

O-I NEW ZEALAND SUBMISSION ON THE PRODUCTIVITY COMMISSION'S LOW EMISSIONS ECONOMY INQUIRY

[REDACTED]

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Question 15: What are the main opportunities and barriers to reducing emissions in industrial processes (such as the production of steel, aluminium and cement) and in product use (such as the use of hydrofluorocarbons in refrigeration and air conditioning equipment)?

ABOUT O-I

- 1 ACI Operations New Zealand Limited, trading as O-I New Zealand (*O-I*), is New Zealand's only glass packaging manufacturer. O-I is a mandatory participant in the New Zealand Emissions Trading Scheme (*ETS*), as it carries out the industrial process of producing glass using soda ash. Under the ETS, O-I qualifies as an Emissions Intensive, Trade Exposed business.
- 2 O-I operates a manufacturing plant in Penrose, Auckland, which employs 272 people and produces over [REDACTED] glass containers per day. O-I is a major supplier to the New Zealand food and beverage industries, making O-I instrumental to the international success of these industries for over 85 years. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- 3 In addition to its glass manufacturing operation, O-I carries out the majority of the glass recycling that occurs in New Zealand, and is one of New Zealand's largest recycling companies overall. O-I's plant recycles more than [REDACTED] tonnes of cullet (crushed glass) per annum. Recycled glass constitutes up to [REDACTED] percent of O-I's final glass product. O-I is continually experimenting with and refining new processes to increase the recycled content of its containers. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- 4 O-I therefore plays a crucial role in New Zealand's domestic waste management and recycling system. It takes glass out of the waste stream, and helps to reduce the volumes of waste that would otherwise be sent to landfill, or shipped offshore to be recycled.

Unique challenges faced by O-I

Significant direct and indirect ETS costs

- 5 Glass manufacturing is inherently emissions-intensive, and uses large quantities of energy from electricity and natural gas. Accordingly, the ETS imposes a substantial financial burden on O-I, which arises from:
 - 5.1 Direct costs, through mandatory participation in the ETS; and
 - 5.2 Indirect costs, as O-I's energy suppliers are able to pass through their own ETS costs (arising from ETS stationary energy provisions) to O-I.

Limited opportunity to pass through costs to consumers

- 6 O-I is a trade exposed operator, as discussed further below. Accordingly, O-I operates in a highly competitive international market, where it is very easy for domestic demand to shift to offshore glass manufacturers. Further, O-I's customers in New Zealand (such as wine producers) are very sensitive to cost increases.
- 7 Accordingly, even small cost increases may prompt O-I's customers to switch to offshore suppliers, which are readily available. O-I's ability to pass through the costs of its ETS liability to consumers is therefore limited, a point of difference to other ETS participants.

BARRIERS TO REDUCING EMISSIONS

Trade exposure, international competitiveness and carbon leakage

- 8 As noted above, New Zealand-based companies such as O-I compete against imported products, whose manufacturers do not face constraints such as emissions trading schemes or other forms of emissions management. The lack of additional emissions-related costs places those manufacturers at an advantage over O-I and other New Zealand businesses. Furthermore, O-I's New Zealand customers are very sensitive to fluctuations in cost.
- 9 As a consequence, if O-I's costs increase and its competitiveness is undermined, demand for glass products will readily shift to economies that do not face the same constraints. This process is known as *carbon leakage*, with economic activity being taken out of New Zealand and shifting to other countries.
- 10 In the glass industry, O-I's primary competitors are located in South-East Asia and the Middle East. Glass manufacturers in those regions are generally less energy efficient, and use less recycled content, than O-I (which is an example of world best practice for energy efficiency).
[REDACTED]
[REDACTED]
[REDACTED]
- 11 If O-I's New Zealand operation is forced to close and carbon leakage to the Middle East and South-East Asia occurs, there would be a consequential increase in the global emissions profile, for two reasons:
 - 11.1 Overseas glass producers are far less efficient than O-I's operation. Those manufacturers would therefore release more emissions to produce the same amount of glass; and
 - 11.2 It would be necessary to import glass products from overseas, and to export glass from New Zealand for recycling, leading to increased emissions from transport.
- 12 If New Zealand loses its capacity to process and/or recycle waste onshore, there are also likely to be flow-on environmental effects domestically. New Zealand's ability to export waste for processing may be constrained, because:
 - 12.1 It may not be possible to find a market to which waste can be exported cost-efficiently;

