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Low-emissions economy inquiry
New Zealand Productivity Commission
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SUBMISSION ON LOW EMISSIONS ECONOMY- DRAFT REPORT

Pacific Aluminium is pleased to have the opportunity to provide a submission in response to the Productivity Commission's (PC) paper on 'Low Emissions Economy: Draft Report' (*the Draft Report*) of 2018. This submission is made by Pacific Aluminium on behalf of Pacific Aluminium (New Zealand) Limited and New Zealand Aluminium Smelters Limited (NZAS). Nothing in this submission is confidential.

Pacific Aluminium is the business unit of Rio Tinto responsible for managing ownership interests in four Australasian aluminium smelters. It owns 79.36 per cent of NZAS at Tiwai Point in Invercargill, in joint venture with Sumitomo Chemical Company Limited, a Japanese company. The Tiwai Point smelter is a world-class facility which contributes \$525 million to the Southland economy annually (10.5% of Southland's GDP) and supports more than 3,200 direct and indirect jobs in the region. In 2016, NZAS paid \$451 million to New Zealand suppliers and in wages and salaries. This included \$46 million to suppliers in Southland. NZAS is one of only two smelters in the world producing ultra-high purity aluminium and the only one producing this using hydro electricity generated from renewable sources giving it one of the lowest carbon footprints of a smelter anywhere in the world.

Aluminium is well positioned for a carbon-constrained world

Aluminium will continue to have a significant role in a carbon-constrained world. It is light, strong, flexible, non-corrosive and endlessly recyclable. Recycling aluminium uses only five per cent of the energy needed to produce primary metal. Its use in lightweight vehicles means it is the fastest growing material used in the automotive sector. The use of one kilogram of aluminium to replace heavier materials in a car or light truck can save a net 20 kilograms of CO₂ over the life of the vehicle. The increased use of electric vehicles is expected to accelerate this trend.

As NZAS is the largest single user of electricity in New Zealand and with the chemistry of the process for producing aluminium inherently requiring the production of CO₂, its owner Pacific Aluminium is vitally interested in how existing and possible future policy regarding greenhouse gas emissions will be applied in New Zealand. In considering policy measures,

Pacific Aluminium adheres to the framework set out by Rio Tinto in its Climate Change Position Statement (www.riotinto.com).

NZAS has taken every opportunity to reduce emissions where it is commercially sustainable, reducing on-site emissions by 55% from ~4.5 tCO₂-e/t Aluminium to ~2 tCO₂-e/t Aluminium since 1990. Currently the only process for economically producing aluminium on an industrial scale, the Hall-Héroult electrolysis process, releases CO₂ because of the inherent nature of the chemical reaction taking place. Aluminium is produced from alumina, the output of a bauxite refining process. To uncouple the oxygen atoms from the alumina they must be combined with a carbon atom and this produces CO₂.

Rio Tinto, Alcoa, Apple and the Government of Quebec have recently announced a joint venture (<https://elysistechnologies.com/en>) supported by the Government of Canada which looks to scale up and demonstrate the economic viability of an alternative process for making aluminium that does not release CO₂ as part of the underlying chemical reaction. The joint venture is targeting the middle of the next decade to demonstrate this process at an industrial scale. The applicability and economic viability of retrofitting this, as yet undeveloped, process to NZAS (or to any other site) is at this stage unknown. As with any major capital investment at an aluminium smelter, the possibility of retrofitting the process will depend on the ability of NZAS to secure a block of electricity at an internationally competitive price for an extended period beyond its current contract's term.

It should also be noted that this process is potentially significant only in a context where the emissions of the electricity supply are low. Powered by renewable hydro-electricity, NZAS has one of the lowest carbon footprints of a smelter in the world, emitting around 15 tonnes less of CO₂-e per tonne of aluminium produced than its coal-fired competitors. NZAS is now one of a small number of smelters which has its metal marketed by Rio Tinto under its 'RenewAl' Brand¹. This certifies the aluminium is made from traceable raw materials and is produced with electricity from low carbon sources, using world class smelting processes. Despite NZAS being by far the largest consumer of electricity in New Zealand, using up to 12% of total generation, aluminium contributed only 0.9% of this country's total emissions in 2015.²

¹ For further information, refer to: <http://www.riotinto.com/aluminium/renewal-low-co2-aluminium-20272.aspx>

