PAPER EXCELLENCE

May 6, 2022

Albert Johnston
Chairperson, Saskatchewan Rate Review Panel
P.O. Box 1301,
Saskatoon, SK
S7K 3N1

Dear Mr. Johnston,

The attached submission is in response to SaskPower's recent Rate Application. We would like to thank the Rate Review Panel for their time and interest in hearing our feedback on this crucial matter for our, and all other, electrically intensive businesses in Saskatchewan.

Sincerely,

Carlo Dal Monte
Vice President – Energy & Business Development

Enclosure

Introduction

Paper Excellence owns the only two pulp mills in Saskatchewan--Meadow Lake Mechanical Pulp Mill (MLMP) which is fully operational and Prince Albert Pulp Inc. (PAPI) which is in the process of being restarted. MLMP alone represents about 2.4% of total SaskPower sales volume and electricity is the largest component of our manufacturing costs. The application as proposed will, after both increases are implemented, make our Meadow Lake operation less competitive, increasing costs at the site by over [redacted]/month which challenges our ability to compete against producers in other provinces.

The Application combines an aggressive revenue request along with a dramatic rate redesign. The proposed rate design appears to put MLMP at a disadvantage relative to remaining Power Class of customers. We believe that SaskPower should implement these as individual initiatives to provide customers an opportunity to adapt their business to cope with the changes.

Finally, the carbon tax has dramatically increased our energy costs without a clear indication on how these funds may be reinvested to reduce GHG emissions and innovate, the objective of a carbon tax. Whereas other Canadian jurisidictions already provide a return on carbon tax fees through a competitive process, Saskatchewan customers have no such opportunity to compete for these funds yet. We sincerely hope that the panel will understand that these market conditions must be evaluated in a holisitic fashion, and when doing so, realize that the price of energy will quickly become uncompetitive in Saskatchewan relative to other juridisdictions.

We believe that a successful path forward will require series of steps, namely:

- Stabilize the existing industrial load by mitigating the rate shock to preserve income;
- Encourage demand response to minimize fuel costs and investment in generation to firm up intermittent renewables. Have key terms defined before implementing the requested for rate change; and,
- Encourage development of other low intensity generation options, namely biomass and natural gas cogeneration.

As one of the largest customers in the province, we can help renew the grid ***and*** stabilize revenue for the utility. Paper Excellence recognizes the challenges faced by the utility; however, we have a responsibility to protect our employees and business interests in the province. We offer the following opportunities for your consideration:

1.	**Avoid Rate Shock:**	**Waive the Demand Ratchet if the Application is accepted**
2.	**Reduce Bill Volatility:**	**Adopt a 30 minute Billing Peak definiton**
3.	**Reduce Bill Volatility:**	**Eliminate Billing Period Duration Impacts**
4.	**Reduce interclass inequity:**	**Demand based on Peak hour operation only**
5.	**Encourgage Customer Generation:**	**Offer an Open Call/Standing Offer for Customer Generation**
6.	**Encourage Demand Response :**	**Provide Transparent Capacity Pricing**

Please note that this is not intended to be a comprehensive list and we are open to other ideas. We believe that collaboration will be essential to prevent large scale grid defection and an acceleration of pressure on rates.

Background - Prince Albert Pulp Inc.

PAPI, which is in the process of being restarted, produces pulp by the Kraft process by chemically dissolving the matrix that binds the individual fibres, which are then cleaned and baled. This process optimizes fibre quality which reduces pulp yield on wood and has a lower electrical intensity at about [redacted]kWh/ADMT. This pulp is used primarily to provide strength reinforcement for tissue, publication, specialty, and packaging paper production in Asia. This market is over 25 million MT globally with PAPI representing less than 1 % of global capacity.

Positive trends for the sector include the shift away from plastic packaging and the limited availability of high-quality northern hemisphere fibre supply. This is balanced by the cooling in the Chinese manufacturing sector coupled with declining demand for publication papers.

PAPI is anticipated to have a relatively flat *gross* consumption of 30-35 MW, and the relationship between energy consumption and production is not as strong as with MLMP. However, PAPI does also have 44 MW of green energy generation capacity[redacted] Outside of generator maintenance PAPI will be a net exporter of energy to the SaskPower system.

Steam generation in the mill is fueled by biomass in 2 forms:

1. Organics dissolved in the process that are concentrated and fired in our Recovery Boiler (RB); and,
2. Woodwaste, primarily bark, that will be burned in our bubbling fluidized bed (BFB) boiler.

