



10 November 2017

Steven Bailey
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New Zealand Productivity Commission
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Via email: info@productivity.govt.nz

Dear Steven

'Low-emissions economy' Issues Paper

Refining NZ appreciates the opportunity to make this submission to the Productivity Commission (The Commission) on its 'Low-emission economy' issues paper dated August 2017.

Refinery background:

1. Refining NZ is the only oil refinery in New Zealand. It supplies approximately 40% of the total energy needs of New Zealand and 70% of the transport fuel needs, with the remaining 30% imported by our customers from larger, newer Asia Pacific refiners (our competitors) in Korea, Singapore, India and the Middle East.
2. Contrary to the Climate Change Response Act, Refining NZ is an Energy Intensive Trade Exposed business (EITE). The table of New Zealand EITE allocation (see Appendix 1), illustrates that Refining NZ is "Energy Intensive" and given it competes in a global market, it is also "Trade Exposed".
3. Our objective is to produce the highest quality conventional fuel with the lowest carbon footprint practically possible. We have made substantial investments in our Refinery (~\$735 million) in order to produce low sulphur diesel, remove benzene from petrol, improve energy intensity and hence, our carbon emissions profile.
4. Refining NZ supports the intent of limiting or reducing Green House Gas (GHG) emissions.
5. We are committed to making energy and emissions improvements under the NGA we have had with the Crown since 2003. Key elements of the NGA are:
 - An agreed energy intensity improvement pathway which leads to a reduction in Refining NZ's carbon emissions.
 - "Competitive at Risk" (CAR) status. This recognises that if Refining NZ is subject to an emissions charge, there is significant risk of the Refinery reducing or even

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ceasing production if offshore refineries face less stringent climate change policies.

- *Two paragraphs of supporting information that is commercially sensitive and must remain confidential to Refining NZ, have been redacted from this section of the document.*

Since its inception this agreement has provided the necessary level of certainty for Refining NZ to make substantial investment in improving the energy intensity and hence, the carbon emissions profile of our Refinery. We continue to meet our NGA obligations.

6. Refining NZ estimates that in the absence of an NGA, and not being recognised as EITE under the Climate Change Response Act, the impact of a full surrender obligation will have a significant financial impact on the Company, anywhere between \$6m (carbon at around \$6) and \$57m (carbon at around \$50), depending on the price at that time.
7. Oil refining is a global activity with a clear link between remaining competitive in the international market, through amongst other actions, reducing energy use; and as a consequence, reducing GHG emissions. Refining NZ is a case in point: energy costs account for around 36% of Refining NZ's corporate costs. The recent \$365 million investment in a new petrol making unit has lifted petrol production while reducing Refining NZ's CO₂ emissions by around 10% a year.
8. Refining NZ is a major contributor to the Northland regional economy, with 500 employees and contractors. In addition, for every job at the Refinery another six are created in New Zealand (in sectors supplying the Refinery)¹.

Key points from our submission:

Policy certainty is required

9. Refining NZ needs policy certainty on the future shape of the carbon market in order to make long-term capital investments. Significant investments are typically based on a 25-30 year asset life basis.
10. Overly onerous targets which lead to Refining NZ's closure may result in unintended consequences, such as the production of New Zealand's fuel requirements offshore by less energy efficient, more carbon intensive refineries together with increased CO₂ emissions in longer shipping supply chains. Closure of

¹ Bruce, P. Hughes, D. et al (2008); "The New Zealand Refining Company – Our Contribution"; *NorthTec and Institute of Public Policy*; P 6.

Refining NZ would paradoxically, increase GHG emissions globally (carbon leakage).

11. For similar reasons, we believe that any policy changes need to be managed so that New Zealand's climate change policy framework is not out of step with our international competitors. Being ahead of the climate change curve would undermine the competitiveness and viability of this country's energy intensive industries, including Refining NZ.
12. Cross-party support of the major parties in ETS settings will help provide the certainty needed to formulate our long-term capital investment plans.

