

2023 Cost of Service Review Preliminary Results Meeting

March 15, 2023

TODAY'S AGENDA

- 1) Housekeeping Items
- 2) Land Acknowledgment & Safety Moment – Scott Chomos
- 3) Introductions – Scott Chomos
- 4) Cost of Service Overview – Rod MacQuarrie
- 5) Preliminary Results of Review – John Todd & Andrew Blair
- 6) Next Steps – Scott Chomos
- 7) Q & A

FOR TODAY'S MEETING

- Remember to mute your microphones.
- Disable camera
- If you have a question, use the raise your hand function or type it in the chat.

- Reminder: this meeting is being recorded.

“Before we get started, for privacy reasons I want to advise that the session is being recorded for future reference/clarity as required. The recording will be stored on the Cost of Service Methodology Review webpage at www.saskpower.com. It will remain in this site until it no longer serves a business purpose and/or has met its retention period. By staying in the Teams meeting, you are consenting to being recorded for the purposes outlined.

After the session, the link to the recording will be shared once it is downloaded and saved.”

LAND ACKNOWLEDGEMENT

This meeting is hosted from the traditional territory of the Treaty 4 nations and the home of the Métis.

We make this acknowledgment in the spirit of reconciliation because we are all treaty people as we each make our homes in a traditional territory of the Indigenous people of Canada.



ELECTRICITY SAFETY AT HOME

- Turn off electricity at breaker switch
- Water and electricity don't mix
- Replace frayed extension cords
- Use correct bulbs

WHEN TO CALL AN ELECTRICIAN

- Frequent blown breakers
- A tingling feeling when touching an appliance
- A warm, discoloured or sparking wall outlet
- Flickering or dimming lights
- A burning or rubbery smell from an appliance

