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**Global Mercury Partnership
Partnership Advisory Group
Second meeting**
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Partnership area business plans

UNEP Global Mercury Partnership

Note by the Secretariat

UNEP Governing Council Decision 24/3 called for business plans to be developed under the UNEP Global Mercury Partnership. The Overarching Framework of the UNEP Global Mercury Partnership sets out a business plan template to provide guidance to the partnership areas in developing the business plans.

The annex to the present note includes the business plans for the seven existing partnership areas: mercury releases from coal combustion; mercury cell chlor alkali production; mercury in products; mercury transport and fate research; mercury in artisanal and small-scale gold mining; mercury waste management and mercury supply and storage. Also annexed to the present note is a list of current partnership area members.

The Partnership Advisory Group may wish to review the business plans to:

- i) Encourage the work of the partnership areas.
- ii) Advise the partnership areas on the consistency of their business plans with the overall goal and the operational guidelines of the UNEP Global Mercury Partnership.
- iii) Identify overarching issues and lessons learned.
- iv) Promote synergy and collaboration across partnership areas.
- v) Promote synergy and collaboration within the UNEP Mercury Programme and with other international agreements and processes.

Annex: Business Plans of the UNEP Global Mercury Partnership

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Part i)***Business Plan of the Mercury releases from coal combustion partnership area, 19 August 2010***

(NOTE: This is the business plan version of 4 February 2009 with editorial revisions and updates proposed by UNEP.)

This Business Plan describes the activities of the *Reduction of Mercury Releases from Coal Combustion* partnership area of the United Nations Environmental Programme (UNEP) Global Mercury Partnership. It serves as a planning and communication vehicle both for Partners and others.

The purpose of the business plan is to provide a framework for developing and implementing projects. The business plan is to serve as a resource for providing a common, cohesive structure for implementing the UNEP Global Mercury Partnership.

The partnership is open for government and stakeholder participation. In UNEP Governing Council Decision 24/3 part IV paragraph 27, UNEP is tasked with working in consultation with Governments and stakeholders to strengthen the UNEP Global Mercury Partnerships. New activities and partners are encouraged within the UNEP Global Mercury Partnership.

Current partnership area lead:

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I. Summary of the Issue

- Mercury is found in trace quantities in coal. Mercury concentrations in coal vary within the different coal types. It is estimated that upwards of 60 % ¹ of mercury emitted from anthropogenic sources to the atmosphere comes from coal combustion.
- The major pathway for mercury releases from coal combustion is via emissions to the atmosphere. To a lesser extent some mercury may be released in wastes/residues or water (in the case of coal washing, for example) and soil, and can be problematic if not properly controlled.
- Rapid development in many parts of the world has led to an unprecedented rate of construction of large coal-fired units. Consequently, they are increasingly considered the dominant source of global mercury emissions.
- Coal fired power emissions are a multi-pollutant challenge. In most instances, decisions related to coal fired utilities are driven by energy security, resource availability, emissions of a variety of air pollutants (such as NO_x, SO₂, PM, CO₂), and other considerations. Mercury emission reductions from coal combustion occur primarily as a result of priority efforts to address conventional air pollution impact for this sector or otherwise improve the efficiency of energy production. For example, flue gas cleaning technologies for particulates can reduce mercury emissions as a co-benefit of controlling other pollutants (often in the range of about 50-90%).
- Coal is used as a fuel in a variety of settings beyond large scale power plants. The nature of these settings may pose different challenges with respect to available response measures and proposed partnership activities:
 - Cement Production: The combustion of coal in cement production (and related release of mercury to the atmosphere) is believed to be a significant source of mercury releases to the environment. In addition, the use of fly ash in cement and gypsum in wallboard manufacture could potentially lead to the later release of some mercury into the environment.
 - Home Uses: In some regions of the world, coal is used for home heating and cooking where the coal is burned in simple, sometimes unvented, household stoves, directly exposing people to emissions of mercury, and/or other toxic pollutants.
 - Small scale boilers: Many small scale industrial facilities use coal fired boilers. The problems and needs associated with small scale industrial facilities may require special consideration under the partnership.

II. Objective of the partnership area

The objective of this partnership area is continued minimization and elimination of mercury releases from coal combustion where possible.

The partnership area aims to supplement existing programs in key, strategically selected ways that ensure that reductions are globally significant as part of a multi-pollutant reduction approach. The partnership area aims to support such efforts while providing additional information on cost effective approaches for enhancing reductions of mercury emissions, particularly for developing nations and countries with economies in transition.

NOTE: Setting numerical targets to achieve under the partnership area has been discussed and may be revisited. Updated inventory information should enable the partnership to make a more advanced assessment of a baseline scenario and project a goal.

¹ This is an estimate for the year 2000. Reference : E. G. Pacyna *et al.* 2006. . Efforts are currently underway to update these estimates.

III: Priority actions

1. Encourage use of best available technology and best environmental practices to reduce or eliminate mercury releases into the environment:
 - i) Prepare guidance document to guide countries. In doing so, review available information on best available techniques (BATs) / Best Environmental Practices (BEPs) for new and existing sources. Amend and supplement this information, as appropriate, with consideration of how it applies to various country situations.
 - ii) Provide information and technical assistance on methods to optimize pollution control systems to improve mercury control as a co-benefit.
 - iii) Identify mercury specific technologies and facilitate exchange of information on emerging technologies, for existing and new facilities.
2. Assist countries (including providing training) in evaluating the environmental impacts of coal combustion and evaluating the opportunities to achieve multi-pollutant emission reductions with associated benefits for reduction in both conventional air pollution (such as SO₂, NO_x, and PM) and mercury emissions, and to assist countries in assessing their situation, interests and needs.
3. Support the development and/or improvement of mercury emission inventories to evaluate both mercury emissions and the effectiveness of emission reduction approaches.
4. Increase the awareness of mercury as a pollutant of concern through increased outreach efforts and collaboration with complementary programmes (such as at UNFCCC level), including consideration of alternative energy sources and energy efficiency.

IV. Ongoing and Planned Partner Efforts and Timelines

“Reducing Mercury Emissions from Coal combustion in the energy sector”

This is a three year project funded by the European Commission (1 million Euro) which started in 2009. In-kind assistance has been provided by the US EPA with respect to the use and promotion of the mercury measurement tool-kit during mercury measurement campaigns in South Africa and Russia. Specifically the project aims to develop guidance material on how to minimize mercury releases:

1. by optimizing multi-pollutant control techniques, including improved energy efficiency to reduce mercury-emissions;
 2. by collecting information to improve accuracy of future emissions inventories for the sector, including technical information on power plants and control technologies used, analysis of mercury concentrations in coals used by power plants and measurements of mercury in stack flue gases;
 3. by implementing pilot studies to demonstrate the efficiency of multi-pollutant co-benefit techniques and by building local/national capacity on these issues, also with the aim of transferring information and lessons learnt to facilities and governments in other countries.
- The actions are focused on China, India, Russia and South Africa, but the results will be of interest to all countries with coal combustion power plants (duplicated below)
 - Additional in-kind assistance has been provided by the US EPA with respect to the use and promotion of the mercury measurement tool-kit during mercury measurement campaigns in South Africa and Russia. In-kind assistance has been provided by the USGS (Geological Survey) towards providing free analysis of coal and ash samples for the mercury monitoring project in South Africa.

Contact: Gunnar Futsaeter, gunnar.futsaeter@unep.org

- As part of the project above, the partnership is developing Process Optimization Guidance for mercury emissions from coal combustion, building on existing information. This work should be completed by end of 2010. It is available at the following web-link:

<http://hqweb.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/Coalcombustion/ProcessOptimizationGuidanceDocument/tabid/4873/language/en-US/Default.aspx>

Cement Production:

- The European Cement Association compiled worldwide data on the status of mercury emissions from cement kilns to share state of the art knowledge about mercury formation mechanisms in cement production processes and to show how it is possible to control and minimize mercury emissions from cement kilns through the use of integrated process optimization. This report should provide the most comprehensive data set available on mercury emission from the cement industry collected from public literature, scientific databases and individual company measurements.
- The United States is working with China State Environment Protection Agency (SEPA), Lawrence Berkeley National Laboratory, the China/US/World Business Councils for Sustainable Development, and other partners to analyze and reduce multi-pollutant emissions from cement kilns. The analysis has demonstrated significant mercury emissions at test kilns, and is developing options for improving combustion efficiency and reducing emissions. This project also involves the Cement Task Force of the Asia Pacific Partnership.

V. Opportunities

Opportunities are included for implementing countries to consider and for donor consideration to fund:

For Emissions Inventories:

Specialist assistance could be provided to allow the production of up to date emission inventories in further targeted regions. This would include, where necessary, help with mercury measurement in both coals and stack gas emissions. Guidance could also be given on how to include current and impending emission legislation and control technology application in future emission estimates.

Further complementary and specific pilot projects (including bilateral projects):

These could include the application and demonstration of any of the approaches outlined in the POG. Members of the coal partnership could be made available at national workshops in target countries to work with local authorities, utilities, researchers and interested parties to facilitate the exchange of knowledge and information on mercury control options, from coal switching and cleaning to more complex plant modifications.

Residential coal use:

Is an issue of significant local human health concern as well as a large contribution to atmospheric mercury releases. This is an area for consideration in future work plans.

For example, in the report 'A synopsis document- Mercury Knowledge & Gaps in the African Region' it was identified that widespread use of wood and coal for household energy consumption is common to all of the reporting countries within the African sub-regions, and more information is needed about the mercury content and emissions of mercury from coal used in domestic household settings in order to better judge the magnitude of this emissions source in Africa.

VI. Evaluation

The partnership areas reports biennially to UNEP in accordance with the UNEP reporting format. Reporting includes monitoring performance (tracking partnership activities and partner contributions) as well as assessing effectiveness (measuring the impact of partnership activities on target beneficiaries).

Amongst other means, results will be characterized in terms of:

- Availability of guidance tools to assist countries in achieving emission reductions.
- Emission reductions achieved.

The latest evaluation report is available as an Information Document to the second meeting of the Partnership Advisory Group, Document UNEP(DTIE)/Hg/PAG.2/INF 1 - Reporting of the mercury emissions from coal partnership area.

VII. Resource Mobilization

Partnerships and the associated business plans are a way of mobilizing funding in a systematic, focused and harmonized way. The Partnerships' objectives and business plans should provide clarity for potential donors and finance institutions.

The partnership has been able to generate significant and targeted actions with the funding from the European Commission from 2009-2011. A strategy for funding beyond 2011 will need to be considered.

The partners are encouraged to contribute financially and also to offer in-kind assistance.

Partners can develop specific initiatives, work with non-partners, or pursue projects consistent with partnership objectives. It is hoped that the Partnership will serve as a mechanism to consolidate and leverage funding for large, strategic projects.

An important opportunity to leverage resources lies in the significant partnership efforts currently underway to address conventional pollution (eg, SO_x, NO_x, CO₂) from this sector. These efforts alone, or built upon with relatively little additional resources, can lead to increased awareness of mercury as a pollutant of concern and significant reductions in mercury emissions.

Partners are encouraged to apply for funding to relevant funders and regional organizations. Developing countries and countries with economies in transition can also submit requests for funding to UNEP under the UNEP Mercury Small Grants Programme.

VIII. Business Planning Process

The business plan will be updated regularly, at intervals deemed appropriate by the partners.

Table 1: Administration and Management Support		Source of Support
Partnership Lead	<ul style="list-style-type: none"> ▪ Facilitation and support of the partnership. 	IEA Clean Coal Centre
UNEP Secretariat Support	<ul style="list-style-type: none"> • Administrative and secretariat support. • Disseminate information to the Partners on relevant issues. • Assist the lead in following up activities by partners. • Other tasks as requested. 	In-kind support from UNEP
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>	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.
Teleconferences	Estimated 3 per year	In-kind support from USA

IX. Linkages

Asia Pacific Partnership (Australia, Canada, China, India, Japan, Republic of Korea, United States). Under the Asia-Pacific Partnership (APP) on Clean Development and Climate, partner countries have agreed to cooperate on development and transfer of technology to address both greenhouse gas emissions and air pollution. A major focus of the APP is the coal fired power sector with the objective of improving both its energy efficiency and environmental performance. Progress made under the APP will reduce greenhouse gas emissions and emission of conventional air pollutants and, as a significant co-benefit, also reduce mercury emissions. Multiple projects are underway directed at Sox emission control, improved efficiency and demand reduction; these have significant mercury reduction co-benefits. Several projects are underway and planned including for the cement sector. efficiency improvements in existing facilities, use of alternate (non-coal) based fuels such as biofuels and waste materials.