Protection is needed for Energy Intense Trade Exposed (EITE) industry

13. Free allocation to EITE industry should only be reduced where such measures are implemented by other nations. To do otherwise would impact our ability to compete on the world stage.

Develop a functioning Emissions Trading Scheme

14. Refining NZ believes an ETS remains the most economical way of reducing CO₂ emissions in the long term and we support measures to improve its effectiveness and central place in a New Zealand CO₂ reduction policy.
15. NZ ETS participants should be allowed to source units from international markets. International fungibility would mean the NZ ETS stays in 'sync' with overseas ETS's or carbon taxes, and provides a competitive playing field in terms of carbon costs for EITE businesses.
16. Where NZ ETS carbon pricing is out of 'sync' with international market prices full surrender of units, ahead of our international competitors, would put Refining NZ at a distinct competitive disadvantage and severely impact the Refinery's viability.

Policy makers need to be cautious about overestimating the reduced use of conventional fuels

17. The future of transport will require a mix of fuels, with conventional oil continuing to play a significant part for some time as New Zealand makes the transition to alternative fuels.
18. The growth of fuel alternatives is a logical step towards reducing New Zealand's dependency on imported fuels, and hence, carbon. However, as other submitters have noted, picking winners, may mean we miss out on future opportunities: electric and hybrid vehicles offer a practical transition to lower carbon transport, however, biofuel technology may prove an equally viable future pathway.



REFINING NZ
Your Energy Hive

19. Refining NZ sees the opportunity of participating in biofuel technology and is continuing to study business opportunities including looking closely at the possibility of producing bio jet fuel and bio diesel for long-haul trucking for the New Zealand market.

Be aware of the social impact of any changes to policy settings

20. The social impact of changes to emissions policy, especially in an economically challenged region such as Northland, needs to be recognised by policy makers. Northland is acknowledged as having some of the highest pockets of deprivation in the country, with an unemployment rate two percentage points above the national average and Real GDP per capita around 26% below the national average.²

In Conclusion

As an energy intensive and critical part of New Zealand's energy infrastructure, Refining NZ recognises the part industry has in helping New Zealand to meet its climate change obligations.

We would welcome the opportunity for more detailed discussion on this submission with the Commission.

For Refining NZ

Sjoerd Post
Chief Executive Officer

² Ministry for Primary Industries, February 2015, "Te Tai Tokerau Northland Growth Study: - opportunities report", P.2.

Responses to the Commission's questions:

Q 1. How can the Commission add the most value in this inquiry?

- Refining NZ needs policy certainty in order to make long-term capital investments. Shareholders also assess the regulatory certainty relevant to the underlying asset before making any investment in our business.
- The refinery's business case for investing in energy efficient assets is based on the continued sustainability of our business in a highly competitive market, and requires a long lead-in (typically 5-6 years), clear market signals, and certainty of Government policy for that investment to be approved by the Refining NZ Board. The refinery's recent \$365m investment in a new petrol making unit has reduced our CO₂ emissions profile by around 10% per year is a prime example of this forward focused investment approach.
- For Refining NZ and other significant industrial emitters there is a need for a more detailed assessment approach. Emissions reduction studies that relate to the EU and the UK are not relevant in a New Zealand setting. This is particularly so for Refining NZ which is the only refinery in the country.
- The focus of the inquiry is on domestic emission reduction. However, where this is likely to result in emissions leakage and increased global emissions, this should be clearly highlighted and evaluated.
- The rate of technology adoption across different sectors which differs in relation to asset life and value needs to be recognised and evaluated. The risks associated with premature closure of the refinery (and other heavy emitters) caused by policies that do not take into account the rate at which a sector can respond, should be highlighted.
- Policy makers need to be wary of creating unintended social consequences of transitioning to a low emission economy, particularly on lower income households.
- The Commission has an important role to play as a balanced reference source – for example, to ensure policy makers take account for the societal and economic impact of policy on lower income households.

Q 8. What are the main barriers to the uptake of electric vehicles in New Zealand?

