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Low-emissions economy
New Zealand Productivity Commission
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Submission on the Low Emissions Economy Draft Report, 27 April 2018 (the 'Draft Report')

1 New Zealand Steel ('NZS') is pleased to have the opportunity to provide comments on the Productivity Commission's (the 'Commission') Draft Report.

2 NZS would like to thank the Commission for a report that makes a significant contribution to the discussion of New Zealand's transition to a low emissions economy. However, NZS has a number of comments on the Draft Report which it considers the Commission should take into account before preparing its final report.

Key Messages

3 NZS fully supports long term regulatory certainty through policies that cover all sectors and that allow New Zealand to reduce its domestic emissions and a transition to a low emissions future, while continuing to grow incomes and well-being. However, we question whether the Commission has adequately considered the impact on incomes and well-being.

4 International competitive neutrality must be fundamentally built into any cost of emissions policy – only then can a global low emissions future be practically achieved. By international competitive neutrality, we mean:

- Calibrating carbon costs imposed on New Zealand emissions-intensive trade-exposed ('EITE') industries so that they are in line with the carbon costs faced by their international competitors, in order to ensure a level playing field for NZS and other EITE businesses.
- ensuring EITE businesses, including NZS, have the benefit of a robust and fair allocation regime that mitigates against carbon leakage.
- Domestic policies that focus on and are cognisant of not only steel production, but also steel consumption.

5 If international competitive neutrality is not achieved, then New Zealand incomes and general well-being will suffer, together with a plethora of resulting adverse economic and social issues. We say this because:

- EITE domestic producers (like NZS) will not have a fair environment in which to be able to effectively compete with overseas producers and thus will ultimately go out of business.

- Consumption of steel in New Zealand will not cease. As a result, the steel consumed in New Zealand will simply be produced offshore – leading to carbon leakage. Thus, trading off New Zealand jobs for nothing more than the perception of reduced emissions.

- Aside from the obvious economic and employment impacts to NZ, carbon leakage is likely to result in a worse global environmental and sustainability profile. NZS has rigorous compliance frameworks relating to its broader environmental footprint, Health & Safety standards, supply chain transparency, corporate social responsibility, push for greater diversity and commitment to human rights. We doubt the same could be said for a large portion of our international competitors – this is part of the potential "cost" if international competitive neutrality is not achieved.

6 The key driver for achieving emissions reductions appears to be increasing the carbon price. However, this will not drive transition for products such as steel where international competition comes principally from countries that do not currently place a price on emissions. Rather, increasing emission pricing in the New Zealand Emissions Trading Scheme ('*NZ ETS*') will simply drive production and jobs offshore to markets with more relaxed emission regulations.

7 In principle, NZS supports the Commission's stated emissions targets in the Draft Report. However, the report is overly focused on proving technical feasibility of achieving net zero emissions by 2050 with inadequate consideration of economic and social outcomes. NZS support comes with a very strong caveat. That is, we have serious concerns regarding the scope, assumptions, veracity and transparency of the Concept Consulting, Motu and Vivid Economics ('CMV') model. If the modelling proves to be materially wrong or regulatory decisions are based on unrealistic expectations, then the stated targets will be unachievable and the broader economic and social cost to New Zealand severely underestimated.

8 Finally, NZS would like to stress that steel is a fundamental input to the global and domestic economy. We disagree with the Commission that there will be a global move away from steel and into substitutable products – there may be some movement around the edges, but if anything, data suggests a global increase in steel requirements. NZS sees steel as part of the solution, not the problem. For example, steel is a critical input into the construction of renewable related infrastructure – infrastructure that directly supports a low emissions economy.

NZS invites the Commission to review the balance of our enclosed submission which builds on the above in more technical detail and nuance.

We would be happy to discuss these and any other issues the Commission considers relevant to progressing its inquiry.

As previously offered, the Productivity Commission is more than welcome to come to the Glenbrook steel mill and see our business in action, meet our people and see our community.

Yours sincerely,

John Nowlan
GM New Zealand Steel & Pacific Islands

New Zealand Steel Limited
Further Submission on the Draft Report

1 In addition to the key messages identified in the cover letter to this submission, NZS makes the following specific comments on the Draft Report.

Summary Points

2 NZS supports many of the Commission's recommendations including, most importantly, the need for emissions regulation to cover all sectors and the need for overarching statutory regimes which provide long-term regulatory certainty. Certainty around policy settings is essential to decision making for long term investment.

3 NZS recognises that it has a role to play in New Zealand's transition to a low emissions economy, albeit noting NZS's low level of emissions relative to the key target areas identified by the Commission; being as agriculture and transport. NZS's key motivations in this submission are to ensure that:

- New Zealand's emissions policy is developed using the most reliable, realistic and robust information and modelling available;
- New Zealand's EITE businesses, including NZS, have the benefit of a robust and fair allocation regime that mitigates against the carbon leakage that would otherwise arise due to overseas competitors not facing commensurate emissions charges; and
- Any actions taken by New Zealand to achieve, or go further than, the existing statutory or agreed Paris Agreement emission reduction targets are very carefully scrutinised in order to preserve economic and social wellbeing and better understand the real economic and social cost.

