Webex Session Details

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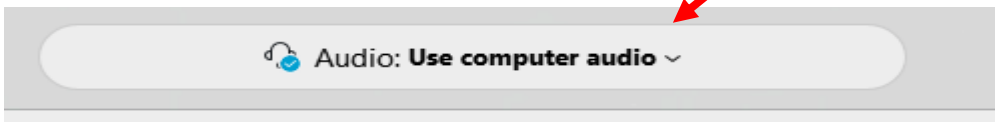

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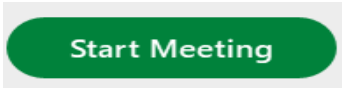

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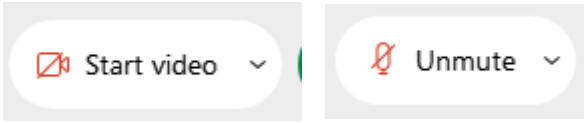

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- Meeting number (access code): 187 162 2089
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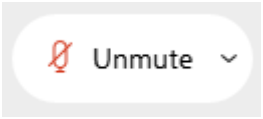
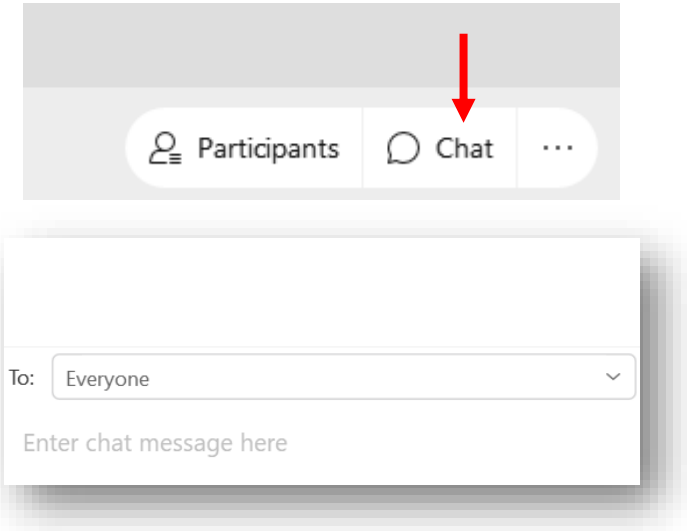


HOW TO PARTICIPATE

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.



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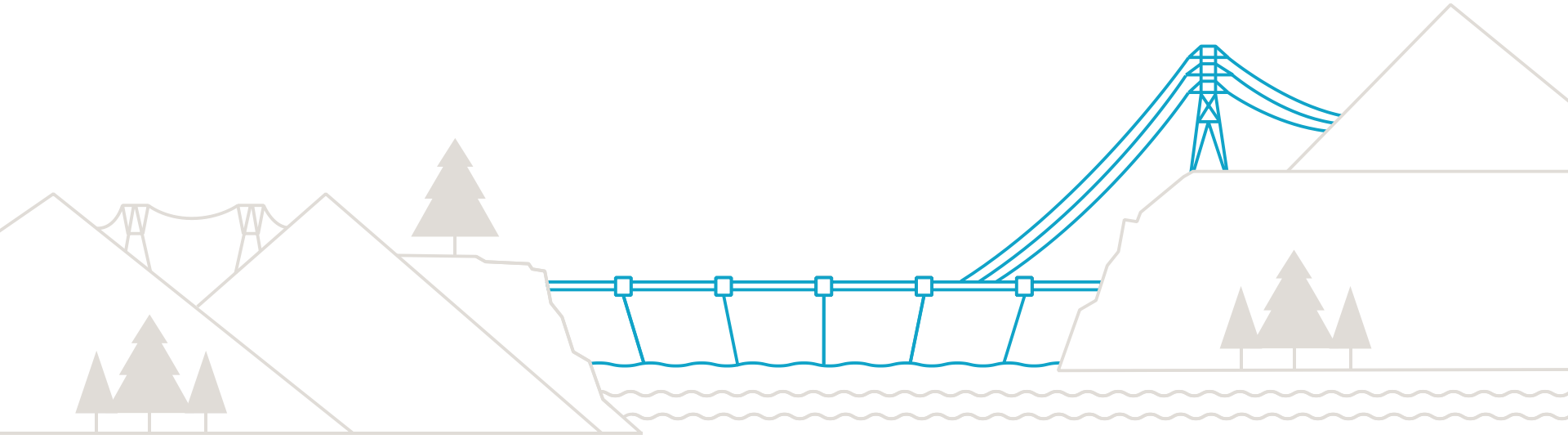
Rate Schedule 1823 Rate Restructuring

Public Workshop #2



April 30, 2021

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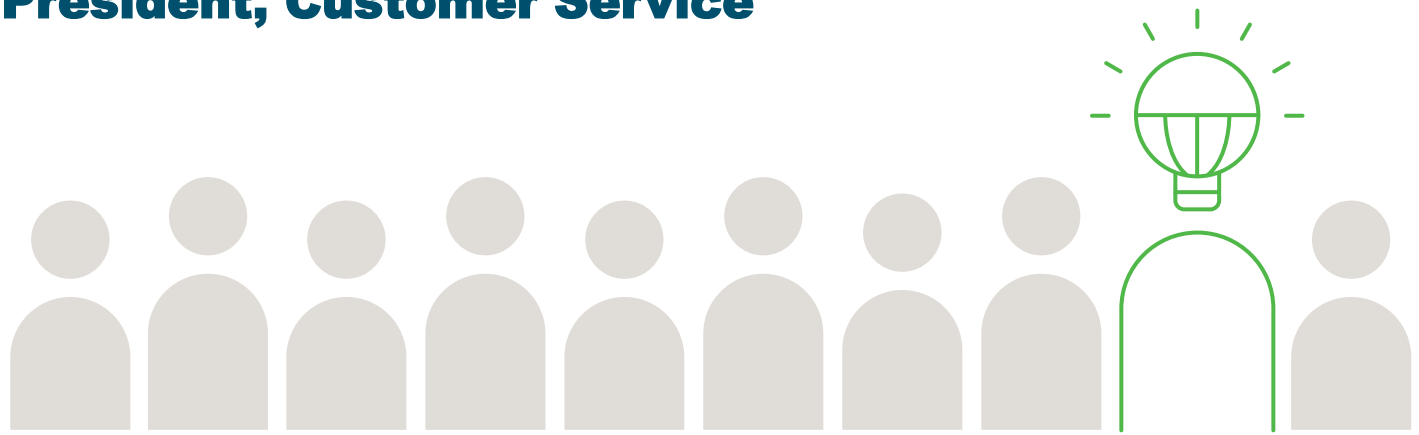
Workshop Agenda

Approximate Time	Item	Presenter
9:30 - 9:40	Welcome / Virtual Workshop Procedures	
9:40 – 9:45	Opening remarks	Keith Anderson, Vice President, Customer Service
9:45 – 10:00	Summary of Feedback from Workshop #1	Anthea Jubb, Senior Regulatory Manager Tariffs
10:00 – 10:30	Context • BC Hydro context • Jurisdictional Review • Rate Design Objectives • Revenue Assumption	Anthea Jubb
10:30 – 11:00	Rate Design Alternatives • Standard Flat Rate • Declining Block Rate	Allan Chung, Sr. Regulatory Specialist
11:00 – 11:55	Rate Design Alternatives continued • Stepped Rate 2.0 • Customer Specific Average Rate	David Keir, Sr. Manager Transmission Rates and Large Customer Rate Operations
11:55 - noon	Closing remarks	Fred James, Chief Regulatory Officer

Opening Remarks

Keith Anderson

Vice President, Customer Service



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RS 1823 Re-structuring Timeline

Customer & Industry Engagement / Feedback

APRIL 2023

DEC 2020

FEB 9, 2021
Workshop 1

APR 30, 2021
Workshop 2

Additional Workshops

Q1 – Q3 2021

RS1823 Re-pricing Application:
Filed Feb 2021 – if approved, maintain existing stepped rate design and pricing principles for F22 + F23

18 months

FILE APPLICATION
TARGET FALL 2021

Policy context

1. Support electrification
2. Support CleanBC goals
3. Affordable, fair and stable rates that improve economic efficiency

Balancing the Objectives

Customer Objectives

- Affordability
- Rate competitiveness
- DSM Recognition
- Investment certainty

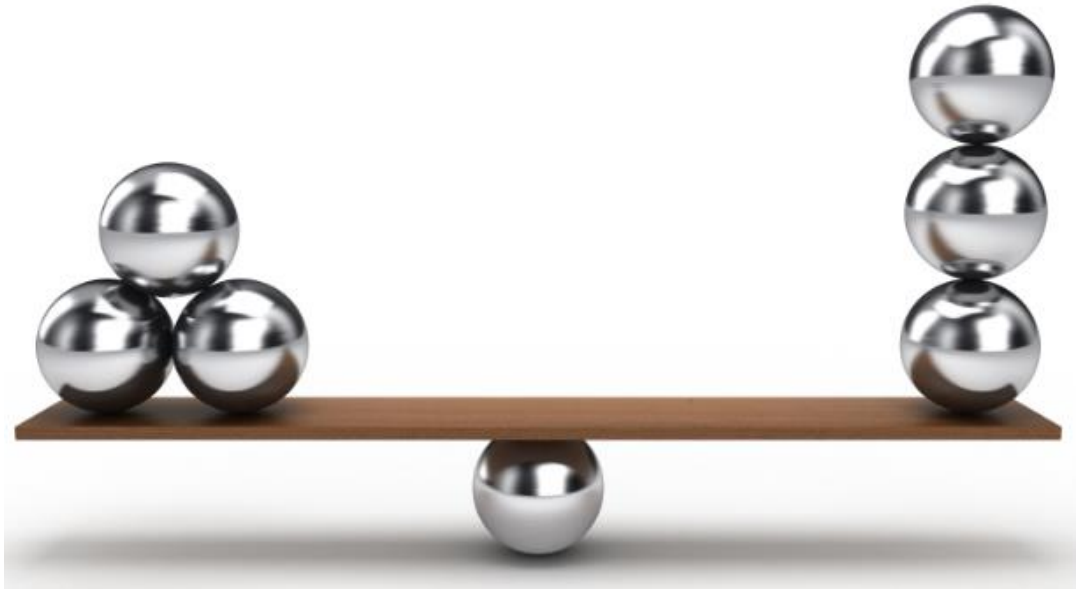
Rate Design Objectives

- Affordability
- Economic Efficiency
- Decarbonization
- Flexibility

Business Objectives

- Retain load
- Grow load
- Attract load

Based on feedback received



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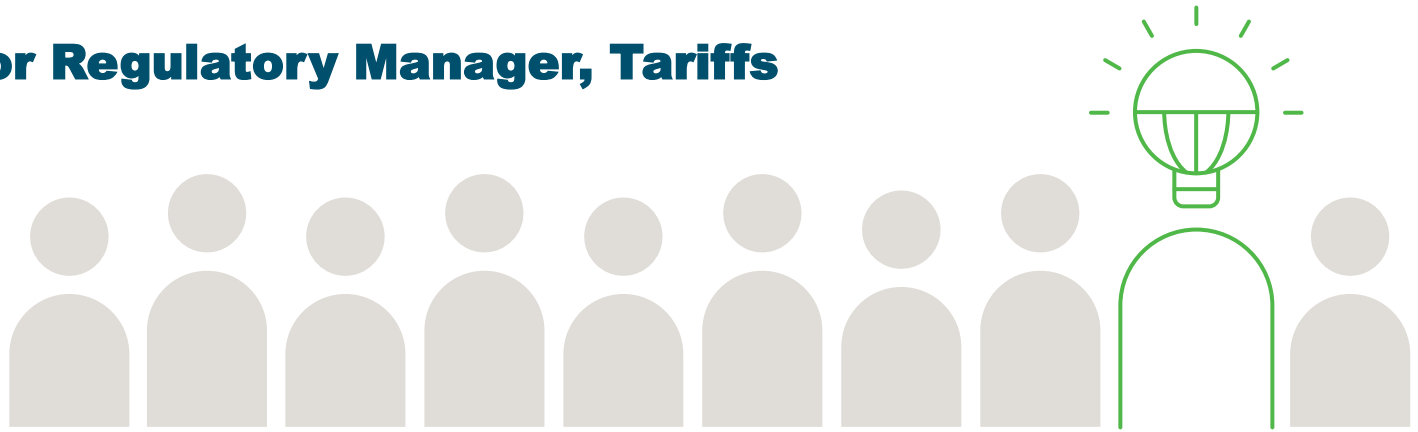
Summary of Feedback from Workshop #1

Anthea Jubb

Senior Regulatory Manager, Tariffs



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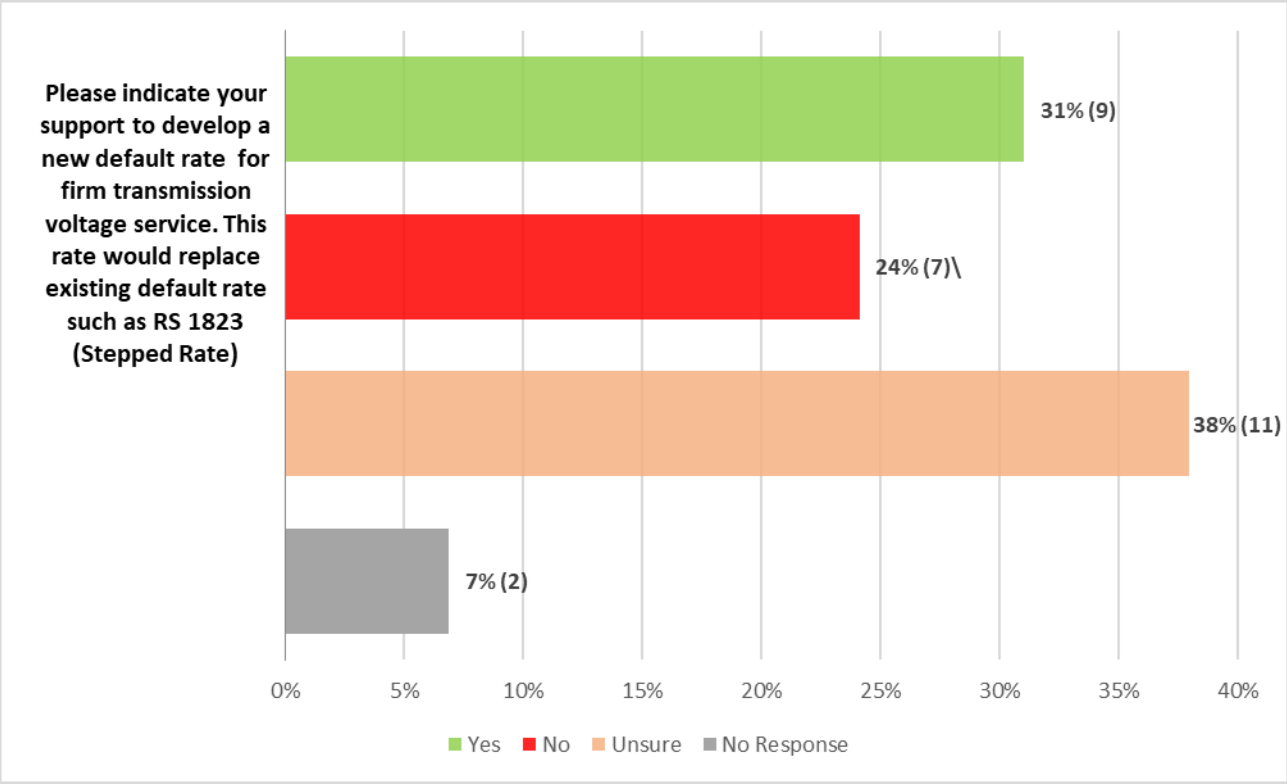
Background

- On February 9, 2021, BC Hydro hosted a virtual workshop on Rate Schedule 1823 restructuring
    - 79 webcast customer participants, 13 non-customers (interveners, industry association staff, BCUC staff) and 5 unknowns for a total of 97 participants.
- The February 9 workshop included the following:
    - Context for restructuring rate schedule 1823
    - Three pricing scenarios for rate schedule 1823
    - Restructuring considerations for other transmission rates

Feedback from Workshop 1

Responses on support for BC Hydro RS 1823 rate restructuring



The above chart is based on 29 unique responses, obtained by adjusting the total 33 responses for multiple responses from the same company. A total of 97 participants, including 79 customers participated in the workshop.