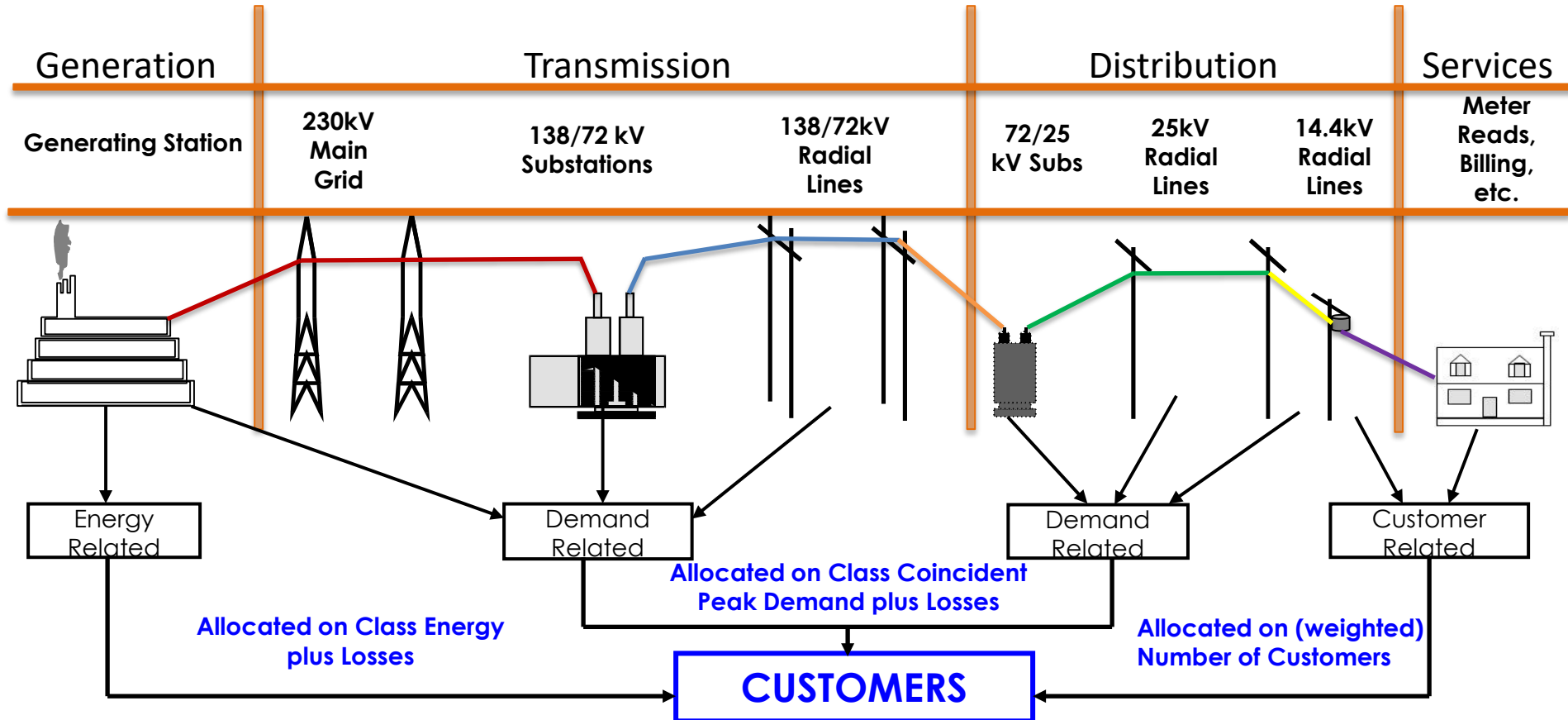


Cost of Service Overview

COS METHODOLOGY

- Methodology used by SaskPower to allocate our assets (rate base) and expenses to each customer class.
- Commonly used approach in the utility industry (NARUC).
- Any increase in SaskPower's expenses are passed along to our customers (assuming achievement of our target ROE).
- Regularly reviewed by independent consultants to ensure we are in accordance with industry standards.
- Based on the principle that each customer class should be allocated its fair share of the total cost to provide electrical service (cost causality).

COS METHODOLOGY



COS METHODOLOGY

- SaskPower uses revenue-to-revenue requirement (R/RR) ratios to determine whether each class is contributing enough revenue to cover the cost of serving that class.
- Commonly used metric throughout the industry.
 - $R/RR = 1.00$ Class is paying its fair share
 - $R/RR < 1.00$ Class is receiving a subsidy from other classes
 - $R/RR > 1.00$ Class is providing a subsidy to other classes
- Special rates provided to a particular customer or class are paid for by all other customers (i.e., zero-sum process).

COS METHODOLOGY

SaskPower's Position on R/RR:

- Set our ratios within a target range of **0.95 – 1.05**

Why?

- Utility standards
- Range established due to the inherent imperfection of allocating common assets and expenses to each customer class
- No material levels of cross subsidization occurring within the range

REVENUE TO REVENUE REQUIREMENT (R/RR)

**2023-24 Rate Change (4% approved)
Effective April 1, 2023**

Customer Class	Target R/RR Ratio	Actual R/RR Ratio
Residential	0.98	0.96
Farm	0.98	0.97
Commercial	1.02	1.02
Power Class	1.02	1.01
Oilfield	1.02	1.03
Streetlights	1.02	0.97
Reseller	1.00	1.00

Review of SaskPower's Cost Allocation and Rate Design Methodologies – Progress Report

John Todd and Andrew Blair

March 15, 2023

Agenda

- 1. Project Description**
2. Background on COS Study Concepts
3. Methodology and Preliminary Elenchus Recommendations

Elenchus

- John Todd, President
 - Founded 1980
 - Cost of Service (CARD) studies for BCUC, OEB, Régie and many utilities across Canada
 - SaskPower COS review in 2012 and 2017
- Andrew Blair joined Elenchus in 2016
 - Prior responsibilities included cost allocation

