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# **Board of Commissioners of Public Utilities**

2018 Review of the Costs of Supply and Distribution of  
Maximum Price Regulated Petroleum Products in the  
Province of Newfoundland and Labrador – Part A

August 9, 2019

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# Introduction

## Purpose and scope

In 2012 the Board of Commissioners of Public Utilities (“the Board” or “PUB”) engaged Grant Thornton LLP (the “Consultant” or “Grant Thornton”) to perform a study of the costs of supply and distribution of maximum price regulated petroleum products in the Province of Newfoundland and Labrador. The project included the collection of cost data from industry participants, preparation of a model to calculate the potential mark-up adjustment and recommendations regarding the process for future petroleum mark-up adjustments. Surveying industry participants posed significant challenges in 2012, which resulted in the final pricing adjustment calculation heavily relying on publicly available data.

To assist the Board in reviewing the current mark-up adjustments for regulated home heating fuels, we have been engaged to update the percentage cost based model presented in our “2012 Study of the Costs of Supply and Distribution of Maximum Price Regulated Petroleum Products in the Province of Newfoundland and Labrador – Part A” (“the 2012 Study”). Our review included retail sales of furnace, stove and propane (“regulated home heating fuels”) and not all regulated petroleum products.

This review included the following:

- Reviewed the 2012 report and considered potential revisions to the approach for application of current economic data;
- Reviewed Board Order - No. P. P. 20(2013);
- Researched externally available market data for cost changes in the following economic data:
  - Fuel and vehicle operating
  - Rent
  - Wages and salaries
  - Inflation
- Updated the model template to recalculate a potential mark-up allocation;
- Calculated potential mark-up adjustments for retail participants;
- Performed sensitivity analysis of the results to assist the Board with understanding the range of potential outcomes; and
- Prepared a report of our findings.

## Restrictions and limitations

This report was prepared for the Board in relation to a study of the costs of supply and distribution of maximum price regulated petroleum products in the Province of Newfoundland and Labrador. This report is not to be used for any other purpose, and we specifically disclaim any responsibility for losses or damages incurred through use of this report for a purpose other than as described in this paragraph. This report should not be reproduced in whole or in part without our express written permission, other than as required by the Board in relation to the described purpose.

Our scope of work is as set out in our engagement letter dated June 11, 2019. The procedures undertaken in the course of our study did not constitute an audit of financial information and consequently, we do not express an opinion on any of the financial information contained in this report.

We acknowledge that the Board is bound by the Freedom of Information and Protection of Privacy Act (“Act”) and agree that the Board may use its sole discretion in any determination of whether, and if so in what form, this report may be required to be released under this Act.

We reserve the right, but will be under no obligation, to review and/or revise the contents of this report in light of information which becomes known to us after the date of this report.

## Assumptions

For the purposes of this report, we have assumed the following:

- 1) While the dollar values of cost categories could have changed for the industry participants, the general allocation of cost categories determined in the 2012 report remain unchanged.
- 2) The industry supply chain information described in the 2012 study has remained unchanged and is therefore included in this report for explanatory purposes. We have not undertaken procedures to validate that this information factually represents the regulated home heating fuel operations in the Province of Newfoundland and Labrador currently.

## Summary of results

The following table provides a summary of the resulting adjustments to the mark-up rates for regulated home heating fuels. The details of our review have been outlined throughout the body of our report.

	Retail Only		
	Furnace	Stove	Propane
Mark-up Board Order No. P.P. 20(2013) (cents per liter)	16.56	18.38	35.20
Increase for period (2012 -2018)	1.71	1.90	3.49
Percent increase	10.35%	10.35%	9.92%
<b>Proposed mark-up (cents per liter)</b>	<b>18.27</b>	<b>20.28</b>	<b>38.69</b>

# Industry overview

## Base zone

Our 2012 survey process was conducted on the base zones established by the Board for regulated home heating fuels. For furnace oil and stove oil, the base zone is Avalon North East (“Zone 1ANE”). For propane, the established base zone is Burin Peninsula/Bonavista Peninsula (“Zone 2”). However based on an understanding of truck based operations, obtained from previous supply chain studies, propane costs were understood to be incurred equivalently across all established pricing zones. Thus for purposes of updating Part A of the Study, propane data was based on Zone 1ANE.

