



**SUBMISSION IN SUPPORT OF NEW ZEALAND'S ACCESSION TO MARPOL ANNEX VI:
PREVENTION OF AIR POLLUTION FROM SHIPS (ANNEX VI)**

To: **Attention: MINISTRY OF TRANSPORT**
PO BOX 3175
Wellington 6140
BY EMAIL: maritime@transport.govt.nz

Name of Submitter: Z Energy Limited (the Submitter)

Address for service: 3 Queen's Wharf, Wellington

Z Energy feedback on potential Accession to MARPOL

Thank you for the opportunity to provide feedback on the potential Accession to MARPOL: Annex VI.

At Z, we stand for an environmentally sustainable New Zealand that is an example to the rest of the world and an inspiration to Kiwis.

We are supportive of New Zealand's accession to MARPOL: Annex VI. Annex VI is targeted to address issues arising from shipping emissions and their impact on both human health and climate change. The impact to Z, as both a fuel provider to the maritime industry and a customer to the shipping industry, is notable.

<https://www.transport.govt.nz/multi-modal/currentlyconsultingon/>

It is worth noting that MARPOL Annex VI may have flow-on effects that have an impact on the cost of ground fuels and jet fuel, regardless of whether or not New Zealand accedes. More detail on this can be found in the *Additional Information* section below.

- 1.1 Z Energy Ltd **supports** the potential Accession for the reasons set out in this submission.

Background to Z Energy

- 1.2 Z Energy (Z) is a Kiwi transport fuels company. It was formed following the purchase of Royal Dutch Shell plc's New Zealand downstream transport fuel business by Infratil and the Guardians of New Zealand Superannuation in April 2010. Z subsequently listed on the New Zealand Stock Exchange ("NZX") and the Australian Stock

Exchange ("ASX") in August 2013. Z owns and operates downstream fuel businesses (Aviation, Marine, Bitumen, Petrol and Diesel) in New Zealand through commercial and retail distribution channels.

On June 1, 2016, Z settled the acquisition of Chevron New Zealand ("Chevron NZ" trading under the Caltex brand). Z now supplies approximately 45% of New Zealand's liquid transport fuel requirements, across all fuel types.

Z has a network of service stations and truck stops located throughout New Zealand. The company owns around 200 Z branded retail service stations and over 150 truck stops. The company also has long-term wholesale supply contracts to around 140 Caltex branded retail service stations. Z's fuels include petrol and diesel on the retail side (along with various retail offerings such as coffee, food, carwashes and other leisure products) and petrol and diesel, jet fuel, general aviation fuel, marine fuel oil and bitumen on the commercial side. In addition, Z has significant investments and joint ventures in other infrastructure assets in the transport fuel supply chain including distribution / pipeline network, coastal ship logistics and terminal storage located throughout New Zealand.

Z is both a customer and shareholder of Refining NZ. Z purchases crude oil on the international market, which is then shipped to Refining NZ to be refined into the petrol, diesel, jet fuel, general aviation fuel, marine fuel and bitumen that Z's customers need. Over a quarter of New Zealand's liquid fuel demands are met by direct import of products, delivered around New Zealand by a range of vessels chartered overseas.

The national liquid fuels supply chain is reliant on efficient and safe shipping to carry bulk crude oil or finished product from overseas ports to New Zealand, also to distribute finished product around New Zealand ports. Z is aware of the impact of its operating footprint and has been actively working to reduce this. Most recently through increasing the efficiency requirements on our product suppliers and their shipping charters to reduce the CO₂ emissions per voyage.

2. PRINCIPAL SUBMISSION

- 2.1 Q1: Z supports Accession to MARPOL: Annex VI. At Z, we stand for an environmentally sustainable New Zealand that is an example to the rest of the world and an inspiration to Kiwis.

We recognise this change is not without challenges to accomplish in the context of the New Zealand supply chain, but we are committed to working with our suppliers and customers to provide solutions that will enable this important environmental initiative.

It is accepted that a shift in the use of fuel oil to gas oil, one method of meeting the lower sulphur limits, would reduce the overall CO₂ emission on a like for like voyage.

2.2 Q2 – Q4: Z does not have a view on EEDI and SEEMP.

2.3 Q5 – Q7: Z does not have a view on the public health costs and benefits of Annex VI.

2.4 Q8: Z understands that the use of flue gas scrubber technology to reduce atmospheric sulphur emissions will be adopted by some shipping owners. There are unknowns on where the sulphur is ultimately deposited. It is our understanding that open loop systems to scrub sulphur will deposit quantities of sulphur into the ocean that do not currently get directly deposited there. Some overseas ports are moving to restrict the use of open loop scrubbers within their water to prevent sulphur discharges to the marine environment.

