

**MERCURY-CONTAINING PRODUCTS PARTNERSHIP AREA**  
**BUSINESS PLAN**  
**June 28, 2013**

**I. SUMMARY OF THE ISSUE**

Large amounts of mercury are used globally in the manufacture and use of numerous products and manufacturing processes at such a level that it represents almost one-third of global demand. Yet, for most products, there are effective alternatives available. The most widely known exception is in mercury-containing energy efficient lamps where mercury-free alternatives are still limited or quite expensive. Eliminating mercury in products is important because reducing the use of mercury ultimately reduces releases of mercury to the air, land or water and reduces the potential for direct human exposure. Addressing mercury use in products will reduce the global demand for mercury and help to ultimately break the cycle of mercury being transferred from one environmental medium to another. The table below illustrates that for 2005, mercury in products (e.g., lighting, measuring and control devices, dental amalgam, batteries, electrical and electronic devices, and pharmaceuticals and vaccines), and manufacturing comprised more than one-third of global demand for mercury. The 2015 “status quo” scenario is the projected demand for mercury use in products and processes, assuming that only a few measures will be introduced in the next ten years. This is considered the baseline on which the products partnership has based its 2015 “focused reduction scenario” medium term objectives.

**Table 1: Global Mercury Consumption and Projection by Sector (2005-2015)<sup>1</sup>**

Global mercury demand (metric tonnes) <sup>2</sup>	2005	“Status Quo” scenario 2015
Small-scale/artisanal gold mining	650-1,000	No change
Vinyl chloride monomer (VCM) production	715-825	1,250
Chlor-alkali production	450-550	315-385
Batteries	260-450	130-178
Dental use	300-400	270-360
Measuring and control devices	300-350	165-193
Lighting	120-150	108-135
Electrical and electronic devices	170-210	102-126
Other (paints, laboratory, pharmaceutical, cultural/traditional uses, etc.)	200-420	170-357
<b>Total</b>	<b>3,165-4,355</b>	<b>2160-3984</b>

Sources: Euro Chlor (*available at <http://www.eurochlor.org/>*); Maxson, “Mercury Flows and Safe Storage of Surplus Mercury” (August 2006); Maxson, Personal comments (December 2007); UNEP, “Summary of Supply, Trade and Demand Information on Mercury” (November 2006); “AMAP-UNEP Global Atmospheric Mercury Assessment” (2008); European Commission, “Options for reducing mercury use in products and applications, and the fate of mercury already circulating in society (2008); and UNEP, “Report on current supply of and demand for mercury, including projections considering the phase-out of primary mercury mining” (2008).

<sup>1</sup> This chart will be updated periodically to reflect relevant new data and studies on mercury demand.

<sup>2</sup> Note: “Demand” as presented above may also be termed “gross consumption,” and is here defined as total annual throughput of mercury for each of these sectors. It should be noted, however, that in each of these sectors some mercury recycling takes place, involving the recovery of mercury from products or wastes. Therefore, “net consumption” of mercury in some of these sectors (especially VCM and chlor-alkali) may be significantly lower than “gross consumption.”

The purpose of this business plan is to provide a framework and goals for developing and implementing projects aimed at the eventual elimination of mercury use in products. The business plan is to serve as a resource for providing a common, cohesive structure for implementing the United Nations Environment Program's (UNEP's) Global Partnership for Mercury's Mercury-Containing Products Partnership Area (Products Partnership). The business plan outlines quantitative goals for achieving mercury reductions in product categories, and provides information for existing and new partners as they manage and track their projects.

## II. OBJECTIVE OF THE PARTNERSHIP AREA

The **overall goal** of the UNEP Global Mercury Partnership is to protect human health and the global environment from the release of mercury and its compounds by minimizing and, where feasible, ultimately eliminating global, anthropogenic mercury releases to air, water, and land.

A. In order to contribute to the overall goal of the UNEP Global Mercury Partnership, the **goal** of the Mercury-Containing Products Partnership Area is to phase out and eventually eliminate mercury in products and to eliminate releases during manufacturing and other industrial processes via environmentally sound production, transportation, storage, and disposal procedures.

### B. Medium Term (5 to 10 years) Objectives<sup>3</sup>

The following objectives represent projected reductions in mercury based on the "Focused Hg Reduction Scenario" in UNEP's November 2006 "Summary of Supply, Trade, and Demand Information on Mercury," and July 2008 "Report on Current Supply of and Demand for Mercury, including Projections Considering the Phase-out of Primary Mercury Mining."

1. In 2005, demand of mercury in batteries was roughly 260-450 tonnes. Based on a status quo scenario, demand is estimated to be around 130-178 tonnes in 2015. To track the effectiveness of the partnership, our objective is to go beyond the status quo scenario and reduce the demand for mercury in batteries (e.g., phasing out the production of mercury-containing button cell batteries), to less than 65 tonnes or a 75 percent reduction from status quo by 2015.

*Basis: Batteries – A substantial amount of the mercury now used in this sector is for button cell battery production. Thus, the pace of the transition to mercury free button cells will determine the extent of mercury demand reduction for this sector.<sup>4</sup> With U.S. manufacturers already committed to producing only mercury free button cells, the major question is when manufacturers in other parts of the globe will follow suit. Given the highly competitive nature of battery manufacturing, the likely regulatory pressures that will be placed on this sector, and the active consideration of new standards for batteries in China, one might predict that the major battery manufacturers will make*

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<sup>3</sup> Objectives are based on a "focused mercury reduction" strategy in which the key countries and companies involved identify mercury demand reduction as a clear priority, and adopt the more obvious measures necessary to move significantly toward that objective. Reference is being made to the UNEP November 2006 trade report "Summary of Supply, Trade and Demand Information on Mercury," as basis for the "focused reduction scenarios."