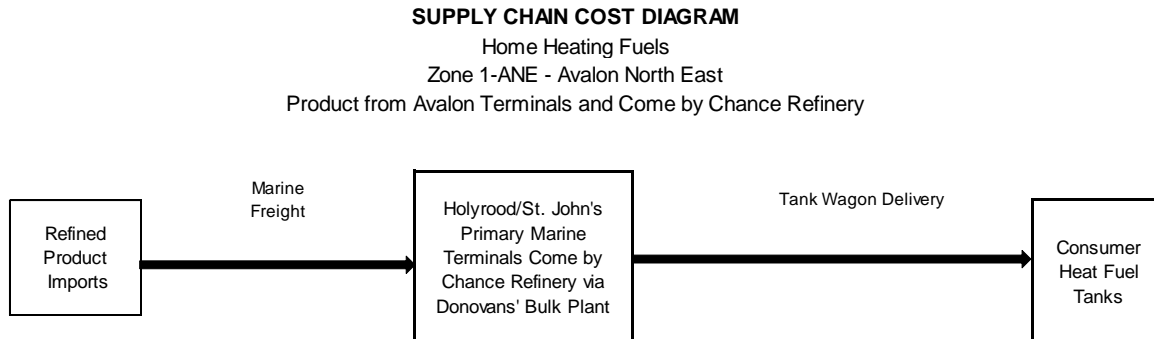
## Types of businesses

Consistent with the 2012 report, we have noted that there are three main types of businesses that operate in the supply and distribution of regulated heating fuels as follows:

1. **Large diversified petroleum companies:** In addition to supplying and distributing regulated heating fuels, these companies provide several other regulated and non-regulated petroleum, energy and other business products and services. Examples of these companies include, Irving, Ultramar and North Atlantic.
2. **Medium to large pure play companies:** These companies have medium to large scale supply and distribution operations and focus a large portion of their operations on the delivery of regulated and non-regulated heating fuels to consumers. An example of such a company is Harvey’s Oil Limited.
3. **Small pure play business operators:** These include small business operators owning single or few assets used in the supply and distribution of regulated heating fuels. These businesses may be incorporated or sole proprietors and can have formal business premises as well as operate administration of the business from a home. An example of such a company is Skinners Oil.

## Understanding the supply chain

The following reflects our understanding of the supply chain for regulated home heating fuels in the base zone based on the 2012 study.

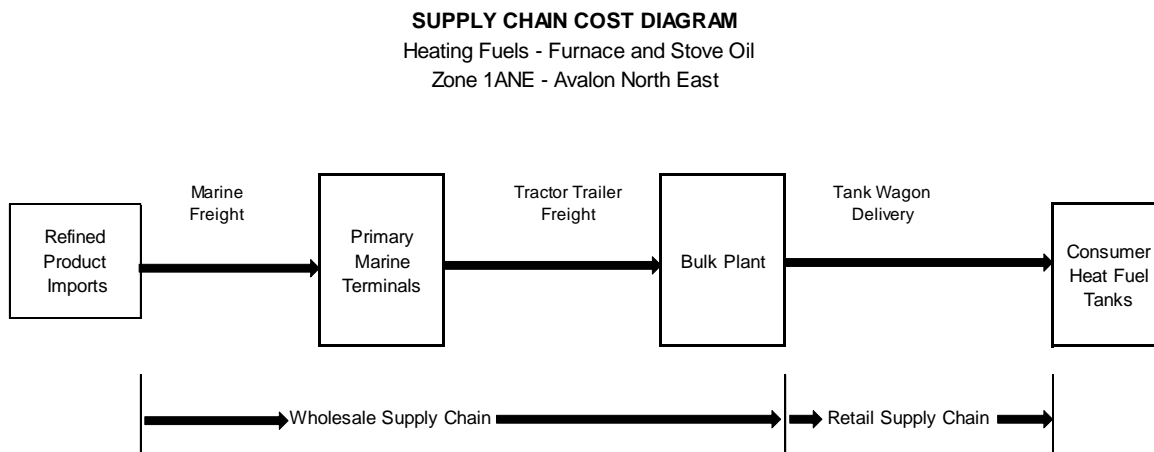


*Note - Obtained from A Study of Storage and Distribution Costs for Petroleum Products throughout Newfoundland and Labrador (David M. French and Associates Inc., May 2005)*

The supply chain consists of two categories: 1) the wholesale supply chain and 2) the retail supply chain.

- 1) **Wholesale Supply Chain:** The wholesale supply chain commences with refined regulated heating fuel transported via marine and tractor trailer freight to marine storage terminals and related bulk plants. These storage facilities mark the end of the wholesale supply chain.
- 2) **Retail Supply Chain:** The retail supply chain commences with regulated heating fuel picked up at primary marine terminals and related bulk plants. This fuel is then distributed by trucks, also known as tank wagons, to consumer heating fuel tanks. This point of delivery marks the end of the retail supply chain.