Development of Emission Inventories – UNEP with support from the Government of Denmark recently updated the ‘Toolkit for Identification and Quantification of Mercury Releases’ based on initial experiences in using the toolkit. The toolkit is a key information gathering tool available to countries in assessing their national situation.

Contact person: Gunnar Futsaeter, UNEP Chemicals.

Mercury Fate and Transport Partnership – The partnership has a strong interest in improving emissions monitoring, data collection and reporting of mercury emissions; including contributing to published data dissemination to support modeling efforts assessing extent of problem, and against which to demonstrate progress. The coal partnership will link closely with the fate and transport partnership.

X. Partners

Please see Part viii of this document for the current list of partners that have submitted letters of support to the UNEP Global Mercury Partnership. There are a number of participating partners that have not officially submitted support letters.

For further details, please go to the list of partner support letters posted at the following web address:

<http://hqweb.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/CurrentPartners/tabid/3437/language/en-US/Default.aspx>

Other partners are welcome to self identify to the partnership.

XI. Completed projects (moved from section iv of the business plan)

- IEA Clean Coal Centre published a report entitled ‘Economics of Mercury Control’. The full document is available from Lesley Sloss (partnership area lead). A summary of the report is available at:
<http://hqweb.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/Coalcombustion/tabid/3530/Default.aspx>
(under reports and publications)
- China, Canada, Japan, the United States and UNEP held a workshop in Beijing in November 2005 on measurement and control of mercury from coal-fired power plants. The workshop increased awareness of the magnitude of mercury emissions from this sector, examined limited data currently available on the level of mercury exposure in China, and provided information on control approaches (funded through Mercury Trust Fund, and also bilaterally funded through Canada, Japan, USA).
- China Follow-on Projects: The Governments of Canada and China, and Tsinghua University have prepared a study to compare the current China Mercury Emission Inventory with the UNEP mercury

emissions toolkit, examine the status of coal washing technology and mercury removal in China, and examine coal combustion-related mercury emissions from small scale use in residential, commercial, and industrial sectors. The report is available at: www.chem.unep.ch/mercury/useful-links.htm

- In 2007, Canada provided training to two trainees from China on measurement of mercury from fossil fuel combustion (including sampling and analysis of coal and coal residues, stack sampling methods and protocols and quality assurance and quality control requirements). The training included a one-month component in Canada and a ten-day follow up in China.
- China hosted a workshop in Hangzhou, China on November 10 - 14, 2008. The workshop focussed on cost effective controls that provide an integrated approach to the control of NO_x, SO_x, PM, Hg, and CO₂. The first two days, sponsored by US EPA and China's Ministry of Environmental Protection (MEP), was open to all and provided up-to-date information on the effectiveness of various control technologies in addition to information about current regulations and policies for the US, China, and on UNEP's Mercury Programme. The second part of the workshop consisted of US vendor presentations, sponsored by US DOE and China's Ministry of Science and Technology (MOST), and was closed to all except US and Chinese citizens.
- The Russian Federation and the United States have worked together to develop low-cost technology for improved air pollution control at a power plant in Russia - it will optimize operations of a wet PM scrubber and look at the possibility of transferring to other facilities in Russia. Also, the Russian Federation, Ukraine, and the United States have partnered on a project to transfer a low-cost technology to improve the performance of ESPs at coal-fired plants and other industrial facilities in Russia and Ukraine.
- South Africa's Council for Scientific and Industrial Research (CSIR) is working with the University of Connecticut, USA to determine the fate and transport of mercury from coal combustion and its impact on water resources in the country. This activity also included using the UNEP mercury emissions toolkit to develop a South African Mercury Emissions Inventory.
- In 2007, South Africa's CSIR and Norway's Norwegian Institute for Air Research (NILU) initiated activity on assessing the current and future emissions of mercury from anthropogenic sources in South Africa.
- Through a Bilateral agreement between the United States and India, information and other assistance has been provided to India to increase effectiveness of pollution controls on coal-fired power plants. Activities in India have included workshops outlining pollutant specific and multipollutant control technology alternatives, mercury monitoring technology, as well as specific training on an EPA developed software tool to help optimize electrostatic precipitator PM capture, with co-benefit mercury emissions reductions.

Part ii)**Business Plan of the Mercury cell chlor alkali production partnership area, 19 August 2010**

(NOTE: This is the business plan version of 4 February 2009 with editorial revisions and updates proposed by UNEP.)

This Business Plan describes the activities of the Mercury Reduction of mercury emissions and use from the Chlor Alkali sector partnership area of the United Nations Environmental Programme (UNEP) Global Mercury Partnership. It serves as a planning and communication vehicle both for Partners and others.

The purpose of the business plan is to provide a framework for developing and implementing projects. The business plan is to serve as a resource for providing a common, cohesive structure for implementing the UNEP Global Mercury Partnership.

The partnership is open for government and stakeholder participation. In the UNEP Governing Council Decision 24/3 part IV paragraph 27, UNEP is tasked with working in consultation with Governments and stakeholders to strengthen the UNEP Global Mercury Partnerships, to include new activities and partners.

Current partnership area lead:

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I. SUMMARY

The mercury-cell process is one of three manufacturing processes used by the chlor-alkali sector to produce chlorine and caustic soda. This technology currently represents approximately 20% of global chlor-alkali production. Mercury cell chlor-alkali production (MCCAP) remains a significant user of mercury (at about 18% of global mercury consumption²) and is a significant source of mercury releases to the environment. Mercury cell facilities which close or convert to non-mercury cell technologies also have significant amounts of surplus mercury which require environmentally-sound long-term management. In general, the number of MCCAP facilities is on the decline, consistent with the end of the economic life of these facilities.

The greatest concentration of mercury cell chlor-alkali production remains in Europe. The European chlor-alkali industry intends to phase out all mercury cell chlor-alkali units by 2020, consistent with the life cycle of such facilities.

There is an active government-supported voluntary agreement with industry to close all the mercury cell facilities in India by 2012.

In some cases, the membrane process is less expensive to operate, for example in terms of energy consumption. However, this varies greatly by location and facility. Potential cost-savings need to be critically assessed based on local factors to include electricity costs, energy sources, capital costs, market demand. Nevertheless, in most cases the final decision remains an industry decision.

II. OBJECTIVE OF THE PARTNERSHIP AREA

Consistent with the overall goal of the UNEP Global Mercury Partnership, the objective of this partnership area is to significantly minimize and where feasible eliminate global mercury releases to air, water, and land that may occur from chlor-alkali production facilities. The sub-objectives of this partnership area are to:

- Prevent the construction of new mercury-cell chlor-alkali production facilities
- Reduce mercury emissions and use from existing mercury-cell facilities
- Encourage conversion to non-mercury processes
- Reduce or eliminate mercury releases from waste generated by chlor-alkali production facilities including waste from conversion to non-mercury processes
- Promote environmentally-sound options for storage of surplus mercury to limit downstream releases from surplus mercury generated by the conversion, phase-out, or closure of mercury-cell chlor-alkali facilities.

Target: The chlor-alkali partnership area promotes a reduction in mercury demand to 250 tonnes by 2015 (a reduction of 29% from the current projections). In 2005, demand of mercury in the chlor alkali sector was roughly 450-550 tonnes. Projected demand for mercury demand from chlor alkali production in 2015 is 350 tonnes. This target represents a 50% reduction in mercury demand by 2015 based on a 2005 baseline of 500 tonnes. The Partnership aims to achieve this target through the above-stated objectives.

The partnership area will meet its objectives by promoting environmentally sound management of mercury in the MCCA Production sector, including when facilities are converted, closed or otherwise phased out by providing economic, technical, and educational benefits to chlor-alkali production facility partners; and by promoting commercially competitive and environmentally responsible solutions for minimizing the mercury emissions and use in chlor-alkali production.

² Maxson, PA., 2006, "Mercury Flows and Safe Storage of Surplus Mercury".

III. PRIORITY ACTIONS

- Encourage and implement use of Best Available Techniques (BAT) / Best Environmental Practices (BEP) in existing mercury-cell facilities.
- Improve awareness and information exchange on non-mercury technologies in chlor-alkali production.
- Share information on, and encourage, appropriate procedures and methods to convert to non-mercury processes using environmentally sound methods, and best practices, including proper waste management, to minimize releases of mercury during the conversion process.
- Work with partner governments to establish effective regulatory and/or voluntary approaches to minimize and where feasible eliminate mercury use and releases from the chlor-alkali sector and to prevent new mercury cell facility construction or expansion, including consideration of national action plans for conversion.
- Develop and share information/best practices for managing surplus mercury generated by conversion, phase-out, and closure of mercury-cell chlor-alkali production facilities.
- Develop and share information on best practices for management of mercury-containing waste generated by chlor-alkali production facilities or generated by conversion, phase-out, and closure of mercury cell chlor-alkali production facilities

IV. PARTNERSHIP EFFORTS AND TIMELINES

Mercury Cell Chlor Alkali Facility - Emissions and Use Reporting

(i) The World Chlorine Council reports annually to UNEP on mercury emissions and consumption in the chlor-alkali industry on a country/regional basis for the following countries/regions: Europe (EU + Norway + Switzerland), India, Russia, South America, USA and Canada. This data covers to the best of World Chlorine Council knowledge about 85% of the world chlorine production capacity based on mercury.

Data posted at:

<http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/ChloralkaliSector/Reports/tabid/4495/language/en-US/Default.aspx>

Partners: World Chlorine Council (WCC) and member industries and organizations

Contact: Rob Simon, WCC, Robert.Simon@americanchemistry.com

(ii) The partnership initiated the development of a global inventory of mercury cell chlor alkali facilities in 2010 which was coordinated by the American Chlorine Council. This inventory will be used as a basis for the global inventory of mercury cell chlor-alkali facilities (including information on capacity, locations, and and any plans for conversion or closure) requested by the intergovernmental negotiating committee on mercury.

Contact: Partnership area lead US EPA. Marianne.bailey@epa.gov

On-going Activities in Russia

The Russia chlor-alkali project will end in November 2010, with a wrap-up conference in Russia in that time frame to discuss the overall results of the project.

(i) *Reduction of Mercury Release and Consumption in Russia:* Completed mercury audits at all three chlor-alkali facilities in Russia. Based on these audits, conducted a technical workshop in Volgograd, Russia, with the participation of international experts and experts from all three Russian chlor-alkali facilities to share experiences and best practices. Completed Cleaner Production Training and conducted two technical exchange visits of Russian experts to chlor-alkali facilities in Europe. As a result of these technical visits, each facility developed an “Action Plan” to reduce mercury consumption and releases. Currently all three Russian chlor-alkali facilities continue developing and implementing mercury reduction projects, as identified in their “Action Plans”. This project has achieved 2.5 tons per year of reductions of mercury releases to date.

Partners: Canada, Norway, the United States, RusChlor, EuroChlor, Volgograd “Caustic” Facility, the Volgograd Regional Environmental Authority (Rostekhnadzor), UNEP Chemicals, Arctic Council and

World Chlorine Council (WCC).

(ii) Management of Mercury-containing Wastes in Chlorine and BX-monomer Production in Russia: RusChlor is developing a project on management of mercury-containing wastes in production of chlorine and production of BX-monomer. The work will include consolidation of the Russian regulatory documents regarding classification of mercury-containing wastes, methodology and its analysis, storage and other issues; monitoring of conditions of management of mercury-containing waste; sound management of mercury surplus accumulated as a result of conversion to membrane technology; consolidation of international experience of management of mercury-containing waste; and development of corrective measures in management of mercury-containing wastes and conditions of storage if such measures are required.

Contact: Eleonora Barnes, USEPA, barnes.eleonora@epa.gov, 202-564-6473

Mexico Mercury Stewardship Workshop and Follow-up

Conducted an international mercury stewardship workshop in Veracruz, Mexico to share methods and guidelines for calculating mercury releases and consumption, share best practices for reducing releases, and encourage adoption of best management practices to facilitate reductions in consumption. Following the workshop, WCC provided the Mexican facilities with a technology mentor for six months to help identify process improvements. The facilities are now considering how to implement best practices at their facilities. Additionally, several Mexican industry representatives traveled to Brazil to tour a state-of-the-art mercury cell facility and to discuss possible future improvements in Mexican facilities.

