MINAMATA CONVENTION ON MERCURY

CIF COMMENTS on the

DRAFT GUIDANCE ON CEMENT CLINKER PRODUCTION FACILITIES

Australian Cement Industry and Mercury

Mercury is present at very low levels in Australian integrated cement plant emissions – largely due to the low levels of mercury in our source materials and fuels used in the process. Care is also taken in the selection of alternative fuels used in the process so as to minimise the amount of mercury introduced into the system.

2013-14 National Pollutant Inventory data published by the Australian Government shows that 94 kg were emitted (to air) by Australia's six integrated cement plants operating during this period. This compares to 6,400 kg emitted by basic non-ferrous metal manufacturing and 2,600 kg emitted by the electricity generation sector.

Australian cement clinker emissions were less than 0.1 per cent of 2010 global cement industry mercury emissions and less than 1 per cent of over 10,000 kg reported from Australian facilities for 2013-14.

Given the low levels of mercury associated with our industry, Australian integrated cement manufacturers should be **excluded from any national plan** to reduce emissions.

Further discussions as part of the initial meetings of the Conference of Parties to the Convention should insist on this point.

Important Key Comments on the Draft Guidance Document

The World Business Council for Sustainable Development's Cement Sustainability Initiative (CSI) is a global effort by 24 major cement producers with operations in more than 100 countries.

The CSI Taskforce Four (Emissions) has made comments on the Draft Guidance on Cement and Clinker Facilities – otherwise known as Best Available Technology/Best Available Practice Guidance document (BAT/BEP). These comments are at **Attachment 1**.

CIF members share all of the concerns expressed by CSI Taskforce Four with regards to aspects of draft guidance document – specifically in terms of the following:

- The CIF agrees with the recommendation of the CSI Taskforce in relation to Section 5 of the draft guidance document (paragraph 2) that, **if it is to be mandated**, then the time period associated with BAT/BEP at a level of 0.03 mg Hg/Nm^3 should be a **monthly or 30-day rolling average** as opposed to a daily average.

  Normal operating conditions for modern cement plants are when the raw mill and kiln are operating together – otherwise known as compound mode. Occasionally, the raw mill is taken offline for maintenance – and this known as direct mode.

Mercury emissions can spike during direct mode operation, however these periods represent a small proportion of the overall operation and are not representative of overall emissions levels from the operations. It is possible that plants will exceed the 0.03 mg Hg/Nm^3 if measured on a daily average.

Measurement over a longer timeframe will provide a more accurate picture of overall emissions from cement plants and is the preferred method of CIF members.

- The proposed performance level of 0.03 mg Hg/Nm^3 in the guidance document has been derived from a small selection of US and European plants, with no evidence that this level is achievable in other areas of the world.

  CIF members concur that achieving levels below 0.03 mg Hg/Nm^3 is extremely unlikely for a modern cement plant – noting that this level is significantly lower than existing limits in Australia (e.g. 0.05 mg Hg/Nm^3 in NSW including alternative fuels and 0.1 mg Hg/Nm^3 when using traditional fuels).

- There appear to be cost discrepancies with regards to abatement equipment in the guidance document – with references to costs of around $50k to $3.2m made in the guidance document.

  The experience in Australia is that abatement equipment costs are typically in the order of tens of millions of dollars – well above the $50-100k quoted in the guidance document.

- The draft guidance document refers to the reported benefits of mercury removal using wet scrubber technology – however doubts exist around the effectiveness of this technology.

  CIF members report that wet scrubbers tend to be very expensive, very 'messy' and difficult to manage – with little assurance that they will solve any potential mercury problem.

- Questions have been raised around the role, availability, application and reliability of continuous emission monitoring (CEMS) of mercury emissions versus the use of the well-established mass balance approach and periodic stack testing.

  CIF members report CEMS as being very expensive and extremely difficult to manage in terms of monitoring mercury emissions – with reliability a serious concern.

- CSI Taskforce 4 expresses concern over the inclusion of a recommended associated Emissions Limit Value (ELV) in the cement/clinker guidance document but not in other draft guidance documents for other technologies.

  The overall aim of the Minamata Convention is to minimise mercury emissions. This can be achieved much more effectively and accurately by understanding and controlling the process inputs and managing outputs, rather than imposing short term ELVs as proposed.

  The CIF agrees that the determination of recommended ELVs should be left up to each member state to decide based on their own specific circumstances.

