



27 November 2012

## **Review of New Zealand's oil security**

### **Introduction**

Thank you for the opportunity to provide feedback on the Review of New Zealand's Oil Security discussion paper.

One of the first conversations Z had with government after taking on the ownership and operation of this company in 2010 was around our concerns regarding security of fuel supply and the strength and resilience of the domestic supply chain. As an organisation approaching this very established industry from the outside, one of Z's primary concerns was, and remains, in the area of fuel security and the directly related element of the level of under-investment in this industry.

In this context, this is a particularly timely report in that the trends within the domestic industry continue to place pressure on fuel security in the broadest sense. Z is pleased with the release of this report and the opportunity for public discussion around the issues it canvasses.

Z wishes to provide some higher level comments in the front part of this document on how Z views the current context and the company's thinking on some of the specific actions proposed in the report before addressing the specific questions posed.

### **Understanding impact and the current context**

The New Zealand's domestic fuel supply chain has tightened considerably over the last 20 years as investment in the industry has reduced.

With more than one third of New Zealand's total fuel demand delivered from the country's sole refinery, down a single pipeline to a single terminal, a discussion around supply chain resilience is timely, especially in light of recent catastrophic events and infrastructure failures such as the Maui gas pipeline failure and the Christchurch earthquakes.

It's important to note that while any disruption to the pipeline delivering fuel to Auckland would be profoundly disruptive to the city and the rest of New Zealand in terms of road transport and industry, 100 percent of Auckland International Airport's (AIAL) jet fuel supply would be disrupted. There are no other delivery points in the North Island bar Wellington.

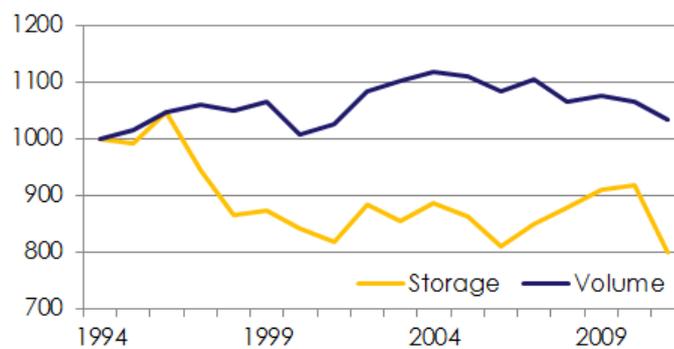
This leads directly into one of the significant questions Z has around the discussion document. When the document talks about 'socially optimal' outcomes, Z is particularly interested in whether this term is used in the context of retail or private fuel consumers, or for industry, or both. This is an important distinction which, in Z's mind, goes to the heart of analysis around potential impact. A household can carpool, walk, catch the train or

otherwise manage a period of disrupted fuel supply, whereas an Air New Zealand, a Fonterra or a large commercial fuel consumer has no discretion around its fuel usage, such that any disruption flows directly through to interrupted operations, the bottom line and, ultimately, to the New Zealand economy.

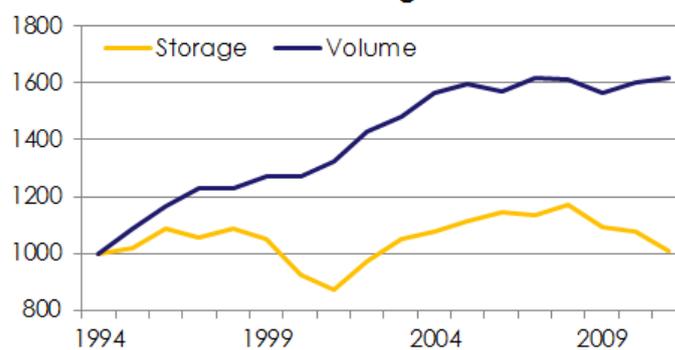
Clarity on this point is important in determining what is deemed an acceptable level of risk. The other important point Z wants to stress is that this discussion and that the considerations that flow from it occur within the current industry and commercial context. For the purpose of summary, Z would describe this context bluntly as being that customers don't want to pay a cent more for a more secure fuel supply, and industry by and large does not want to invest.