- 12.2 It is not guaranteed that other countries will continue accepting waste from New Zealand. For instance, China has recently announced a ban on imports of certain kinds of waste, including some paper and plastic products; and
- 12.3 New Zealand is a signatory to the Basel Convention,¹ which restricts transboundary movements of hazardous waste. In particular, the Basel Convention emphasises that waste should be processed as close as possible to the point of generation.
- 13 These potential constraints mean that any reduction in on-shore waste processing capacity is likely to result in more waste going straight to landfill, which could otherwise be recycled.
- 14 In transitioning to a low emissions economy, O-I therefore considers that the New Zealand government should be mindful that greenhouse gas (*GHG*) emissions are a global concern, and should be assessed at a global scale. Emissions management systems may impose costs that ultimately force environmentally conscious New Zealand businesses out of the market. In this instance, the likely outcome is that such operations would be transferred offshore to less regulated jurisdictions (which are already attractive investment destinations due to their lower compliance costs and rapidly growing domestic markets). Consequently, the global GHG emissions profile would increase, and there are likely to be negative flow-on environmental effects domestically.
- Lack of coordination across government, businesses and households**
- 15 A key barrier to reducing O-I's emissions is the lack of a coordinated, nationally consistent approach to waste management and recycling.
- 16 In the glass manufacturing industry, effective recycling practices contribute to reductions in emissions because:
- 16.1 Recycling decreases the need to use virgin raw materials in production, thus minimising the GHG emissions generated in the production and transportation of those materials;
- 16.2 Creating glass from virgin raw materials (soda and lime) involves a chemical reaction that releases GHGs. This chemical reaction does not occur when cullet is re-melted;
- 16.3 Cullet melts at a lower temperature than the virgin raw materials used in new glass, meaning less energy is required for glass manufacture. Higher recycled content therefore reduces upstream emissions from energy production (eg gas and electricity); and
- 16.4 Recycling decreases the amount of waste going to landfill, which decreases methane gas emissions.
- 17 Consequently, the more good-quality recycled glass O-I can source and re-use in its manufacture of glass containers, the lower O-I's GHG emissions will be. Use of cullet also has broader environmental benefits, such as waste minimisation and reducing the quantity of raw materials that must be extracted and processed.

¹ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1989, ratified in New Zealand in 1994.

- 18 By contrast, reduced access to cullet affects O-I's ability to reduce its GHG emissions. Central and local government waste policies therefore have a direct impact on those emissions. O-I relies on effective waste management and recycling policies, which ensure a consistent supply of cullet to convert into glass products. O-I commends a number of local authorities that have implemented efficient recycling policies that are easy to follow.
- 19 Nevertheless, other local authorities have prioritised short-term costs over long-term waste management strategies that would improve recycling practices and ultimately reduce emissions. For example, in Auckland and Christchurch – two of New Zealand's largest centres – recycled materials are "co-mingled" at the collection point, meaning households put all recyclable materials into a single bin.
- 20 Co-mingling makes it much more difficult to isolate glass at the collection point (where it is cheapest to do so) and recover that glass for colour sorting and recycling. Co-mingling therefore diminishes the amount of cullet that is available to recycle, with as much as 40-50 percent of collected glass unable to be used as cullet. Glass that is unsuitable for cullet requires further processing (grinding) before it can be used in glass production, which creates an additional cost. Any remaining unrecycled glass ultimately ends up in landfill, or used as aggregate substitute in roads. By contrast, using a separate bin to collect glass means that 98 percent of the glass collected can be colour sorted and turned into bottles or jars.
- 21 Additionally, in a combined recycling bin, glass shatters and becomes embedded in paper and cardboard, which makes those materials impossible for local cardboard manufacturers to reuse. Consequently, poor recycling policies have wider environmental impacts, beyond increases in emissions.
- 22 O-I wishes to emphasise that a sustainable, low-emissions economy requires a "whole system" approach. The government should identify where households, businesses and central and local government can work together to move towards a more circular economy, which minimises waste and, ultimately, emissions. We discuss such policies further under "Opportunities" below.

The ETS has been uncertain

- 23 As a mandatory participant in the ETS, O-I has found the ongoing amendments to the scheme challenging. O-I appreciates that changes to the ETS are generally introduced gradually, following consultation. Nevertheless, the scheme has undergone continual changes since its implementation, which makes it very difficult for businesses such as O-I to plan their future operations in New Zealand. O-I considers that any changes to the scheme for existing participants should be minimised to the greatest extent possible. Where changes are introduced, the government should seek to maximise certainty by:
- 23.1 Signalling any changes clearly, and with enough time to allow businesses to prepare;
- 23.2 Avoiding multiple changes to the scheme at any one time; and
- 23.3 Phasing in changes gradually, to allow businesses time to adjust.
- 24 Price certainty is another challenge for O-I. As noted above, O-I has limited ability to pass through its ETS costs to its customers, who are very price sensitive (for example, the wine industry). Accordingly, O-I must absorb the full impact of any

price fluctuations. Mechanisms such as the existing \$25 price ceiling on emissions units assist in making the scheme more predictable.