The following diagram reflects our understanding of the wholesale and retail supply points assigned in the supply chain for the base zone based on the 2012 study.



*A Study of Storage and Distribution Costs for Petroleum Products throughout Newfoundland and Labrador (David M. French and Associates Inc., May 2005)*

# Model update

## Rationale for using a percentage cost based model

The following table summarizes the fundamental concepts of the percentage cost based model and the rationale of these concepts, consistent with the 2012 study.

Concept	Rationale/Benefit
Costs summarized as a percentage of total costs	Removes the issue of choosing absolute value cents per litre (“CPL”) data among contributors with highly varied CPL costs of storage and delivery of regulated heating fuels.
Costs summarized in total, removing the direct operating cost and office support and other distinctions	Eliminates determining or suggesting a correct way of doing business amongst contributors with varied business models. Those businesses that are heavier or lighter in costs in any area (i.e. direct operating costs or office support costs) incur cost efforts more consistently when expressed in total cost percentage terms.
Pre-existing mark-ups are effectively rebalanced and reattributed to current costs of delivering regulated heating fuels	Previous studies determined mark-ups that gained the acceptance and consensus support of industry stakeholders, through complex models. Using industry representative percentage cost factors of today, these mark-ups can be updated to today’s cost of delivering regulated heating fuel.

## Cost allocation categories

The allocation categories used to refresh the model were consistent with the 2012 study and included the following:

- Capital costs and depreciation
- Fuel and vehicle operating
- Insurance
- Office, administrative and other costs
- Rent
- Repairs and maintenance
- Transaction fees
- Utilities and communications
- Wages and salaries

## Price rate of change based on external market data

Based on the above noted cost allocation categories, we reviewed publically available information to measure the cost changes that industry participants were reasonably expected to have experienced from 2012 to 2018. Consistent with the 2012 study, we have identified external data sources for fuel and vehicle operating, wages and salaries, and rent. All other cost categories are assumed to have increased at inflation rates, which was determined based on externally available market data. The following commentary discusses the results of the price rate of change investigations in more detail:

### 1) Fuel and Vehicle Operating

Since tank wagons are diesel operated vehicles, we reviewed the Board of Commissioners of Public Utilities weekly maximum regulated pricing for motor fuels to determine the change in diesel fuel prices since 2012.

	December 2012 (cents per liter)	December 2018 (cents per liter)	Rate of Change 2012 - 2018
Diesel	139.8 <sup>1</sup>	130.3 <sup>2</sup>	-6.80%

Our calculation applied the decrease of diesel fuel prices of 6.80% to the fuel and vehicle operating cost allocation category. We recognize that vehicle operating costs include costs other than fuel. However, given that the total vehicle operating costs category was not broken down into fuel and other we were unable to distinguish between the two types of expenses. However, we have assumed that vehicle operating costs associated with the delivery of regulated home heating fuels would largely be driven by fuel for the delivery trucks. This is consistent with the approach that was adopted in the 2012 study.

<sup>1</sup> Board of Commissioners of Public Utilities - Maximum Retail Motor Fuel Prices – December 28, 2012 - [http://www.pub.nf.ca/orders/ppo/fuel/Fuel\\_121228.pdf](http://www.pub.nf.ca/orders/ppo/fuel/Fuel_121228.pdf)

<sup>2</sup> Board of Commissioners of Public Utilities - Maximum Retail Motor Fuel Prices – December 28, 2018 - [http://www.pub.nf.ca/orders/ppo/fuel/Fuel\\_181228.pdf](http://www.pub.nf.ca/orders/ppo/fuel/Fuel_181228.pdf)



## 2) Wages and Salaries

To consider the potential change in wages and salaries we have reviewed the employee wages by occupation<sup>3</sup> Table: 14-10-0307-01 (formerly CANSIM 282-0152), from Statistics Canada’s Canadian socioeconomic database for the following occupation categories; 1) office support occupations, and 2) trades, transport and equipment operators and related occupations. The following table presents the increases in wages and salaries obtained from Statistics Canada.

Wage Category	December 2012 (\$ wages / hr)	December 2018 (\$ wages / hr)	Rate of Change 2012 - 2018
Office support occupations	19.36 <sup>4</sup>	21.63 <sup>5</sup>	12%
Trades, transport and equipment operators and related occupations	23.38 <sup>6</sup>	26.53 <sup>7</sup>	13%
Average	21.37	24.08	13%

Our calculation applied the average percent increase of 13% to the wages cost allocation category.

