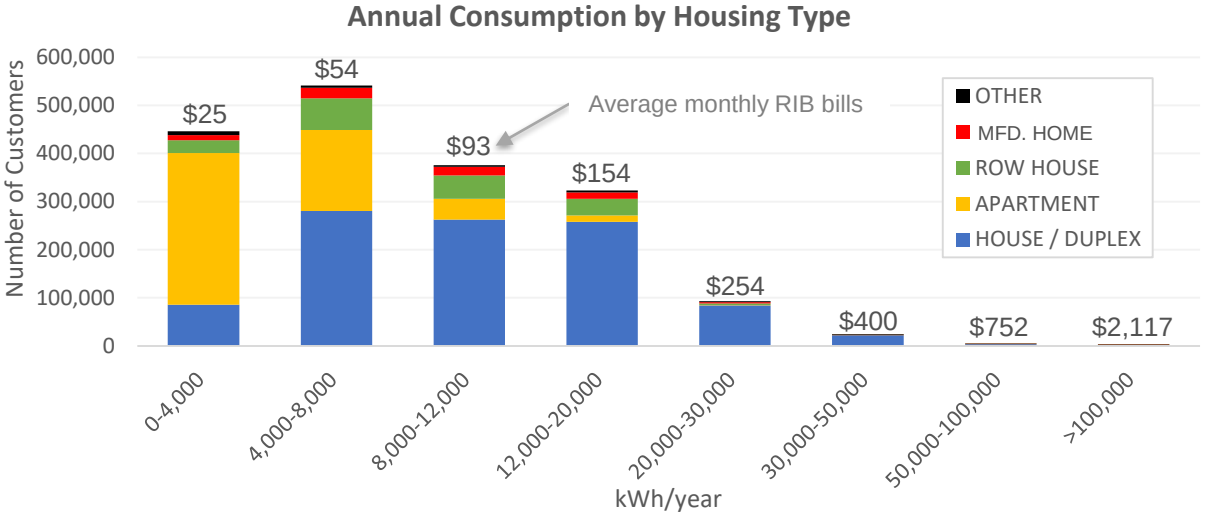
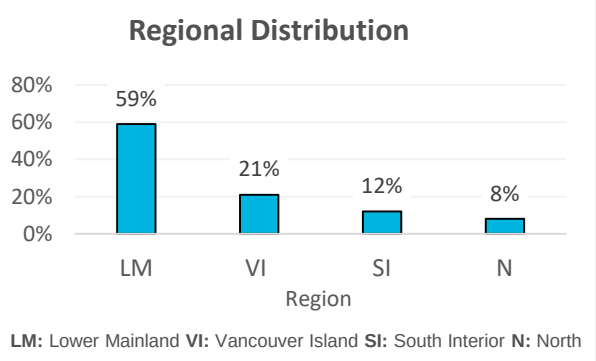
# Residential Rates

| Rate Schedule | Description | Number of Customers | % of Customers | Revenue |
|---|---|---|---|---|
| **1101** | **Zone I:** Residential Service | 1,856,165 | 98.56% | $2,132M |
| **1121** | **Zone I:** Multiple Residential Service | 1,251 | 0.07% | $10M |
| **1105** | **Zone I:** Residential Service – Dual Fuel (closed) | 5,646 | 0.30% | $5M |
| **1151** | **Zone I:** Exempt Residential Service | 14,581 | 0.77% | $55M |
| **1161** | **Zone I:** Multiple Exempt Residential Service | 14 | 0.00% | $119K |
| **1151** | **Zone IB**: Residential Service | 472 | 0.03% | $850K |
| **1107** | **Zone II:** Residential Service | 5,072 | 0.27% | $7M |
| **1127** | **Zone II:** Multiple Residential Service | 4 | 0.00% | $15K |

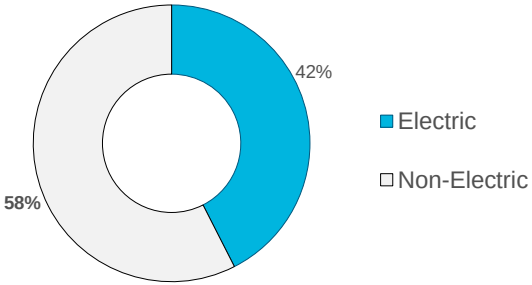
# Residential Inclining Block rate customer characteristics

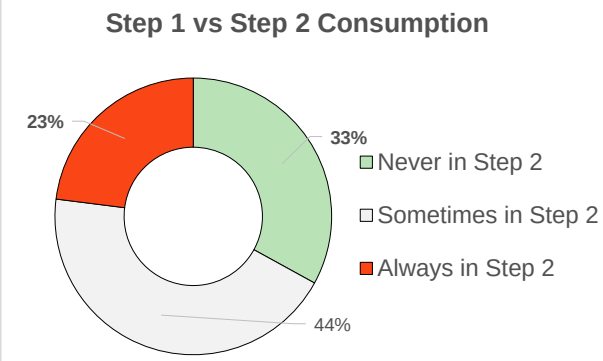
| Customer Data | |
|---|---|
| Number of customers | ~1.9M |
| Avg monthly consumption | 836kWh |
| Avg monthly bill | $99 |
| Total consumption | 18,891GWh |
| Total revenue | $2.25B |