<sup>4</sup> As mentioned in the UNEP trade report, there remain unanswered questions with regard to batteries that are entered in the Comtrade database as "mercuric oxide batteries." The database shows world imports of more than 3,000 tonnes of these batteries for 2005, which average 65 g mercury per battery in weight. Apparently, therefore, a large number of these batteries are not button cells. Even if we assume many of these batteries may have been traded several times during the year, they comprise a potential pool of several hundred tonnes of mercury. This will not prevent us from setting a reduction target for mercury in button cells, but we should not assume that we know the extent of mercury in batteries until we know more about international trade in what are coded as "mercuric oxide batteries."

*this transition by 2015, thus reducing annual mercury consumption for this sector to less than 50 tonnes.*

2. In 2005, demand of mercury in measuring and control devices was roughly 300-350 tonnes.<sup>5</sup> Based on a status quo scenario, demand in 2015 is estimated to be around 165-193 tonnes. To track the effectiveness of the partnership, our objective is to go beyond the status quo scenario and reduce the demand for mercury in measuring and control devices to less than 120 tonnes or a 60 percent reduction from status quo by 2015.

2.a. To track the effectiveness of the partnership, our objective is to go beyond the status quo scenario and, by 2017, to phase out the demand for mercury-containing fever thermometers and sphygmomanometers by at least 70 percent and to shift the production of all mercury-containing fever thermometers and sphygmomanometers to accurate, affordable, and safer non-mercury alternatives.

*Basis: Measuring and control devices – The European Union (EU) and some states in the United States have prohibited the sale of certain mercury measuring and control devices. The most successful example of reductions in measuring devices is in the health care sector, where many experts are projecting a reduction in mercury use in this sector of 60-70 percent or more during the next ten years.*

3. In 2005, demand of mercury in electrical and electronic devices was roughly 150-350 tonnes. Based on a status quo scenario, demand in 2015 is estimated to be around 110 tonnes. To track the effectiveness of the partnership, our objective is to go beyond the status quo scenario and reduce the demand for mercury in electrical and electronic devices to less than 50 tonnes or a 55 percent reduction from status quo by 2015.

*Basis: Electrical and electronic equipment – If one assumes that the European Union Rule on Hazardous Substances (RoHS) Directive is influencing the global market, as key producers develop similar legislation over the next several years, an even greater reduction in worldwide mercury use in this sector is conceivable. However, such a reduction would depend strongly on the extent to which China eventually implements RoHS legislation.<sup>6</sup> The RoHS Directive is also starting to influence state action in the United States, where it is expected to continue to have a rippling effect.*

4. In 2005, demand of mercury in lighting and lamps was roughly 120-150 tonnes. Based on a status quo scenario, demand in 2015 is estimated to be around 108-135 tonnes. To track the effectiveness of the partnership, our objective is to go beyond the status quo scenario and reduce the demand for mercury in lighting and lamps to less than 96 tonnes or a 20 percent reduction from status quo in 2015.

*Basis: Lighting – With other countries expected to adopt legislation similar to RoHS, the mercury limits imposed by the EU could spread much more widely. In the event that a wide range of energy-*

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<sup>5</sup> CRC/NRDC research suggests a figure at the top end of this range, which would likely raise the 2015 “status quo” projection.

<sup>6</sup> China enacted RoHS-type legislation that became effective on March 1, 2007. However, the scope of the Chinese RoHS was developed entirely independent of the EU RoHS. Further, although there is substantial overlap between the European and Chinese RoHS, many product types that are not within the scope of EU RoHS are within the scope of Chinese RoHS (*see* <http://www.chinarohs.com/faq.html>).

*efficient light emitting diode (LED) or similar energy-efficient mercury-free lamps come onto the market rapidly at prices that consumers find acceptable, one could conceive of a more than 20 percent reduction in mercury use in this sector by 2015. However, there are presently no particular signs of a rapid influx of LED or other energy-efficient mercury-free lamps.*

5. In 2005, demand from dental uses was roughly 300-400 tonnes. Based on a status quo scenario, demand in 2015 is estimated to be around 270-360 tonnes. To track the effectiveness of the partnership, our objective is to go beyond the status quo scenario and reduce the demand for mercury in dental amalgam to less than 255 tonnes, or a 15 percent reduction from status quo in 2015.

*Basis: Dental uses – Even in the event of an increased number of people worldwide seeking dental care, it is possible to consider a range of incentives that may encourage a global reduction in dental mercury use during the next ten years. However, there are presently no significant trends or international initiatives reported that point in that direction. Even lacking such concerted efforts, however, it is certain that the cost of alternative dental fillings will continue to decrease, and the aesthetic advantages of non-mercury fillings will become better recognized. Further, it is recognized that certain countries are focusing on proper disposal of dental amalgam waste rather than quantitative reduction goals.*

6. In 2005, demand of mercury in other uses such as paints, laboratory, pharmaceutical, cultural/traditional uses was roughly 200-420 tonnes. Based on a status quo scenario, demand in 2015 is estimated to be around 170-357 tonnes. To track the effectiveness of the partnership, our objective is to go beyond the status quo scenario and reduce the demand for mercury in other uses to less than 150 tonnes or a 25 percent reduction from status quo in 2015.

*Basis: This sector is too diverse to predict significant reductions over 10 years. However, one might assume that the more attention is devoted to mercury awareness and reduction in other sectors, including the development and promulgation of legislation applicable to “all uses” (or similar), the more reduction of mercury in these “other uses” might also be expected.*

7. To encourage and support countries to promulgate laws, standards, and regulations that would prohibit or restrict importation of mercury-containing products.

### **III. PRIORITY ACTIONS**

1. Reduce global mercury demand related to use in products and production processes.
2. Encourage and implement use of best available technique (BAT) and best environmental practices (BEP) to reduce or eliminate mercury consumption and releases into the environment.
3. Promote substitution and support conversion to mercury-free products and production processes.
4. Develop suitable alternatives to mercury-containing products where none currently are available and promote non-mercury technologies where feasible.
5. Encourage and implement environmentally sound management of mercury waste, by

following a lifecycle management approach.

