Submission to the Joint Standing Committee on Treaties, Parliament House, Canberra ACT

in response to

Inquiry into the Minamata Convention on Mercury

Prepared by Friends of Latrobe Water Inc.

19 July 2021

Friends of Latrobe Water
No. A0112386P

E: flowlatrobe@gmail.com
W: www.flowlatrobe.org

Face Book: @FLoWLatrobe
Twitter: @FLOWLatrobe

RATIFICATION OF THE MINAMATA CONVENTION ON MERCURY

About Friends of Latrobe Water

Friends of Latrobe water is a Victorian incorporated association formed for the purpose of protecting and advocating for Latrobe Valley water sources, connected waterways and Gippsland Lakes from brown coal activities including historic mining activities, legacy and coal ash contamination and mine rehabilitation activities, including utilising the legal system to facilitate that protection.

With that, we take every opportunity to inform, educate and support Latrobe Valley and broader Gippsland community to take action ensuring legacy contamination from the coal industry and other heavy industry is remediated under improved statutory obligations to provide clean air, land and water. Facilitating a positive post-mining legacy in the Latrobe Valley and for Victoria more broadly will contribute to the future social and economic prosperity of the region in a manner that safeguards and protects the surrounding environment, including waterways such as the Latrobe River that contribute freshwater flows to the Gippsland Lakes.

Introduction

Friends of Latrobe Water (FLoW) welcomes the opportunity to make a submission to the Joint Standing Committee on Treaties (Committee) in support of the Australian Government ratifying the Minamata Convention on Mercury (Convention).

Friends of Latrobe Water supports the ratification of the Convention for the reasons outlined below.

For further information on this submission, please contact:
Tracey Anton
[redacted]
E: flowlatrobe@gmail.com

Why ratification is critical

Ratification of the Minamata Convention on Mercury by Australia is not only necessary but morally responsible to protect human health and the environment, globally, from exposure to ongoing mercury emissions and legacy mercury contamination.

> *Australia is only a signatory and accordingly is not currently obliged to meet any internationally accepted best practice requirements imposed under the treaty.*[1]

Ratification would have Australia moving in line with the global push to address mercury pollution giving impetus to those states who have yet to invest in mercury remediation. Mercury is commonly found in the aquatic environment in its organic form, methyl mercury, with atmospheric mercury emissions in Australia originating from natural and anthropogenic sources. These emissions eventually deposit to land and water with much public data of mercury pollution from human activity with the National Pollution Inventory only supplying industry estimates.

Obligations to remediate historical mercury pollution would reduce ongoing exposure by removing highly toxic mercury from our environment. Yes, there would be a cost involved both socially and economically but the improved health outcomes to the population would far outweigh the negatives and should be broadly accepted.

Nationally, there are any number of sites and catchments around Australia that have been contaminated by mercury due to our reliance on coal power generation, historical gold mining, Chlor Alkali plants to name a few. But it is the ability of mercury to be transported over long distances in the atmosphere that supports why Australia needs to ratify the convention to ensure Australia is engaged in the global effort to reduce both domestic and international mercury emissions.

> *Mercury, which comes from both natural and anthropogenic sources, also possesses toxic qualities. Circulating in the lithosphere, atmosphere, hydrosphere and biosphere, mercury undergoes transformations. As a result of reduction, it changes into its volatile atomic form and, through methylation, to its most toxic organic form. In the atmosphere, mercury and pesticides can be transported over short and long distances by the wind or with migrating birds (Falandysz et al. 1999a; Blais et al. 2005).*[2]

Given mercury contamination is a significant problem in our communities a greater understanding of environmental chemical interactions from organochlorines, PFAS, pesticides, salinity and the like is also required.[3]

> *In the aquatic environment, mercury binds to organic particles and settles out in sediments; only relatively small amounts of mercury dissolve in the water column (Tiller, 1990). Under anoxic conditions, microbiological processes within the sediment*

[1] https://www.researchgate.net/publication/329984727_Mercury_Pollution_from_Coal-Fired_Power_Plants_A_Critical_Analysis_of_the_Australian_Regulatory_Response_to_Public_Health_Risks
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3656231/
[3] https://phys.org/news/2014-08-safer-pesticide-toxic-mercury.html

> *can lead to inorganic forms of mercury being converted to methyl-mercury (MeHg). MeHg is a biologically accessible and potentially harmful form of organic mercury. The transformation of inorganic mercury into MeHg is the first step toward bioaccumulation of mercury in aquatic organisms (Hsu-Kim et al. 2013). This transformation, together with the persistence of MeHg in tissue, results in biomagnification across the food chain (Ward et al. 2010). For this reason, predatory fish; fish with long life-spans; and other fish-eating wildlife can accumulate concentrations of mercury in their tissues that greatly exceed the concentration of mercury in their surrounding environment.*[4]

Opportunity to nationalise regulatory standards and address contaminated sites

Unfortunately, state legislature on mercury controlling pollution-control strategies differ from state to state with Victoria being highly unregulated.

