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BAY OF PLENTY
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MARPOL Annex VI Submission
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Public Consultation: MARPOL Annex VI: Prevention of Air Pollution from Ships

The role of the Bay of Plenty DHB

The Bay of Plenty District Health Board (Bay of Plenty DHB) is required by the Public Health and Disability Act 2000 to improve, promote, and protect the health of people and communities, to promote the inclusion and participation in society and independence of people with disabilities and to reduce health disparities by improving health outcomes for Māori and other population groups. Under this Act the Bay of Plenty DHB is also tasked with promoting the reduction of adverse social and environmental effects on the health of people and communities.

This submission is based on a report prepared by Emission Impossible Limited for the Ministry of Health, and has been prepared by Toi Te Ora Public Health (Toi Te Ora) which is the Public Health Unit for Bay of Plenty DHB. The key role of Toi Te Ora is to promote, protect and improve population health, prevent ill health and minimise the risk of disease and injury through population based interventions. Designated officers within Toi Te Ora have responsibilities to reduce conditions within the local community which are likely to cause disease.

For these reasons, Bay of Plenty DHB makes this submission and welcomes the opportunity to provide helpful, objective and independent input to decisions that affect the health of people living in the Bay of Plenty.

The Bay of Plenty DHB has answered selected questions only.

Q1. New Zealand's stated ambition is to be a global leader on climate change and strengthen our credibility and influence in international climate negotiations. To enable New Zealand to influence climate change policy at the IMO we need to accede to Annex VI and be at the table to influence decisions. Do you agree? Please provide a detailed response. If you don't agree please provide reasons why.

It is our view that yes, New Zealand should accede to Annex VI, but not just so that New Zealand can influence international climate negotiations.

Researchers who have extensively studied the shipping industry are clear that the benefits of greener shipping outweigh the costs (Winnebrake & Corbett, 2018).[1] The benefits include:

- Reduced emissions of harmful air pollutants will result in reduced adverse public health effects (and costs), including premature deaths.
- Reduced emissions of harmful air pollutants will result in reduced adverse effects on ecosystems (e.g. acidification, deposition of toxics such as heavy metals and dioxins).
- Reduced greenhouse gas emissions are a tangible action to combat climate change (an issue of planetary urgency).

These three benefits provide compelling reasons, on their own, for New Zealand to accede to MARPOL Annex VI.

Q5. What are the public health benefits of acceding to Annex VI?

Monitoring of sulphur dioxide in a residential area adjacent to the Mount Maunganui industrial and port areas has shown ongoing exceedances of the World Health Organization's daily guideline limit for sulphur dioxide. Although, in the case of Mount Maunganui, the sulphur dioxide is mainly due to industrial processes, it is clear that air quality around our ports needs to improve.

Little work has been undertaken to comprehensively assess shipping emissions in New Zealand. This constrains the ability of health agencies to provide robust data in support of anticipated health benefits resulting from ship emissions reductions.

This is further complicated by complexities of the counter factual position i.e. the extent to which international vessels flagged to countries which have acceded to Annex VI by 2020 would reduce their harmful air and greenhouse gas emissions anyway. Peeters (2018) notes that "*nearly all foreign vessels visiting Auckland are already subject to Annex VI regulations*".[2] Therefore, even if New Zealand does not sign up to Annex VI, a substantial drop in SO_2 emissions can be expected when the 0.5 % sulphur content limit comes into effect in 2020.

The public health benefits will not be able to be robustly quantified unless, or until, a comprehensive inventory for shipping in New Zealand is developed. (The 2015 Ministry for the Environment inventory only estimates domestic shipping emissions).[3] We query why this, and a cost benefit analysis, were not provided with the Ministry of Transport discussion document.

What is clear, and indeed well established, is that reducing emissions of harmful air pollutants from ships will have a direct reduction in adverse health effects for members of the public exposed to those emissions. A rough estimate suggests that nearly 200,000 New Zealanders may be living and working in reasonably close proximity to harmful ship emissions. Thus, it is reasonable to anticipate significant public health benefits would be accrued in and around New Zealand ports should harmful ship emissions to air be reduced. This will be especially true for harmful pollutants emitted from ship fuel combustion that are carcinogenic and/or for which there is no safe threshold such as:

- PM_{10}
- Benzene
- Dioxins and heavy metals including lead and mercury.