6. Increase knowledge on mercury inventories, human and environmental exposure to mercury, mercury environmental monitoring, and socio-economic impacts of mercury.
7. Improve global awareness on mercury exposure, use, production, trade, disposal, and release through exchange and dissemination of information.
8. Provide technical support to developing countries in making mercury-free products available at reasonable costs.

The Mercury-Containing Products Partnership Area will achieve its goal and objectives through structured reduction in global use and demand for mercury-containing products. It will promote substitution where feasible and promote development of alternatives where none currently are available. It also will seek to identify, reduce, and eliminate global mercury releases to air, water, or land that are associated with the manufacture and use of mercury containing products. The Products Partnership is designed to provide economic and educational benefits to partners and the general public by promoting commercially competitive and environmentally sound solutions for reducing the use of mercury-added products. It will identify where mercury is used in products and manufacturing sectors and implement effective strategies for promoting the use of feasible alternatives to mercury-added products, and tracking reductions in mercury use.

In addition, the Products Partnership seeks to identify, reduce, and eliminate multimedia global mercury releases associated with mercury-containing industrial processes and the environmentally sound collection, recycling, or disposal of mercury-added products and wastes. While such topics also will be addressed by other Partnership Areas, including the Mercury Waste Management Partnership Area, it is important to apply a lifecycle and cross-cutting approach to the effects of mercury in the production, use, and disposal of mercury-added products.

#### **IV. PARTNER EFFORTS AND TIMELINES**

The following is a list of projects that are underway or have been completed by the Products Partnership. Partnership objective(s) and priority action(s) are addressed through each project identified below.<sup>7</sup> Also identified is the stage of each specific project and a contact person from whom to get further information.

##### ***ONGOING PROJECTS***

- ***East Africa (Kenya, Tanzania, and Uganda) Dental Amalgam Phase Down Project:***  
Demonstrates dental amalgam phase down in these countries. Activities include awareness-raising on dental restorative materials, Africa dental amalgam trade study, on-site demonstration on the environmentally sound management of dental amalgam waste.
  - Partners: Ministries of Health and Environment in Kenya, Tanzania, Uganda, World Dental Federation, International Association of Dental Manufacturers, GroundWorks Friends of the Earth South Africa, WHO Oral Health Unit, UNEP Chemicals
  - Start Date: July 2012

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<sup>7</sup> Partners are encouraged to implement activities that will strategically meet the targeted objectives.

- Costs to date: \$105,000 USD (Norway ODA 2012)
  - Phase or Stage of Project: Inception workshop to take place first week of November 2012
  - Contact: Desiree Narvaez, UNEP, [desiree.narvaez@unep.org](mailto:desiree.narvaez@unep.org), Poul Erik Petersen, WHO, [petersenpe@who.int](mailto:petersenpe@who.int)
  - **Priority Actions: 1, 2, 3, 5, 7**
  - **Objective: 5 – Dental amalgam**
- ***Latin America Hospitals Project:*** Multi-year initiative to expand existing and launch new health care mercury inventory, reduction, waste management, and training pilots.
    - Partners: Brazil, Costa Rica, Ecuador, Mexico, United States, HCWH, University of Massachusetts at Lowell
    - Estimated Date of Completion: April 2013
    - Costs: \$840,000 USD (United States)
    - Contact: Ellie McCann, U.S. EPA, [mccann.ellie@epa.gov](mailto:mccann.ellie@epa.gov)
    - **Priority Actions: 1, 2, 3, 5, 7**
    - **Objective: 2 – Measuring and control devices**
- ***Phasing Down Dental Amalgam: Country Case Studies:*** Will describe several case study examples where countries have “phased down” the use of dental amalgam, including the prevalent trends, variations and commonalities.
    - Partners: Tides Center, Mercury Policy Project, WHO Oral Health Unit, UNEP Chemicals
    - Start Date: July 2012
    - Costs to date: \$20,000 USD (United States)
    - Phase or Stage of Project: The project is expected to be completed by December 2012
    - Contact: Michael Bender, Zero Mercury Working Group, [mercurypolicy@aol.com](mailto:mercurypolicy@aol.com); Desiree Narvaez, UNEP, [desiree.narvaez@unep.org](mailto:desiree.narvaez@unep.org)
    - **Priority Actions: 1, 3, 7**
    - **Objective: 5 – Dental amalgam**

## **COMPLETED PROJECTS**

- ***Americas Workshop to Reduce Mercury in Products:*** The North American Commission for Environmental Cooperation hosted a workshop in February 2006 in Mexico to promote the reduction of mercury use in products. The workshop informed and engaged governmental environment and health officials, non-governmental organizations, and product manufacturers in the Americas to build capacity through exchange of information on successful mercury reduction programs in various product sectors and identification of participating country needs, priorities, including next steps for reducing mercury use in products in the Americas. Meeting report available at <http://www.chem.unep.ch/Mercury/partnerships/CEC-Hg%20Prod%20Mtg%20Sum.pdf>, as well as NACEC and UNEP offices
  - Contact: Luke Trip, NACEC, [ltrip@cec.org](mailto:ltrip@cec.org)
  - Partners: Mexico, United States, NACEC, UNEP
  - Date of Completion: February 2006
  - Costs: N/A
  - **Priority Action: 7**
  - **Objective: All**

- **Basel Mercury Waste Capacity Building from Products Partnerships:** Development of a cooperative agreement that will help build capacity and best management practices for addressing mercury waste collected from health care products and other sectors addressing mercury in products.
  - Partners: Argentina, Costa Rica, Uruguay, United States, Basel Convention Secretariat
  - Date of Completion: July 2012
  - Costs: \$2,000,000 USD; year-one budget: \$250,000 USD (United States)
  - Contact: Sue Slotnick, U.S. EPA, [slotnick.sue@epa.gov](mailto:slotnick.sue@epa.gov)
  - **Priority Actions: 2, 5**
  - **Objective: All**
  