The Recovery Boiler will operate at a constant rate and provide most of the power production. The BFB will modify its operating rate to meet any changes in process steam demands in the mill. It is projected that the BFB will be on standby in summer months due to low steam demand in the mill.

Background - Meadow Lake Mechanical Pulp

MLMP produces pulp by mechanically grinding wood into separate fibres, which are then cleaned, bleached and baled. This process maximizes wood utilization however it is very electrically intensive at about [redacted] kWh/ADMT. This pulp is used primarily to provide bulk for tissue and packaging paper production in Asia. There is very little North American consumption. MLMP represents about 9% of global capacity however the market is very fragmented and therefore there is very little pricing discipline, typically the lowest global production cost sets the market price floor. These mills are generally located in regions with large hydroelectric supplies (Figure 2).

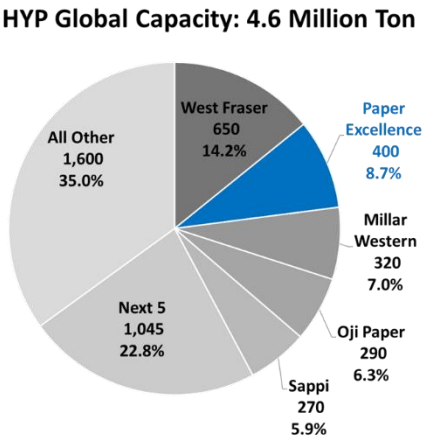

Figure 1. BCTMP Global Market Share 2021

Positive trends for the sector include the shift away from plastic packaging and tightness in recovered paper supply which in turn is driving demand for other recyclable fibres. This is balanced by the cooling in the Chinese manufacturing sector coupled with supply chain issues driving customers to make their own pulp onsite from imported chips.

Figure 2. North American BCTMP Mill Locations

MLMP has no self-generation at present and relies entirely on grid supply. The average load is [redacted] with monthly peaks ranging from [redacted] The variation in peaks is due to changes in pulp quality specifications, wood supply and changes in plate design on the refiners that can force higher energy intensity to achieve the same output.

[redacted]

[redacted] The BCTMP process very well suited to demand response projects since pulping is achieved over two primary lines with most of the energy being consumed in three large motors.

Concerns Regarding the Rate Application

1. **Extreme Rate of Increase:** The Application as proposed will increase energy rates for MLMP by [redacted]/month over present rates by April 1, 2023. This is extremely high on a per customer basis relative to other customer classes. (Figure 3).

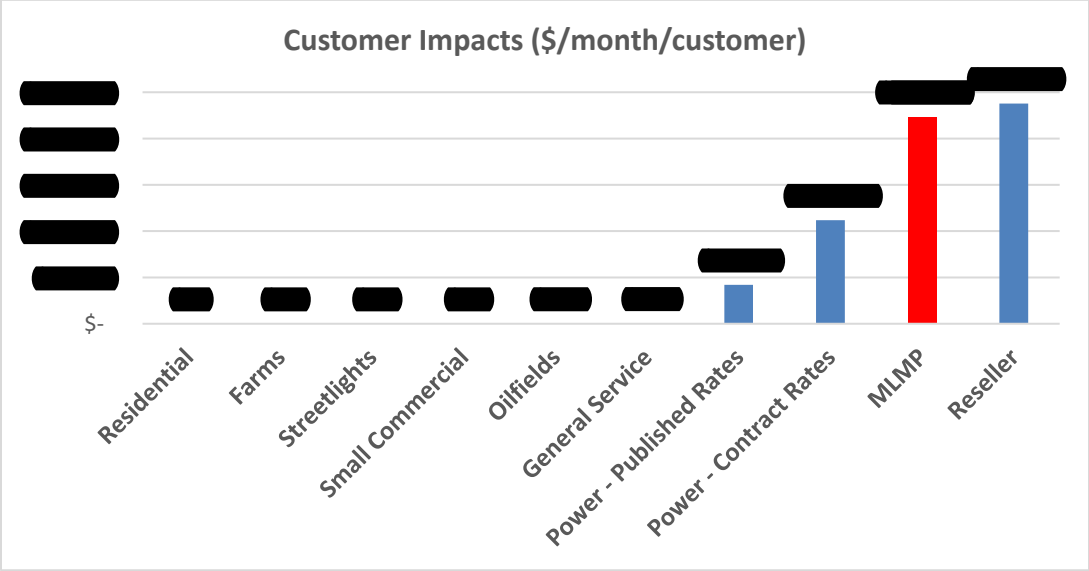

Figure 3. Application Customer Impacts

A comparison of the proposed increase with a recent BC Hydro filing in their 2023-25 Revenue Requirement Application shows that the increase as proposed for seven months represents seven years of rate increases projected by BC Hydro (Figure 4).