> *The Australian response to mercury emissions differs greatly from its international counterparts. On a comparative basis, international jurisdictions having implemented mercury controlling transboundary pollution-control strategies, national frameworks and involvement with other global actors. Foremost among such strategies are those arising from The Minamata Convention.*
> *In terms of mercury regulation at the State/Territory level, the nebulous approach in New South Wales, for example, under the Protection of the Environment Operations Act 1997 (NSW), is for any "likely impact of the pollution on the environment" to be considered.29 Similarly in Victoria the Environmental Protection Act 1970 (Vic) provides powers to the administrating authority to impose conditions on licenses to pollute only "where appropriate"30 but again with no specific regulatory triggers threatening serious financial consequences. Both these State regulatory guidelines evidence the lack of incentives to reduce the absolute level of current emissions by States and Territories. The vague restrictions in their current state are not congruent with any attempts to phase-down mercury over time. Ratification of The Minamata Convention would see an assessment of the State and Territory strategies for mercury storage, emission rates and licence permits.*[5]

The three Latrobe Valley power stations in Gippsland Victoria are noted for high airborne mercury emission concentrations due to poor regulatory management and ineffectual pollution control in Victoria.[6]

> *Although Australian coal is considered to have low mercury content, the mercury emissions provided in the NPI, and the poor energy efficiency of brown coal, requiring more coal to be burnt per kWh produced, means the Latrobe Valley produces significant mercury emissions (Table 1). Further, the absence of cobeneficial removal of mercury in Australia through air pollution control of sulfur dioxide or oxides of*

[4] https://www.epa.vic.gov.au/about-epa/publications/1637-1

[5] https://www.researchgate.net/publication/329984727_Mercury_Pollution_from_Coal-Fired_Power_Plants_A_Critical_Analysis_of_the_Australian_Regulatory_Response_to_Public_Health_Risks PDF p4 of 9

[6] https://www.sciencedirect.com/science/article/abs/pii/S0269749121011787?dgcid=rss_sd_all

> *nitrogen, that is, sulfur scrubbers and so on (Pacyna et al., 2010), as is standard practice elsewhere (i.e., Europe, United States, and China), means that most of the mercury in the coal used in the Australian electricity production is released to the atmosphere. The Latrobe Valley power stations constituted between 45% and 63% of Australia's mercury emissions from electricity generation, with 1,513 kg emitted in the period 2015–2016.*[7]

The Environment Protection Agency (EPA) has always been the pre-eminent authority on pollution for evidence-based information about the environment, relevant standards and statutory obligations imposed on licence conditions for discharges to air, land and water.
Its objective is to protect human health and the environment by reducing the harmful effects of pollution and waste. **However, with greater knowledge about environmental pollutants, greater evidence about lax regulatory compliance, greater evidence of contaminated sites and their impacts on human health and the environment it has become clear that the separate State EPAs are no longer capable of managing legacy industry pollution of toxics with mercury at the top of the list.**

The *National Interest Analysis: Contaminated sites* notes -

> *31. Parties must endeavour to develop appropriate strategies to identify and assess mercury-contaminated sites and manage those sites in an environmentally sound manner (Article 12).*
> *50. States and territories administer controls over contaminated sites, including site identification and management. Relevant legislative frameworks within each jurisdiction already comply with Convention obligations for contaminated sites. For example, each framework already requires the application of environmentally sound principles in identifying and managing contaminated sites – including the assessment of risks to human health and the environment. These principles are established through subordinate legislation, guidelines and guidance, or by incorporating references to the National Environment Protection (Assessment of Site Contamination) Measure 1999.*

Indeed, Victoria's new EPA Act 2017 has a get-out clause for legacy contamination with historical background sources of pollution the standard.

> *"The Environmental Reference Standards provides a reference to help make decisions. It does not:*
> • *create specific obligations you must follow*
> • *set out enforceable compliance limits*
> • *describe levels that it is okay to pollute up to.*[8]

[7] https://online.ucpress.edu/elementa/article/9/1/00072/116529/Atmospheric-mercury-in-the-Latrobe-Valley p2 of 16
[8] https://www.epa.vic.gov.au/about-epa/laws/epa-tools-and-powers/environment-reference-standard/applying-the-standard

Table 4.3: Indicators and objectives for the land environment[9]

Column 1 Environmental value	Column 2 Indicators	Column 3 Objectives
Human health	Inorganic and organic contaminants set out in Appendix A of Schedule B2 of the NEPM (ASC), and any other contaminants present at the site as determined by the current use or site history assessed in accordance with the NEPM (ASC)	The objective for each indicator is the health investigation or screening level in the NEPM (ASC), unless – (a) there is no such investigation or screening level; or (b) due to site specific characteristics the more appropriate objective is: (i) the level derived using the risk assessment methodology described in the NEPM (ASC); or (ii) the background level determined in accordance with section 36 of the Act, in which case the objective for the indicator is (i) or (ii), as applicable.