How do we know this? The industry trend for the last decade has been for reduced fuel storage and infrastructure, despite growing demand. For example, petrol storage in New Plymouth has been mothballed or switched to diesel storage due to the lower costs of storing diesel. As a result, all of that region's petrol is now trucked from either Wellington or Mount Maunganui. The graphs below show the New Zealand's petrol and diesel consumption trends against available storage capacity.

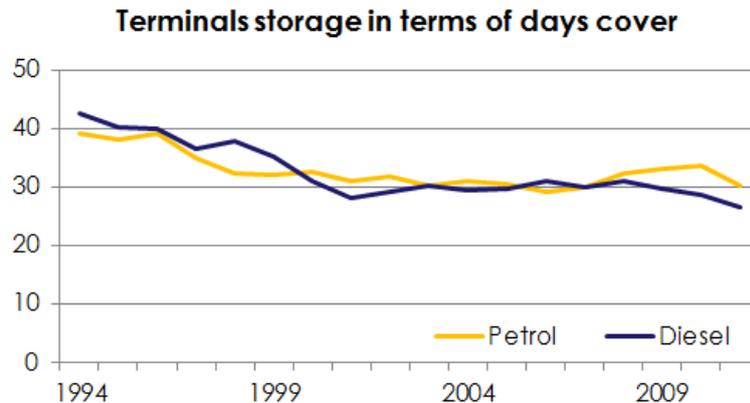
**Petrol volumes & storage indexed to 1994**



**Diesel volumes & storage indexed to 1994**



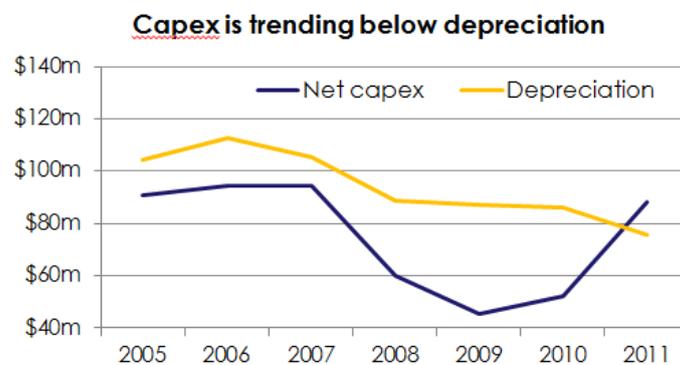
Terminal storage in terms of days cover is also reducing:



The under-investment in terminal infrastructure and the bulk fuel supply chain has increased over a period in which the industry has performed poorly by commercial measures – returns in New Zealand's downstream fuel industry have not met the industry's Weighted Average Cost of Capital (WACC).

In real terms, gross margins in fuel marketing were able to continually decline over the past two decades as industry cut its costs and deferred investment to offset underlying increases in operational costs.

As a result, until Z entered the market, capex had been steadily trending below depreciation. This is a clear sign of an unsustainable industry focused on the short term.



### **Intergenerational security – the need for government and industry partnership**

It is a key part of the current context that – Z believes - there are varying levels of commitment among fuel companies to the New Zealand market. Most recently this has been seen with Shell choosing to exit the New Zealand downstream market, with two of the three major fuel companies voting against the most recent refinery expansion project and with smaller competitors seeking supply from competitors in favour of committing capital to much needed infrastructure.

With this in mind, while Z very much favours markets as the preferred mechanism to deliver commercially optimal outcomes, the company has concerns around leaving fuel supply security and infrastructure investment solely in the hands of this market at this time.

At the heart of this document lie questions around investment in the resilience of long-term intergenerational assets in an evolving and probably consolidating market. It is Z's view that in this context a Government framework around contingency fuel supply infrastructure investment should be considered, at least partially to mitigate the risk of continued status quo and to ensure the best outcome for New Zealand Inc.

Z would be happy to engage further with Government around design of such a framework which might, for example, ensure WACC-equivalent returns over time on industry investment in socially desirable but commercially marginal projects and contingency-specific infrastructure that otherwise will not be built.

