

City of Mississauga Corporate Report



Date: January 27, 2021 To: Chair and Members of General Committee From: Gary Kent, CPA, CGA, ICD.D, Commissioner of Corporate Services and Chief Financial Officer	Originator's files: Meeting date: February 24, 2021
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Subject

Annual Report on Commodity Price Hedging Agreements for 2020 (Electricity and Natural Gas)

Recommendation

That the Corporate Report dated January 27, 2021 entitled "Annual Report on Commodity Price Hedging Agreements for 2020 (Electricity and Natural Gas)", from the Commissioner, Corporate Services and Chief Financial Officer be received for information.

Report Highlights

- The Ontario Regulation 653/05 "Debt-related financial instruments and financial agreements" under Municipal Act 2001 as it pertains to Commodity Price Hedging Agreements, requires that municipalities adopt a statement of policies and goals relating to the use of financial agreements to address commodity pricing and costs before the municipality enters into commodity price hedging agreements. City of Mississauga adopted Corporate Policy #03-06-07 Procurement of Electricity and Natural Gas. This report is to satisfy the requirements of this Policy.
- The goal of the electricity and natural gas procurement strategies is to mitigate the risk of price volatility and optimize the cost of the City's electricity and natural gas.
- Fixed Price Contract (Hedging) is a method of managing the electricity and gas price volatility.
- The total cost of electricity for the City of Mississauga in 2020 was \$12,974,992 (1.76% tax included). The market conditions and offerings did not favour hedging for electricity; therefore, this strategy was not considered in 2020.
- The total cost of natural gas for the City of Mississauga in 2020 was \$2,069,928 (1.76% tax included). The market conditions and offerings did not favour hedging for natural gas; therefore this strategy was not considered in 2020.

- For 2021, no feasible hedging options were recommended as the analysed factors seem to suggest normal rates with low volatility. This decision will be re-visited if the market conditions change and feasible hedging options become available.

Background

This Report is being provided to General Committee as required by Corporate Policy # 03-06-07 on Commodity Price Hedging Agreements on Electricity and Natural Gas. The Policy states that electricity and natural gas procurement will be undertaken in a manner that endeavours to balance the need to achieve the lowest cost with the need for price stability.

To assist in developing the City's electricity and natural gas procurement strategy, the City hired Jupiter Energy Advisors Inc. (Subject Matter Expert) as energy consultants. They are hired to advise on supplier contracts and market opportunities and to provide the City with ongoing market updates and support as required.

The Policy also requires that the Commissioner of Corporate Services and CFO provide a report to Council, on an annual basis that contains the information provided in this report.

Comments

Electricity

There are 3 major costs associated with Electricity use for the City:

- Commodity/Supply – The cost of purchasing the electricity from a Generator, Retailer, or the Local Distributing Company (LDC).
- Global Adjustment – Charge which includes compensation to Ontario Power Generation when market prices fall below an agreed base price but also the recovery of premium that the Province pays towards green power generation projects and conservation programs. Global Adjustment can be either Class A, Class B or embedded in the commodity rates for small accounts.
- Regulated Charges – Costs to deliver the electricity from the Generator to the LDC (Transmission) and from the LDC to the end user (Distribution) in addition to fixed connection and administrative fees.

In an effort to identify the most suited electricity procurement strategy which best optimizes the City's electricity cost and reduces the risk of adverse price movement, the City analyzes the previous year's strategy performance, the market conditions, new regulations and available procurement options offered by the LDC.

Hedging is a procurement strategy known to manage the price volatility. Hedging was not considered for the City's electricity purchase since 2004 when Global Adjustment was introduced. The reason for this is that retailers are currently only offering contracts to cover the

Hourly Ontario Electricity Price (HOEP) which is the commodity portion of the electricity price, and not the Global Adjustment. As the HOEP currently only makes less than 11% of the pricing, a hedge would still leave a majority of the City's electricity exposed to the volatility of the Global Adjustment.