Partners: Mexico, United States, UNEP, ANIQ, Chlorine Institute, Clorosur, EuroChlor, Mexichem, and WCC

India Voluntary Program

A comprehensive plan for control of mercury emissions from chlor-alkali sector was developed through a Government-Industry partnership - Corporate Responsibility on Environmental Protection (CREP). The Government of India constituted a Task Force for chlor-alkali sector which is overseeing the implementation program under CREP. The Task Force is taking periodical review, including site visits for on-the-spot assessments to ensure compliance of the Action Plan. This includes conversion of mercury-cell plants to membrane cell process by 2012. As of 2007, mercury-cell chloralkali capacity was reduced to 12% of total capacity. Activities have also included cleaner production measures. The program has resulted in reduction of mercury use from 110.50 g/t in 2001-02 to 36.37 g/t in the year 2006-07 and reduction of mercury emissions from 28.15 g/t in 2001-02 to 1.12 g/t in the year 2006-07.

Contact: G.K. Pandey, Ministry of Environment and Forests, India, pandey@menf.delhi.nic.in

Storage Projects

UNEP has initiated mercury storage projects with partners in South America and Asia to assist in preparing the region for retirement of large quantities of mercury (including from chlor alkali facilities). This is particularly relevant for this partnership area in South America where

A detailed work-plan and timetable for the project is available on the UNEP mercury web-site.

Contact: Desiree Narvaez, UNEP Chemicals, +41 22 917 88 65, dnarvaez@chemicals.unep.ch

V. OPPORTUNITIES

In addition to current and already-planned activities, the following ideas represent opportunities for developing a more robust set of Partnership approaches:

- NEW: Mexico is encouraging a private company (IQUISA-CYDSA) to pursue their interest to get funds to switch to membrane cells at their two plants in Mexico, and has encouraged the company to attend the international mercury meetings in the recent years to meet contacts and organizations useful to their purpose. They have also provided UNEP and the United States of America with a summary of what their needs are, seeking orientation on the options for them to consider. Partners will seek to meet with relevant financing organizations to explore possibilities for and obstacles to financing of conversions;

- Encourage governments to promote conversion by sharing information on, for example, costs, benefits, and other financial incentives. For example through enhanced information/knowledge, to include analysis of economic benefits of switching to non-mercury processes, and improve information and tracking of mercury from decommissioned sources.
- Consider additional strategies to address technical, economic, or regulatory impediments to achieving mercury reductions goals.

VI. EVALUATION

The Partnership will report biennially to UNEP in accordance with the UNEP reporting format. 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.

The partnership's progress will be evaluated on the following, using 2002 as a baseline:

- *Per cent reduction in mercury use per metric ton of chlorine production.*
- *Per cent reduction in mercury emissions and use per metric ton of chlorine production.*
- *Per cent reduction in mercury use by the chlor-alkali industry.*
- *Per cent reduction in mercury mercury emissions and use from the chlor-alkali industry.*
- *[Progress towards a projected reduction of XX% in mercury use by 2015]*
- *Number of chlor-alkali units with mercury cell technology decommissioned.*

The latest evaluation report is available as an Information Document to the second meeting of the Partnership Advisory Group, Document UNEP(DTIE)/Hg/PAG.2/INF 2 - Reporting of the mercury cell chlor alkali production partnership area.

VII. RESOURCE MOBILIZATION

The UNEP Global Mercury Partnership and the associated partnership area business plans are a way of mobilizing resources in a systematic, focused and harmonized way. The partnership objectives and business plans should provide clarity for potential donors and finance institutions.

The partners are encouraged to contribute financially and also to offer in-kind assistance.

Partners can develop specific initiatives, work with non-partners, or pursue projects consistent with Partnership objectives. It is hoped that the UNEP Global Mercury Partnership will serve as a mechanism to consolidate and leverage funding for large, strategic projects.

Partners are encouraged to apply for funding to relevant funders and regional organizations. Developing countries and countries with economies in transition can submit requests for funding to UNEP under the UNEP Mercury Small Grants Program (see www.chem.unep.ch/mercury/Overview-&-priorities.htm). UNEP and other partner implementing agencies 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).

Partners can outline possible fiscal or other incentives systems for conversion from mercury cell to membrane or other non-mercury technology, as one possible means to increase or accelerate the extent and rates of conversion, to include: dedicated funding sources (such as the system employed to reduce Ozone Depleting Substances under the Montreal Protocol), soft loans, accelerated depreciation accounting, or possible carbon credits from improved energy efficiency.

Such analysis would benefit from better information on the range of conversion options and their costs, reduction in energy consumption possible, mercury release reductions, and other associated costs and benefits of conversion. Note: Issues such as the prevailing energy costs within a particular locality can be an important determinant in the cost analysis for conversion.

VIII. BUSINESS PLANNING PROCESS

The business plan will be reviewed regularly and adjusted accordingly by the partners.

Consideration will be given to the direction of the partnership area, the projects being undertaken, and measures for evaluating the productivity of the efforts. Annual partnership area meetings, in person or by teleconference, will be arranged and hosted by the partnership area lead in cooperation with partners and stakeholders in order to evaluate productivity and conduct joint planning.

Table 2: Administration and Management Support (will vary across the Partnerships)		Source of Support
Partnership Lead	<ul style="list-style-type: none"> ▪ Facilitation and support of the partnership. ▪ Preparing Business Plan. ▪ Preparing for meetings. ▪ Logging meeting notes, tracking action items. ▪ Collaborating with partners to strategically link to overall partnership goals and objectives. 	U.S. Environmental Protection Agency (Martin Dieu)
UNEP Secretariat Support	<ul style="list-style-type: none"> • Managing the clearinghouse/website. • Taking in funding from multiple sources to fund projects. • Developing activity proposals in collaboration with partners. • Assisting the lead in following up activities by partners. • Other tasks as requested. 	In-kind support from UNEP
Teleconferences and Meetings	At least one per year and as needed.	U.S. Environmental Protection Agency

IX. LINKAGES

Given the cross-cutting work that will, by definition, occur under the UNEP Global Mercury Partnership, this section is intended to list the key related activities. These activities should include cross-cutting activities that are both internal and external to the UNEP Global Mercury Partnership efforts.

- Mercury supply and mercury storage
- Mercury waste partnership area and Secretariat of Basel Convention mercury waste guidelines development
- UN Cleaner Production Centers
- Vinyl Chloride Monomer production
- Energy Efficiency

Mercury containing wastes in the chlor-alkali sector are potentially a significant source of mercury releases to the environment if not properly handled.

Due to the large quantities of surplus mercury that will be generated as chlor-alkali units are decommissioned between now and 2020, the European Commission has proposed legislation to ban mercury exports and require long-term storage of surplus mercury. Incentives for long-term storage of mercury following phase out of such large-scale uses may be necessary to prevent sale of mercury into the market.

X. PARTNERS

Please see Part viii of this document for the current list of partners that have submitted letters of support to the UNEP Global Mercury Partnership. There are a number of participating partners that have not officially submitted support letters.

For further details, please go to the list of partner support letters posted at the following web address:

<http://hqweb.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/CurrentPartners/tabid/3437/language/en-US/Default.aspx>

Other partners are welcome to self identify to the partnership.

Part iii)**Business Plan of the Mercury in products partnership area, 19 August 2010**

(NOTE: This is the business plan version of October 2009 with editorial revisions and updates proposed by UNEP.)

This Business Plan describes the activities of the mercury in products partnership area of the United Nations Environmental Programme (UNEP) Global Mercury Partnership. It serves as a planning and communication vehicle both for Partners and others.

The purpose of the business plan is to provide a framework for developing and implementing projects. The business plan is to serve as a resource for providing a common, cohesive structure for implementing the UNEP Global Mercury Partnership.

The partnership is open for government and stakeholder participation. In UNEP Governing Council Decision 24/3 part IV paragraph 27, UNEP is tasked with working in consultation with Governments and stakeholders to strengthen the UNEP Global Mercury Partnerships. New activities and partners are encouraged within the UNEP Global Mercury Partnership.

Current partnership area lead:

Ms. Maria J. Doa, Ph.D.
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MERCURY-CONTAINING PRODUCTS PARTNERSHIP AREA BUSINESS PLAN

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 the 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 the 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 Demand and Demand Projection by Sector (2005-2015)³

Global mercury demand (metric tonnes) ⁴	2005	“Status Quo” scenario 2015
Small-scale/artisanal gold mining	650-1,000	650
Vinyl chloride monomer (VCM) production	600-800	1,000
Chlor-alkali production	450-550	350
Batteries	270-460	200
Dental use	280-360	270
Measuring and control devices	300-355	125
Lighting	100-150	125
Electrical and electronic devices	150-210	110
Other (paints, laboratory, pharmaceutical, cultural/traditional uses, etc.)	220-350	40
Total	3,000-4,200	2,870

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) and Options for reducing mercury use in products and applications, and the fate of mercury already circulating in society (European Commission 2008).

The purpose of the mercury-containing products 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. 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.

³ This chart will be updated periodically to reflect relevant new data and studies on mercury demand.

⁴ 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.”

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 (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) Objectives⁵

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.”

1. In 2005, demand of mercury in batteries was roughly 300-600 tonnes. Based on a status quo scenario, demand is estimated to be around 200 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 50 tonnes or a 75% 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.⁶ With U.S. manufacturers already committed to producing only mercury free button cells by 2011, 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 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 150-350 tonnes.⁷ Based on a status quo scenario, demand in 2015 is estimated to be around 125 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 50 tonnes or a 60% 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% 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) has prohibited the sale of these mercury devices and some states in the United States are beginning to prohibit the manufacture and sale of certain 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% or more during the next ten years.

⁵ 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.”

⁶ 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.”

⁷ Recent CRC/NRDC research suggests a figure at the top end of this range, which would likely raise the 2015 “status quo” projection.

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% 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.⁸ 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 100-150 tonnes. Based on a status quo scenario, demand in 2015 is estimated to be around 125 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 100 tonnes or a 20% reduction from status quo in 2015.

Basis: Lighting – With other countries expected to adopt similar legislation to RoHS, the mercury limits imposed by the EU could spread much more widely. In the event that a wide range of energy-efficient light emitting diode (LED) or similar energy-efficient mercury-free lamps also come onto the market rapidly at prices that consumers find acceptable, one could conceive of a more than 20% 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 240-300 tonnes. Based on a status quo scenario, demand in 2015 is estimated to be around 270 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 230 tonnes, or a 15% 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 30-60 tonnes. Based on a status quo scenario, demand in 2015 is estimated to be around 40 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 30 tonnes or a 25% 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, the more reduction of mercury in these “other uses” might also be expected. Further, legislation against selling newly developed products containing mercury has been introduced in Sweden, and will increasingly be implemented elsewhere as more nations move to eliminate most mercury uses.

7. To encourage and support developing countries and countries with economies in transition to promulgate laws, standards, and regulations that would prohibit or restrict importation of mercury button cells and other mercury-containing products.

⁸ 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>).

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 Partnership Area 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 Partnership Area 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 Partnership Area. Projects completed on or before December 2008 are included in section XI of the business plan. Partnership Area objective(s) and priority action(s) are addressed through each project identified below.⁹ Also identified is the stage of each specific project and a contact person from whom to get further information.

- ***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
 - Estimated Date for Completion: July 2012.
 - Costs: \$2,000,000 USD; year-one budget: \$250,000 USD (United States)
 - Phase or Stage of Project: Anticipated to begin in August 2008
 - Contact: [Ibrahim Shaffi](#), Secretariat of the Basel Convention, ibrahim.shaffi@unep.ch; Sue

⁹ Partners are encouraged to implement activities that will strategically meet the targeted objectives.