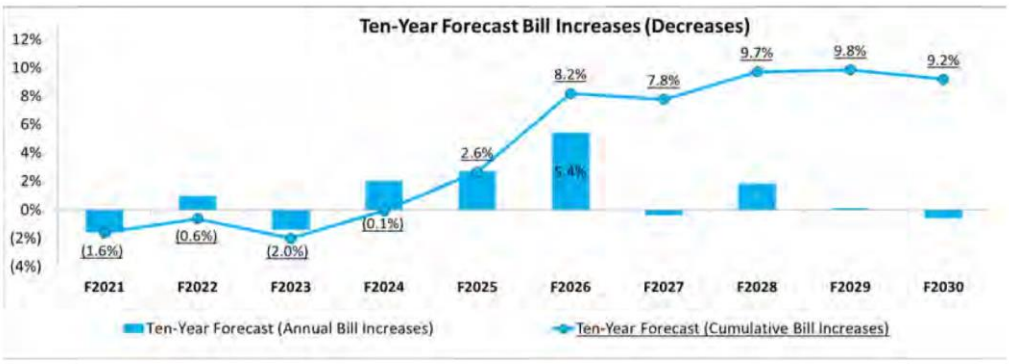

Figure 4 BC Hydro Rate Increase Projection

Information Request No. **1.1.1** Dated: **October 28, 2021**
British Columbia Hydro & Power Authority
Response issued**: December 16, 2021**
https://docs.bcuc.com/Documents/Proceedings/2021/DOC_65129_B-7-BCH-responses-to-BCUC-IR-No1-Public.pdf

2. **Jurisdictional Competitiveness:** Saskatchewan industries are at risk of losing ground to other competition in other provinces (Figure 5). PEC recognizes that rates have been held flat since F2019 however customers must include the carbon tax rate rider since this is also invoiced by the utility and there is no clear mechanism for tax recovery or mitigation at the time of this submission.