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Standard Flat Rate - 3 Pricing Scenarios Workshop 1

SCENARIO 1: Set Demand Charge at RS 1823 Demand Charge

Set the Demand Charge at RS 1823 Demand Charge and,

calculate new Flat Energy Charge to achieve target revenue.

SCENARIO 2: Set Energy Charge at RS 1823 Tier 1 Energy Charge

Set the Flat Energy Charge at RS 1823 Tier 1 Energy Charge and,

calculate new Demand Charge to achieve target revenue.

SCENARIO 3: Set Demand Charge at 100% Cost-based Demand Charge

Set Demand Charge to recover 100% of allocated demand costs and,

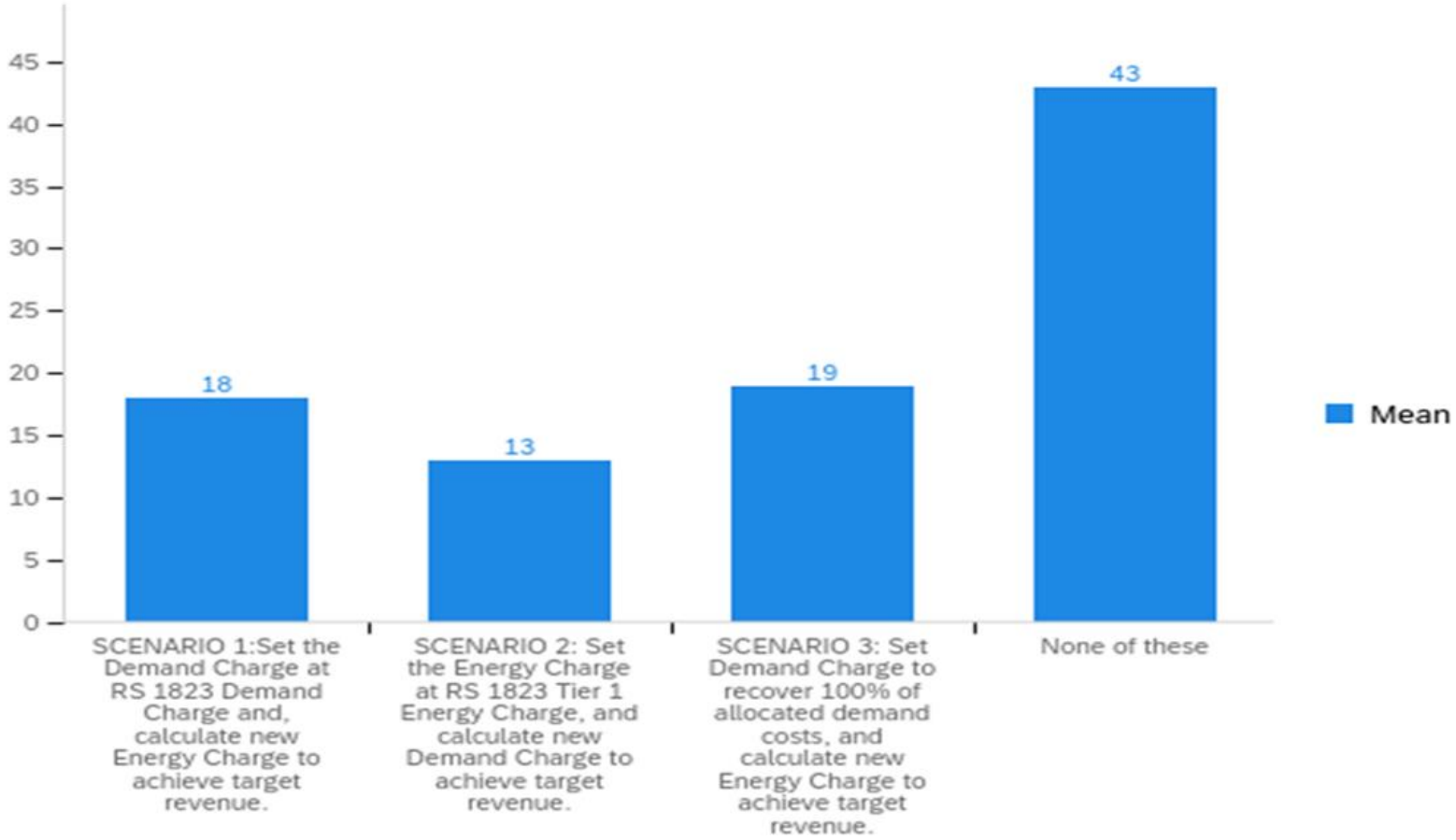
calculate new Flat Energy Charge to achieve target revenue.

Forecast Revenue Neutrality is maintained in all pricing scenarios.

This refers to calculating the energy and demand rates so that the target revenue from the rate class is achieved, and results in no impact to other rate classes.

Feedback from Workshop 1

Q9 - RS 1823 Pricing Scenarios This section will seek your feedback on the three pricing scenarios presented by BC Hydro. Please indicate your support for the three scenarios described below assigning points to each of the options set out below so that the total number of points add up to 100.



The above chart is based on an earlier analysis of 32 responses and was not adjusted for multiple responses from the same company.

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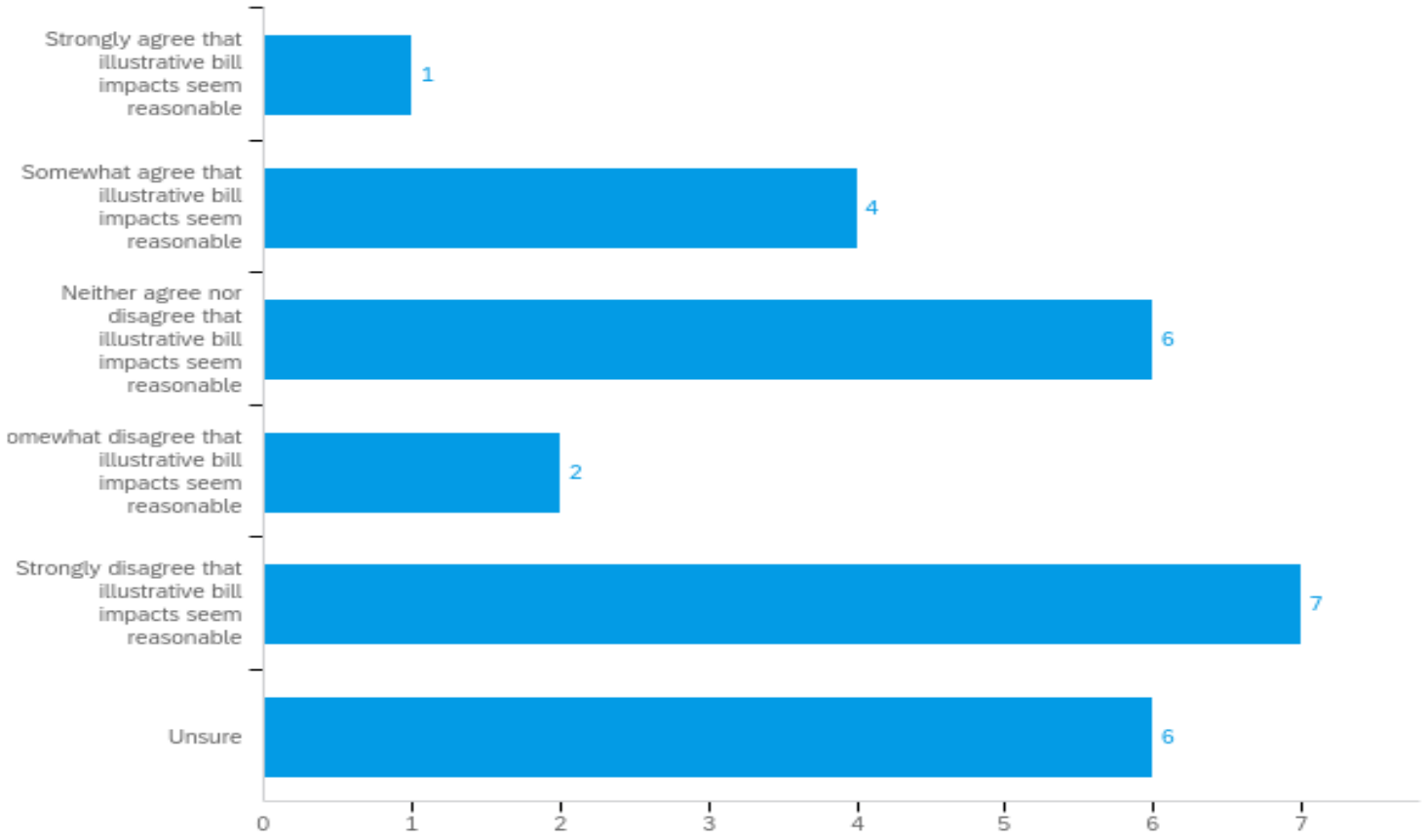
Feedback from Workshop 1

Reasonableness of Bill Impacts



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Feedback on Rate Restructuring

Written feedback themes

1. Interest in potential changes to provide greater price certainty for budgeting and be simpler to calculate and track
2. Interest in potential changes to better incent load growth, electrification and decarbonization
3. Concerns about potential negative financial impact of rate restructuring on companies which have made extensive investment in demand side management
4. Concerns about potential bill increases for some customers due to rate restructuring
5. Concerns about potential diminished support for conservation

Feedback from Workshop 1

In addition, five letters were received from customers suggesting rate design alternatives and providing additional feedback.

- Concern about potential bill impacts of greater than 7 percent for some customers
- Concern about impact on customer-funded demand side management
- Bill impact mitigation suggestions such as:
  - A seven-to-ten year transition period
  - Credit or grandparenting for customer-funded DSM
  - A customer specific rate based on efficiency of plant
- Suggestion that future rate design enables and encourages load growth

Response to Feedback on Bill Impacts

- BC Hydro acknowledges the concerns raised by customers about bill impacts
- In consideration of this feedback, we have:
    - Conducted sensitivity analysis on the revenue forecast assumptions, which may reduce bill impacts
    - Developed additional rate design concepts
- Further, we will request BCUC approval for bill impact mitigation measures, such as a multi-year transition period and/or recognition of DSM investments.

Context

Anthea Jubb

Senior Regulatory Manager, Tariffs

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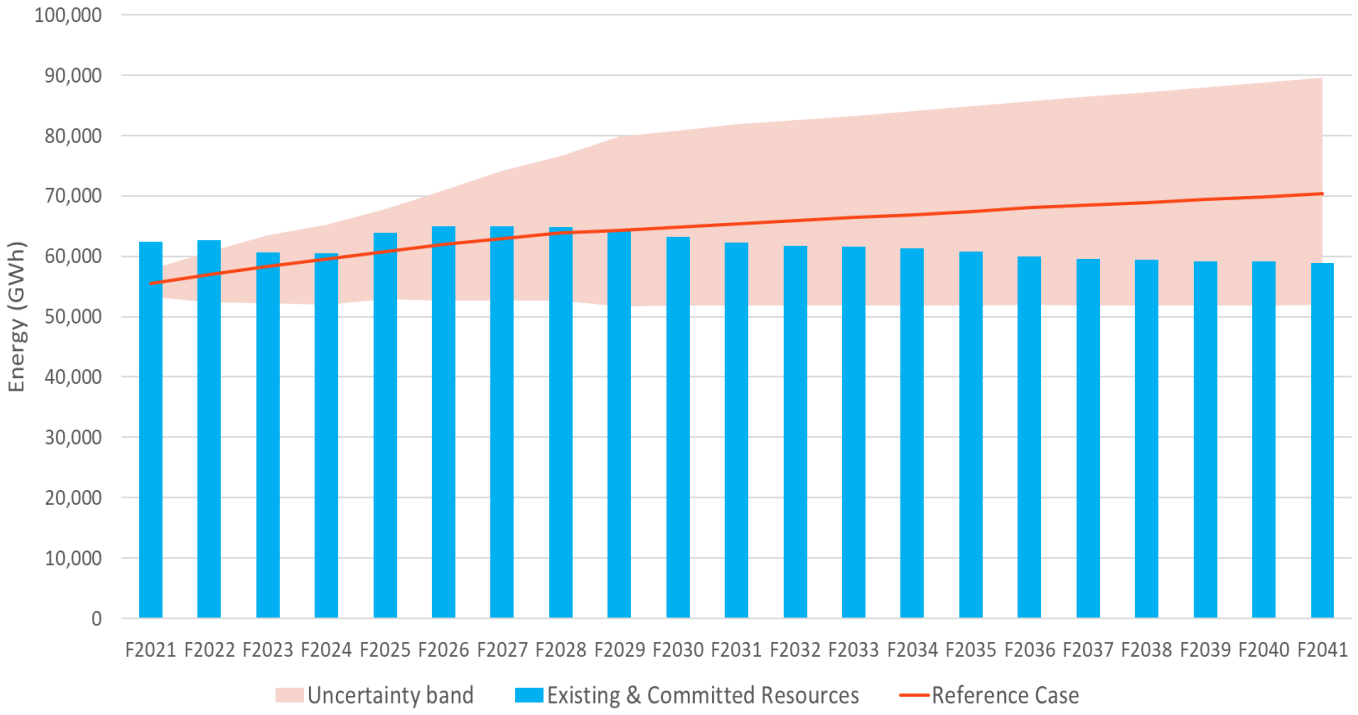
Load Resource Balance Energy

