EUROPEAN ENVIRONMENTAL BUREAU

European Environmental Bureau comments on the draft final revised report (30 June 2014) on the Study on EU Implementation of the Minamata Convention on Mercury, prepared for the European Commission

31 July 2014

The European Environmental Bureau (EEB) appreciates the opportunity to comment on the draft final report (30 June 2014) on the Study on EU Implementation of the Minamata Convention on Mercury ("Convention" or "MC"), prepared by COWI, Bipro, ICF Intl and Garrigues Ambiental, for the European Commission.

With our comments, the EEB would like to underline the importance of a continuously robust EU mercury policy and global leadership in minimising mercury supply, demand and emissions from all anthropogenic sources. With this in mind, we welcome the study carried out from the consultants and call upon the European Commission, as a follow up, to look up to the challenges ahead and propose legislation overall going beyond the minimum Convention requirements.

The EEB believes that the policy options proposed beyond treaty requirements will indeed get us down the road to fulfilling the mandate of the EU strategy to eliminate mercury. Furthermore, if such policy options are pursued, the EU could be seen as regaining its global leadership position on key and necessary mercury reduction activities. We note the Convention provides mandatory reviews of Annexes A and B, and look forward to EU leadership for expanding the scope of the products and processes subject to phase-out requirements. We further note the other opportunities specified in the Convention for identifying mercury compounds subject to supply and trade restrictions, as another example where we seek EU policy leadership and advocacy.

More detailed comments are presented below, following the report structure and Articles of the Treaty.

Detailed comments on the study

Art. 3 – Supply and trade

Comments on the study

1. With respect to the consumption estimates, better data are needed especially concerning porosimetry use since this appears as the largest uncertainty in estimating consumption. (We would note that in this context amalgam use may appear uncertain but this is due to upcoming policy decisions, not the lack of accurate data)

2. It would be useful if further information and qualitative analysis was provided on the following issues:

- P.51- why compounds' exports have increased so much in 2013? (tables 4.4 and 4.5), and why compounds code 28529000 so high? What compounds are under this code? Can these compounds be converted to elemental mercury to circumvent the mercury export ban?

- P51-51- table 4.5 – why is there still trade of mercury in flasks? And how are these figures justified? since we have the EU mercury export ban in place since 2011? Circumstances should be investigated and the legality evaluated.

- Why exports exceed imports?

Given questions above, the need for clarifying regulatory language in the existing legislation should be assessed by the consultants and proposals made thereof.

- In that respect we would further like to note that although the study assesses compliance with the MC –it does not seem to examine what was foreseen and requested by the Regulation 1102/2008 in Art. 8, and mainly (a) relevant to supply (a) extending the export ban **to other mercury compounds, mixtures with a lower mercury content** […]

  Although a relevant question was asked to the MS we believe that further research is needed on the types of compounds covered under 'other mercury compounds, mixtures with a lower mercury content'. This is becoming rather imperative after the discussions under Art 3 of the study on compounds appearing with increased export volumes from the EU although the mercury export ban is in place (p.51-52). As a result, extending the export ban to cover such compounds need to further be looked at and relevant impacts be assessed.

3. The EU definition on how mercury from decommissioned chlor-alkali facilities should be managed is more precise than the one used in the MC text – and this is the understanding of the MC community. We don't think that the EU wording should change to meet the MC wording (but rather the opposite if there was a possibility).

4. **In the impact assessment (IA),** costs for the beyond Minamata Convention (BMC) scenario, towards a full import ban apart from mercury going for disposal, are assessed as C-2

   To our view these costs may not be as much as indicated (p53), since alternatives are available and on the other hand it will indeed promote substitution. As mentioned already in the study, within the EU we also have experience with the Prior Informed Consent (Rotterdam) convention and therefore such procedures could be installed at the EU level relatively smoothly. Furthermore some costs appear to be the same for the Minimum implementation (MI) (restriction) / and the BMC (general ban) scenario; administrative effort for restriction appears higher than during a general ban – as specified from the consultant (p.56), nevertheless Table 4.1 indicates the opposite (MI A-1, BMC A-2).