- **China Hospitals Project:** Demonstration programs at two Beijing hospitals to significantly reduced mercury containing products and waste.
  - Partners: China (Beijing), United States, Health Care Without Harm (HCWH)
  - Date of Completion: August 2007
  - Costs: \$50,000 USD (United States); RMB 500,000 (Tiantan Hospital)
  - Contact: Shen Yingwa, SEPA, [shenyw@crc-sepa.org.cn](mailto:shenyw@crc-sepa.org.cn); Chen Wen, U.S. EPA, [wen.chen@epa.gov](mailto:wen.chen@epa.gov)
  - **Priority Actions: 1, 2, 3, 7**
  - **Objective: 2 – Measuring and control devices**
  
- **Buenos Aires Hospital Project:** Supported Healthcare Without Harm’s efforts to assist the Buenos Aires City Government to deliver mercury-free training for all city-run hospitals and to complete mercury elimination for two hospitals and fourteen neo-national units. Training of health workers and the procurement of mercury alternative medical devices was performed. UNEP provided technical support in the conduct of the project.
  - Partners: Buenos Aires, United States, HCWH, UNEP
  - Date of Completion: December 2007
  - Costs: \$95,000 USD (UNEP Mercury Trust Fund)
  - Contact: Josh Karliner, HCHW, [josh@hcwh.org](mailto:josh@hcwh.org)
  - **Priority Actions: 1, 2, 7**
  - **Objective: 2 – Measuring and control devices**
  
- **Burkina Faso Assessment:** Conducted an initial mercury life cycle assessment for products as a first step in Burkina Faso's efforts to characterize and reduce mercury use. A products and use inventory was developed, as well as a mercury action plan.
  - Partners: Burkina Faso, United States, UNEP
  - Date of Completion: January 2008
  - Costs: \$33,750 USD at the country level and additional support of an international consultant (UNEP Mercury Trust Fund)
  - Contact: M. Desiré Ouedraogo, [desireouedraogo@yahoo.fr](mailto:desireouedraogo@yahoo.fr)
  - **Priority Action: 6**
  - **Objective: 1 – Batteries**
  
- **Cameroon Education and Awareness for Cosmetics:** The Centre de Recherche et d'Education pour le Développement (CREPD), under the small grant funded by the Swedish Society for

Nature Conservation (SSNC), carried out activities on the identification of mercury contained in cosmetics followed by education and awareness campaign.

- Partners: Cameroon, CREPD, Swedish Society for Nature Conservation
- Date of Completion: N/A
- Costs: N/A
- Contact: Tetsopgang Samuel, Ph.D., CREPD, [tetsopganag@yahoo.com](mailto:tetsopganag@yahoo.com)
- **Priority Actions: 1, 3, 7, 8**
- **Objective: 6 – Other uses (cosmetics)**

- ***Chile Hospitals Assessment Project:*** Developed and implemented hospitals assessment and reduction/elimination of mercury-containing products in Chile.

- Partners: Chile, HCWH, United States
- Date of Completion: March 2009
- Costs: \$60,831 USD (United States)
- Contact: Thomas Groeneveld, U.S. EPA, [groeneveld.thomas@epa.gov](mailto:groeneveld.thomas@epa.gov)
- **Priority Actions: 1, 2, 3, 5, 7**
- **Objective: 2 – Measuring and control devices**

- ***Chile Inventory Development and Risk Management Planning:*** Supported the United Nations Institute for Training and Research (UNITAR), which partnered with Chile and UNEP on a project that includes awareness raising, development of national mercury inventory in Chile, including product based releases and the drafting of a Chilean mercury risk management plan.

- Partners: Chile, United States, UNEP, UNITAR
- Date of Completion: October 2008
- Costs: \$30,000 USD (UNEP Mercury Trust Fund)
- Contact: Vera Barrantes, UNITAR, [vera.barrantes@unitar.org](mailto:vera.barrantes@unitar.org)
- **Priority Actions: 6, 7**
- **Objective: All**

- ***Collection, Replacement, and Recycling of Mercury-Containing Thermometers and Safe Storage of Mercury in Altai Krai:*** This Russian Federation-U.S. bilateral model demonstration project developed model procedures to control of use and environmentally-responsible disposal of mercury-containing thermometers in the Altai Krai region of Southern Siberia. The project included the collection of mercury-containing thermometers from children's hospitals, kindergartens, orphanages, psychiatric hospitals, veterans' hospitals, and retirement homes. Collected thermometers were safely destroyed at the Terek recycling facility and replaced with environmentally-safe non-mercury thermometers. Mercury extracted from destroyed thermometers was sent for safe long-term storage at the Tomsk "Polygon" facility in a neighboring region to ensure that it does not reach the commodity mercury market.

- Partners: Russian Federation, United States
- Date of Completion: September 2009
- Costs: \$50,000 USD (\$30,000 USD – United States; \$20,000 USD – Regional Administration of Altai Krai)
- Contact: Ella Barnes, U.S. EPA, [barnes.eleonora@epa.gov](mailto:barnes.eleonora@epa.gov)
- **Priority Actions: 2, 3, 5, 8**
- **Objective: 2 – Measuring and control devices**

- ***Costa Rica Hospitals Assessment Project:*** Demonstrated the risk to staff, patients, and the environment associated with the use of mercury in hospitals. Demonstrations included identification, inventory, and proper handling of spills and waste. The overall goal was to eventually eliminate the use of mercury in hospitals. This pilot project was limited to National Children's Hospital. In 2009, it was extended to the Hospital of San Ramon.
  - Partners: Costa Rica, United States
  - Date of Completion: March 2009
  - Costs: \$75,318 USD (United States)
  - Contact: Thomas Groeneveld, U.S. EPA, [groeneveld.thomas@epa.gov](mailto:groeneveld.thomas@epa.gov)
  - **Priority Actions: 1, 2, 3, 5, 7**
  - **Objective: 2 – Measuring and control devices**
  