We expect to be in an energy surplus for roughly a decade



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Rate Structure Jurisdictional Scan

Canadian Utilities– Industrial (Transmission connected)

Canadian Electric Utility	Rate	Rate Structure	Energy	Fixed	Demand
BC Hydro	RS 1823 Transmission Service Stepped Rate	Inclining Block Rate with customer baseline load	Higher tier 2 rate originally intended to match marginal cost Lower tier 1 rate	N/A	Flat $/kVA
Sask Power	Power Standard Rate Customer Owned Transformation >3,000 kVA and >100 kV	Standard Tariff	Flat rate per kWh plus carbon charge per kWh	Monthly Charge	Flat $/kVA
Manitoba Hydro	General Service >100kV Customer Owned Transformation	Standard Tariff	Flat rate per kWh	N/A	Flat $/kVA
Hydro Quebec	Large Power >5,000 kW	Standard Tariff	Flat rate per kWh	N/A	Flat $/kW

Rate Structure Jurisdictional Scan

Canadian Utilities – Industrial (Transmission connected)

Canadian Utility	Rate	Rate Structure	Energy	Fixed	Demand
Newfoundland	Industrial Firm and own transmission reduction	Standard Tariff	Flat rate per kWh	N/A	Flat $/kW
Nova Scotia	Large Industrial Tariff	Standard Tariff	Flat rate per kWh	N/A	Flat $/kVA
New Brunswick	Large Industrial	Standard Tariff	Flat rate per kWh	N/A	Flat $/kW with discount for customer directly served by transmission
Labrador	Industrial Firm and own transmission reduction	Inclining Block Rate	Two tier rate per MWh, higher > Development Energy Block		Flat $/kW

Source:: CD Howe Commentary No. 582 The Price of Power Comparative Electricity Costs across Provinces Grant Bishop, Mariam Ragab and Blake Shaffer, Table 3, page 22

Rate Structure Jurisdictional Scan

Canadian Utilities– Industrial (Transmission connected)

Canadian Utility	Rate	Rate Structure	Energy	Variable	Fixed	Demand
Calgary - Enmax	Transmission connected and Demand Transmission Service (AESO)	Unbundled rate, deregulated wholesale market	Real time market price per kWh (or hedged under contract)	Flat charge per MWh	Daily distribution charge	Flat $/MW plus rate per MW of substation capacity x customer share of substation
Edmonton - Epcor	Transmission connected and Demand Transmission Service (AESO)	Unbundled rate, deregulated wholesale market	Real time market price per kWh (or hedged under contract)	Flat charge per MWh	Daily distribution charge	Flat $/MW plus rate per MW of substation capacity x customer share of substation
Toronto Hydro	Uniform Transmission Rates (Hydro One) and Domestic Customer (IESO)	Unbundled rate, deregulated wholesale market	Hourly Ontario Energy Price per MWh and monthly Global Adjustment charge per MWh	IESO usage fee per MWh	N/A	Flat $/kW

Rate Structure Jurisdictional Scan

Survey of 15 US Utilities – Industrial Service Rate Class

Study for Seattle City Light (Cuthbert Dec 2018)

1. Twelve of the 15 utilities reviewed have some form of fixed cost charges (e.g., Basic Charge, Customer Charge, Access Charge, Minimum Demand and Minimum Charge)
2. Energy Charge

   Five types of energy charges are seen among the 15 utilities in the review for their high demand or industrial service classes.

   - Flat – four utilities
   - Seasonal, time of use – six utilities
   - Seasonal flat – one utility
   - Declining block – two utilities
   - Time of use - two utilities

Rate Structure Jurisdictional Scan

Survey of 15 US Utilities – Industrial Service Rate Class Study for Seattle City Light (Cuthbert Dec 2018)

3. Demand Charge
    - All 15 utilities in the review have demand charges ($/kW)
    - Flat – seven utilities
    - Seasonal time of use – four utilities
    - Seasonal – two utilities
    - Non seasonal time of use – two utilities
4. Includes large municipal utilities (e.g., Los Angeles (LADPW), San Antonio (CPS Energy), South Carolina Public Service Authority (Santee Cooper), other municipal (e.g., Colorado Springs Utilities) and Pacific Northwest investor owned (e.g., Avista Utilities, Idaho Power, Portland General Electric, Puget Sound Energy)

Rate Design Concepts for Today's Discussion

We have modelled and priced four concepts

1. Standard Tariff Flat Energy and Demand Charge from Workshop 1
    1. Scenario 1: Flat energy charge, status quo demand charge
    2. Scenario 2: Lower flat Energy Charge set to RS 1823 Tier 1 Charge, higher Demand Charge
    3. Scenario 3: Lowest flat Energy Charge, higher Demand Charge set to recover demand-related costs
2. Declining Block Rate: Flat Demand Charge, declining block Energy Charge and higher demand charge
3. Stepped Rate 2.0: Maintain current stepped rate, lower Tier 2 Charge and higher Tier 1 and Demand Charges, while improving cost reflectivity
4. Customer Specific Rate: Rate calculated as historical average tier 1 / tier 2 load using F20 as base year, potentially with adjustments

BC Hydro Rate Design Objectives

1. Affordability

- Considering magnitude of bill impacts

2. Economic Efficiency

- Considering how closely the energy charge reflects our marginal cost

3. Decarbonization

- Consider merging with economic efficiency given that a lower energy charge would reflect our marginal cost and generally encourage electrification

4. Flexibility

- Considering whether the rate design would be easier or more difficult to change in future, and the extent to which the design supports or impedes introduction of additional optional rates (considering pricing complexity and potential customer impacts of future design changes)

Alternative Rate Design Concepts from Feedback

Additional concepts were suggested / under consideration

Rate Structure	Description	BC Hydro Comment
1. Flat firm rate but add non-firm interruptible rate above maximum firm demand at market price	Flat firm rate based on standard tariff Non-firm rate for incremental use based on market price and/or discounted demand charge	Similar concepts are currently available as Rate Schedule 1893 Incremental Energy Rate and Rate Schedule 1892 Freshet Energy Rate
2. Real Time Pricing (RTP)	Monthly Customer Baseline Market energy price for incremental/ decremental consumption	May be examined in future as an optional rate BC Hydro previously offered RTP on an optional basis (RS 1848)
3. Charge marginal cost-based energy and demand rates	Rates are adjusted to meet revenue requirement (e.g., through fixed charge)	Several concepts presented today have energy prices that approach our marginal costs
4. Demand credit for high voltage users	Provides demand credit to customers taking service at larger voltage	May be examined as an add on, or pricing element in future
5. Tier 1 only energy charge tariff supplement with customer commitment to increase energy purchases	Intended to increase customer's energy purchases at Tier 1 price, status quo demand charge applies	Further examination required, including terms, conditions and pricing, ratepayer economics

Alternative Rate Design from Feedback not for further consideration

Rate Structure	Description	Comment
1. **Extend eligibility for Clean BC Industrial Electrification Rates e.g., allow existing and those coming into service electrified facilities with DSM**	Fuel Switching RS 1895 provides discounted rate for New or Modified Electrification Projects over a 7-year period.	The Clean BC Rate Schedules 1894 and 1895 were introduced by government.
2. **Energy only rate**	Recover demand charge by raising the energy charge	Not for further consideration given the risk of under recovery of fixed cost.
3. **Demand Charge based on average demand**	Demand charge reflects average demand over a billing period instead of peak demand during a 30min period	In response to the COVID-19 pandemic, BC Hydro implemented average demand as a temporary measure to address unusual / unanticipated conditions

Revenue Target

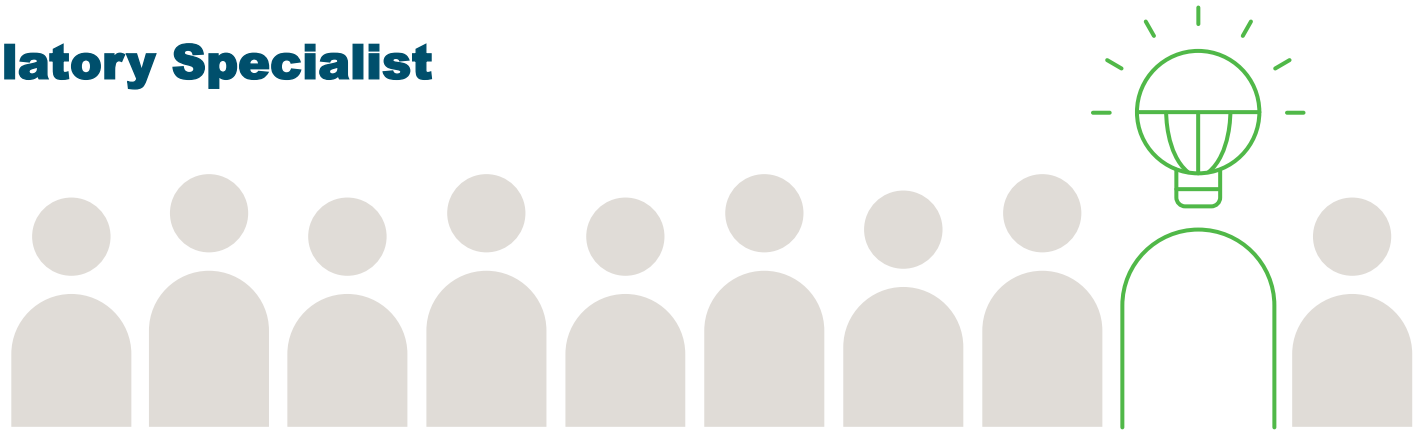
- To price the rate design concepts we require a load and target revenue assumption
- Standard practice is to use the forecast from our next revenue requirement application (RRA)
- In workshop #1 we used the F22 RRA forecast, however BC Hydro recognizes that the estimated rates are sensitive to the load forecast used
- For workshop #2, we have used F20 actuals for pricing as a sensitivity analysis to the results presented in Workshop #1
    - The three standard tariff scenarios have been repriced using F20 actuals – bill impacts decrease under this sensitivity
- We expect to use F23 RRA forecast for our planned fall rate application

Rate Design Concepts:

Standard Flat Rate and Declining Block Rate

Allan Chung

Regulatory Specialist



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Standard Flat Rate Concept Workshop #1

F22 Rates	Status Quo	Pricing Scenario 1	Pricing Scenario 2	Pricing Scenario 3
Energy and Customer Cost Recovery	115%	119%	108%	96%
Demand Cost Recovery	62%	62%	80.3%	100%
Demand Charge $/kVA	**8.655**	**8.655**	**11.246**	**14.004**
Tier 1 Rate (c/kWh)	**4.514**			
Tier 2 Rate (c/kWh)	**10.111**			
Flat Rate RS 1823 (c/kWh)		**4.989**	**4.514**	**4.009**
Flat Rate RS 1823A and RS 1827 (c/kWh)	**5.073**			

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Standard Flat Rate Concept – Sensitivity using F20 Actuals

F22 Rates	Status Quo	Pricing Scenario 1	Pricing Scenario 2	Pricing Scenario 3
Energy and Customer Cost Recovery	115%	119%	108%	96%
Demand Cost Recovery	62%	62%	72%	100%
Demand Charge $/kVA	**8.655**	**8.655**	**10.026**	**14.004**
Tier 1 Rate (c/kWh)	**4.514**			
Tier 2 Rate (c/kWh)	**10.111**			
Flat Rate RS 1823 (c/kWh)		**4.775**	**4.514**	**3.757**
Flat Rate RS 1823A and RS 1827 (c/kWh)	**5.073**			

This table shows revised pricing for each Scenario using F20 actuals for revenue neutrality

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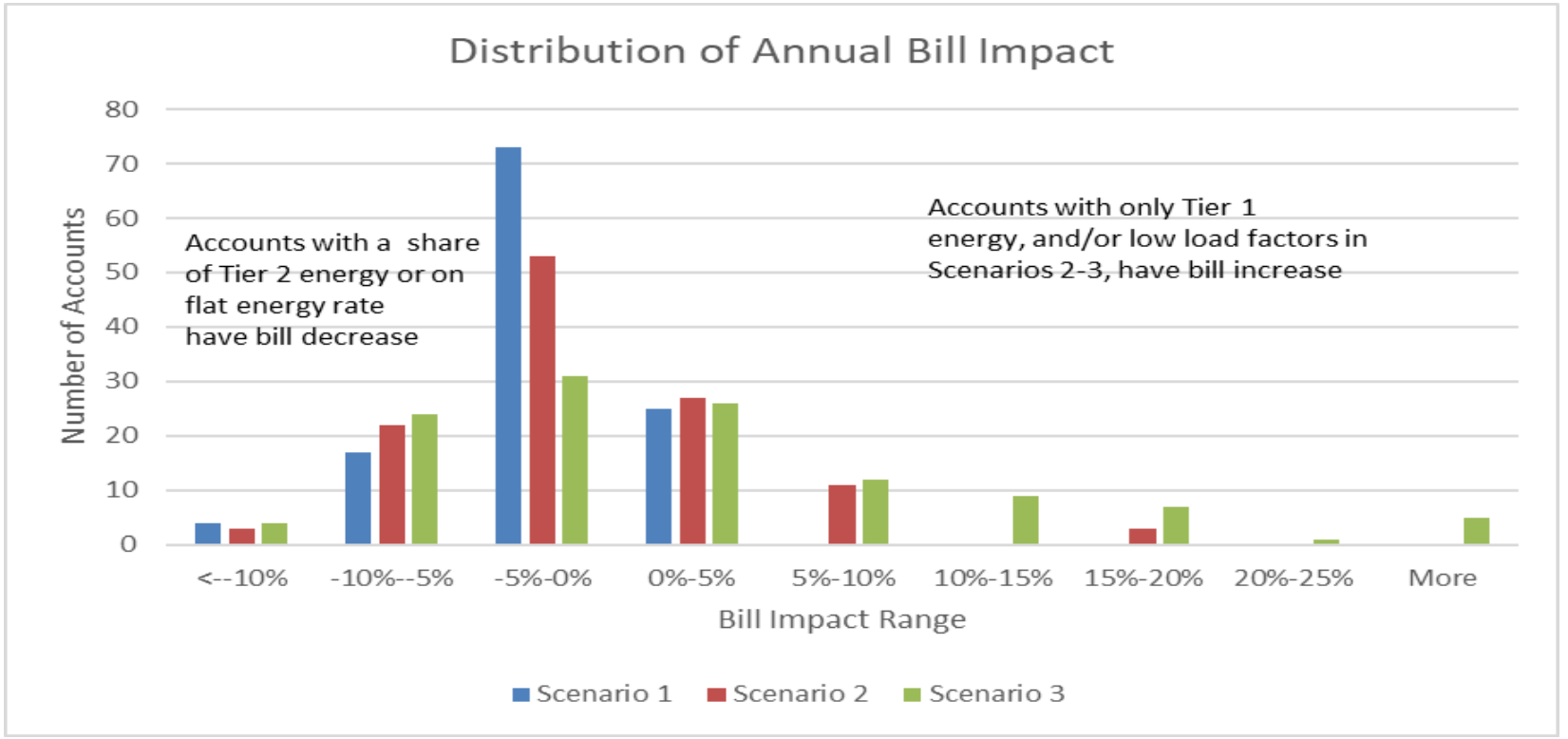
Standard Flat Rate Bill Impact Results Scenarios 1-3

by site and CBL aggregated sites (F2019 data)



Notes:

- CBL aggregated sites are those that have their site Energy CBLs aggregated under the CBL Determination Guidelines (TS 74) for the RS 1823 Stepped Rate.
- Compared to Workshop #1, for scenarios #1 and #2 bill impacts are lower and there are more sites with overall bill decrease
- This chart can be compared with Slides 40, 54 and 55 which show % bill impacts for the other rate designs using F19 data.

