

14th June 2010

Mr Lyndon Hammond
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Dear Lyndon,

Response to Discussion Document: An Investigation into Bitumen Prices

We would like to thank NZTA for producing the above Discussion Document and for providing Roothing NZ with an opportunity to comment on it.

Thank you also for speaking to the Document at our Executive Council meeting late last year. This was most helpful and generated good discussion. Executive Council members were impressed with NZTA's understanding of the issues.

Overall we found that the Document focused on only one of the fundamental inaccuracies of the current formula, namely modeling bitumen price changes by way of a mathematical formula. The Document sought to establish a formula that best replicates historic price changes.

While exploring these mathematical models was useful, we believe that this was a fairly narrow focus and there are other fundamental inaccuracies of the current formula that need to be addressed, including

- The use of a bitumen price weighting in the formula
- Expressing the changes in bitumen price as an index

After much analysis and discussion Roothing New Zealand's Executive Council considered this issue of a fair and robust Bitumen Price Fluctuations formula again at its meeting late last month. It agreed unanimously that the fluctuations formula should be changed to work on volumetrics and the monthly \$ change in bitumen prices. It also agreed by consensus that that \$ change in bitumen price should be measured by changes in raw HSFO prices (i.e. excluding the 1.37 factor) adjusted for the exchange rate.

The justification for these suggestions is set out below:

Inaccuracies with using a bitumen price weighting in the formula

This problem occurs when the actual volume of bitumen used in contracts deviates from the weighting the Bitumen Price Index might have in broader cost adjustment indices. In essence this has a magnification effect i.e. will either overcompensate or under compensate the actual bitumen volumes used. We strongly advocate removing the fixed bitumen weightings in favour of volumetric measures as we believe this is implicitly a fairer and more transparent way to manage this risk for all parties. It would also mean that market fluctuations could be applied to hot mix asphalt and slurry seals, as well as reseals.

We note that volumetrics has been in successful use by the Australian Roading Authorities for many years.

Inaccuracies with expressing bitumen price changes as an index

The magnitude of difference between a Bitumen Price Index and bitumen price movement has been shown to be a function of statistical base effects related to the nominal or actual (HSFO linked) price of bitumen established at the beginning of the contract. Putting this another way, the amount the contractor gets paid, or has to pay back to the Principal, for say a \$200/tonne change in bitumen price varies significantly according to whether the current price of bitumen is \$400/tonne or \$800/tonne. We believe that this is a fundamental problem with using an index approach and should be corrected by expressing bitumen price changes not as an index but as a lump sum change in bitumen price for each month. We strongly advocate a change to this "lump sum change in bitumen price" approach instead of the current "Index ratio" approach as further detailed below.

New Zealand appears to be the only country that uses an index approach to calculate bitumen price fluctuations.

Modeling bitumen price changes

There are other options for modeling for bitumen price changes besides a mathematical model approach. These include:

- A modified HSFO formula
- A New Zealand Bitumen Price Index calculated as the average cost in tank price for bitumen

As requested by Ernest Albuquerque we have listed below the advantages and disadvantages of the three options for modeling bitumen price changes. There are complex issues associated with these options but on balance Roading New Zealand Executive Council agreed by consensus on Option (2).

Option	Advantages	Disadvantages
(1) A mathematical formula that replicates past price changes.	<ul style="list-style-type: none"> ▪ Could better reflect past changes after further work from that in the discussion Document. ▪ Could reflect a mix of both international and domestic price changes. 	<ul style="list-style-type: none"> ▪ No certainty for predicting future price changes particularly in periods of high market volatility, and changing supply structures and participants. ▪ Not an international marker and is not possible to hedge against.

<p>(2) Use HSFO as a basis for calculating price changes</p>	<ul style="list-style-type: none"> ▪ Reasonable correlation with domestic market price changes and may give contractors the opportunity to purchase bitumen on a back to back basis such that they are not exposed to movements in bitumen prices. ▪ Is possible to hedge against. 	<ul style="list-style-type: none"> ▪ Does not replicate international price changes.
<p>(3) A NZ bitumen price index based on the average bitumen price of all bitumen suppliers.</p>	<ul style="list-style-type: none"> ▪ Reflects the actual average cost in tank changes at any time. ▪ Reflects a mix of both international and domestic price changes 	<ul style="list-style-type: none"> ▪ Could be open to manipulation due to the vertical integration of the industry. ▪ Not an international marker so not possible to hedge against. ▪ NZ Industry not united in adoption of a NZ Bitumen index. Very likely that pricing data is not made available due to commercial reasons. ▪ Ability to determine average cost of bitumen problematical given domestic and import supply models

In adopting Option 2, bitumen price fluctuations would be calculated as detailed hereunder:

$$\text{\$ Payment or reimbursement} = \text{Bitumen Volume} \times \text{Price change}$$

$$\text{Where Volume} = \text{Tonnes of bitumen used during period}$$

$$\text{Price change} = \text{Actual \$ lump sum change in bitumen price based on movements in NZ\$ value of HSFO}$$

We suggest that the calculations required for fluctuation payments could be modeled on the Australian approach, but extended to the use of a "web calculator". This would require NZTA to place such a calculator on its website for anyone to use. The respective party would simply enter the tonnes of bitumen used during the period and the calculator would draw on its database of price changes to produce the amount required for reimbursement or payment.

Tonnes of bitumen used could be easily verified from chip seal application rates or from the bitumen content of hot mix asphalt.

We do not agree with the statement on Page 7 of the document that for short term contracts of less than a year, changes in the cost of bitumen can normally be passed onto the client. This is because in times of volatile global bitumen price fluctuations suppliers can only provide price certainty for each shipload or batch of bitumen and there are numbers of these during the year. Furthermore, it has been common practice for many clients including NZTA to exclude contract price fluctuations for short term contracts of less than a year.

In summary we strongly advocate:

- A move away from bitumen weightings to volumetrics
- A move away from an index approach to actual \$ changes in bitumen prices
- The actual \$ changes in bitumen prices be calculated monthly using HSFO adjusted for the exchange rate.
- Requiring bitumen price market fluctuations to be applied on all contracts regardless of contract duration.

The calculation of bitumen fluctuations and the lack of consistency in application across the industry continues to cause Roading NZ member's considerable angst. Clearly there is significant detail to be worked out and we look forward to early dialogue accordingly.

We also suggest that NZTA begins to engage Local Government and its Highways Division on this issue.

Yours sincerely



Chris Olsen
Chief Executive