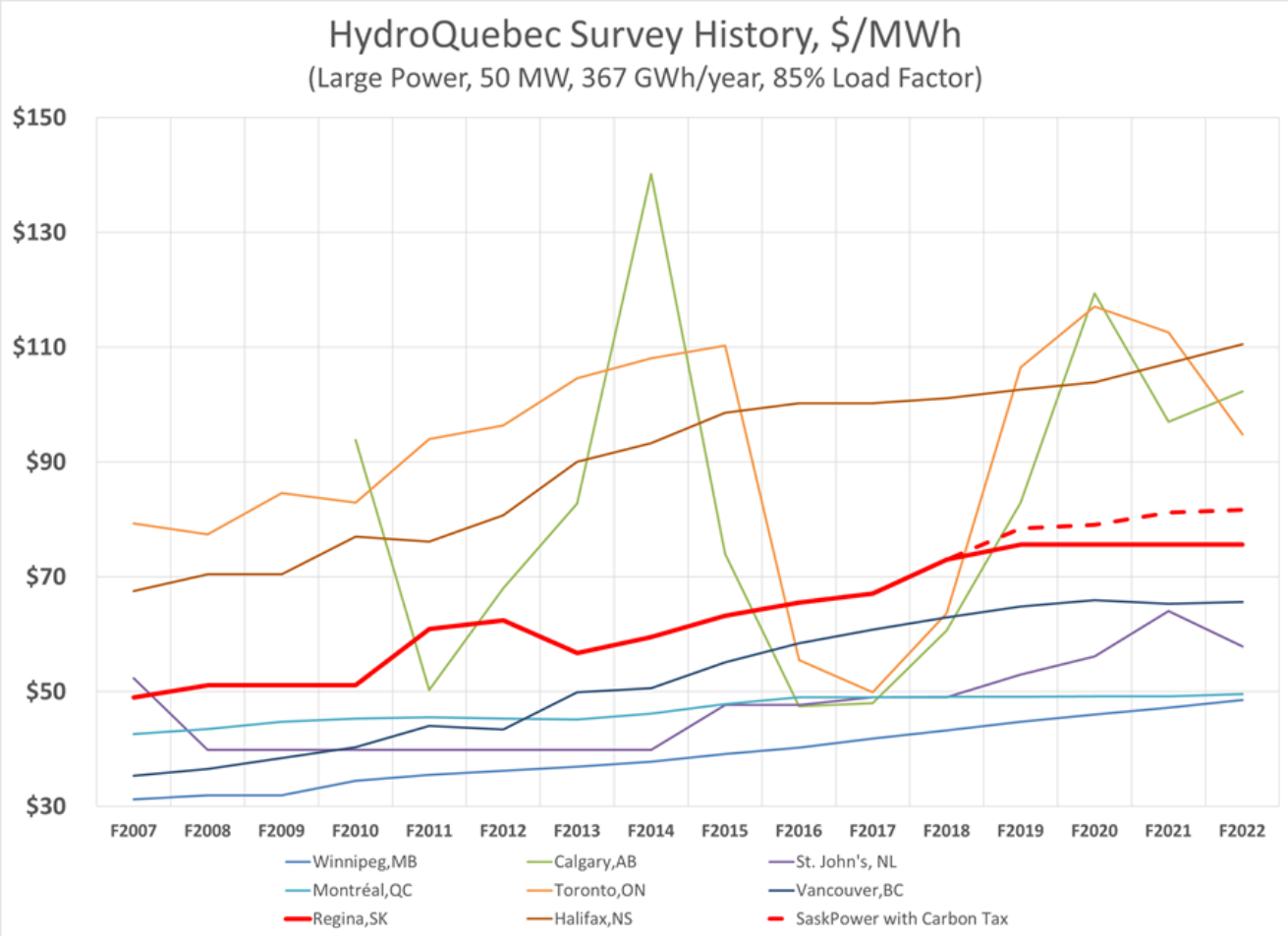

Figure 5. HydroQuebec Rate Survey Data

3. **Customer Class Competitiveness:** The proposed design of the rate appears to put MLMP at a disadvantage relative to other large customers. MLMP [redacted] represents 2.4% of all SaskPower projected sales [redacted]. Analysis of the rate class data by separating MLMP from the remainder of the Power Class shows that the Application as proposed puts MLMP at a disadvantage to the rest of the customers in the Published Rate [redacted] This analysis is inclusive of Carbon Tax.

Figure 6 Customer Class Effective Rates 2023-24

4. **Rate Rebalancing:** The Application combines a request for significalty more revenue along with a dramatic rate redesign by shifting the fixed portion of customer's bills with a 40% demand charge increase while the energy rate actually *decreases* about 1.4% (Figure 7).

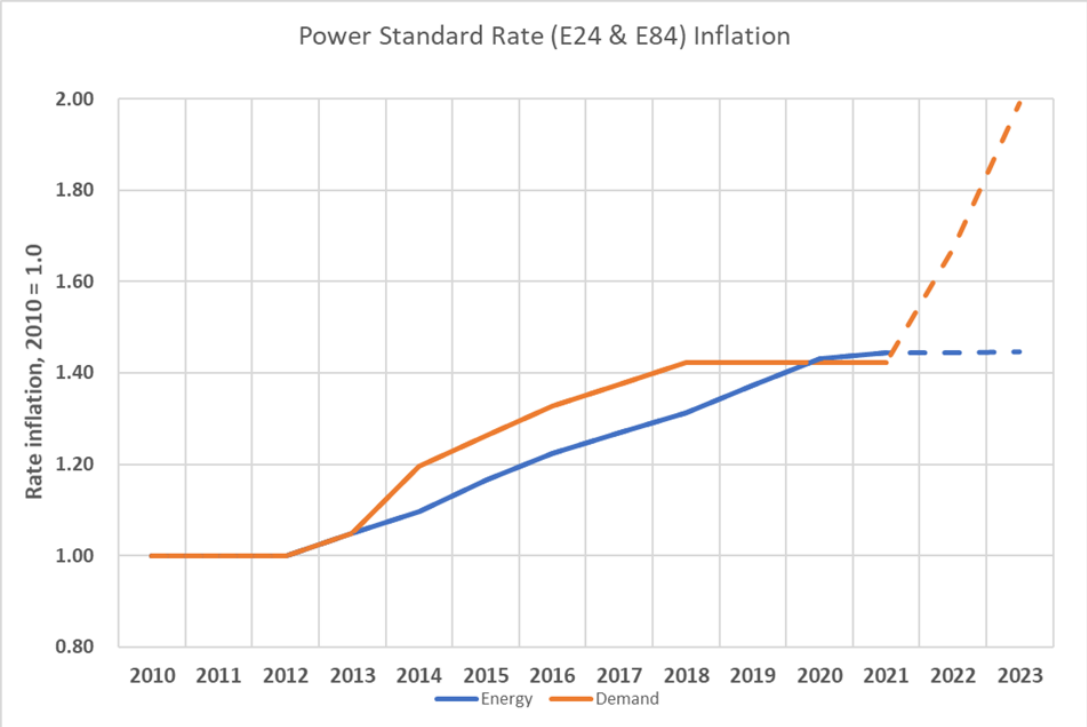

Figure 7. Demand and Energy Rate Inflation

This dramatic shift creates challenges for customers with a lower Load Factor (LF), the formula for a customer's effective rate (their total bill divided by their total consumption) is shown below.