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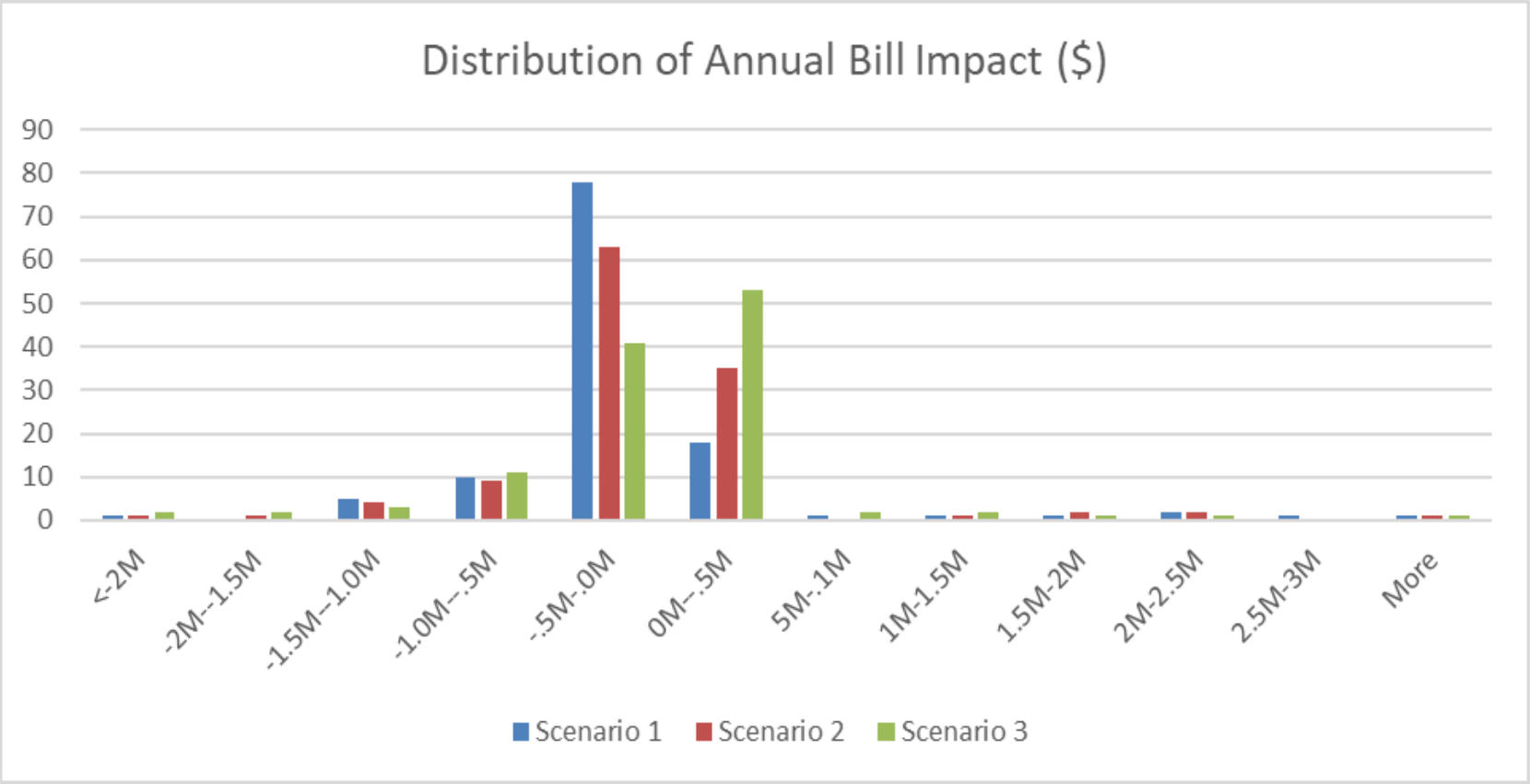
Standard Flat Rate Bill Impact Results Scenarios 1-3

by site and CBL aggregated sites (F2019 data)



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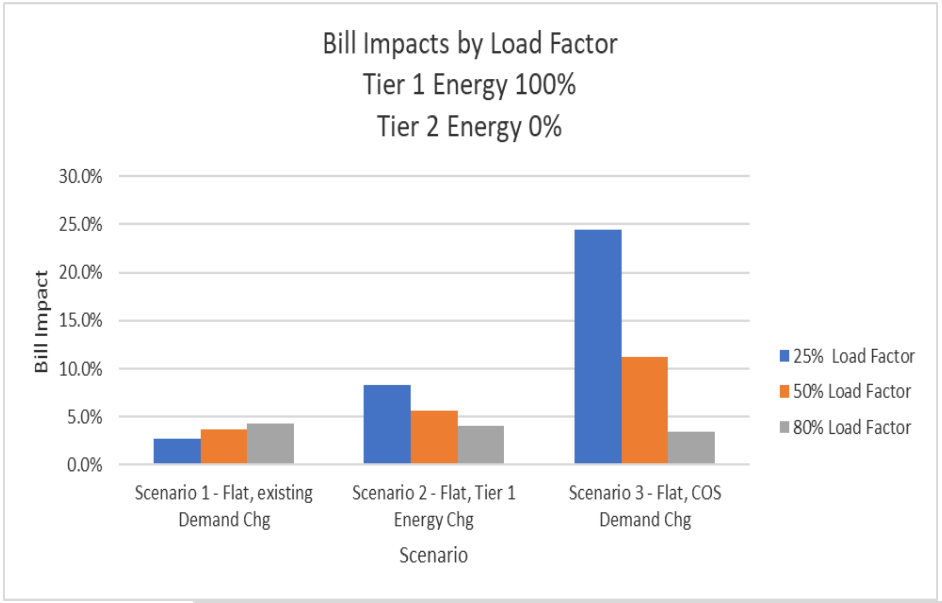
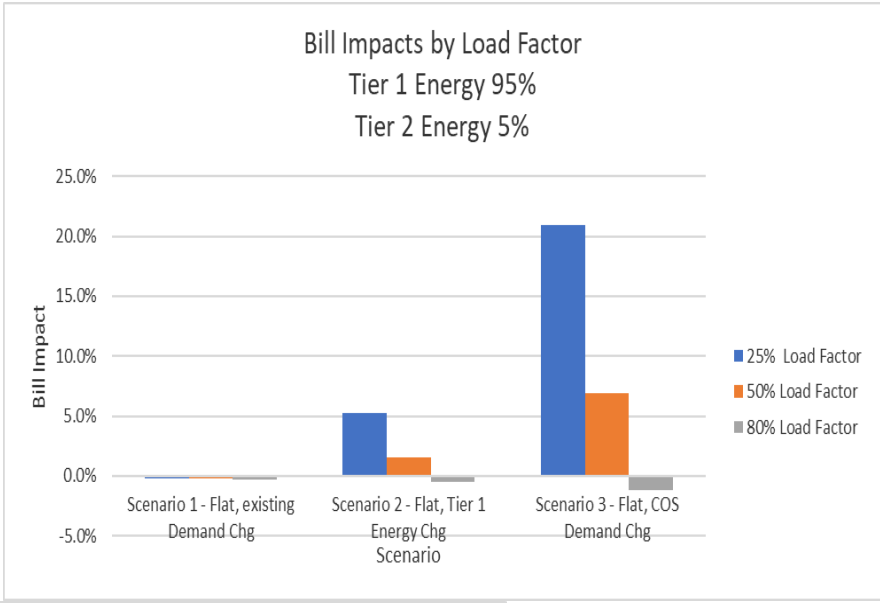
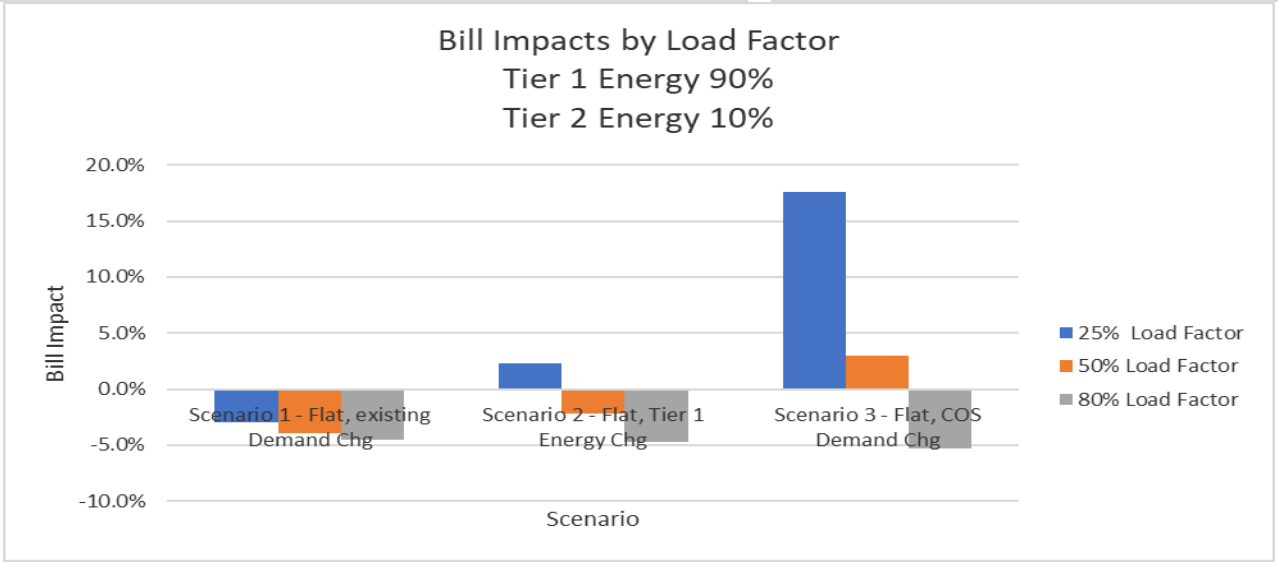
Illustrative Standard Flat Rate Bill Impacts Scenarios 1-3

By Load Factor and Share of Tier 1 Energy – Assumes 95% Power Factor







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Illustrative Standard Flat Rate Bill Impacts for high load factor customer – Scenarios 1-3

Bill impacts by rate scenario assuming 80% Load Factor and 95% Power Factor

	No CBL or 100% CBL	95% CBL	90% CBL
SCENARIO 1: CURRENT RS 1823 DEMAND CHARGE			
Bill Impact %	-4.5%	-0.3%	4.3%
SCENARIO 2: CURRENT RS 1823 TIER 1 CHARGE			
Bill Impact %	-4.7%	-0.5%	4.1%
SCENARIO 3: 100% COST-BASED DEMAND CHARGE			
Bill Impact %	-5.3%	-1.1%	3.4%

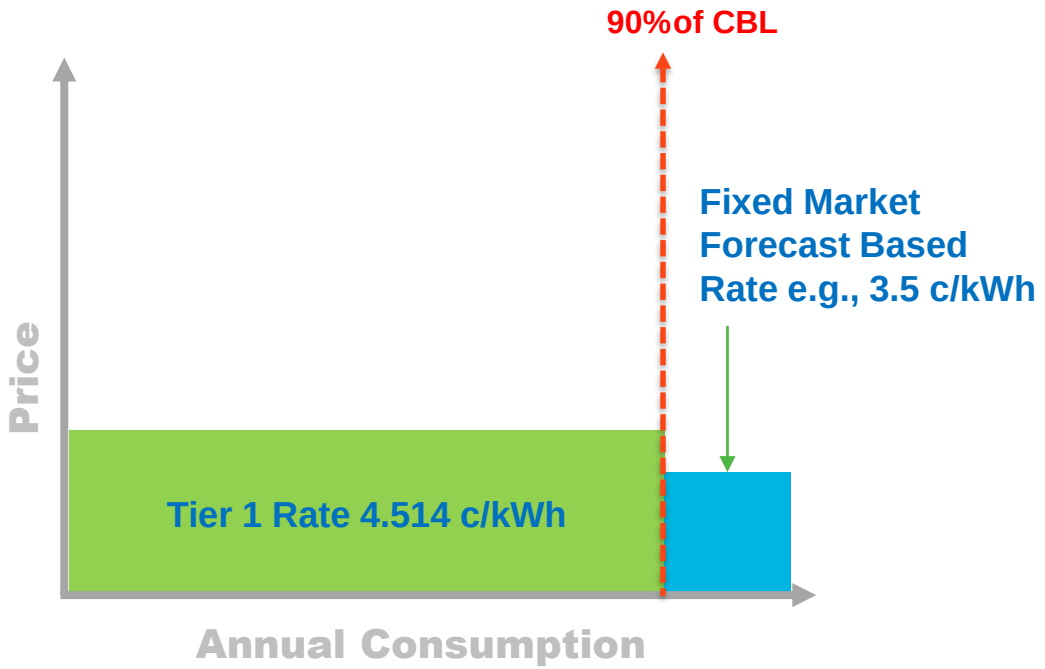
Bonbright rate design criteria
1. Standard Flat Rate

Bonbright Criteria	Grouping	Remarks
1. Price signals to encourage efficient use and discourage inefficient use	Economic Efficiency	All three scenarios improve alignment with our marginal costs
2. Fair apportionment of costs among customers	Fairness	Scenario 3 is approximately equivalent to cost based rate designs for energy and demand
3. Avoid undue discrimination		All three scenarios provide non-discriminatory pricing
4. Customer understanding and acceptance; practical and cost effective to implement	Practicality	All three scenarios improve ease of understanding and practicality of administration.
5. Freedom from controversies as to proper interpretation		Based on Workshop #1 feedback, customer acceptance and freedom from controversy are issues because of bill impacts that arise from moving from a stepped rate..
6. Recovery of the revenue requirement	Stability	All three scenarios are revenue neutral and collect the forecast revenue requirement
7. Revenue stability		Assuming no load impacts, revenue is stable and only varies each year by changes in load and change in general rate increase.
8. Rate stability		The rate is stable and only changes with general rate increases.

