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British Columbia Utilities Commission

Inquiry into Gasoline and Diesel Prices in British Columbia

Supplementary Report

November 12, 2019

Before:

D. M. Morton, Panel Chair
D. A. Cote, Commissioner
M. E. Doehler, Commissioner

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1.0 Overview

On May 21, 2019, the British Columbia Utilities Commission (BCUC) was requested by the Lieutenant Governor in Council (LGIC), under section 5(1) of the *Utilities Commission Act* (UCA), to conduct an inquiry respecting gasoline and diesel prices in British Columbia (Inquiry) in accordance with the terms of reference set out in section 3 of Order in Council (OIC) No. 254. On August 30, 2019, in accordance with the OIC, the BCUC issued its Inquiry into Gasoline and Diesel Prices Final Report (Report) to the Minister of Jobs, Trade and Technology.

On September 6, 2019, by OIC No. 470/2019, the LGIC amended the OIC to provide an opportunity for the public to comment on the Report. This Supplementary Report has been prepared to address the key issues raised over the 30-day comment period and should be read in conjunction with the August 30, 2019 Report¹.

We thank the interveners for their participation in the comment process. We received a number of thoughtful submissions that provided the Panel with further insight into the matters considered in the Report. This has led to us further refining some of our conclusions. However, we are not persuaded that material changes are required to be made to the Report's findings.

In accordance with OIC No. 470/2019, the Panel is providing this Supplementary Report to summarize the comments received from the public and our responses and advice to those comments. The Supplementary Report is organized as follows:

- Section 2.0 provides an overview of the comments process and a summary of the public letters of comment;
- Section 3.0 discusses the issues raised by the interveners in the additional round and the Panel's response.

Prior to dealing individually with each of the key issues raised over the 30-day comment period, the Panel considers it helpful to provide an overview of our collective thinking as to the issues at play and our findings in the Inquiry. Specifically, we wish to address the three primary areas where we drew our conclusions in the Report; Wholesale Market Pricing, Wholesale Market Concentration and Retail Market.

1.1 Wholesale Market Pricing

The Report made a number of observations and findings regarding wholesale gasoline prices. Primary among these are the following:

- The wholesale price differential between Vancouver and Western Canada rose to about 20 cents per litre (cpl) in early 2019.²
- The primary determinant of Vancouver wholesale prices is the Pacific Northwest (PNW) spot price while at most 5% of the gasoline sold in BC is imported from that area.
- There is a high correlation between the PNW spot price and Vancouver wholesale prices. They tend to move up and down together, at the same time. This supports the evidence we received that Vancouver wholesale prices are set based on the PNW spot price.

¹ BCUC Inquiry into Gasoline and Diesel Prices in British Columbia Final Report (Report):

https://www.bcuc.com/Documents/Proceedings/2019/DOC_55251_BCUC-Inquiry-Gasoline-Diesel-Report-FINAL-web.pdf

Executive Summary: https://www.bcuc.com/Documents/Proceedings/2019/DOC_55253_2019-08-30-BCUC-Gas-Diesel-Inquiry-Executive-Summary.pdf

² Report, p. 4.

- Economic theory as presented by Parkland’s expert, Dr. Kahwaty, suggests that the market price is based on the most expensive barrel of gasoline that is supplying the market.

There are two conclusions that can be drawn from these observations and findings. First, the cost of the most expensive 5% of the supply is driving the price of all of the gasoline sold. This reliance on the PNW spot price as a proxy for the marginal unit supplier has been stated by the Panel as the “tail wagging the dog”.³ Second, even though there is a reliance on the PNW spot price or marginal unit supplier as a major determinant of wholesale prices, there is an additional 13 cpl that cannot be explained or justified by the cost required to transport and prepare refined product for sale in BC.

Tail Wagging the Dog

Our Report went into some detail to describe the economic theory concerning the reliance on the marginal cost in determining pricing. As noted in Section 3.8 of this Supplementary Report, the potential to create arbitrage opportunities is a major deterrent to allowing prices to increase beyond the marginal unit cost plus transportation. Thus, where there is a competitive functioning market charging below the marginal rate it will present export arbitrage opportunities and charging above it will result in import arbitrage opportunities.

The evidence in this proceeding is that the proxy best representing the marginal unit cost or highest supply cost is the PNW spot price. All other sources of supply are theoretically at a cost which is lower than this. In practice the Panel observes there is no evidence giving credence to there being an alternate marginal cost unit which is, over the long term, higher than the PNW spot price. On the contrary it would appear that the PNW spot price is heavily relied upon because, except in unique circumstances, supply is readily available and in close proximity. This would indicate that although supply is secured from other US locations, it is at a price lower than that of the PNW except in those circumstances where there were temporary supply issues.

Given this reliance on the PNW spot price, the result is that 5% of the gasoline supply is the primary driver of the wholesale prices in the Vancouver market. The implication of this is in those instances where the price of Alberta crude is low, it has limited or no effect on the Vancouver wholesale price. Put more simply, economic theory suggests that regardless of the cost impacts on other sources of supply the primary dictator or determinant of wholesale pricing will remain the PNW spot price.

In Section 3.8 the Panel acknowledges the refiner-marketer cost impacts resulting from the lack of Trans Mountain Pipeline (TMPL) capacity. However, we point out that this does not justify increasing the wholesale price beyond PNW spot price as it would create arbitrage opportunities and potentially destabilize supply.

The Unexplained 13 Cents Per Litre

Our Report looked more closely at the difference between the Vancouver wholesale price and the PNW spot price and found the following:

- Up to early 2015, there was a difference of approximately 5 cpl in the two prices. By 2019, the gap had widened to approximately 20 cpl.
- An analysis of the price differentials in 2019 was unable to account for up to 13 cpl of that difference.⁴
- Although supply from the PNW constitutes at most 5 percent of BC’s total imports, the unexplained differential of approximately 13 cpl applies to all wholesale gasoline sold in southern BC. Given the differential of 13 cpl in southern BC and 6 cpl in northern BC we estimate that applying an average 10 cpl differential to all gasoline sold in BC, consumers paid approximately \$490 million per year more than they otherwise would have paid.

³ <https://vancouver.sun.com/opinion/columnists/vaughn-palmer-inquiry-confirms-b-c-motorists-getting-hosed-at-pumps-via-big-markups>

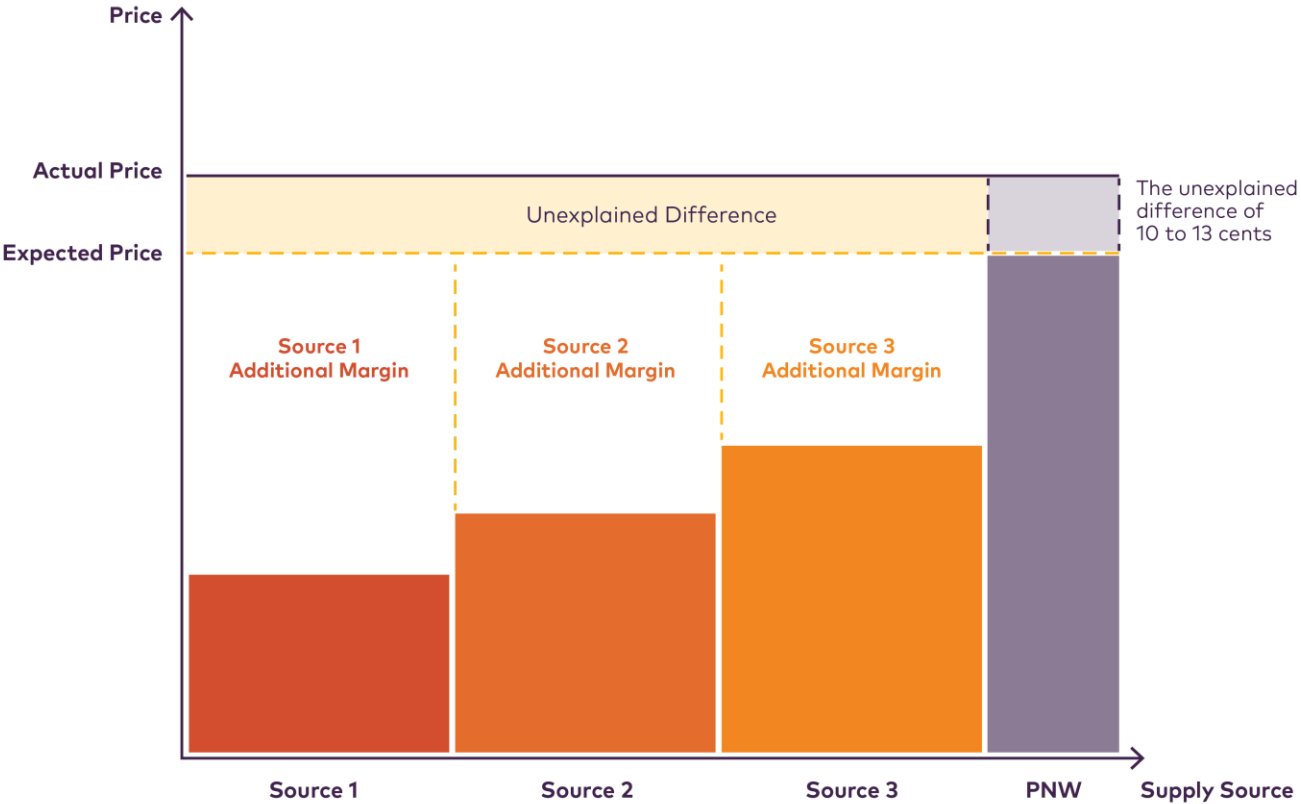
⁴ Report, p. 78.

In the comment period some interveners argue that 13 cpl difference stated in the Report is too high and that it should be reduced by as much as 7.7 cpl. The Panel finds that there’s no concrete evidence, in this proceeding, to make a definitive adjustment. The Panel acknowledges there is validity to considering some of the factors brought forward by the interveners. However, the evidence is either inconclusive or conflicting, making it impossible to determine an appropriate quantum for an adjustment, if any. As such, the Panel’s best estimate is that the unexplained difference could potentially range from 10 cpl to the originally reported 13 cpl, as explained further in section 3.0 of this Supplementary Report.

The fact that 10 to 13 cpl of the wholesale cost remains unexplained raises the question as to whether there is a well functioning competitive market within BC and why the apparent arbitrage opportunities do not appear to have been exploited. The differential and the market issues are explored further in Sections 3.3 and 1.2 of this Supplementary Report.

This unexplained difference applies to every litre of gasoline sold in the province, including the 95% or more of gasoline that is sourced at a price lower than that paid for gasoline acquired from the PNW. The Panel provides the following figure. Although the figure illustrates the expected price⁵ under a perfectly competitive market, in the Report we found that the market is not perfectly competitive for various reasons, such as barriers to entry. The shaded area attempts to show the effect of the unexplained difference of 10 to 13 cpl is added on all the gasoline consumed in BC, even though not all is sourced from the PNW.

Figure 1: The Unexplained Difference & Additional Margin



⁵ Expected price = pre-2015 price adjusted for 2019.

Even if there were no unexplained difference on the gasoline imported from the PNW, there would still be an additional margin on all gasoline sold in the province from Sources 1, 2 and 3 as shown in the chart above. These sources represent products imported from Alberta and other jurisdictions or refined in BC.

Many parties justify this on the basis of the theory of the “marginal barrel” - that the price should be set based on the most expensive unit entering the province that is needed to satisfy BC’s demand for the product (see Report, Section 6.2, p. 51). They have also pointed out that opportunity costs for the last unit are important to consider because market participants could sell their product at that higher price to buyers at the location the marginal barrel originates (see Report, Section 6.4, p. 62). However, those same parties also argue that they have long term contracts in BC and a commitment to their BC customers and it is unlikely that they would sell their gasoline elsewhere if it meant depriving their BC customers. We discussed this at some length in the Report.

Thus, the market price for gasoline is being set by the cost (plus an additional unexplained difference of 10 to 13 cpl) to acquire approximately 3-5 percent of the total gasoline required in BC. At the actual market price, Oil Companies are enjoying this additional margin on gasoline from all sources, which is represented by the shaded area in the graph above.

There has not been sufficient time to investigate and analyze the cost of gasoline from the infra-marginal sources (Sources 1, 2 and 3) so we are unable to estimate the amount of additional margin paid by BC motorists on this approximately 95 percent of gasoline purchased – the tail wagging the dog. Regardless, it is in addition to the \$490 million annually that we estimated for the 13 cpl unexplained difference. Every 1 cent additional margin represents \$37 million more dollars paid annually by BC motorists. This is in addition to any “unexplained difference” in the retail margin.

1.2 Wholesale Market Concentration

The Report also made a number of observations and findings about wholesale market concentration and market power. Included among these are the following:

- Based on the four firms concentration test the wholesale market is considered an oligopoly, although a highly concentrated market does not, in itself, imply that any one company, or combination of companies, control the market.
- However, combined with the results of the market concentration test, the control of the distribution infrastructure gives the wholesale gasoline market characteristics of a natural monopoly
- Significant barriers to entry would confront any new potential entrant into the wholesale and diesel market in BC.
- That there is a low likelihood of new entrants supplying the market in response to elevated prices lends credence to the view that the incumbent suppliers of wholesale gasoline and diesel in BC have market power.