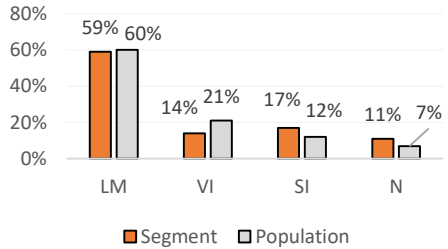

**LM:** Lower Mainland **VI:** Vancouver Island **SI:** South Interior **N:** North



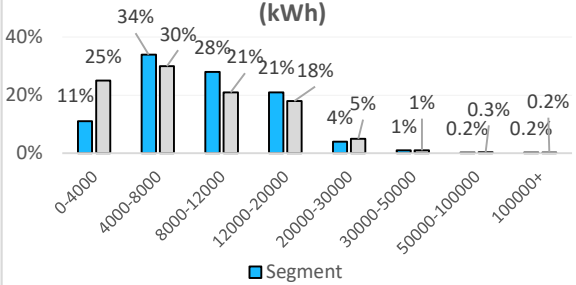



# Non-Electrically Heated House/Duplex Customers

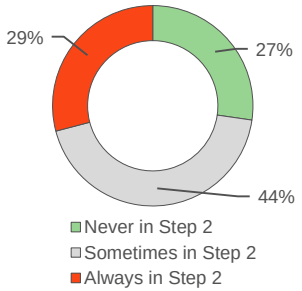
## Regional Distribution



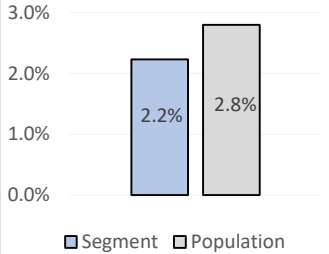

## Annual Consumption Distribution (kWh)



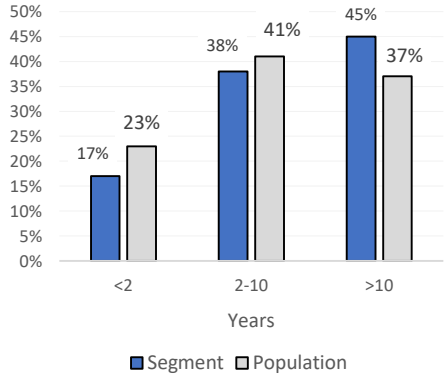

## Step 1 vs. Step 2



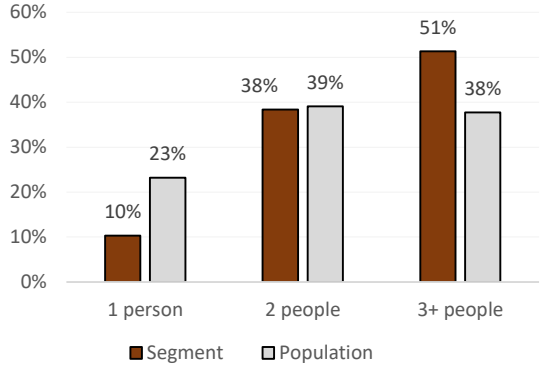

## Vacancy Rate



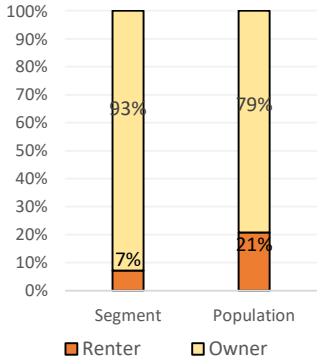

## Account Duration Distribution




## Household Size Distribution




## Own/Rent Distribution




## Segment Size

~720k customers
40% of population

## Monthly kWh

Median: 716
(442 – 1,123)

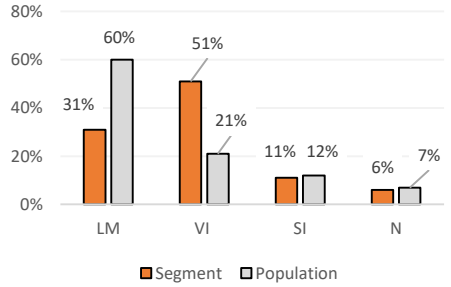
## Monthly Bill

Median: $78
($48 - $134)