$$Rate_{eff} = energy + \frac{demand}{LF * hours}$$

The energy rate impact is direct; however, the impact of the demand charge is contingent on a couple of variables. The primary issue is the Load Factor, this is the ratio of the average consumption to the billed demand peak in the billing period. Customers with a lower Load Factor will experience a higher rate increase. The lowest rate is achieved with a flat load profile; however, the maximum load is limited by the connected horsepower so there is no way for a customer to "catch up" to offset the impact of planned and unplanned outages on their load. This penalizes customers who are performing maintenance on their equipment and exacerbates the impacts of external constraints on their production (e.g., railways). This creates a different effective rate based on the type of industry as well as making the monthly differences in effective rates greater for a customer depending on their maintenance schedules.

The secondary issue is the duration of the billing period, a shorter billing period (e.g., February) will be more expensive than other months. This has not been a material issue to date, however as the demand charge increases this will become more of an issue.

The chart below (Figure 8) shows the effective rate over a range of actual conditions at MLMP from January 2020 to January 2022. The chart shows that there is a wide variation in the Load Factor at the mill. The proposed rates will increase the range in the effective rate from $4/MWh to $7/MWh from a "good" month to a "bad" month. This increases the price volatility for a customer and complicates business planning. The higher demand charge may drive customers to extend curtailment periods to align with a billing period and avoid setting an expensive demand peak.