There's no judgement in any way here, but the vast majority of this industry is owned by offshore companies. That's neither a good nor a bad thing but it should be noted that competitor companies have other markets and opportunities in which to invest their capital and make returns and the New Zealand operations are very small in the global context.

As a local company, this is Z's only market, and the company is committed to a constructive approach on supply chain contingency in the interests of New Zealand, even if this means supporting less than economically pure models.

Z has already made a \$25 million investment in increasing storage capacity in the South Island since the company was formed and has announced plans for further investments of up to \$40 million in new tankage at Lyttelton and Mount Maunganui to improve supply chain resilience, security of supply to customers and freight economics.

The fuel industry currently operates a tight but historically well-maintained and operated supply chain. However, against this backdrop of low returns, a retrenching industry and industry 'sharing' arrangements that do not reflect the cost of capital or acknowledge or reward economies of scale, Z believes the supply chain is aging and becoming increasingly tight, which in turn leads to an elevated risk profile.

It is difficult to justify any action – let alone major commercial investment - in seeking to mitigate the risk of an event that is probability weighted to a one in 100 to 200 year chance before applying the social and commercial cost of such an event.

Z believes this is not a purely economic issue to solve and that there is a role for Government in the management of intergenerational resilience issues where infrastructure failure can so profoundly impact the national economy. Z believes there is an opportunity, and indeed a need, for government and industry to work in partnership to build greater resilience into the supply chain through a model which works for all parties and which affords greater protection to New Zealand customers, industry and the national economy.

Z believes that the consequential costs of a major disruption will be severe and that industry and government need to also work together to have an agreed and regularly refreshed back-up plan for major scenarios, such as an extended RAP failure.

### **Key risks well defined, questions on probability**

Z believes that the key risks to New Zealand's oil security have been correctly identified within the report. Most of these risks are couched in terms of minimal probability. However, when a broader view is taken across the number of potential eventualities, and the sum of the probabilities, Z thinks that it is reasonable to expect the potential for major disruption every 25 years. This estimate recognises the fact that the industry's

assets are aging and not being replaced. The RAP is currently 25 years old, and as it gets older, its risk profile will necessarily increase.

Z's biggest concern throughout the report is the contingency for Jet fuel supply, especially for AIAL in the advent of a major RAP / WAP / Wiri outage. Resumption in improving supply of petrol and diesel can occur within several weeks through trucking and import solutions but AIAL remains stranded for domestic jet fuel supply.

There is inadequate back-up for even a short disruption at both AIAL and Christchurch Airport, and the primary constraints identified in the report, especially trucking, won't come close to sufficiently addressing this. AIAL can be the back-up airport for a fuel disruption at Christchurch Airport, but not the reverse.

The RAP-WAP bypass as proposed in the document could provide contingency for certain scenarios, and is worthy of investigation. The cost must include a means by which ground fuels in the pipeline can be discharged prior to switching the line to Jet fuel, such as contingency tanks exterior to Wiri. This will likely mean that the cost will be at the upper end of estimates.

The bypass only caters for a scenario in which Wiri is out of action and does not address a significant outage at Refining NZ that prevents products being pumped through the RAP, or of the RAP itself. There is no Jet stored at Mt Maunganui and therefore Z believes consideration should still be given to storing Jet in Auckland with ocean access as part of a genuine contingency approach.

The report comments that:

*Industry investment in a bypass on the Refinery to Auckland Pipeline that would allow jet fuel to flow directly to Auckland Airport may be justified if the cost is considered to be an 'insurance premium' against jet fuel disruption to Auckland Airport. The bypass is the only feasible option for getting jet fuel to Auckland Airport in the event of a Wiri Terminal outage.*

The industry could potentially regard this bypass option as an expensive insurance premium that only covers a single scenario. This is not to say that it shouldn't be considered, as it does have its merits. However a solution such as trucks in storage and additional loading gantries at Refining NZ and/or Jet tanks at Mt Maunganui coupled with additional discharge points at AIAL would also provide a level of insurance across a wider range of potential problems and may work out more cost effective.