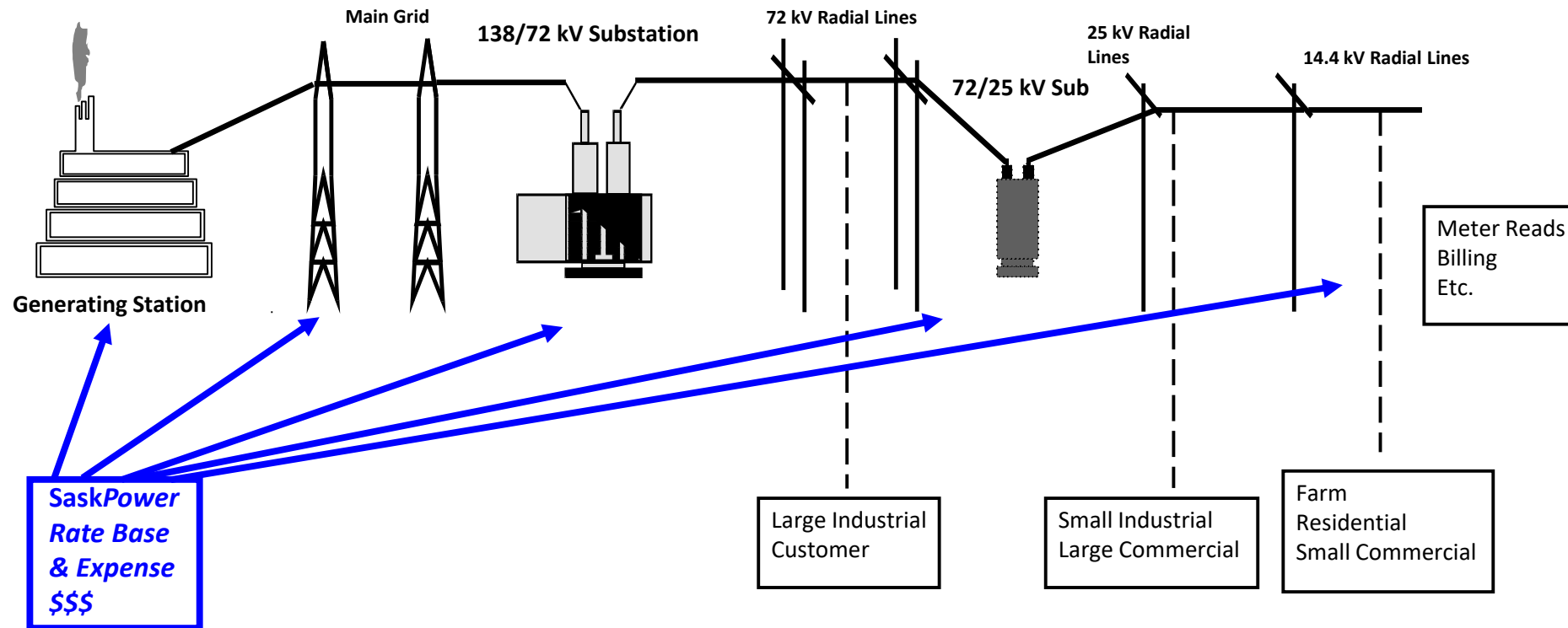
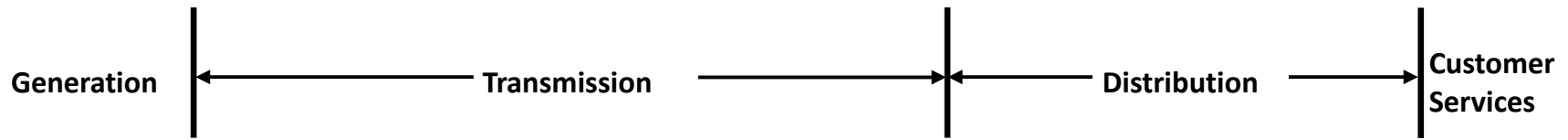
www.elenchus.ca