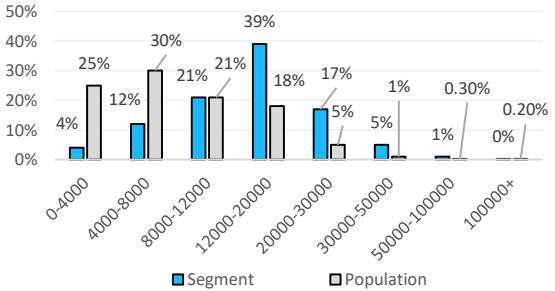
BC Hydro
Power smart

# Electrically Heated House/Duplex Customers

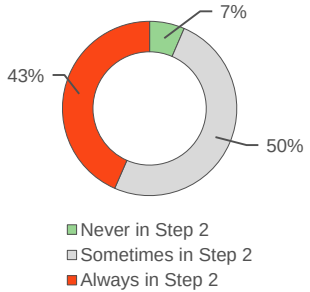
## Regional Distribution



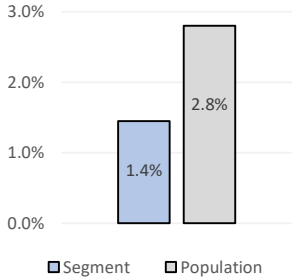

## Annual consumption Distribution (kWh)



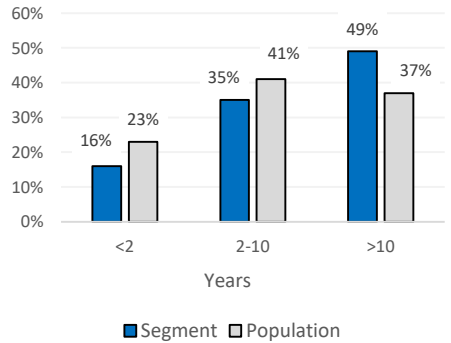

## Step 1 vs. Step 2



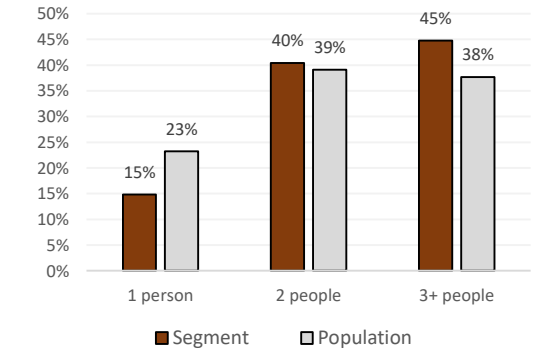

## Vacancy Rate



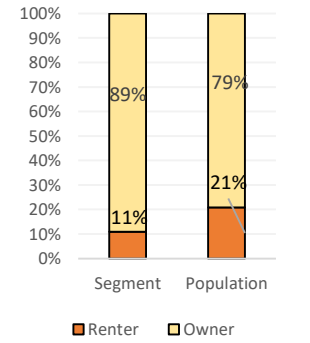

## Account Duration Distribution




## Household Size Distribution




## Own/Rent Distribution




## Segment Size

~280k customers
16% of population

## Monthly kWh

Median: 1,204
(751 - 1,806)

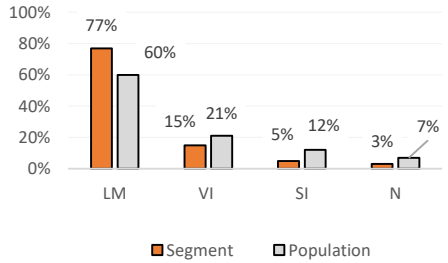
## Monthly Bill

Median: $146
($85 - $231)