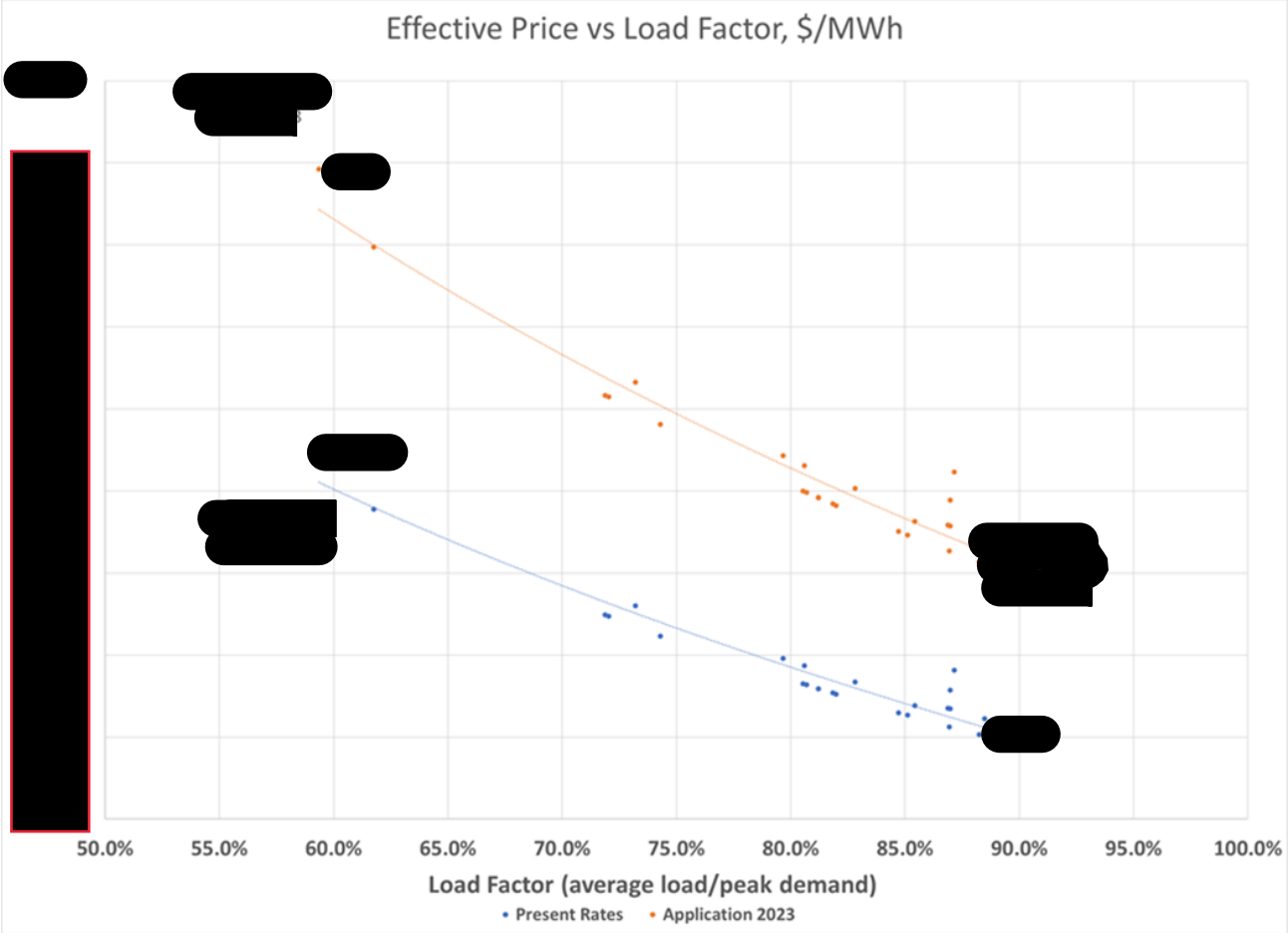

Figure 8. Effective Rate versus Load Factor at MLMP

Figure 9 magnifies the differences in the effective rate at around 88% Load Factor and shows that the effectives rates above the trend line are in the shorter months (note that February 2020 was in a leap year). [redacted]

Finally, this rate rebalancing encourages customers to operate at the same load in all hours. However, the overall system shows significant variation in demand over the course of the day that could be offset with the appropriate rate design (Figure 10).