Project Description (SaskPower RFP)

- Review SaskPower's Cost Allocation Methodology
- Examine Functionalization, Classification and Allocation Methodologies
- Survey Canadian and US Utilities' practices
- Make Recommendations to SaskPower
- Draft Report April 28
- Presentation May 17
- Final Report June 30

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Cost Allocation Methodologies

- Directly allocated costs - Exclusive use by class (rare)
- Shared Utility Assets and Expenses
 - We all benefit from sharing
 - Electrons flow through common infrastructure
- Cost Causality is main criterion
 - Mostly apportioned based on relative “use”
 - E.g., meters measure energy (kWh) use
- Goal is Fair and Reasonable Rates
 - Causal costs=> allocated costs =>Target/ideal rates
 - Rate design is a subsequent step

Cost Allocation Methodology Steps

- Functionalization, includes:
 - Generation, Transmission, Distribution, Customer Service
- Categorization or classification
 - Energy, Demand, Customer
- Allocation
 - Use Cost Drivers: kWh, kW, customer count (Weighted)

Functionalization

- Group similar assets and expenses
 - Reflects SaskPower's System of Accounts, including:
 - Generation Stations with many sub-functions
 - Transmission Line: differentiated by voltage, towers, wires, etc.
 - Distribution Lines, feeders by voltage, customer connections, meters, etc. (each by type with different costs)

Example Functionalization

- Generation (17 stations)
 - 37% coal; 24% natural gas; 16% hydro; and more
- Transmission
 - Power Customers (72 kV)
 - Connects generation to distribution & large users
- Distribution
 - Residential, farms, business below 750 V
- Customer Service

Classification

- Demand-related costs
 - Facilities determine **CAPACITY** of energy flows
 - Higher capacity requires larger “pipe”
- Energy-related costs
 - More energy consumed means more fuel to produce
- Customer-related costs
 - More customers require more meters and customer service agents; differs by class

