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Hon Chris Penk
Minister for Building and Construction
Parliament Buildings
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Dear Minister

Briefing for the Incoming Minister

About Metals New Zealand

1. Metals New Zealand (MNZ) was established in 2011 to advocate for the New Zealand metals-related industry. It is committed to working with partners to deliver sustainable products for use in residential, commercial and infrastructure build projects and supporting the sector's transition to a low emissions and circular economy future. MNZ represents a diverse range of large and medium-sized manufacturers, distributors and recyclers who combined employ c. 25,000 people across New Zealand, with a strong presence in regional New Zealand. The sector contributes c. \$3 billion annually to gross domestic product.

Self-adoption of green building practices

2. Your speech at the launch of New Zealand Green Building Council's (NZGBC) *Practical Guide to Upfront Carbon* on 15 December 2023 provided an insight into your vision for the sector's self-adoption of green building practices. In that regard, MNZ is supportive of policy aimed at aligning New Zealand's building and construction sector with lower emissions and circular economy principles. It is commonly accepted that reducing construction wastage will improve economic as well as environmental performance.

A Path to Net Zero

3. The metals sector shares the Government's objective of reducing carbon emissions in the building and construction sector. In doing so, we need to move away from calculations focused only on embodied carbon and instead need to consider lifetime carbon emissions.

4. In pursuing the path to net zero, we must ensure that we don't lose critical industries offshore and, in doing so, further expose the economy to potential supply chain challenges as was the case during New Zealand's response to Covid 19.

Metals sector is committed to transitioning to a low-carbon future

5. MNZ members take their role in the transition to a low-carbon climate-resilient economy seriously, and collectively support the Government's goal for net-zero emissions by 2050.
6. New Zealand Steel's 21 May 2023 announcement that it will partner with the Government to build a new \$300 million Electric Arc Furnace (EAF) at its steelworks at Glenbrook within the next three years, as part of the country's largest-ever emissions reduction project, is a game-changer. This significant investment will reduce Glenbrook's carbon footprint by at least 800,000 tonnes from day one – the same as taking approximately 300,000 cars off the road permanently. That represents a reduction of over 45% in New Zealand Steel's emissions – or a total of 1% of New Zealand's total annual emissions.
7. Steel is infinitely recyclable and the EAF will allow scrap steel to be melted and reused. For example, vehicles at end-of-life will no longer be shipped overseas but will become the raw material for other products – for likely reuse in the building and construction sector.
8. Fletcher Steel has access to 100% recycled zero-emission steel and is currently considering market opportunities in New Zealand.
9. Phoenix Metals Recyclers is mitigating climate change by recovering 90,000 MT of metals which are infinitely recyclable -diverting them from landfill, reducing deforestation and mining of virgin resources.

Harnessing hydrogen to drive down emissions

10. New Zealand Steel, in partnership with MBIE and Victoria University of Wellington's *Robinson Research Institute*, is evaluating a process that utilises hydrogen -instead of coal- in decarbonising primary steel making in New Zealand. The hydrogen reacts with iron ore to form only water vapour, and hence the process has zero CO₂ emissions. Hydrogen can be generated from the electrolysis of water using 'green' electricity from wind, solar or geothermal sources.

Repurposing existing buildings to reduce emissions

11. MNZ supports the adaptive reuse for existing commercial and public buildings. Instead of taking a 'knock-it-down and build-a-new-one approach', repurposing buildings could be a cost-effective tool in helping reduce building and construction emissions.
12. The beauty of steel is that it is readily adaptable. Reusing steel means not having to add additional emissions, as they have already been accounted for in its original form.

13. The University of Auckland has a good example of a NZGBC six-star building that repurposes an old steel frame to create the new build¹. This highest rated Greenstar project is due to open in 2024.
14. Adaptive reuse of the steel structure was key to achieving the low embodied carbon emissions and demonstrates steel's key role in buildings.²
15. The key to repurposing buildings is to identify new uses for old structures. Many older buildings have sufficient height and spacing of columns and beams to allow easy repurposing. Flexibility is pivotal and reusing the steel means less energy, less carbon and reduced projects costs. A real benefit of steel is the ease with which it can be altered – steel is readily adapted by welding, cutting or shaping.

Taking advantage of roof replacements

16. Thousands of houses are re-roofed each year in New Zealand. During a roof replacement, roofing contractors usually strip the roofing down to the decking material. If the roof deck is in good condition, it is kept as it is. Since the roof insulation is typically installed on the underside of the roof decking, homeowners have the opportunity to have roof insulation installed or replaced. If a ceiling or roof has no insulation, you can lose c. 40% of your cooling and heating energy. One of the simplest and most cost-effective ways to boost thermal performance is to increase roof insulation. However, when many homeowners re-roof, financial constraints can sometimes mean that only the new roof is budgeted for³.
17. In attempting to provide a potential solution, MBIE could consider working with EECA to partner with the New Zealand Metal Roofing Manufacturers' Association⁴ to develop an incentive for homeowners to re-roof and insulate at the same time. This provides a double benefit of emissions reduction and, from c. 2026, the steel from the roof can be recycled into new steel (for the next roof) using New Zealand Steel's EAF.