4 The Nationally Determined Contribution commitments under the Paris Agreement require all signatory countries to work domestically on reducing the worlds' emissions. This places direct onus on producers ignoring the fact that emissions are ultimately the result of consumer demand. For NZ to focus only on production emissions runs a high risk of carbon leakage[1] resulting in economic and social pain.

5 The Draft Report does not adequately scope, analyse and assess the impact on New Zealand society of the changes required over the next 32 years to achieve net zero carbon. It is surprising that the Draft Report makes no reference to the Treasury's Living Standards Framework.[2]

6 NZS has serious concerns regarding the scope, assumptions, veracity and transparency of the CMV model. NZS suggests that the CMV modelling work and its associated narrative in Chapter 3 of the Draft Report is overly focussed on proving the technical feasibility of achieving net zero emissions in 2050, with inadequate consideration of economic and social outcomes. NZS therefore considers that the CMV model should be revised and peer reviewed. Pending such review and revision, extreme caution should be exercised before using the modelled carbon prices as the basis for any regulatory decisions, particularly any NZU pricing controls, including price lower and upper bound settings.

7 Given its significance to New Zealand's transition to a low emissions future, it is extremely disappointing that the Draft Report does not include any detailed assessment of the wider economic and social impacts of the 2050 emissions targets or the modelled carbon costs. It appears that such assessment will only be available in

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1 Draft Report, Section 4.3 page 85.
2 Available at:https://treasury.govt.nz/information-and-services/nz-economy/living-standards-0.

October 2018. Consequently, New Zealand businesses and households are not currently able to fully understand the implications of the modelling or the Draft Report.

8 NZS operates in a sustainably responsible way. It is a viable business that faces international competition. It has a unique process; sourcing iron from local iron sand, mined and transported in a sustainable and environmentally responsible way. 60% of the Glenbrook Steel Mill's electricity requirements are met from use of off-gases and heat from the iron making process. Finished products are transported in many cases by rail with the largest New Zealand market being close to the production site. Glenbrook has world-class environmental controls and world-leading health and safety practices.[3]

9 For products such as steel (where international competition comes principally from countries that do not currently place a price on emissions[4]), increasing emission pricing in the New Zealand Emissions Trading Scheme ('NZ ETS' or 'ETS') will simply drive production and jobs offshore to markets with more relaxed emission regulations.

10 The approach to free allocation for EITE businesses is therefore critical to ensure that the NZ ETS does not unfairly hand overseas competitors a trade advantage. The approach, particularly with respect to allocation phase-out rates, needs to recognise that:

- steel is a key material for many applications and will continue for the foreseeable decades to be a crucial component in projects that enable transition to a low emissions economy;
- steel demand in New Zealand will continue as the country grows and as more is invested in infrastructure and renewable energy projects;
- NZS's size and operations are fit-for-purpose; providing flexibility in production as well as efficiency and timeliness of supply for the relatively small New Zealand economy.
- Under the New Zealand ETS, NZS has faced a cost of carbon since 2010. The overwhelming majority of overseas steel producers still do not face similar emissions regulation and are not likely to in at least the short to medium term.
- Apart from producers in the EU and South Korea, material overseas steel producers do not face similar national emissions regulations. In both the EU and South Korea there is significant free allocation to steel producers. Although China continues to plan for a national ETS, the launch date has been delayed from the original planned commencement in 2017. Furthermore, of the original eight sectors that were to be covered (including steel), only the power sector will now be included in the first instance. It is highly uncertain as to if and when the scheme will be expanded to cover the steel sector.[5]

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3 BlueScope, '*Sustainability Report FY2017*' available at: https://www.bluescope.com/sustainability/reports/ .

4 According to a report prepared for the Australian Industry Greenhouse Network, by the Centre for International Economics, of the countries that have either proposed or implemented an explicit carbon price (in the form of an emissions trading scheme or carbon tax), only a little over 20% of steel production in these countries is in jurisdictions that have actually implemented such policies. Even in those countries that have an explicit carbon price, not all directly apply it to their steel industries, meaning the share of production facing a carbon price is even smaller. The weighted average carbon price in those countries that have an explicit carbon price (whether applied to their steel industries or not) is very low (a little over USD$2/t CO2-e) compared to New Zealand's carbon price. See: Centre for International Economics, 'Trade *competitiveness and international carbon policies'*, May 2017, p.25.

5 Source: Carbon-Pulse China Dossier http://carbon-pulse.com/18865/.

- Where there are climate change policies, the implementation details are crucial in that the actual effect on a sector or facility can be considerably different to the implied broad descriptions of the policy.[6]

11 If the allocation regime in New Zealand is inadequate, the same emissions will occur, albeit from an offshore location, but New Zealand will have lost jobs, revenue, expertise and absorptive capacity. In addition, in all likelihood, the overseas producers will be operating under more relaxed regulatory regimes and likely have both a large environmental footprint and questionable ethical standards.