- Refining NZ believes policy makers need to be cautious about overestimating the reduced use of conventional fuels in New Zealand. The future of transport will require a mix of fuels, of which conventional oil will continue to play a substantial

part:

- Conventional fuels offer a unique mix of affordability, availability, portability and higher density than any existing alternative transport fuel;
 - Ongoing improvements in internal combustion engine efficiency will further extend the attractiveness of conventional fuel, including from a carbon reduction perspective;
 - Domestic aviation fuel emissions are likely to grow as a result of increased New Zealand bound tourism. The replacement of international fleets with fuel efficient planes we believe, will only go some of the way to reducing the carbon impact of increased tourism;
 - Hybrid vehicles offer a practical transition to lower carbon motoring with the vast majority also using conventional fuel;
 - Thus, for the medium term New Zealand will still rely on hydrocarbon fuels for much of its energy needs. It is fair to assume that any future reduction will come from reduced fuel imports.
- Therefore, with New Zealand having a long term need for conventional transport fuels, CO₂ reduction targets which lead to Refining NZ's closure may result in the production of New Zealand's fuel requirements offshore, by less energy efficient, more carbon intensive refineries. Increased CO₂ emissions due to longer shipping supply chains may exacerbate this issue. Thus, closure of Refining NZ could paradoxically, increase GHG emissions globally (carbon leakage).

Q 10. In addition to encouraging the use of electric vehicles, what are the main opportunities and barriers to reducing emissions in transport?

- If New Zealand is to meet its climate change targets we believe the Government needs to consider fuel specifications for biofuel (bio jet and biodiesel for long-haul trucking). As we have indicated to incoming Government Ministers, the development of bio jet and biodiesel is something Refining NZ is looking to explore, with a view in the future to refining such fuels at Marsden Point.
- New Zealand's Research & Development budget is well below the OECD average of 2.4% of GDP³. We welcome the signals from Government that substantial investment in this area is needed. Successfully identifying the 'ideas' with the greatest potential and bringing them to 'market' also requires a high degree of cooperation between all parties: research institutes, industry and Government.
- Aviation has a long term reliance on jet fuel. Domestic aviation fuel emissions are likely to grow as a result of increased New Zealand bound tourism. The replacement of international fleets with fuel efficient planes we believe, will only

³ Stats NZ Tatauranga Aotearoa, September 2017, 'Research and Development in New Zealand 2016'.

go some of the way to reducing the carbon impact of increased tourism.

Q11. What are the main opportunities and barriers to reducing emissions from the use of fossil fuels to generate energy in manufacturing?

- The examples cited by the Commission of employing technology to improve energy efficiency (e.g. integrated control systems; using sensors to adapt process conditions; sub-metering to monitor energy used by specific equipment or parts of a plant) are employed at Marsden Point.
- Given that the greater proportion of emissions from transport are created through consumption, rather than by manufacturing, we see opportunity going forward, for migration to biofuels.

Q 18. Policies to lower emissions from particular sources, technologies and processes can have interactions with emission sources in other parts of the economy. What are the most important interactions to consider for a transition to a low emission economy?

- Excluding agriculture (biological emissions) from the NZ ETS elevates land prices, resulting in foresters seeking high carbon price for marginal afforestation. This results in increased ETS costs on sectors which are inelastic (transport) or unable to respond (emissions efficient industry such as Refining NZ that is trade exposed and cannot pass on those costs).

Q 20. Acknowledging the current review, what changes to the New Zealand Emissions Trading Scheme are needed if it is to play an important part of New Zealand's transition to a low-emissions future?

- Refining NZ supports the retention of NZ ETS with the caveat that it must not impose additional costs on our trade exposed business that our competitors do not incur.
- A measured and globally integrated response is needed to combat climate change, yet New Zealand's carbon price at NZD19 is currently out of step with the rest of the world, e.g. the EU price is currently below 8 Euro (NZD13).
- Access to 'accredited' International markets for the purchase of 'approved' units is essential in assisting with global trade neutrality. This will also go some way to levelling out the playing field with jurisdictions that do not stay within the Paris Accord.

Q 22. What type of support for innovation and technology would best help New Zealand transition to a low-emissions economy?