Adverse health effects from air pollution are typically disproportionately borne by sensitive parts of the population such as the elderly and the socio-economically disadvantaged. There are

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[1] J. Winnebrake & J. Corbett, 2018. "The urgency of curbing pollution from ships, explained". The Converation. 12 April. USA. [Online: Retrieved 20 December 2018]. Extensive shipping research available here: https://scholar.google.com/citations?user=nFDXRBkAAAAJ&hl=en&oi=ao

[2] Peeters S., 2018. At page 5.

[3] EIL, 2018.

therefore, significant social and environmental justice benefits to be realised through regulations to reduce harmful emissions.

Q6. What are the public health costs of acceding to Annex VI?

We have not identified any public health costs of acceding to Annex VI.

Q7. Are there any cost and benefits resulting from accession to Annex VI for the marine and built environments?

This question does not relate to public health. However, the following points are relevant:

- Reduced emissions (especially greenhouse gases) will also have ecological benefits in terms of minimising ocean acidification, ocean warming and extreme weather events (which can damage habitat).
- Part of Annex VI focusses on reducing ozone depleting substances so that will also improve health and environmental outcomes.
- Reduced SO_2 emissions will reduce damage to buildings and supporting infrastructure.
- Reduced smoky stack emissions means better amenity for tourists (both domestic and international) by removing dirty plumes from ships coming into port (as well as inhaling fumes while on board).

Q8. Are there any public health or other environmental issues that we should be aware of when considering accession to Annex VI?

There are significant win-win outcomes that arise from reducing ship emissions that are both harmful to people, and to global warming. It is unfortunate that the Ministry of Transport has not quantified these, and their associated costs and benefits, for their discussion document. Climate change affects human health in several ways.[4]

Direct effects of climate change include:

- Increased extreme meteorological-caused events (e.g. flooding, fires)
- Displacement
- Extreme temperatures.

Indirect effects from climate change on human health include:

- Increased harmful algal blooms
- Increased microbial contamination
- Decreased food availability, quality and safety
- Decreased mental health and well-being
- Reduced outdoor air quality
- Increased carriers of new diseases
- Increased migration of tropical species into New Zealand.

These last two are particularly relevant for shipping, and increased cruise ship visits, in New Zealand.

While cases of malaria declined in New Zealand between 2015 and 2016, cases of dengue fever and Zika virus (also mosquito borne) increased.[5] Zika virus outbreaks in the Pacific have been increasing since 2013 and New Zealand cases are currently linked to travellers coming

[4] Royal Society of New Zealand, 2017.
[5] ESR, 2018.

into New Zealand. Climate change increases the possibility of these diseases becoming established in New Zealand.

Finally, (in brief):

- New Zealand is about to implement a Zero Carbon bill that will require us to start addressing emissions wherever opportunities present themselves in order achieve real reductions in emissions by 2050.
- New Zealand is significantly lagging behind other countries that have already acceded to Annex VI.

We therefore strongly support international regulations that seek to reduce both harmful and greenhouse gas emissions from ships.

Q36. Are there any other issues not considered above, but which you deem important and need to be factored in when considering the costs and benefits of accession to MARPOL Annex VI?

Much like vaccinations, to be effective Annex VI requires widespread adoption. It would irresponsible for New Zealand not to accede to Annex VI.

Q38. If New Zealand is to accede to Annex VI, is 2021 a reasonable timeframe to bring the requirements into effect? Please provide your reasons for your answer.

This seems rather long given most international ships that visit New Zealand have already acceded to Annex VI.

Further, the discussion document identified fewer than 50 ships which will require regulation. This suggests compliance will not be particularly onerous (compared to say, the millions of privately-owned passenger vehicles for which the Ministry of Transport is already responsible).

January 2020, which ties in with the commencement of Annex VI regulations, is a more reasonable date.

Yours sincerely

SALLY WEBB
Board Chair

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