Asia Pacific (AP) Regional Mercury Storage Project
Executive Committee (Execom) Meeting
29-30 July 2011, Surabaya, Indonesia

Report of the meeting of the project executive committee

Background and objectives of the meeting

1. This meeting was a follow-up to the 2009 Norway- funded project "Reducing Mercury Supply and Investigating Safe Long Term Storage Solutions", also known as "UNEP Mercury Storage Project". The project is in parallel with the intergovernmental negotiating committee (INC) process that will elaborate a legally-binding instrument for mercury. This project is part of the continuing work to provide technical assistance to countries in search for environmentally-sound long-term storage for elemental mercury, identified as a priority of governments.

2. The Chemicals Branch of UNEP Division of Technology, Industry and Economics implemented the Mercury Storage Projects in the Asia-Pacific and in the Latin America and Caribbean (LAC) Regions in March 2009. The projects are aimed at reducing the release of mercury into the environment by initiating regional processes that will support the sequestration of excess mercury in these regions, thereby preventing its re-entry into the global marketplace. More information about the project can be found at the

http://www.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/SupplyandStorage/LACMercuryStorageProject/tabid/3554/language/en-US/Default.aspx

3. The project builds on GC 25/5 III decision that requested "UNEP Executive Director working through the Global Mercury Partnership and concurrently with the work of the Intergovernmental Negotiating Committee to develop a legally-binding instrument on mercury, to continue and enhance as part of international action on mercury the existing work, including enhancing capacity for mercury storage".

4. The project is recognized as an activity under the UNEP Global Mercury Partnership on Supply and Storage, currently led by the Zero Mercury Working Group. The partnership area's objective as set out in the business plan is "to contribute to the minimization and, where feasible, elimination of mercury supply, considering a hierarchy of sources, and the retirement of mercury from the market as a result of environmentally sound management". It recognizes that "mercury supply and trade are priority areas for the intergovernmental negotiating committee and aims to halve the global supply of mercury by 2013". The full partnership on supply and storage business plan is available at http://www.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/SupplyandStorage/tabid/3546/language/en-US/Default.aspx

5. The safe long term storage of mercury is seen as a requirement or obligation as countries implement legislation leading to excess mercury supply. A number of countries and regions have already passed legislation or enacted regulatory measures to reduce mercury supply both nationally and regionally. Worth noting are the mercury export ban to come into force for the European Union by 2011, the US export ban by 2013, and the export bans in Sweden and Denmark. Information on developments and progress of mercury storage in other countries is available at

http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/SupplyandStorage/Reports/tabid/4508/language/en-US/Default.aspx

6. Upon request of the project Execom and some partners of the Global Mercury Partnership on Supply and Storage, UNEP commissioned the GRS, a German non profit research group based in Germany to improve the options analysis study for the environmentally sound storage of surplus mercury and provide recommendations to the countries in the region. The final report is available at http://www.unep.org/hazardoussubstances/Portals/9/Mercury/Documents/supplystorage/Analysis%20of%20options%20for%20the%20environmentally%20sound_EDITED%20CLEAN_May2011.pdf

7. The objectives of the AP Execom meeting was to inform governments and stakeholders in the AP region about the options for managing surplus mercury in order to help form a basis for a decision on a safe mercury storage and to identify possible next steps in addressing the need to manage surplus mercury in the AP region

Opening of the meeting and Election of chair

8. The meeting was opened by Mr. Per M. Bakken, Head of UNEP DTIE Chemicals Branch. He stressed that storage of mercury is a priority topic that needs immediate attention due to the expected excessive mercury surplus. The Execom elected Mr. Richard Guiterrez, (BanToxics/ Zero Mercury) as Chair and Indonesia as rapporteur.

Presentations and discussions on storage of mercury and mercury waste

9. Ms. Desiree Montecillo Narvaez (UNEP Chemicals) provided a brief walk through of the AP mercury storage project, summarizing the major findings of the AIT, areas for improvement and the findings of the revised study. The objective of the mercury storage project is to prevent re-entry of mercury to the global market and instead find environmentally sound storage solutions it. She referred to INC-2 in Chiba (Japan) in January 2011 where delegates affirmed the importance of the storage issue and its inherent relation to supply and demand. They also said interim storage projects should be undertaken in the short term.

10. After the opening of the meeting, UNEP consultant Sven Hagemann (GRS) gave an introduction to the glossary of terms on mercury storage and disposal that has been developed under the Mercury Supply/Storage partnership. The 7th version is currently under consideration by the Basel Small Intersessional Working Group (SIWG) that is preparing the Basel Technical Guidelines on mercury waste. It describes and explains terms as they currently used as well as the underlying concepts based on current practices.