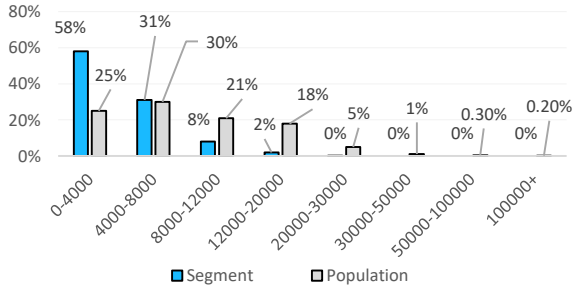
BC Hydro
Power smart

# Apartment Customers

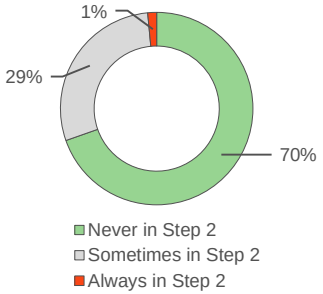
## Regional Distribution



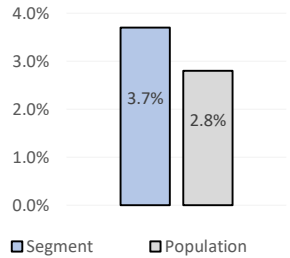

## Annual Consumption Distribution (kWh)



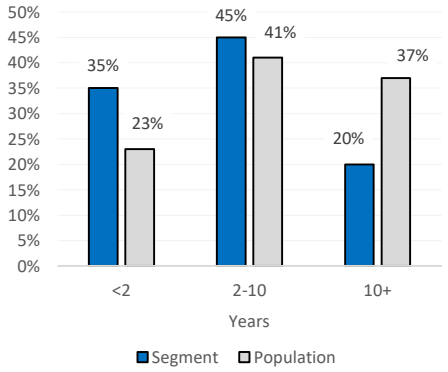

## Step 1 vs. Step 2



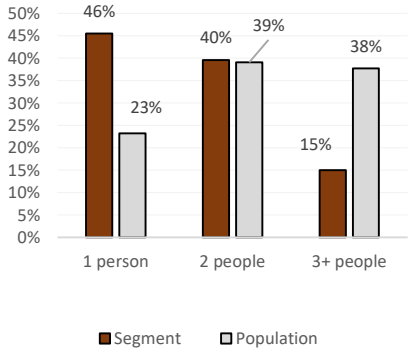

## Vacancy Rate



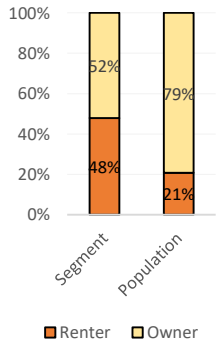

## Account Duration Distribution



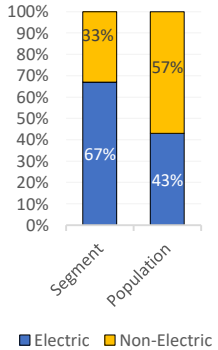

## Household Size Distribution




## Own/Rent Distribution




## Space Heating




## Segment Size

~541k customers
30% of population

## Monthly kWh

Median: 290
(157 – 555)

## Monthly Bill

Median: $34
($21 - $57)

BC Hydro
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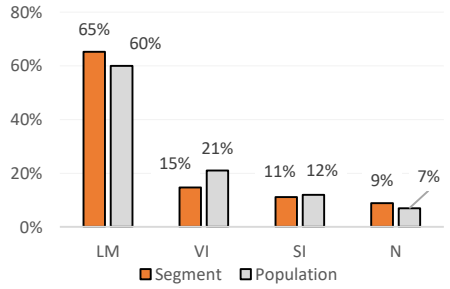
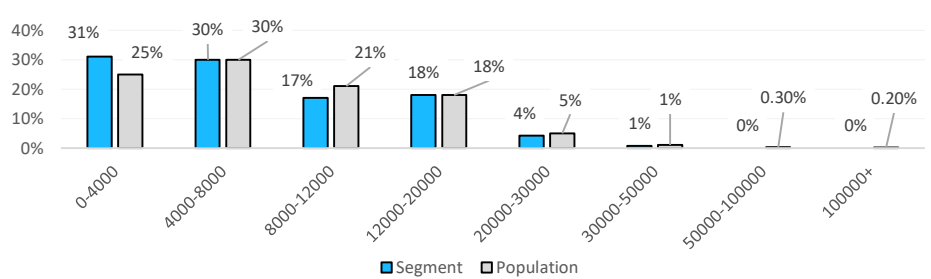
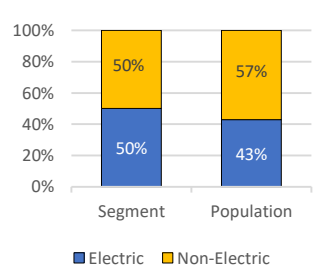
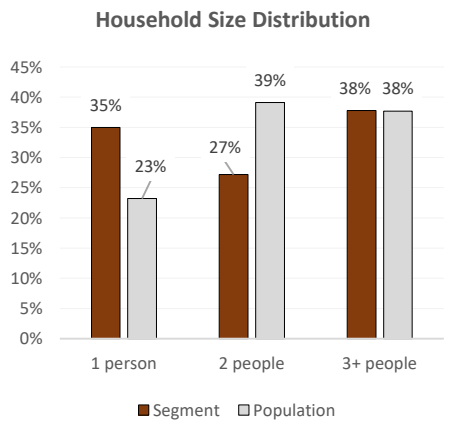
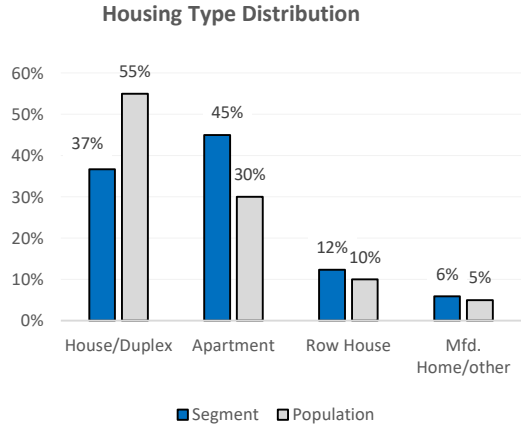
# Low Income Customers

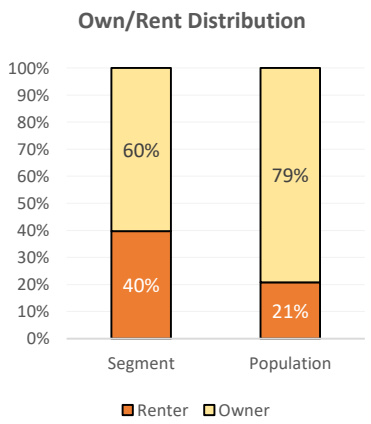



## Segment Size

~173k customers
10% of population

## Monthly kWh

Median: 538
(238 – 1,032)

## Monthly Bill

Median: $55
($28 - $126)