Table 5.7: Indicators and objectives for surface waters [10]

Column 1 Environmental value	Column 2 Indicators	Column 3 Objectives
Human consumption of aquatic foods	For the relevant segment, the indicators are specified in the following Tables – • Rivers and streams (six segments) in Tables 5.8 and 5.9 • Lakes in Tables 5.10 and 5.11 • Estuaries in Table 5.12 • Port Phillip Bay in Table 5.13 • Western Port in Table 5.14 • Corner Inlet in Table 5.15 • Gippsland Lakes in Table 5.16 • Open Coasts in Table 5.17	For the relevant segment, the level of indicators specified in the following Tables – • Rivers and streams (six segments) in Tables 5.8 and 5.9 • Lakes in Tables 5.10 and 5.11 • Estuaries in Table 5.12 • Port Phillip Bay in Table 5.13 • Western Port in Table 5.14 • Corner Inlet in Table 5.15 • Gippsland Lakes in Table 5.16 • Open Coasts in Table 5.17
	Indicators specified for metal contaminants, non-metal contaminants, natural toxicants, and mercury in Schedule 19 (Maximum levels of contaminants and natural toxicants) of the Food Standards Code	Level of the indicators in the tissue of aquaculture species specified in Schedule 19 (Maximum levels of contaminants and natural toxicants) of the Food Standards Code.

Whilst there is some limited risk assessment and sampling by EPA of identified reaches of mercury contaminated sites there is, however, no mechanism or statutory obligations for remediation of those same sites.

Friends of Latrobe Water support amending legislation and policies to ensure implementation of Convention obligations.

Aligning Convention global standards of best practice management for mercury emissions, remediation and National Food Standards code would provide greater regulatory and compliance opportunities that currently do not exist in Australia.

We are particularly interested in how statutory obligations for remediating mercury pollution in Australia, under different state-based standards and regulations, will be addressed with substantial legislative changes required to be effective in reducing mercury exposures.

[9] https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.vic-engage.files/7816/2311/6470/489._EPA_Environment_Reference_Standard.pdf p16

[10] Ibid, p29

Economic Opportunities

In ratifying the Minamata Convention, Australia would be better placed to trade in goods that are subject to controls under the Convention which Australia, currently, is unable to fully participate in those trade conversations. Wholly engaging with the international community can only be to Australia's benefit.

Likewise, there could exist a significant opportunity to create a workforce of skilled experts based on existing mercury remediation and technology. Whilst the greatest opportunities existed immediately post signing of the convention in 2013, nonetheless, there are still significant mercury remediation required globally to mitigate ongoing risks of mercury exposures that Australia could form part of positive global action.

Additionally, large coal mines throughout Australia with EPBC responsibilities are moving into rehabilitation mode over the next two decades. However, rehabilitation is different to remediation to ensure legacy contamination is addressed. Equally, for the many historical mines and those abandoned small to medium sized mines across Victoria, there are substantial job opportunities in the future for a skilled and trained workforce to clean-up the massive tonnages of mercury lost by the mining process to the environment, particularly along associated river and stream catchments. These skills already exist in the Mining Industry. Whilst Victorian departments and agencies already know extensive mercury pollution exists, **it is the comprehensive and transparent assessments still to be completed which are critical to catchment scale remediation.**

A comprehensive sampling program could provide extensive job opportunities for regional Victoria over a diverse range of disciplines with Gippsland having sufficient skills for engineering specialised mercury recovery equipment to start remediation processes. Mapping the trajectory of coal mine plumes and increasing the appropriate testing for mercury in sediments would give a greater understanding of biological mercury transformation in the Gippsland catchment.

The RIS clearly indicates that it is cost beneficial for Australia to ratify the Convention especially in consideration of associated health costs with mercury pollution.

> *1.1. Health implications*
> *…Cost assessments for mercury are dominated by human health costs as these are assumed to exceed those of ecosystem damage. The cost associated with each kilogram of pollutant released to the air from Australian and Latrobe Valley coal combustion is given in Table 1 derived using the methodology described in Nedellec and Rabl (2016). Nationally, coal generation in 2016 is estimated to have had a health cost of approximately $AUD34.5B. The closure of Hazelwood in 2017 is estimated to have an annual health benefit for Victoria of approximately $AUD1.1B in 2017.*[11]

[11] https://online.ucpress.edu/elementa/article/9/1/00072/116529/Atmospheric-mercury-in-the-Latrobe-Valley p4 of 16