Slotnick, U.S. EPA, slotnick.sue@epa.gov

- **Priority Actions: 2, 5**
- **Objective: All**

- ***Chile Hospitals Assessment Project:*** Develop and implement 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
 - **Priority Actions: 1, 2, 3, 5, 7**
 - **Objective: 2 – Measuring and control devices**

- ***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 will develop model procedures to control of use and environmentally-responsible disposal of mercury-containing thermometers in the Altai Krai region of Southern Siberia. It will include the collection of mercury-containing thermometers from children's hospitals, kindergartens, orphanages, psychiatric hospitals, veterans' hospitals, and retirement homes. Collected thermometers will be safely destroyed at the Terek recycling facility and replaced with environmentally-safe non-mercury thermometers. Mercury extracted from destroyed thermometers will be 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)
 - Phase or Stage of Project: Altai Krai Regional Department of Ministry of Health agreed to implement project under UNEP Global Mercury Partnership; preliminary goals include collection, recycling, and replacement up to 2,000 mercury-containing thermometers
 - Contact: Ella Barnes, U.S. EPA, barnes.eleonora@epa.gov
 - **Priority Actions: 2, 3, 5, 8**
 - **Objective: 2 – Measuring and control devices**

- ***Costa Rica Hospitals Assessment Project:*** The objective of this project is to reduce the risk to staff, patients, and the environment associated with the use of mercury in hospitals. Risk reduction will be achieved through identification, inventory, and proper handling of spills and waste. The overall goal is 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
 - **Priority Actions: 1, 2, 3, 5, 7**
 - **Objective: 2 – Measuring and control devices**

- ***Health Care Cooperative Agreement to Provide Technical Support for Mercury Reduction in Hospitals:*** 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 for Completion: April 2013
 - Costs: \$1,000,000 USD; year-one budget: \$315,000 USD (United States)

- Phase or Stage of Project: Grants awarded and accepted in May 2009; teleconference with grantees held in May and June 2009.
 - Contact: Benjamin Lim, U.S. EPA, lim.benjamin@epa.gov; Ellie McCann, U.S. EPA, mccann.ellie@epa.gov
 - **Priority Actions: 1, 2, 3, 5, 7**
 - **Objective: 2 – Measuring and control devices**
- ***Honduras Hospitals Assessment Project:*** Develop and implement 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
 - **Priority Actions: 1, 2, 3, 5, 7**
 - **Objective: 2 – Measuring and control devices**
- ***Mexico Healthcare Project:*** Build 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 and Alfonso Flores Ramirez, CENICA-INE-SEMARNAT, alfonso.flores@semarnat.gob.mx
 - **Priority Actions: 1, 2, 3, 7**
 - **Objective: 2 – Measuring and control devices**
- ***Mexico Mercury Product Waste Management Initiative:*** As a follow-on to the Market Study and Healthcare project, this project seeks to investigate and test options for managing mercury products removed from service. The initial emphasis for 2009 is to work with hospitals participating in the Healthcare project who have replaced mercury-containing equipment and collected broken thermometers. Subsequent stages will consider 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.
 - Estimated Date for Completion: TBD
 - Costs: \$20,000 USD 2009 (United States and NACEC)
 - Contact: Luke Trip, Program Manager, NACEC, ltrip@cec.org and Jorge Jimenez Perez, SEMARNAT, jorge.perez@semarnat.gob.mx
 - **Priority Actions: 2, 5, 7**
 - **Objective: 2 – Measuring and control devices (1st phase), All**
- ***Nepal and Tanzania:*** Support 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
 - Estimated Date for Completion: January 2011
 - Costs: \$60,000 USD
 - Phase or Stage of Project: Preliminary phases underway, including identification of facilities, conducting an inventory of devices, and developing staff education plan.
 - Contact: Yves Chartier, WHO, chartier@who.int
 - **Priority Action: 1, 2, 3, 5, 7**
 - **Objective: 2 – Measuring and control devices**
- ***Recycling Mercury-Containing Lamps at Russian Military Bases in the Arctic:***

This bilateral (Russian Federation-U.S.) model demonstration project is being 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 also will accommodate other mercury-containing equipment from the Russian Navy. Lamps and other equipment will be collected from military bases and adjacent civilian communities. After recycling, residual mercury will be placed into long-term storage at the Polyarninsky facility to ensure that it does not reach the commodity mercury market.

- Partners: Russian Federation, United States
 - Date of Completion: December 2009
 - Costs: \$239,000 USD
 - Phase or Stage of Project: Mercury lamp recycling facility planned for commissioning at the Navy Yard 10, Polyarninsky, Murmansk, in November 2008; Ministry of Defense of the Russian Federation signed protocol stating that project will be implemented under the UNEP Global Mercury Partnership; Russian Navy established a budget line-item for environmentally-safe recycling of mercury-containing lamps as a result of this project; preliminary goals include the recycling more than 150,000 mercury-containing lamps by the end of 2009
 - Contact: Ella Barnes, U.S. EPA, barnes.eleonora@epa.gov
 - **Priority Actions: 2, 3, 5**
 - **Objective: 3 – Electrical and electronic equipment and 4 – Lighting**
- ***South Africa Assessment:*** Support 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
 - Estimated Date for Completion: TBD
 - Costs: \$160,000 USD
 - Phase or Stage of Project: A face-to-face meeting occurred in mid-2009 and all parties are working to draft and sign a Memorandum of Agreement (MoA).
 - Contact: Craig Boljkovac, UNITAR, craig.boljkovac@unitar.org
 - **Priority Actions: 6, 7**
 - **Objective: TBD**
- ***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
 - Estimated Date for Completion: December 2010
 - Costs: \$113,625 USD (\$103,625 USD – United States; \$10,000 USD – CCAD)
 - Phase or Stage of Project: Initial workshop to select pilot countries held October 2008; Costa Rica – product substitution completed April 2009; Honduras – working to complete products inventory; Dominican Republic – completed Mercury Management Situation Analysis draft (June 2009), which will be reviewed at National Workshop in September 2009; Nicaragua – working to finalize formal project agreement as of June 2009.
 - Contact: Thomas Groeneveld, U.S. EPA, groeneveld.thomas@epa.gov
 - **Priority Action: 1, 3, 4, 6, 7, 8**
 - **Objective: All**

UNEP notes the following activities based on recent activity in the mercury programme (August 2010 addition to the business plan)

- ***Dental Amalgam Activities:***
 In November 2009, the World Health Organization hosted a consultation on future dental restorative materials in Geneva, co-sponsored by UNEP. The consultation was organized in response to the initiation of the negotiation of the global legally binding instrument on mercury. The purpose was to provide a platform for sharing scientific information and country experience. Follow-up activities will be initiated through a global phase down approach.
 - Partners: WHO, UNEP.
 - Estimated Date for Completion: TBD
 - Costs: UNEP contributed approximately \$50,000 USD for participant travel to the workshop.
 - Phase or Stage of Project: Initiated in late 2009.
 - Contact: Desiree Narvaez, UNEP, desiree.narvaez@unep.org
 - **Priority Actions: 1, 3, 4, 5, 6, 7**
 - **Objective: 5**

- ***Efficient Lighting for Developing and Emerging Countries (En.Lighten):***
 The project promotes alternatives to compact fluorescent lights (CFLs) taking into account mercury content. It aims to strengthen capacity for environmentally sound recycling and recovery of mercury in CFLs. There are three operational components: a global stakeholder forum, a Centre for excellence, and the support for implementation of energy efficient lighting programmes in countries and regions.
 - Partners: UNEP, GEF Earth Fund, OSRAM GmbH, Philips Lighting and the French Environment and Energy Management Agency.
 - Estimated Date for Completion: End of 2013.
 - Costs: Close to \$ 20 million US in support from project partners.
 - Phase or Stage of Project: Initiated in early 2010. Workshop to be hosted in October 2010.
 - Contact: Gustavo Manez, UNEP, Gustavo.manez@unep.org
 - **Priority Actions: 3,4,5,8**
 - **Objective: 4**

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; (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 partnership area:

- Broader representation on the partnership, both in terms of number and scope of partners, including build upon industry engagement such as the World Business Council for Sustainable Development, and encourage additional governments and stakeholders to partner.
- Strengthen and increase the scope of global efforts to address and reduce the use of mercury-containing dental amalgam.

- 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.
- 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.
- Identify major manufacturers of mercury-containing products, set standards for mercury content, and share BAT/BEP on the reduction of mercury content.
- 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.

VI. PERFORMANCE MEASUREMENT AND REPORTING

The partnership areas will report biennially to UNEP in accordance with the UNEP reporting format. 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.

There are currently no quantifiable measures of progress identified; however, percentage reduction goals are set forth per product sector. Additional proposed indicators include: mercury demand for manufacturing of products containing mercury; quantity of mercury used in products consumed by consumers; release reductions achieved; availability of non-mercury alternatives; and number of dental practitioners using amalgam.

The latest evaluation report is available as an Information Document to the second meeting of the Partnership Advisory Group, Document UNEP(DTIE)/Hg/PAG.2/INF 3 - Reporting of the mercury in products partnership area.

VII. RESOURCE MOBILIZATION

Partnership Areas and the associated business plans are a way of mobilizing funding in a systematic, focused and harmonized way. The Partnership Area objectives and business plans should provide clarity for potential donors and finance institutions. The business plan should encourage and facilitate donors to support activities and provide a tool to leverage funds.

Working with UNEP, the overall Partnership Area lead helps 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 Partnership Area.

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 Partnership Area will serve as a mechanism to consolidate and leverage funding for large, strategic projects.

Partners are encouraged to contribute not only financially but also to offer in-kind assistance. For example, the current UNITAR-UNEP-EPA partnership project on “Pilot Projects on Strengthening Capacities for Mercury Inventory Development and Risk Management Decision-Making” has 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). 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).

Table 2: Administrative¹⁰ and Management Support (will vary across the Partnerships)		Value	Source of Support
Partnership Lead ¹¹	<ul style="list-style-type: none"> ▪ Facilitation and support of the partnership. 		In-kind support from USA
Organization Point of Contact	<ul style="list-style-type: none"> • Preparing Business Plan. • Preparing for meetings. • Logging meeting notes, tracking action items. • Collaborating with partners to strategically link to overall partnership goals and objectives. 	¼ person year	In-kind support from USA
UNEP Secretariat Support	<ul style="list-style-type: none"> • Managing the clearinghouse/website. • Taking in funding from multiple sources to fund projects. • Developing activity proposals in collaboration with partners. • Assisting the lead in following up activities by partners. • Other tasks as requested. 	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	Estimated one per year.	Teleconference lines	In-kind support from USA
	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).	Travel support	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.
Teleconferences	Estimated 3 per year	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 Partnership Area lead serves 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

¹⁰ Administrative support does not cover the cost of administering individual projects.

¹¹ For the Products Partnership, the lead is the United States, with a potential co-lead identified in the near future.

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 and new projects, the Business Plan should be updated on a quarterly basis, working with all of the projects via teleconference. The Partnership Area 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 Partnership Area, 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. CURRENT PARTNERS

Please see Part viii of this document for the current list of partners that have submitted letters of support to the UNEP Global Mercury Partnership. There are a number of participating partners that have not officially submitted support letters.

For further details, please go to the list of partner support letters posted at the following web address:

<http://hqweb.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/CurrentPartners/tabid/3437/language/en-US/Default.aspx>

Other partners are welcome to self identify to the partnership.

XI. Completed projects as of end of 2008 (moved from section iv of the business plan)

The following is a list of projects that have been completed by the partnership area by the end of 2008.

Initiatives related to the medical sector

- ***China Hospitals Project:*** Demonstration programs at two Beijing hospitals to significantly reduce 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; Chen Wen, U.S. EPA, wen.chen@epa.gov
 - **Priority Actions: 1, 2, 3, 7**
 - **Objective: 2 – Measuring and control devices**
- ***Buenos Aires Hospital Project:*** Support 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 is underway. 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
 - **Priority Actions: 1, 2, 7**
 - **Objective: 2 – Measuring and control devices**
- ***Regional Workshops on Elimination of Mercury in Health Care:*** Organize 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)
 - Costs: \$300,000 USD (\$130,000 USD – UNEP; additional funds from HCWH and WHO)
 - Date of Completion: December 2008
 - Contact: Josh Karliner, HCWH, josh@hcwh.org
 - **Priority Actions: 3, 8**
 - **Objective: TBD**

Inventory and Assessment Activities

- ***Burkina Faso Assessment:*** Conduct 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 will be developed along with 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
 - **Priority Action: 6**
 - **Objective: 1 – Batteries**
- ***Chile Inventory Development and Risk Management Planning:*** Support the United Nations Institute for Training and Research (UNITAR), which is partnering 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. Chile's Comision Nacional del Medio Ambiente (CONAMA) already finished a mercury release inventory, using the Spanish mercury inventory toolkit, including consideration of products situation and has completed a draft Risk Management Plan for Mercury in April 2008. UNEP also provided consultant support for some aspects related to the preparation of the inventory. Chile is now starting to develop a Strategy for the Integration of the Mercury Inventory within the framework of the national PRTR. The draft Risk Management Plan will be presented at a National Workshop in July 2008. In the workshop, a variety of stakeholders will participate in the revision and endorsement of this document and with the upcoming Strategy for the Integration of the Mercury Inventory within the national PRTR. This will provide a basis for the sound

management of mercury used in Chile.