12 NZS has significant value to New Zealand in terms of its absorptive capacity. Given absorptive capacity plays an essential role in New Zealand's ability to innovate, the impact of emissions regulation on firms such as NZS should be specifically and carefully considered in all policy decisions.

13 Once lost to New Zealand, domestic steel production and the jobs and economic value it brings is unlikely to return. If the modelling proves to be wrong or regulatory decisions are based on unrealistic expectations, there will be no going back or 're-optimising' our economy.

14 More detailed NZS's comments and concerns are set out below and generally follow the order of matters raised in the Draft Report.

Chapter 3 -Mitigation pathways

15 As the Commission rightly points out, modelling can throw light on whether an emissions target is feasible.[7] However, NZS has a number of concerns with the CMV model. Specifically, NZS considers that the CMV model:

- only considers two relatively onerous future emissions targets (being net zero emissions or 25Mt CO_2e emissions by 2050) but does not compare these pathways to the current Paris Agreement reduction commitments;
- relies on potentially unrealistic and/or unfounded assumptions and inputs which have not had the benefit of consultation;
- is not reported in sufficient detail to enable an objective analysis of the modelled outcomes;
- does not include any allowance for least cost abatement through the use of Internationally Transferred Mitigation Outcomes ('ITMOs') under Article 6 of the Paris Agreement; and
- fails to address the challenge of continuing to meet a net zero target post 2050 in an adequate fashion.

Limited modelled targets

16 NZS notes that the Commission's original terms of reference were set prior to the 2017 general election. Subsequent to this the incoming Minister in his letter to the Commission dated 27 December 2017 states that *"it would be helpful for the Commission to take into consideration the Government's intention to set a more ambitious target for 2050. This may include setting a zero net emissions target for 2050."* NZS suggests that the CMV modelling work and its associated narrative in Chapter 3 of the Draft Report is overly focussed on proving the technical feasibility of achieving net zero emissions in 2050, with inadequate consideration of economic and social outcomes.

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6 Centre for International Economics, 'T*rade competitiveness and international carbon policies*', May 2017, p.34.

7 Draft Report, page 10.

17 NZS therefore considers that the CMV model should be revised and peer reviewed. Pending such review and revision, extreme caution should be exercised before using the modelled carbon prices as the basis for any regulatory decisions, particularly any NZU pricing controls, including price lower and upper bound settings.

18 To enable a useful debate and assessment of the economic and social implications of various pathways for a low emissions future it is also essential that the CMV model considers and compares other targets, including New Zealand's commitment under the Paris Agreement of a 30% reduction below 2005 levels by 2030, as well as the current legislated target of a 50% reduction in emissions from 1990 levels by 2050.[8] Without modelling other targets, New Zealand businesses and households are left in the dark as to what is feasible, and importantly, ignorant as to the alternative economic implications of such targets.

Unrealistic Base Assumptions

19 The CMV model is based on a number of assumptions which are not realistic or reasonable.

20 Firstly, the modelled pathways assume that there will be a shift away from steel production in response to global technological developments.[9] This assumption appears to be based on the assumption that substitutes for steel will emerge resulting in reduced demand for steel, but NZS sees no substantiation for this assumption in the Draft Report.

21 While steel manufacturers face inter-material competition on an on-going basis, it is absolutely essential that the Commission and the CMV model recognise that there is presently no known like-for-like replacement for many steel applications – certainly not one that provides the breadth of benefits to the construction and manufacturing sectors that steel does. Furthermore, there is no basis upon which to assume that such a substitute will emerge within the 30 year timeframe modelled. To the contrary, the International Energy Agency shows crude steel production in 2014 as 1670Mt and increasing to 1885Mt by 2030 and 2170Mt by 2050.[10] Given the comparative benefits of steel, it is presently inconceivable that New Zealand will not require steel. The question is simply whether that steel should be locally produced, or imported.

22 The Commission has given no realistic basis for the assumption built into the modelled pathways, that the world will face high carbon prices which result in a global shift away from steel.[11] As noted above, very few of NZS's main competitors operate in markets that impose an emissions price on the steel sector. While NZS would welcome a truly global emissions price, it is highly speculative to assume that this price will emerge over the timescale modelled, especially if other countries continue like New Zealand with a closed ETS. It is even less likely that prices will be at the levels identified in the CMV model. A recent survey of International Emissions Trading Association ('IETA') members by PwC has highlighted a significant mismatch between predicted EU ETS emission allowance prices in 2021-2030 and the much higher theoretical carbon price required to meet the Paris Agreement 2°C target.[12]

23 A more reasonable assumption is that emissions prices will emerge in some nation states or regional blocs but that there will be a wide range of prices. It is also therefore likely that most of those regimes will include some form of transitional protection from carbon leakage (in the form of allocation or tax credits) which ameliorate trade exposure/competitiveness concerns until comparable climate policy

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8 Climate Change Response Act 2002.