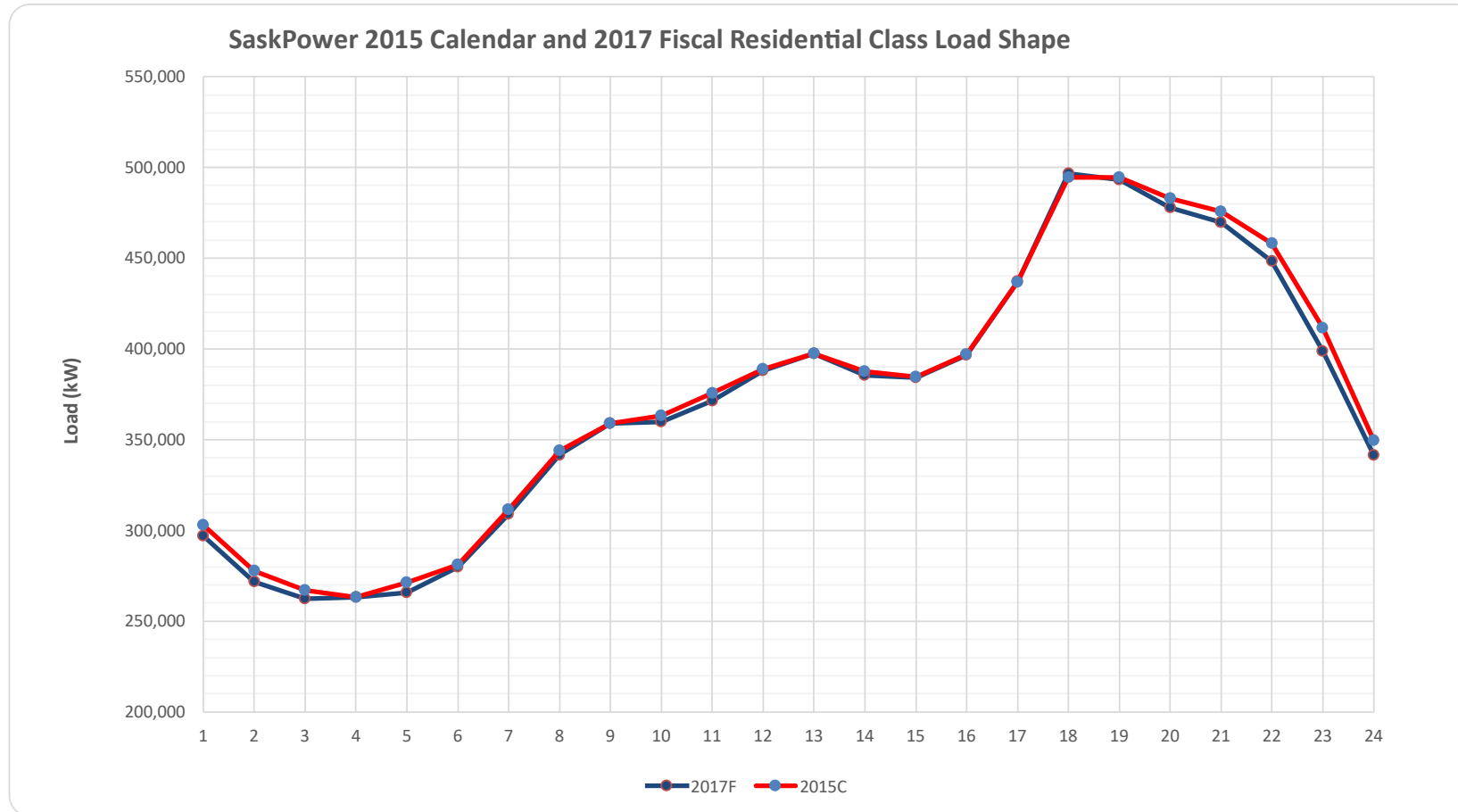
Allocation

- Costs allocated to SaskPower customer classes
 - Primary Allocators (costs shared by proportionate use)
 - kWh (energy including losses)
 - kW (demand including losses)
 - # of customers
 - Weighted # of customers
 - Direct Assignment (Streetlights)
 - Produces total allocated costs by customer class
 - Compare to class revenue => revenue/cost ratios

Cost Allocation Results

- Revenue to cost ratios (RCRs) by customer group
 - Target RCR is 1.00
 - Above 1.00 – providing subsidy
 - Below 1.00 – receiving subsidy
 - But allocation is not precise
 - Hence, goal is RCR in a **range = 0.95 to 1.05**
- Using this range
 - Reduces volatility in rates due to anomalous fluctuation
 - Allows for adjusting without “rate shock”
- Adjusting RCRs is the starting step for **Rate Design**
- Additional step is monthly/demand/energy charges

Demand, Energy & Peak Demand (2015 vs 2017)



Generally Accepted Rate Making Principles – Cost Allocation and Rate Design

- Bonbright Principles (1961 and 1988)
 - Regulators restructure – but cover the same concepts
- Aka: **Attributes of a sound rate structure**
 - Revenue Related Attributes
 - Cost Related Attributes
 - Practical Related Attributes

SaskPower Principles

Based on Bonbright:

- Meeting revenue requirement
- Fairness and equity
- Economic efficiency
- Conservation of resources
- Simplicity and administrative ease
- Stability and gradualism

Bonbright restructured but covers the same concepts

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- 3. Methodology and Preliminary Elenchus Recommendations**

Elenchus' Review Approach

- Survey of other jurisdictions
- Review model and documentation
- Exchange of information with SaskPower staff
- Compare with standard practice based on survey and Elenchus experience