## 3) Rent

Using publically available research reports from Cushman & Wakefield, a global commercial real estate services firm, St. John’s has shown the following rental rates per square foot change from 2012 to 2018.

	December 2012 (\$ price per sq ft)	December 2018 (\$ price per sq ft)	Rate of Change 2012 - 2018
Industrial space	11.75 <sup>8</sup>	11.33 <sup>9</sup>	-3.57%
Office space	30.21 <sup>10</sup>	34.77 <sup>11</sup>	15.09%
Average	20.98	23.05	9.87%

Our calculation applied the average percent increase of 9.87% to the rent cost allocation category.

## 4) Remaining Cost Allocation Categories

Consistent with the 2012 study, we have assumed that all remaining cost categories have changed based on inflation. Therefore, we have relied on The Bank of Canada (“BOC”) inflation calculator to determine inflationary increases for the period of 2012 to 2018. The inflation calculator uses monthly consumer price index (“CPI”) data to show changes in the cost of a fixed “basket” of consumer purchases. These include food, shelter, furniture, clothing, transportation and recreation. An increase in this cost over time is called inflation.

<sup>3</sup> Statistics Canada - Table 14-10-0307-01 (formerly CANSIM 282-0152)

<sup>4</sup> Statistics Canada - Table: 14-10-0307-01 (formerly CANSIM 282-0152)

<sup>5</sup> Statistics Canada - Table: 14-10-0307-01 (formerly CANSIM 282-0152)

<sup>6</sup> Statistics Canada - Table: 14-10-0307-01 (formerly CANSIM 282-0152)

<sup>7</sup> Statistics Canada - Table: 14-10-0307-01 (formerly CANSIM 282-0152)

<sup>8</sup> Cushman & Wakefield – Marketbeat Industrial Snapshot – Q4 2013

<sup>9</sup> Cushman & Wakefield – Marketbeat Office Snapshot – Q4 2013

<sup>10</sup> Cushman & Wakefield – Marketbeat Industrial Snapshot – Q4 2018

<sup>11</sup> Cushman & Wakefield – Marketbeat Office Snapshot – Q4 2018

	June 2012 (\$)	June 2018 (\$)	Rate of Change 2012 - 2018
Price per basket of goods	100.00 <sup>12</sup>	109.87 <sup>13</sup>	9.87% <sup>14</sup>

Our calculation applied the 9.87% rate of change for inflation from 2012 to 2018

The percent of total cost allocation is assumed consistent with the “2012 Study of the Costs of Supply and Distribution of Maximum Price Regulated Petroleum Products in the Province of Newfoundland and Labrador (Summary Report) – Part A”. The following table summarizes the cost categories by fuel type and the price rate of change applied.

Cost Category	% of Total Cost (Furnace and Stove)	% of Total Cost (Propane)	% Price Rate Change
Capital Costs and Depreciation	11.98%	7.70%	9.87%
Fuel and Vehicle Operating	5.60%	9.34%	-6.80%
Insurance	2.32%	1.32%	9.87%
Office, Administrative and Other Costs	8.92%	8.06%	9.87%
Rent	5.26%	3.76%	9.87%
Repairs and Maintenance	7.48%	6.33%	9.87%
Transaction Fees	4.44%	4.50%	9.87%
Utilities and Communications	3.88%	3.51%	9.87%
Wages and Salaries	50.12%	55.48%	12.68%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	

<sup>12</sup> Bank of Canada – Inflation Calculator - <https://www.bankofcanada.ca/rates/related/inflation-calculator/>

<sup>13</sup> Bank of Canada – Inflation Calculator - <https://www.bankofcanada.ca/rates/related/inflation-calculator/>

<sup>14</sup> Bank of Canada – Inflation Calculator - <https://www.bankofcanada.ca/rates/related/inflation-calculator/>

## Summary of results – furnace

The following table summarizes the results of our calculated 2018 mark-up adjustment:

Cost Category	% of Total Cost	2012	Board Order P.P. 20 (2013)	% Price Rate Change	Calculated 2018
Capital Costs and Depreciation	11.98%	1.63	1.98	9.87%	2.18
Fuel and Vehicle Operating	5.60%	0.76	0.93	-6.80%	0.86
Insurance	2.32%	0.32	0.38	9.87%	0.42
Office, Administrative and Other Costs	8.92%	1.21	1.48	9.87%	1.62
Rent	5.26%	0.71	0.87	9.87%	0.96
Repairs and Maintenance	7.48%	1.02	1.24	9.87%	1.36
Transaction Fees	4.44%	0.60	0.73	9.87%	0.81
Utilities and Communications	3.88%	0.53	0.64	9.87%	0.71
Wages and Salaries	50.12%	6.82	8.30	12.68%	9.35
<b>Total mark-up</b>	<b>100.00%</b>	<b>13.60</b>	<b>16.56</b>		<b>18.27</b>
<b>Mark-up adjustment (cents per liter)</b>			<b>2.96</b>		<b>1.71</b>
<b>Mark-up adjustment (%)</b>			<b>21.76%</b>		<b>10.35%</b>

## Summary of results – stove

The following table summarizes the results of our calculated 2018 mark-up adjustment:

Cost Category	% of Total Cost	2012	Board Order P.P. 20 (2013)	% Price Rate Change	Calculated 2018
Capital Costs and Depreciation	11.98%	1.81	2.20	9.87%	2.42
Fuel and Vehicle Operating	5.60%	0.85	1.03	-6.80%	0.96
Insurance	2.32%	0.35	0.43	9.87%	0.47
Office, Administrative and Other Costs	8.92%	1.35	1.64	9.87%	1.80
Rent	5.26%	0.79	0.97	9.87%	1.06
Repairs and Maintenance	7.48%	1.13	1.38	9.87%	1.51
Transaction Fees	4.44%	0.67	0.82	9.87%	0.90
Utilities and Communications	3.88%	0.59	0.71	9.87%	0.78
Wages and Salaries	50.12%	7.57	9.21	12.68%	10.38
<b>Total mark-up</b>	<b>100.00%</b>	<b>15.10</b>	<b>18.38</b>		<b>20.28</b>
<b>Mark-up adjustment (cents per liter)</b>			<b>3.28</b>		<b>1.90</b>
<b>Mark-up adjustment (%)</b>			<b>21.72%</b>		<b>10.35%</b>

## Summary of results – propane

The following table summarizes the results of our calculated 2018 mark-up adjustment:

Cost Category	% of Total Cost	Pre-2013	Board Order P.P. 20 (2013)	% Price Rate Change	Calculated 2018
Capital Costs and Depreciation	7.70%	2.42	2.82	9.87%	3.09
Fuel and Vehicle Operating	9.34%	2.73	3.17	-6.80%	2.95
Insurance	1.32%	0.30	0.35	9.87%	0.39
Office, Administrative and Other Costs	8.06%	2.42	2.82	9.87%	3.09
Rent	3.76%	1.21	1.41	9.87%	1.55
Repairs and Maintenance	6.33%	1.82	2.11	9.87%	2.32
Transaction Fees	4.50%	1.52	1.76	9.87%	1.93
Utilities and Communications	3.51%	1.21	1.41	9.87%	1.55
Wages and Salaries	55.48%	16.67	19.36	12.68%	21.82
<b>Total mark-up</b>	<b>100.00%</b>	<b>30.30</b>	<b>35.20</b>		<b>38.69</b>
<b>Mark-up adjustment (cents per liter)</b>			<b>4.90</b>		<b>3.49</b>
<b>Mark-up adjustment (%)</b>			<b>16.17%</b>		<b>9.92%</b>

# Sensitivities

## Range of potential mark-up adjustments

To provide the Board with some context of the impact of changes to the external market data regarding price changes we have performed some sensitivity calculations. For these calculations, we adjusted the price change assumptions +/- 10% from the price rate change that was calculated based upon the externally available market data. The results of this analysis is summarized in the table below.

Sensitivities	-10%	Calculated	+10%
Furnace	1.54	1.71	1.88
Stove	1.71	1.90	2.09
Propane	3.14	3.49	3.84

# Conclusions and recommendations

Our review and update of Part A of the 2012 Study has resulted in the following conclusions and recommendations:

- ✚ The potential mark-up adjustments which are supportable by external market data are as follows:

	Retail Only		
	Furnace	Stove	Propane
Mark-up Board Order No. P.P. 20(2013) (cents per liter)	16.56	18.38	35.20
Increase for period 2012 -2018 (cents per liter)	1.71	1.90	3.49
Percent increase	10.35%	10.35%	9.92%
<b>Proposed retail mark-up (cents per liter)</b>	<b>18.27</b>	<b>20.28</b>	<b>38.69</b>



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