Rate Design Concepts for Default Service

Rate Structure	Description	Comment
2. Declining Block Rate	Maintain CBL framework Price 90% CBL at Tier 1 rate Price >90% CBL at average forecast market price e.g., 3.5 c/kWh RS 1823A, RS 1827 and RS 3803 energy rates decrease Demand charge increases for revenue neutrality	BC Hydro had declining block energy rate for general service which had to be flattened over time "Declining block" is based on an assessment of future market price remaining low, which may or may not be the case (market is dynamic) Revenue decrease from lower energy charges needs to be recovered through a higher demand charge

Declining Block Rate Pricing



Annual Energy CBL established under RS1823

- **Up to 90% of CBL = RS 1823 Tier 1 Rate**
- **> 90% of CBL = Fixed Market Forecast Based Rate**
- **Market Price is forecast to increase from 3 to 4 c/kWh over next 10 years**
- **RS 1823A, RS 1827 = 90% x Tier 1 Rate + 10% Market Based Rate = 4.413 c/kWh**
- **Demand Charge = $10.27 /kVA (increase for revenue neutrality)**

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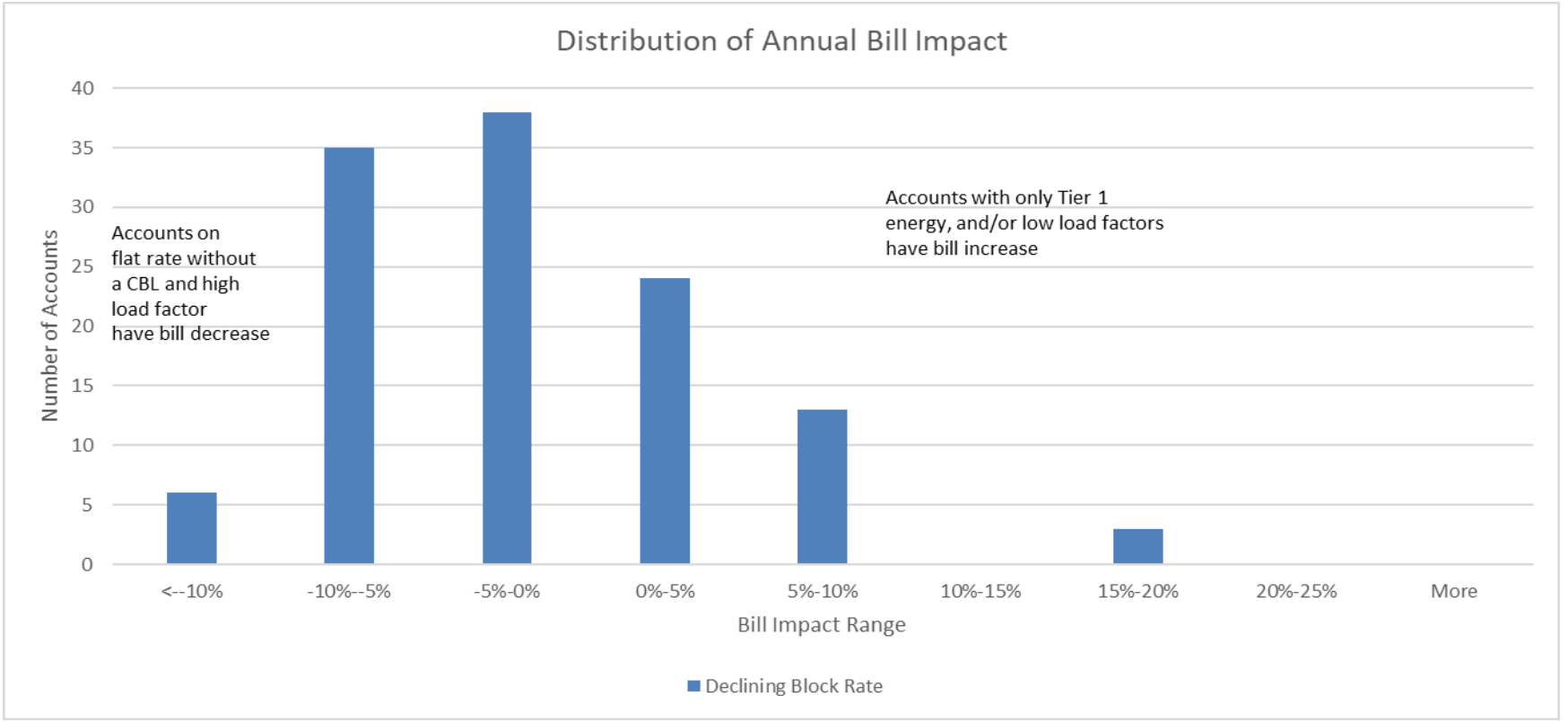
Declining Block Rate Bill Impact Results
by site and CBL aggregated sites (F2019 data)



Notes:

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- This chart can be compared with Slides 33, 54 and 55 which show % bill impacts for the other rate designs using F19 data.

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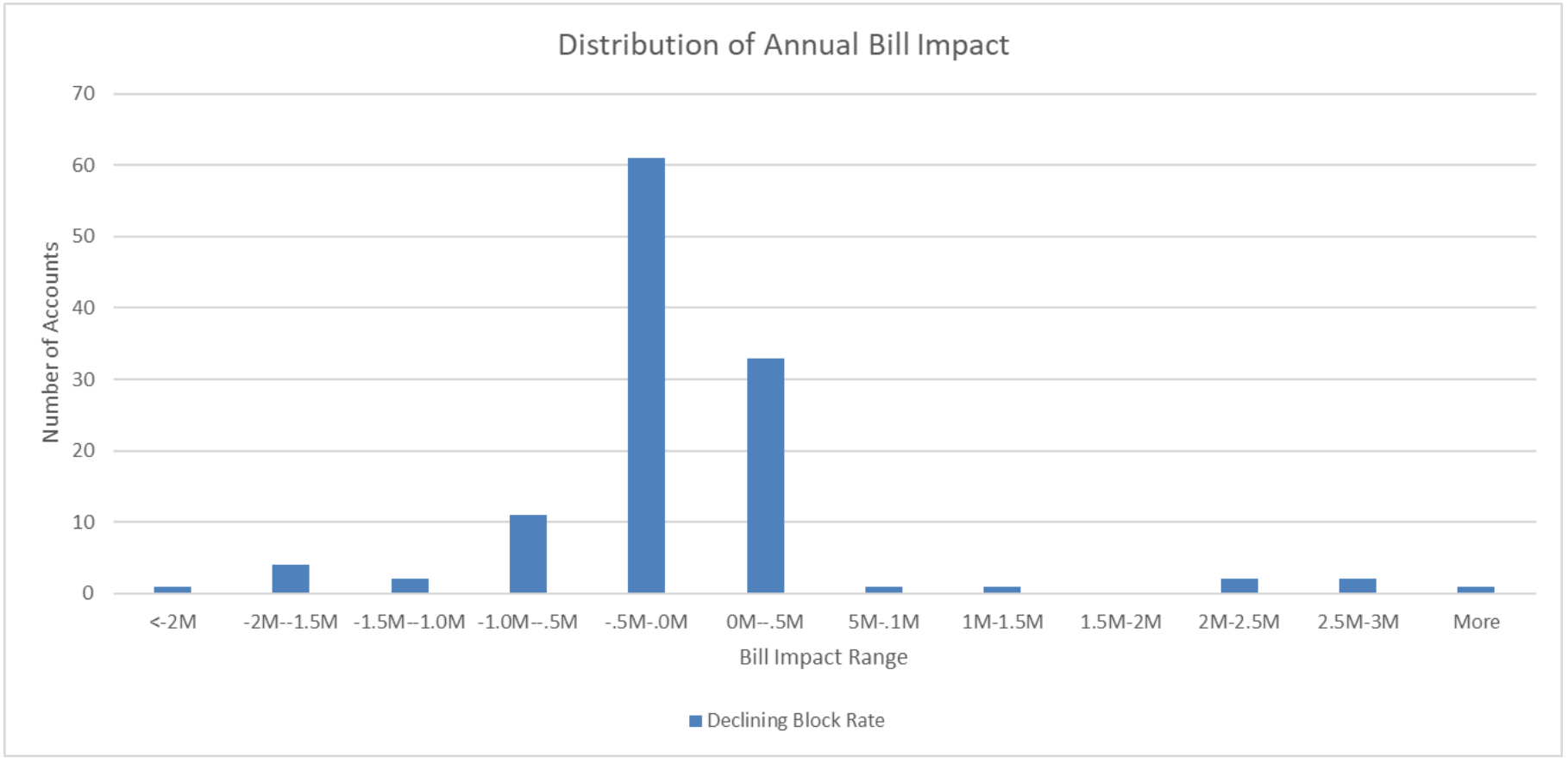
Declining Block Rate Bill Impact Results

by site and CBL aggregated sites (F2019 data)



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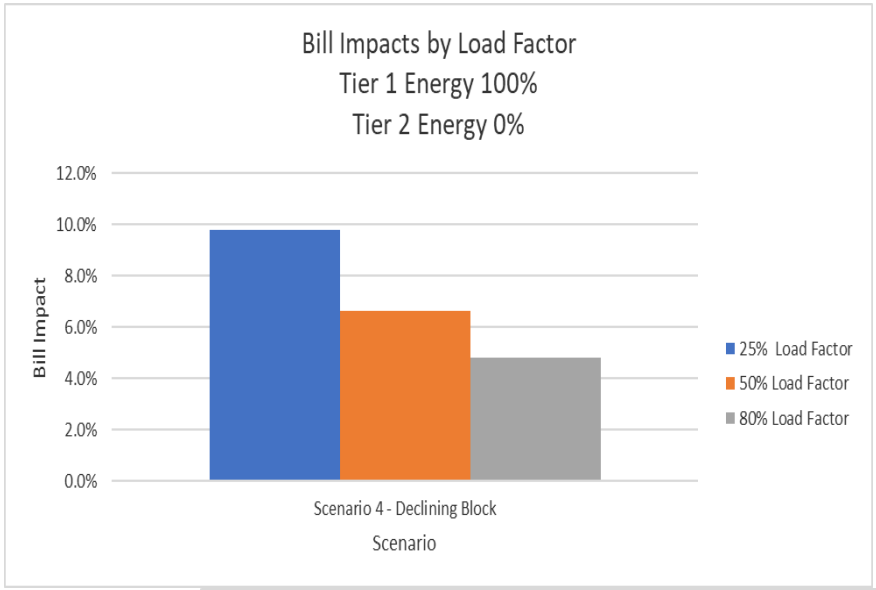
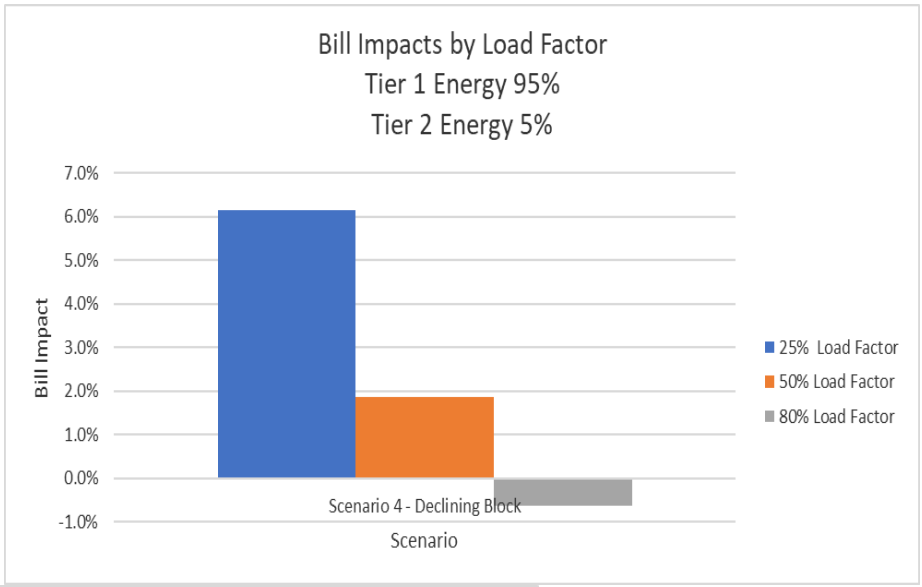
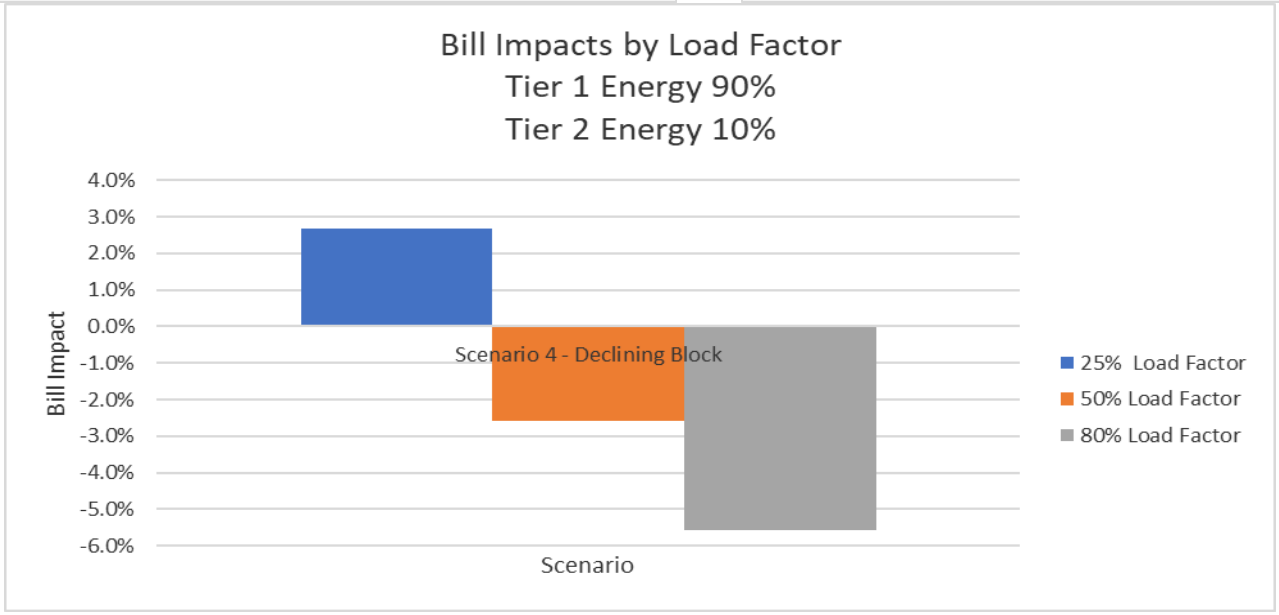
Illustrative Declining Block Rate Bill Impacts