In the comment period, some of the parties argued that the Vancouver Wharves facility for exporting diesel, the Ashcroft Bulk Terminal and the YVR jet-fuel terminal are examples of facilities that speak to the feasibility of developing substantial petroleum product distribution infrastructure within BC. These parties argue that their existence demonstrates that the four firms do not have market power and barriers to entry in the wholesale market can be readily overcome.

In Section 3.4 of this Supplementary Report the Panel examines each of these. We point out that the Vancouver Wharves is a diesel export facility which cannot handle gasoline; the YVR facility is a purpose-built facility for a single customer that doesn’t handle gasoline and took 16 years to complete. The Panel concludes that contrary

to the arguments made, there is no facility currently in place that could handle refined gasoline and given the time to complete the YVR facility, time alone is a barrier to entry.

With respect to a transloading facility, the Panel questions that even if a suitable location for such a facility could be found, there are transportation cost considerations over the long term which would result in considerable risk to a prospective developer. Further, there is no evidence that such a transloading facility would provide the requisite capability to blend the gasoline.

The Panel remains persuaded that the market concentration and the potential to exercise market power exists. Perhaps the strongest indication that it not only exists, but is being exercised, lies in the fact that there remains a 10 to 13 cpl unexplained differential. Given this differential it is difficult to explain why large-scale arbitrage is not being undertaken. If the market was fully competitive and there were alternatives with low barriers to entry as claimed by many of the interveners, it would follow that new competition would enter the market.

1.3 Retail Market

The Report made the following observations and findings concerning the retail market:

- There is no evidence that market control is being exercised at the retail level.
- Retail margins (as reported) in BC are higher than in the rest of Canada. However, issues related to calculation of the retail margin result in it not being possible to accurately quantify the gap.
- Higher market volatility can be an indicator of a functioning competitive market. However, it can also be a major irritant to consumers, engendering feelings of frustration and unfairness if they feel powerless to control when and where they purchase.
- The evidence based on letters of comment from consumers indicates that there is dissatisfaction and frustration caused by the retail price volatility in BC.
- A more fulsome understanding of customer concerns is required to better understand whether some type of regulatory model is appropriate or whether price volatility is best endured as a consequence of a competitive market.
- The value of land is not a direct driver of gasoline prices but in certain markets can be used to justify a higher retail margin.

In the comment period, interveners raised the issue of high land values influencing gasoline prices. This issue was fully canvassed in the Inquiry and the Report reflected what the Panel heard – that gasoline prices are not based on costs, including land costs. As outlined in Section 3.5 of this Supplementary Report, the Panel remains persuaded that while the value of land is not a direct driver of retail prices or margin, the opportunity cost related to it might, in certain markets, be used to justify a higher retail margin than in other regions with lower land values.

Ironically, the Panel observes that there has been a great number of letters of comment with respect to the high price of gasoline in Powell River relative to the Metro Vancouver. Given the difference in land values between these two areas it might be expected this would be reflected in a lower gasoline price.

Dr. Kahwaty's analysis of price cycling has relied heavily on some of the economic research that has been conducted. He has provided no evidence to demonstrate that he has considered customer comments. The Panel's position is that the academic work done in this area cannot be ignored but neither can the consumer. As outlined in Section 3.7 of this Supplementary Report, our view is that each of these must be balanced in determining an appropriate approach to deal with this issue. In the Report, the Panel found that a potential option would be to consider some form of retail regulatory model. However, before deciding whether to embark on such an undertaking, the Panel acknowledged there was a need for a more fulsome understanding of

customer concerns. We believe that this remains the most appropriate approach to determining a better understanding of the problem and developing a balanced solution.

2.0 Public Comments on the Report

On September 10, 2019, by Order G-216-19, a regulatory timetable was established to receive comments from the public on the Report, which included additional intervenor evidence, one round of Panel questions on the additional evidence, final and reply submissions, as well as letters of comment from the public. This comment period concluded on October 10, 2019.

The following interveners participated in this phase of the Inquiry:

- Parkland Fuel Corporation (Parkland)
- Imperial Oil Limited (Imperial Oil)
- Suncor Energy (Suncor)
- Advanced Biofuels Canada (Advanced Biofuels)
- 7-Eleven Canada, Inc. (7-Eleven)

Of the five interveners that participated in this phase of the Inquiry, Parkland, Imperial Oil, Suncor and Advanced Biofuels filed additional intervenor evidence. On October 1, 2019, the Panel held an in-camera teleconference meeting with Imperial at their request. All five interveners filed final submissions.

The BCUC received 41 letters of comment from the public since the Report. Additional letters received after the October 10, 2019 deadline were not considered and were not posted on the proceeding webpage.

In the Report, the Panel provided a brief summary of the 73 letters of comment that were received with respect to the Inquiry. The Panel observed there were five general themes emerging from these letters:

- Concerns about price gouging;
- Price Fluctuations and volatility;
- Collusion and price fixing;
- Price variability within a region or in areas adjacent to Metro Vancouver; and
- The need for regulation.

Within our summary in the Report, we provided examples of comments made with respect to each of these and noted that while issue may be taken with the facts presented and how they should be interpreted, they do point to a growing frustration among BC consumers with what they see at their local service stations.⁶

None of the interveners addressed these comments in evidence or argument during the comment period of this Inquiry.

Not surprisingly, most of the additional letters fit under one of the general themes identified above. However, of interest to the Panel is that of the 41 letters received, 29 of these were from Powell River. Many expressed what Powell River residents considered to be the unique circumstances related to the pricing of gas within their community.

Based on letters received from Powell River residents, it appears pricing practices in that region differ greatly from the Metro Vancouver area. As described in the Report, Metro Vancouver retail pricing is characterized by price cycling which has led to high volatility, a source of frustration to many. By contrast, residents of Powell River complain that prices have been static at or around 159.9 cpl. Their comments and concerns seem to centre

⁶ Report, pp. 17-20.

on the magnitude of price differential between Powell River and other communities with a number noting they do not pay a transit tax like Metro Vancouver residents but the amount they pay is the highest in the province. Representative of these letters is the following:

I would like to know why gas prices in Powell River BC are the highest in the whole province at 159.9/L, one of the highest in North America? 159.9L has been our gas price all summer and it has not gone down or up since the last change in the provinces gas prices many months ago. On a recent trip to Courtenay BC, gas prices was only 130L. Also, why has the Lower Mainland rose to 152.9 from 140.9 on a long weekend and they pay a .07/L transit tax. Powell River does not have a transit tax so how is this happening? Why are we being charged so much? This needs to stop!

This was subsequently added to with the following comments from the same resident:

I also want to submit I spoke to a business owner this morning who said he buys bulk fuel from a local cardlock that works out to approximately \$1.16/litre. Regardless of the reasonings for the discount, in my opinion it does not justify the .43/litre in mark up. Our gas in Powell River BC (that I could find) is the most expensive in North America.⁷

Another Powell River resident submits the following comments:

I wish to recommend the BCUC conduct a special study of the Powell River area gas market as the community regularly has higher retail gas prices than the Lower Mainland and Vancouver Island. This has been the case for many years and at this time it has been inordinately and consistently high at 159.9/l for quite some time..... A BCUC study would be more than useful not only for Powell River but for the Province as I believe it would reveal some interesting wholesale activities which could affect future decisions on regulations. My suspicion at this stage is that the oligopoly, or monopoly, has somehow forced all our local gas retailers into a situation whereby your "mystery 13 cents" is probably nearer 25 cents.⁸

Panel Response

The Panel notes that the general content of the letters of comment are similar to those received in the first phase. With reference to pricing in Powell River, the Panel has no evidence to assist in determining whether the fuel prices in this community are reasonable as compared to other regions. Therefore, we cannot comment further, other than to acknowledge that the quoted price of 159.9 cpl in that community seems high relative to other markets although we note there may be a good explanation to justify it. It is unfortunate none of the interveners chose to respond to any of these concerns raised in the letters of comment or at least acknowledge them.

The large number of letters of comment received from the Powell River area indicates that, from the residents' perspective, there is a significant pricing problem. This may be true but in addition, it points to the fact that the price cycling approach which has been described as characteristic of many areas of BC does not necessarily apply in all areas. It is clear from the letters of comment received in both phases of this Inquiry that in addition to price cycling, other approaches to pricing exist in some markets. However, with the time constraints of this Inquiry, it was not possible to conduct a more comprehensive, detailed market by market review of BC retail pricing and pricing methodologies.

As quoted above, one Powell River Resident has suggested that such a study would be useful. The Panel made the same observation in the Report and we agree. In our view, a more comprehensive study on a market by

⁷ Exhibit E-78 and E-78-1.

⁸ Exhibit E-71.

market basis would lead to an identification and better understanding of any problems that exist within communities and could be useful in helping determine future steps that may be taken to address them.

3.0 Issues Arising

3.1 Marginal Barrel Concept

In our Report, the concept of the “marginal barrel” was examined and it was noted that none of the Oil Companies argued against the reliance on it as a key determinant in the wholesale price of gasoline in BC.⁹ However, the Panel found that the analysis of the “marginal barrel” provided by Deetken and with which most participants agreed, has applicability to a perfectly competitive market but should be used with caution for the BC gasoline and diesel market.

Parkland submits that the BCUC is misinterpreting the economic concept of “marginal barrel” as a literal product unit (litre/barrel) that is capable of being identified by any market participant at any given point in time as being the most expensive unit entering the BC market, to which it can then refer when determining its rack price. This misperception is reflected in the Report’s emphasis that market participants, due to confidentiality, “hav[e] no knowledge of what that supply source is”.¹⁰

Dr. Kahwaty explains that the economic analysis of wholesale pricing based on the cost of the marginal barrel should not be viewed as a precise calculation that market participants make daily but rather as indicating the dynamics driving price in one direction or another.¹¹ Dr. Kahwaty further states that supply and demand models are highly stylized and that the marginal unit of supply is not a unit that the market participants are necessary aware of but rather a concept used by economists to understand market behavior, especially how market prices change over time.¹² To illustrate, Dr. Kahwaty provides a hypothetical example of one of many plausible scenarios of how Parkland’s wholesale prices might be set. If a supply-constrained competitor of Parkland needs to ship gasoline from the PNW and increase its rack price as a result, Parkland will factor that competitor’s price increase into its rack price, thus indirectly reflecting the price of the marginal supply even if Parkland is not itself importing product from PNW and may be unaware of the PNW spot price and/or transportation costs to BC.¹³

Thus, prices adjust by moving in the direction of what economists call “equilibrium prices”, which are set by market forces, and one such market force is the marginal supply source. Market prices move in the direction of the equilibrium price, but may not ever achieve that price because, as the adjustment process occurs, other changes in supply or demand yield a new equilibrium price, leading to further pressure for price adjustments. The marginal source of supply – and the cost of that source of supply – is one factor that impacts the equilibrium price in the market, and as the marginal source of supply changes, so too does the pricing pressure that flows from the marginal supply source.¹⁴

Dr. Kahwaty recognizes that while the evidence from refiners like Imperial Oil and Parkland is that they look to PNW pricing and use it as a starting point when making their own pricing decisions for sales in BC, it is important to distinguish the process or mechanics of setting prices by individual wholesale market competitors from the fundamental market forces that drive market prices. The evidence was not that Vancouver wholesale market suppliers price in lockstep with PNW pricing but rather that PNW pricing was the starting point for their review

⁹ Report, pp. 51-52.

¹⁰ Parkland Final Submission, p. 20.

¹¹ Exhibit C5-30, para. 37, p. 18.

¹² Exhibit C5-31, p. 14.

¹³ Exhibit C5-31, p. 16.

¹⁴ Exhibit C5-31, pp. 14-15.

and setting of prices for Vancouver, and that adjustments are made to PNW pricing so as to reflect market conditions.¹⁵

Furthermore, Dr. Kahwaty disagrees with the BCUC Report's view that barged product from the PNW is the marginal supply source. In his view, if barged product from the PNW is the "predominant" method of transportation, it is therefore not the marginal supply source and thus the BCUC's analysis of unexplained wholesale price differential is mis-specified.¹⁶ The marginal transportation method is, by definition, the *highest cost* mode of transportation. It is not the "predominant" mode of transport.¹⁷ Parkland submits that the BCUC ought to have accepted the evidence of its own expert (Deetken), and market participants like Parkland, that refined products are transported by truck from PNW to Vancouver. Trucking is a realistic transport option from Seattle. It is higher cost than barging. It should have been used as the basis for the marginal cost of transportation. Imperial's new evidence suggests that trucking costs from Seattle, combined with other reasonable cost estimates, would account for essentially all of the differential in 2018.¹⁸

According to Dr. Kahwaty, the BCUC's analysis assumed that the relevant differential was between Vancouver and PNW as the marginal (most costly) source of supply, dismissing evidence of the influence of more distant (and costly) sources of supply that would contribute to a larger Vancouver-PNW price differential. The influence of more distant markets along with the PNW spot benchmark stands to reason given that BC also gets a material amount of its products from California, the US Midwest and the Gulf Coast. The Report itself talks of the high degree of integration in the North American market.¹⁹ The BCUC assumption that market participants uses the PNW as a point of reference on a day to day basis is unsound.²⁰ Although it may not be possible to discern with precision the *extent* of the impact of more distant markets on BC wholesale prices, it is possible to conclude with certainty that a portion of the "unexplained differential" could be readily explained by competitive market dynamics predicted by economic theory.²¹

For its part, Imperial Oil believes it is reasonable to assume that PNW gasoline marine imports into Vancouver are a likely source of the marginal barrel (less reasonable to assume the same for diesel)²² but cautions against using just one number to characterize the import layer given the volatility around it, as shown in the graph on page 5 of Exhibit C8-10. This volatility explains why Imperial used ranges in its supplemental evidence.

