Clause 11 in Report No. 9 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on May 25, 2017.

11

Fuel Price Hedging Program 2016

Committee of the Whole recommends adoption of the following recommendation contained in the report dated April 26, 2017, from the commissioner of Finance:

That this report be received for information.

Report dated April 26, 2017 from the Commissioner of Finance now follows:

1. Recommendation

It is recommended that this report be received for information.

2. Purpose

This report summarizes the activities undertaken during 2016 as part of the Region's fuel price hedging program, as well as its historical performance. This report is required by regulation because there were fuel hedging agreements in place in 2016.

3. Background and Previous Council Direction

The goal of the hedging program is to achieve greater cost certainty for fuel prices

Council has adopted a *Commodity Price Hedging Policy* (the Policy) that allows for the price hedging of commodities, in particular the fuel that is used for transit and fleet vehicles. The goal of the Policy is not to speculate on the future price of the commodity, but rather to manage the Region's financial risk by locking-in the price of the commodity at a predetermined quantity.

The Policy permits the hedging of up to 80 per cent of the forecasted annual commodity volume for a term of up to thirty (30) months beyond the execution date of the contract.

Fuel hedging agreements are contracts entered into with financial institutions that set a price for fuel over a stipulated timeframe. These contracts are purely financial transactions and do not involve the physical receipt of fuel, which continues to be sourced at the pump or through bulk delivery contracts. Under a hedging agreement, the Region receives a payment when the average market price of the specified index exceeds the stated price in the contract, which is settled on a monthly basis. This payment is used to help offset the higher prices paid at the pump. Conversely, the Region is obligated to pay if and when the price falls below the contract price, but this cost is normally offset through savings at the pump.

Fuel hedging agreements are arranged through Canadian financial institutions on a competitive basis

Before entering into a fuel hedging agreement, staff obtain quotes from at least two Canadian financial institutions. The Region then enters into the agreement with the financial institution offering the lowest quote. Other than the price, the terms in the hedging agreements are subject to the International Swaps and Derivatives Association Master Agreement, which is a standardized agreement that is published by the Association.

Ultra-Low Sulfur Diesel is used for hedging both diesel and gasoline

Since May 2013, the New York Mercantile Exchange uses the Ultra-Low Sulfur Diesel futures as an index for either diesel or gasoline. Approximately 80 per cent of the Region's fuel consumption is either Ultra-Low Sulfur Diesel or biodiesel, the majority of which is acquired through bulk purchases.

4. Analysis and Implications

The Region hedged 80 per cent of its 2016 fuel requirements at a net price of $1.05 per litre

During 2014, the Region entered into three fuel hedging agreements that covered 80 per cent of its expected fuel consumption for 2016, at an equivalent price of $1.05 per litre, net of HST rebates (see Table 1).

Table 1

Fuel Price Hedging Transactions for 2016

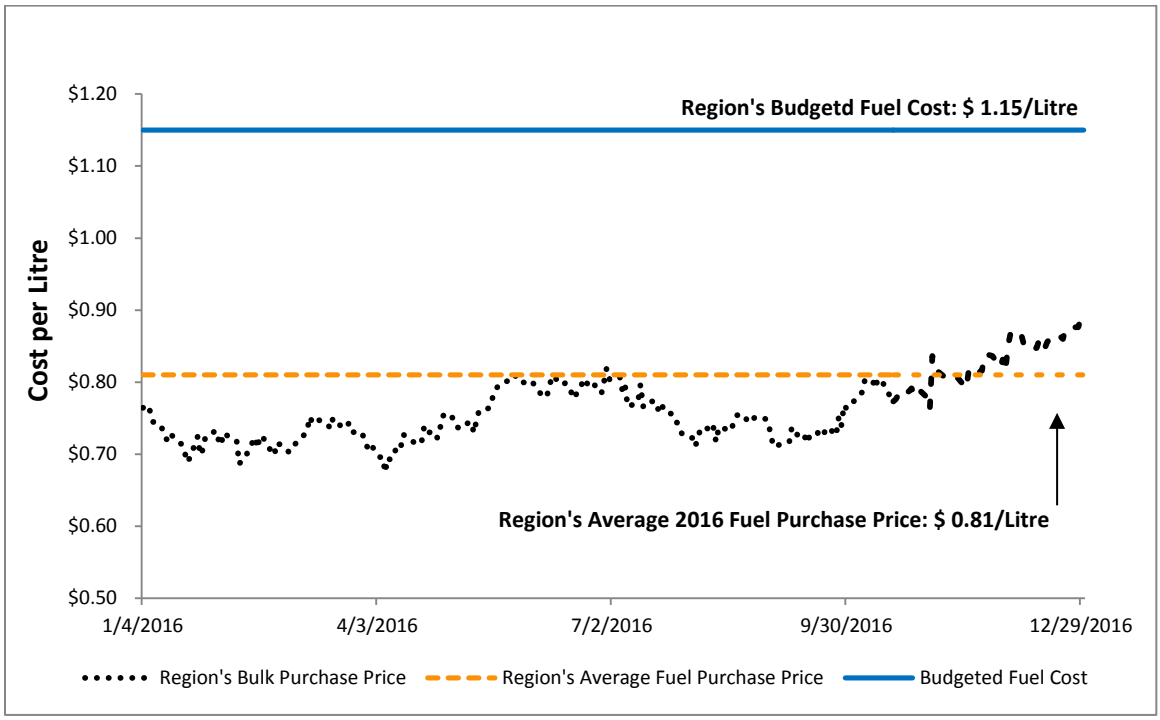
Hedging Agreement Execution Date	Counterparty	Hedging Year	Hedged Volume (litres)	Hedging Contract Price (CA$/litre)	**Region's Equivalent Diesel Price (CA$/litre) Net of Taxes**
Oct 8, 2014	CIBC	2016	9,504,000	0.7895	1.06
Oct 10, 2014	CIBC	2016	4,800,000	0.7795	1.05
Oct 15, 2014	RBC	2016	5,325,000	0.7670	1.03
Hedging Total / Average			**19,629,000**	**0.7810**	**1.05**
Forecast Annual Demand		2016	24,550,000		
Total Hedged Volume as % of Forecast Demand			**80.0%**		