On the whole, Z suggests that the contingency solutions to domestic supply disruptions do not have to be 'all or nothing'. An expenditure of around \$200 million would give New Zealand significantly improved contingency across all fuels. If spread across seven billion litres of fuel over five years, this would work out to a levy of about 0.5c a litre. Z is prepared to work with government developing an investment framework and in then committing capital to investment, so long as Z is not commercially disadvantaged by doing so.

However, there are also less expensive options that could provide enough security to mitigate the social cost of one of the domestic supply risks eventuating, such as some of those Z has discussed above.

Across all of New Zealand's fuel volumes a 0.5 cent per litre increase for a period of five years could manifestly improve New Zealand's fuel security and supply chain resilience.

This would be investment which improves social outcomes which could not be made on a rational commercial basis, which is why Z makes the rare case for an element of government co-ordination in designing such an investment framework and programme.

On the topic of international supply disruptions, buying tickets to meet New Zealand's IEA 90 day obligations is far cheaper than providing physical storage, but tickets should not be viewed as being anywhere near as effective as additional product storage in the event of a disruption. In the event of a significant international outage it is difficult to imagine the likes of Spain allowing product to be loaded to ship to New Zealand to meet our domestic ticket obligations.

Z is committed to providing consumers and businesses with a competitive, safe and reliable supply of transport fuels while providing our shareholders with a reasonable return for the investment they have made and the risks they continue to take. As a New Zealand company with a long-term commitment to this country, Z is very mindful of the social cost of major infrastructure failure.

Z is very pleased this conversation is occurring and looks forward to working with the Ministry of Business, Innovation and Employment in finding the right solutions for New Zealand's security of supply.

## Questions

### **Q1. Are you aware of any future investments or shutdowns, or any other factors that are likely to significantly alter the level of commercial inventories held in New Zealand?**

No. Z is actively advancing further storage facilities at Lyttelton and Mount Maunganui but, at a combined total of an additional 35 million litres, these are not significant in terms of meeting New Zealand's 90 day requirement.

### **Q2. Do you agree that the international oil security problem definition is appropriate?**

We don't disagree with the definition, however we do question whether a \$10 million per annum cost of tickets is significant enough to consider a levy, instead of retaining it within Vote Energy.

Given the cost trade-off, the ticketing regime is more economically sensible, however it is worth bearing in mind that the international security issue cannot be fully addressed by ticket funding. There is ultimately no substitute for physical stock in country. For example, if global shortages were to occur, would Spain in practice deliver cargoes to New Zealand to meet its ticket obligations while running short itself?

Another important point to note is that if a worldwide oil crisis occurs, it is possible that ticket contracts held will not equate to the amount of physical stock available, and the IEA will likely need to step in and optimise how fuel is allocated over the total envelope.

### **Q3. Do you agree with the selection criteria used for the international oil security analysis?**

Yes.

### **Q4. Do you agree that New Zealand should maintain its membership of the IEA and continue to meet its IEA obligations?**

Yes.

**Q5. Do you agree that New Zealand should continue to meet its IEA stockholding obligations through ticket contracts rather than purchasing domestic stockholding?** Yes. We also think there is value in further investigating the holding of strategic contingency stock, such as jet for AIAL, but note this would be immaterial in the context of the 90 day stockholding requirements.

**Q6. Do you agree that the government should continue to procure ticket contracts rather than placing a mandate on industry?**  
Yes.

**Q7. Do you agree that it is more equitable to recover ticket contract costs via a levy on fuel than from general taxation? Are there any other matters that the government should consider?**

For the low cost of tickets in and of itself, we don't have an objection to recovering ticket contract costs via general taxation. However a relatively small levy could fund the building and holding of physical storage of Jet for Auckland as already discussed if deemed to be a priority.

**Q8. Do you agree that the PEFML is the most appropriate levy by which to recover ticket contract costs and that it should only cover petrol, diesel, ethanol, and biodiesel?**

While not ideal, the PEFML may be the easiest option from an administrative point of view by which to recover ticket contract costs. A more equitable way of recovering these costs could be through a monetary levy that is collected from fuel companies.

However, we would recommend that the levy doesn't apply to biofuel produced from indigenous feedstock. As domestically produced biofuel will incrementally strengthen New Zealand's onshore stockholding position, we question whether it should be subjected to a levy to recover ticket contract costs.