   Finally, general loss from imports is indeed considered, however we have to also consider the environmental cost for having additional mercury coming into the EU for any use/treatment, as well as the cost savings/benefits from less mercury coming in the EU. These two costs do not seem to have been taken into consideration in the study, and could therefore be considered in the cost estimates. To that end, the IA scores may need to be reviewed.

5. P.62 concluding paragraph **–** Although such an analysis may sound reasonable, as per our comments above, the question that comes in mind is whether the data are good enough to make these policy calls. Until the policy is set on amalgam and the data on porosimetry are improved, this question may appear premature.

Additional Data

- For price/import/export of mercury you could also consult http://www.mercurywatch.org/
- We would like to bring to your attention the fact that illegal exports of mercury appear to have occurred from Germany to Switzerland and probably beyond:

Initially we received the following information:

- Several 100 t of mercury were exported to Switzerland, but there was no information about the final destination or the whereabouts.
- Waste was sent to underground facility Bleicherode consisted of reddish sand or brick dust instead of cinnabar
- Operator of underground facility in Bleicherode and DELA both are subsidiaries of one mother company
- Estimated value of exported mercury >10 Mio EUR
- Four people were accused among them thee managers, three of them in arrest
- DELA declared insolvency and facilities in Dorsten are shut down
- Relevant articles below:

    - http://www.wn.de/Muensterland/Staatsanwaltschaft-ermittelt-gegen-Spezialentsorger-Dela-Dunkle-Geschaefte-mit-Quecksilber
    - http://www.nw-news.de/owl/kreis_minden_luebbecke/bad_oeynhausen/bad_oeynhausen/10992788_Illegale_Geschaefte_mit_Quecksilber.html
      http://www.dorstenerzeitung.de/staedte/dorsten/Staatsanwaltschaft-ermittelt-Die-Dela-Chefs-stehen-unter-Betrugsverdacht;art914,2329828
    - http://www.dorstenerzeitung.de/staedte/dorsten/Recylingfirma-im-Indupark-Dela-stillgelegt-Insolvenzverfahren-eroeffnet;art914,2349952
    - http://www.radiovest.de/vest/lokalnachrichten/lokalnachrichten/archive/2014/05/02/article/dela-ist-insolvent.html
    - http://www.marlaktuell.de/?p=255347

These news were followed by additional information on the whereabouts of the mercury from DELA: part of it was obviously delivered to BATREC in Switzerland (Wimmis, Kanton Bern). There is a newspaper report that exporting of 200 to 500 t started in 2011 and ended in 2013. Since the export from the EU to Switzerland is prohibited, the mercury was covered with soil, thus giving the impression it were mercury containing waste …

Below there is a link to a Swiss Newspaper that describes the investigations and findings in Switzerland:

- http://www.bernerzeitung.ch/region/thun/Oberlaender-Firma-erhielt-500-Tonnen-illegales-Quecksilber/story/30997943

- http://www.derbund.ch/bern/kanton/Giftige-Vorwuerfe-gegen-Berner-Unternehmen-/story/15237074
- http://www.bernerzeitung.ch/region/thun/Recyclingfirma-brachte-Gift/story/20782812
- http://www.beobachter.ch/justiz-behoerde/buerger-verwaltung/artikel/entsorgung_schweizer-firma-in-quecksilber-skandal-verwickelt/

It seems that BATREC insists that from their point of view everything was legal: the import of mercury containing waste from the EU is legal and they have never imported "pure" mercury. They say that mercury waste with a high mercury content is not uncommon.

However more recently, according to some local newspaper reports the total amount of mercury illegally exported mercury may amount to more than 1000 t. Trade intermediaries could be located in Switzerland, the Netherlands and Greece. Letter-box companies in Russia and Belize acted as formal receivers. Many tons of DELA mercury could be located in Singapore warehouse. Relevant articles below:

- http://www.mt.de/lokales/regionales/20191355_Millionendeals-mit-giftigem-Quecksilber.html
- http://www.die-glocke.de/lokalnachrichten/regionales/Quecksilber-aus-OWL-illegal-verkauft-bdeae1a4-ffb3-4bce-92e5-1b52812e1c68-ds
- http://www.radiovest.de/vest/lokalnachrichten/lokalnachrichten/archive/2014/07/04/article/dela-mitarbeiter-fuerchten-um-ihre-jobs.html
- http://www.nw-news.de/owl/11176180_Weltweite_Suche_nach_Quecksilber.html

It is rather frustrating that the EU and national legislation we have in place has not managed to prevent such mercury flows; some simple tricks were enough to let perhaps as much as 1000 t of mercury just evaporate beyond the EU borders.