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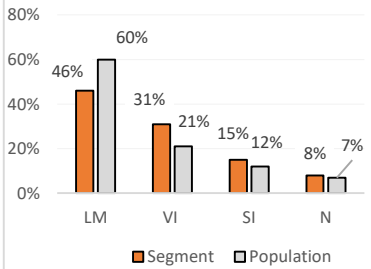
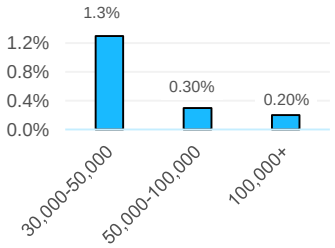
# High Consuming Customers (>=30,000kWh/year)

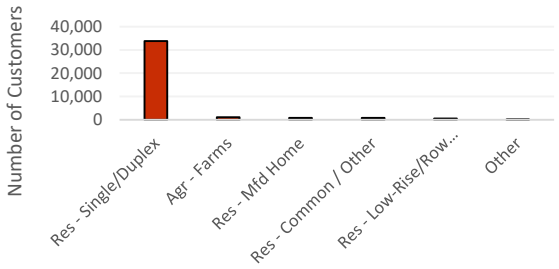
## Regional Distribution



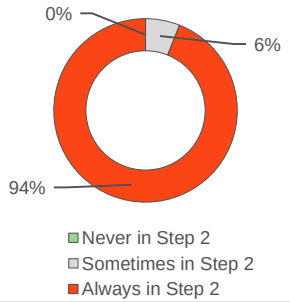

## Annual consumption (kWh)



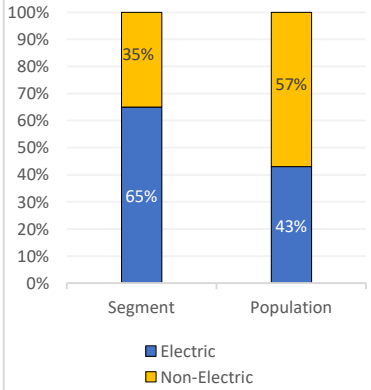

## Customers by Type



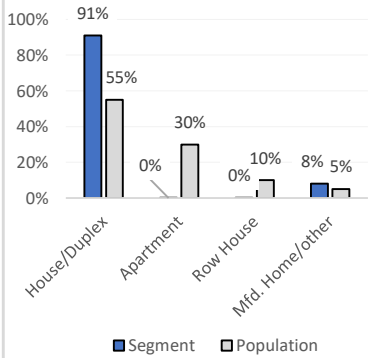

## Step 1 vs. Step 2



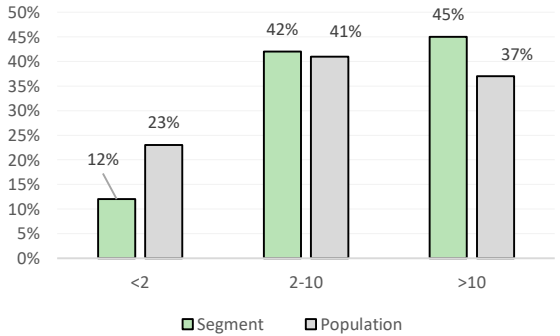

## Space Heating




## Housing Type Distribution




## Account Duration Distribution




## Segment Size

~32k customers
1.8% of population

## Monthly kWh

Median: 3,071
(2,648 – 4,550)

## Monthly Bill

Median: $410
($350 - $619)