The industry in New Zealand will need clarity early if New Zealand were to consider the impact on the marine environment and adopt a similar stance.

The final discharge of sulphur from closed system scrubbers is also unknown for New Zealand. Investment decisions in the industry are likely to be delayed until clarification is possible on port receiving facilities for sulphur discharges.

2.5 Q9: Z utilises both domestically and foreign state flagged vessels to deliver fuels around the coast of New Zealand so views accession to Annex VI as a simplification of the process for domestic vessels to visit overseas ports in Party States. Once vessels are operating to Annex VI specifications domestically, vessels will be configured to visit other ports, and will not need to undergo fuel conversion prior to calling at overseas ports. The cost impact will be unknown until availability of low sulphur fuels become firmer in New Zealand.

2.6 Q10: Coastal fuel tankers are operated for the fuel industry in New Zealand by Coastal Oil Logistics Limited (COLL). Coastal tankers operate predominately on the New Zealand coast, but from time to time the vessels are traded internationally, primarily to Australia, Singapore, China and South Korea. Aligning New Zealand's vessel sulphur emission regulations with these nations would make compliance easier when entering these jurisdictions.

2.7 Q11: Z has no view on this.

2.8 Q12: Z will be working with COLL to prepare a plan to convert coastal fuel tankers to comply with Annex VI when visiting overseas ports in Party States. The ability to access the required ship facilities for maintenance and refitting is critical to ensuring safe and consistent fuel supply throughout New Zealand.

2.9 Q13: Z views the reduction in the allowable sulphur content in marine fuel as a positive change. This will directly reduce the emission of sulphur oxides to the atmosphere, which are known to impact human and environmental health. Z cannot quantify these benefits.

Q14: Z views that there are three elements of the fuel supply chain where financial impacts may be experienced:

1) The effectiveness of refining products within New Zealand, and

2) Increased shipping costs due to increases in fuel costs and/or vessel availability, and

3) A need for interim or parallel infrastructure for <0.5% Sulphur fuels.

If low sulphur fuel oil (LSFO) is not produced in New Zealand, demand for the current fuel oil will drop. Without changes to the refinery process at Refining NZ (RNZ) at Marsden Point, the excess 3.5% sulphur fuel oil will create a need to export greater amounts of fuel oil to foreign markets. This represents a loss of value to the New Zealand economy through additional shipping costs and lower value recovery through the refining process. This would be a cost incurred by the fuels industry.

1) Effectiveness of Refining Product within New Zealand

A move away from marine fuels with >0.5% Sulphur is expected to have impacts on the quantity of fuel oil that is exported from New Zealand. The shift to low sulphur products is expected to result in a drop in demand for high sulphur fuel oil currently produced by RNZ. This will be replaced in the short term with low sulphur gas oil or low sulphur fuel oil. The outcome of this will be an increase in high sulphur fuel oil exports, exporting is [typically conducted at a trading loss].

The different grades of marine fuel are shown in the table below:

Fuel Grade	Comments
HBFO (Heavy Bunker Fuel Oil)	Residual fuel oil with high sulphur content of up to 3.5% as per RNZ product. Will require vessels to have flue gas scrubbers to use to meet Annex VI.
LSFO (Low Sulphur Fuel Oil)	Residual fuel oil with sulphur <0.5%. Not currently available in NZ. Supply options are being investigated.
MGO (Marine Gas Oil)	Marine diesel with sulphur <0.5%. Not currently available in NZ. Supply options are being investigated.
AGO (Automotive Gas Oil - Diesel)	Standard NZ spec diesel. Sulphur content is 0.001%, very low compared to MGO. Readily available throughout existing infrastructure in New Zealand.

It's worth noting that there may be knock-on effects to the price of ground fuels and jet fuel as a result of MARPOL Annex VI, regardless of whether or not New Zealand accedes. Please see the *Additional Information* section towards the end of this submission for more details on this.

2) Increased Shipping Costs

Shipping companies, without flue gas scrubber technology will be required to shift to gas oil or low sulphur fuel, which will cost more. This is also the case with fuels sourced overseas, so it is anticipated shipping costs to New Zealand will increase to account for the increased fuel costs to international shipping companies.

Z's understanding from the market is that it is expected that most shipping fleets will be compliant with Annex VI. Market projections expect an increase in demand for MGO and some LSFOs. There are several ship owners who are considering or investing in scrubbing technologies for their fleets. It is expected that the costs for any use of higher cost fuels or capital investments to fit scrubbers will be passed on to charter parties and through the international supply chains.