One problem can be that the custom authorities have no means to evaluate if, when and where other substances have been added to transform metallic mercury into waste.

To that end, EU and Member States must concentrate more on tracking and physical security of Hg stocks: permanent surveillance, electronic controls, four/six/eight eye principle when moving mercury containers, obligatory chemical identity check when passing mercury or mercury waste from one company to another, public registers, obligatory reporting and frequent external evaluation of Hg stocks/ movements. With the mercury prices high at the moment, theft, illegal trade, and smuggling could be too inviting.

As a result we would appreciate that the consultant investigates precisely what is transpiring with respect to legal and illegal mercury trade, and make recommendations regarding regulatory and operational revisions to fix the problems. For example, if the companies were engaging in sham mercury waste management to circumvent the export ban, then the consultants should be considering whether there is a need to clarify the regulatory text.

Art 4(1) Prohibition of manufacture/import/export of MAP

Comments on the study

1. On Table 4.10:

   i. It is mentioned that Topical antiseptics are subject to the EU directive 2001/83 but it cannot ruled out that authorisations may exist at MS level. This element needs to be elaborated further to ensure that no mercury is used in such products – otherwise additional provisions may be needed.

   ii. Under non-electronic measuring devices - it is not only the fact that there is no precondition in the EU that 'no suitable mercury free alternative is available' , but we would further note that the EU legislation also seems to include devices 'installed in large scale equipment or those used for high precision measurements' since it refers to 'measuring devices intended for industrial and professional uses', even with the exemptions that are indicated.

2. On the IA (p.68):

   i. It is said that the degree of the impacts will be higher under the BMC scenario for the stakeholders involved in production and export of products which are targeted by the EU marketing restrictions but not by MC marketing restrictions, and that there is a possibility that manufacturers relocate outside the EU.

   In the example where in the EU CFLs should only contain 2.5 mg/lamp, where by MC they could still contain 5mg/lamp – a further question that needs to be elaborated more is whether it would be worth for the EU manufacturers to keep or set up two separate production lines for their CFLs…. One for lamps that they could sell in the EU market (≤ 2.5 mg/lamp), and one for lamps between 2.5 and 5mg which they could still be allowed to export if we were to go with the MI scenario and partial export ban. Also price difference between those two may be nonexistent or minimal.

   These two issues - production lines and price - would need further analysis in the study, since to our view this may not be beneficial to the EU manufacturers. Therefore an export ban of all EU products which are not allowed in the EU market could be the way forward so that the EU avoids double standards and exporting mercury added products where they may not yet be regulated and where their disposal is often poorly handled. Moreover, we note China's lamp production mercury limits will also be more stringent than the Convention, and most of those lamps are intended for export. The EU and China should continue their global leadership in the lamp area, and set the stage for the Convention Annex A review which will be underway at COP 2 and completed by COP 3.

Art. 4 (3)Annex A , Part II – Dental Amalgam Life cycle

Comments on the study

We would propose that some more analysis should be done for final report considering the following issues:

1. The 'higher costs' attributed to the BMC scenario are rather questionable:

i. The real cost of amalgam is not really considered. If environmental costs were included in the amalgam price then this would cost 66 euro more than the actual price and as a result would be more expensive than the use of alternatives. See study THE REAL COST OF DENTAL MERCURY , 22/3/2012.
ii. The reasons for which the cost is estimated to be higher – e.g. larger or more complex fillings, alternative materials that take longer time to be applied etc. – are areas where the BMC scenario actually includes exemptions based on the Danish model. As a result such costs should not be counted in the equation.
iii. Longevity of the restoration is not a relevant concern when it comes to children's primary teeth, which are not exempted by the Danish model, since these teeth often fall out long before the restoration fails.[i]
iv. It also should be considered that a cavity originally prepared to receive an amalgam filling is typically larger and distinguished by various angles that would never be prepared for a composite, rendering the placement of a composite more difficult and time-consuming than it would otherwise have been.[ii] Therefore, continued amalgam use creates the need for some larger and complex fillings. This is a cost of continued amalgam use that should be included under the MI approach.
v. Furthermore the reason for potentially higher costs attributed to use of alternatives, are mainly due to the fact that dentists may not be used to dealing with such materials and not due to the clinical situation of the patient or the material itself. The BMC scenario would ensure that dentists do get used to dealing with these materials and lessen this potential cost.
vi. The results of the BIOS 2012 report on environmental impact from the use of dental amalgam, has clearly shown that the best option from economic, social and environment point of view would be a phase out in the next years (by 2018) in the EU.
vii. As mentioned earlier, the cost benefits from phasing out mercury use in this sector could also be considered given the high exposure an amalgam may cause to a person. Although the SCENIHR opinion on the direct health effects of dental mercury to human is still on going, it is a fact that some part of the EU (and global) population may be indeed highly affected from such a use. It is also a fact that whatever the SCENIHR opinion is, amalgam still has an environmental impact that needs to be addressed. Therefore once more, because of the environment impacts caused (as per SCHER opinion 2014 – where despite all its weaknesses and parts of emissions not considered it still showed risk for secondary poisoning) and on the basis of the precautionary principle with respect to the direct health effects, a phase out would be the best option at EU level.

Additional Data

- Please consider our EEB/WAMFD/MPP COMMENTS TO THE SCHER 2013 PRELIMINARY OPINION ON DENTAL MERCURY(Annex I - average case scenario, Annex II - best case scenario)– where additional data can be found with respect to releases of mercury used in dentistry.
- Please consider also the EEB comments on the final draft BIOS report on the study on the potential for reducing mercury pollution from dental amalgam and batteries including Appendices I, II, III, IV (May 2012)

- Further Data on the releases are also provided in the BIOS report 2012.

- Please consider also our study THE REAL COST OF DENTAL MERCURY , 22/3/2012.

Art 4(6) and 5(7) Discouragement of new products and processes with intentional mercury use.

Comments on the study

1. There are a variety of issues associated with these sections of the report. First, while we agree the term "discourage" in the Convention is undefined and subject to interpretation, we believe at a minimum Parties will need to identify new types of products and new processes through an industry reporting obligation. Without such reporting, Parties cannot demonstrate whether in fact the new products and processes have been "discouraged" nor can they comply with reporting and demonstration obligations associated with implementing these provisions.
2. Second, the consultant's report considers the MC provisions for new products and processes as identical. However we would like to note that in the Convention provision on processes, permission for a new process requires a higher standard of proof and COP approval and acquiescence - if the "Party can demonstrate to the satisfaction of the COP that the manufacturing process provides significant environmental and health benefits and that there are no technically and economically feasible mercury free alternatives available providing such benefits." Therefore we would see the two provisions differently.
3. Having noted the differences between the two provisions as far as the Convention is concerned, as a policy matter, this is a crucial high priority issue for both products and processes, and such an explicit ban within the BMC option is necessary at the EU level. The report fails to note the possible new mercury uses already appearing in the USA, which could easily move to the EU. These include, by way of example:

Tennis elbow brace
http://www.amazon.com/Tennex-Elbow-Shock-Watch-Black/dp/B002N1OJSI

Wheel weights and other flyweight applications.
http://www.balancemasters.com/home.html
The video from the company is at http://www.balancemasters.com/video.html

There is another company making these in Canada. See
http://www.centrabalance.com/centra/about.html

People will always want to make money, and may continue being inventive – but not really to offer 'significant environment and health benefits. We should not underestimate the market and think that everyone will act responsibly absent a clear prohibition against new uses, with exemptions available for rare, extraordinary instances of social benefits.