9 Draft Report, pages 49 and 62.

10 International Energy Agency, '*Energy Technology Perspectives 2017*', (data section).

11 Draft Report, page 62.

12 IETA, '*GHG Market Sentiment Survey 2018, 13th Edition*', available at: https://www.ieta.org/resources/Resources/GHG_Market_Sentiment_Survey/GHG_Market_Sentiment_Survey-2018.pdf Figure 3.

measures are undertaken by other countries.[13] That has been the experience in carbon markets thus far, and by way of example the European Commission has recently confirmed its intention to continue to provide high levels of free allocation to EU trade exposed operators until at least 2030 with low phase-out rates.[14] NZS continues to commend the 70% of competitors test[15] approach to allocations.

Other concerns with the CMV Model

24 In addition to the above, NZS's advisors have also identified a number of specific concerns with the veracity and transparency of the CMV model. These concerns include:

- A general lack of detail in the reporting of the model which prevents a thorough and objective analysis of the modelled outcomes. For example, no industry or sector level data has been released in tabular form by year to allow analysis of the timing of transitional shifts;

- Reliance on a single relatively high forestry sequestration rate per hectare which relies on emission accounting rules that have yet to be legislated;

- Reliance on high and potentially overly optimistic electrification rates for transport and heat users;

- No linkage between industries (for example lime to steel linkages, peroxide to pulp linkages and urea to resins for LVL/chip board);

- Limited if any provision for short or medium-term changes from higher emissions fuels to gas;

- The models being unnecessarily insular and extreme as they provide for targets which substantially exceed internationally agreed commitments,[16] and do not provide for the use of any international emission units[17]; and

- The models providing no understanding of what New Zealand will look like once the modelled targets are reached.

25 The Draft Report refers to the modelling as "first stage modelling"[18] and in light of the above concerns, NZS suggests that the next stage (which should be completed before finalising the Commission's Report) should be to commission a detailed independent peer review of the model, its underlining assumptions and its outputs. Any modelling that forms the basis of future policy decisions must be detailed and reliable.

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13 The modelling assumptions in the Draft Report are at variance to this position. See Draft Report, Table 3.2, page 55.

14 See European Commission's decision on the Preliminary Carbon leakage List 2021-2030 (2018/C 162/01) (pursuant to Directive 2003/87/EC).

15 NZS Submission to the Productivity Commission, Submission Number 064, 2 October 2017, paragraph 30, and Schedule 2. https://productivity.govt.nz/sites/default/files/sub-low-emissions-64-new-zealand-steel-1580Kb.pdf.

16 Note that calculations have suggested that to meet the internationally agreed goals of limiting temperature rise to 2°C or 1.5°C (in accordance with the Paris Agreement) global emissions would only need to reach zero by 2080-2090 and 2060-2080, respectively. (Source: Morgan '*COP21 Q&A: What Is GHG Emissions Neutrality in the Context of the Paris Agreement?*' World Resources Institute, December 11, 2015, http://www.wri.org/blog/2015/12/cop21-qa-what-ghg-emissions-neutrality-context-paris-agreement and as reported by Carbon-Pulse in their International Dossier http://carbon-pulse.com/26153/).

17 Noting that New Zealand's Paris Agreement targets were predicated on access to international markets and other international emissions trading schemes enable the limited use of international emissions units (see Article 11a(8) of Directive 2003/87/EC establishing the EU ETS).

18 Draft Report, page 67.

Reliance on modelled emission prices

26 Emission pricing is notoriously difficult to model correctly.[19] Given NZS's concerns with the CMV Model, the emissions prices it derives should be treated, at best, with considerable scepticism. They should certainly not be relied upon to make policy decisions regarding emission unit pricing nor should they be used to set any emission floor or ceiling prices.

Lack of economic impact assessment

27 The Commission's terms of reference required it to specifically consider options to reduce emissions "*while at the same time continuing to grow incomes and wellbeing.*"[20] However, the Draft Report is conspicuous in its lack of any assessment of the wider economic impact of the CMV model's pathways and emission prices on key economic factors or on New Zealand households and businesses.[21]

28 In fact, and surprisingly, more than one of the modelled pathways provides for the closure of NZS's operations, without any detailed assessment of the significant resulting economic and social implications. The Draft Report simply notes, without any comment on scale, that "*economic activity will be lost within New Zealand from the closure of iron, steel and aluminium production*"[22] under the disruptive decarbonisation pathway.

29 It bears repeating that NZS employs 1,300 people directly and a further 2,500 indirectly, annually it contributes $278M directly and $351M indirectly to the economy. NZS is the only domestic steel producer, shielding the New Zealand manufacturing and construction sector from steel price shocks, import reliance and tariff wars. At the very least, an economic impact assessment of the wider effects of the modelled pathways needs to be provided before finalising the Draft Report.

30 The 2018 budget confirmed that complex economic modelling of the impact of the 2050 target is being undertaken by the Transition Hub, but will only be available on 31 October 2018.[23] Consequently, it appears unlikely that any informed debate on the modelled low-emissions futures will be possible until well after the Commission's inquiry closes.

31 NZS considers that failure to make economic modelling available to the Commission undermines its work and means that many of the Draft Report's findings and recommendations will need to be reassessed in light of the economic modelling when it is made available.