The marginal layer²³, assumed by Imperial to be a U.S.-based import, will set the wholesale price for all competitors, including Imperial. Imperial testified that economic theory would dictate that, additional volume on the lower cost supply chain, sufficient to push out the existing marginal layer, would result in downward pressure on price.²⁴

Panel Response

We do not agree with Parkland that we are "misinterpreting the economic concept of 'marginal barrel' as a literal product unit (litre/barrel) that is capable of being identified by any market participant at any given point in time as being the most expensive unit entering the BC market. The Report clearly states, as Parkland points out, that participants have no knowledge of what that supply source is. The Panel provided an illustrative example – Widget Co – of how the "marginal barrel" theory could apply, or not apply, in a real world situation.

¹⁵ Exhibit C5-30, para. 50, p. 35.

¹⁶ C5-30, para. 51, p. 36.

¹⁷ Parkland Final Submission, p. 15.

¹⁸ *Ibid.*, p. 16.

¹⁹ *Ibid.*, pp. 5-6.

²⁰ *Ibid.*, p. 18.

²¹ *Ibid.*, p. 23.

²² Imperial Final Submission, pp. 2-3.

²³ Imperial Oil used the term "marginal layer". The Panel understands this term to be interchangeable with marginal barrel.

²⁴ Imperial Oct 1 confidential transcript, p. 44. Imperial agreed to provide this portion of its confidential transcript publicly.

Parkland and Deetken discussed the “marginal barrel” concept. However, the Panel did not use the “marginal barrel” theory in its own analysis. We were told, by Imperial and Suncor, and no parties refuted either in the proceeding or in this comment period, that Vancouver rack prices were primarily established based on the PNW spot price. A visual scan of a graph showing the movement of the two prices suggest a strong correlation²⁵ and we conducted a correlation test on the data that shows a high coefficient of correlation.²⁶ Based on the evidence presented, the Panel understands that the PNW spot price can be considered a proxy for the marginal barrel.

We agree with Dr. Kahwaty’s statement that “PNW pricing was the starting point for their review and setting of prices for Vancouver, and that adjustments are made to PNW pricing so as to reflect market conditions” and that is exactly what we did in our analysis – to explain what could account for the differential.

Dr. Kahwaty explains that “the economic analysis of wholesale pricing based on the cost of the marginal barrel should not be viewed as a precise calculation that market participants make daily but rather as indicating the dynamics driving price in one direction or another.” He then goes on to state that “if barged product from the PNW is the “predominant” method of transportation, it is therefore not the marginal supply source and thus the BCUC’s analysis of unexplained wholesale price differential is mis-specified”.

There is no evidence that there is sufficient volume of wholesale gasoline trucked in from the PNW that would justify the cost of trucking to be the marginal cost. In our view, there needs to be a substantial volume to push the marginal supply out to have an impact on prices. This is supported by Imperial’s submission that they view it is reasonable to assume that the PNW gasoline marine imports is a likely source of the marginal barrel. Although economic theory indicates that the marginal barrel is the highest cost source of supply, which would include the highest transportation costs, the Panel finds that it is not a practical approach in this market.

In our view, the primary method of transportation from the PNW is by barge and therefore we use the cost of barging in our analysis.

We place no weight on Dr. Kahwaty’s submission that in the Report we misinterpret the economic concept of “marginal barrel”.

3.2 Using the Pacific Northwest (PNW) Spot Price vs. PNW Rack Price

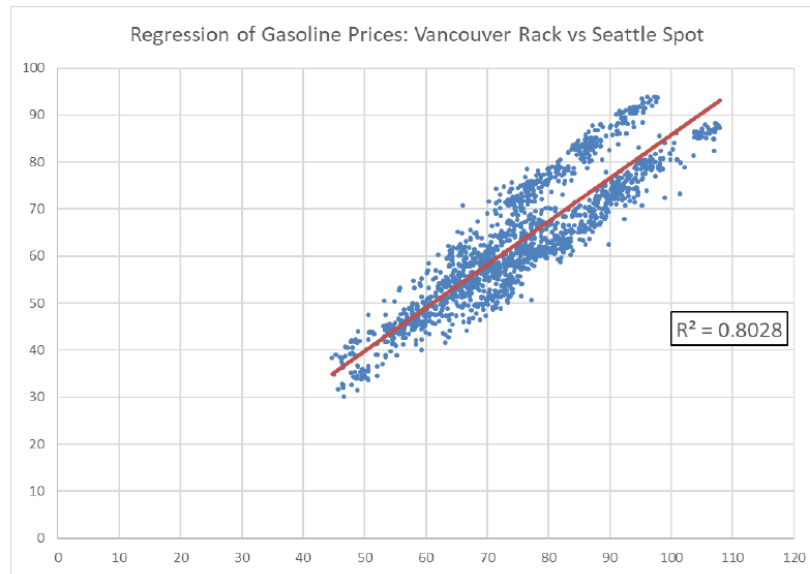
In our Report, we discussed the rack rate setting mechanism in section 6.5. We found that the refiners, rather than the “invisible hand” of the market, set the rack price. The evidence in the Inquiry has demonstrated that rack prices in BC are set by participants at least once a day as they observe a number of published prices, primarily the PNW spot prices for Southern BC. “The four companies participating in the Inquiry generally agree that the PNW spot price is the primary driver of the rack price for Vancouver and southern British Columbia. The graph below (reproduced from Figure 26 in the Report) shows that 80 percent of the variation in the Vancouver gasoline rack prices can be explained by the PNW spot prices as reported by OPIS.”²⁷

²⁵ Exhibit A2-29, on pp. 3-4.

²⁶ Report, Figure 26, p. 67.

²⁷ Report, pp. 66-67.

Figure 26: Regression of Gasoline Prices - Vancouver Rack vs Seattle Spot^{211,212, 213, 214}



Dr. Kahwaty states that the BCUC’s comparison of Vancouver rack to PNW spot is not an apples-to-apples comparison and differences in transaction scales alone may lead to a price differential. Specifically, he states that the BCUC’s analysis did not make allowance for actually distributing the fuel, *i.e.*, storing it in tanks and loading it from the tanks onto trucks for delivery to the gas station.²⁸

The BCUC Report explains the importance of primary terminal functions but no allowance for these functions is included in its price differential analysis. PNW spot price volumes transported into BC are not ready for distribution. In particular, no allowance is made in the Commission’s analysis for primary terminal storage and processing. Bulk volumes stored on a barge are not ready for loading onto individual trucks for distribution to gas stations. Primary terminal storage and processing is not without cost, and by failing to include any costs for primary terminal distribution services, the Commission is implicitly assuming that product is brought into the distribution system in the Vancouver area and handled free of charge. A wholesaler in Vancouver could not support its operations if it were unable to markup this fuel to cover distribution costs. The Commission has not prepared an apples-to-apples pricing comparison and therefore its estimate of a pricing differential of 13 cents lacks economic merit.²⁹

In its Supplemental Final Argument, Parkland states that:

Dr. Kahwaty provides an *illustrative* analytical framework that would have to be used to restore the BCUC’s analysis to an “apples to apples” comparison (in his illustration he uses hypothetical “plug” numbers simply for the purpose of showing the steps).³⁰ [Emphasis added]

The above-referenced analytical framework is provided in Table 5 of the Kahwaty Supplemental Report and reproduced below for ease of reference.³¹

²⁸ Exhibit C5-30, paras 53-54, pp. 36-37.

²⁹ Ibid, para. 55, p. 37.

³⁰ Parkland Supplemental Final Argument, para. 13, p. 13.

³¹ Exhibit C5-30, para. 58, p. 38.

Table 5
Illustrative Framework for Evaluating A Potential Wholesale Price Differential

Price/Cost	Formula	2015	2016	2017	2018	2019	2015-2019 Average
Vancouver Rack	A	66.56	61.31	74.28	87.88	86.66	74.53
Average Rack Discount [Illustrative Number]	B	2.50	2.50	2.50	2.50	2.50	2.50
PNW Spot	C	59.96	49.90	59.30	70.39	66.54	60.83
LCFS Cost	D	1.00	2.00	2.00	4.00	4.00	2.60
Federal Fuel Standard	E	0.50	0.50	0.50	0.50	0.50	0.50
Barge Transport	F	1.70	2.00	2.00	2.00	2.00	1.94
Distribution Costs [Illustrative Number]	G	6.00	6.00	6.00	6.00	6.00	6.00
Differential [Illustrative Number]	A - (B + C + D + E + F + G)	-5.10	-1.59	1.98	2.49	5.12	0.16

As shown in the above table, Dr. Kahwaty’s only two suggested changes to make the PNW spot price to Vancouver rack price an apples-to-apples comparison are the addition of discounts to rack and distribution costs.

Similarly, both Imperial and Suncor have adapted the BCUC analytical framework along the lines of Dr. Kahwaty’s suggestions and use the PNW spot price to model the marginal import layer shipped by barge from the PNW.³²

Dr. Kahwaty points out that the Vancouver rack and PNW spot prices are endogenous variables which are both driven by other variables, *e.g.*, crude prices, and as such, the BCUC regression of Vancouver rack prices on PNW spot prices is mis-specified. Dr. Kahwaty also provides 10 additional graphs plotting the relationship between Vancouver rack and other racks or spot prices to show that a high correlation is not unique to Vancouver rack and PNW spot prices.³³ He states:

... the Commission’s regression analysis does not show that prices in the PNW gasoline and diesel wholesale markets affect or influence prices in the Vancouver gasoline and diesel wholesale markets. It is a common statistical error to confuse correlation with causation. Correlation or simple regression analysis only shows that a linear relationship exists between two variables. It does not explain how or why a relationship exists between those two variables. The Commission’s simple regression analysis has no ability to deduce a cause-and-effect relationship between the two variables analyzed solely on the basis of an observed association or correlation between them.

...

Therefore, ... the BCUC Report’s Figure 26 cannot support the Commission’s conclusion that the PNW spot price has a significant influence on Vancouver rack prices.³⁴

³² Exhibit C8-10, p. 3 and Suncor Final Submission, p. 5.

³³ Exhibit C5-30, pp. 22-35.

³⁴ Exhibit C5-30, p. 35.

Panel Response

The Panel had been told by the Oil Companies that the PNW spot price is the primary driver of Vancouver rack prices. The Panel also observed an 80.28% correlation between the two variables, which in our view, supported the submissions made by the Oil Companies and hence based our analysis accordingly.

The Panel understands that other factors, such as the prices in other PADDs, can be part of the consideration when determining the Vancouver rack price. There are also costs related to processing and handling the refined products. Regardless, there is an historical relationship between the PNW spot price and Vancouver rack. That relationship showed a differential of 5 cpl up to 2015, which the Panel considered was sufficient to deal with whatever additional costs were incurred to access this source of supply. No one indicated that they pay and/or use Seattle rack prices to source any supply. During the comment period, all the economic models submitted use PNW spot prices. Therefore, in our view, our comparison is of apples to apples and we make no alternate finding to that made in the Report.

3.3 Submissions Purporting to Explain the 13 Cents Per Litre Differential

In the Report, we used two methodologies to derive the 13 cpl differential. The first methodology relied on the premise that there is a 20 cpl differential between Vancouver Rack price and the PNW spot price in 2018/2019. The Panel then deducted 2.0 cpl to account for notional marine transportation costs and 4.5 cpl for provincial and federal compliance costs (B.C. Low Carbon Fuel Standard (LCFS) and the federal fuel standard regulation) to reach the 13 cpl difference (rounded by 0.5 cpl).³⁵ This will be referred to as the Additive Model. The second methodology focused on changes since 2015 that would affect the acquisition and transport of gasoline from the PNW into B.C. This alternate analysis of the cost differential looked at three specific factors: (1) changes in costs that existed pre-2015; (2) cost impacts of changes in federal and provincial fuel standards; and (3) changes in the exchange rate between the U.S. and Canadian dollar; and concluded with the same unexplained difference of approximately 13 cpl.³⁶ This will be referred to as the Differential Model.

Parkland, Suncor and Imperial all disagree with the Report that there is an unexplained differential of 13 cpl between Vancouver rack price and PNW spot price. Both Imperial and Suncor have adopted the BCUC analytical framework along the lines suggested by Dr. Kahwaty with the goal of explaining the 13 cpl differential. The Panel had the opportunity to question Imperial on its supplemental evidence via in-camera teleconference meeting. However, portions of Suncor's additional evidence was filed in its Supplemental Final Argument, and as such, could not be tested.

Imperial modeled a marine import of gasoline from Seattle into intermediate storage for sales into the BC market, *i.e.*, what the marginal marine import supply economics look like as the driver of wholesale price. Imperial cautions that this is not intended to illustrate Imperial's business model because Imperial does not structurally import via marine; rather, it is an attempt to develop a financial model for a third-party importer. The following table is reproduced from Exhibit C8-10.³⁷

³⁵ Report, pp. 77-78.

³⁶ Report, pp. 78-79.

³⁷ Exhibit C8-10, p. 3.