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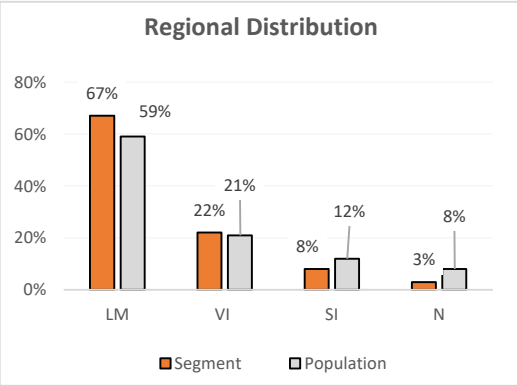
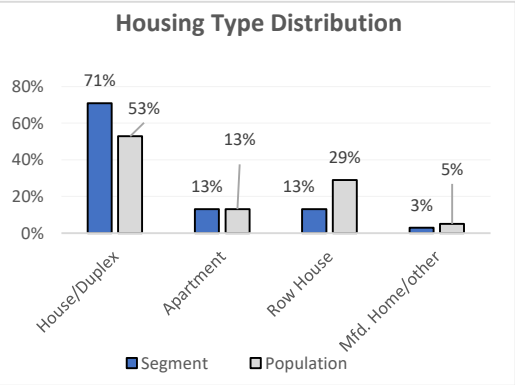
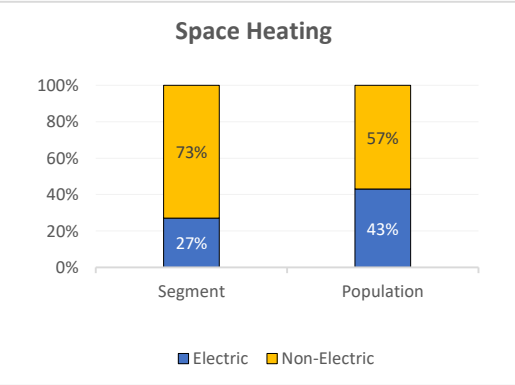
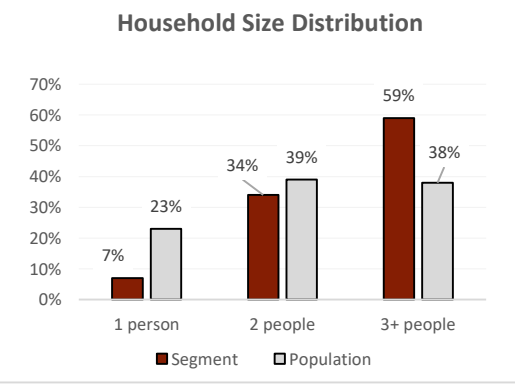
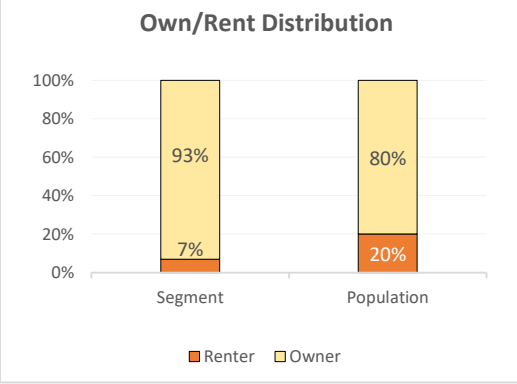
# Electric Vehicle Household Customers




**Feedback form question #2:** What other groups or segments should we look at and why?

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# Rate design concepts


## Rob Zeni

## Senior Regulatory Specialist


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Power smart

# Rate Design Concepts

**We could redesign the default residential rate and introduce voluntary rates**

Illustrative default rate design concepts:

- Maintain the inclining block rate
- Eliminate the inclining block rate
- Segment the residential rate class

Illustrative voluntary rate design concepts:

- Introduce voluntary whole home time varying rate
- Introduce voluntary end-use rates, such as electric vehicle charging and heat-pump rates

# Preliminary Default Rate Design Concepts

## We're seeking feedback on the following default rate design concepts

| Default Rate Concepts | Description |
|---|---|
| Maintain the inclining block rate | Rate concepts may include:<br>• Status quo<br>• Increase of Step1 / Step 2 threshold<br>• Reduced energy charges and increase the basic charge |
| Eliminate the inclining block rate | Rate concepts may include:<br>• Flat rate and maintain basic charge<br>• Flat rate with increased basic charge<br>• Declining block rate |
| Residential rates by segment | Rate concepts may include:<br>• Different flat rates based on annual consumption |

**Forecast Revenue Neutrality is maintained in all pricing scenarios.**
This refers to calculating the energy rates and basic charges so that the target revenue from the residential rate class is achieved, resulting in no impact to other rate classes.

# Concepts that Maintain the Inclining Block Rate Structure

## Illustrative pricing

| Default Rate Concepts | Threshold (kWh per month) | Step 1 Rate (¢ / kwh) | Step 2 Rate (¢ / kwh) | Step 3 Surcharge Rate (¢ / kwh) | Basic Charge (¢ / day) |
|---|---|---|---|---|---|
| Status quo | 675 | 9.41 | 14.10 | N/A | 20.80 |
| Increase of Step1 / Step 2 threshold | 900 | 10 | 14.5 | N/A | 20.80 |
| Reduced energy charges and increased the basic charge | 675 | 8.5 | 11.5 | N/A | 63 |

# Maintaining the Inclining Block Rate: Considerations

- Depending on the design, a continuation of the inclining block rate design may:
  - Continue to encourage energy conservation
  - Minimize bill impacts of rate redesign
  - Discourage electrification

**Feedback form question #3:** Do you support BC Hydro advancing rate design concepts that maintain the inclining block rate for further development? Are there additional options related to the inclining block rate you would like to see analyzed?

# Concepts that Eliminate the Inclining Block Rate Structure

## Illustrative pricing

| Default Rate Concepts | Threshold (kWh per month) | Step 1 Rate (¢ / kwh) | Step 2 Rate (¢ / kwh) | Basic Charge (¢ / day) |
|---|---|---|---|---|
| Status Quo | 675 | 9.41 | 14.10 | 20.80 |

| Default Rate Concepts | Threshold (kWh per month) | Step 1 Rate (¢ / kwh) | Step 2 Rate (¢ / kwh) | Step 3 Rate (¢ / kwh) | Basic Charge (¢ / day) |
|---|---|---|---|---|---|
| Declining Block Rate | 675 / 2500 | 12 | 10 | 9 | 20.80 |

| Default Rate Concepts | Flat Rate (¢ / kwh) | Basic Charge (¢ / day) |
|---|---|---|
| Flat rate and no change to basic charge | 11.5 | 20.80 |
| Flat rate and triple basic charge | 10 | 63 |

# Eliminate the Inclining Block Rate: Considerations

- Depending on the design, eliminating the inclining block design may:
  - Improve bill and revenue stability by reducing high winter heating bills
  - Improve affordability of electric heat
  - Support decarbonization by removing a disincentive to electrify
  - Improve economic efficiency by moving the energy charge closer to marginal costs
  - Increase bills for some customers

**Feedback form question #4:** Are you interested in BC Hydro further developing rate design concepts that eliminate the inclining block rate? Are there additional options for eliminating the inclining block rate you would like to see analyzed?