By Load Factor and Share of Tier 1 Energy – Assumes 95% Power Factor







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Illustrative Declining Block Rate Bill Impacts

Bill impacts by rate scenario assuming 80% Load Factor and 95% Power Factor

	No CBL or 100% CBL	95% CBL	90% CBL
DECLINING BLOCK RATE			
Bill Impact %	-5.6%	-0.6%	4.8%

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Bonbright rate design criteria
2. Declining Block Rate

Bonbright Criteria	Grouping	Remarks
1. Price signals to encourage efficient use and discourage inefficient use	Economic Efficiency	Improves economic efficiency by providing lower marginal energy price signal to increase use
2. Fair apportionment of costs among customers	Fairness	Weighted energy price is close to cost-based energy rate, Potential for increased usage > 90% of CBL at market price
3. Avoid undue discrimination		
4. Customer understanding and acceptance; practical and cost effective to implement	Practicality	Relatively straightforward to explain and should be easily understood Requires maintenance of CBL structure
5. Freedom from controversies as to proper interpretation		Bill impacts may lessen customer acceptance.
6. Recovery of the revenue requirement	Stability	The rate is revenue neutral and collects the forecast revenue requirement.
7. Revenue stability		Assuming no load impacts, revenue is stable and only varies each year by changes in load and change in general rate increase.
8. Rate stability		Re-pricing may be required in future if market price forecast changes

Rate Design Concepts:

- Stepped Rate 2.0
- Customer Specific Average Energy Rate

David Keir

Senior Manager, Transmission Rates and Large Customer Rate Operations

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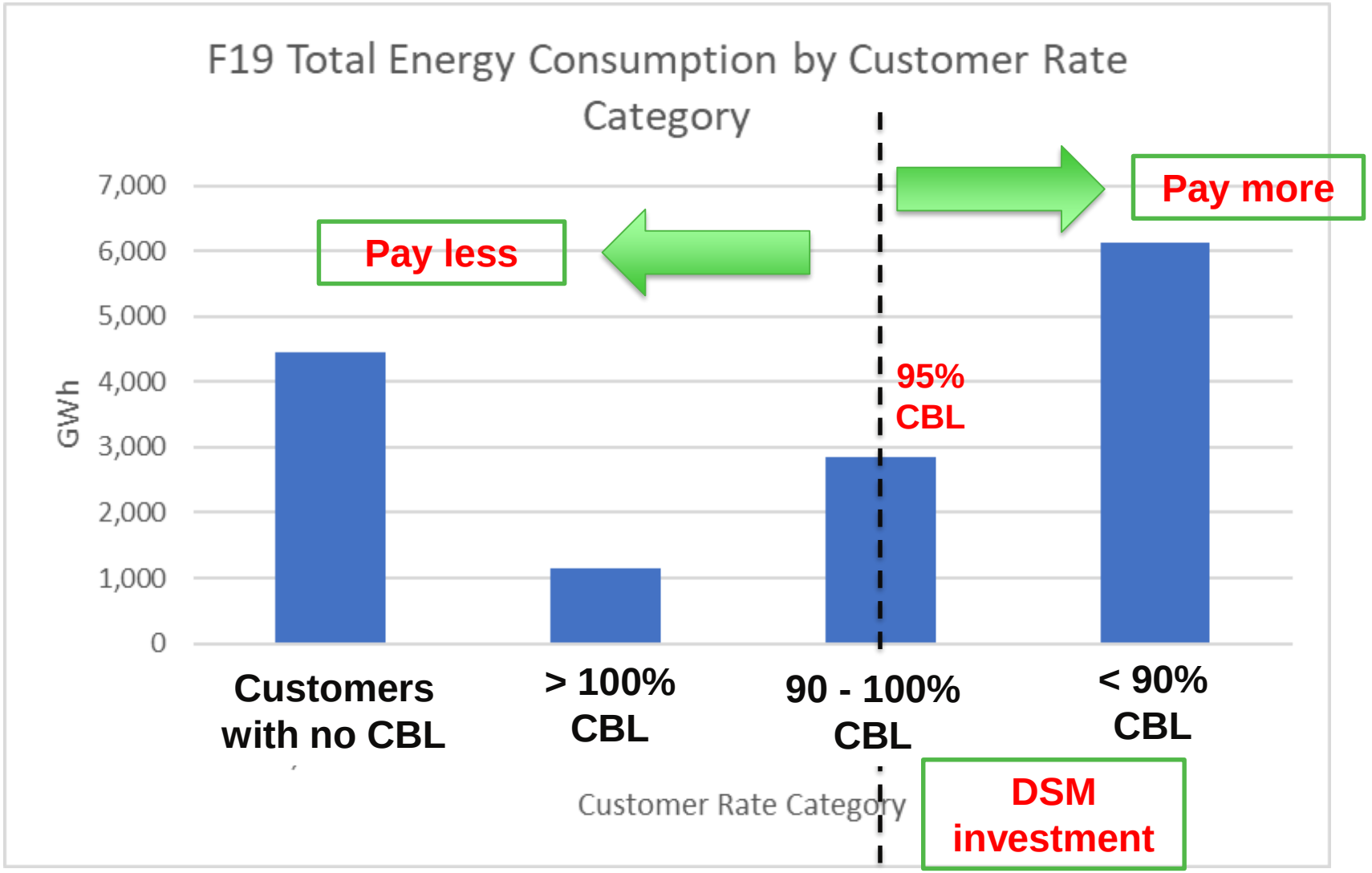
Rate Design Concepts for Default Service

Rate Structure	Description	Comment
3. Stepped Rate '2.0' - Maintain stepped rate while improving cost reflectivity	Set base energy and demand charges using F20 FACOS Overlay stepped rate structure with Tier 2 re-priced lower and Tier 1 re-priced higher Residual charge for revenue neutrality	Cost-reflective pricing Maintains stepped rate structure for efficiency investments Responds to customer feedback

Proposed rate design is responsive to customer feedback



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Step 1: Set Cost-reflective Base Prices (using F20 FACOS)

F2020 COST OF SERVICE	TSR Allocated Cost	TSR Class Electricity Sales	Calculated F20 Rates	F2021	F2022
Per F20 FACOS Report	$m			-1.62%	1.16%
Energy (GWh)	$ 539.0	14,448	$ 37.47	$ 36.86	**$ 37.29**
Demand (MVA)	$ 386.8	27,003	$ 14.32	$ 14.09	**$ 14.26**
Customer Care	$ 2.3				
Total	$ 928.1				

F2020 ACTUALS	TSR Class Revenue	TSR Class Electricity Sales	Average Rates
	$m		
Energy (GWh)	$ 688.6	14,448	$ 47.66
Demand (kVA)	$ 233.7	27,003	$ 8.65
Total	$ 922.3		
F20 REVENUE/COST RATIO	**99.4%**		

	F2022 INTERIM	F2022 F2020 COS NO RN ADJUSTMENT
Interim F22 Rates per F22 RRA	**1.16%**	
Electricity Charges		
RS 1823 Energy Charge A ***($/MWh)***	50.73	**37.29**
RS 1823 Tier 1 Rate ***($/MWh)***	45.14	37.29
RS 1823 Tier 2 Rate ***($/MWh)***	101.11	**37.29**
RS 1823 Demand Charge *($/kVA)*	8.655	**14.256**

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Step 2: Add existing Stepped Rate structure and re-price T2 lower (by $30/MWh) and T1 higher

RS 1823 Re-structuring	F2022 BASELINE Status Quo	F2022 F2020 COS Existing T2	F2022 OPTION 1 $30 lower T2
Interim F22 Rates per F22 RRA	**1.16%**	**0.00%**	**0.00%**
Electricity Charges			
RS 1823 Energy Charge A ***($/MWh)***	50.73	**37.29**	37.29
RS 1823 Tier 1 Rate ***($/MWh)***	45.14	30.19	33.53
RS 1823 Tier 2 Rate ***($/MWh)***	101.11	101.11	**71.11**
RS 1823 Demand Charge *($/kVA)*	8.655	**14.256**	14.256
Deferral Account Rate Rider	**0.00%**	**0.00%**	**0.00%**

- Tier 2 is re-priced lower by $30/MWh
- Tier 1 is re-priced higher by $3/MWh
- Re-pricing formula uses the existing stepped rate design (per below)
- Customer is bill and revenue neutral at 100% of CBL consumption

90% * T1 + 10% * T2 = 100% RS1823A

- This approach re-prices Tier 2 to better align with a lower LRMC
- Maintains price signal for DSM and efficient plant investment
- Re-priced Tier 1 and Tier 2 charges maintain revenue neutrality with new cost-reflective RS 1823A flat rate at 100% of CBL

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Step 3: Calculate revenue neutral residual price

Option 1A: Calculate RN demand charge

- RN adjustment is $0.95 adder to demand charge
- Shifts costs from high to low load factor customers

Option 1B: Calculate RN energy charges

- RN adjustment is $1.81 adder to all energy charges
- Spreads costs across all customer segments in class

F2022	F2022
OPTION 1A ($30 lower T2)	OPTION 1B ($30 lower T2)
F20 RN DEMAND	F20 RN ENERGY
0.00%	0.00%
37.29	39.09
33.53	35.33
71.11	72.92
15.204	14.256
0.00%	0.00%

F2020 ACTUAL SALES	Energy (MWh)	BASELINE	$30 lower T2	$30 lower T2 with F2020 RN demand	$30 lower T2 with F2020 RN energy
Tier 1 energy	10,094,213	$ 455.6	$ 338.4	$ 338.4	$ 356.7
Tier 2 energy	285,074	$ 28.8	$ 20.3	$ 20.3	$ 20.8
RS 1823A energy	2,239,873	$ 113.6	$ 83.5	$ 83.5	$ 87.6
RS 1827 / RS 3808 energy	1,499,330	$ 76.1	$ 55.9	$ 55.9	$ 58.6
TOTAL ENERGY	**14,118,490**	**$ 674.1**	**$ 498.1**	**$ 498.1**	**$ 523.6**
RS 1823 demand	23,868,273				
RS 1827 + RS 3808 demand	3,008,924				
TOTAL DEMAND (kVA)	**26,877,197**	**$ 232.6**	**$ 383.2**	**$ 408.6**	**$ 383.2**
TOTAL REVENUE ($)		**$ 906.8**	**$ 881.3**	**$ 906.8**	**$ 906.8**
AVERAGE UNIT COST ($/MWh)		**64.23**			
REVENUE VARIANCE ($)			**$ 25.49**	$	
OPTION 1B **ENERGY ADJUSTMENT ($/MWh)**			**$ 1.81**		
or					
OPTION 1A **DEMAND ADJUSTMENT ($/kVA)**			**$ 0.949**		

Revenue neutral adjustment based on F2020 actuals *(as sensitivity for F23 forecast)*

Illustrative Bill Impacts – Stepped Rate 2.0

Bill impacts by rate scenario assuming 80% Load Factor and 95% Power Factor

	No CBL or 100% CBL	95% CBL	90% CBL
STEPPED RATE 2.0 Option 1A (Revenue Neutral Demand Charge)			
Bill Impact %	-2.5%	-1.1%	0.3%
STEPPED RATE 2.0 Option 1B (Revenue Neutral Energy Charges)			
Bill Impact %	-2.3%	-1.0%	0.5%

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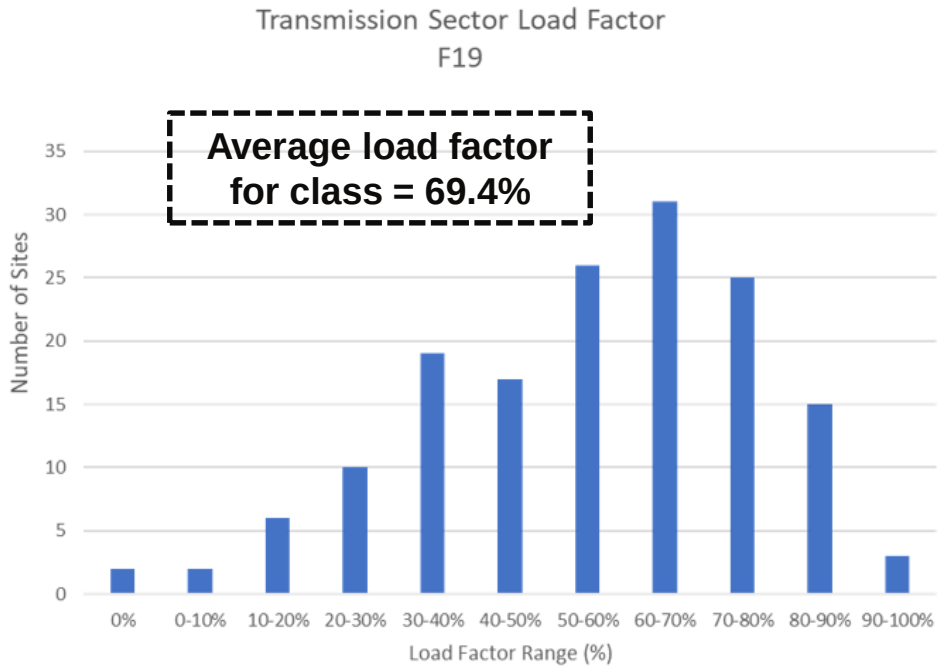
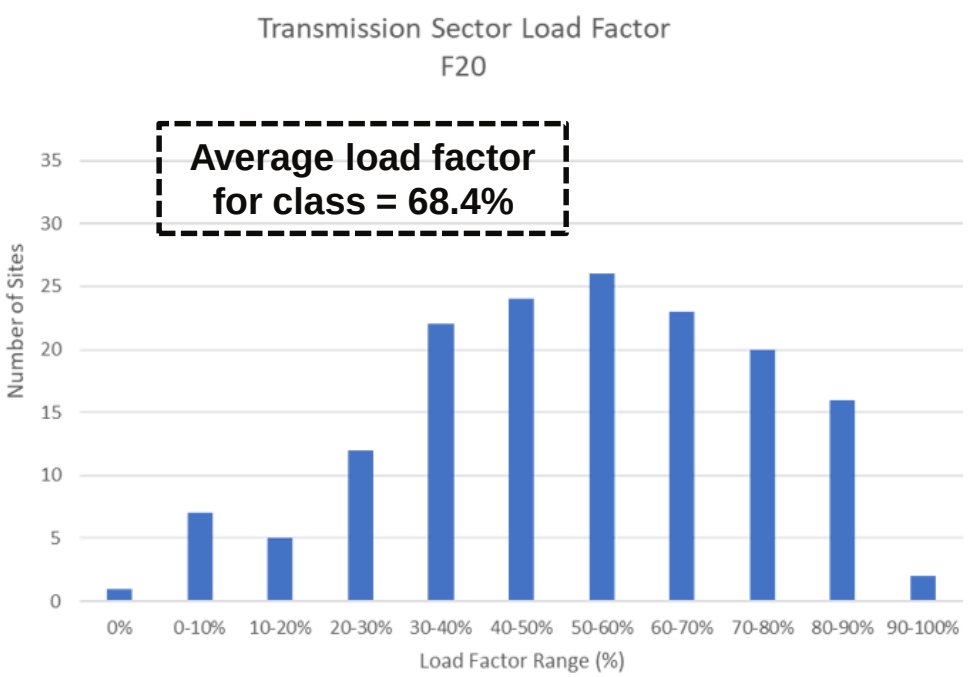
Load Factor is dynamic and varies by year