- 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
 - **Priority Actions: 6, 7**
 - **Objective: All**
- ***Ecuador Inventory Development and Risk Management Planning:*** Support UNITAR in assisting Ecuador to develop an inventory of releases, including consideration of releases from mercury products and, based on this information, develop a mercury risk management plan. Ecuador has developed a draft Mercury Emissions Inventory, with special consideration of products situation, a mercury situation analysis and a document exploring the relationship between mercury emissions and mercury containing products. The next steps for Ecuador include the development of a National Risk Management Plan for Mercury and a Strategy for the Integration of Mercury Inventory within a National PRTR. It is important to note that Ecuador made initial efforts to establish a National PRTR with the assistance of UNITAR. Nevertheless, the system has not yet been completed or validated. Through the National Workshop on Institutionalizing a Mercury PRTR and Developing a Mercury Risk Management on September 2008, stakeholders will agree on the best procedures to be followed for an institutionalization of a PRTR with mercury as a key focus.
 - 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
 - **Priority Actions: 6, 7**
 - **Objective: All**
- ***Mexico Mercury Market Study and Products Inventory Update: Conduct an assessment of elemental mercury trade and uses in products, manufacturing and processing, primary and secondary mercury production, imports and exports.*** Developing a mercury-containing products and alternatives inventory and update 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. Notably and for consideration, the study recognizes 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, Program Manager NACEC, ltrip@cec.org and Gustavo Solorzano Ochoa, CENICA-INE-SEMARNAT, gsolorza@ine.gob.mx
 - **Priority Action: 6**
 - **Objective: All**
- ***Panama Mercury Inventory and Risk Management Planning:*** Support UNITAR in assisting Panama to develop an inventory of releases including consideration of releases from mercury products and, based on this information develop a mercury risk management plan. Panama has completed a draft Mercury Emissions Inventory with special consideration of products situation, developed a mercury national situation analysis, and a note exploring the relationship between mercury emissions and mercury containing products. Forthcoming steps in the project include a Mercury Risk Management Plan and a Strategy for the Integration of Mercury Inventory within a National PRTR. The National Workshop on Institutionalizing a Mercury PRTR and Developing a Mercury Risk Management is expected to be held in September 2008.
 - 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
- **Priority Actions: 6, 7**
- **Objective: All**

Workshops and Awareness Raising

- ***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.
 - Partners: Mexico, United States, NACEC, UNEP
 - Date of Completion: February 2006
 - Costs: N/A
 - Phase or stage of project: 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, Program Manager NACEC, ltrip@cec.org
 - **Priority Action: 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
 - Costs: \$100,000 USD (UNEP Mercury Trust Fund)
 - Contact: Desiree Narvaez, UNEP, DNarvaez@chemicals.unep.ch
 - **Priority Action: 7**
 - **Objective: All**

Part iv)**Business Plan of the Mercury Air Transport and Fate Research partnership area, 19 August 2010**

(NOTE: This is the business plan version of January 2009 with editorial revisions and updates proposed by UNEP.)

This Business Plan describes the activities of the United Nations Environmental Programme (UNEP) Global Partnership for Air Transport and Fate Research (F&T) during the period 2007-2009 and serves as a communication vehicle both for Partners and others. It updates the initial F&T business plan, developed at its January 2007 Gatineau, Quebec meeting and later posted on the Partnership web site.

The purpose of the business plan is to provide a framework for developing and implementing projects. The business plan is to serve as a resource for providing a common, cohesive structure for implementing the UNEP Global Mercury Partnership.

The partnership is open for government and stakeholder participation. In UNEP Governing Council Decision 24/3 part IV paragraph 27, UNEP is tasked with working in consultation with Governments and stakeholders to strengthen the UNEP Global Mercury Partnerships. New activities and partners are encouraged within the UNEP Global Mercury Partnership.

Current partnership area lead:

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I. Summary of the Issue

An improved understanding of mercury emission sources, fate and transport is important in:

- (a) setting priorities at the national, regional and global levels,
- (b) developing and implementing policies and strategies, and
- (c) in establishing baselines to monitor and assess progress on mercury reductions.

Integrated global assessments, based on valid data and information from regional and national levels, are essential for global understanding and for predicting trends. However, there is a lack of global coverage and coordination in research efforts.

With competing resources and priorities at the national, regional and global levels, integrating the partners, countries and stakeholders in the field of atmospheric mercury research, aiming to achieve the objectives below would help facilitate a greater understanding of mercury uses and releases, and in achieving reductions in mercury contamination.

II. Objective of the Partnership

F&T aims to increase global understanding of international mercury emissions sources, fate and transport by:

- Accelerating the development of sound scientific information to address uncertainties and data gaps in global mercury cycling and its patterns (e.g., air concentrations and deposition rates, source-receptor relationships, hemispheric-global air transport/transformation, emission sources).
- Enhancing sharing of such information among scientists and between them and policymakers.
- Providing technical assistance and training, where possible, to support the development of critical information.

At present, the scope of the Partnership's research activities is constrained to mercury in the atmosphere from the point of emission to the point up to and including deposition. Consideration of research on biochemical cycling and effects of mercury in aquatic or terrestrial systems is deferred.

III. Long-Term Priority Actions

The following table identifies long term priority actions and then links them with various current partnership efforts (further described in Appendix B) and timelines.

Long-Term Priority Actions	Current Partnership Efforts and Timelines	Future Strategic Initiatives to be considered to fill the gaps
<ul style="list-style-type: none"> • Coordination in conducting research projects related to partnership objectives and scope on national/regional/global scales on cross-cutting issues of the mercury cycle. 	<ul style="list-style-type: none"> • Continue high altitude measurements in Mauna Loa, Hawaii during 2007 and 2008, to better understand globally cycling mercury and sharing that information thru the UNEP web site. (U.S.) 	<ul style="list-style-type: none"> • Joint research proposal to be submitted in the framework of the European Commission FP7. (Italy)
<ul style="list-style-type: none"> • Develop global, coordinated network of measurements for assessing levels of mercury and its species in the atmosphere – improving the comparability among measurements and observations 	<ul style="list-style-type: none"> • Conduct atmospheric monitoring and make summary data available (Canada, South Africa) • Share sampling and monitoring methodologies (U.S.). • Measure mercury in precipitation and make summary data available 	<ul style="list-style-type: none"> • Encourage joint initiatives to promote training on mercury measurements in ambient air and flue gases. (Italy) • Support international programs and initiatives (IGBP-IGAC, UNEP). (Italy)

Long-Term Priority Actions	Current Partnership Efforts and Timelines	Future Strategic Initiatives to be considered to fill the gaps
	(Canada, South Africa) <ul style="list-style-type: none"> • Develop circumpolar network of TGM measurements (Canada) • Expand mercury measurements to include speciation (RGM, Hg(p)) (Canada, South Africa) • Develop common protocols for the measurement and estimation of Hg dry deposition (Canada), • Develop common protocols for the measurement and estimation of Hg wet deposition South Africa) 	<ul style="list-style-type: none"> • Continue to support UNECE-LRTAP convention for shaping future international mechanisms aimed to reduce the mercury emissions to the atmosphere and its impact on ecosystems and human health. (Italy, U.S.)
<ul style="list-style-type: none"> • Develop global, coordinated network for research on source-receptor relationships effort that would allow for the creation of modeling framework for understanding global fate of mercury 	<ul style="list-style-type: none"> • IPY projects on mercury transport, cycling and deposition of mercury to the Polar environment (Canada) 	
<ul style="list-style-type: none"> • Develop a global, commonly accepted modeling framework for source-receptor relationships assessment at global and regional scales 	<ul style="list-style-type: none"> • Canada has developed the global/regional atmospheric heavy metals model (GRAHM) for the distribution of atmospheric mercury • GRAHM used to estimate intercontinental transport of mercury to various regions (Canada) • South Africa is developing a MERIECO model (Bayesian Network) to determine the linkages between Hg from source to receptor. • Share worldwide meteorological data through the READY web-based system (U.S.). • Share various transport and air dispersion models (U.S.) 	
<ul style="list-style-type: none"> • Develop global emissions inventories, e.g., by filling current gaps in geographic and source coverage which includes information on regions not yet accounted for and on sources not yet accounted for in currently used databases, e.g. biomass burning, artisanal gold mining, coal-bed fires and natural sources 	<ul style="list-style-type: none"> • Maintain and make available national mercury emissions information (Canada, United States) (ongoing; annual reports) • Develop and implement a program to quantify bi-directional mercury flux from oceans, lakes, soils and vegetation (Canada, U.S.). • South Africa is currently completing a Hg inventory for the country. • South Africa and Norway are working together on developing Hg scenarios for the country. • Share worldwide coal inventory (http://energy.er.usgs.gov/coalquality/wocg/collaborators.html) (U.S.) 	
<ul style="list-style-type: none"> • Build capacity, including through the provision of training programs, related to partnership objectives and scope monitoring, modeling and other tools in countries where necessary 	<ul style="list-style-type: none"> • South Africa held a Hg analytical training programme in conjunction with international Hg experts 	
<ul style="list-style-type: none"> • Build on existing international activities work already underway 	<ul style="list-style-type: none"> • Canada will co-author the next AMAP mercury assessment 	

Long-Term Priority Actions	Current Partnership Efforts and Timelines	Future Strategic Initiatives to be considered to fill the gaps
internationally, e.g., GEOSS, Arctic Council, UNECE-HTAP, WMO, AMAP	<ul style="list-style-type: none"> • Canada participated in two model intercomparison studies (led by EMEP and EPA) and will contribute to UNECE-HTAP interim and final assessment reports on the evidence for intercontinental transport • Through the CEC Canada and US are assisting Mexico to seek funding to continue and expand programs for mercury monitoring. 	

IV. Current Partnership Efforts and Timelines

Each country and organization's initial contributions are provided in the section "Specific Contributions" of the F&T website (<http://www.cs.iaa.cnr.it/UNEP-MFTP/index.htm>) and indicated in Appendix B of this document. The following is a summary of salient examples of each contribution:

- Completion of a 3 year study by Italy on mercury emission control technologies and methodologies, including the development of national legislation in China, initiated with the Institute for Atmospheric Pollution of the Italian National Research Council. Training and capacity building activities will be offered to interested parties.
- Development of a circumpolar mercury measurement network building upon the long-standing Canadian data set of continuous measurements of atmospheric mercury in the Arctic.
- U.S./Canada collaboration in developing a network to estimate dry deposition under the Mercury Deposition Network (MDN).
- Collaborative research work in a South African mercury partnership initiated in 2006. Foci include emission inventory development, as well as research towards understanding mercury releases from coal.
- The United States contribution focuses on continuing taking high altitude measurements of atmospheric mercury (and other pollutants for two more years at Mauna Loa, Hawaii, to better understand globally cycled mercury and sharing that information with a notice of availability on the UNEP web site as well as sharing other data bases, such as the U.S. Geological Survey's World Coal Quality Inventory and various monitoring and modeling methodologies. The US Department of Energy's NETL will maintain its ongoing partnership with the Chinese Ministry of Science and Technology and Zhejiang University, which includes developing emission factors for coal-fired power plants.
- Initiation of Japan's pilot project in 2007 to monitor atmospheric mercury levels and obtain information on the long range transport of mercury and other trace elements in the Asia –Pacific region.
- Expansion of the Electric Power Research Institute's (EPRI) high altitude monitoring program involving measurements at Mount Bachelor, Oregon and with aircraft, to better understand transboundary transport.
- The Partnership is working together to assist UNEP by providing a report (see information in Appendix A) encompassing information on three topics falling within the F&T scope of activities (i.e., emissions, air modeling and air monitoring).

The Partnership has met three times face to face. The 1st meeting was held in Madison, Wisconsin in conjunction with the 8th International Conference of Mercury as a Global Pollutant. The 2nd meeting was held in Gatineau, Quebec, Canada on January 9-10, 2007 with the main objective to discuss and define, for

the Partnership, the elements included in Decision 23/9 IV. Since then, the Partnership has had two teleconferences. A 3rd meeting was held in Washington, D.C. on 10-11 October 2007.

V. Future Strategic Initiatives to be Considered to Fill the Gaps

Areas identified at the F&T meeting in January 2007 in Gatineau, Canada for further investigation/ unfunded proposals for further Partnership consideration include:

- Harmonization of greenhouse gas and mercury emission inventories;
- Possible partnership activities to further the understanding of atmospheric mercury through a measurement program at K2 Italian Research Station.
- Italy will investigate a special session related to F&T activities during the 2009 International Conference as a Global Pollutant to be held in Guiyang in China and possibly during the 14th International Conference on Heavy Metals to be held on 23-30 November 2008 in Taipei, Taiwan.
- Relevant information will be gained through International Polar Year 2008 activities. The partners are collaborating together to mutually benefit from the knowledge and information generated under this activity.
- Further coordination and liaison with various organizations and programs (such as United Nations Economic Commission for Europe, Arctic Monitoring and Assessment Programme, UNEP Regional Seas).