11. That followed a presentation by Sven Hagemann (GRS) on major sources of mercury supply and major demand/uses in the AP region and the potential excess supply; mercury trade flow (exports and imports) of commodity mercury and mercury containing waste. A regional mercury surplus is expected only after 2020, but national surpluses may already exist in some countries or may occur soon. The presentation included newly extracted export and import data from the UM Comtrade database for the year 2009. In the discussion it became clear that some gaps and inconsistencies in the database may be related to significant illegal trade, e.g. in cases where a country has notified an export of mercury to another country, but for that country no import has been notified. One participant informed that such illegal imports are taking place in his country. The imported mercury is presumably used for artisanal and small scale gold mining.

12. In his presentation Mr. Zaigham Abbas (Pakistan) informed about the current status of mercury in Pakistan with emphasis on the mercury inventory project, the mercury waste project and the guidance

on best industrial practice in chlor-alkali sector. He said that is planned to phase-out mercury use in Pakistan, but that further capacity building and awareness raising is necessary.

13. Another country example was given by Ms. Elvira P. Pausing (Philippines) who reported about approaches to the challenges on the management of mercury and mercury wastes in the Philippines. She highlighted regulatory measures such as phase out of mercury in the health care sector, actions taken in the Philippines and immediate concerns such as minimizing mercury releases and final disposal of mercury and mercury containing lamps.

14. Mr. Hagemann introduced the participants to concepts for the environmentally sound management of surplus mercury. His presentation covered major sources and types of mercury waste and the principal approaches to dispose them. According to his classification there are two levels of mercury removal: removal from the market and removal from the biosphere. Possible elements of environmentally sound management of surplus mercury could be a) Effective collection to remove mercury from the market; b) early stabilization for avoid transport and storage of elemental mercury and c) safe disposal to isolate mercury from the biosphere.

15. A presentation followed on the stabilization technologies for elemental mercury (Mr. Hagemann). Principal approaches for stabilization and technologies that are available or those undergoing development were presented. At least one commercial technology is available at full industrial scale; the product is a solid that may be transported and stored in drums or plastic bags. Prices for stabilization start at 2.800 USD per ton. Approaches by other companies may soon follow.

16. Detailed information on the concept of above ground storage of elemental mercury in warehouses was given by Mr. Hagemann. He gave a description of the concept, feasibility and applicability including a description of the legal, technical, environmental hazards as well as economic, political, social and cultural considerations; information was also given on environmental hazards in the region and these may affect the selection of suitable sites. Regarding suitable sites he said that it is not necessary to restrict the search on dry, cold areas, since warehouse and container could provide sufficient resistance against climatic conditions; but to avoid unnecessary traffic, warehouse should be located near the main producers (industry, recycling plant) or at a place easily accessible for transport (e.g. near a harbour). In the discussion one participant stressed the need to respect buffer zones to protect sensible areas. Another speaker said that storage facilities in areas of artisanal and small scale gold mines could be much smaller.

17. Then, the concept of permanent storage of hazardous wastes in underground mines was discussed by Mr. Hagemann. His presentation covered feasibility and applicability including a description of the legal, technical, environmental hazards as well as economic, political, social and cultural considerations; Mr. Hagemann briefly introduced the issue of host rocks and which geological requirements a specific site must have in order to become a candidate site for further investigation. According to his explanations many rock types may be suitable for hosting an underground disposal facility depending on the overall geological situation. For example, it may be possible to utilize existing zinc or lead sulphide mines for the disposal of mercury sulphide.

18. Mr. Hagemann evaluated the possibilities and limitations of exporting mercury and mercury waste. He stressed that export of waste is restricted by the Basel Convention and many national legislations. However it may be an intermediary option until disposal facilities become available in the Asia Pacific region itself.

19. Mr. Sunichi Honda (Japan) informed the participants on how mercury added products and end of life product are managed in Japan. Japan has elaborated a set of regulations that addresses the mercury content, mercury emissions and mercury waste management in many sectors. A number of specialized waste management companies exist in Japan, one being the former operator of Japan's

largest mercury mine. Mercury demand is now as low as 12 t/ year with lamps, manometers and batteries being the most important remaining uses.

20. The presentation was followed by an overview by Mr. Hagemann on the management options for mercury containing waste (end of life products and stabilized mercury). He said mercury has first to be extracted from the waste. It may then be either re-used or stabilized and disposed. Disposal of non treated waste is not recommended. For the disposal of stabilized mercury permanent storage in underground mines and possibly specially engineered landfills are available.

21. Starting with the second day, Mr. Hagemann informed about temporary storage of elemental mercury, mercury waste and mercury added products, but later on concentrated on storage of waste by the owner or last user before collection. Two important examples are the preliminary storage of industrial waste on the site of its production (e.g. oil and gas industry) and the storage of mercury added products that became waste in hospitals. Centralized facilities are used to store waste pending other disposal operations. Such facilities may hold waste for a longer time and under more suitable conditions than at industrial sites or hospitals.

22. After this overview, Mr. Syaiful (Indonesia) reported about temporary storage of mercury waste in Indonesia. Such storage takes places in accordance with legislation on storage of hazardous waste and may be done only after licensing. Part of the mercury waste in Indonesia is exported (mainly from the oil and gas industry) but for mercury waste from other sources no dedicated disposal options exist. He stressed that more guidance on temporary storage is needed.