- It is imperative that regulators keep abreast of technological developments to ensure barriers to technology uptake are avoided.
- The recent broadening of the EECA focus to climate change issues will spread the funding base and importantly provide facilitation and assistance in the transition to a low-emission economy. We note that Refining NZ process engineers have been working with EECA on investment in small scale energy efficiency improvement projects.

Q 29. Does New Zealand need an independent body to oversee New Zealand's domestic and international climate change commitments? What overseas examples offer useful models for New Zealand to consider?

- Establishing an independent body needs further consideration. The risk with an independent body is that it doesn't have the necessary grounding in either business or social matters. While the Electricity Authority may be a model worthy of consideration its attempts at Transmission Pricing modelling have been narrowly focused on the economics of electricity supply, without regard for the social impacts, particularly on the poorest of consumers living in Northland.
- Cross political party support for NZ ETS policy is important to ensure longevity of policy settings. To this end, the work of the Globe-NZ group brought political party representatives together and is a valuable forum at an aspirational level. The publication of the Vivid Economics report⁴ prepared for Globe-NZ, proved a useful addition to thinking about how we collectively manage climate change. Going forward, meeting a Zero Carbon target by 2050 will require the development of pragmatic policy grounded in factual detail.

Q 31. What types of analysis and underlying data would add the greatest value to this inquiry?

- The analysis needs to be done on an industrial activity basis, and when looking at large emitters such as the refinery, to not extrapolate emission reduction potentials from international studies.
- Relying on sector definitions used in published NZ climate change analysis obscures the actual impacts particularly for large New Zealand industry which has few participants (in the case of the refinery, only one).

⁴ Vivid Economics Limited (UK), March 2017, 'Net Zero in New Zealand'.



Q 32. What should be the mix, and relative importance of, different policy approaches (such as emissions pricing, R&D support, or direct regulation) in order to transition to a low-emissions economy?

- We believe the mix of policy approaches in terms of priority should be focused on 1. Research and Development; 2. Developing an effective Emissions Trading Scheme; 3. Direct regulation (particularly as we have suggested, amendment of New Zealand's fuel specifications to mandate the use of bio jet and bio diesel).

Q 34. Who are the most important players in driving forward New Zealand's transition to a low-emissions economy?

- Ultimately, business makes investment decisions in response to customer demand and government regulation. The level of global emissions largely comes back to consumer demand driven from lifestyle choices, necessities.
- Policy makers should emphasise that ultimately, net emissions are driven by market factors not production. In other words, each consumer of goods in New Zealand has a responsibility for emissions.
- The Government plays a critical role in providing the national policy settings required for business to make investment decisions with certainty. The development of regional policy such as the Auckland Unity Plan, has the potential to introduce another layer into emission policy that may run counter to policy settings by central Government.

Q 35. What measures should exist (and at what scale and duration) to support businesses and households who have limited ability to avoid serious losses as a result of New Zealand's transition to a low-emissions economy?

- The Refinery's NGA with the Crown has provided the necessary level of certainty for Refining NZ to make substantial investment in improving the energy intensity and hence, our carbon emissions profile. We continue to meet our NGA obligations.
- *A paragraph of supporting information that is commercially sensitive and must remain confidential to Refining NZ, has been redacted from this section of the document.*
- Allocation for EITE industry is important until such time as a (more) level playing field is achieved through other nations placing a price on carbon. Allocation provides the necessary support to trade exposed business like Refining NZ that make a significant economic contribution and generates a critical mass of industry in the region.

- The rate of phase out of allocation under the ETS should align with trading competitors and be activity dependent e.g. petroleum refining may remain exposed while a level playing field for another activity has been achieved.
- The social and economic impact of policy needs to be accounted for. Support for low income households and Maori, especially in an economically challenged region such as Northland, needs to be recognised by policy makers.

Q 38. How should the issue of emissions leakage influence New Zealand's strategy in transitioning to a low-emissions economy?