**Q9. Do you agree that it is best to smooth the levy rate over three years? How much lead time is required for companies to prepare for a change in the rate?**

We don't feel that we have the expertise to comment on how to apportion a levy correctly, so will leave that in the hands of government. From a levy collection perspective, annual changes should not be problematic.

**Q10. Do you agree that the rationale for government investigation into domestic oil supply security is to ensure that domestic oil infrastructure resilience is socially optimal, and to ensure that industry can re-establish supply as quickly as possible following a disruption?**

Absolutely, yes. The term 'socially optimal' lies at the heart of this issue for Z. There is no commercial rationale for building something like a WAP bypass or increased Jet storage in the north and customers will not pay for this kind of investment. However, if a major failure was to occur, the results could seriously impact New Zealand's economy, New Zealanders' way of life, New Zealand's reputation and the viability of many businesses. For low probability, high social impact events, government involvement is critical in ensuring socially optimal solutions. To this end, Z is comfortable with the development of a Government framework through which industry would invest for something like a guaranteed WACC. Clearly, WACC is not a commercial aspiration but such a system would enable industry to invest in non-commercial projects while covering costs.

**Q11. Are there any other measures available to industry or government to increase supply following an emergency disruption?**

Aligning fuel specifications to ensure harmonisation with Australian specifications would make re-supply more efficient and faster.

The fuel Industry has already prepared a set of emergency fuel specifications for diesel, unleaded 91 petrol and unleaded 95 petrol in the event of a pandemic event resulting in a collapse of jet fuel demand within New Zealand (and thus a reduced jet fuel make required at Refining NZ).

These fuel specifications have previously been discussed with the MED, and so should be in MBIE's files ready to be enacted in an emergency.

A similar process could be set up if we wanted to allow petrol and diesel at Australian specifications to be supplied to New Zealand. MBIE could pre-approve Australian specifications in the event of an emergency. Note that the Australians also have a set off emergency fuel specifications that can be adopted.

**Q12. Is the description of the major refinery outage accurate? If not, what should be expected?**

If Refining NZ's RAP input facilities or control room are severely damaged, then the RAP could be unavailable for use for much longer than two weeks.

We also recommend a closer review of the impact on Jet, given there are no import facilities in the North Island other than in Wellington. Manukau harbour could be an option, but a jet barge would need to be secured first.

**Q13. Is 0.20-0.25 percent per year a reasonable probability range for a major outage at the refinery?**

While we haven't conducted a formal risk assessment of this specific scenario, as a starting place we don't disagree with this. That said it's perhaps too simplistic to dismiss a risk just because there is a very low probability of that risk eventuating. The cost of storage will never be justifiable when probability weighted under these circumstances but does this make the decision not to invest the right one, given the potential impact?

Z believes that for the purpose of understanding resilience, contingency and potential impact, the Refinery needs to be seen as the individual sum of its parts rather than as one piece of plant.

For this purpose the refinery consists of:

- an oil and products import port,
- a crude production facility
- a truck loading gantry and
- a control / operating facility which operates the RAP.

Given the role of each of these components in an outage scenario – for example, the role of the import terminal, the RAP and the control room in a production outage – Z believes it is important to have a deep understanding of RNZ's contingency planning in terms of how certain elements of the refinery can keep product flowing even in the face of a serious disruption to other elements.

The distinction around refinery components becomes important in considering the following questions.

**Q14. Are there other factors that can be addressed to enable industry to better respond to a major refinery outage?**

There are a couple of things that can be done. The first is to be reasonably certain that regional refineries can supply a shortfall. Currently they can, but as Australia continues to close its domestic refining capacity in favour of increased imports, the regional supply mix can be expected to continue to change.

As a suggestion, government could potentially enter into an agreement with South Korea, so that in the event of a domestic incident, they will give preferential treatment to New Zealand's domestic needs if fuel companies cannot secure prompt cargoes.

**Q15. Is the description of the minor refinery outage accurate? If not, what should be expected?**

Yes, but whilst echoing concerns about Jet as above (Q12).