3) Infrastructure

To supply LSFO or MGO to the New Zealand market it is expected that refinery plant changes would be required by RNZ and parallel changes to fuel terminal

infrastructure around New Zealand. We understand RNZ are continuing to assess their options for both the production of low sulphur fuel oil and marine gas oil.

A second option exists to import finished product meeting the low sulphur specification. To support this, additional tankage would be required or conversion of existing tanks at key ports such as Mount Maunganui, Nelson, Timaru and Dunedin would be required. The business case for new tankage or the conversion of the existing tankage in those ports has not been completed.

Z's current view is that scrubber technology is likely to be adopted by the cruise ship industry and some of the larger international container vessels. Based on this premise, bunker fuel is likely to remain available via RNZ and via bunkering services such as the Awanui in Auckland harbour. If the assumed increase in vessels installing scrubber technology does not eventuate and more ships are reliant on LSFO or MGO, then this may impact on the security of fuel oil supply due to insufficient quantities being available on the market.

- 2.10 Q15: One of the challenges for shippers and refiners internationally is the lack of a unified standard for LSFO – this could lead to regionally disparate marine fuels. There are known complexities in mixing fuels, so Z is working closely with customers to understand their needs and fuel capabilities. Availability of low sulphur fuels (LSFO or MGO) will largely be tailored to customer demand. LSFO or MGO may be available to import from global markets, however high short-term demand and lack of storage infrastructure may make this unfeasible or pricing particularly unfavourable. There are technical, time and cost constraints limiting the ease of interchanging between Fuel Oil and Gas Oil. This could likely see marine customers move to MGO (or supplied as AGO) for flexibility and certainty, limiting the case for supplying new low sulphur grades.
- 2.11 Q16: This is information for RNZ to provide.
- 2.12 Q17: This is information for RNZ to provide.
- 2.13 Q18: If LSFO is not produced in New Zealand, and sufficient quantities are not imported, then Z views two supply routes for international visiting ships. In the short term, international vessels may not bunker in New Zealand. Instead bunkering prior to coming to New Zealand and bunker again outside New Zealand. The second alternative is the international vessels may convert to operating on gas oil, so may bunker on MGO in New Zealand. A number of large international vessels that visit New Zealand, such as cruise ships, have already completed or will be completing

the installation of flue gas scrubber technology, so will continue to operate on the 3.5% sulphur fuel oil available in New Zealand.

- 2.14 Q19: It is expected that all low sulphur grades of fuel will be more expensive than the current fuel oil grades. Therefore, it would be expected that, unless the domestic fleet installs scrubber technology, fleet operators will face increased operating costs. The payback period for vessel operators will vary, as will the complexity and duration of installation. The uptake of flue gas scrubbers for vessels calling into New Zealand has been increasing and forecast to increase more than previously anticipated.
- 2.15 Q20: If low sulphur grades of fuel are not available in New Zealand then it is expected the domestic fleet will convert to the readily available gas oil, AGO or supplied as MGO (diesel). International vessels will have options to bunker at overseas ports. This is based on vessels operators not installing flue gas scrubbers.
- 2.16 Q21: From a supply perspective there are two main benefits for conversion of marine vessels to using gas oil versus fuel oil. The first is that gas oil (AGO) is readily available in all ports in New Zealand and meets the Annex VI specification for low sulphur. So, minor additional infrastructure would be required to support the marine industry. Secondly gas oil is not a persistent pollutant, so presents a lower risk during bunkering and transfer operations on water than fuel oil.
- 2.17 Q22: As per Q14, the supply cost of gas oil is higher than the current fuel oil, costs which will be passed on to vessel operators and ultimately consumers through higher prices for goods and services. For the fuel supply industry, the shift to low sulphur specifications will reduce the current outlet for refinery residuals from RNZ. This will likely result in additional exports of low value fuel oil to foreign markets, representing lost value to the New Zealand economy. (consider adding COLL estimates and a speculative estimation on our supply chain delivery costs outside of infrastructure.)
- 2.18 Q23: To date, many international cruise ships are fitted with this technology and are bunkered while in New Zealand. Z's view is that this will continue and possibly increase as more modern ships are fitted with the technology. However, it may be a short to medium term solution, with possibly more ships converting to gas oil or LPG in the future.

These are assumptions and if they change significantly, then many unknowns will come into play and the security of fuel oil supply could reduce.

- 2.19 Q24: Vessel operators are better placed to comment on this.