23. Mr. Honda presented the Draft Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminating with Mercury. The 6th version is now available and a final 7th is expected for discussion at the Conference of the parties of the Basel Convention. In response to questions by other participants Mr. Honda said that mercury waste (e.g. in the industry or hospitals) should be collected and stored separately in order to avoid mixing.

24. Following this presentation, BanToxics/BaliFokus gave an overview about a project on mercury waste management and storage in Indonesia and the Philippines. It aims at developing a national mercury storage plan for the Philippines and achieving a similar process in Indonesia building on the experience in the Philippines. Activities are targeted at the sub-national level, where the preparation of subnational inventories and consultations are planned. A strong cooperation shall be established with local government units. The project has just begun and financed by the US Department of State.

25. An introduction to site selection processes and feasibility studies was given by Mr. Hagemann. He highlighted the role of the site selection process within a national mercury strategy, general criteria to assess the suitability of a site as well as social factors that may influence the site selection. Before a full feasibility study for any type of storage or disposal facility can be done a site selection process has to be performed.

26. In his final presentation Mr. Hageman summarized the major findings of the Asia options study. 5,500-7,500 t of surplus mercury are expected between 2027and 2050 in the region but national surpluses may occur sooner. At least one commercial stabilization technology for elemental mercury is available at industrial scale. Two concepts for long-term management of surplus mercury are applicable for the Asian region: warehouse storage of elemental mercury and permanent storage of stabilized mercury in underground mines. Costs are expected to be around 3,000 – 5,000 USD/t. As both options need some time for implementation, the establishment of temporary storage facilities would be priority, while preparing for one or more long-term approaches. For the environmentally sound management of mercury waste he suggested a three-step strategy of effective collection, early stabilization and safe disposal.

27. In the following discussion members of the Execom and other participants discussed the most urgent needs related to surplus mercury and mercury wastes in their countries and the obstacles to implement an effective management program. A table was prepared that highlighted urgent national needs and possible solutions. Areas that should be addressed included the chlor alkali sector, hospital waste, mercury in products, national waste management plans. As possible solutions awareness raising, better coordination between producers and policy-makers and the availability of training and guidance material was mentioned. The following regional activities were identified that may support national efforts:

- Information exchange (about national Hg management programs)
- Capacity building (learn from each other)/ sector specific exchange of information and experience
- On the basis of national projects establish national temporary storage facilities, regional program to find regional management solutions
- Inventory of legislative frameworks
- Forward information from this meeting to other countries in the region

Next steps

28. Members of the Execom are asked to review the country table with needs and possible solutions by 19 August 2011.

ANNEX:

NATIONAL AND REGIONAL (ASIA PACIFIC) COOPERATION ON MERCURY STORAGE AND DISPOSAL

Country	Priority national needs	Possible solutions
Pakistan	i. Chlor-Alkali ii. Hospital/health sector waste iii. Lightening products	• Awareness raising about the health impacts of mercury(newspapers, electronic media) • Coordination between producers and policy-makers (through regulatory means)
China	i) Data collection ii) Separation and collection system for Hg waste (including take back system) iii) Identify and prevent secondary pollution iv) Efficient implementation of policies v) Capacity building	• Awareness raising (also in the facilities/ companies) • Mandatory reporting • Multilateral information exchange (sectoral level) • Guidance and training for pollution control officers for certain sectors • Institutional capacity building for local governments (using easy to understand material)
Indonesia	i) Data collection using the toolkit ii) Guidance on temporary storage iii) Guidance on waste management (collection to disposal) in health sector iv) Guidance for phase-out of Hg devices v) Guidance on management of used lamps vi) Capacity building ASGM (mercury substitution)	• Assistance for data collection • Training on the ESM of mercury waste and substitution of mercury added products • Capacity building on ASGM

	vii) Guidance on Deep well injection (incl. management of technology)	• Training on deep well injection technology
Ban Toxics (for Philippines)	i) Develop plan to prioritize needs ii) Access to comprehensible data	• Strengthening of interagency coordination

Regional Activity	
• Information exchange (about national Hg management programs)	• Regional workshops; UNEP Chemicals Branch to disseminate National Mercury programmes through BCRC
• Capacity building (learn from each other)	• Disseminate case studies and lessons learned via booklet/manual/ regional workshop
• On the basis of national projects establish national temporary storage facilities, regional program to find regional management solutions	• With weak technical and management basis, and limited resources, technical and financial support are necessary for the developing countries in the region to find sound solutions • Initially, temporary mercury storage facility should be developed at national level on pilot scale. Then, a regional mercury storage project should be initiated with the involvement of BCRC
• Inventory of legislative frameworks	• Legislation important through regional cooperation to limit illegal activities in the region or sub-region
• Forward information from this meeting to other countries in the region	• Important and necessary to share the information in the next Asia Pacific regional consultation/meeting