NZS production [24]

32 NZS, as part of the BlueScope Group, is a world-leading steel producer in terms of sustainability, environmental performance and management, and ethical business practices.[25] NZS is uniquely committed to maximising the use of production waste and

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19 See for example the recent International Emissions Trading Association's '*Greenhouse Gas Market Sentiment Survey 2018*' which showed that respondents considered actual emission prices in the EU would fall substantially below those modelled by the High-Level Commission on Carbon Prices, 2017, Stiglitz and Stern (as referred to throughout the Draft Report).

20 Terms of Reference for Inquiries into the Opportunities and Challenges of a Transition to a Lower Net Emissions Economy for New Zealand, 26 April 2017.

21 While the Draft Report considers the link between emissions and incomes at a high level (page 72) and refers to previous reports on the impact of emissions pricing on petrol and electricity prices (page 226), it is not informed by a broad economic impact assessment.

22 Draft Report, page 72.

23 See: *'Vote Environment'* The Estimates of Appropriations 2018/19 - Environment Sector B.5 Vol.3 at: https://treasury.govt.nz/sites/default/files/2018-05/est18-v3-envir.pdf.

24 Draft report, page 62.

25 BlueScope, '*Sustainability Report FY2017*' available at: https://www.bluescope.com/sustainability/reports/

by-products. 60% of its electricity requirements are produced using off-gases from iron making (with further cogeneration projects currently being implemented), 70,000 tonnes pa of scrap steel are recycled into the steel making process, and recovered slag is reprocessed into paving and roading aggregates and other materials. NZS's key raw material is local iron sand mined and transported in a most environmental friendly way (via slurry pipeline). Many of its markets are close to the site of production.

33 NZS's size and operations are fit-for-purpose providing flexibility in production, as well as efficiency and timeliness of high-quality supply, for the relatively small New Zealand economy. Steel is a crucial component in projects that enable the transition to a low emissions economy. In fact, demand for steel will grow as the country grows and more is invested in infrastructure and renewable energy projects.

Chapter 4 – Emissions Pricing

Inclusion of all sectors with appropriate allocation to EITE

34 NZS supports the Commission's view that the inclusion of all sectors and the appropriate provision for free allocation is a better approach than the total exemption of specific sectors (i.e. agriculture).[26]

Phase-out of free allocation

35 As the Commission states, there is no single global emissions price and the world is far from such a position.[27] Until there is a global emissions price, New Zealand businesses will require free allocation to mitigate against carbon leakage brought about by New Zealand's emissions policy being out of step with our competitors. In other words NZS is advocating for a level playing field that provides international competitive neutrality).[28]

36 NZS supports the principle set out by the Commission that free allocation to EITE firms should be a transitional measure. NZS agrees that free allocation should (with adequate prior notice) be gradually phased out over time as other countries increasingly impose comparable emissions pricing on their firms in the same industry.[29] This approach is needed to counter the impact of lack of coordination of policy between countries.[30]

37 However, the phase-out of free allocation must occur at a rate that is commensurate with overseas competing firms actually facing not only emissions regulation, but equivalent pricing, with comparable enforcement action and no other subsidies. This is consistent with approaches to free allocation under other emissions trading schemes. As noted above, in relation to the EU ETS, the European Commission has recently recognised the ongoing need for protection against carbon leakage and has confirmed high levels of industrial free allocation with low phase-out rates until at least 2030.[31] Again it should be noted modelling undertaken for the Draft Report is out of step with this position.[32]

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26 Draft Report, page 86.
27 Draft Report, page 86.
28 See the paragraph 4 of the cover letter to this submission for a description of what is meant by international competitive neutrality.
29 Draft Report, page 86.
30 The CIE, *'Trade competitiveness and international carbon policies'*, May 2017, p.17.
31 See European Commission's decision on the Preliminary Carbon leakage List 2021-2030 (2018/C 162/01) (pursuant to Directive 2003/87/EC).
32 Draft Report table 3.2, page 55.

38 NZS's original submission to the Commission provided details regarding the "70% of competitors test" for phase down of free allocation. [33] NZS continues to support this rule as a useful and fair method to determine the appropriate time to commence the phase down of free allocation. The Commission does not appear to have considered or commented on this method. It goes without saying that without such a provision there is unlikely to be a future for steel making in New Zealand. Demand for steel will not reduce, and with production off-shore global emissions will continue, quite probably in a less sustainable way.

International emissions trading

39 NZS supports the Draft Report's recognition that investing in high integrity emissions reductions overseas, through credible international emissions unit purchases provides a way to deliver global emission reductions at lower cost to New Zealand.[34]

40 Prohibiting the use of credible overseas emission reductions (as New Zealand has done and as the CMV model assumes will continue), is economically inefficient and imposes unnecessarily high costs on New Zealand businesses. Provided the eligible international emissions units are credible, the global climate change impact will be the same as domestic abatement, simply at lower cost.

41 Other emissions trading schemes, including the EU ETS,[35] have permitted limited use of international emissions units to meet surrender obligations. NZS considers that similar mechanisms should be recommended in New Zealand, provided credibility of units is assured.