Table 1: Imperial's Evidence

	3 rd Party Import (As modeled by BCUC)		3 rd Party Import (as modeled by Imperial)	
	2015 BCUC	2019 BCUC	2015	2018
Base	PNW + freight	PNW + freight	PNW + freight	PNW + freight
Freight	1.7	2	1.7 to 1.8	1.9 to 2.0
LCFS BC	3	4	1.3	3.9
LCFS Federal	0.5	0.5	0.5	0.5
Discount Range	0	0	2.5 to 4.0	3.0 to 6.0
Terminaling	0.0	0.0	0.9 to 1.5	0.9 to 1.7
Overhead	0.0	0.0	1.0 to 1.5	1.0 to 1.5
RINS Discount	0.0	0.0	-1.8	-1.4
Other Costs for Importer			?	?
Total vs PNW	5.2	6.5	6.1 to 8.8	9.8 to 14.2
Inquiry Value (Rack vs PNW)	5.0	20.0	6.7	17.5
Delta vs PNW	-0.2	13.5	-2.1 to 0.6	3.3 to 7.7

Very likely a smaller or U.S.-based importer would face additional costs not captured here.

Suncor prepared its own analysis using the same two models as the BCUC to demonstrate that the gap is much lower. The following table is reproduced from Suncor's Supplemental Final Argument.³⁸

Table 2: Suncor's Calculations

Defining the "Gap"	BCUC Calculations			Suncor Calculations		
	2015	2019	Increase	2015	2019	Increase
Vancouver Gasoline Rack Price vs. PNW Spot Gasoline Prices ^A	5 cpl	20 cpl	15 cpl	8 cpl	20 cpl	12 cpl
Closing the "Gap"	2015	2019	Increase	2015	2019	Increase
Freight ^B	1.7 cpl	2 cpl	0.3 cpl	1.7 cpl	2 cpl	0.3 cpl
BC-LCFS Regulatory Costs ^{C,D}	3 cpl	4 cpl	1 cpl	0.5 cpl to 0.7 cpl	4.9 cpl to 7.0 cpl	4.4 cpl to 6.3 cpl
Federal Fuel Standards Costs ^E	0.5 cpl	0.5 cpl	0 cpl	0.5 cpl	0.5 cpl	0 cpl
Aftermarket Discounts ^F	0 cpl	0 cpl	0 cpl	2.5 cpl to 4.0 cpl	3.0 cpl to 6.0 cpl	0.5 cpl - 2.0 cpl
Terminal Costs ^{G,H}	0 cpl	0 cpl	0 cpl	0.9 cpl to 1.5 cpl	1.9 cpl to 2.5 cpl	1.0 cpl
RINS Discounts ^{I,J}	0 cpl	0 cpl	0 cpl	-2.4 cpl	-1 cpl	1.4 cpl
Overhead, Profit and Other Factors ^K	0 cpl	0 cpl	0 cpl	?	?	?
	5 cpl	7 cpl	2 cpl	3.7 cpl to 6.0 cpl	11.3 cpl to 17 cpl	7.6 cpl to 11.0 cpl
Net "Unexplained Gap"	2015	2019	Increase	2015	2019	Increase
	0 cpl	13 cpl	13 cpl	2 cpl to 4 cpl	3 cpl to 9 cpl	1 cpl to 4 cpl

³⁸ Ibid.

3.3.1 Price Differential Timeframe

In the Report, the Panel looked at the pre-2015 differential of approximately 5 cpl upon which to base its analysis.³⁹ All three Oil Companies disagree with the BCUC's calculation of the pre-2015 differential of 5 cpl as the basis for the Differential Model. Suncor and Parkland make the following submissions:

Suncor submits that:

The BCUC erred in selecting to use 5 cpl as a starting point in its differential analysis for pre-2015. As shown in Figure 34 on p. 77 of the BCUC Report, the differential rises in the latter half of 2014. Given the time period of the Inquiry, the appropriate starting point differential is 8.0 cpl (rounded up from 7.86 cpl, which is the January 2015 average. Thus, the BCUC should seek to explain an increase of 12 rather than 15 cpl in the differential from 2015 to 2019.⁴⁰

Parkland submits that:

In fact, the months used by the BCUC in its calculations were not representative. The figures cited by the BCUC were derived with reference to data from the final months of 2018 and the first six months of 2019 - *the period with, by far, the largest price differential*. Market prices and margins fluctuate regularly in an active market such as exists in BC. Therefore, focusing on a single time period as representative of the differential is not accurate. The 13 cents per litre figure significantly overstated the differential in four of the past five years. Parkland respectfully submits that, given the Terms of Reference cover a five-year period, a more accurate way for the BCUC to have presented its findings would have been to use a five-year average. This change alone, *even before making all of the other necessary adjustments discussed in the subsequent sections*, reduces the BCUC's 13 cent per litre "unexplained differential" by one-third (i.e., by approximately five cents per litre).⁴¹

As shown in Imperial's model above for the third-party importer, Imperial calculates that the rack versus PNW price differential is 6.7 in 2015 and 17.5 in 2018.⁴²

Panel Response

The price differentials vary over time. Some interveners have suggested alternate ways of averaging the price differential. The Panel started with the average differential for the whole of 2014 of 5.03 cpl (rounded to 5 cpl) and the six-month average of 2019 (January to July) of 20.12 cpl (rounded to 20 cpl).

The annual averages of the price differential have been calculated by the Panel to be:

2014 – 5.03 cpl,
2015 - 7.38 cpl,
2016 - 12.48 cpl,
2017 - 14.07 cpl,
2018 - 17.40 cpl, and
January to July 2019 – 20.12 cpl

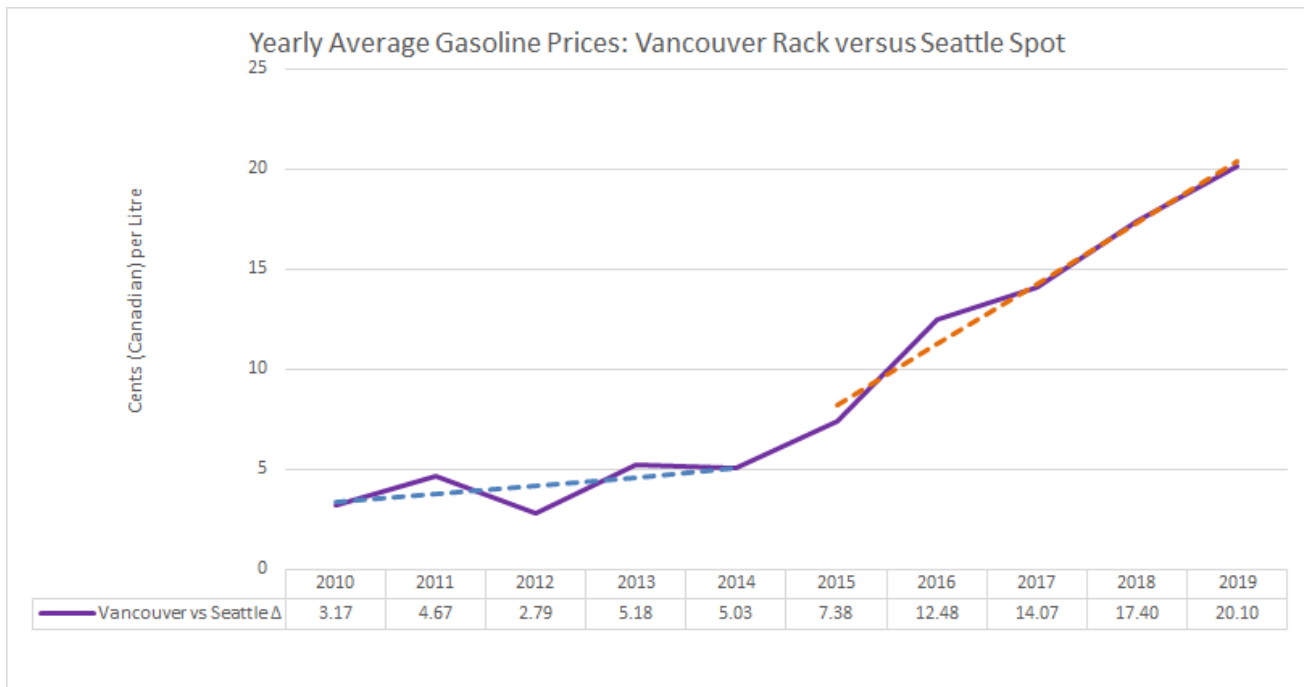
³⁹ Report, p. 78.

⁴⁰ Suncor Final Submission, pp. 6-7.

⁴¹ Parkland Final Submission, p. 10.

⁴² Exhibit C8-10, p. 3.

Regardless of which averages are used, the key is that the differential has been increasing. By how much is subject to interpretation. The graph below, based on published Opus data, shows the yearly average gasoline price differentials since 2010 to show a more complete picture over the last ten years.⁴³



The Inquiry mandated us to examine the changes in the prices since 2015. The Panel observes that the price differential from 2010 increased slowly – at a rate probably slightly ahead of inflation – to an average of 5 cpl at the end of 2014. It was after 2014 the trend of the differential increased considerably. There is no indication at the time of the Inquiry that the increase in the differential has stopped. Therefore, the Panel does not find any reason to change its interpretation of the change in the differential or its quantum.

3.3.2 Amounts to Explain the Difference

In the Report, the Panel identified certain factors that could help to explain the reasons that the differential had increased in the period from 2015 to 2019. Some interveners took issue with the magnitude of these identified factors and the omission other factors that should have been considered.

Rack Discounts

Dr. Kahwaty points out that “most transactions occur at discounts to rack” and cautions that “by comparing spot prices to rack prices, the Commission’s analysis is designed to find an unexplained differential even if none exists”. Dr. Kahwaty suggests adding “discounts to rack” in the BCUC’s differential analysis.⁴⁴

Imperial agrees and adds a discount range of 2.5 to 4 cpl in 2015 growing to 3 to 6 cpl in 2018.⁴⁵

While Suncor's aftermarket discounts are commercially sensitive, Suncor generally agrees with the discount data used in Imperial Oil's modelling in Example 1 of Exhibit C8-10 for this analysis and has also used this data.⁴⁶

⁴³ Note that there were no published PNW Spot (FOB Seattle) prices from 1/1/2010 to 4/23/2010 provided in the OPIS data. For 2019, the data date range is from 1/1/2019 to 07/31/2019.

⁴⁴ Exhibit C5-30, para. 56, p. 37 & Table 5, p. 38.

⁴⁵ Exhibit C8-10, p. 3.

⁴⁶ Suncor Supplemental Final Argument, p. 6.

Thus, both Imperial and Suncor agree that rack discounts increased by a range of 0.5 to 2 cpl from 2015 to 2018.

Transportation/Freight Costs

In our Report, we found that 2 cpl can be explained by transportation cost by barge. The Panel notes that the cost of marine transportation was estimated to be 1.7 cpl in a 2011 study by the Asia-Pacific Economic Cooperation referenced in the Deetken report. To be conservative and to recognize that prices were likely subject to inflation since 2011, the Panel assumed that the cost to transport fuel by barge has increased to 2 cpl.⁴⁷

Imperial's additional evidence shows that the marine freight cost ranges from 1.7 cpl to 2 cpl, which is similar to the Panel's finding in the Report. Suncor generally agrees that BCUC's estimates for 2015 and 2019 freight costs are reasonable approximations.⁴⁸ The tables above show a minor increase of 0.2 to 0.3 cpl in freight cost from 2015 to 2018.

Low Carbon Fuel Standard (LCFS) Costs

In our Report, we estimated the cost of the LCFS in order to determine any unaccounted-for difference between Vancouver and PNW prices. We noted that in its analysis, Deetken pointed out that based on the purchase of compliance units at the maximum compliance unit cost, the maximum cost of this regulation is 2 cpl in 2016 raising to 4 cpl for gasoline and 3 cpl for diesel in 2018. As none of the Oil Companies refuted the cost estimates provided by Deetken regarding gasoline, the Panel found that the estimates provided by Deetken with respect to the cost of meeting BC fuel regulatory requirements were reasonable and used the upper value of 4 cpl.⁴⁹

With regard to LCFS costs, the additional evidence provided does not point uniformly in one direction. Imperial is the only one of the Oil Companies that confirmed the BCUC number for 2018 (3.9 cpl) after having calculated the BC LCFS credit costs. However, rather than showing a 1 cpl increase between 2015 and 2018, it showed an increase of 2.6 cpl.⁵⁰

Suncor submits that Deetken's estimates to meet the LCFS and used by the BCUC are understated for 2019 and that compliance obligations for both gasoline and diesel could cost as high as 4.9 to 7 cpl.⁵¹ Suncor calculates an increase of over 4 cpl in LCFS compliance costs between 2015 and 2019, and higher than 6 cpl if a fuel supplier must rely on higher cost options as the only viable means of achieving compliance with Part 3 of the regulation. Operational costs necessary to comply with LCFS must also be incurred and should not be valued at zero, rather they should be captured under overhead.⁵²

In contrast, Advanced Biofuels provides evidence that the BC LCFS cost impact is considerably lower than the low end of the Deetken estimated range. Deetken's maximum cost, which the Report adopted, is based on 100% purchase of compliance units at the max cost but data from the BC Ministry of Energy, Mines & Petroleum Resources show that the use of purchased credits only accounted for 10.5% and 13% of compliance in 2016 and 2017 respectively for the gasoline and diesel pool combined, meaning that lower cost abatement strategies are used most of the time. That data also show that ethanol is used to provide greater than 90% of gasoline compliance credits and Deetken's analysis shows that a 5% ethanol blending requirement reduces the wholesale price of gasoline by 1% in 2018.⁵³ Navis calculates gasoline production cost savings attributable to ethanol in

⁴⁷ Report, p. 77.

