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AUSTRALIAN ALUMINIUM COUNCIL RESPONSE TO INVITATION TO COMMENT ON THE PROPOSAL FOR AUSTRALIA TO RATIFY THE MINAMATA CONVENTION ON MERCURY

Thank you for the opportunity to comment on the proposal for Australia to ratify the Minamata Convention on Mercury. This submission is made on behalf of the bauxite mining, alumina refining and aluminium smelting industry.

The aluminium industry

The aluminium industry directly employs more than 15,000 people and sustains the livelihoods of more than 50,000 households, most in regional Australia. We are responsible for more than \$9 billion of export earnings for the Australian economy and make up a substantial part of the economic activity in regions where we operate including Gladstone, south-west Western Australia, Hunter Valley, Geelong, Cape York, Portland and Tasmania.

Mercury in the aluminium supply chain

Mercury is released within our supply chains from two principal sources: the combustion of coal (at alumina refineries); and through the digestion and calcining stages of alumina refining.

The release of mercury through the combustion of coal is the lesser of the two sources and occurs in manner consistent with combustion of coal in other contexts. The emission of mercury from alumina refining in the Bayer process is related to the presence of mercury within bauxite (aluminium ore) in trace amounts.

Bauxite contains trace amounts of mercury, ranging from about 0.02 to 1.5 mg/kg. The large volume of bauxite processed in alumina refineries allows mercury to accumulate in Bayer liquor, aluminum hydrate and oxalate.

Some of the mercury is released to air. Previous studies have shown that the main form of mercury emitted from Bayer process plants is the elemental form (Hg^0) – more than 95% of total mercury air emissions. These results are in contrast with combustion sources which emit mercury in Hg^{2+} , Hg_p and Hg^0 forms.

Elemental mercury – Hg⁰ – has a long atmospheric lifetime of about 1 to 1.5 years and is globally dispersed. It does not pose an immediate environmental risk to the local ecosystem. While this increases the global loading of mercury in the atmosphere, it does not represent an immediate localized risk such as that posed by combustion sources.

Coverage of Minamata Convention

Article 8 of the Minamata Convention covers emissions from source categories that are listed in Annex D. Coal-fired industrial boilers are listed in Annex D and, while the production of non-ferrous metals is also included, the list constrains this to “lead, zinc, copper and industrial gold” – not aluminium or alumina.

We infer from this - and have had it informally confirmed - that the obligation on Australia to implement the measures outlined in paragraph 5 of Article 8 would therefore only be applicable, in our industry, to mercury released from the combustion of coal and not the mercury released through the digestion and calcining stages of alumina refining.

Article 9 of the Convention relates to releases to land and water from unspecified sources. Very little mercury is released to land or water within the aluminium supply chain.

Management of mercury emissions

Mercury emissions from alumina refineries are managed within the usual framework for Australian operations. This includes reporting of emissions through the National Pollutant Inventory and the requirements of the relevant State-level environmental licencing regime.

A variety of techniques are used to quantify emissions including published estimation techniques, mass-balance methods, analysis of inputs and outputs, and direct measurements. There is a high level of confidence on the quantification of mercury emissions from alumina refineries.

It should be noted that mercury emissions from alumina refineries are highly variable. A large proportion of this variability is caused by the variability in composition, quality and type of bauxite used in the refining process. However, there is also variability caused by the type and age of processing technology. It would be critical that these factors be taken into account in any measures considered to fulfil Australia’s obligation under the Minamata Convention.

Summary

The Australian Aluminium Council proposes that the following be incorporated into Australia’s implementation of the Minamata Convention should it choose to ratify:

- Measures to be taken should, as far as possible, rely on existing systems and frameworks, including at a State level;
- The coverage of sources should not be expanded without fully considering the global significance of additional sources and the impact of any resultant obligations on Australian operations;

- Any measures or responses must consider the variability in emissions caused by natural resource variability and technology/process variability.

Thank you again for the opportunity to comment on the proposal to ratify the Minamata Convention. Please contact me if any matter in this submission requires further clarification or detail.

Yours sincerely



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