**Q16. Is 0.5-1.0 percent per year a reasonable probability range for a minor refinery outage?**

One in 100-200 years feels generous. While the New Zealand refinery is a very good one, with an excellent track record, there have been instances of major unit failure at Refining NZ, and as their kit ages, the risk increases. The recent Crude Distilling Unit fire is an example of this. It is unlikely that the whole refinery would be affected, but an extended unplanned outage has a reasonable likelihood of occurring. We've seen two extended unplanned shutdowns in the last two years, which were managed by the industry, but had these outages been any larger or continued for any longer, customers would have started feeling the impact.

**Q17. Are there other factors that can be addressed to enable industry to better respond to a minor refinery outage?**

A pre-arranged agreement between the governments of New Zealand and South Korea could be a possibility, as South Korea produces on-specification refined product with ships that generally head in the right direction to be diverted to New Zealand.

**Q18. Is the description of the long-term disruption to RAP/Wiri accurate? If not, what should be expected?**

Yes – a long-term RAP/Wiri outage is major and will have serious consequences for the local and national economies and productivity in the Auckland region.

**Q19. Is 0.2-0.3 percent per year a reasonable probability range for a long-term RAP/Wiri disruption event?**

We haven't done detailed risk modelling on this scenario, but we suggest that the fact that the RAP is 25 years old might increase that probability. We are also interested in the calculations that sit behind this analysis – in particular is the probability calculated on an integrity issue such as corrosion or a technical fault as opposed to an external event damaging the pipeline (earthquake, accidental excavation damage). Given the critical importance of the RAP and the level of disruption that could accompany any outage, we would welcome additional detail on how that is calculated. This would enable a better informed position on probability.

**Q20. Are there other factors that can be addressed to increase the speed with which industry can respond to a long-term disruption to RAP/Wiri?**

Review the cost of holding 20 – 30 semi-trailers in a shed, as bridging fuel from Mt Maunganui to Auckland will require additional trucks. Having trucks and pre-trained drivers ready to go will significantly increase the speed of responding to a long-term disruption to RAP/Wiri.

The lack of gantries at Refining NZ and Mount Maunganui are then likely to become the issue, so investment in more gantry capability could help increase the speed with which industry can respond, and the cost is unlikely to be prohibitive.

Z also recommends investigating a system by which retired truck drivers with the required permits to carry fuel can have their permits maintained and up to date as insurance in such an event. This would be low cost and could provide not only a register of emergency truck drivers but ensure they could fulfil the work at short notice. Having a reciprocal drivers cover arrangement with Australia, where New Zealand approved handler certification can be fast-tracked in an emergency, will also help increase the speed with which the industry can respond to a long-term disruption.

A slightly more creative and expensive alternative is the Manukau Harbour LPG pipe being converted to carrying Jet into Auckland in an emergency.

**Q21. Is the description of the short-term disruption to RAP/Wiri accurate? If not, what should be expected?**

The issues will be similar to a long-term disruption however the probability will be higher.

**Q22. Is 0.5-1.0 percent per year a reasonable probability range for a short-term RAP/Wiri disruption event?**

See response to question 19.

**Q23. Are there other factors that can be addressed to enable industry to better respond to a short term outage to RAP/Wiri?**

The factors are similar to the ones we have talked about for the long term outage. Even a short term outage to RAP/Wiri will cause significant disruption to the Auckland region.

**Q24. Is the description of the long-term disruption at Seaview accurate? If not, what should be expected?**

An outage at Seaview only takes out the ocean access for Jet into the North Island as there is storage in Miramar. The shortfall in the first two weeks is likely to be less than 35 percent.

A Seaview outage is significantly less of an issue than a RAP/Wiri outage, as shipping into Napier, New Plymouth and Mt Maunganui is possible, as is additional trucking.

**Q25. Is 0.15-0.25 percent per year a reasonable probability range for a long-term Seaview disruption event?**

We're not in a position to assess this accurately. Given access to the underlying variables and assumptions in this calculation would be helpful to reach a more accurate and informed view.

**Q26. Are there other factors that can be addressed to enable industry to better respond to a long-term disruption to Seaview?**

Addressing gantry limitations at Napier and New Plymouth terminals could enable industry to respond to a disruption at Seaview.