- 2.20 Q25: Z does not have specialist knowledge of the costs or benefits of the abatement technology.
- 2.21 Q26: Z does not have specialist knowledge of the costs or benefits of the abatement technology.
- 2.22 Q27: While linked to price via supply and demand, a key consideration for switching fuels or use of abatement technology is the availability of different grades of fuel. As outlined above, depending on the outcome of decisions by RNZ, low sulphur grades of fuel may be limited in the New Zealand market. This will reduce options available to vessel operators.
- 2.23 Q28: Z understands that the use of flue gas scrubber technology to reduce atmospheric sulphur emissions will be adopted by some shipping owners. There are unknowns on where the sulphur is ultimately deposited. It is our understanding that open loop systems to scrub sulphur will deposit quantities of sulphur into the ocean that do not currently get directly deposited there. Some overseas ports are moving to restrict the use of open loop scrubbers within their water to prevent sulphur discharges to the marine environment. The industry in New Zealand will need clarity early if New Zealand were to consider the impact on the marine environment and adopt a similar stance.

The final discharge of sulphur from closed system scrubbers is also unknown for New Zealand. Investment decisions in the industry will be delayed until clarification is possible on port receiving facilities for sulphur discharges.

- 2.24 Q29: Z does not have a view on this question.
- 2.25 Q30: As outlined above, if low sulphur fuel oil is not produced in New Zealand, demand for the current fuel oil will drop. Without changes to the refinery process at Marsden Point, the excess 3.5% sulphur fuel oil will create a need to export greater amounts of fuel oil to foreign markets. This represents a loss of value to the New Zealand economy through additional shipping costs and lower value recovery through the refining process. This would be a cost incurred by the fuels industry.
- 2.26 Q31-Q35: Z has no view on these questions.
- 2.27 Q36: Z's view is that the list of questions is comprehensive and relevant to inform the Ministry on the issue at hand.

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where the sulphur is ultimately deposited. It is our understanding that open loop systems to scrub sulphur will deposit quantities of sulphur into the ocean that do not currently get directly deposited there. Some overseas ports are moving to restrict the use of open loop scrubbers within their water to prevent sulphur discharges to the marine environment. The industry in New Zealand will need clarity early if New Zealand were to consider the impact on the marine environment and adopt a similar stance.

- 2.28 Q37: Z supports Accession to MARPOL: Annex VI. At Z, we stand for an environmentally sustainable New Zealand that is an example to the rest of the world and an inspiration to Kiwis.
- 2.29 Q38: Z understand that once a decision is made, changes will occur quickly in the industry, driven from overseas markets. However, investment decision cycles mean that significant capital expenditure on vessels, plant and port facilities will require a longer lead time. 3 to 6 months is likely to be too short without a definitive decision in advance of New Zealand depositing the instrument of accession with the IMO.

We recognise this change is not without challenges to accomplish in the context of the New Zealand supply chain, but we are committed to working with our suppliers and customers to provide solutions that will enable this important environmental initiative.

3. ADDITIONAL INFORMATION

- 3.1 It is worth noting that MARPOL Annex VI may have flow-on effects that have an impact on the cost of ground fuels and jet fuel, regardless of whether or not New Zealand accedes.

Some international oil analysts believe that there will be higher demand for diesel as ships, in the short term at least, switch to diesel from fuel oil as they try to meet their commitments under Annex VI, and demand for lower sulphur crude oil increases.¹

- 3.2 The extent to which this change will impact the price of crude oil and refined products is unknown and will be ultimately determined by factors including the demand and supply of different types of crude oil and the response of the global refining and shipping industries to this change. However, it is our view that there is risk

¹ <https://www.wsj.com/articles/white-house-seeks-to-slow-rollout-of-rules-for-cleaner-ship-fuels-1539900741>

of a material increase in fuel prices. As an example, the IEA have estimated a potential increase of 30%, with other estimates higher than this.

- 3.3 If this was to occur, we believe the consequences would not only exacerbate current concerns on fuel prices but have a more recessionary impact at a global level. Such a scenario is articulated in this article by the economist Phil Verleger².
- 3.4 Such an extreme view is not our view, nor representative of a consensus view but at the same time we note the degree of uncertainty that exists and believe it worth bringing this to your attention.
- 3.5 Z Energy is pleased to have the opportunity to participate in the consultation process and remains available to assist with further information as required.

Z Energy Limited

By its authorised representative:

A handwritten signature in blue ink, appearing to read 'D. Binnie', with a stylized flourish at the end.

David Binnie

General Manager Supply and Distribution

5 February 2019

² https://ljp6c3tnea61xd0wz1l33nmf-wpengine.netdna-ssl.com/wp-content/uploads/sites/149/2018/08/20180824_Verleger_Viewpoint.pdf