25 O-I also notes that political risk around emissions management is a significant ongoing challenge for businesses. The variance in climate change policies across the major parties at the 2017 election illustrates this difficulty. The risk of significant changes to (or replacement/abandonment of) the ETS following a future change of government creates significant uncertainty for businesses and erodes business confidence in the ETS.

26 If New Zealand is genuinely committed to an emissions-constrained future, then political parties should strive for cross-party agreement on core elements of climate change policy. Parliament must strive for an overall consensus strategy on climate change, which is then "ring-fenced" and implemented, irrespective of who is in government. Even if such a consensus involved protracted negotiations, O-I would support such a move if it results in an agreed long-term climate change strategy for New Zealand.

Regulatory complexity and compliance costs

27 The ETS is complex, particularly for O-I, which is not a sophisticated participant in the scheme. The ETS imposes considerable compliance costs, which do not necessarily drive genuine reductions in emissions, as those costs remain the same regardless of the level of emissions generated.

28 Like many industrial operators, the ETS is not O-I's core business, and O-I does not have the personnel or in-house capability to maintain consistent engagement with the scheme. This lack of capacity means that O-I must outsource much of its ETS compliance to external advisors, which adds to O-I's participation costs.

29 O-I considers that an effective emissions management scheme would be clear, and easy to understand for emitters at varying levels of sophistication.

Lack of coordination with overseas schemes

30 O-I considers that an ongoing challenge with New Zealand's climate change efforts is a lack of alignment with overseas GHG management schemes. While O-I acknowledges that such linkages are "aspirational", coordination between the New Zealand ETS and international emissions management schemes would result in the following benefits:

30.1 Increased market liquidity for carbon credits;

30.2 Better alignment of carbon prices globally;

30.3 More efficient sourcing and management of carbon credits within international corporate groups; and

30.4 Overall, greater cost efficiency in carbon emissions reduction.

31 In addition, O-I considers that the government should identify areas where New Zealand can make a genuine difference to overall global emissions. As part of this process, the government should identify activities where New Zealand is a major per capita contributor, and implement specific measures to target those activities. Increased costs for industrial operators, which only contribute 7% of New Zealand's emissions, are of limited value (particularly in a global context where New Zealand industrial operators are more energy efficient than their overseas counterparts).

OPPORTUNITIES FOR REDUCING EMISSIONS

Improved coordination across government, businesses and households

- 32 As noted above, O-I considers that there are opportunities to identify where households, businesses and central and local government can work together to achieve a low emissions economy. O-I considers that an ideal end goal would be a largely circular economy, where goods are produced, consumed and recycled on-shore.
- 33 With the right policy settings in place, O-I considers that it is possible for New Zealand to reduce emissions, and enable broader flow-on environmental benefits such as better waste management, and reduction in waste going to landfill.
- 34 Domestic policies around waste management can assist in achieving these outcomes. Central government should introduce high level policy directions, with local governments undertaking measures to achieve those objectives (with central government support). At household level, implementing simple, easy-to-follow procedures, supported by clear messaging would improve waste collection practices. These improvements would lead to environmental benefits and flow-on reductions in emissions from manufacturing and industry.
- 35 Retaining and further developing on-shore recycling and waste processing capability, for a wide range of materials, is crucial to this outcome. This capability significantly reduces New Zealand's reliance on overseas markets to process waste, which leaves New Zealand's waste management systems vulnerable to policy changes offshore (such as China's recent ban). Maintaining on-shore waste processing capability therefore insulates New Zealand from such shifts, and reduces emissions at the same time.
- 36 Further, an on-shore recycling facility has wider positive effects for other New Zealand industries, which can claim the benefits of using domestically recycled packaging for their own products. One such example is the wine industry, whose overseas customers are "carbon conscious". On-shore recycling facilities also have wider economic benefits for New Zealand, and provide skilled employment opportunities.

Using the ETS as a source of funds

- 37 Although the ETS requires emitters to pay for emissions units, it does not currently act as a source of funds to drive initiatives to reduce GHG emissions. Presently, the ETS imposes an extra cost on businesses, with the ultimate policy objective of supporting and encouraging global efforts to reduce GHG emissions.
- 38 O-I sees value in investment in research and development and innovation, and would like to see the government explore the potential for the ETS to generate funds, which could be hypothecated for investment in research into technologies to reduce carbon emissions, particularly in the agricultural sector.