- ***Economics of Conversion to Mercury Free Products in the US and the EU:*** Resulted in case studies of two firms involved in the transitioning from mercury-added to mercury-free products (medical devices and batteries). The report is available at:
 

[http://www.unep.org/hazardoussubstances/Portals/9/Mercury/UNEP%20Economics%20of%20Conversion%20to%20Mercury-free%20Report%20Final%20102611\\_finaldraft\\_wAPP.pdf](http://www.unep.org/hazardoussubstances/Portals/9/Mercury/UNEP%20Economics%20of%20Conversion%20to%20Mercury-free%20Report%20Final%20102611_finaldraft_wAPP.pdf)

  - Partners: University of Massachusetts at Lowell, Rayovac, UNEP Chemicals
  - Date of completion: October 2011
  - Costs: \$40,000 USD (United States)
  - Contact: Desiree Narvaez, UNEP, [desiree.narvaez@unep.org](mailto:desiree.narvaez@unep.org)
  - **Priority Actions: 1, 3, 4**
  - **Objective: 1- Batteries; Objective: 2 – Measuring and control devices**
  
- ***Economics of Conversion to Mercury Free Products in China:*** Resulted in the study “Hypothetical Transition Scenarios Analysis and Socio-economic Cost Estimation in China”
  - Partners: China Ministry of Environmental Protection Center for Chemical Registration, UNEP Chemicals
  - Date of completion: March 2012
  - Costs: \$40,000 USD (United States)
  - Contact: Desiree Narvaez, UNEP, [desiree.narvaez@unep.org](mailto:desiree.narvaez@unep.org)
  - **Priority Actions: 1, 3, 4**
  - **Objective: 2 – Measuring and control devices**
  
- ***Ecuador Inventory Development and Risk Management Planning:*** Supported UNITAR in assisting Ecuador to develop an inventory of releases, including consideration of releases from mercury products. Based on this information, a mercury risk management plan was developed.
  - Partners: Ecuador, United States, UNITAR
  - Date of Completion: October 2008
  - Costs: \$30,000 USD (UNEP Mercury Trust Fund)
  - Contact: Vera Barrantes, UNITAR, [vera.barrantes@unitar.org](mailto:vera.barrantes@unitar.org)
  - **Priority Actions: 6, 7**
  - **Objective: All**
  
- ***Honduras Hospitals Assessment Project:*** Developed and implemented hospitals assessment and reduction/elimination of mercury-containing products in Honduras.
  - Partners: Honduras, HCWH, United States

- Date of Completion: March 2009
  - Costs: \$50,000 USD (United States)
  - Contact: Thomas Groeneveld, U.S. EPA, [groeneveld.thomas@epa.gov](mailto:groeneveld.thomas@epa.gov)
  - **Priority Actions: 1, 2, 3, 5, 7**
  - **Objective: 2 – Measuring and control devices**
  
- ***Mexico Healthcare Project:*** Built on a healthcare facility pilot project initiated in 2007 in Mexican hospitals to establish a template for mercury reduction initiatives in other healthcare facilities.
  - Partners: Mexico, United States, HCWH, North American Commission for Environmental Cooperation (NACEC)
  - Date of Completion: December 2009
  - Costs: \$125,000 USD (\$105,000 USD – NACEC; \$20,000 USD HCWH)
  - Contact: Luke Trip, Program Manager, NACEC, [ltrip@cec.org](mailto:ltrip@cec.org); Alfonso Flores Ramirez, CENICA-INE-SEMARNAT, [alfonso.flores@semarnat.gob.mx](mailto:alfonso.flores@semarnat.gob.mx)
  - **Priority Actions: 1, 2, 3, 7**
  - **Objective: 2 – Measuring and control devices**
  
- ***Mexico Mercury Market Study and Products Inventory Update:*** Conducted an assessment of elemental mercury trade and uses in products, manufacturing and processing, primary and secondary mercury production, imports and exports. Developed a mercury-containing products and alternatives inventory and updated existing product databases. The inventory compiled information on specific mercury-containing products (including description, mercury content, costs, manufacturer information and available alternatives for some production sectors) that is gathered from the Market Report work. The study recognized the contradiction between regulating part per million concentrations of mercury releases to the environment while continuing to allow trade in commodity grade mercury for product use, a situation prevailing in many countries
  - Partners: Mexico, United States, NACEC
  - Date of Completion: December 2008
  - Costs: \$30,000 USD (United States and NACEC)
  - Contact: Luke Trip, NACEC, [ltrip@cec.org](mailto:ltrip@cec.org)
  - **Priority Action: 6**
  - **Objective: All**
  
- ***Mexico Mercury Product Waste Management Initiative:*** As a follow-on to the Market Study and Healthcare project, this project investigated and tested options for managing mercury products removed from service. The initial emphasis for 2009 was to work with hospitals participating in the Healthcare project that replaced mercury-containing equipment and collected broken thermometers. Subsequent stages considered additional healthcare facilities, as well as wastes from other sectors.
  - Partners: Mexico, United States, HCWH, North American Commission for Environmental Cooperation (NACEC), Association of Lighting and Mercury Recyclers, other stakeholders.
  - Date of Completion: N/A
  - Costs: \$20,000 USD (United States and NACEC)
  - Contact: Luke Trip, NACEC, [ltrip@cec.org](mailto:ltrip@cec.org); Jorge Jimenez Perez , SEMARNAT, [jorge.perez@semarnat.gob.mx](mailto:jorge.perez@semarnat.gob.mx)