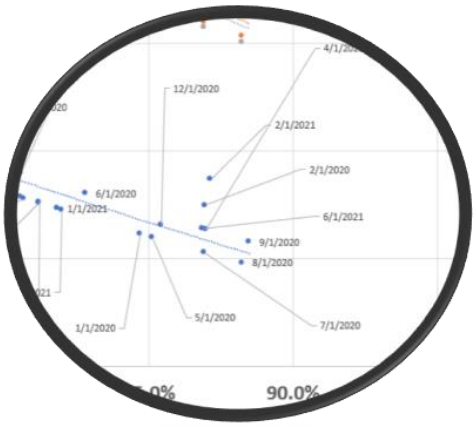

Figure 9 Billing Period Impact Highlighted

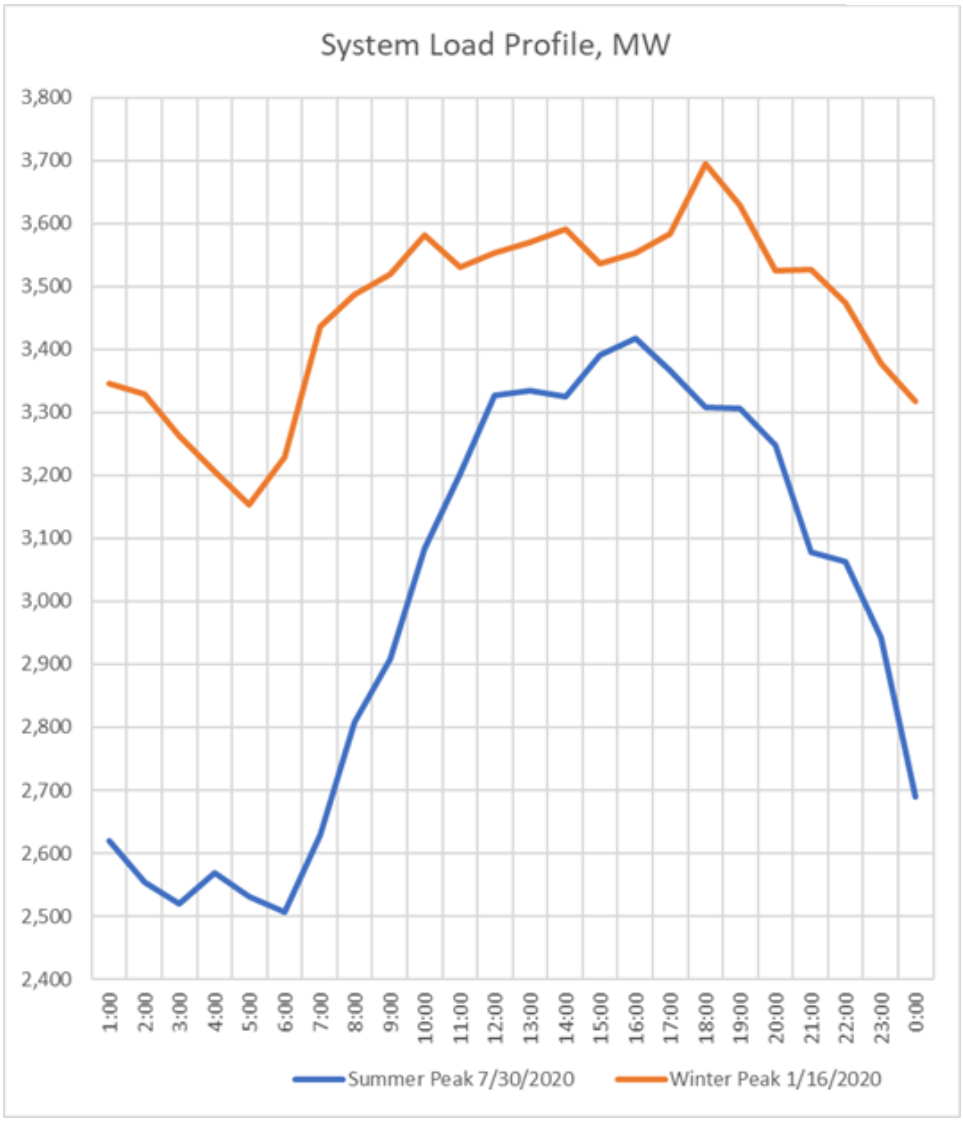

Figure 10 System Peak Days, Summer & Winter

5. **Carbon Tax Projection:** The Application is careful to state that it excludes discussion about the Carbon Tax for a variety of reasons. The challenge for customers is that we are being charged the tax without any clear mechanism on how those collected funds will be disbursed, therefore we must assume that the tax will remain embedded in our energy rate. We have received SaskPower projections on the rate and have extrapolated it to estimate the tax rate rider at the $170 Carbon Tax being proposed federally in Figure 10. This pace of increase is challenging for our long-term planning and highlights the urgency for clarifying the customer policy regarding the collected carbon tax, particularly for energy intensive, trade exposed customers like ourselves.