VI. Evaluation

The partnership areas will report biennially to UNEP in accordance with the UNEP reporting format. Reporting will include monitoring performance (tracking partnership activities and partner contributions) as well as assessing effectiveness (measuring the impact of partnership activities on target beneficiaries).

Partners will also provide periodic reports to UNEP upon completion of priority activities.

The latest evaluation report is available as an Information Document to the second meeting of the Partnership Advisory Group, Document UNEP(DTIE)/Hg/PAG.2/INF 4 - Reporting of the mercury air transport and fate research partnership area.

VII. Resource Mobilization

Partnerships and the associated business plans are a way of mobilizing funding in a systematic, focused and harmonized way. The Partnerships' 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.

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 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. Developing countries and countries with economies in transition can also submit requests for funding to UNEP under the UNEP Mercury Small Grants Programme. UNEP could consult with the partnership area for expert advice when such proposals are developed.

The partnership area lead, in cooperation with partners and other research and university institutions, submitted (Call of July 2009) a 5-yr research proposal to the European Commission aiming to build a Global Mercury Observation System (GMOS). The GMOS proposal was approved by the EC for funding and will

likely start in November 2010. GMOS will support major international programs and conventions aiming to control the effectiveness of control measures that will be adopted in the future to reduce the impact of mercury pollution related to man-made activities on human health and ecosystems. The project provides a great opportunity for the partnership.

The partnership area has proposed other possible ways to engage international donor agencies and make them aware of Partnership activities and needs, such as:

- informing other countries of opportunities to pursue possible financial support from different agencies, such as the Asian Development Bank, World Bank, other regional funding institutions, and that it is desirable that these agencies be involved in the beginning of the process, and
- considering ways to market the significance of mercury studies to major funding organizations so that the study of mercury pollution is included in their selection criteria as an issue with significant socio-economic implications.)

VIII. Business planning process

The business plan will be reviewed regularly and adjusted accordingly by the partners. Ideas are welcome on how best to take stock of efforts, determine whether the direction of the Partnership for the various projects need to be re-considered, and measure the productivity of the efforts under the Partnership.

IX. Linkages with other Partnerships and with other entities

The F&T Partnership serves to integrate and enhance the work of the other Partnerships and other programs by providing information within the scope of its objectives.

X. UNEP F&T website

The F&T has established a website at <http://www.cs.iiia.cnr.it/UNEP-MFTP>, to serve as a bulletin board for sharing information within the Partnership and provide up to date information to policy makers and stakeholders. It is linked to the UNEP website:

<http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/AirTransportandFateResearch/tabid/3532/Default.aspx>

XI. Partners

Please see Part viii of this document for the current list of partners that have submitted letters of support to the UNEP Global Mercury Partnership. There are a number of participating partners that have not officially submitted support letters.

For further details, please go to the list of partner support letters posted at the following web address:

<http://hqweb.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/CurrentPartners/tabid/3437/language/en-US/Default.aspx>

Other partners are welcome to self identify to the partnership.

Appendix A. Developing the F&T Report

The Governing Council of UNEP, in its decision 24/3, called for the UNEP Executive Director to prepare a report, drawing on, among other things, ongoing work in other forums addressing best available data on mercury emissions and trends including where possible an analysis by country, region and sector, including a consideration of factors driving such trends and applicable regulatory mechanisms; and current results from modelling on a global scale and from other information sources on the contribution of regional emissions to deposition which may result in adverse effects.

The Partnership recognized that it is uniquely placed to contribute to the UNEP report requested by the UNEP Governing Council, and accordingly, it coordinated the development of a F&T partnership report that will address sources of mercury released to the atmosphere, spatial coverage and temporal trends of mercury measurements, and understanding atmospheric mercury dynamic processes on hemispheric and global scales.

The report is publically available at:

<http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/Activities/tabid/4497/language/en-US/Default.aspx>

Structure of the Report

The outline of the F&T Report accounts for an extensive discussion had within the F&T and inputs received by all F&T members.

The F&T report is structured in three parts, each part includes a summary of key elements highlighted in the chapters.

Part-1 is aimed to provide up to date information of mercury emissions from major industrial sources, including point and diffuse sources, and natural sources.

Part-2 will provide an overview of spatial and temporal distribution of mercury measurements performed in recent years at terrestrial and off-shore sites and key elements for future monitoring programs.

Part-3 is aimed to provide up to date information on global atmospheric mercury models currently available and will present a brief overview of the global mercury models intercomparison currently on-going in the UNECE-HTAP Task Force.

Appendix B. Contributions of Partners

B1 - Contribution from Italy

Italy is leading the UENEP F&T in cooperation with Canada, Japan, US and UNEP. The work plan of the Partnership along with a description of the progress made in 2006, the specific contributions of the partners and products of the Partnership are reported in detail on the Partnership's web site at: <http://www.cs.ija.cnr.it/UNEP/index.htm>. Italy will continue to maintain and update the web site.

The Italian contribution to the Partnership is related to different aspects of atmospheric mercury emissions, transport and transformations on regional and global scales. Activities are carried out in the Mediterranean region, in China and in Polar regions as well. The specific projects and programs led by Italy in 2006 and planned for the following two years are briefly reported below.

MED-OCEANOR Programme: It has been /is supported by Italian CNR and European Commission. It is aimed to investigate the air-water exchange processes and MBL chemistry that influence the cycling of mercury in the region. The program was started in 2000 and is projected to continue in the future. It

involved several Mediterranean countries i.e., France, Slovenia, Greece, Spain, Morocco, Egypt, Israel. Intensive atmospheric, surface and deep sea measurements were performed and training activities were provided to several participants on different state-of-the-art methods for assessing the mercury levels in air and water samples (see: http://www.cs.ii.cnr.it/research_project.htm).

MERCYMS project: It was funded by the European Commission as part of the FP5 and was aimed to investigate on mercury cycling in the Mediterranean region. The projects ended in 2006 and now is continuing the distribution of its products to major national and international policy makers and stakeholders in EU and abroad (see at: <http://www.cs.ii.cnr.it/MERCYMS/project.htm>).

ESPREME project: It was funded by the European Commission as part of the FP6 and is aimed to develop an assessment of atmospheric trace metals pollution, including mercury, in Europe and possibly to assess the relative contributions of EU countries compared to the long range transport contribution originated in other continents. More information can be found at: <http://www.cs.ii.cnr.it/espreme.htm>.

AME project: It is a three-year project funded by the Italian Ministry of Environment and it is a joint project with SEPA in Beijing and other Chinese institutions at province level. It is aimed to assess spatial and temporal distributions of atmospheric mercury in the City of Suzhou, China and possibly the source-receptor relationships. The project includes tasks on measurements and modeling. Training activities will be carried out to interested parties. More information can be found at: <http://www.cs.ii.cnr.it/AMSUCY/index.htm>.

UNECE-HTAP Task Force, WG on Hg: Italy is Leading the Working Group on Mercury. The major goals of this WG are to perform a modeling intercomparison for assessing the effectiveness of emission reduction measures and an assessment of the relative contribution of natural vs. anthropogenic sources on hemispheric and global scales. Preliminary tests of the models involved was carried in 2006. The final results will be part of the 2009 UNECE-HTAP report.

Polar research program: As part of the IPY in 2008, Italy will perform an intensive campaign in Ny-Alesund on the Svalbard Islands at the Italian research site. The aim of this project is to investigate on mercury depletion mechanisms that affect the transfer of mercury from the atmosphere to surface snow. More information can be found at: <http://www.htap.org>, <http://aqm.jrc.it/HTAP>.

B2 - Contribution from Japan

Monitoring Project for Ambient Atmospheric Mercury and Other Heavy Metals in Remote Background Areas – Japan started a monitoring program that will provide background air monitoring data of mercury and other heavy metals to contribute to the understanding of their atmospheric long-range transport. For this purpose, the Ministry of the Environment started a pilot project at the Cape Hedo Atmosphere and Aerosol Monitoring Station in Okinawa, in February 2007. The objectives of the pilot project are to:

- Monitor current levels of toxic trace elements, including mercury, in air, particles, and precipitation;
- Obtain useful information on the long-range transportation of trace elements in Asia-Pacific region;
- Develop monitoring methodologies and measurement items;
- Contribute to the international efforts in ambient atmospheric monitoring.

Measurement items, sampling and analysis:

Mercury speciation in atmosphere such as gaseous elemental mercury (Hg(0)), divalent reactive gaseous mercury (RGM), and total particulate mercury (TPM) are continuously measured with Tekran mercury speciation system.

- Airborne particles are collected on a polytetrafluoroethylene filter using a low-volume sampler. Toxic trace elements including Pb, Cd, Cu, Zn, As, Cr, V, Ni, etc..., in particles are analyzed with the inductively-coupled plasma mass spectrometer (ICP/MS) once a week.

- Precipitation samples are collected using an automatic wet-only sampler, and toxic trace elements are measured once a month. Toxic trace elements and their analytical methods are the same as those of particulates.

III. Modeling fate of mercury species in multimedia environment:

Long-range transport of mercury species has been simulated by a number of atmospheric transport and chemistry modeling frameworks. Although atmospheric transport and resultant deposition are believed to be the major source of entry into surface environment, inter-media processes between air and surface media including water, soil and others may not necessarily be described in existing modeling frameworks sufficiently. National Institute for Environmental Studies has developed a multimedia-modeling framework to assess the inter-media transport of mercury species through media-boundaries based on the multimedia-modeling framework for organic chemicals, which mainly focuses on the inter-media transport of media boundaries explicitly. By combining existing chemical/transport atmospheric modeling experiences to the inter-media transport simulation, more comprehensive fate modeling including both air and terrestrial/aquatic environment would be possible for more integrated assessment purposes. The objectives of the pilot project is to:

- develop inter-media transport scheme and process descriptions for mercury species by expanding the multimedia modeling frameworks from the monitoring outputs.

Methods: Multimedia fate model G-CIEMS is used as the basis of the study, which is now under POP model inter-comparison study by MSC-E/EMEP. Hg(0), RGM (Hg²⁺), Particulate and MeHg are the first set of target chemicals for the study.

- Results of the existing and our atmospheric monitoring information are to be used in the process description and validation of simulation results.
- After box-model study of multimedia processes, integration to the atmospheric chemistry and transport scheme will be explored for the final goal of the project.

B3 - Contribution from South Africa

A South African Mercury Assessment Programme (SAMA) was established during 2006 to serve as the principal programme through which mercury research in South Africa is co-coordinated. Its are: to co-ordinate and facilitate high-quality research relating to Hg pollution in South Africa; to develop and execute a co-coordinated plan to achieve this, based on partnerships; and to provide opportunities for collaboration and training for young scientists. More information can be obtained at: www.waternet.co.za/sama. To date, partners of the SAMA Programme focused on different aspects of mercury research. As mercury acts differently in different systems, emphasis was placed on all systems (water, air, terrestrial environment, and human health). The projects undertaken by the partners are as follows:

CSIR: A few pilot studies, funded by the CSIR and National Research Foundation, were undertaken. The studies form part of a larger project that focuses on:

- A mercury inventory for South Africa, and developing scenarios on its emissions;
- A national survey of mercury pollution and impacts in South Africa to determine the sources, fate and transport of Hg in South Africa, in air and water resources;
- Mapping information obtained in national survey, using large-scale multidisciplinary mapping;
- Evaluating the impacts of artisanal gold mining on human health and environmental health; and
- Developing and/or identifying appropriate mitigation processes or actions for ameliorating the Hg pollution that has been identified.

A mercury inventory on coal combustion (its sources and emissions to the environment) was established during 2006, and information will be published in the peer reviewed literature during 2008. In order to complete the inventory and to provide updated information to UNEP, this study will be extended during 2007 to include other mercury sources (household appliances, landfill sites, cement factories, waste incinerators, etc).

A pilot study on the fate and transport of mercury in selected South African rivers in the Western Cape (Liesbeek, Black, Eerste/Kuils, Silvermine), and Gauteng and Mpumalanga (Steenskoolspruit, Vaal River) was undertaken. Total mercury and methylmercury analyses were made of all air, water, sediment and biota samples collected, in collaboration with the University of Connecticut, USA. Detailed Hg studies were undertaken in collaboration with University of Connecticut, USA, and as part of MERSA, Norway, during 2007. A historical analysis of mercury in sediment of selected water resources was undertaken during 2006, and will be continued during 2008.

A pilot study on mercury emissions from artisanal gold mining in South Africa was undertaken during 2007. The study focused on the Limpopo/Mpumalanga Provinces, where artisanal gold mining is believed to take place.