**Q27. Is the description of the long-term disruption at Lyttelton accurate? If not, what should be expected?**

A Lyttelton outage is serious as Timaru does not have Jet storage and Nelson is too far away to realistically offer a supply option. The availability of Jet will be a major issue as

the only alternative is to supply Christchurch from Dunedin and/or Bluff, but the available tankage would be inadequate.

Domestic flights should be able to use a North Island airport to refuel. Long haul will be the most severely affected, but diverting long-haul through the North Island, or bunkering in from Australia could help temporarily address Jet shortage issues.

**Q28. Is 0.2-0.3 percent per year a reasonable probability range for a long-term Lyttelton disruption event?**

While we haven't conducted a formal risk assessment of this specific scenario, as a starting place we don't disagree with this.. Given access to the underlying variables and assumptions in this calculation would be helpful to reach a more accurate and informed view.

**Q29. Are there other factors that can be addressed to enable industry to better respond to a long-term disruption to Lyttelton?**

Ensuring there are viable terminals at Timaru and Dunedin will go a long way. A pipeline from Port Chalmers to Dunedin would also significantly increase resiliency in the South Island. This would be expensive but would add resilience to the supply chain, including improving efficiency of day-to-day supply.

**Q30. Do you agree that the probability of a tsunami that results in disruptions that are more severe than those outlined above is extremely small?**

Yes.

**Q31. How viable is it to use the above mentioned trucks, are there any other trucks in New Zealand that have not been considered above, and are there any regulatory barriers to unconventional trucks being utilised in an emergency?**

The number of additional trucks required in the event of a failure of the RAP, Wiri or Refining NZ is significant. We think there are some real questions around the practicalities of freeing up unconventional trucks. Rural fuel distribution trucks could be a possibility, however we question if we could get access to these trucks quickly, and we don't believe that spare milk trucks would be a solution. By the time the latter becomes available and retro-fitted for use, the issue may be solved.

**Q32. Assuming the Commerce (Cartels and Other Matters) Amendment Bill is enacted, would oil companies be able to plan and coordinate fuel deliveries and trucking resources between themselves in an emergency?**

Yes.

**Q34. Are the assumptions about the length of time to import trucks from Australia reasonable? How could the importation of offshore trucks be expedited in an emergency?**

We don't think that importing trucks from Australia is a substitute for having capacity in country, especially considering the expense of having trucks on stand-by in New Zealand is unlikely to be too high. We also feel that the estimated timing for truck importation appears optimistic.

**Q35. Are there any other sources of drivers that could drive fuel trucks in an emergency?**

Infrastructure companies such as Fulton Hogan, Higgins and Downers could quickly supply and train additional drivers, though in the event of an emergency situation we would expect these companies to be busy – such as in the immediate aftermath of a major earthquake.

Another possibility could be members of the New Zealand military. Given they are already trained in explosives and can be deployed quickly by government, it's worth considering whether some of them can be trained to drive fuel trucks in advance. See above point in question 20 re assisting retired drivers retain their qualifications.

**Q36. Are there any issues that would hinder Australian drivers and New Zealand milk truck drivers driving fuel trucks in an emergency? What measures could be taken to ensure that Australian drivers could obtain approved handler certification sooner? How long would it take to certify Australian drivers if such measures were taken?**

New Zealand and Australian fuel truck drivers are comparable, however there would be substantial risks with using milk truck drivers to transport fuel as they will essentially be in control of a dangerous goods vehicle. Experienced fuel industry drivers from other countries such as Australia would be able to take on the task and obtain approved handler certification far more quickly than a local without this experience.

See also response to question 20.

**Q37. Should drivers without approved handler certification still be utilised in an emergency if they are not required to physically load/unload fuel?**

No. On road safety issues still need to be considered as there is more to handling fuel transportation than the loading and unloading. People who are in control of a dangerous goods vehicle need to have the right experience and credentials.

**Q38. Should driver time restrictions be relaxed in an emergency?**

No. We believe that the current legal requirements provide sufficient flexibility. Managing fatigue is a high priority and should be managed on a case by case basis, but within the limits of the law.