Product use should ideally be driven by engineers, designers and specifiers

18. Timber, concrete and steel all have a role to play in building and construction. Decisions regarding the use of building materials should ideally be driven by engineers, designers and specifiers on a project-by-project basis. We must not lose sight that the selection decision between steel and any elimination/replacement material is more than just carbon -design, cost and durability are also key decision-making factors. Higher durability materials reduce the need for repair and replacement ,which can reduce the lifetime carbon impact of buildings.

¹ <https://www.auckland.ac.nz/en/news/2021/08/12/uoa-building-design-receives-highest-ever-green-star-rating.html>

² <https://nzgbc.org.nz/case-studies/building-201-reuse-of-university-of-auckland-building-slashes-carbon>

³ Since 1 July 2019, ceiling and underfloor insulation has been compulsory in all rental homes where it is reasonably practicable to install.

⁴ https://www.metalroofing.org.nz/about_us

Need to increase New Zealand's recycling rates

19. We pride ourselves on being a 'clean and green' country. However, the amount of waste we produce is a major problem and our recycling rates are relatively low compared to other countries with better systems in place. In 2020, we sent 3.38 million tonnes of waste to landfill. We estimate that nationally only 28 per cent of materials are recycled, and the other 72 per cent go to landfills. In contrast, Germany, Austria and Wales have the highest recycling rates in the world, with over 50 per cent of all waste recycled.
20. Currently, New Zealand's economy predominantly uses resources in a manner consistent with the linear 'extract-make-use-dispose' model. In contrast, a circular economy maximises the circularity of resources and energy within production systems.
21. Working in partnership with business and iwi, the Government needs to formally commit to a circular economy strategy development and implementation. This will involve establishing the necessary resourcing, information, data and tools to reduce both production-based and consumption-based emissions.
22. Recycling remains a necessary process as it enables the circulation of resources and exists as a tool to prevent waste. The important role of metals recycling from commercial construction and electronic waste is an example of this.
23. In research done for HERA, approximately 85% of New Zealand's building and construction steel waste is recycled or repurposed⁵. This recycling is less carbon-intensive than newly produced steel, with around 1000 kilograms of avoided emissions per tonne of steel recycled. Aluminium can be recycled indefinitely as reprocessing does not damage its structure. Increasing recycling rates would further lower emissions.
24. Zinc is the fourth most used metal and is an essential resource in renewable energy, vehicles and infrastructure. Its main uses are protecting steel and manufacturing bronze and brass. Recycling zinc is critical for preserving this resource for future generations. Unlike most recycled metals, recycled zinc has a larger CO₂ footprint than if it was mined. Christchurch-based Zincovery is partnering with AW Fraser, Callaghan Innovation and the University of Canterbury in building an alternative to the current carbon intensive zinc recycling process. It aims to create the world's first waste-free galvanising industry, further highlighting the sector's bold sustainability aspirations. In addition, stainless steel -with its "self-replenishing" passive film- does not require a painting/coating/protection system.
25. Many technologies important in the transition to a more circular economy (including wind turbines, solar panels, and batteries) require metal inputs, with an especially high use of stainless steel. Emissions reduction can therefore be achieved throughout a product's life cycle, including its design, production, distribution, use and end of life reclamation and reuse. New Zealand is one of the world's highest per capita users of stainless steel and it remains important to our economy and recycling journey.

⁵ <https://www.hera.org.nz/sustainability/steel-recycling/>

26. In exploring how New Zealand can accelerate the transition to a circular economy, making the economy more circular should become a 'tier one' national research priority.
27. If a product can't be reduced, reused, repaired, rebuilt, refurbished, recycled or composted, then it should be restricted, redesigned, or removed from production.

Establishment of a Ministerial Advisory Group on the circular economy

28. The Government should consider providing leadership for the building and construction sector in following Australia's transitioning path to a circular economy. In November 2022, Australia's Minister for the Environment Tanya Plibersek announced the establishment of a Ministerial Advisory Group on the Circular Economy.
29. This new expert group has been established to guide Australia as it transitions to a circular economy by 2030⁶. The group will look at how products are designed, manufactured and used across all sectors of the economy. It will identify meaningful and direct changes the Government and industry can make to drive the transition to a circular economy.⁷

MNZ would welcome the opportunity to meet with you as your schedule allows to discuss matters raised in this briefing note.

Kind regards



Rick Osborne
Chief Executive

⁶ <https://minister.dcceew.gov.au/plibersek/media-releases/expert-group-guiding-australia-circular-economy>

⁷ <https://wastemanagementreview.com.au/first-meeting-of-circular-economy-advisory-group/>