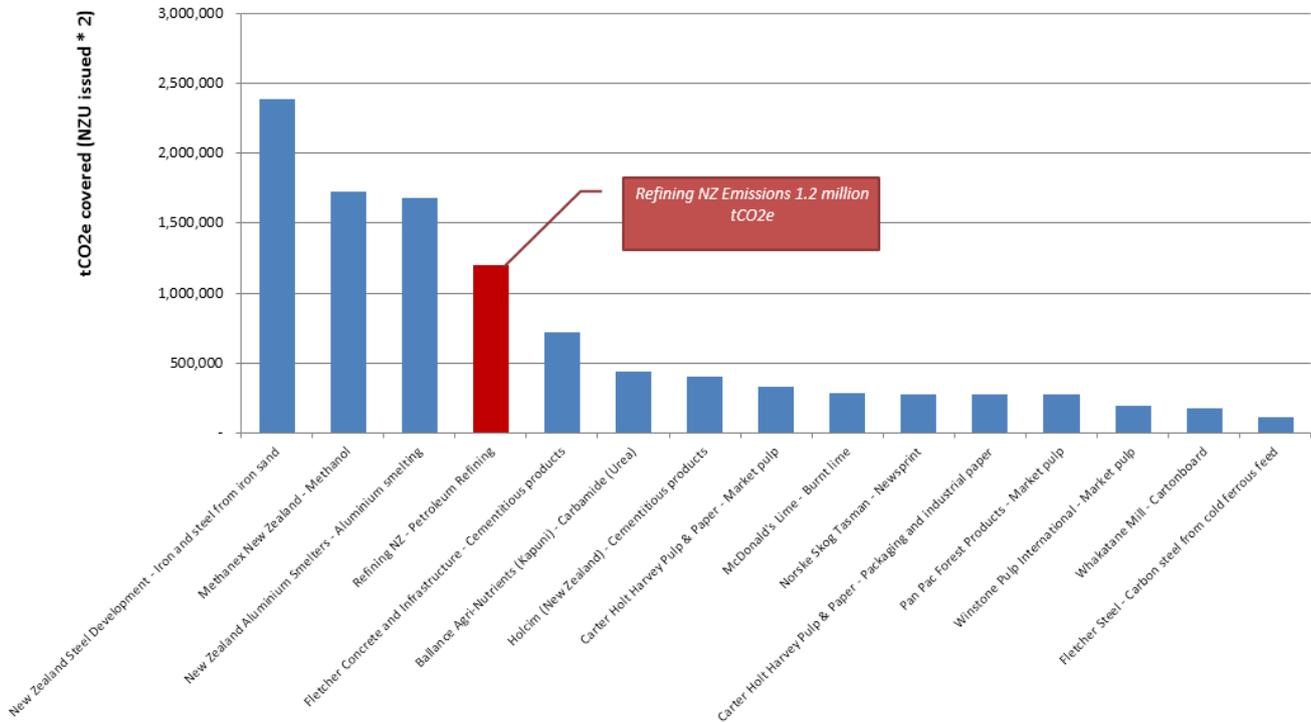
- Exporting our emissions by shutting down New Zealand domestic production would be environmentally irresponsible. The Commission needs to make clear to policy makers that in many cases closing New Zealand production will not decrease global emissions, and may even increase them by shifting manufacturing to countries with poor quality standards, environmental practices.
- It would not make economic sense to impose strict emissions regulation and higher carbon pricing on our Energy Intensive Trade exposed industry without offering support, when international competitors face no such regulation or low carbon pricing. This would simply make the Refinery uncompetitive and lead to our closure.

Q 40. What does your long-term vision for a low-emissions economy look like? Could a shared vision for New Zealand be created, and if so, how?

- Our country has a number of value-adding Energy Intensive, Trade Exposed businesses. For New Zealand to be ahead of other countries, where less stringent emissions policy apply, simply puts New Zealand jobs at risk without necessarily improving global emissions.

APPENDIX 1

NZ ETS 2014 Emissions Intensive Trade Exposed (EITE) Allocation (tCO₂e)



Data sourced from <http://climatechange.govt.nz/emissions-trading-scheme/participating/industry/allocation/decisions/index.html>