- **Priority Actions: 2, 5, 7**
- **Objective: 2 – Measuring and control devices (1<sup>st</sup> phase), All**
- ***Mongolia Inventory Development and Risk Management Planning:*** Supported the United Nations Institute for Training and Research in negotiating an agreement with the Mongolian Government to develop a provincial mercury risk management plan, based on information related to mercury in products and mercury emission from the provincial emission inventory.
  - Partners: Mongolia, United States, UNITAR
  - Date of Completion: March 2012
  - Costs: \$59,000 USD
  - Contact: Vera Barrantes, UNITAR, [vera.barrantes@unitar.org](mailto:vera.barrantes@unitar.org)
  - **Priority Actions: 6, 7**
  - **Objective: All**
- ***Nepal and Tanzania:*** Supported the World Health Organization in efforts to demonstrate that mercury-free devices are safe, cost-effective, accurate, and efficient alternative medical devices are available in order to support their introduction in health care settings in pilot countries as well as provide guidance and assessments for projects in the future.
  - Partners: Nepal, Tanzania, United States, WHO
  - Date of Completion: Nepal (January 2011), Tanzania (Summer 2011)
  - Costs: \$60,000 USD
  - Contact: Christina Wadlington, U.S. EPA, [wadlington.christina@epa.gov](mailto:wadlington.christina@epa.gov)
  - **Priority Action: 1, 2, 3, 5, 7**
  - **Objective: 2 – Measuring and control devices**
- ***Panama Mercury Inventory and Risk Management Planning:*** Supported UNITAR in assisting Panama to develop an inventory of releases including consideration of releases from mercury products. Based on this information, a mercury risk management plan was developed.
  - Partners: Panama, United States, UNEP, UNITAR
  - Date of Completion: October 2008
  - Costs: \$30,000 USD (UNEP Mercury Trust Fund)
  - Contact: Vera Barrantes, UNITAR, [vera.barrantes@unitar.org](mailto:vera.barrantes@unitar.org)
  - **Priority Actions: 6, 7**
  - **Objective: All**
- ***Recycling Mercury-Containing Lamps at Russian Military Bases in the Arctic:*** This bilateral (Russian Federation-U.S.) model demonstration project was implemented under the Arctic Military Environmental Cooperation (AMEC) Program to develop a localized facility for the collection, storage, and treatment of mercury-containing fluorescent lamps at Navy Yard 10, Polyarninsky, in the Murmansk region of the Russian Federation. The facility accommodated other mercury-containing equipment from the Russian Navy. Lamps and other equipment were collected from military bases and adjacent civilian communities. After recycling, residual mercury was placed into long-term storage at the Polyarninsky facility to ensure that it would not reach the commodity mercury market.
  - Partners: Russian Federation, United States
  - Date of Completion: December 2009
  - Costs: \$239,000 USD
  - Contact: Ella Barnes, U.S. EPA, [barnes.eleonora@epa.gov](mailto:barnes.eleonora@epa.gov)

- **Priority Actions: 2, 3, 5**
- **Objective: 3 – Electrical and electronic equipment and 4 – Lighting**
- ***Regional Workshops on Elimination of Mercury in Health Care:*** Organized four regional workshops in South East Asia, Latin America, Southern Africa and South Asia to promote alternatives to mercury in the health care sector in developing countries.
  - Partners: HCWH, UNEP, World Health Organization (WHO), local/regional health care professionals associations (sponsorship/participation in each workshop from national ministries of health and environment)
  - Date of Completion: December 2008
  - Costs: \$300,000 USD (\$130,000 USD – UNEP; additional funds from HCWH and WHO)
  - Contact: Josh Karliner, HCWH, [josh@hcwh.org](mailto:josh@hcwh.org)
  - **Priority Actions: 3, 8**
  - **Objective: TBD**
- ***South Africa Inventory Development and Risk Management Planning:*** Supported the United Nations Institute for Training and Research in negotiating an agreement with the Western Cape Provincial Government to develop a provincial mercury risk management plan, based on information related to mercury in products and mercury emission from the provincial emission inventory.
  - Partners: South Africa, United States, UNITAR
  - Date of Completion: March 2012
  - Costs: \$160,000 USD
  - Contact: Vera Barrantes, UNITAR, [vera.barrantes@unitar.org](mailto:vera.barrantes@unitar.org)
  - **Priority Actions: 6, 7**
  - **Objective: All**
- ***Southeast Asia Workshop on Mercury Use in Products:*** Similar to the NACEC-Americas workshop, UNEP hosted a products workshop to inform and engage countries in Southeast Asia on capacity building, information exchange, and best practices. The workshop resulted in concrete action plans to reduce mercury in products among twenty-four Asia Pacific countries as well as seven NGOs who participated.
  - Partners: Thailand, United States, UNEP
  - Date of Completion: May 2007; meeting report available at [http://www.chem.unep.ch/mercury/Sector-Specific-Information/Docs/Hg\\_workshopBangkok\\_HgRedAsiaPac1719May2007-11.pdf](http://www.chem.unep.ch/mercury/Sector-Specific-Information/Docs/Hg_workshopBangkok_HgRedAsiaPac1719May2007-11.pdf)
  - Costs: \$100,000 USD (UNEP Mercury Trust Fund)
  - Contact: Desiree Narvaez, UNEP, [desiree.narvaez@unep.org](mailto:desiree.narvaez@unep.org)
  - **Priority Action: 7**
  - **Objective: All**
- ***Strengthening Regional and National Capacities in Central America:*** Multi-part initiative with a mercury component to develop mercury emissions and products inventory in the Dominican Republic and Nicaragua, and expand health care assessment, reduction, and substitution efforts in Costa Rica and Honduras.
  - Partners: Costa Rica, Dominican Republic, Honduras, Nicaragua, United States, Comision Centroamericano de Ambiente y Desarrollo (CCAD), UNITAR

- Date of Completion: December 2010
- Costs: \$113,625 USD (\$103,625 USD – United States; \$10,000 USD – CCAD)
- Contact: Thomas Groeneveld, U.S. EPA, [groeneveld.thomas@epa.gov](mailto:groeneveld.thomas@epa.gov)
- **Priority Action: 1, 3, 4, 6, 7, 8**
- **Objective: All**

## V. OPPORTUNITIES

Projects (including bilateral projects) targeted towards meeting business plan objectives are encouraged, and could include the following topic areas: (1) developing sector-related product substitution strategies – Priority Action 3; (2) researching alternatives to mercury use for energy efficient lighting – Priority Actions 2, 3, 4; (3) pursuing international standards for accurate, mercury-free, high-quality medical devices and other health care products, including certain vaccinations – Priority Actions 2, 3, 4; (4) developing, implementing, and replicating model policies at municipal, state/provincial, and national levels to eliminate mercury use in products and assure its safe storage and disposal (including procurement policies) – Priority Actions 1, 2, 5, 7; (5) maintain and make available listings of project reports and other relevant guidelines, codes of practice – Priority Actions 6, 7; and (6) develop technical and capacity building projects including implementation of projects identified by countries in country action plans, and results of mercury inventories – Priority Actions: 2, 6.