4. In both options MI and BMC, the IA score appears the same. It is rather difficult to see why cost score "-2" has been given, when most refers to profits one may have in the future, but which are not real losses on profits right now. On the other hand such profit and additional jobs could go to production of mercury free alternatives – therefore more benefit rather than costs would be seen. Costs related to authorization would only occur if the product/process were intended to provide 'significant environment and health benefits' which, on the basis of the examples above, is not really the case.

Additional Data

(see above)

Art 5(3) Restricting mercury use in the production of VCM, Sodium/Potassium Methylate/Ethylate and Polyurethanes

Comments on the study

1. Options need to be elaborated further mainly with respect to the VCM and Polyurethane (PU) provisions of the MC. It rather seems that existing provisions in the EU do not cover MC requirements. With respect to PU, if other than the five EU banned phenylmercury compounds are used in a process – these would not be covered and could therefore lead to breach of the MC.

2. For a BMC scenario a ban earlier than 10 years could also be considered given that this is not a new issue for the EU - for all three areas VCM, PU, alcoholates, and manufacturers have well been involved in relevant discussions.

3. From the report as well as the discussion during the stakeholder workshop it is now imperative that the alcoholate industry provides all relevant information to the consultant and EC. It is clear that information appears withheld – blocking and delaying decision making. If no further information is provided then decisions should be made on the available assumptions with all consequences. Most specifically information on the uses of potassium ethylate should be provided including on down stream uses, since those could be replaced by alternatives altogether. Use of up to 100 tonnes (since only pre-registered in REACH) is still very significant since mercury is contained therein.

4. It has to be clarified in the report to avoid confusion or rather be removed, that the interpretation of industry on the 50% target of emissions reduction is incorrect. The target refers to unit of production and not for the whole plant as interpreted by industry on pages 93-94.

   Furthermore, if emissions reduction costs are indeed so high as indicated in the report, then It would be better for industry to pass straight to conversion – also given the fact that the chlor-alkali facilities linked to those special chemical facilities will have to be converted by 2017 (CAK BREF conclusions 2013).

   On page. 94, the fact that now industry is claiming that their emissions of 190 kg/y are for the whole site including their mercury based chlor-alkali production needs further clarification, since until now it was known that these are the emissions only from the alcoholate process.

5. Similarly to the above, industry's assumption that they could potentially ask for further exemptions beyond the phase out date when this is defined is not correct. No exemption can apply beyond the 10 year period after entry into force of the MC– art. 6.9.

6. With respect to costs of production of alcoholates with mercury vs. mercury free process, the type of energy used should be considered. If energy comes from renewable sources associated costs may be lower, compensating for the cost of a slight more energy demanding mercury free process. This element needs to also be discussed in the report.

7. There is no clear difference between the MI and BMC options presented, apart from the obligation to reduce emissions. The costs are rather similar. As mentioned above, if reducing emissions is not cost efficient, industry should proceed with straight conversion/phase out of the mercury process.

Art 8 – Emissions

Comments on the study

1. On p. 216 of the report, the authors suggest that under the Convention, a Party may elect to pursue a multi-pollutant control strategy to control air emissions from existing sources, and not be bound to address directly all the source categories identified in Annex D. The sole basis for this interpretation is the absence of the term "relevant sources" in Article 8.5(d). In our view, the authors read too much into this inadvertent omission, in large part by ignoring the remainder of the Article. For example, Article 8.1 expressly states its purpose is to control emissions from the Annex D source categories. In addition, the "existing source" definition in Article 8.2 incorporates the "relevant source" term within it, and thus all of Article 8.5 refers to existing sources within the relevant source categories. Thus, the failure to repeat "relevant source" again within Article 8.5(d) is not meaningful. Furthermore, the inventory obligation of Article 8.7 applies to emissions from relevant sources, without exception, because the Parties intend to track progress in reducing air emissions across all the relevant source categories. In short, we find the author's suggestion without merit, and counterproductive to effective Convention implementation, since it has the potential to undermine the purpose of including Annex D in the Convention text.