⁴⁸ Suncor Supplemental Final Argument, p. 5.

⁴⁹ Report, p. 78.

⁵⁰ Exhibit C8-10, p. 3.

⁵¹ Exhibit C2-15, p. 2, Suncor Supplemental Final Argument, p. 5.

⁵² Suncor Supplemental Final Argument, p. 8.

⁵³ Exhibit C6-10, p. 6.

2017 in BC to be 5.7 cpl. Combined with ethanol's discount to gasoline at the rack (wholesale), ethanol in the BC LCFS reduced refiner's fuel costs by 6.5 cpl.⁵⁴

Parkland was unable to complete its own analysis of LCFS costs in the time allotted. However, Suncor's final supplemental argument states that, in its experience, "LCFS compliance costs have increased significantly between 2015 and 2019." It cited several compelling reasons for why that has occurred. Parkland recognizes that the BCUC was trying to be conservative in using this assumption instead of using a lower cost compliance option. However, the cost of compliance actually exceeds the amount assumed.⁵⁵

Federal Fuel Standard

In our Report, we estimated the cost of compliance with the federal fuel standard at approximately 0.50 cpl, after accounting for transportation cost, costs to meet the provincial standard and allowing for inflation compared to the pre-2015 differential of 5 cpl.⁵⁶

The Panel notes that the 0.5 cpl finding appears to have been misidentified by some interveners. The Panel clarifies that this cost is related to the cost of meeting the Government of Canada's fuel content standards, such as the standards for Reid Vapor Pressure, and is not related to federal renewable fuel standards.

With the above misattribution in mind, Advanced Biofuels submits that the federal renewable fuel regulation has zero cost in BC because the provincial standard is identical to the BC standard and BC compliance satisfies the federal standard. Thus, this is a double-counting error.⁵⁷ Imperial submits that an importer may or may not incur the Federal LCFS cost depending on how they are complying with provincial standards. For example, if an importer is buying credit to comply with BC LCFS only, they may need to also pay/consider the Federal Renewable Fuel Standard, whereas if they are blending they may be complying with both.⁵⁸ In contrast, Suncor generally agrees that BCUC's estimates for Federal Fuel Standards costs in 2015 and 2019 are reasonable approximations.⁵⁹

Terminal Costs/Distribution Costs

In our Report, we noted that Suncor suggested that in addition to the LCFS requirements and transportation costs, other cost factors should be considered, including terminalling costs.⁶⁰

As explained previously, Dr. Kahwaty suggests adding "distribution costs" in the BCUC's differential analysis.⁶¹ He explains that distribution costs have not remained constant, *e.g.*, increased storage constraints due to changing regulatory compliance requirements and increased logistical constraints due to TMPL capacity limitations.⁶²

Imperial also adds terminalling cost that range from 0.9 to 1.5 cpl in 2015 growing to 0.9 to 1.7 cpl in 2018.⁶³ Suncor generally agrees with Imperial on the cost range for 2015.⁶⁴ But from 2014 to 2019, Suncor stated that it

⁵⁴ *Ibid.*, p. 7.

⁵⁵ Parkland Supplemental Final Argument, p. 16.

⁵⁶ Report, p. 78.

⁵⁷ Exhibit C6-10, p. 5.

⁵⁸ Imperial Supplemental Final Argument, p. 8

⁵⁹ Suncor Supplemental Final Argument, p. 6.

⁶⁰ Report, p. 78.

⁶¹ C5-30, para. 58 & Table 5, p. 38.

⁶² Exhibit C5-32, pp. 2-3.

⁶³ Exhibit C8-10, p. 3.

⁶⁴ Suncor Supplemental Final Argument, p. 6.

faced a 49% increase in property tax and 152% increase in Port of Vancouver leases.⁶⁵ Suncor represents costs in 2019 as 1 cpl higher than in 2015 as a reflection of these cost increases.⁶⁶

RINs (Renewable Identification Number) Credit

Used as part of US biofuel regulation, the cost of these credits is built into the US spot price and are typically credited back to any purchaser that is exporting out of the U.S. market. This credit amounts to 1.8 cpl and 1.4 cpl in 2015 and 2018 respectively.⁶⁷ Recognition of RIN credits reduces the differential between PNW spot and Vancouver rack in any given year, because the RIN credits decreased between 2015 and 2018. According to Imperial's calculation, recognition of this actually explains part of the increase in the differential between 2015 and 2018.

Suncor agrees with Imperial that the BCUC failed to account for RINs credits for product sourced from the U.S., thereby overstating PNW prices. Suncor used RIN credit values at 2.4 cpl in 2015 and 1 cpl in 2019 based on publicly available information.⁶⁸

Overhead

In our Report, we acknowledged that there may be additional costs that were not considered in our analysis (Additive Model) and therefore, we provided an alternate analysis of the cost differential (Differential Model).⁶⁹

Imperial states that overhead costs need to be added in the range of 1 to 1.5 cpl in 2015 and 2018 (employees supporting the business, system costs, marketing and sales costs), recognizing that this cost category hasn't contributed to the increase in the differential between 2015 and 2018. Imperial also makes a provision for other costs borne by third-party importers to recognize that smaller or U.S.-based importers are likely less efficient or bear other costs not seen by Imperial.⁷⁰

Suncor it is not in a position to provide specific calculations regarding these factors but is of the view that they should not be considered as "zero costs" and a representative number should be included in the BCUC's calculations.⁷¹

Summary of the "Unexplained Difference"

In conclusion, all three Oil Companies have submitted additional evidence during the additional comment period to state that the "unexplained differential of 13 cpl" is either fully explained or much reduced and the remaining gap represents potential profit available to an importer.

Imperial states:

After accounting for the missed costs, Imperial concludes that the differential lies between 3.3 to 7.7 cpl before tax in 2018 versus the 13 cpl (but was negative or break even in 2015) and submits it represents the potential profit available to an importer.⁷²

Suncor submits:

⁶⁵ Exhibit C2-15, p. 3.

⁶⁶ Suncor Supplemental Final Argument, p. 6.

⁶⁷ Exhibit C8-10, p. 3.

⁶⁸ Suncor Supplemental Final Argument, p. 6, 10.

⁶⁹ Report, p. 78.

⁷⁰ Exhibit C8-10, p. 3.

⁷¹ Suncor Supplemental Final Argument, p. 10.

⁷² Imperial Supplemental Final Argument, p. 2.

Suncor disagrees with the BCUC's conclusion that there is an unexplained difference of 13 cpl between Vancouver rack price and PNW spot price. Any remaining "gap" that cannot be accounted for by the various cost factors that have been provided in evidence during the course of the Inquiry and the comment period can likely be explained by an importer's overhead costs, profit, and other factors not submitted in evidence.⁷³

In Parkland's view:

The "unexplained" differentials can, in fact, be fully explained by correcting the BCUC's methodological errors and using more accurate cost assumptions. With the benefit of new evidence submitted by independent third-party experts and other participants about how the market functions and the costs involved in providing wholesale gasoline and diesel, the BCUC should update its findings and highlight the residual uncertainty around them.⁷⁴

Panel Response

In the Report the Panel determined the amount of unexplained difference using both an Additive Model and a Differential Model.

Some interveners submitted evidence to reduce, if not eliminate, this 13 cpl difference. In using the Additive Model, they attempted to quantify costs that had been identified as possible contributors in the Report and to identify other, additional costs to consider. These additional costs, such as discounts to rack, terminal costs and overhead costs are all highly dependent on the business model used by the individual companies - they are not dependent on the source of the refined product. These costs are incurred regardless of the source. For example, costs incurred to handle the product and load it onto tanker trucks for delivery to the retailers. The only consideration would be if there was a change in how the products were handled that would lead to a need for greater margin. The only costs that would potentially change the additive model analysis was for storage and logistical constraints, but no quantum of the additional costs was provided nor was the rationale for any such changes in handling since 2015. The only relevant increase, therefore, is inflationary costs from 2014 to date. This is also the case for any transportation cost changes. The increases in these four factors were the reason for the 2 cpl allowance for inflation and exchange rate changes in the differential or economic model.

The Additive Model, for the reasons stated above, is not as reliable in attempting to understand the reason for the increase in the differential. As such the Panel places less reliance on the Additive Model and more on the Differential Model in an attempt to understand the economics of the industry.

The Differential Model looks at independently reported figures and attempts to explain the reasons for the increase in the observed differential. It is an economic model to explain how two dependent variables that have a history of tracking each other have spread apart over five years. In this case the difference between PNW spot and Vancouver rack of 5 cpl that occurred before 2015 and the 20 cpl that is reported in 2019 - a difference of 15 cpl. The pre-2015 difference of 5 cpl, accounts for transportation costs and any cost required to bring the fuel to Canadian and BC standards. Since it is not known whether there is any unexplained difference included in this amount, for the purpose of that analysis we assumed it is all explained. In the Report, the Panel assumed that these costs were inflated at 2 per cent per year in addition to the change in exchange rate between 2015 and 2019. This resulted in a 2 cpl change, leaving an unexplained difference of 13 cpl in 2019.

For the Differential Model, the Panel finds relevant, the changes since 2014 in the LCFS costs and the change in the RINS credit. The evidence shows that the costs to meet the Federal Renewable Fuel Regulations have not changed to any significant degree.

⁷³ Suncor Supplemental Final Argument, pp.4, 11

⁷⁴ Parkland Supplemental Final Argument, p. 3.

Due to limitations in this Inquiry, the Panel was not able to test the accuracy of the changes in the BC LCFS costs or reconcile the different approaches. For instance, it is unclear as to whether the higher than 6 cpl increase in costs stated by Suncor as a possibility apply to either gasoline, diesel or both. The HRD blending to meet Part 3 compliance obligations is for diesel and does not apply to gasoline. Meanwhile Imperial submitted that there was an increase of 2.6 cpl from 1.3 cpl in 2015 to 3.9 cpl in 2018 for the BC LCFS which is calculated based on credit cost – and we note that the maximum used by Imperial is less than the 4 cpl used by the Panel in the Report. Counter to these increases it is Advanced Biofuels contention that LCFS is a cost benefit to the Oil Companies.

The RINS credit information was not in evidence during the first phase of the Inquiry and the figures presented in the comment phase could not be fully tested. Imperial presented a change of 0.4 cpl, whereas Suncor stated it was 1.4 cpl. It was not possible for the Panel to test either number.

The Panel finds that there's no concrete evidence to support a definitive adjustment to the unexplained 13 cpl difference stated in the Report. The Panel acknowledges that there is validity to considering some of the factors mentioned by the interveners. However, the evidence is either inconclusive or conflicting, making it difficult to determine an appropriate quantum for these factors. As such, the Panel's best estimate of the unexplained difference could potentially range from a low of 10 cpl to the originally reported 13 cpl.

3.4 Barriers to Entry

The BCUC found that it is not easy for new sellers to enter the wholesale gasoline and diesel market in BC due to the presence of significant barriers to entry, such as control of the distribution infrastructure, sunk costs, regulatory barriers, market maturity, and economies of scale.⁷⁵

Imperial, Suncor and Parkland disagree with the BCUC's assessment that barriers to entry are high because new competitors cannot develop or access logistics independently from the oil companies' assets. To support their position, they provide the following examples of third-parties other than oil companies developing petroleum product terminals, including:

- Kinder Morgan Vancouver Wharves
- Vancouver Airport Facilities Corporation
- Transloading Terminals

Further, Parkland states that “the development of these facilities, irrespective of whether they are used for refined fuels, speaks to the feasibility of developing substantial petroleum product distribution infrastructure in this province.”

Kinder Morgan Vancouver Wharves

Kinder Morgan is expanding its existing Vancouver Wharves terminal to increase the capacity to export diesel volumes.⁷⁶ Suncor confirmed that partial capacity is contracted for the BC diesel market, however they provided no evidence that these volumes are sold to non-industrial customers. Further, Suncor confirmed that Vancouver Wharves is not permitted to handle gasoline.⁷⁷

In addition, oil companies did not identify any other third-party facilities like Vancouver Wharves, therefore it is unknown whether there are any actual marine development or expansion opportunities for gasoline distribution in BC.

⁷⁵ Report, p.60

⁷⁶ Exhibit A2-9, Kinder Morgan, Vancouver Wharves Diesel Handling Facility Expansion Project Overview, March 2018.

⁷⁷ Exhibit C2-16, Suncor Response to Panel IR 1.

Vancouver Airport Facilities Corporation

The Vancouver Airport Fuel Facilities Corporation has received approval for, and is building, new petroleum marine import facilities for jet fuel in the Vancouver area. Imperial states that this speaks to the possibility of overcoming regulatory hurdles and developing logistics in BC.⁷⁸

Vancouver Airport Facilities Corporation received environmental approval in 2013 from the provincial and federal governments following more than a decade of planning, review and consultation. Numerous regulatory delays and opposition from the City of Richmond followed, resulting in the project being several more years behind schedule. Construction of the project is currently underway and is expected to be finished and operational by 2021.⁷⁹

Transloading Facilities

Oil Companies suggest that barriers to entry have significantly decreased with the presence of new transloading facilities which involve storage and distribution of refined product at a rail yard Suncor states that there are, at a minimum, 40 transloading facilities across Canada. Many of these facilities are owned by CN or CP, but there are other third-party owners as well.⁸⁰ Oil companies did not provide evidence that these transloading facilities have blending capabilities.