The City also monitors Electricity accounts type. There are 307 electricity accounts in the City that can be divided into two main categories:

- Small accounts (less than 50kW, Residential and Small Commercial): Commodity rates for these accounts are regulated and can be either Time of Use (ToU) or Tiered price plans. There are 236 accounts in this category but they only represent around 10% of the annual electricity cost of the City. The City recently changed 25 of these accounts from ToU to Tiered to benefit from the Provincial Government announcement in 2020 that allowed customers to choose the optimum price plan for their usage. As the facilities re-open, the City will continue to monitor these accounts and select the best price plan for each one as required.
- Large account (50 to 499 kW, 500 to 4999 kW and Street Lighting): The City has 71 accounts in this category representing 90% of the annual electricity cost. Electricity rates for these accounts are based on Spot Market Rates (Hourly Ontario Energy Price – HOEP) and; for the majority of them; Global Adjustment Class B rates. The City has the option to select Global Adjustment Class A if the demand of the account is more than 1000kW and this has been selected for City Hall; the only account that is eligible for this option. Class A allows large Industrial and Commercial customers to save on their Global Adjustment charges based on their ability to reduce demand in peak hours. The City will continue to monitor all large accounts and select the optimum strategy for each one as performance, eligibility criteria and requirements change over time.

2021 Strategy

With HOEP (Hourly Ontario Energy Price) (index rates) currently averaging about 1.35 cents per kWh year-to-date, the majority of the City's electricity charge is made up of the Global Adjustment (11.3 c/kWh). As such, no hedging is currently suggested as part of the procurement strategy for 2021. Should market conditions change and the risk of higher index price volatility increase, the strategy will be revisited.

Natural Gas

There are 3 major costs associated with Natural Gas use for the City:

- Commodity/Supply – The cost of purchasing the physical gas from a supplier.
- Transportation – The costs associated with moving the purchased gas from the point of purchase to the Local Distributing Company (LDC) at Dawn (Ontario).
- Regulated Charges – Administrative charges and costs to deliver the gas from the LDC to the end user.

This report refers to the first two bullets as regulated charges are defined by Ontario Energy Board (OEB) and are not subject to commodity purchase strategies.

Similarly with electricity, the procurement strategy for gas aims to mitigate budget volatility while maintain an optimal cost for gas over time.

There are 3 representative strategies for commodity procurement:

- 100% Fixed Price (Hedge);
- 0% Fixed (100% Index or Spot Market);
- Blended strategies (a combination of the 2 above).

Statistics show that a 100% Fixed Price strategy lowers volatility but produces the highest prices. The 100% Index achieves the lowest price but with greater volatility relative to other strategies. Blended strategies provide a compromise between price and volatility.

The City used Blended strategies in the past years however, in 2020, the City did not purchase any of the required quantity on fixed price contracts (hedging). The decision was taken after reviewing historical market conditions and the future forecasted trends of the factors that impact gas prices. The City also reviewed hedging scenarios received from Jupiter Energy Advisors Inc. (Subject Matter Expert) and none of these scenarios was feasible. A summary of the purchase strategy used in 2020 is presented in the table below.

It should be noted that the decision to engage in different purchase strategies of gas is always based on the information at the time of the decision and the recommendations provided by Jupiter Energy Advisors Inc. (Subject Matter Expert), engaged by the City to advise on commodity procurement.