**Q39. What other measures could be taken to reduce bottlenecks at loading gantries at terminals?**

Ensuring 24 hour access to loading gantries in an emergency would help. Having dedicated personnel at gantries to load trucks without the driver having to leave their vehicle will also minimise downtime and increase throughput. Allowing trucks to temporarily operate at maximum weights would also improve efficiency.

**Q40. What other measures can be taken to increase coastal shipping capacity in an emergency?**

Coordinating all remaining stock around the country immediately will protect stock from being taken from other locations and stop a shortage spreading.

As pointed out in the report, foreign ships bringing in imports can also be utilised for some coastal shipping in an emergency or shortage. However, it is worth bearing in mind that the upgrades soon to take place at the refinery mean there will eventually be less import vessels on the water at any one time, as more domestic production means less need to import finished product. This will have an impact on supply flexibility.

**Q41. Do you agree that a government campaign to encourage voluntary demand restraint in a short-term disruption will be effective at minimising a short-term supply shortfall?**

It may help, though we don't know how effective it will be. There was widespread panic-buying at service stations in Christchurch after the earthquakes of February and September 2011. The Buncefield disaster in the UK also induced panic buying of fuel in London.

In a serious shortage, government would need a range of options up its sleeve if voluntary restraint doesn't prove effective, including forced restrictions. A form of managing demand might be needed, such as the gasoline rationing system introduced in New Jersey after Hurricane Sandy, where cars with odd- and even-numbered license plates could fill up only on alternate days.

**Q42. Do you envisage that any consenting process would result in delays to emergency repairs of fuel infrastructure? If so, what are they?**

We don't have any views on this.

**Q43. Do you think that a handbook with representative domestic supply disruption scenarios, and supply-side response measures would help to expedite an emergency response?**

Yes. We think this is a good idea that would keep the dialogue around these issues between industry and government current and focussed. While a handbook will never provide 100 percent solutions because the incidents will always vary somewhat, we think this could be a constructive focal point which would help mitigate these issues falling beneath the radar. The document would need to be refreshed annually.

**Q44. Do you agree that building the RAP-WAP bypass is a reasonable 'insurance premium' to pay to avoid disruption of jet supply to Auckland Airport? Which party is best placed to cover these costs?**

The RAP-WAP bypass is achievable and would provide contingency for certain scenarios, but not all. The cost must include a means by which ground transport fuels in the pipeline can be discharged prior to switching the line to Jet, such as contingency tanks exterior to Wiri. This will mean that the cost will be at the upper end of estimates.

The bypass only caters for a major failure at Wiri and does not address a significant outage at Refining NZ that prevents products being pumped through the RAP, or of the RAP itself. This is an expensive insurance policy but, given the extent to which Jet supplies to AIAL would be disrupted under such a scenario, Z supports further work into this option.

**Q45. What work could be pre-emptively undertaken to expedite the building of a RAP-WAP bypass following a disruption, how much time would this work expedite the build by, and what would this work cost? Which party is best placed to cover these costs?**

Resource consents and use of easements could all be put in place in advance and could expedite the building of a RAP-WAP bypass. It is unlikely to be something that industry would cover given there is no commercial incentive to do so. Z would also recommend consulting local iwi around the project as early as possible.

**Q46. What preparatory measures could industry take to expedite the importation of trucks from Australia in the event of a long-term terminal outage? What measures can government take to ensure that the importation process is sped up?**

A pre-prepared working template with likely suppliers would make implementation much faster.

**Q47. Do you agree that the construction of domestic stockholding is not an economic solution to improving domestic oil security? If you disagree, please state why?**

The report does not specifically say it would rely on tickets for resupply which is good because, in Z's view, the likelihood of a country honouring its commitments in an international supply emergency is likely to be low. The only sure solution to a Jet outage in the north is storage, trucking and gantries at supply and delivery points.

**Q48. What cost effective options are there for improving the resilience of the network? Please provide an explanation of the network vulnerabilities that the option would address, and an estimate of costs.**

Z has covered all the points it wishes to make in both the contextual piece of this submission, in response to these questions and in previous discussions with the MBIE.

Again, we are pleased this discussion is occurring and appreciate the opportunity to comment.