In recent reports, the NEB notes that the current rail infrastructure in Canada is operating at, or near, capacity due to a significant increase in crude-by-rail exports from Alberta. Unless facilities already exist, rail capacity cannot be brought on quickly as it takes time to acquire specialized tank cars, locomotives, and associated loading/unloading infrastructure, and to train crews. Furthermore, limited land may be available, especially in larger urban centres.^{81 82}

Imperial describes its challenges in finding land for a transloading facility in the Vancouver area as follows:

Then we needed to find a storage location in Vancouver that could take rail cars and believe it or not that was a difficult exercise. We couldn't even find a location that allowed us to go bring in the rail but also have that same location serve as the point that we use to supply the local market.⁸³

Panel Response

The evidence continues to support the Panels view that there are high barriers to enter the gasoline market with little terminal and storage available. With regard to the new evidence brought forward in the comment period:

1. The Vancouver Wharves terminal is for diesel export and the facility is not permitted to handle gasoline.
2. The YVR facility is exclusively for jet fuel. Further it is a purpose-built facility for a single customer that doesn't handle gasoline and took 16 years from start to completion. In our view the completion time of this facility further supports our finding that there are high barriers to entry in the wholesale gasoline market.
3. Regardless of whether a suitable location for a transloading facility in the Vancouver area could be found, the cost differential will be the primary factor that determines whether petroleum product

⁷⁸ Imperial Oil Supplemental Final Argument, p.4.

⁷⁹ Exhibit A2-8, Vancouver Airport Fuels Facilities Corporation, Fuel Delivery Project Overview, May 2019.

⁸⁰ Exhibit C2-15, Suncor Response to BCUC IR 1.

⁸¹ Exhibit A2-4, NEB, Western Canada Crude Oil Supply, Markets and Pipeline Capacity, December 2018.

⁸² NEB, Optimizing Oil Pipeline and Rail Capacity out of Western Canada, Advice to the Minister of Natural Resources, March 2019.

⁸³ Transcript Volume 1, p. 291.

moves by rail. The higher cost of rail compared to pipeline and marine transport means that any investments in transloading facilities in the Vancouver area may come with considerable risk for new competitors.

Further, there is no evidence that such a transloading facility would provide the requisite capability to blend the gasoline.

3.5 Retail – Land Values as a Factor Influencing Retail Prices

The issue of land values and their impact on retail pricing was canvassed in the Phase 1 proceedings where Deetken outlined that the value of land was a major consideration in explaining the retail margin differentials that existed between 2015 and 2019. The Panel disagreed pointing out there was no evidence that marketers and retailers rely on the value of land in determining retail prices. However, the Panel noted that marketers and retailers universally seemed to agree that the value of land, while not a direct consideration, was an important consideration in the broader sense in terms of whether they were earning an adequate return on capital or whether the value was such that it should be sold. As a consequence, the Panel found that “while the value of land is not a direct driver of prices or margin the opportunity cost related to it might, in certain markets, be used to justify a higher retail margin than in other regions with lower land values”.⁸⁴

During the comment period, Dr. Kahwaty in his evidence states that the Panel’s finding “confuses daily price setting behaviour with long-term market dynamics”. He explains that from an economist’s view in the short term, firms set prices in a manner that considers the units they will sell and the costs to be incurred to produce and sell those units. Fixed costs are not relevant. This is because items such as the physical plant and available equipment can be changed or adjusted over time but this cannot be done immediately or over a shorter timeframe. He states that because costs like building, expanding or selling a gas station takes time, there is no need to consider these costs when making day to day pricing decisions. Dr. Kahwaty elaborated:

As facilities exit the market, remaining gasoline and diesel retailers may – when making day-to-day pricing decisions – increase prices because the facilities that have exited the market no longer place competitive pressure on them. Therefore, even if the effects of opportunity costs are not factored into day-to-day pricing decisions, over time they are reflected in market prices. Detailed opportunity cost estimates provide information on the types of price changes to be expected in the market over time and should be included in the Commission’s analysis.

To support his position, Dr. Kahwaty performed a simple regression model which looked at 25 Canadian market cities and used average house prices as the explanatory or independent variable to explain retail gas margins (the dependant variable). He explained that although information such as the local cost of living and average gas station volume result in an unexplained variation in the data, his results suggest the unexplained differential after taking land costs into account is less than 2 cpl. Dr. Kahwaty suggests that his work is indicative of the type of work that can be done and if other variables were taken into consideration, it would further improve the regression model. That said, he believes his model shows the importance of including the opportunity cost of land in our analysis.⁸⁵

Parkland argues that Dr. Kahwaty’s observation is well-founded in economic theory and the BCUC should revisit its conclusion.⁸⁶

⁸⁴ Report, pp. 101-102.

⁸⁵ Exhibit C5-30, pp. 46-48.

⁸⁶ Parkland Supplemental Submission, p.28.

Panel Response

The Panel notes that this issue was discussed in some detail within the Report and a conclusion not dissimilar to that of Dr. Kahwaty reached. The Panel's finding stated the value of land was not a direct driver of prices or margin. None of the participants in this proceeding disputed this although they were clear it was an important consideration over the longer term. This point is also made by Dr. Kahwaty who in evidence states:⁸⁷

In the short run, economists view individual firms as engaging in profit-maximizing behavior by setting their prices in a manner that considers the units they will sell to their customers and the variable costs they will incur to produce and sell those units. Fixed costs are not relevant when making such a decision...

The Panel continues by stating that the opportunity cost related to the price of land, in certain markets, may be used to justify a higher margin than in other regions with lower land values.⁸⁸ This recognizes the high value of land in certain markets and speaks to its impact on pricing.

While the Panel acknowledged the impact of land values on pricing, we did not attempt to quantify this opportunity cost as has been done by Deetken and Dr. Kahwaty. There are two reasons for this. First, while the amount derived from any such approach to quantifying may be appropriate to be added to the price in one market area it may be less appropriate in another. This is because real estate values are not homogeneous and values of properties in close proximity potentially vary. Thus, if one station raised its prices (and margin) to reflect the value of the land on which it sits, a nearby competitor on lower value land adopting the same methodology would offer its products at a lower price. Thus, in the interests of remaining competitive, the operator in the high land value market could be restricted from realizing the additional margin that might be justified based on economic principles. Any such calculations would therefore need to be on a site-specific basis taking such factors into account which would add to the complexity of determining a meaningful calculation.

More importantly however, is the finding in the Report that preceded the discussion on land values. There, the Panel found that due to issues related to the calculation of retail margins and the effect on the validity of retail margins currently being reported, only limited weight could be placed on the magnitude of reported differences in retail margins between regions.⁸⁹ What the Panel is saying is that the numbers, as reported, have limited credibility and therefore cannot be fully relied upon. Therefore, while Deetken and Dr. Kahwaty were trying to bridge an 8 cpl gap that had been identified by Deetken, the Panel considered the exercise to be of limited value until such time as a methodology allowing for the collection of more accurate information could be developed. Once done, it might be worthwhile to spend time to develop a more fulsome method of determining the value of land and its impact on retail margins and fuel pricing. The Panel remains persuaded that while the value of land is not a direct driver of retail prices or margin the opportunity cost related to it might, in certain markets, be used to justify a higher retail margin than in other regions with lower land values.

The Panel observes that there has been a great number of letters of comment with respect to the high price of gasoline in Powell River relative to the Metro Vancouver. Given the difference in land values between these two areas it might be expected this would be reflected in lower gasoline prices.

3.6 Retail – Relationship Between Retailers and Refiner-Marketers

In our Report, the number of retailers and their concentration levels within the BC market were examined. Although the percentage of refiner-marketers having direct control over pricing is significantly higher than the average in Canada, the Panel accepted that concentration levels within the retail market are low. However, the Panel observed that in addition to the dealer-controlled stations, a significant number of the independent

⁸⁷ Exhibit C5-30, p. 46

⁸⁸ Report, p. 102

⁸⁹ Report, pp. 4-5, 102

retailers are contractually tied by brand to the five major refiner-marketers. Noting that the rack price is, for the most part, controlled by refiner marketers and these contractual relationships exist, the Panel found that these relationships “may still have an impact on there being a fully competitive market” and “increases the opportunity for effective market control”.⁹⁰

During the comment period Dr. Kahwaty provided his views on the Panel’s concerns that there is an increased opportunity for market control. He states that in a vertical supply chain “entities at one level gain if other levels of the supply chain are competitive”. Further, concerning the relationship between wholesale and retail markets, he states that “an effort to exercise market power by increasing prices at the retail level of the supply chain reduces demand at wholesale and does not benefit wholesale suppliers”. Moreover, he observes that Imperial Oil, because it has divested its retail stations, has no incentive to try to exercise market power downstream from the parts of the supply chain it controls. Dr. Kahwaty explains that if there were excess profits to be earned from the downstream retail, it would be better if wholesale market participants were to increase wholesale prices and promote competition in retail rather than splitting the excess profits earned with independent retailers.

Dr. Kahwaty does not agree with the Panel’s comment that having a higher average for refiner-marketer stations than the Canadian average increases the opportunity for effective market control. He asserts that the 4-firm concentration ratio of 36.9% is below the 65% safe harbor threshold based on Competition Bureau’s Merger Enforcement Guidelines.⁹¹

Advanced Biofuels agrees with the Report findings and submits that direct price control by refiner-marketers that is “significantly higher than the average in Canada undermines retail market competitiveness”.⁹² It submits that the term independent retailer is misleading “because the Oil Company supplier has retained control over sales volumes through those stations and also sets the price of fuel supplied to retail stations”.⁹³

Advanced Biofuels notes that the Federal Competition Bureau can determine regional concentration to be against the public interest in a merger and acquisition review and require the sale of some assets to a third party. It recommends that similarly, a BC regulator could mandate the sale of some assets to non-refiners of retail stations in southern BC where concentration is high. In the case of branded stations, an Oil Company would be required to not renew the terms of its supply agreements for a specified number of branded retailers sufficient to bring concentration levels down.⁹⁴

7-Eleven submits that while the recommendations provided by Advanced Biofuels are directed at Oil Companies, it believes them to be prejudicial to independent retailers. 7-Eleven strongly disagrees with any suggestion that pricing in the retail market is not competitive or that the ability of wholesalers to allow retailers to operate under brands owned by the wholesalers somehow compromises competition amongst retailers or adversely affects the retail price of fuels. 7-Eleven states that it operates as an independent retailer under the brands of Esso and Petro Canada and supply arrangements place no constraints on the prices at which fuels are sold. In its view, Advanced Biofuel’s recommendations, if adopted, would have a negative impact on consumers and the provision of retail fuels.⁹⁵

7-Eleven also submits that retailers and consumers benefit from branded fuels because it distinguishes the source of supply and offers other services for customers. If the retailer had discretion to switch the type of fuel brand sold at the whim of the wholesale price, there would be customer confusion because the retailer cannot

⁹⁰ Report, pp. 101-102.

⁹¹ Exhibit C5-30, Dr. Kahwaty, pp. 43-45.

⁹² Exhibit C6-10, Advanced Biofuels, p. 2.

⁹³ Ibid., p. 4.

⁹⁴ Ibid., pp. 11-12.

⁹⁵ 7-Eleven Final Submission, pp. 2-4.

change the site's fuel image to reflect the most recent brand of wholesale fuel purchased. At the end of a contract, retailers weigh the benefits and costs to stay or leave a supplier.⁹⁶

Panel Response

In the Report the Panel was clear in stating there was no evidence of the existence of either collusion or cartel behaviour among the retail operators. Additionally, while the Panel found that the relationship among refiner marketers and independent retailers increases the opportunity for effective market control there is no evidence of this market power being exercised (emphasis added).⁹⁷

Dr. Kahwaty is of the view that the retail concentration is insufficient to drive prices at the retail level. The Panel agrees that the 4-firm concentration model is below the 65 % safe harbour threshold relied upon by the competition Bureau. However, the Panel's finding was based on the fact that in addition to the 36.9 percent of BC stations being controlled, a significant number of retailers are tied contractually by brand to the five refiner-marketers. While the refiner-marketers do not set the retail price for these operators, they do have a cooperative relationship. 7-Eleven has been adamant that, as an independent retailer, there are no contractual constraints on the price at which fuels are sold. However, the fact that there are no contractual constraints does not preclude there being a cooperative relationship and this increases the opportunity for coordination on pricing. While there is no evidence that there is cooperation in setting prices there is also no evidence presented which definitively refutes our observation that this increases the opportunity for cooperation on pricing which would effectively increase the market concentration. Therefore, the Panel is not persuaded there is a need to change our finding.

In Advanced Biofuel's view, where concentration is high, a BC regulator could mandate the sale of some assets to non-refiners or restrict the renewal of the terms of its supply agreements to bring concentration levels down. The Panel agrees with 7-Eleven who opposes this type of move. We have found no evidence of any existing market power being exercised and undertaking recommendations such as those recommended by Advance Biofuels would be draconian given this lack of evidence.