Load factor is a measure of efficiency of use

100 MW	876 GWh	100%
75 MW	657 GWh	75%
50 MW	438 GWh	50%
25 MW	219 GWh	25%





assumes 95% power factor

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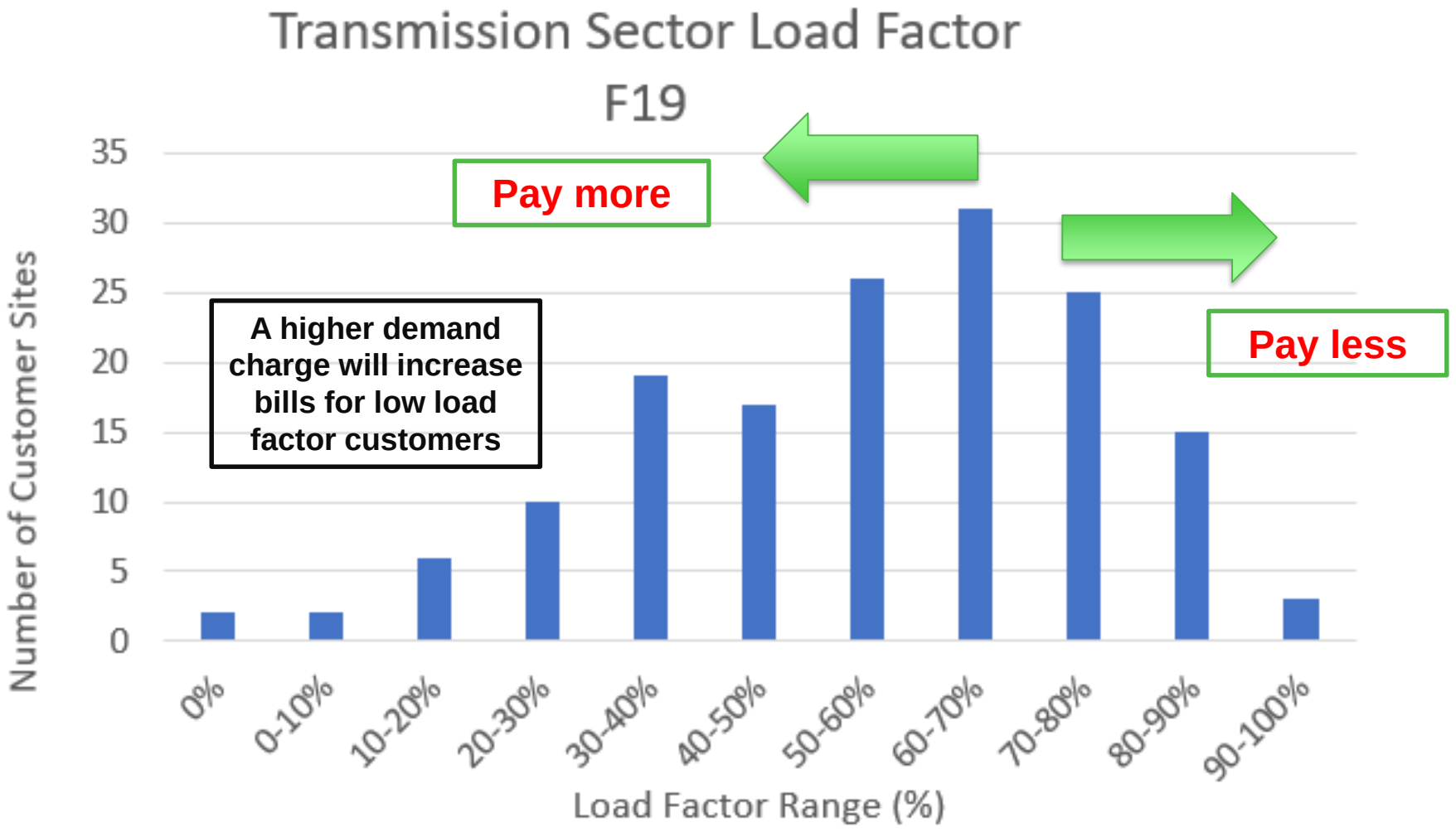
Load Factor and Demand Charges

F2019 Distribution of Load Factor in TSR Class



assumes 95% power factor

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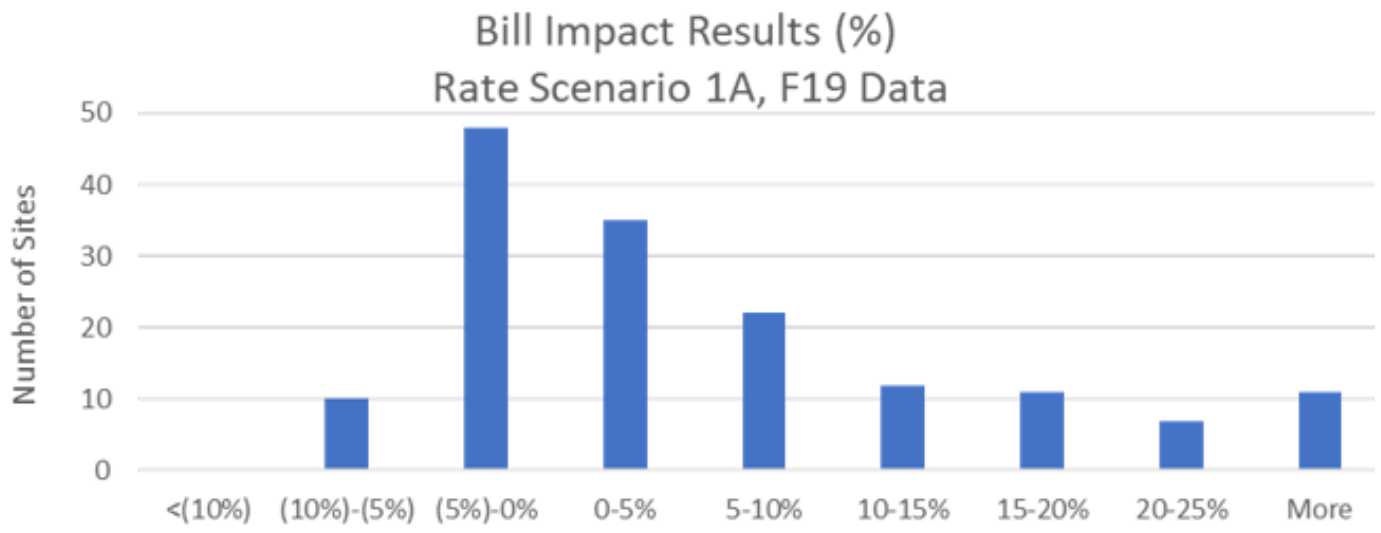
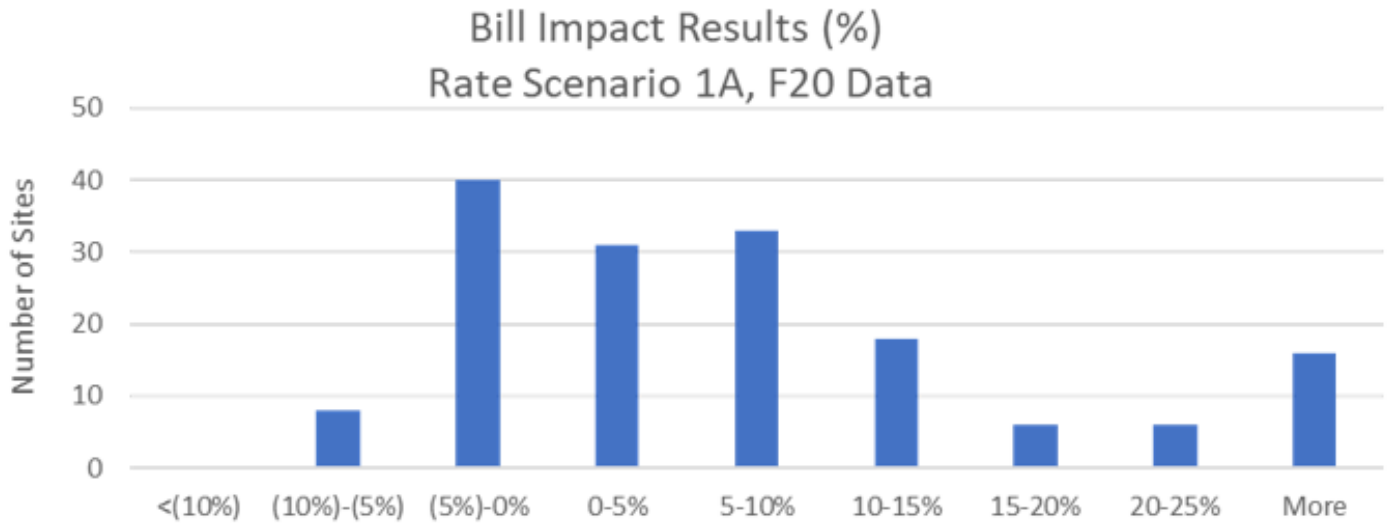
% Bill impacts are dynamic: Scenario 1A



High load factor ⟷ **Low load factor**



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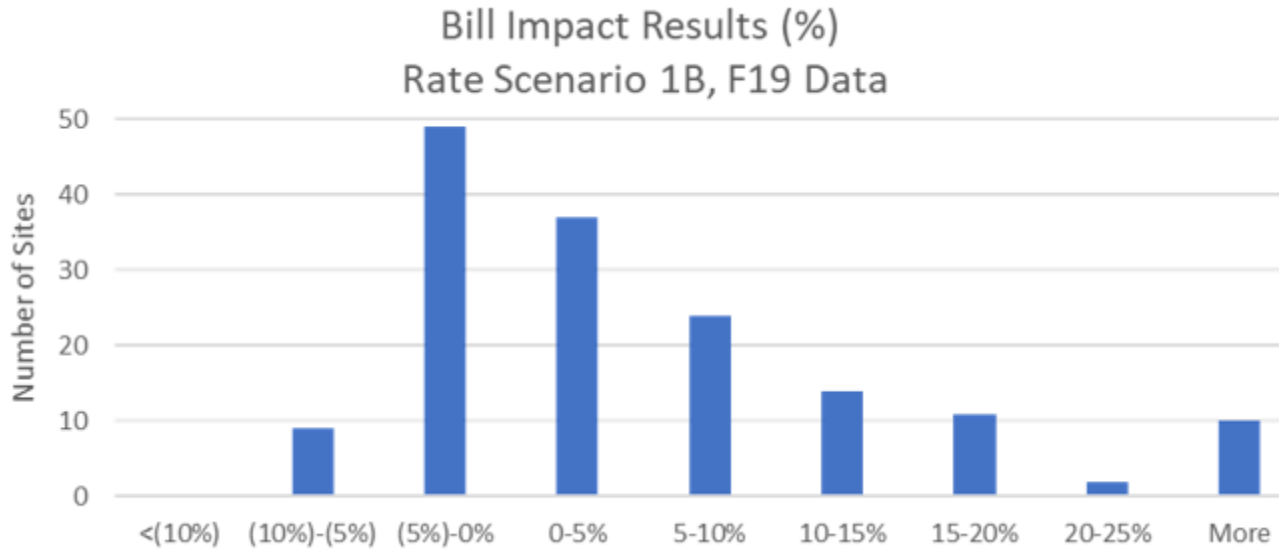
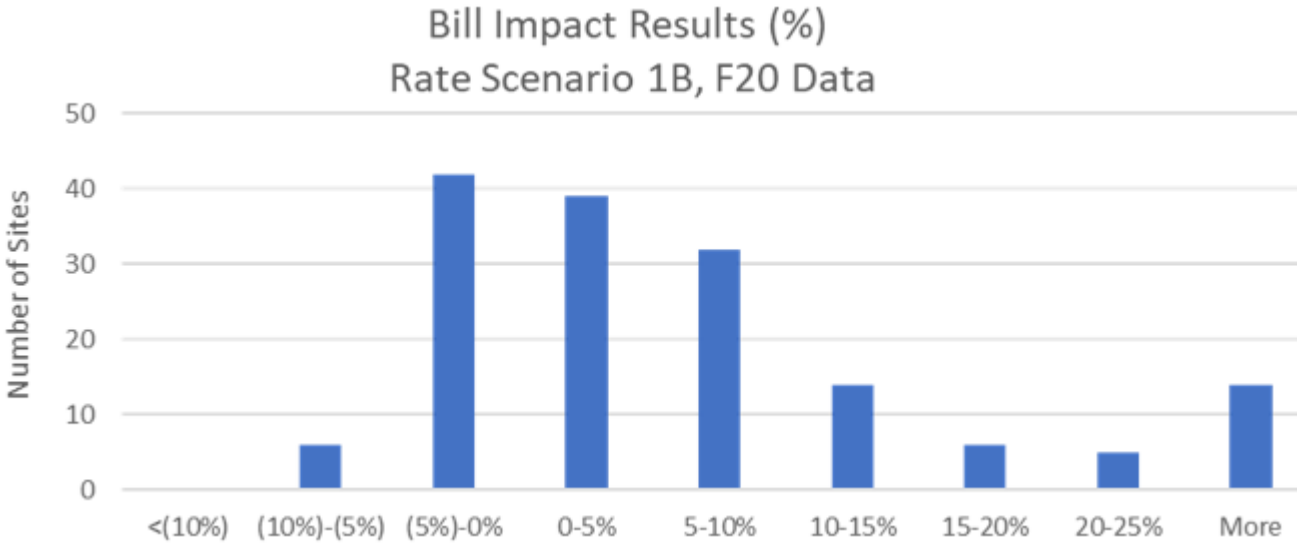
% Bill impacts are dynamic: Scenario 1B