² Figure 10 of the Issues Paper

RESPONSE TO THE DRAFT REPORT

The Draft Report has only a limited number of questions for submitters. Pacific Aluminium has accordingly focused this submission on high-level observations about the content of the Draft Report overall:

The Terms of Reference for the Draft Report are too narrow

Climate change is an international problem requiring international action. Pacific Aluminium supports least cost abatement focussed on international action and commitments as the basis for national action on climate change. The concern that Pacific Aluminium raised in the context of the Issues Paper regarding the domestic action focus of the Terms of Reference (ToR) for this PC review has been borne out in the Draft Report which focuses on domestic action rather than the broader international context for emissions reduction. New Zealand is an open economy connected to the world through international trade with very limited barriers to free trade. New Zealand's domestic action should not be considered in isolation but must be seen in the context of how it fits into international action. In particular, as New Zealand advances toward a goal of net zero emissions, least cost abatement at an international level would be expected to be occurring external to the New Zealand economy.

The New Zealand ETS should be central to meeting New Zealand's targets

The New Zealand ETS plays a central role in New Zealand's transition to a low-emissions future. The NZ ETS is a comprehensive and flexible mechanism which can rapidly respond to changing domestic and international developments.

As discussed in our response to the Issues Paper, the current level of transitional assistance provided in the NZ ETS incentivises abatement in companies that carry out EITE activities while ensuring the normal operation and production growth of the company is not penalised. This supports continued growth of the New Zealand economy and the on-going competitiveness and viability of the affected organisation.

The NZ ETS has been able to be adjusted so as to deliver on New Zealand's international commitments at least cost. That least cost abatement was outside the New Zealand economy during the Kyoto commitment period does not mean that the NZ ETS has not delivered on what was required for New Zealand at that time. The domestic-only focus of the Draft Report in our view does not acknowledge the success of the NZ ETS to date in meeting international commitments.

It is positive that the Draft Report supports the continuation of the NZ ETS including supporting the broadening of its coverage to include agriculture and basing the modelling approach on the price of carbon acting broadly in the New Zealand economy. However the

Draft Report while framing the importance of the NZ ETS, still proceeds to recommend multiple other policy approaches focussed on particular sectors. This appears to be indirectly expressing that the NZ ETS is not sufficient.

This multi-policy approach is not aligned with Pacific Aluminium's view that markets are typically the best way to solve complex problems of allocation and efficiency, nor does it seem consistent with the PC's own Statement of Intent³ which points to "dynamic and competitive markets" and "openness to trade and international connectedness" as being important features of high productivity societies.

Further, this does not take into account the already significant transition that the NZ ETS has already made. New Zealand, by moving to the use of domestic only unit surrender for 2016 onwards, has in effect already made a significant change to the NZ ETS with the effective carbon price in New Zealand increasing by a factor of 20⁴ from that seen in recent years. The ramifications of the domestic-only focus of the NZ ETS is still working through the economy. Without requiring any further change it will mean that the cost of and opportunities for abatement in New Zealand become very important in determining the effectiveness of the scheme.

There is limited need for change to New Zealand governance, policies and institutions

The Draft Report contends that "New Zealand has lacked clear and stable climate-change policies". Pacific Aluminium is not convinced that this is the case. The existing Climate Change Response Act (CCRA) framework has provided a durable policy framework supported by both of the major parties of Government. To date points of political difference have been primarily able to be accommodated in the tuning and coverage of the existing NZ ETS mechanism rather than in wholesale changes. As noted above the effectiveness of the NZ ETS needs to be seen in the context of meeting New Zealand's Kyoto commitments. The recent transition in the NZ ETS to a domestic only scheme with the associated uplift in carbon price has not been shown as insufficient for New Zealand to meet its international Paris commitments and there is no reason to expect that it will be. In Pacific Aluminium's view the existing Climate Change Response Act framework, with the NZ ETS pricing the greenhouse gas externality as a centrepiece, and governed directly by the democratically elected Parliament has the necessary capability to deliver what is required.

The Government is the appropriate entity to oversee New Zealand's domestic and international climate change commitments; the New Zealand parliament is the appropriate place for changes to be managed, as are other decisions which have broad economic and social implications for New Zealand and the Ministry for the Environment is the appropriate administrator of the legislation. In that context, we are supportive of the approach proposed

³ New Zealand Productivity Commission Statement of Intent 2014-2018

⁴ Westpac (2016) The Paris Agreement: What it means for the New Zealand economy.

in the Draft Report that the soon to be implemented Climate Commission is to be advisory only, with Ministers still accountable for decisions

Electricity sector targets must properly take into account the particular issues with moving from a very high level of renewables to 100 per cent.