As stated, the Panel has been clear there is no evidence that market control is being exercised at the retail level. With respect to retail fuel sales, the key issue of concern raised by the Panel in our Report is that of volatility and the frustration identified by consumers related to price cycling. This has been addressed in Section 3.7 of the Report and is further addressed in the section below.

3.7 Retail – Price Cycling

There was considerable discussion of the retail price cycling issue and its impacts within the Report. The Panel noted that many British Columbians in their letters of comment identified price cycling as an issue. Many of these identified the high level of volatility related to price cycling as a source of frustration. The Panel also raised the question as to whether observed price cycling could be some form of unplanned 'tacit coordination' and while stating this was possible, reached no conclusion on it. After consideration of the evidence, the Panel asserted that while the retail pricing practices employed could be described as competitive and within the law, we were unable to conclude this competitive activity related to price cycling was in the best interests of the consumer as it causes frustration. The question of whether the high level of price volatility is best dealt with by some form of regulatory model or whether it is best endured as a consequence of a competitive market was left to the need for a more fulsome understanding of customer concerns being undertaken.⁹⁸

⁹⁶ 7-Eleven Final Submission, pp. 2-3.

⁹⁷ Report, pp. 93-96.

⁹⁸ Report, pp. 96-97.

During the comment period, Dr. Kahwaty stated that the BCUC’s “concern with excessive volatility overlooks the fact that the majority of the economic literature finds that, relative to markets with more stable and hence less volatile pricing, price cycles appear to lead to lower prices and are more common in markets with aggressive independent competitors”. In support of his position he cited a number of studies further stating that “Price cycling is associated with the greater presence of independent firms, which is inconsistent with the idea that such cycling is either a reflection of, or serves to facilitate, the type of coordination that raises competition policy concerns”.⁹⁹

Dr. Kahwaty explains that tacit coordinated conduct is easier to support when competitors have similar cost structures and there are fewer of them and these factors make this conduct unlikely in BC. He states there are multiple retail competitors in most BC markets and with business strategies and cost structures that vary among competitors. As an example, he points out that the cost structure and business model used by a retailer with a smaller convenience store would differ from others with larger convenience stores.¹⁰⁰

Dr. Kahwaty states there is no economic support for the BCUC stating that price cycling may represent tacit coordination among retailers resulting in excessive price volatility to the detriment of consumers. In support of this, he states that the literature suggests that consumers benefit from price cycles citing examples of studies that found “price cycling, including intraday cycling, is associated with lower average retail gasoline prices”. He states these findings imply that limiting price variability, with all else being equal, would actually harm customers.¹⁰¹

Panel Response

In his evidence, Dr. Kahwaty provided a listing of studies he believes lends support to his submission that price cycling is a benefit and leads to lower pricing. One of these, Zimmerman, et al. 2013 reports that after cycling began prices were lower from .5 to 1.5 cents per gallon (converted to liters this amounts to 0.13 to 0.4 cpl)¹⁰². Publicly available information summarizing studies such as these indicate that savings may even be slightly higher than those reported by Zimmerman, et al, 2013.¹⁰³

In the Report, the Panel was unable to conclude that the price cycling employed in the BC market, is in the best interests of the consumer. The source of concern is the customer letters of comment which were replete with examples of the frustration felt by consumers with respect to the day to day and intraday volatility of pricing. The Panel takes no issue with the various academic studies that seem to indicate that when price cycling is looked at holistically, there can be savings to the consumer. However, from the customer’s perspective price cycling that is prevalent within the BC market involves sizable changes of price, often over the course of a single day. As outlined in the Report, the Panel provided an example where prices dropped by 10 to 12 cents at an escalator pace and returned to the starting price, all within a single day. This type of price movement indicates that over the course of a day there is an average price and a median price. Depending upon the timing of the purchase an individual customer could be a “winner” and save money or a “loser” and pay a higher price. As pointed out in the Report, this in effect puts the customer in the position of being a trader in a commodity market.

Dr. Kahwaty’s analysis of price cycling has relied heavily on some of the economic research that has been conducted on price cycling. He has provided no evidence to demonstrate that he has considered customer comments. The Panel’s position is that the academic work done in this area cannot be ignored but neither can the consumer. Our view is that each of these must be balanced in determining an appropriate approach to deal

⁹⁹ Exhibit C5-30, pp. 39-41.

¹⁰⁰ Exhibit C5-30, p. 42

¹⁰¹ Exhibit C5-30, pp. 41-43.

¹⁰² Exhibit C5-30, p. 41

¹⁰³ Michael D. Noel, “Edgeworth Price Cycles”, March 2011; an article summarizing studies related to price cycling.

with this issue. In the Report the Panel found that a potential option would be to consider some form of retail regulatory model. However, before deciding whether to embark on such an undertaking, the Panel acknowledged there was a need for a more fulsome understanding of customer concerns. We believe that this remains the most appropriate approach to determining a better understanding of the problem and developing a balanced solution.

Dr. Kahwaty states that there is no economic support for the BCUC stating that price cycling may represent tacit coordination among retailers resulting in excessive price volatility to the detriment of consumers. The Panel disagrees. We raised the question as to whether the price cycling evidenced in the BC region could be some form of tacit coordination. However, we reached no such conclusion noting that in any case it is not illegal. That said, the Panel is not persuaded some form of tacit coordination could not exist in these circumstances. We note that Maskin & Tirole (1988) wrote the seminal theory paper on Edgeworth Price Cycles where they noted their model can be viewed as a theory of tacit collusion.¹⁰⁴ In the Report we included our own observations of what we saw occurring in the market. This is not evidence there is tacit coordination of some type but on the other hand we have no compelling evidence that tacit coordination in some form could not exist.

As outlined in the Report, the Panel has concerns with respect to the inability to determine actual retail margins with an acceptable degree of accuracy. If the accuracy of retail margin can be improved it will be instrumental in creating a better understanding of the impact of price cycling and other price setting behaviours exhibited around the province of BC.

3.8 TransMountain Pipeline

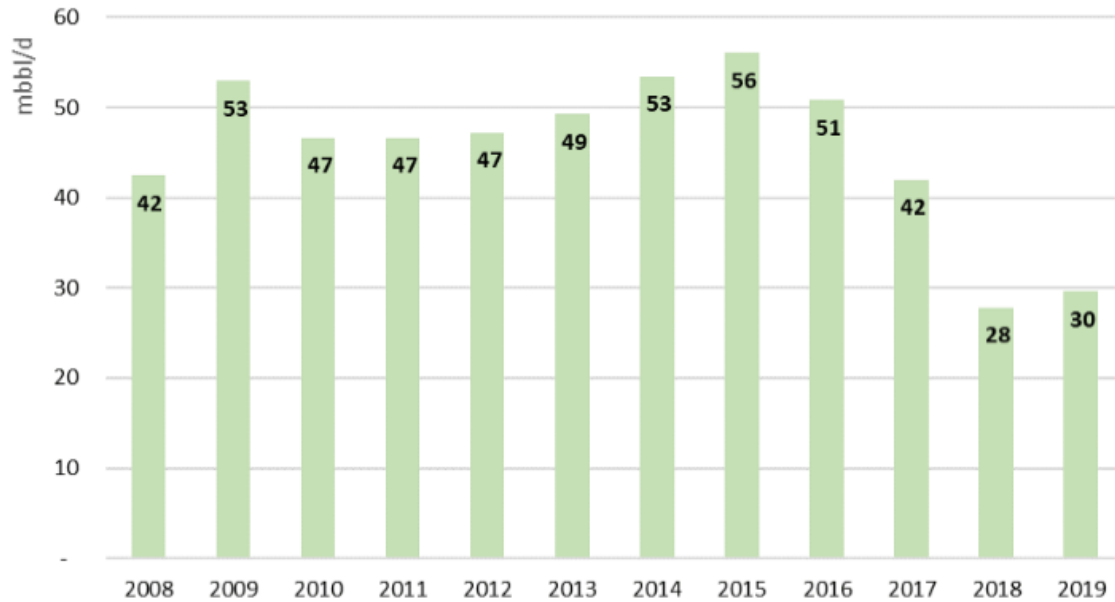
As discussed in Section 5.4 of the Report, transportation of crude oil or refined product into and through BC is by pipeline, rail, marine or truck. Of these options, pipelines are generally considered the most desirable means to move these products because pipelines can move very large amounts of product in the most cost-effective manner. While other methods like rail and marine have the potential to move relatively large amounts of product, they are more expensive and potentially require the addition of facilities and solutions to logistical challenges with offloading. The only pipeline with the potential to serve the Lower Mainland of BC is the TransMountain Pipeline.

Oil Companies state that access to the TMPL has become increasingly limited since 2015, which has necessitated the use of more costly modes of transportation such as rail, marine and trucks.¹⁰⁵ Evidence indicates that the amount of refined product being transported through the TMPL has been moving progressively lower since 2015 as depicted in Figure 2.

¹⁰⁴ Maskin, Eric; Tirole, Jean (1988). "A Theory of Dynamic Oligopoly, II: Price Competition, Kinked Demand Curves, and Edgeworth Cycles". *Econometrica*. 56 (3): 571–599.

¹⁰⁵ Exhibit C2-2, p. 5; Exhibit C5-2, p. 31; Exhibit C8-2, p. 3.

Figure 2: All Refined Product –Throughput Received in Burnaby from the TMPL¹⁰⁶



In support of this position, Parkland submits that pipeline capacity constraints have led to the recommissioning of a crude-by-rail program in Q4 2018, which now accounts for five to ten percent of the crude supply to the Burnaby refinery.¹⁰⁷ Parkland states that rail is more expensive and inefficient relative to crude delivery by the TMPL, which has impacted Parkland’s net margin. Notably, Parkland states that its own access to the TMPL has not affected wholesale gasoline prices in BC since Parkland’s Burnaby Refinery is not the marginal source of supply.¹⁰⁸

Additionally, several interveners note the TMPL allocation methodology changed in 2015, which affected the amount of refined product being transported by the TMPL.

In the Report, the Panel discussed how the change in the allocation methodology, coupled with other factors, has affected the amount of refined product being transported by the TMPL. However, as depicted in Figure 3, the reduction in refined product apportionment on the TMPL did not result in a decrease in the amount of gasoline and diesel shipped from Alberta until 2018.¹⁰⁹

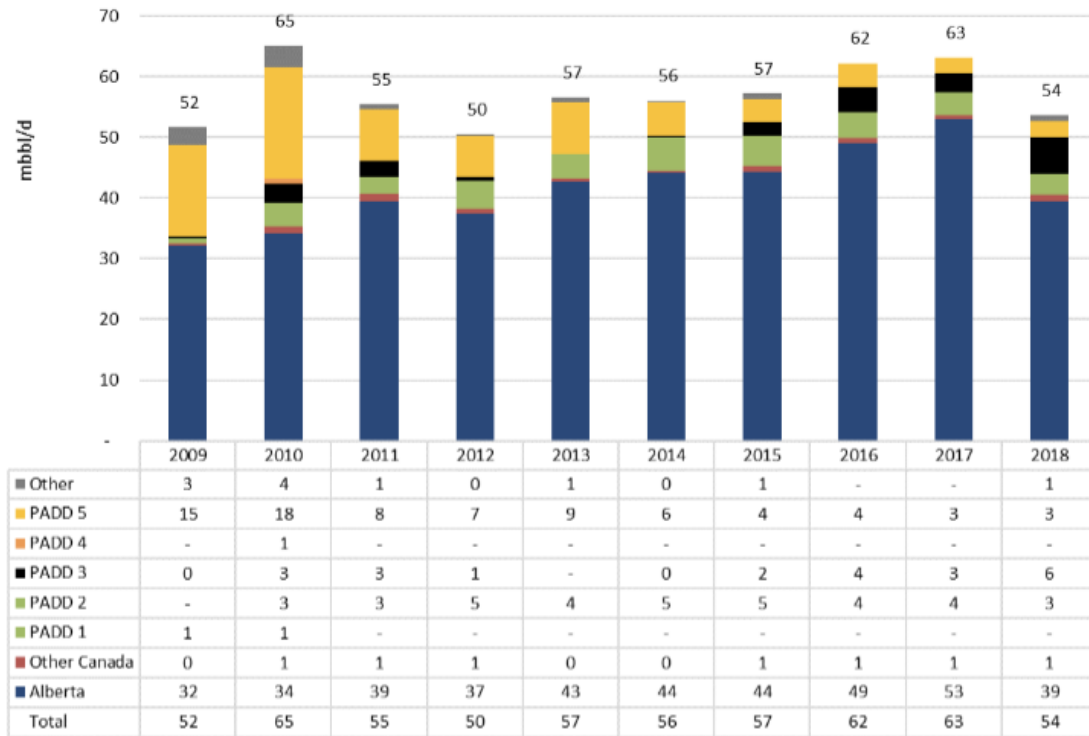
¹⁰⁶ Exhibit A2-1-1, p. 38.

¹⁰⁷ Exhibit C5-2, PDF p. 40.

¹⁰⁸ Parkland Fuel Corporation (Parkland) Final Argument, p. 8.

¹⁰⁹ Report, Section 2.4.3, pp. 7-10.