Emission Trading Reforms

42 The Commission makes a number of statements and findings in relation to reforms of the NZ ETS, including in relation to pricing mechanisms and structural reform.

43 NZS supports those findings which underscore the need for certainty and consistency in emissions regulation.[36] However, given the current lack of detail regarding proposed reforms to ETS structural elements and mechanisms, and the lack of any detailed economic assessment, NZS reserves its position with respect to the Commission's draft findings.

Chapter 5 – Innovation

Distinction between subsidy and free allocation

44 NZS supports the Draft Report's separate consideration of free allocation to industry, versus subsidies to emissions–intensive activities. [37] NZS considers it is important that the final report distinguishes between the two concepts on the basis that subsidies are pure financial assistance, whereas allocation is a deliberate transitional measure designed to provide competitive neutrality for EITE businesses until a consistent international approach to emissions pricing emerges.

Protecting absorptive capacity

45 NZS supports the Commission's recognition of the important role that absorptive capacity of New Zealand firms plays in transitioning to a low emissions economy. As the Draft Report recognises, without enough firms with sufficient capacity, good

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33 NZS Submission to the Productivity Commission, Submission Number 064, 2 October 2017, paragraph 30, and Schedule 2.

34 Draft Report, page 89.

35 See Article 11a(8) of Directive 2003/87/EC establishing the EU ETS), but noting For Phase 4 from 2021-2030 the EU ETS is expected to be closed to international units.

36 Draft Report, Finding 4.12.

37 Draft Report, pages 113-114.

research will not translate to effective solutions and commercial scale rollout of an effective national innovation system.[38]

46 NZS is an example of a firm with a high level of absorptive capacity. It possesses all five of the Draft Report's markers for high absorptive capacity:

- Overseas links - Through its position in the BlueScope Group, NZS is part of a large multinational industrial business with operations in Australia, Pacific Islands, North America, and Asia. It is also a member of the World Steel Association ('worldsteel'), through which it stays connected with developments regarding research into breakthrough low emissions technologies, alternatives and efficiency measures;

- R&D activity – Although R&D undertaken in traditional industries is often overlooked when considering R&D effort, traditional industries such as steel making have a significant role to play in New Zealand's R&D activity;[39]

- Innovation and export activity – NZS is an industry leader in innovative, safe and sustainable steel manufacturing;

- Large size – As previously noted, NZS contributes over $278M annually directly to the national economy and a further $351M indirectly; and

- Large employer of professionals, managers and technicians – as noted previously NZS employs 1,300 people directly and a further 2,500 indirectly. Of that number, NZS continues to be a training/development ground for countless engineering, scientific, and technical personnel indirectly supporting New Zealand tertiary institutes and further learning. Steel and other heavy industries also are a large user of the pool of skilled fitters and maintenance personnel that New Zealand is able to sustain. Without NZS and other large industries there is increased risk such a labour pool cannot be maintained in New Zealand.

47 Consequently, NZS represents one of a relatively small number of New Zealand firms that have the critical mass of a large manufacturing operation with absorptive capacity to benefit other sectors. Without operators like NZS, New Zealand is unlikely to have the skills necessary to maintain existing businesses and drive innovation in other sectors, and will be reliant on imported skills. NZS therefore considers that the assessment of various emissions policies should take into account their impact on firms with essential absorptive capacity.

Chapter 7 - Laws and institutions

Law and institutions

48 NZS strongly supports the Draft Report's findings in relation to the need for long-term strategies[40] and political commitment to climate change laws and institutions.[41] The qualifier to such long-term planning is that laws and institutions need to be durable and therefore able to adapt to changes and improved information over time and be non-partisan.

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38 Draft Report, page 130 and Finding 5.12.

39 Woodfield, '*Innovation in Traditional Industries*', University of Auckland Business Review, 2015, 18 available at: http://www.uabr.auckland.ac.nz/pdfs/innovatingintraditionalindustrie.pdf.

40 Draft Report, Finding 7.1.

41 Draft Report, Finding 7.2.

Calls for a 'UK style' law

49 NZS supports the calls for political consensus and long term regulatory stability that the Zero Carbon Bill is intended to bring. It agrees that the UK Climate Change Act is a useful model for New Zealand.