# Concepts that Segment the Residential Class

## Illustrative Pricing

| Default Rate Concepts | Threshold (kWh per month) | Step 1 Rate (¢ / kwh) | Step 2 Rate (¢ / kwh) | Basic Charge (¢ / day) |
|---|---|---|---|---|
| Status Quo | 675 | 9.41 | 14.10 | 20.80 |

| Default Rate Concepts | Flat Rate (¢ / kwh) | Basic Charge (¢ / day) |
|---|---|---|
| Flat rate for Customers < 8,000 kWh per year | 9.5 | 20.80 |
| Flat rate for Customers 8,000 to 20,000 kWh per year | 11.5 | 20.80 |
| Flat rate for Customers > 20,000 kWh per year | 12.5 | 20.80 |

# Segment the rate class: Considerations

- Depending on the design,  segmenting the rate class may:
  - Improve flexibility by allowing for greater service differentiation across the rate class bill
  - Improve affordability for lower usage accounts
  - Be considered unfair to customers in segments that that have a higher rate

**Feedback form question #5:** Are you interested in BC Hydro further developing rate design concepts that segment the rate class? Are there additional options for segmenting the rate class you would like to see analyzed?

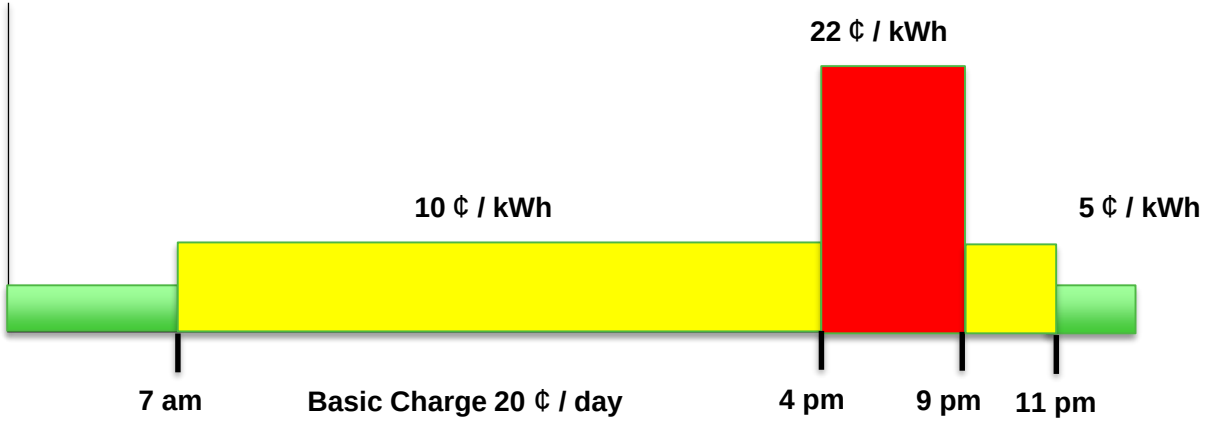
# Preliminary Voluntary Rate Design Concepts

## We're seeking feedback on the following voluntary rate design concepts

| Voluntary Rate Concepts | Description |
|---|---|
| **Whole-home time varying rates** | Rate concepts may include:<br>• Seasonal time varying rates<br>• Weekday / weekend time varying rates<br>• Traditional (peak, off-peak, super off-peak) time varying rates or simple day / night rates<br>• Critical peak period pricing |
| **End-use rates, such as electric vehicle charging and heat-pump rates** | Rate concepts may include:<br>• Seasonal time varying rates<br>• Weekday / weekend time varying rates<br>• Traditional (peak, off-peak, super off-peak) time varying rates or simple day / night rates<br>• Discounted rate based on end use |

# Voluntary Whole Home Time Varying Rate

## Traditional time varying rate with peak, off-peak and super off-peak illustrative pricing



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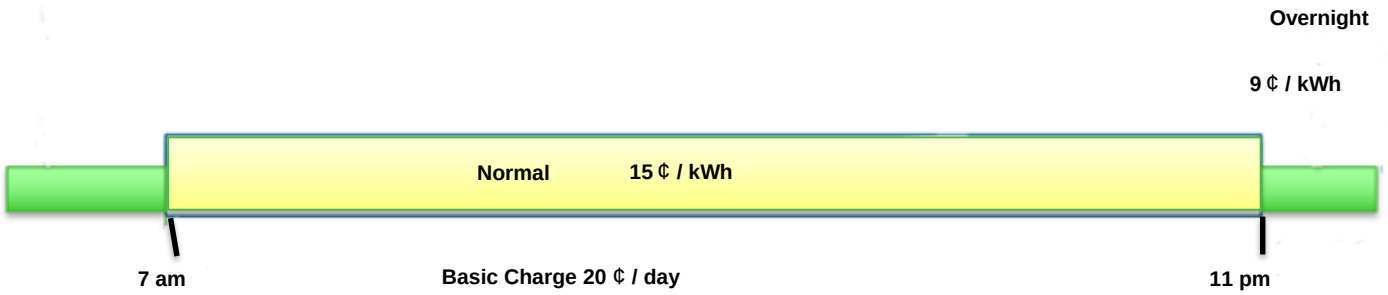
# Voluntary time varying rates: Considerations