Department of Water Affairs and Forestry: Funded by the Department, total mercury in water resources has been measured since 1975, as part of South Africa's National Monitoring Programme. Monitoring of water resources will continue.

SASOL: Funded internally by SASOL, research has focused on understanding mercury released from coal during the Fischer-Tropsch process; and also focuses on the safe disposal of the elemental mercury that is recovered. Research will continue.

University of Stellenbosch: This group focuses on analytical method development for mercury speciation, with new methods for detecting elemental and inorganic mercury at low levels, being successfully developed. The method has been tested at the Cape Point Global Atmospheric Watch station, as a pilot study. The group is currently developing this method for other mercury species. Capacity is also being developed on a new technique to study the impact of humic acids on mercury and methylmercury bioavailability.

ESKOM: Funded internally by ESKOM, studies focus on the different mercury species emitted during coal combustion processes in electricity generation, since it is likely that species other than oxidized and particulate mercury is released during coal combustion.

The SAMA Programme envisages that in ten years from now, a completed baseline study will provide South Africa with a comprehensive view of mercury measurements in the country. Baseline data will be updated continuously and disseminated throughout a proposed mercury monitoring network.

B4 - Contribution from USA

U.S. Partners (to date): U.S. Environmental Protection Agency (USEPA) (Facilitator), U.S. National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Energy (DOE), U.S. Geological Survey (USGS), Electric Power Research Institute (EPRI).

USEPA will continue taking speciated measurements of atmospheric mercury (together with particulate matter and other criteria pollutants) at the U.S. National Oceanic and Atmospheric Administration's high altitude station at Mauna Loa, Hawaii. Data obtained during 2007 and 2008 are to be shared, at intervals deemed appropriate with notice of availability to be posted on the UNEP web site. USEPA will participate in additional monitoring, source receptor modeling and training activities as circumstances and resources permit, participate in various meetings among Global Partnership partners that would be facilitated by Italy (the lead country) and contribute to various reports under the Partnership. At Italy's request, USEPA will arrange teleconferences among Global Partners.

NOAA will 1/share its monitoring data, through a web link to be placed on the Partnership website, for three new long-term mercury monitoring stations within the U.S. that will measure ambient concentrations of mercury species as well as other pollutants, e.g., SO_x and PM, as well as mercury deposition 2/ continue to provide worldwide meteorological data through the READY web-based information system and various models for computing atmospheric trajectories and dispersion, including HYSPLIT and 3/ participate in

additional monitoring, modeling and training activities, including technical advice to other countries on developing a mercury monitoring strategy.

USDOE's National Energy Technology Laboratory (NETL) will 1/ share atmospheric monitoring data it has collected within the U.S. and information about sampling and monitoring methodologies. 2/ continue its mercury work in China, developing and, after consultation with Chinese collaborators, sharing project information as deemed appropriate. As part of the latter project, NETL will maintain its ongoing partnership with the Chinese Ministry of Science and Technology (MOST) and Zhejiang University, which includes developing mercury emission factors for estimating emissions from coal-fired plants. To this end, speciated measurements have been taken at a sample of Chinese plants having different technologies. The dialogue with the Italian-led Suzhou project will be continued.

The USGS will share its World Coal Quality Inventory, a database of 2,800 samples of mercury (and other) contaminant concentrations from more than 80 country collaborators as well as 7,500 samples of US coals (http://energy.er.usgs.gov/coal_quality/wocqi/collaborators.html). These data were recently used to develop DOE's mercury emissions inventory in China (Streets et al, 2005). These data may be useful in combination with the International Energy Agency (IEA) Clean Coal Center's Coal Power 5 database (<http://www.iea-caol.org.uk/content/default.asp>).

EPRI will expand its atmospheric mercury measurement program to better understand transboundary transport through continued support of high altitude ground-based monitoring (Mt Bachelor, Oregon) and aircraft soundings, including an investigation of in-cloud processing of mercury in marine and continental environments. EPRI will continue its mercury global and regional modeling, using the "one atmosphere" models as well as studies on mechanisms. EPRI will also continue work on background mercury fluxes, including work at various impacted and natural sites and undertaking aircraft measurements to elucidate natural sources of emissions, e.g., volcanoes and wildfires. Finally, EPRI will continue its support for the Mercury Deposition Network (MDN) data analysis, data quality, data interpretation and data measurement programs and will investigate further initiation of a background site in California. Results will be shared with the Partnership by posting reports at www.epri.com.

B5 - Contribution from Canada

Canada maintains a domestic mercury emission database under the National Pollutant Release Inventory (NPRI) program.

Several sites across Canada have been measuring total gaseous mercury using the Tekran 2537A continuous measurement instrument since 1997. The data are publicly available in Environment Canada's NAtChem database. The standard operating procedure (SOP) is available upon request and has been used throughout Canada, the US and in Europe. A quality control (QC) procedure and a QC software package for measurements within this Network have been developed and can be shared. Atmospheric speciation measurements are being made with the Tekran 1130/1135 speciation system in research mode at several sites. A SOP, QC protocol and QC software package have been developed and can be available on request. This measurement system will be assessed for operational use in the network. Canada and the United States have initiated discussions leading toward the development of a mercury dry deposition network.

The level of mercury in precipitation is determined at sites across Canada as part of the Mercury Deposition Network (MDN). The data are publicly available on the MDN website. Canada conducts mercury processes research aimed at understanding environmental pathways by which mercury is cycled.

Canada works internationally through agreements such as the NAFTA CEC North American Regional Action Plan (NARAP) on mercury, New England Governors/Eastern Canadian Premiers (NEG/ECP) action plan on mercury, Great Lakes Binational Toxics Strategy and the Arctic Council Action Plan on Mercury and contributes to the Arctic Monitoring and Assessment Program and the United Nations Environment Program.

Canada is collaborating with other Arctic countries (Norway, Denmark, Russia and USA) to develop a circumpolar network of TGM measurements. Canada will be a co-author on the next Arctic Monitoring and Assessment Programme (AMAP) assessment. This document will report on the advances in knowledge made since 2002 on mercury depletion events and their contribution to elevated levels of mercury in the arctic environment. During the 2007-2008 International Polar Year (IPY) Canada has proposed to investigate the transport, cycling and deposition of mercury to the polar environment (using an interdisciplinary approach) and to collaborate with Chinese, Vietnamese and Japanese researchers on the transpacific transport of mercury from Asia.

Canada has developed the global/regional atmospheric heavy metals model (GRAHM) for the distribution of atmospheric mercury. Using this model, source-receptor relationships were developed to estimate the intercontinental transport of mercury to various regions. Canada participated in two model intercomparison studies (one EMEP study led by MSC-E and one North American study led by US-EPA). Canada is participating in developing the work plan of the use of the multi-model approach in support of the UN-ECE LRTAP task force on hemispheric transport of pollutants. Canada will be contributing to the interim report (mid 2007) and the final assessment report of the evidence for intercontinental transport (2009). GRAHM will be participating in the model evaluation and intercomparison study for mercury.

Through the Commission for Environmental Co-operation, Canada provided instrumentation and training to measure GEM concentrations at various sites in Mexico, aided the implementation of 2 MDN sites in Mexico and is assisting Mexico to seek funding to continue and expand these programs (with USA)

B6 - Contribution from UNEP

Development of Emission Inventories – UNEP with support from the Government of Denmark recently updated the ‘Toolkit for Identification and Quantification of Mercury Releases’ based on initial experiences in using the toolkit. The toolkit is a key information gathering tool available to countries in assessing their national situation.

Contact person: Gunnar Futsaeter, UNEP Chemicals.

UNEP Emissions Report – UNEP has collaborated with the partnership on the development of the UNEP Emissions Report required under Governing Council Decision 24/3 IV, paragraph 24. This report was presented to Governing Council 25/5 and is available at the following link:

<http://www.unep.org/hazardoussubstances/Mercury/MercuryPublications/ReportsPublications/tabid/3593/Default.aspx>

Document Description: ‘Global Atmospheric Mercury Assessment: Sources, Emissions and Transport’, December 2008. This document presents best available data on atmospheric mercury emissions from various sources, atmospheric transport and deposition and current results from modelling on a global scale. It is an overall summary for policy makers. Contact Person: Gunnar Futsaeter, UNEP Chemicals.

Part v)**Business Plan of the Mercury in artisanal and small-scale gold mining partnership area, 19 August 2010**

(NOTE: This is the business plan version of 4 February 2009 with editorial revisions and updates proposed by UNEP.)

This Business Plan describes the activities of the Artisanal and Small Scale Gold Mining (ASGM) partnership area of the United Nations Environmental Programme (UNEP) Global Mercury Partnership. It serves as a planning and communication vehicle both for Partners and others.

The purpose of the business plan is to provide a framework for developing and implementing projects. The business plan is to serve as a resource for providing a common, cohesive structure for implementing the UNEP Global Mercury Partnership.

The partnership is open for government and stakeholder participation. In UNEP Governing Council Decision 24/3 part IV paragraph 27, UNEP is tasked with working in consultation with Governments and stakeholders to strengthen the UNEP Global Mercury Partnerships. New activities and partners are encouraged within the UNEP Global Mercury Partnership.

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I. SUMMARY OF THE ISSUE

- The artisanal and small-scale gold mining (ASGM) sector remains the largest demand sector for mercury globally (best global estimates put mercury use in the range of 650-1000 tonne/year in 2005). Virtually all of the mercury used is released to the environment.
- This sector produces 20-30% of the world's gold (approximately 500-800 tonnes in 2005), and involves an estimated 10-15 million miners, including 4.5 million women and 1 million children. With the price of gold rising to \$900 oz in December 2007, a gold rush involving additional poverty-driven miners is currently underway in many countries and the number of miners using mercury could increase in the coming years.
- Serious long-term environmental health hazards exist for populations associated with or downstream/wind from mining operations, often including indigenous peoples.
- ASGM sites are usually remote and scattered. The practice is informal and in some countries illegal. Reaching out to individual miners is challenging. Encouraging sustained behaviour change of miners requires understanding and overcoming social and cultural barriers.
- Mercury amalgamation is currently the most commonly used method to extract gold in artisanal and small-scale gold mining due to its ease of use, low cost, and abundant supply. Whole ore amalgamation dramatically increases the potential for the excess mercury in use to be released to the environment. In some cases, this excess mercury approaches 90% of what is used. This practice accounts for a growing portion of the more than 1/3 of all mercury demand in ASGM. Preferred techniques involve many options for concentrating the ore prior to amalgamation, greatly reducing the amounts of mercury used.
- Alternatives to mercury use in artisanal gold mining exist, but at present most are not widely known and are generally ore -specific in their applicability. Cyanide chemical extraction, the only other widely-practiced method, also presents risks to human health and the environment, and its use can create additional problems. When used with or after mercury, the production of methylmercury is enhanced.
- Higher mercury prices can act as an economic incentive for miners to reduce mercury releases and can create demand for alternative technologies.
- A niche market for fair trade artisanally mined gold is emerging. Associated with this niche market is the opportunity to generally raise awareness on this issue and promote cleaner ASGM practices. Supply of fair trade gold to the market remains limited. At present there is no independently certified ASGM gold available in the market. It should be available in 2009. The only certified mercury free gold is the Green Gold of Colombia, which is a registered trademark.

II. OBJECTIVE OF THE PARTNERSHIP

The objective of this partnership is continued minimization and elimination of mercury uses and releases in artisanal and small scale gold mining. The Partnership aims to complement and supplement existing programmes in key, strategically selected ways that ensure that mercury reductions on the ground are globally significant. Consistent with the United Nations Declaration on the Rights of Indigenous Peoples, the partnership area will meet its objectives by:

- Providing assistance to developing countries and countries with economic in transition to formalize / regulate the ASGM sector.
- working with governments to address financial, policy and regulatory options which can improve the ability of mining communities to achieve significant reduction of mercury use and emissions.
- providing economic, technical, and educational information / guidance to miners and mining communities.
- working within supply chains to promote environmentally sound gold products.

Target: The Partnership promotes a target of a 50 percent reduction in mercury demand in ASGM by the year 2017. To achieve this, the Partnership seeks to eliminate the practice of whole ore amalgamation. Additionally, the Partnership will work to promote other changes in ASGM mining and processing techniques to achieve measurable reductions in mercury releases.