CEMENT INDUSTRY FEDERATION

Comments on "Draft guidance on cement clinker production factilities" from http://www.mercuryconvention.org/Portals/11/documents/BATBEP%20draft%20guidance/Cement_clinker_production.pdf

Which is the cement section of BAT/BEP from the Expert Group of Minamata Convention: http://www.mercuryconvention.org/Negotiations/BATBEPExpertGroup/CommentsonBATBEPguidance/tabid/4545/Default.aspx

1. The most important comment is related to Section 5, *Best available techniques and best environmental practices*, paragraph 2. The document states that *"The performance level associated with best available techniques and best environmental practices in new and existing installations for control of mercury emissions to air is below 0.03 mg Hg/Nm3 as a daily average, or average over the sampling period, at reference conditions 273 K, 101,3 kPa, 10 per cent oxygen and dry gas."* We believe that the time period associated with BAT/BEP at a level of 0.03 should be a monthly or 30-day rolling average. In paragraph 3 the authors cite data by Renzoni et al., 2010 as justification for this level – but the data used in this article comes from European reporting where companies do testing under "normal operating conditions", meaning with the raw mill running. As the raw mill down condition represents a small portion of the overall time, this data gives a reasonable accurate picture of the overall emissions of these plants, but on any single day where the raw mill is not running, this level may be exceeded. The authors have used the data out of context to justify an overly restrictive level of performance.

The Minimata convention is concerned with overall releases of mercury to the environment and its monitoring provisions specify yearly reporting; it would seem a longer timeframe (e.g. monthly/30 days) for determining BAT/BEP is appropriate, rather than a short time frame used in some regulatory regimes.

The possible increase in mercury release to the environment for exceeding the limit on a daily average but maintaining the limit on a monthly or 30-day rolling average is small compared to the cost of controls necessary to maintain this limit on a daily average. It is quite conceivable that plants that average less than 0.013 mg Hg/Nm^3 on a monthly basis (approximate USA Neshap limit, the most restrictive regulation world-wide) will at times exceed the 0.03 mg Hg/Nm^3 if measured on a daily average.

2. The reported performance of some existing plants was used as the main justification that 0.03 mg Hg/Nm3 is the associated level of BAT. This data stems from US and European plants with a given set of raw materials and not a specific technique. There is no evidence that this same level is achievable in other areas of the world such as Latin America or parts of Asia where historical volcanic activity has left the raw materials with higher levels of mercury.

The justification for the 0.03 mg Hg/Nm3 is based on "cherry-picking" emissions from a sub-set of plants that can achieve this low emission level due to their raw materials rather than looking at the entire population of plants.

3. In many places of the document there are discrepancies in the cost of installing abatement equipment, particularly bag filter/sorbent injection. For instance, in §3.2.2, sub-section

“Cost”, investment cost for a baghouse is listed as $50k-100k without reference; in §3.2.3 the costs for a baghouse is listed as $3.2m (2005) referencing US Cement 2010 which does not state have this number; the only published cost in the industry for sorbent injection followed by a bag filter is Ash Grove Cement Durkee whose published cost is $20M

(http://www.bakercityherald.com/Local-News/Ash-Grove-cautiously-optimistic-it-can-meet-2015-mercury-rules).

4. Wet scrubber achieved benefit: although the data submitted to the EPA probably showed at least one plant achieving 80% mercury removal with a wet scrubber, the wording implies all five plants achieved this level. There is no reference to other plants with high elemental mercury that achieved less than 20% mercury removal, but the results from these plants are not in publications.

5. §6 Monitoring: Monitoring of mercury emissions is required by the Minamata Protocol on a yearly basis. This can either be done by a mass balance approach or by an appropriate stack measurement. The mass balance is a method which the cement industry is using for other compounds for decades. Continuous emission monitoring is used in only very few countries worldwide (mainly Germany and US). It requires a relatively huge effort regarding maintenance and operational control. As the required technological support by the (mostly European or US) analyzer suppliers as well the specific expertise in the cement industry may be lacking especially in less industrialized countries, mass balance is the more appropriate approach in those countries.

6. The draft BAT/BEP guidelines are an excellent overview of the available control technology. In reviewing the guidance and that produced by the various groups, it appears that only the cement/clinker guidance has a recommended associated ELV. It would seem more appropriate that similar to other groups, the recommended ELV be left up to each member state to decide based on its own country level specifics, rather than incorrectly stating that the associated technologies can achieve this ELV in all parts of the world with many different specificities.