Survey of Classification and Allocation Methodologies

- Utilities surveyed:
 - ATCO Electric
 - BC Hydro
 - Newfoundland Power
 - NB Power
 - Nova Scotia Power
 - Hydro Quebec
 - Hydro One
 - Manitoba Hydro
 - Georgia Power
 - Montana-Dakota Utilities

Cost of Service Methodology

- SaskPower follows traditional approach
 - Models currently use 2021 data
- Previous reviews documented:
 1. NARUC Electric Utility Cost Allocation Manual (1992)
 2. Many “acceptable” methods – what best reflects that operational factors of each utility
 3. Main methodologies used in North American jurisdictions indicates usual practices

Functionalization

- Approach very standardized in the electricity industry
- Main functions includes generation, transmission, distribution and customer service
- Costs by function are based on the utility's system of accounts
 - All costs incurred by SaskPower are assigned to a function
 - Carbon tax same but parallel calculation
- **SaskPower functionalization approach is standard**
(but IFRS has increased componentization)

Classification / Allocation Methods

- Generation costs present conceptual challenges
 - How to separate capacity related from demand related capital
 - Generation assets provide both capacity and energy
- Transmission is essentially capacity related (coincident peak allocation)
- Distribution also capacity (non-coincident peak)
- Customer costs are largely (weighted) customer-related allocation (i.e., not caused by demand or energy)

- **Elenchus revisiting classification alternatives**

Generation Classification Methodologies

- Variable costs (per MWh) are energy related
 - Such as fuel costs
- How classify capital and other fixed costs?
 - NARUC Manual (January 1992) identifies many acceptable options to use for the demand/energy split
 - Peak Demand Methods (five methods identified)
 - Energy Weighting Methods (four methods identified)
 - Time Differentiated Embedded Cost of Service Methods (four methods identified)

Generation Classification Methodologies (2)

- Peak Demand Methods (five methods identified)
 - Single Coincident Peak (1-CP)
 - Summer and Winter Peak (Average of 3 CPs in each season)
 - Sum of 12 Monthly Coincident Peaks (12-CP)
 - Multiple Coincident Peak
 - All Peak Hours
- Reflects a view that generation is built to meet the capacity requirements (i.e., caused only by demand, not energy requirements)

Generation Classification Methodologies (3)

- Energy Weighting Methods
 - Average and Excess
 - Equivalent Peaker
 - Base and Peak
 - Judgmental Energy Weightings
- Reflects view that generation is built to meet both energy and demand drivers
 - Widely accepted; must meet annual MWh energy needs as well as peak MW demand
 - Should demand/energy split reflect supply mix or customer load profile?

Generation Classification Methodologies (4)

- Time Differentiated Embedded Cost of Service Methods
 - Production Stacking
 - Base-Intermediate-Peak (BIP)
 - Loss of Load Probability (LOLP) Production Cost
 - Probability of Dispatch
- These methods are not commonly used
 - Can be complex
 - Can be unstable if supply mix is changing

SaskPower's Generation Method

- **SaskPower uses Average and Excess** to determine energy-related and capacity-related generation costs
- Energy-related generation costs:
 - Allocated based on energy (MWh)
- Demand-related generation costs:
 - Allocated on the basis of 2 CP (Coincident Peak), reflecting:
 - Winter peak demand > summer peak demand
 - Winter capacity > summer capacity (warm wires)
 - Operationally there are two peaking periods

Transmission Classification / Allocation Methodologies

- Transmission is widely classified and allocated on the basis of capacity (demand-related costs)
 - System is built for peak, not for energy
 - Has spare capacity the rest of the time
- In prior reviews, Elenchus agreed with:
 - Classifying 100% demand-related and
 - Allocation using 2CP (same as generation)

Distribution Classification / Allocation Methodologies

- Report will document main methodologies used
- Elenchus views (across utilities):
 - Use Minimum System Method for classification of lines and transformers
 - Agrees with 2 CP for sub-transmission and NCP allocation of distribution demand related costs
 - Agrees with (weighted) number of customers for customer related costs