Figure 3: BC Imports of Road-Use (clear) Gasoline by Source Location¹¹⁰



It appears that the amount of refined products that were displaced from the pipeline were shipped by rail during 2016 and 2017, and the growth in transportation by rail may have slowed in 2018.¹¹¹ Furthermore, the Panel found that the evidence on the additional amount of refined product that Alberta is able to ship to BC, given reasonable transportation costs, to satisfy all of BC’s demand, is inconclusive.¹¹²

During the comment period, a number of participants have reiterated their viewpoint that TMPL pipeline constraints have exerted an upward pressure on wholesale gasoline prices.¹¹³ Suncor states that doing business in BC has become costlier over the last five years because of oversubscription on the TMPL means that refined petroleum product shippers need to rely on more costly methods of transportation, such as rail, truck and marine.¹¹⁴

Similarly, Dr. Kahwaty suggests that the availability of pipeline capacity into BC and its relationship to gasoline prices is underestimated by the BCUC.¹¹⁵ Dr. Kahwaty states that the increase in the refining margin in BC relative to other jurisdictions is coincident with the reduction in TMPL throughput of refined petroleum products into BC. Further, as lower-cost products are removed from the market due to pipeline constraints, BC is forced to rely on ever more expensive alternative sources of supply to meet provincial demand while other Western Canada provinces have not faced these same pipeline constraints.¹¹⁶

¹¹⁰ Exhibit A2-1-3, p. 5.

¹¹¹ Report, Section 2.4.3, p. 9.

¹¹² Report, Section 5.4, p. 45.

¹¹³ Suncor Supplemental Final Argument, Section C, pdf. p. 4; Parkland Supplemental Final Argument, pp. 25-26; Exhibit C5-31 response to BCUC Question 1.2.

¹¹⁴ Suncor Supplemental Final Argument, Section C, pdf. p. 4.

¹¹⁵ Parkland Supplemental Final Argument, pp. 25-26.

¹¹⁶ Exhibit C5-31, response to Question 1.2, p. 10.

Panel Response

Dr. Kahwaty's evidence in the comment period has revisited issues related to the allocation process and the fact that the amount of TMPL space available to ship refined products has been reduced. He points out that as a result, shippers are required to rely on alternative transportation such as rail or marine at a much higher cost to secure product. Dr. Kahwaty and others have stated that the lack of space available on the TMPL is a significant factor effecting gasoline prices and is an important part of the explanation for differences in wholesale prices and refining margins between BC and other Western Provinces.

The Panel is not persuaded that the change in allocation and its impact on pipeline availability at a higher cost provides a satisfactory explanation for any of these differences. As outlined in Section 3.1, the refiner-marketers place a great deal of weight on the marginal unit cost or the PNW spot price as its key reference point in determining rack prices and refining margins. Moreover, based on Figure 3, it is clear that BC's reliance on offshore product is not new as imports from various US sources and abroad has made up a significant part of BC's gas supply from 2009 onwards. Consequently, based on the evidence provided and outlined in our Report, rack and wholesale pricing has and continues to be more closely tied to the cost of the marginal supply than to a more average cost-based system which would take into account all sources of supply in calculating these amounts. A reliance on the marginal cost for price setting effectively sets the price at the highest unit cost. By definition all other gasoline supply sources would be at a lower price which would not affect the marginal price setting mechanism. Given these circumstances, little weight can be given to Dr. Kahwaty's and others assertions that the lack of space available on the TMPL is a significant factor effecting gasoline prices.

That said, the Panel acknowledges the lack of capacity on the TMPL has had an impact on costs for refiner-marketers as most appear to have had to rely to a greater degree on more expensive transportation options such as rail or marine. The magnitude of this impact varies among members of the refiner-marketers group depending upon the amount of crude or refined product which had to be transported by more expensive rail or marine. For example, refiner-marketers like Suncor or Imperial Oil were likely more affected due to the reduced TMPL capacity for refined products, forcing them to place heavy reliance on rail transportation.

While the Panel acknowledges that TMPL capacity issues may have had an impact on refiner-marketer costs, we are not persuaded that this should result in rack pricing which exceeds the marginal cost as represented by the PNW spot price plus transportation. As outlined by Deetken, prices between regions should not diverge by more than the cost of transportation between regions where there is reliance on the marginal unit cost. This is because it would constitute an arbitrage opportunity to transport fuel to the jurisdiction with the higher prices.¹¹⁷ This could destabilize supply. Therefore, just because there has been an increase in transportation costs related to lower cost supply, it does not mean that this should be reflected in the price of the higher cost marginal supply units.

3.9 Economic Regulation and Reporting

In our Report, the Panel discussed the circumstances in which economic regulation has been used in other jurisdictions. The Report also discussed where in the supply chain regulation could be used and stated the potential pros and cons of such regulation.

Economic Regulation

Imperial submits that BC, including Vancouver, are functioning free markets and intervention, such as economic regulation may result in unintended consequences that could never be fully anticipated, and government

¹¹⁷ Exhibit A2-1-1, p. 35.

regulation introduces uncertainty, business risk, additional administrative burden and ultimately may disincentivize infrastructure investment needed to sustain reliable fuel supplies in the future.¹¹⁸

Imperial further submits that any price regulation runs the risk of inadvertently eliminating the incentive needed to attract the supply required to balance the demand. It states, “As an example, the oft-cited concept that a supplier should be selling at its cost plus a margin is generally incompatible with free market economic theory of supply and demand: if the most efficient competitor in a market were to sell its produce above its cost but below a less efficient competitor’s cost, the less efficient competitor becomes unprofitable and likely leaves the market, resulting in shortage.”¹¹⁹

Imperial also states that any attempt to model the marginal layer of supply as a means to regulation runs a high risk of error with the same result. It is nearly impossible to understand all costs and complexities from all supply sources as the basis for a marginal supply model in price regulation and an incorrect application could result in the loss of supply and shortage.¹²⁰

Imperial also refutes the Panel’s suggestion that supply chain regulation may be a consideration as access to logistics is largely held by refiners (i.e. regulate access to logistics). Imperial states that it has described numerous examples of logistics already existing, or planned, available or being developed by non-refiner third parties and that it would be unprecedented in Canada for a local or provincial government to interfere in this type of free commercial enterprise. Imperial further submits that this type of regulation is likely to lead to less investment in the logistics needed to serve the market as new competitors that are currently building these facilities no longer have the knowledge that their investments can be underpinned by the free market and their ability to cultivate their own profitable client base, rather their client base being mandated to them by the government.¹²¹

Price Transparency Measures

Imperial submits that any transparency measures recommended by the BCUC is taken to mean collection and reporting of costs associated with providing finished product. The supply of finished product is highly complex and products that are sold at different prices (gasoline vs diesel) often have interwoven logistics making it impossible to ‘unwind’ the exact costs to serve each product. A similar argument would also hold true for production where gasoline and diesel are both produced from crude oil using a variety of sometimes shared, sometimes independent, processes. Imperial further states that supply sources can vary daily and can be sourced from across North America on various types of logistics. Moreover, attempting to manage a reporting structure designed to track this level of complexity would be burdensome, costly and unlikely to yield a level of accuracy that would be useful.¹²²

Imperial recommends that government intervention would be useful promoting business growth and competition. It explains that the local and regulatory framework that governs new permitting and investment slows the process and creates an unnecessarily administrative burden to new infrastructure and streamlining of such process could encourage new development.¹²³

Imperial also states that environmental concerns are important to all Canadians and should be addressed in a reasonable and responsible way and that BC Biofuels and carbon policies have begun to move out of step with Federal and other provincial frameworks at a pace that has become increasingly difficult to manage. This has

¹¹⁸ Imperial Supplemental Final Argument, p. 5.

¹¹⁹ Ibid.

¹²⁰ Ibid., pp. 5-6.

¹²¹ Imperial Supplemental Argument, p. 6.

¹²² Ibid.

¹²³ Ibid., p. 7.

created an environment where fuel suppliers are required to have unique compliance strategies for BC. As a result, this has accelerated and will likely continue to accelerate the cost to serve BC. Imperial recommends that the Government aligns BC's biofuels and carbon policies to the rest of Canada to reduce the cost of serving the BC market.¹²⁴

Parkland Comments

Parkland submits that although BCUC's report acknowledges problems and risks associated with regulation, the Supplementary Report should acknowledge BCUC's previous determinations that the public interest is not served by the regulation of markets.

Parkland made references to previous BCUC decisions, in particular to the AES Inquiry report where the BCUC stated that "Regulation is costly, time-consuming, and limited by informational asymmetries. It is only in natural monopoly situations where consumer protection is needed that these limitations are outweighed by the benefit of regulation". Parkland states that the Report did not acknowledge the BCUC's previous pronouncements and instead characterized the BC wholesale market as having characteristics of a 'natural monopoly' citing ownership of primary terminals by five companies and barriers to entry. Parkland claims that this characterization is untenable.¹²⁵

Parkland states that the BCUC, in the AES Inquiry Report, described natural monopoly conditions in a way that is fundamentally incompatible with the characteristics of the gasoline and diesel market in BC. Parkland further states that the BCUC identified the essential feature of a 'natural monopoly' as being where delivery is most efficient when done by a single company, i.e. not multiple competitors.¹²⁶

Parkland refers to additional evidence submitted by Parkland and Dr. Kahwaty (Exhibit C5-30), where Dr. Kahwaty provides additional references to literature that define 'natural monopoly' in the same manner and opines that the BCUC report's characterization of the wholesale market as having features of a 'natural monopoly' is unsupported by economic theory.¹²⁷

Parkland further submits that reporting requirements would not address the underlying Pipeline Capacity Issues and that the BCUC Report and the evidence illustrates that capacity constraints on the TMPL have created the conditions for higher prices in BC since 2015. Parkland also submits that the Report makes clear that greater access to the TMPL could have a favourable impact on the BC market and that additional reporting, which comes with cost to consumers, is not required to highlight that situation.¹²⁸

Advanced Biofuels Recommendation

In its additional evidence, Advanced Biofuels makes five recommendations. One recommendation that has not been discussed thus far is that Advanced Biofuels recommends:

- An expert working group, representative of the BC fuels sector, should inform a more detailed set of recommendations to BCUC and to the Minister of Jobs, Trade and Technology.¹²⁹

Advanced Biofuels also recommends collecting and publishing petroleum market data to increase market transparency and enabling public access to the market data. Advanced Biofuels suggests that the BCUC administrate this function.¹³⁰

¹²⁴ Ibid.

¹²⁵ Parkland Supplemental Final Argument, p. 30.

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Ibid.

¹²⁹ Exhibit C6-10, Advanced Biofuels, pp. 2, 9.

¹³⁰ Exhibit C6-10, Advanced Biofuels, p. 9.

Panel Response

The Panel agrees with Imperial that economic regulation may result in unintended consequences and can introduce uncertainty, business risk and additional administrative burden. These factors can disincentivize infrastructure investment needed to sustain reliable fuel supplies in the future.

However, risk is multi-faceted and the analysis of risk is always a balance of outcomes. The need to regulate natural monopolies, such as public utilities, is generally well accepted and can provide many public interest benefits. Regulation isn't a perfect proxy for competition, but it is the only proxy in these circumstances. It is the responsibility of the regulator to ensure that regulatory risk is minimized while still providing protection from the risk of monopolistic pricing – a balancing of risk.

In this case, there is an oligopoly that is exercising market power at the wholesale level. Any regulation that is introduced should not reduce investment incentives. However, there is no evidence that there are currently any realistic investment opportunities for any other parties to invest. The existing members of the oligopoly have an incentive to invest because the returns are high. Those returns are realized through higher prices for customers than they would pay in the absence of an oligopoly exercising market power. Regulation can potentially balance investment opportunities for all with prices to consumers that are fair.

With regard to Parkland's assertion that we should acknowledge previous BCUC determinations that the public interest is not served by the regulation of markets we agree, and we so acknowledge. The BCUC has consistently applied the principle of "only regulate where necessary" and recommended exemptions where market conditions warranted. However, the BCUC found, in its AES report:

It is only in natural monopoly situations where consumer protection is needed that these limitations are outweighed by the benefits of regulation. [Emphasis added]

In the AES Inquiry, the BCUC was specifically considering natural monopolies - not oligopolies - exercising market power. Therefore, its findings and comments were correctly limited to those. In the Report, we found that "considering access to distribution infrastructure and our concerns about the price setting methodology, this market has the characteristics of a "natural monopoly".¹³¹ It is appropriate that the issue of consumer protection be considered in these circumstances.

Parkland submits that reporting requirements would not address the underlying pipeline capacity issues. The Report did not purport that they would. Further, the Report states that the pipeline capacity issue alone is not driving prices as long as the PNW price is the primary pricing determinant.

Reporting requirements are intended to address the ability to monitor costs and further assess the possible need for regulation. There may be issues with what reporting data is made public and what is provided on a confidential basis and further analysis is required to determine what would be the most effective at an economical cost.

In terms of Advanced Biofuels' recommendation to form a working group, the Panel takes no position on whether these activities should take place and which parties would participate. In the above sections and in the Report, the Panel has already discussed various ways and the potential issues of collecting and publishing data.

¹³¹ Report, p. 106.

DATED at the City of Vancouver, in the Province of British Columbia, this 12th day of November 2019.

Original signed by:

D. M. Morton
Panel Chair / Commissioner

Original signed by:

D. A. Cote
Commissioner

Original signed by:

M. E. Doehler
Commissioner