- Depending on the design, voluntary time varying rates may:
  - Improve flexibility by allowing for greater service differentiation across the rate class
  - Improve affordability by reducing bills for customers who can shift when they use electricity
  - Improve economic efficiency by sending a price signal to shift demand from peak periods to minimize required transmission and distribution investments
  - Reduce utility revenue, which can be offset by utility savings on transmission and distribution

**Feedback form question #6:** Are you interested in BC Hydro further developing rate design concepts for time varying rates? Are there additional options for time varying rates you would like to see analyzed?

# Voluntary End Use Time Varying Rate

## Simple Overnight Rate for end uses such as electric vehicle charging



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# Voluntary end use rates: considerations

- Depending on the design, voluntary end use rates may:
  - Improve economic efficiency by sending a price signal to reduce peak demand and minimize required transmission and distribution investments
  - Support decarbonization by encouraging electric vehicle adoption and heat pump adoption
  - Be perceived as unfair by customers who cannot participate as they do not have the end use technology

**Feedback form question #7:** Are you interested in BC Hydro further developing end use rates? Are there additional options for end use rates you would like to see analyzed?

# Other considerations

**Feedback form question #8:** Are there any other rate design concepts we didn't mention today that you would like us to explore?

**Feedback form question #9:** Are there any rate concepts that you feel may require program support (marketing and outreach, educational materials, financial incentives, technology incentives) in order to be effective?

# Closing remarks

## Chris Sandve

## Chief Regulatory Officer

BC Hydro
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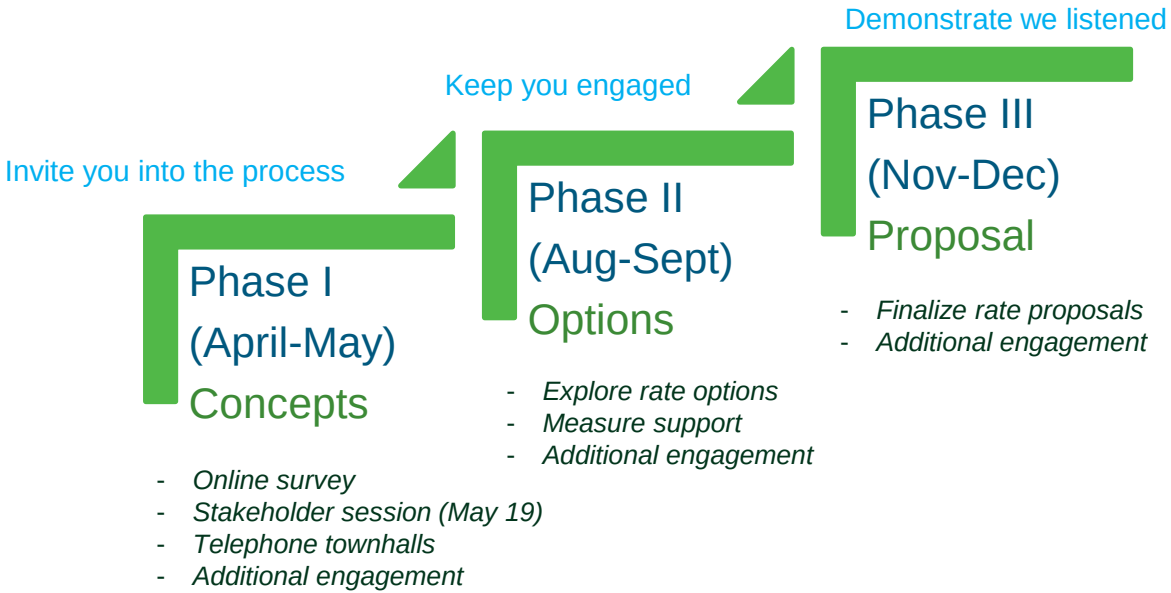
# Engagement Plan for Rate Design



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# We'd love to hear more from you.

- Complete the online Feedback Form this week
- Join us for additional engagement

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# Closing Remarks: Key Contacts and Process

- BC Hydro values your participation and feedback on our rate designs
- Please contact BC Hydro Regulatory Group with any questions about the regulatory or engagement process: bchydroregulatory@bchydro.com
- Remember to submit your feedback by June 02, 2021
- The link to the online feedback form is: https://bchydro.ca1.qualtrics.com/jfe/form/SV_8kqmM9K9t03OeLc


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