UNEP also has presented the following ideas for the consideration of the Products Partnership:

- Broader representation on the partnership, both in terms of number and scope of partners, including increased collaboration with other key international organizations such as the World Health Organization; build upon industry engagement such as the World Business Council for Sustainable Development, and encourage additional governments and stakeholders to partner.
- Consideration of sub-categories within the products sector may help focus the business planning process (e.g., consumer product and health care sectors).
- Review existing BAT/BEP guidance for new and existing sources. Amend and supplement as appropriate to provide mercury guidance and expand outreach to developing countries in sharing and implementing such guidance.
- Promote bilateral and multilateral aid and investment to foster the industrial transition to global production of affordable, high quality non-mercury products.
- Explore possibilities for economic and financial incentives as well as loans for technology conversion/change over.
- Pursue international standards for mercury content in compact fluorescent lamps.
- Identify major manufacturers of mercury-containing products, set standards for mercury content, and share BAT/BEP on the reduction of mercury content.
- Encourage governments with positive or successful experience on mercury substitution and technology changeover to share experiences such as legislative/regulatory measures, financial incentives, capacity-building, and awareness-raising.
- Strengthen and increase the scope of global efforts to address and reduce the use of mercury dental amalgam.

## VI. PERFORMANCE MEASUREMENT AND REPORTING

The Partnership Areas will report biennially to UNEP in accordance with the UNEP reporting format.<sup>8</sup> Reporting will include tracking partnership activities and partner contributions as well as assessing effectiveness, and measuring the impact of partnership activities on the achievement of the overall goal. In this section, the Partnership Areas shall:

- Outline the indicators of progress in meeting the partnership area objective(s).
- Describe how the partnership area will undertake performance measurement and reporting.

## VII. RESOURCE MOBILIZATION

Partnership Areas and the associated business plans are a way of mobilizing funding in a systematic, focused and harmonized way. Partnership Areas' objectives and business plans should provide clarity for potential donors and finance institutions. The business plans should encourage and facilitate donors to support activities and provide a tool to leverage funds. Working with UNEP, the Products Partnership lead would help to facilitate communication and provide administrative and management support (*see* Table 2: Administrative and Management Support, below) to ensure that individual activities or projects are supported and connected to the larger, overall strategic goals of the Products Partnership.

### *Funding for Partnership Activities:*

Partners can develop specific initiatives, work with non-partners, or pursue projects consistent with partnership objectives. It is hoped that the Products Partnership will serve as a mechanism to consolidate and leverage funding for large, strategic projects. If partners wish to leverage funding for particular projects, details should be outlined within this section.

Partners are encouraged to contribute not only financially but also to offer in-kind assistance. For example, the UNITAR-UNEP-EPA partnership project on "Pilot Projects on Strengthening Capacities for Mercury Inventory Development and Risk Management Decision-Making" considered staff time from Governments (Chile, Ecuador, and Panama), as their counterpart and contribution. In addition, the QSC's State Resource Network provides technical experience and expertise amongst state environmental officials throughout the United States. Other examples include engagement of an industry that has expressed interest to act as a resource in a workshop on mercury recycling in lamps and batteries, or a manufacturer's active promotion of CFLs with reduced mercury content.

Partners are encouraged to apply for funding to relevant funders and regional organizations (seeking to collaborate regionally). Developing countries and countries with economies in transition can also submit requests for funding to UNEP under the UNEP Mercury Small Grants Program (*see* [www.chem.unep.ch/mercury/Overview-&-priorities.htm](http://www.chem.unep.ch/mercury/Overview-&-priorities.htm)). UNEP and UNITAR stand ready to assist countries to develop proposals addressing mercury issues under the SAICM Quick Start Programme (*see* [www.chem.unep.ch/saicm/qsp.htm](http://www.chem.unep.ch/saicm/qsp.htm)).

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<sup>8</sup> UNEP will develop a systematic reporting format and timeline for the partnership areas to follow.

<b>Table 2: Administrative<sup>9</sup> and Management Support</b> (will vary across the Partnerships)		<b>Value</b>	<b>Source of Support</b>
Partnership Lead <sup>10</sup>	<ul style="list-style-type: none"> <li>▪ Facilitation and support of the partnership.</li> </ul>	¼ person year	In-kind support from USA.
Organization Point of Contact	<ul style="list-style-type: none"> <li>• Preparing Business Plan.</li> <li>• Preparing for meetings.</li> <li>• Logging meeting notes, tracking action items.</li> <li>• Collaborating with partners to strategically link to overall partnership goals and objectives.</li> </ul>		In-kind support from USA.
UNEP Secretariat Support	<ul style="list-style-type: none"> <li>• Managing the clearinghouse/website.</li> <li>• Taking in funding from multiple sources to fund projects.</li> <li>• Developing activity proposals in collaboration with partners.</li> <li>• Assisting the lead in following up activities by partners.</li> <li>• Other tasks as requested.</li> </ul>	¼ person year	In-kind support from UNEP.  Efficiencies of UNEP time will be gained when pulling some of these tasks out into the overarching activity of the partnership.
Face-to-face meetings	<p>Estimated one per year.</p> <p>All attempts will be made to host face to face meetings of the partnerships in the most cost effective way (e.g. back-to-back with other related meetings and have the ability to call in).</p>	<p>Teleconference lines</p> <p>Travel support</p>	<p>In-kind support from USA.</p> <p>UNEP will support some limited travel of developing countries/NGOs in face to face meetings, rest is in-kind support from partners for their own travel.</p>
Teleconferences	Estimated one per year, which may take the place of face-to-face meeting.	Teleconference lines	In-kind support from USA.
Other	Supplies, communication materials.		In-kind support from Partners.