Year	Procurement Method	Period	Duration	Amount (% of total volume)	Volume of Natural Gas
2020	Hedging (contract)	Jan-Oct	10 Months	0%	0 GJ
		Nov-Dec	2 Month	0%	
	Daily Priced Index at AECO + Transportation to Dawn	Jan-Oct	10 Months	100%	322,017 GJ
	Daily Priced Index at Dawn	Nov-Dec	2 Months	100%	
	2020 Totals	Jan-Dec	12 Months	100%	322,017 GJ

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Review of Natural Gas Strategy for 2020

The following hedging scenarios were analysed for 2020 natural gas purchasing:

				Cost compared to No-Hedging Scenario (Benefit)		
Date of Analysis	Scenario	Percentage of Hedging	Duration	Low Index Price	Middle Index Price	High Index Price
Dec 19	Hedging 10 Months	32%	Jan 20 to Oct 20	\$52,592.76	\$10,843.68	(\$55,954.85)
Dec 19	Hedging 3 Months	32%	Jan 20 to Mar 20	\$20,451.35	\$5,883.46	(\$17,425.15)
Aug 19	Hedging 12 Months	50%	Nov 19 to Oct 20	\$83,246.01	\$11,015.09	(\$104,554.4)
Aug 19	Hedging 12 Months + Winter Hedge	50%	Nov 19 to Oct 20	\$83,839.82	\$28,783.93	(\$59,305.50)
Indicative Probability of Occurrence				15%	55%	30%

As can be seen from the table, all hedging scenarios would result in additional costs if the prices were around the middle of the forecast range or below. The prices have combined probability of 70% to be in that range. The City would only save if prices were towards the higher end of the forecast range. The City also received a forecast of the expected market conditions at that time which indicated low price volatility during 2020.

Forecast and Recommendations

Gas prices are impacted by supply and demand factors. To anticipate gas prices, volatility and evaluate hedging options, the following factors were reviewed in the third quarter of 2019:

Storage – Normal to High

- Storage began recovering nicely in the spring of 2019 and continued through summer of 2019.
- Storage levels were on track to reach or exceed 5 year average levels by the end of October 2019.

Production Levels – High

- Production continued to hit historical new highs through 2019 and was expected to remain at a similar level for 2020.

Demand – Normal

- Natural gas exports were projected to have steady growth in 2020.
- Domestic use was projected to have steady to little growth in 2020.

Weather

- Weather forecasts indicated colder than normal fall and mild winter of 2019/2020.

An analysis of the above factors indicated that the risk of volatility is low and that the index prices would maintain recent trends. Additionally, no feasible hedging option was available at that time and the decision was made to purchase the entire City gas quantity at index price without any hedging.

Implemented Actions

- The entire natural gas quantity for the period from November 2019 to October 2020 was purchased at Index price at AECO.
- Transportation to Dawn (Ontario) was purchased for the entire quantity from November 2019 to October 2020 at a fixed price of \$1.2875/GJ.
- The remaining gas quantities for November and December 2020 were purchased at Index price at Dawn (Ontario). There was no need for separate transportation charges as they were imbedded in the commodity price.

Actual Conditions

Although actual market conditions were disturbed by the pandemic that impacted the majority of industries in 2020, the impact on gas prices was mild due to the following reasons:

Storage – Normal to High

- High storage levels at the end of 2019 coupled with reduced demand as a result of the pandemic ensured that storage levels remain high during 2020.

Production – Low to Normal

- The pandemic impacted gas production and delayed some of the projects causing slight decline in rig count in 2020.