High load factor ⟷ **Low load factor**



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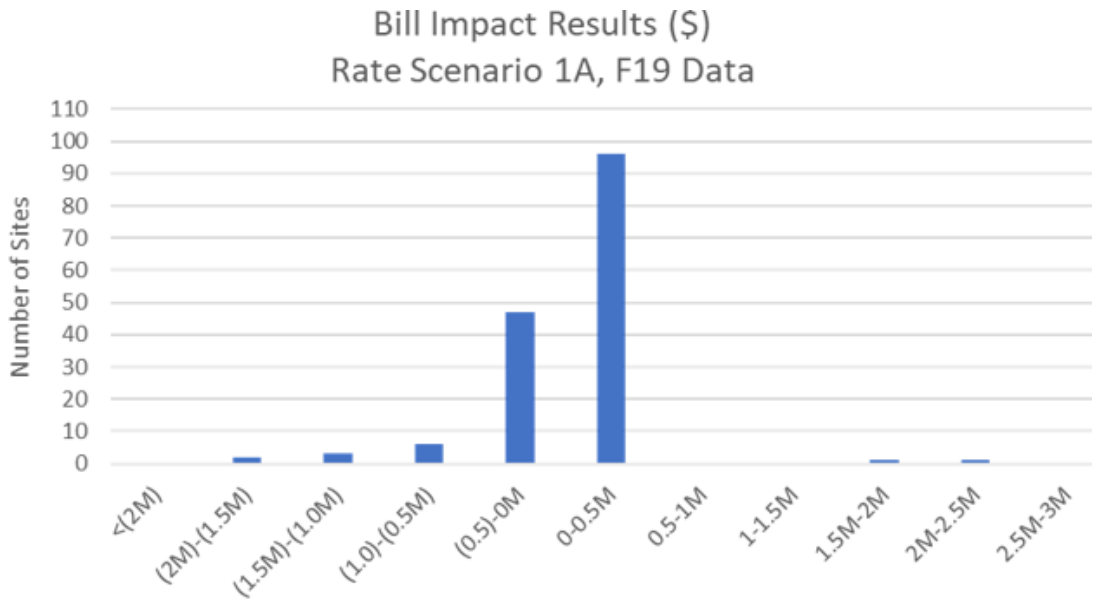
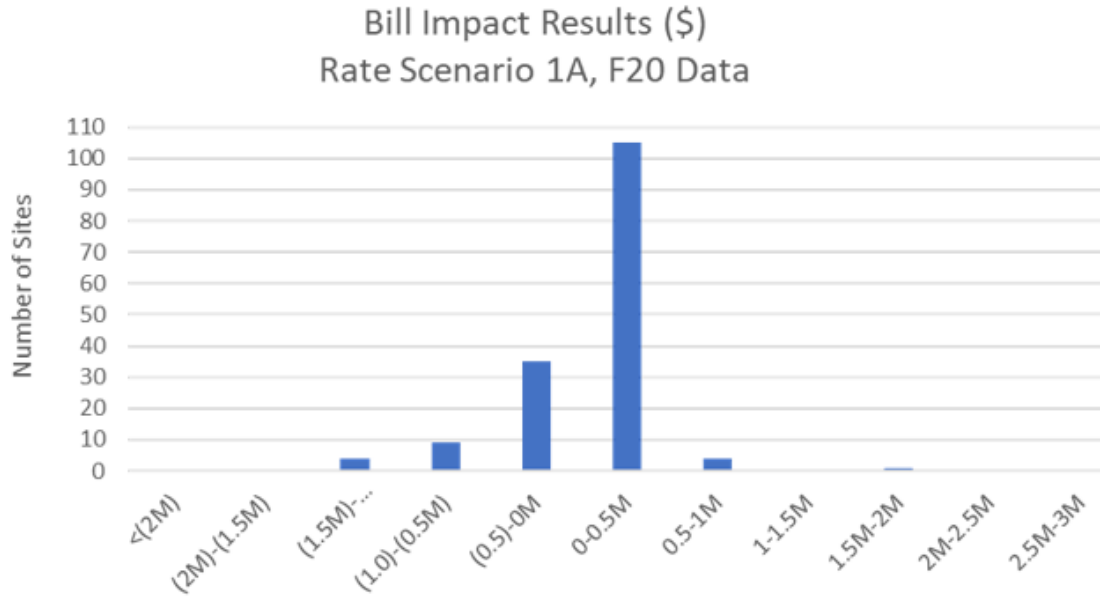
$ Bill impacts are more stable: Option 1A



High load factor ⟷ **Low load factor**



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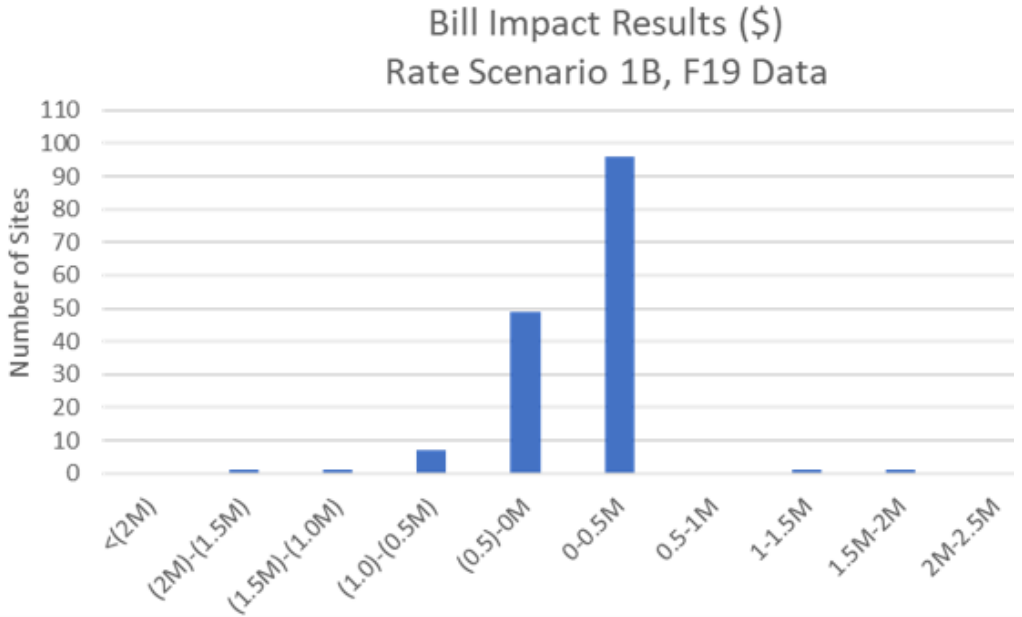
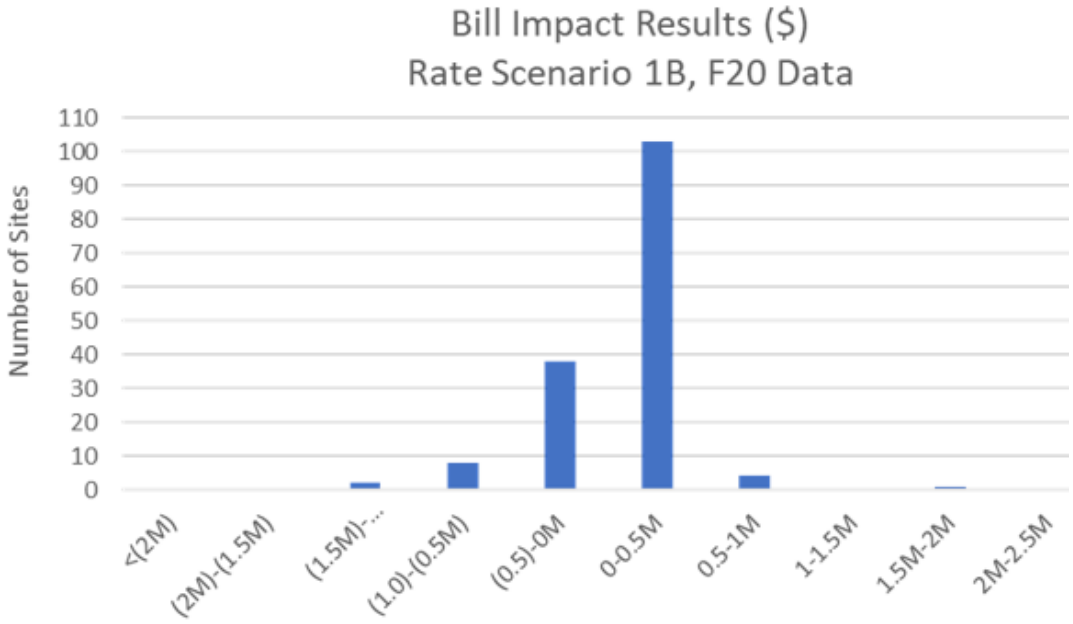
$ Bill impacts are more stable: Option 1B



High load factor ⟷ **Low load factor**



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Bonbright rate design criteria
3. Stepped Rate 2.0

Bonbright Criteria	Grouping	Remarks
1. Price signals to encourage efficient use and discourage inefficient use	Economic Efficiency	Cost-reflective pricing foundation Stepped rate structure maintains price signal for efficiency investment (existing and new plant) Lower T2 energy price improves alignment with marginal cost of energy
2. Fair apportionment of costs among customers	Fairness	Direct alignment of flat energy and demand charges with cost of service Higher demand charge shifts costs to low load factor customers Preservation of stepped rate structure mitigates cost shift to customers with DSM investment
3. Avoid undue discrimination		
4. Customer understanding and acceptance; practical and cost effective to implement	Practicality	Responsive to customer feedback. No change to existing CBL framework Retains price signal for DSM investment Bill impacts to low load factor customers may lessen customer acceptance
5. Freedom from controversies as to proper interpretation		
6. Recovery of the revenue requirement	Stability	Rate is revenue neutral and collects the forecast revenue requirement Retains harmonization with optional rates for incremental use Stepped rate retains ability to respond to future long-run marginal price changes via re-pricing
7. Revenue stability		
8. Rate stability		

Rate Design Concepts for Default Service

Rate Structure	Description	Comment
4. Customer-specific Average Energy Rate	Energy charge calculated as historic average tier 1 / tier 2 load using F20 as base year, potentially with adjustments Flat demand charge calculated residually for revenue neutrality	Responds to customer feedback Similar rate design concept as RS 1828 – Biomass Rate May be challenging to demonstrate the basis upon which this is fair to all customers

Customer-specific Average Energy Rate

	HISTORICAL ENERGY MIX	F2020	F2020	F2020	F2020
	FOR ILLUSTRATIVE PURPOSES ONLY	Customer 1	Customer 2	Customer 3	RS1823A
	Energy CBL (MWh)	500,000	500,000	500,000	
	Annual RS 1823 energy purchases (MWh)	450,000	470,000	520,000	500,000
	Total RS 1823 Tier 1 energy (MWh)	450,000	450,000	450,000	
	Total RS 1823 Tier 2 energy (MWh)	-	20,000	70,000	
	Tier 1 Energy (%)	**100.0%**	**95.7%**	**86.5%**	**90.0%**
	Tier 2 energy (%)	**0.0%**	**4.3%**	**13.5%**	**10.0%**

	Current RS 1823 Energy Prices (F22)	Customer 1	Customer 2	Customer 3	RS1823A
	$/MWh	$/MWh	$/MWh	$/MWh	$/MWh
RS 1823 Tier 1	$ 45.14	$ 45.14	$ 43.22	$ 39.06	$ 40.63
RS 1823 Tier 2	$ 101.11	$ -	$ 4.30	$ 13.61	$ 10.11
	Site-specific Energy Charge ($/MWh)	**$ 45.14**	**$ 47.52**	**$ 52.67**	**$ 50.74**

KEY DESIGN ELEMENTS

- Reflects RS 1828 Biomass Energy Rate design concept
- Use F2020 as base year for tiered energy price mix
- Results in customer site-specific average energy rate
- Demand charge calculated residually for revenue neutrality
- Adjustment mechanism for verified DSM (new customers)

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Bonbright rate design criteria
4. Customer Specific Rate

Bonbright Criteria	Grouping	Remarks
1. Price signals to encourage efficient use and discourage inefficient use	Economic Efficiency	Individual customer marginal price signal, which is closer to our marginal cost of energy Supports energy intensive users with DSM and efficient new plant Sends signal for use of idle capacity > 90% of CBL that was previously uneconomic at T2 price
2. Fair apportionment of costs among customers	Fairness	Maintains customer's F20 energy price mix, which may not be a fair allocation of costs
3. Avoid undue discrimination		Different customers pay different rates (same pricing outcome as under current design) Recognizes customer's DSM and efficiency investments
4. Customer understanding and acceptance; practical and cost effective to implement	Practicality	Responsive to customer feedback More complex to administer. Adjustments likely required for customers where F20 not representative / for new customers with DSM
5. Freedom from controversies as to proper interpretation		Subject to regulatory risk if BCUC considers customer-specific rates unduly discriminatory
6. Recovery of the revenue requirement	Stability	Rate is revenue neutral and collects the forecast revenue requirement
7. Revenue stability		Provides revenue and rate stability. Residual demand charge may under or over-recover depending on timing of any adjustments
8. Rate stability		

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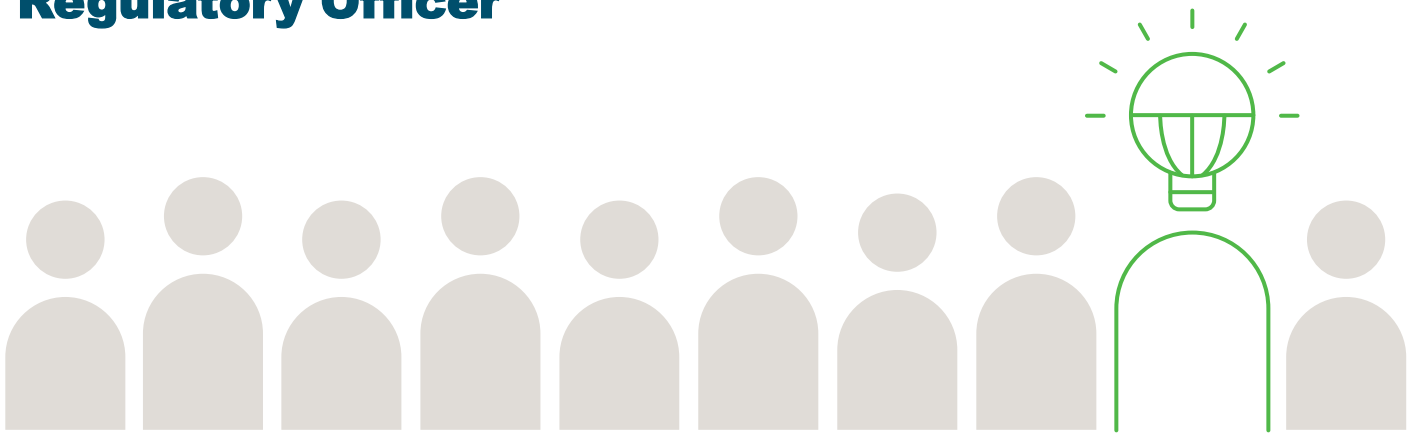
Closing Remarks

Fred James

Chief Regulatory Officer



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Next Steps

1. Continue TSR stakeholder and customer consultation
2. Continued engagement with stakeholder and customers Q2/Q3 2021
3. Develop RS 1823 Rate Restructuring Application

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 form by May 19, 2021
- The link to the online feedback form is on www.bchydro.com

Questions

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