2. Cost for the BMC scenario could also be 0 on the basis of the analysis rather than -1….

3. For a BMC scenario, beyond the potential addition of mercury to the proposed MCP directive we would appreciate if the consultant also considered the addition of mercury at the National Emissions Ceiling Directive (NEC). In both EC proposals for these directives mercury was not initially mentioned but it is now being assessed in this report from the MCP side. However the European Parliament has now requested the EC to evaluate the impact of adding mercury under the NEC directive. As a result such an option should be considered in this report to our view.

   Including mercury in the NEC directive would also meet the EU strategy objectives and MC requirements. It would complement the IED to reduce overall emissions of mercury into the air and would complement actions included already in the strategy since 2005.

Furthermore it would provide further incentives to control mercury emissions from most problematic sources such as LCPs and MCPs as well as others.

Art 9 Releases to water and land

Comments on the study

1. p.221-222. While we agree that the definition of relevant sources is unclear in the Convention, we do not agree with the Consultant's characterization that consideration of the point sources in Annex D and other major point sources as possible relevant sources is an interpretation farther from the language in the Convention text. We believe the phrase "not addressed in other provisions of this Convention" is best interpreted as applying to sources where the Convention text expressly addresses releases to land and water. Examples would include chlor-alkali plants and other processes covered by Article 5.5(a) of the Convention, and ASGM sites covered by Annex C, par. 1(e). While the Consultant notes the air emission control BAT/BEP guidance may consider cross-media impacts, the Consultant fails to note that Parties are not required to control air emissions via BAT/BEP at existing facilities under Article 8. Parties using other control measure options under Article 8.5 would not address mercury releases to land and water, and thus it is difficult to see how the Annex D source releases to land and water could be considered addressed under Article 8.

Art 11 Mercury Waste

Comments on the study

1. In this section we would like to note once more the justification for the illegal trade discussed above. To that end it needs to be assessed whether there is a need for clarifying text to address sham waste disposal to avoid export ban obligations.

Final Disposal of metal mercury

In terms of determining the best disposal solution for liquid mercury considered waste, the report analyses the two recent studies available on the issue and mainly brings new evidence through the Hagemann et al (2014) study on the long term behavior of metallic mercury.

Although the outcome appears to now be 'equally beneficial' from safety point of view, between storing liquid mercury underground (under specific conditions) and solidifying the liquid mercury before disposal, EEB is still concerned about the long term safety of disposing liquid mercury underground. For further information please consider our EEB comments on Revised draft final BiPRO study on mercury storage (February 2010)

The concern increases in terms of message/signal that EU would send to the rest of the world, if it were to adopt relevant measures for mercury disposal; control and assurance that the pre-conditions required for liquid mercury disposal would be thoroughly met, could be highly questionable.

We would welcome some further discussion on this point by the consultants in this present study.

Appendix 3 – Summary of Member State questionnaire replies

We would like to first congratulate the 4 MS which have already taken measures going beyond the EU legislation since 2010, as well as others which may have already had such measures for many years. Such examples should be further followed by other MS and eventually EU should harmonise its relevant legislation.

On the questionnaire replies summary thank you for considering the following:

1. Please precise which MS confirmed that it would not be participating to the study and for what reason.
2. It is rather alarming that no countries have received data submissions from relevant operators on supply of mercury referring to art 5(3) of the Mercury Export Ban regulation. Could you please elaborate a bit more on the issue; or will further information be requested in the near future and vis a vis the forthcoming study related to exports of mercury, as mentioned during the stakeholder worskhop?

Editorial comments

1. P.69, para 4.5.1. please delete “of the key impacts”, repetition
2. P. 72 – fourth line, please consider deleting “was estimated”

For more information please contact:

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[i] BIO Intelligence Service (2012), *Study on the potential for reducing mercury pollution from dental amalgam and batteries*, Final report prepared for the European Commission-DG ENV, http://ec.europa.eu/environment/chemicals/mercury/pdf/Final_report_11.07.12.pdf, p.69

[ii] BIO Intelligence Service (2012), *Study on the potential for reducing mercury pollution from dental amalgam and batteries*, Final report prepared for the European Commission-DG ENV, http://ec.europa.eu/environment/chemicals/mercury/pdf/Final_report_11.07.12.pdf, pp.67-68