Treatment of Carbon Tax

- Carbon tax is unique from cost allocation perspective
- Functionalization: “caused” by generation
- Classification: “adder” to fuel cost, hence
 - Energy-related cost (caused by coal and natural gas)
 - Essentially a markup on fuel, but tracked separately
- Same allocation to classes as would result from an all-in fuel cost
- Parallel allocation done to derive the correct and transparent line item on customer bill

Rate Design Methodology

- SaskPower uses fixed and variable charges:
 - Basic monthly charge and Energy Charge (¢/kW.h) for Residential and energy billed small commercial customers
 - Diesel supplied customers have a monthly charge and an inclining energy rate
 - Farms and larger commercial customers with demand meters have a basic charge, demand rate above 50 kVa/month and energy rate that declines once the demand rates is applied
 - Larger customers, (power standard, resellers), have a monthly charge, a demand charge and an energy charge

Methodological Change: Bary Correction

- Used since 2000 as a proxy for coincident peak allocator
- High average demand implied higher coincidence
- Starting with 2022, being phased out because:
 - High energy price is a false price signal to self-generate
 - Electricity markets are changing
 - Change facilitates unbundling of rates
- **Elenchus recommended this change in 2017**

NEXT STEPS

Date	Milestone
March 22	Deadline for written questions to be submitted to SaskPower/Elenchus
March 30	Written responses provided to stakeholder questions
May 17	Elenchus presents draft report and findings to stakeholders, invites written submissions
May 24	Deadline for written questions to be submitted to SaskPower/Elenchus
June 2	Written responses provided to stakeholder questions
June 16	Stakeholders file final written submissions on the draft report
June 30	Elenchus delivers final report which includes all written questions and responses to stakeholder submissions.

Email questions & submissions to :

cosreview@saskpower.com

How to find COS
Methodology Review
information on our
website:

- www.saskpower.com
- Click “Accounts”
- Click “2023 Cost of Service Methodology Review” in the Power Rates section.

The screenshot shows the SaskPower website navigation menu. At the top left is the SaskPower logo with the tagline "Powering our future". To the right is a search bar with the placeholder text "What are you looking for?". Further right are links for "Careers", "Contact Us", and "About Us". Below these is the "MySaskPower" user profile icon. The main navigation bar includes "Accounts", "Services", "Outages", "Power Savings and Programs", "Our Power Future", and "Safety". The "Accounts" tab is highlighted in orange. Below the navigation bar, the "Accounts" section is expanded, showing a list of links. A red arrow points to the "Accounts" tab. Another red arrow points to the "2023 Cost of Service Methodology Review" link in the "Power Rates" section.

Accounts

- My Dashboard
- My Power Bill
- My Power Use
- My Outages
- My Service Requests
- My History
- My Profile
- My Reports
- Message Centre

MySaskPower

- Access Your MySaskPower Account
- Access Your MySaskPower Business Account
- Download the SaskPower App
- Email, Internet and Phone Scams
- Terms and Conditions

Billing

- Your Power Bill**
- Billing Reports
- Compare Bills
- Paperless Billing
- Consolidate Multiple Bills
- Download Data
- How to Read Your Bill

Understanding Power Use

- Bill Higher than Normal?
- Power Reports

Meter Readings

- Power Consumption
- Submit Your Meter Reading
- Meter Readings
- Start or Stop Meter Reading

Payments

- Paying Your Bill
- Payment History
- Pre-authorized Payments
- Credit Card Payments
- Equalized Payment Plan

Power Rates

- Power Supply Rates
- 2022 and 2023 Rate Increases
- 2019-20 Capacity Reservation Service Rate Review
- 2023 Cost of Service Methodology Review
- Federal Carbon Tax

Email questions & submissions to :

cosreview@saskpower.com

Wrap-up

THANK YOU

Questions?