## VIII. BUSINESS PLANNING PROCESS

As outlined in Table 2: Administrative and Management Support, the Products Partnership lead would serve to provide a cohesive structure or framework for ensuring that individual projects are able to be linked to the larger goals outlined in Section II of the business plan. As such, there should be a more structured process for individual projects to communicate on a regular basis, to obtain technical and outreach support, and to ultimately record, learn from and build upon successes and outcomes.

In creating regular communication and support current projects and facilitating support for existing

<sup>9</sup> Administrative support does not cover the cost of administering individual projects.

<sup>10</sup> For the Products Partnership, the lead is the United States, with a potential co-lead identified in the near future.

and new projects, the Business Plan should be updated on a quarterly basis, working with all of the projects via teleconference. The Products Partnership may wish to hold periodic face-to-face meetings either separately or in conjunction with other international mercury meetings. In addition, the Business Plan should be used as a tool for identifying technical issues and facilitating smaller work sessions for brainstorming ways to address issues as they arise. An example of this is organizing a working session on how to leverage funds for a project or how to establish more formal linkages with other international organizations.

In addition to having regular calls and working session topics, the business plan will be used to track the mercury reductions identified in Section II. UNEP will be working with the Partner leads to examine ways projects can systematically report their progress in way that can be linked to the Partnership Objectives.

The Mercury-Containing Products Partnership Area will also be examining ways to formally invite and encourage new projects into the Products Partnership, such as through a written, formal statement, or through another mechanism whereupon new projects are efficiently recognized in a clear, deliberate fashion.

## **IX. LINKAGES**

As a starting point, suggested linkages within the Mercury-Containing Products Partnership Area currently include issues concerning the proper procurement, storage, and oversight of mercury waste (e.g., pursuant to the Basel Convention), innovative strategies pertaining to assessing and monitoring issues of mercury supply and storage, and possible collaboration with the North American Commission for Environmental Cooperation, Arctic Council Action Plan, United Nations Cleaner Production Centers and the World Health Organization (e.g., development of mercury-related health care policies).

## **X. PARTNERS**

All stakeholders are welcome to participate in the Mercury-Containing Products Partnership Area.<sup>11</sup> A partner is any entity which expresses the willingness to contribute time, resources, or expertise to implement the objectives of the partnerships to achieve the goals of the UNEP Global Mercury Partnership. Participation in the partnerships is voluntary, with new partners welcomed on an equal basis.

### Governments

Burkina Faso

Cote d'Ivoire

Iraq

Liberia

Madagascar

Malawi

Mali

Mexico

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<sup>11</sup> Participation to the Partnership is defined in the Operational Guidelines of the Overarching Framework for the UNEP Global Mercury partnership

Nigeria  
Philippines  
Syrian Arab Republic  
United States of America

Intergovernmental Organizations

Basel Convention  
United Nations Environment Program (UNEP)  
United Nations Industrial Development Organization (UNIDO)\  
United Nations Institute for Training and Research (UNITAR)  
World Health Organization (WHO)

Nongovernmental Organizations

Artisanal Gold Council  
Asociación Argentina de Médicos por el Medio Ambiente (AAMMA)  
Associazione Malattie de Intossicazione Cronica e/o Ambientale (AMICA)  
Balifokus  
Ban Toxics  
Centre de Recherche et d'Education pour le Développement (CREPD)  
Consumers for Dental Choice  
Day Hospital Institute for Development & Rehabilitation (DHIDR – Egypt)  
Education for All Africa (EDUCAF)  
European Lamp Companies Federation (ELC)  
Grupo Parques Nacionales Panama/Alianza Contaminacion Cero  
Health Care Without Harm (HCWH)  
Informer, Sensibiliser, Eduquer sur les Polluants Organiques Persistants en Cote d'Ivoire (ISE-POPS-CI)  
International Academy of Biological Dentistry and Medicine (IABDM)  
International Academy of Oral Medicine and Toxicology Europe  
International POP's Elimination Network (IPEN)  
International Society of Doctors for the Environment (ISDE)  
Mercurio de Amalgamas Dentales y Otras Situaciones (MERCURIADOS)  
New World Hope Organization  
Pro-Biodiversity Conservationists in Uganda (PROBICUO)  
Safe Minds  
Society of Environmental Toxicology and Chemistry (SETAC)  
Uganda Network on Toxic Free Malaria Control (UNETMAC)  
World Alliance for Mercury-Free Dentistry  
World Dental Federation (FDI)  
World Medical Association (WMA)  
Zero Mercury Working Group

Others

ARCADIS US, Inc.  
Cardno ENTRIX  
CETAC Technologies  
Hg Recovery Pty. Ltd.  
Institute for Combustion Science and Environmental Technology, Western Kentucky University

International Association for Dental Research  
International Dental Manufacturers (IDM)  
OIKON - Institute for Applied Ecology  
Peerless Green Initiatives  
Rayovac  
V.L. Natarajan

For more information, please contact Thomas Groeneveld at [groeneveld.thomas@epa.gov](mailto:groeneveld.thomas@epa.gov), or Desiree Narvaez at [desiree.narvaez@unep.org](mailto:desiree.narvaez@unep.org). Please visit <http://www.unep.org/themes/chemicals/> for additional information on the Global Mercury Partnerships.