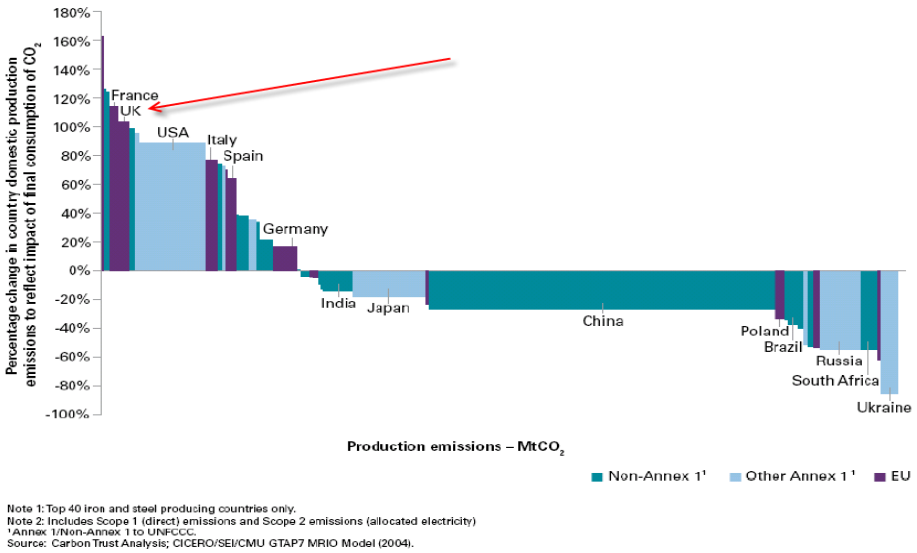
50 However, it is important to be realistic about the extent to which following a UK model alone will result in emissions reductions. This is principally because the New Zealand context differs substantially from the UK context. In the UK, the downward trend in emissions had started well before the UK Climate Change Act came into force and further reductions were made possible through: [42]

- Substantial emission reductions in the UK's electricity sector through the replacement of coal generation and an existing relatively low renewables mix;

- The global financial crisis triggering significant closures or contractions of heavy industry operations; [43] and

- The long-term trend of closing domestic emissions-intensive manufacturing capacity and its replacement with foreign manufactured goods. For example, in the year 2000 the UK produced 15.2 million tonnes of steel and consumed 13.1 million tonnes. By 2016, production had fallen to 7.6 million tonnes, while consumption had only fallen to 10.7 million tonnes. So while the UK's steel production fell by 50% between 2000 and 2016, its steel consumption fell by only 18%. Rather than reduce demand for steel and transition to lower emissions materials, the UK has instead largely closed domestic steel production in favour of imported steel, whose emissions are not counted in the UK's carbon statistics.[44] Figure 1 below illustrates this trend.

Figure 1: International carbon flows (steel)



Source, Carbon Trust, May 2017 [45]

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42 Fankhauser S, Averchenkova A, and Finnegan J, (2018), '*10 years of the UK Climate Change Act*', London, The Centre for Climate Change Economics and Policy and the Grantham Research Institute on Climate Change and the Environment.

43 Ibid.

44 All data from World Steel Association, *'World Steel in Figures'* publications, 2001 and 2017.

45 Carbon Trust, '*International Carbon Flows – Steel*', page 3, available at: https://www.carbontrust.com/media/38362/ctc791-international-carbon-flows-steel.pdf.

51 None of these circumstances occur in New Zealand; national emissions trajectories have been increasing,[46] the renewable electricity mix is already very high and there are concerns regarding the impact of security of supply associated with 100% renewable electricity generation.[47] Furthermore, in the UK there were an array of other non-ETS policies that provided financial incentives for lower emissions or energy efficiency actions.[48] By contrast the Draft Report recommends that New Zealand rely on the emissions price under the NZ ETS as our principal policy tool.[49]

52 Consequently, while the UK model is supported as a tool for greater regulatory stability, it should not be regarded as directly analogous to New Zealand emissions policy.

Chapter 12 – Electricity

53 NZS has had the opportunity to review and supports the submission of the Major Electricity Users Group on the Draft Report. NZS would like to make particular reference to:

- Supporting the Commission's stance regarding the costs and security of supply risk of moving to 100% renewable energy generation.[50] A cost completive and secure base load electricity supply is critical to NZS's operations.

- Requesting the Commission expand and perhaps strengthen its comments regarding hydro generation[51] particularly its flexibility and reliability as a generation source[52] (subject of course to water availability) and the need for the Resource Management Act 1991 to become an enabler of hydro development and other renewable electricity projects.

- NZS notes recommendation R12.2[53] and the caution expressed to ensure high carbon prices do not result in new technologies significantly increasing the wholesale cost of electricity.

- Transpower[54] has also flagged potential outcomes whereby the current electricity market arrangements mean all participants receive the highest price. The prices are often being set by thermal generators, but with a higher percentage of renewables, thermal plant will be required less frequently leading to lower prices and deterring further investment in renewables. Transpower refers to this as a form of 'investment gridlock'.

- NZS draws the Commission's attention to Transpower's comments on "Transmission implications".[55] In particular, the expected 10GW of additional generation capacity that will be required and the need for a significant part of this to be connected to the national grid. NZS echoes the concern as to location of generation in relation to load especially in the upper North Island with growth in Auckland and planned closure of Huntly thermal plant. Location of generation also impacts system voltage stability. The economic and environmental cost of

46 Draft Report, page 22.
47 Transpower, '*Te Mauri Hiko, Energy Futures*', White Paper, 2018.
48 For example, the EU Renewables Directive, the UK Renewables Obligation and the CRC Energy Efficiency Scheme.
49 Draft Report, pages 75 and 108.
50 Draft Report, page 321.
51 Draft Report, page 333, box 12.4.
52 As opposed to say solar generation. Draft Report, page 322.
53 Draft Report, page 335.
54 Te Mauri Hiko, Energy Futures, Transpower White Paper, 2018, page 51.
55 Te Mauri Hiko, Energy Futures, Transpower White Paper, 2018, pages 33 and 34.

providing transmission over long distances is significant. The commission should ensure these points are factored into the modelling and are quite clear in its final report. (As an aside, cogeneration at the NZS Glenbrook site is now the largest generation north of Huntly and NZS provides considerable under frequency reserves into the market).