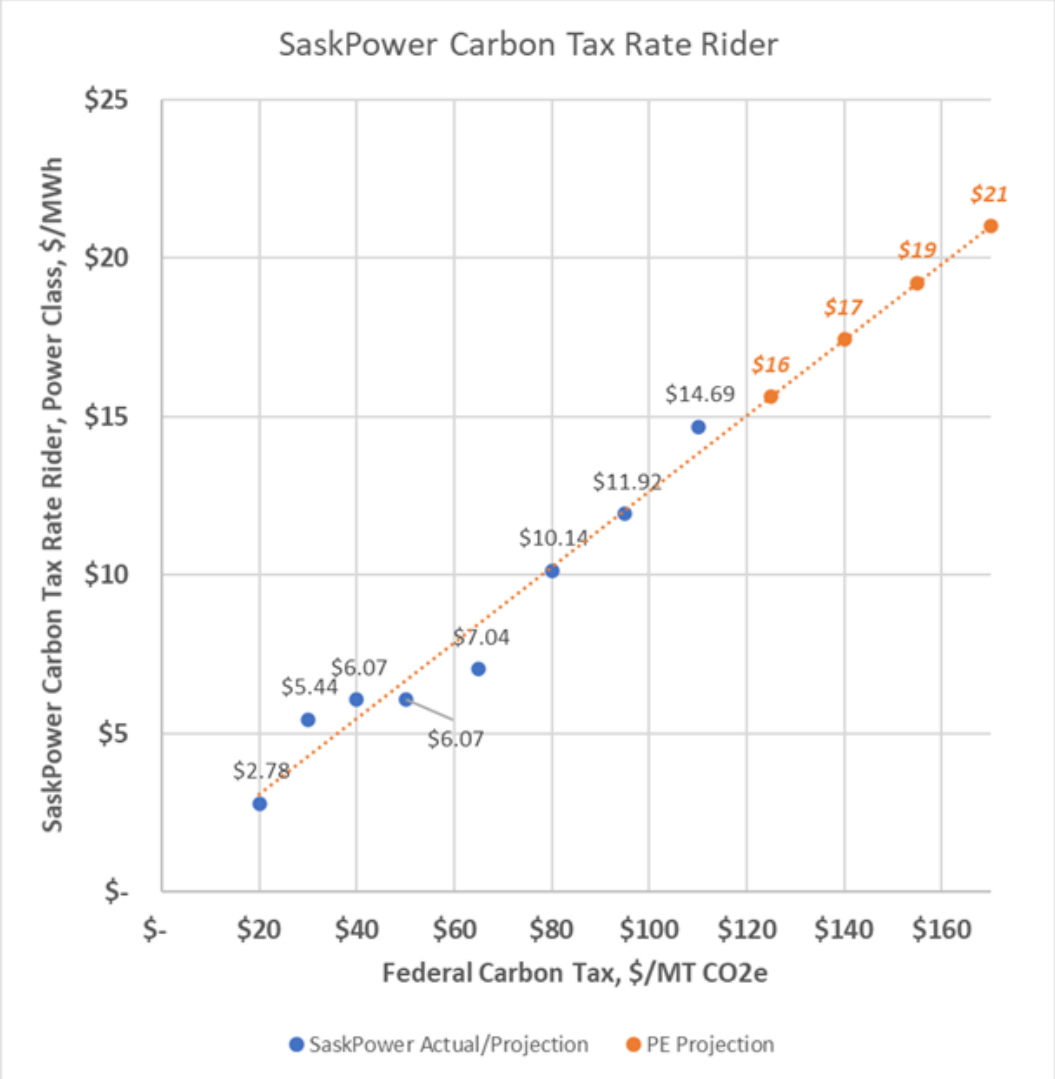

Figure 11. Carbon Tax Rate Rider Projection

Opportunities for Mitigation

Paper Excellence recognizes the challenges being faced by the utility; however it has a responsibility to protect its employees and business interests in the province. We offer the following opportunities for your consideration.

A. **Avoid Rate Shock- Waive the Demand Ratchet if this Application is accepted**
Presently the billing demand shall not be less than 75% of the maximum billing demand in the preceding 11 months. This may penalize a customer who made decision to set a peak in October 2021, long before this application was made, and the magnitude of the demand charge was known. The period to calculate the ratchet would begin with the September 2022 billing period and give all customers an equal footing.

B. Reduce Bill Volatility – Adopt a 30 minute Billing Peak definiton
Increase the measurement duration for defining a peak to reduce a customer's exposure to short term fluctuations, it is presently 20 minutes. This reduces the potential volatility that a customer would be exposed to for a brief disruption. Thirty minute billed peak definition is what is used by BC Hydro. Most remaining Canadian utilities (Newfoundland & Labrador, New Brunswick, Quebec, Manitoba and Ontario) are using a 15-minute definition for billed demand.

C. Reduce Bill Volatility – Billing Period Duration
As the demand charge is increased the impact of a shorter month is exacerbated. The peak is based on the highest 20 minutes, regardless of the number of hours in the month. This would be addressed by a variable demand charge depending on the number of days in the billing period. A sample calculation is provided in Table 1 below.

Table 1 Demand Rate Proposal

	hours	SP proposal	% of year	counter proposal
Jan	744	$ 11,586	8.5%	$ 11,808
Feb	672	$ 11,586	7.7%	$ 10,665
Mar	744	$ 11,586	8.5%	$ 11,808
Apr	720	$ 11,586	8.2%	$ 11,427
May	744	$ 11,586	8.5%	$ 11,808
Jun	720	$ 11,586	8.2%	$ 11,427
Jul	744	$ 11,586	8.5%	$ 11,808
Aug	744	$ 11,586	8.5%	$ 11,808
Sep	720	$ 11,586	8.2%	$ 11,427
Oct	744	$ 11,586	8.5%	$ 11,808
Nov	720	$ 11,586	8.2%	$ 11,427
Dec	744	$ 11,586	8.5%	$ 11,808
$/MVA-year		**$ 139,032**		**$ 139,032**

D. Reduce interclass inequity– OnPeak Demand Billing

Customers with variable loads are penalized with the increased demand charges, however these customers are also those who have the demonstrated ability to shift their loads to suit the needs of the system. A simple mechanism for encouraging this behavior is to calculate the Demand Charge based on *Peak hours only*. This will provide an incentive for the customer who can shift operations to increase their consumption into periods when other customer classes have reduced loads. Customers who cannot shift loads typically have higher load factors and already realize a benefit.

E. Encourage Customer Generation – Open Call/Standing Offer for Customer Generation

Customer generation and cogeneration are low intensity resources that are already connected to the system. Clear price signals from the utility will provide certainty and encourage investment in the province to assist with reducing the carbon exposure for all customers.

F. Encourage Demand Response – Transparent Capacity Pricing

Demand response pricing is negotiated bilaterally. The pricing should be indexed to the demand charge to reflect the value of capacity to the system and encourage additional participants to avoid the need to build additional infrastructure.