During 2016, the average settlement price for Ultra-Low Sulphur Diesel was about $0.24 per litre lower than the hedged price. As a result, the Region paid a total of $6,047,981 through its hedging program, and received $8,041,345 from corporate fuel savings and the corporate contingency amount.

During 2016, the average net fuel purchase price paid by the departments was $0.81 per litre

The 2016 budget assumed a net fuel cost of $1.15 per litre (department base of $1.00 per litre plus a $0.15 per litre corporate contingency) with a forecast fuel volume of 24.6 million litres. The actual fuel consumption for 2016 was below budget, with an average price (net of HST rebates) of $0.81 per litre (see Graph 1 below). The difference between the budgeted and actual average fuel costs was contributed to the Fuel Cost Stabilization Reserve Fund.

Graph 1
Region's Fuel Purchase Price vs Budget Price in 2016



Note: The Region's average fuel purchase price of $0.81/litre included the bulk purchases and purchases at the pump for both diesel and gasoline fuel in 2016.

The Fuel Cost Stabilization Reserve Fund received approximately $8.0 million from operating departments

The purpose of the Fuel Cost Stabilization Reserve Fund is to address the differences between actual and budgeted fuel rates during the year and any costs or savings arising from the fuel hedging program. The reserve is funded from the corporate fuel contingency (currently at $0.15 per litre), contributions from operating departments, and the net receipts from the fuel hedging agreements.

During 2016, the fuel savings and the corporate contingency amount contributed $8 million to the Fuel Cost Stabilization reserve, which net against the hedging settlements of approximately $6 million. At the end of 2016, the reserve had a balance of $7.7 million which is a $2.1 million increase from the balance in the reserve a year ago (see Table 2).

Table 2
Fuel Cost Stabilization Reserve Fund Activity for 2016

Activity	$
Balance as at December 31, 2015	5,644,168
Fuel Savings and Corporate Contingency	8,041,345
Fuel hedging settlements	(6,047,981)
Interest earned on reserve balance	111,940
Balance as at December 31, 2016	**$ 7,749,472**

The effectiveness of the hedge has diminished recently as a result of price volatility

The proxy for the price of gas the Region pays is the Toronto Diesel Rack price, which has historically been highly correlated with Ultra-Low Sulfur Diesel futures contracts. Graph 2 on the following page shows the relationship between the two prices.

A price ratio is used to quantify the relationship between the Toronto Diesel Rack price and the Ultra-Low Sulfur Diesel futures price. For the fuel hedge to work well, the price ratio should be consistent over time, with minimal volatility.

Between 2012 and 2014, the price ratio was 1.06. This means the Toronto Rack Diesel price was on average 1.06 times the Ultra-Low Sulfur Diesel futures contract price.

Between 2015 and 2016, the price ratio expanded to an average of 1.20 and was more volatile over that time period.

The increase in the average price ratio could signal a structural shift in the relationship between the two prices, while the increased volatility could signal a diminishing relationship between the two prices. The metrics mentioned above are summarized in Table 3 and Graph 2 below:

Table 3
Price Ratio: Toronto Diesel Rack vs. ULSD Futures Price

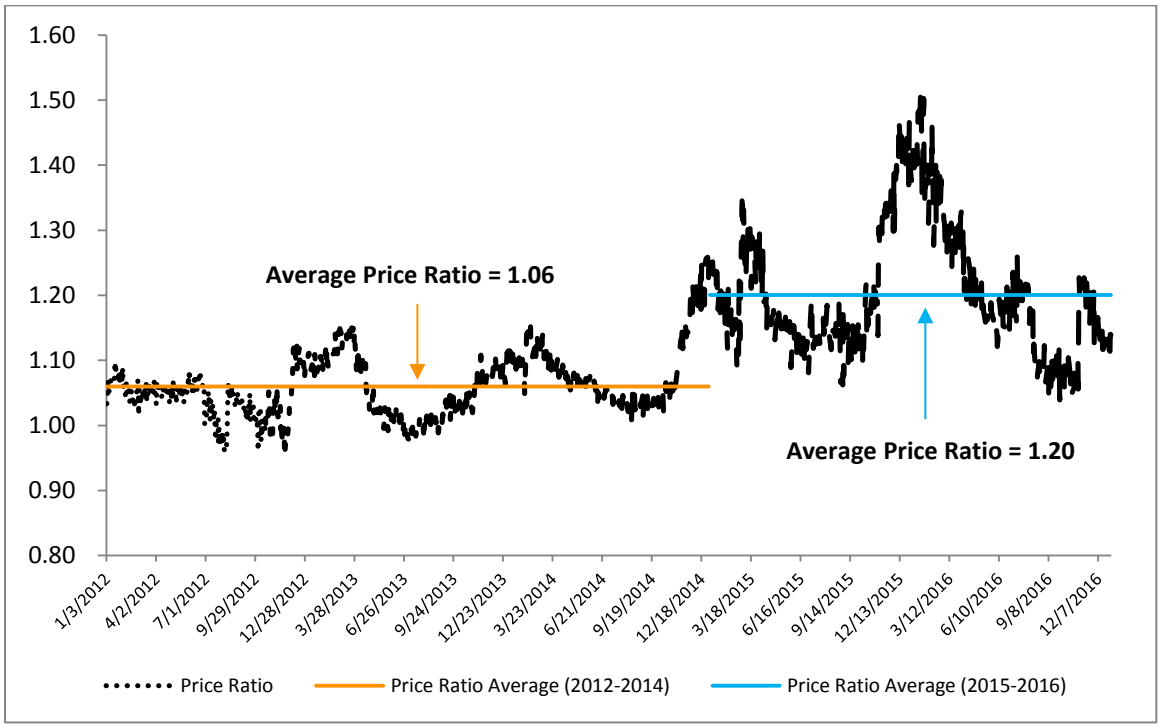
Price Ratio	2012 to 2014	2015 & 2016	Change
Average price ratio	1.06	1.20	+0.14
Price ratio – Maximum	1.26	1.53	+0.27
Price ratio – Minimum	0.95	1.03	+0.08
Range	0.31	0.50	+0.19

Graph 2

Price Ratio

Toronto Rack Diesel price vs. ULSD price

(2012-2016)



As shown, the ratio of the two prices has recently increased on average, and the relationship between the two prices has become more volatile.

There are numerous market effects that contributed to the change in the price ratio, one of which is “sticky” prices. “Sticky” prices refers to the rigidity of retail prices (price at the pump), which don’t move as quickly, or in some cases don’t respond to changes in the Ultra-Low Sulfur Diesel futures contract price. As a result, the prices paid at the pump did not fully offset the cost of the hedging program.

Although there seemed to be a sustained gap between the Toronto Rack Diesel price and the Ultra-Low Sulfur Diesel price at the beginning of 2015, the two-year correlation between the two prices is strong at 0.87. The correlation coefficient indicates the degree to which two variables move in the same direction. The range of the correlation coefficient is between -1 and 1. A value of 1 indicates a very strong relationship where two variables move in the *same* direction, and a value of -1 indicates a very strong relationship where two variables move in the *opposite* direction. Hence a 0.87 correlation represents a strong positive price relationship between the Toronto Rack Diesel price and the Ultra-Low Sulfur Diesel price. A continuing strong correlation is necessary for the Region to consider entering into future hedging contracts.

Hedging does not mitigate cap and trade effects

Hedging does not mitigate the effect of the Province's Cap and Trade program in effect as of January 1st, 2017. Cap and Trade adds approximately 4 to 5 cents per litre to the cost of fuel. However, the final cost that will flow through to the consumer is not fixed, and will ultimately be related to the additional costs carried by oil refiners and fuel distributors as a result of the program.

5. Financial Considerations

In the 2017 budget, the Region budgeted $1.00 per litre base and $0.15 per litre contingency. As a result of actual fuel cost being lower than the $1.00 per litre, the Fuel Cost Stabilization Reserve received approximately $4.3 million from the operating departments and $3.7 million from the corporate fuel contingency.

The Region hedged approximately 80 per cent of its 2016 forecast fuel volume at a net price of $1.05 per litre and paid approximately $6.0 million in hedging settlements as a result of the lower price of oil during this period.

6. Local Municipal Impact

There is no impact on local municipalities arising from the fuel price hedging program.

7. Conclusion

The fuel price hedging program was introduced to provide cost certainty for the Region's fuel consumption. Regional staff will continue to monitor the effectiveness of the program.

For more information on this report, please contact Ed Hankins, Director, Treasury Office, at extension 71644.

The Senior Management Group has reviewed this report.

April 26, 2017

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Accessible formats or communication supports are available upon request