Chapter 13 - Heat and Industrial Processes

Industrial processes – iron and steel

54 NZS agrees with the Draft Report's recognition that the opportunities to directly reduce GHG emissions from iron and steel production are currently limited.[56] It is also noted that the emissions from iron and steel manufacture in New Zealand are also a very small part of the country's carbon footprint.

55 However, technology breakthroughs and emissions efficiency breakthroughs should not be ruled out. NZS is, through its worldsteel membership, continuing to work towards emission reductions in the steelmaking process and NZS remains vigilant to new technologies that can materially reduce emissions or improve efficiencies. NZS has made a number of substantial emission efficiency advances[57] and is actively engaging with technology developments including in relation to assessment of possible alternative fuel sources.[58] Transitional free allocation provides a level playing field for domestic businesses to compete with off-shore competition that does not face the same carbon costs. This provides valuable time for R&D activity, development, and the scale-up to full production. This approach is quite different to a subsidy which favours inefficient operations against competitors doing business on a like-for-like basis.

Carbon capture storage ('CCS')

56 The Draft Report suggests that for large, single-point sources of significant carbon emissions such as steel, CCS may be a suitable means of reducing or eliminating net emissions in the future.[59]

57 While CCS has conceptual appeal, NZS is cautious about placing considerable reliance on CCS as a removal mechanism for a number of reasons. Firstly, New Zealand's geological context raises considerable risks regarding the permanence and reliability of CCS. Secondly, the costs of early CCS projects have been extremely high and have resulted in very low uptake of CCS projects. Indeed the UK experience shows that despite the UK government providing nearly £30 million in financial support towards developing CCS projects, the wider CCS research programme was ultimately mothballed.[60]

58 That said, NZS is certainly not opposed to the development of CCS technology in New Zealand and supports the Draft Report's recommendation for new legislation regulating CCS activities. Again it must be recognised there is often an extended time and large investment required to take a technological breakthrough to large scale application. NZS will be keen to embrace an effective and commercially viable CCS system.

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56 Draft Report, page 358.

57 Including its substantial investment in cogeneration at Glenbrook which has resulted in off-gases and waste heat from the ironmaking process being used to generate up to 60% of total site electricity requirements. Further projects are underway.

58 For example, NZS's "green coke" trial with Carbon Scape (see Draft Report, page 351).

59 Draft Report, page 360.

60 See Guardian article, '*Carbon capture: UK pays firms £30m despite scrapping projects*', 19 June 2016, available at: https://www.theguardian.com/environment/2016/jun/19/carbon-capture-and-storage-uk-government-shell-drax.

59 On a related subject, NZS has and continues to support CCU (carbon capture and utilisation) evaluation projects with Lanzatech being the plant that has progressed from pilot at the NZS Glenbrook site to production in other parts of the world.

Chapter 15 - The Built Environment

Emissions embodied in construction

60 The Draft Report states that the most effective way of incentivising a transition toward the construction of buildings with lower embodied emissions is to increase the price of emissions in the NZ ETS.[61] NZS disagrees with this statement. An increase in the price of emissions through the NZ ETS will not necessarily result in the New Zealand construction industry selecting lower emission materials. Instead, it will result in the industry selecting the same materials, but those that are produced by an overseas company in a market that is not subject to an ETS (import substitution). An increase in the price of carbon under the NZ ETS will only serve to harm New Zealand producers. Higher NZ ETS prices will be ineffective as imported building materials set the price (import parity).

61 The Draft Report correctly recognises that establishing limits on the emissions embodied in buildings through changes to the New Zealand Building Code ('Building Code') would be impractical. NZS supports this position and notes that the focus and purpose of the Building Code should remain on the production of good quality, safe and durable buildings. Any move to assess the embodied emissions of building materials as part of the Building Code would undermine its purpose and potentially raise concerns with safety, stability and durability.

62 NZS agrees that the Building Code should not present a barrier to other technologies and materials but agrees with the Draft Report's findings that it should not favour one material over another based on its embodied emissions.

63 Any move to assess embodied emissions in construction materials requires a full product life cycle analysis. This includes production, service-life, and end-of-life scenarios. [62]

Conclusions

64 NZS would be happy to discuss the above and any other issues the Commission considers relevant to progressing its inquiry.

65 As previously offered, the Productivity Commission is more than welcome to come to the Glenbrook steel mill and see our business in action, meet our people and see our community.

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61 Draft Report, Finding 15.31, page 388.

62 Worldsteel April 2017. End-of-life scenarios for a buildings structural frame: steel has 94% recycled, 5% re-used, 1% to land fill. Concrete has 5% to landfill. Timber 58% to landfill.