Demand – Low

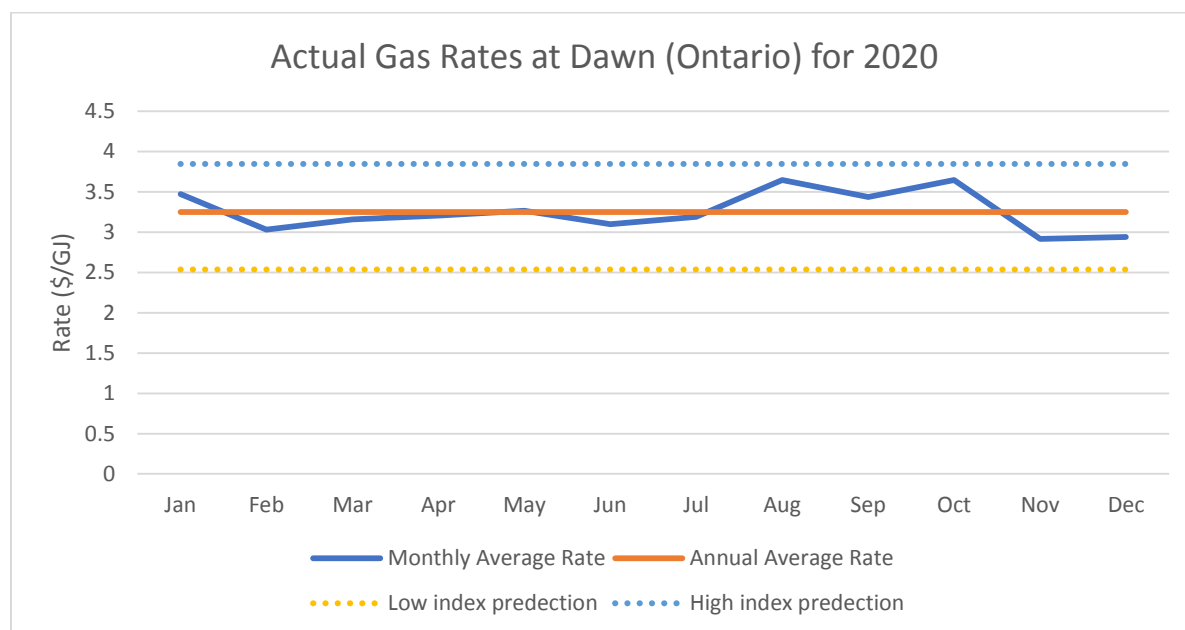
- Gas exports and non-residential domestic demand dropped significantly in 2020 as a result of the pandemic.

Weather

- Relatively mild summer and a mild beginning to the heating season helped reduce the demand for gas in 2020.

Actual Results

- The average annual rate that the City paid for gas delivered to Dawn (transportation included) was \$3.251
- The average monthly rates had very low volatility varying on average around 6% from the mean (the monthly rates ranged between \$2.92/GJ and \$3.65/GJ).
- The graph below shows that the monthly rates had low volatility and were within the prediction limits identified in 2019.



As can be seen from the above, the balanced impact of the pandemic on supply and demand factors did not cause any unusual volatility and the rates remained within predictions. The 2020 purchase strategy was successful in quantifying the risk of volatility and selecting the lowest price for the City.

2021 Strategy

For the period from November 2020 to October 2021, which covers the majority of 2021 fiscal period, no hedging was recommended due the following factors:

Storage – Normal to High

- Storage levels are projected to remain above average into 2021.

Production Levels – Low to Normal

- Production levels are projected for slow recovery during 2021 following the end of pandemic restriction measures.

Demand – Low to Normal

- Export and domestic use are projected to be below average during the pandemic with slow recovery afterwards.

Weather

- Mild beginning for the heating season is projected to reduce the demand for gas.

Given the above factors and the large premiums that are currently in effect for fixed price hedges, no feasible hedging options are recommended as the factors seem to suggest normal market rates for 2021 with normal volatility. This decision will be re-visited if the market conditions change and feasible hedging options become available.

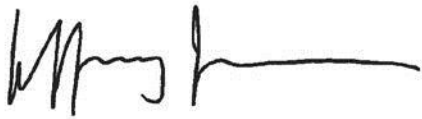
Financial Impact

In 2020, the City achieved the intended utility budget stability without the need for hedging; therefore, there is no financial impact as a result of the 2020 electricity and natural gas procurement strategies.

Conclusion

This report provides an overview of the electricity and natural gas procurement strategy used in 2020 and the results of the strategy. Additionally, it presents the approach to be followed in 2021.

The City proactively monitors electricity and natural gas markets conditions and takes appropriate procurement decisions in order to mitigate the risk of price volatility and optimize the cost of the City's utilities.



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