New Zealand already has a much more significant reliance of renewables for electricity generation than do most other nations. However the relatively shallow nature of the allowable hydro storage means that New Zealand must be in a position to manage dry year risk which requires the use of thermal generation able to be dispatched as needed. This provides the necessary back-up that allows New Zealand to continue to source mostly renewable electricity at a national level. Any targets set for the level of renewable generation in the New Zealand electricity sector must take into account these issues.

Modelling change and transition should also include current international obligations and the impact of international offsets

Pacific Aluminium also has some concerns regarding the modelling choices made by the Productivity Commission in the modelling to support the Draft Report. While we recognise that multiple scenarios were modelled, we are still concerned with the arbitrary decisions made to externally force the closure of NZAS in 2025 in one of the modelled scenarios. We are unaware as to why this arbitrary choice was made, noting that NZAS has an electricity contract in place to at least 2030.

We are also broadly concerned that there is not a foundation of modelling New Zealand's current international commitments (50% by 2050 target) to allow a meaningful basis for comparing the revised targets that are considered in the Draft Report. There is also no modelling of what the impacts might be of allowing use of international offsets. We would support both of these modelling actions being completed to inform the final report by the Productivity Commission.

Withdrawal of transitional assistance must be calibrated to what happens in competitor countries

Aluminium is a globally priced commodity; sold on the London Metals Exchange (*LME*), therefore aluminium smelters cannot compete on price and must compete by ensuring operating costs are as low as possible. Relative to the overall aluminium industry, NZAS' high delivered electricity price mean that it has thin operating margins with the profitability of the smelter, and is therefore highly exposed to fluctuations in both the New Zealand dollar and the LME, affecting its ability to achieve long-term commercial sustainability.

The main risk for NZAS associated with climate policy settings remains the lack of comparable action our competitors are exposed to and are unlikely to be exposed to in the short to medium term.

It is therefore a concern that in forming the modelled scenarios, the modelled rates of assistance withdrawal appear to be driven only by New Zealand domestic considerations and are independent of the context in competitor countries

It would not benefit the world or reduce global emissions to introduce more stringent carbon measures in a country that has one smelter using hydro-electricity and already struggling with high delivered energy costs, thereby handing a trade advantage to smelters in other countries using coal fired electricity⁵.

In the case of aluminium, it is critical that our international competitors face a similar price of carbon to the cost in New Zealand, before the transitional measures are wound back in the NZ ETS. For this reason Pacific Aluminium would support the wind back of transitional measures being linked to the development of international schemes applying to a substantial percentage of that global industry, rather than based on New Zealand domestic policy. As Pacific Aluminium has previously argued, a useful metric might be eighty per cent of global emissions being covered by an equivalent price of carbon and that smelter competitors see a similar removal or phase out of transitional assistance. This would cover all of the major economies and therefore almost all of NZAS' competitors.

Conclusions

New Zealand already has in place the framework and mechanisms for an economically and politically sustainable solution. It is important that action and settings for the NZ ETS is paced to match international commitments.

The transition to a low-emissions economy will be a net cost to the New Zealand economy—the primary question is how much it will cost and for how long. In that context, the primary benefit that counts for New Zealand is the contribution to meaningful international action. Unilateral action by a relatively small open economy such as that of New Zealand that is focussed on domestic abatement will only have a meaningful impact on global emissions in the way in which it contributes to broader international action.

NZAS as a business is potentially well positioned to leverage a competitive advantage of producing some of the lowest carbon aluminium in the world when there is an equivalent price of carbon as it applies to aluminium smelting across the global economy. It is important that the policy choices New Zealand makes, as they apply to emissions intensive trade exposed activities, are calibrated to the international response in competitor countries.

⁵ The alternative to producing hydro-powered aluminium at NZAS is the addition of new coal fired based smelting capacity in China (where >50% of the world's aluminium is currently produced).

If you would like to discuss our comments further, please contact either Daniel Woodfield by email: Daniel.Woodfield@pacificaluminium.com.au or myself on (04) 916 1496 or by email: Jennifer.Nolan@pacificaluminium.com.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'J. Nolan'.

Jennifer Nolan

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