III. PRIORITY ACTIONS

1. Support government efforts in setting national objectives/reduction targets for ASGM, including:
 - Facilitate the development of ‘Strategic Country Plans’.
 - Provide tools to assist in understanding and addressing the issue, including formalizing the ASGM sector.
 - Characterize extent of mercury consumption and emission, as required, building on existing information.
2. Eliminate the practice of whole-ore mercury amalgamation and achieve additional reductions in mercury use and emissions throughout the artisanal gold mining sector through the following:
 - Document and make available, in a way that is helpful and convincing to miners, ways to increase gold yield from alternative practices compared to existing practice.
 - Encourage and implement use of best available technology and best environmental practices, including non-mercury technologies, to reduce or eliminate mercury consumption and releases into the environment.
 - Encourage legislators to make the use of retort compulsory.
3. Promote awareness and adoption of clean ASGM practices and technologies among governments, NGOs, miners, cyanide manufacturers and other stakeholders. Priority activities include:
 - Promoting and adapting, based on site specific needs, non-mercury technologies, through activities such as disseminating information about the applicability and availability of non-mercury mining technologies and practices, including information and stewardship on cyanide use. This will include information of the incompatibility between cyanidation and amalgamation.
 - Increasing the availability and the dissemination of user-friendly information to communities and community-based groups regarding mercury risks to reduce occupational/ environmental exposures and environmental contamination.
 - Increasing cadres of trained local specialists to work in communities on a long-term basis to foster behaviour change among miners, through for example regional training centres.
 - Implementing projects that:
 - Create opportunities to locally manufacture affordable ore concentrating equipment.
 - Expand the use of mercury vapour control technologies and retorting in small-scale gold processing with amalgam processing throughout the chain of custody between gold miner and end-user.

4. Explore innovative market-based approaches, including:
 - Support the development and implementation of fair trade standards, such as the Association for Responsible Mining's (ARM) Standard Zero.
 - Promote environmentally sound gold products locally, regionally and globally through, for example: raising awareness of gold consumers, building capacity among miners to meet mercury management components of fair trade programs and building organised miners' capacity to access micro-credit.

IV. EVALUATION

The Partnership areas will create a mechanism to allow interested parties to monitor on-going efforts and will report annually, and upon request, to UNEP Governing Council through UNEP on progress under the Partnership. Partners will also provide periodic reports to UNEP upon completion of priority activities. Results will be reported in terms of measurable results related to the Partnership objectives, consistent with the targets and milestones identified in the Partnership efforts. Results can be captured in various dimensions, such as:

- Achievement of long-term reduction goals.
- Was there less mercury purchased and used in the communities where technical activities are carried out?
- How much less mercury is now used in the target countries compared to before the project was undertaken? (baseline is the 2005 data from the 2006 UNEP Trade Report)
- What are the emissions reductions achieved?
- Where available and where feasible, number of kilograms of gold produced by ASM for one kilogram of mercury used in the sector.
- Availability of guidance tools to build capacity at the local level.

The latest evaluation report to UNEP is available as an Information Document to the second meeting of the Partnership Advisory Group, Document UNEP(DTIE)/Hg/PAG.2/INF 5 - Reporting of the mercury in artisanal and small scale gold mining partnership area.

V. PARTNERSHIP EFFORTS AND TIMELINES

UNIDO Global Mercury Project (GMP)

The UNIDO GMP has been focused on this important problem in six pilot countries for the past five years in UNIDO's GMP Phase I: Brazil, Sudan, Indonesia, Lao's People's Democratic Republic, Tanzania and Zimbabwe.

Phase II is being planned on a global scale. Funding is currently being scoped for UNIDO GMP Phase II. Limited funding is secured.

Many lessons were learned from the first round of UNIDO's GMP efforts with relevance to future application:

- There is no single solution that can be applied to all sites.
- Identifying the needs of the miners proved helpful but other issues may have prevented a complete solution.
- artisanal miners will only implement any process if they feel that there is economic advantage associated with environmental practices.
- Creating a greater presence in the field allowed for better implementation.
- Solutions happen with a continued, not short-term, presence.
- Flexibility in implementation and connectivity to other projects are essential.
- Mercury replacement will take time, in the interim promoting better operations will achieve substantially reduced releases.

Within the UNIDO GMP context, after an analytical survey of needs, a prescriptive approach involving one or more of the following activities will be initiated. In brief summary, a menu of the activities planned under the GMP include:

- Field-level technical activities such as inventories of project sites, environmental and health assessments and demonstrations of affordable and local technologies for improved gold processing.
- Awareness campaigns related to the danger of mercury use.
- Training of local trainers to disseminate information on technology to artisanal miners.
- Assisting in the improvement of national and international policy.

More information, including an extensive database of related publications is available on the project website: <http://www.globalmercuryproject.org/>

Association for Responsible Mining – Standard Zero

- Under the Association for Responsible Mining (ARM) standard zero, responsible mercury and cyanide use are allowable for certain certification levels but mercury-free gold would meet a premium “green gold” standard.
- The standard zero of ARM proposes a process to support the miners organizations to minimise the use of mercury and cyanide over an agreed upon period of time, through implementation of responsible practices and technologies to mitigate impact on the environment and human health.
- ARM is working on field-testing the Standard Zero in four countries in Latin America: Bolivia (2 cooperatives in Cotapata), Colombia (Choco – 2 community councils, and Nariño – 2 cooperatives), Ecuador (Bella Rica), and Peru (Central Peru – 3 community miners companies). Both Nariño and Peru have important progress to show in mercury reduction. Choco does not use it at all. These are key showcases for dissemination, which can be reinforced through a miner` exchange program to induce horizontal learning.
- Pilot projects will be implemented in Africa in 2008-2 and 2009 (Mozambique, Tanzania and Uganda).

More information on <http://www.communitymining.org/>

Communities and Small-scale Mining (CASM):

The Communities and Small-scale Mining (CASM) initiative was launched in 2001, in response to a critical need for integrated, multi-disciplinary solutions to the complex social and environmental challenges facing ASM communities, and improved coordination between those working in this sector.

CASM is a global networking and coordination facility with a stated mission to “to reduce poverty by improving the environmental, social and economic performance of artisanal and small-scale mining in developing countries.” CASM is currently chaired by the UK’s Department for International Development and is housed at the World Bank headquarters in Washington, D.C.

Resourced by a multi-donor trust fund, CASM can provide support to, and mobilize practical expertise from, its global network of members. Its activities range from ASM initiatives in many countries—working with companies, governments, civil society and miners themselves—through to engagement in international development policy dialogues. CASM’s engagement in capacity building and community level projects with country partners and miners has helped CASM in its important advocacy role to communicate to international forums and development agencies the potentially positive development influence that ASM can have, based on evidence provided by practical experience.

The United States has partnered with the World Bank’s CASM Program to develop a mercury web page on the CASM website, with links to UNIDO, UNEP, and other resources. The intent is to reach those stakeholders who use CASM’s services but who may not be aware of the mercury issue or its solutions. Next steps include developing a process for updates and improvements to the site, and collection of public

awareness documents and tools which can be readily accessed from the site and adapted for local languages and situations.

More information available on <http://www.artisanalmining.org/index.cfm> (click on right-hand “of interest” button)

Small-scale Gold Processing Project:

The United States, local governments in Brazil, UNIDO and UNEP have partnered to reduce mercury emissions from gold processing shops in the Amazon. The Partnership has verified baseline measurements in the Amazon, and developed options for locally-manufactured appropriate technology solutions for the capture of mercury vapours in the gold shops. A prototype technology was installed in 6 gold shops in 2 cities in the Brazilian Amazon and tested at over 80% efficiency of mercury vapour capture. The total estimated mercury reduction to date is 78.75kg.

The project is engaging other partners to disseminate the technology further in Brazil, and into other countries. A report of the Brazil technology demonstration is available online, including case study information and a manual for building and installing the technology. A site assessment for gold refining shop applications in the Peruvian Amazon was undertaken in May 2008, with a return visit and pilot mercury capture system installation anticipated in September 2008. An outreach workshop in Brazil will occur in the September/October timeframe.

More information on http://www.artisanalmining.org/index.cfm?page=page_disp&pid=4264

Senegal Improved Artisanal Mining Technology and Training Project:

Senegal has partnered with the United States, UNIDO, the Blacksmith Institute, and local NGOs to reduce the use, emissions, and health effects of widespread mercury use in the gold mining region of eastern Senegal, near Tambacounda. Beginning with a baseline assessment of mercury use by field miners, partners developed and implemented a plan to train community-based NGOs and health workers on appropriate technologies for mercury capture and reuse, and safe mercury management techniques. Over 800 miners have been trained in the use of hand-held retorts as a mercury collection device for use during gold amalgamation in the field. Over 250 miners have purchased retorts and about 94% report that they use these retorts consistently in the amalgamation process, with mercury release reduction to date of over 38.5kg.

To ensure buy-in and sustainability of cleaner technology approaches, USEPA is planning a meeting to be hosted by the Government of Senegal, in mid-September, 2008, where government officials, academics, and representatives from the artisanal gold mining community will develop and agree to promote a model strategy for the remaining 8,000 miners to ensure mercury reduced exposure.

Next steps include a regional approach to encourage neighboring mining countries to develop action plans for dramatic reductions in mercury use, emissions and exposure throughout the artisanal gold supply chain.

More information on <http://www.chem.unep.ch/mercury/Sector-Specific-Information/Artisanal-small-scale-mining.htm>

Mongolia Mining Project:

Mongolian NGO Sans Frontiers Progress (SFP) and PACT partnered with the United States on an awareness and education and training campaign about mercury use, harm reduction strategies, and alternative technologies including a non-mercury sluice in the South Gobi mining region. A data collection component assisted in assessing the national mercury picture. Key results include broad dissemination of public awareness materials, development and dissemination of guidance on mercury free extraction methods, completion of baseline data survey.

More information on http://pact.mn/mercury_awareness.html

National Strategies:

Partners will help stakeholders in key countries to adopt reduction goals and to create a strategic plan that describes a specific timeline of activities to achieve specified mercury reductions. The purpose would be to bring stakeholders together to build on what is being done and develop an integrated strategy and synergies.

The national strategy would, amongst other things, consider:

- What will it take to achieve significant reductions?
- Which communities need to be worked in?
- How much mercury do they use now?
- What practices do they need to convert to?
- What would an educational/community-based initiative look like?
- How many people would need to be involved?
- What would be the timeline?
- What kind of government resources would be required?
- What role could NGOs play? What role would the private sector play?
- What information do we need to gather to set these priorities? Who can do that? Who can provide the resources?

UNEP Quick Start Project in South East Asia and South America:

This is an 18 month project targeted for completion in early 2010.

The Asian project initially focuses on activities in the Philippines and Cambodia and the South American project focuses on Bolivia and Peru. Both projects include a broader regional element towards the end of the project. The main coordination will be at a national level (i.e. planning, organization of work and workshops, national plan), and an inception workshop is planned for mid 2009. Other stakeholders from environment, health, and mining ministries, local authorities, NGOs, etc. will be taking part in the project and its relevant activities. A similar project in Africa is planned.

Expected outcomes of the project:

- National Working Group is formed. National workplan prepared.
- Guidance on the development of a national strategic plan is developed.
- Multi-stakeholder national strategic plan for ASGM is developed at the national level.
- Regional collaboration and coordination is enhanced through exchange of experiences and lessons learned on a regional level. Awareness of governments and stakeholders is raised. A regional action plan will be developed within the region as a result of the regional conclusion workshop.
- Stakeholders identified. Coordination of national stakeholders as well as public participation in activities is improved.

Harmonization System for responsible artisanal and small scale metals production

The Madison Dialogue Metals Working Group is working to develop an information-sharing and harmonization system for responsible artisanal and small-scale metals production. This group is building on existing activities and initiatives and is being facilitated by EARTHWORKS.

Contact Person: Scott Cardiff scardiff@earthworksaction.org"

Completed Projects

Suriname Training Project:

University of Bremen, UNIDO, Suriname and UNEP have partnered to train small-scale gold miners in clean technology, training of personnel to quantify atmospheric mercury emissions and its impact on health. The project was funded (US\$ 39,000) through the UNEP Mercury Trust Fund. Results are expected by the end of 2007 and will be posted on the UNEP web-site.

VI. OPPORTUNITIES

High profile Fair Trade Gold Campaign

There is an opportunity for a government or other stakeholders to launch a high profile 'Fair Trade Gold' campaign with gold consuming populations (industry and individuals) to increase marketing of 'Fair Trade Gold', work to streamline existing initiatives and develop international standards and to build profile.

'Standard Zero for Fair Trade Artisanal Gold' is a set of draft principles and standards produced under the coordination of the Association for Responsible Mining, ARM in partnership with FLO and FTF. They are an adaptation of the Fair Trade Labelling Organization (FLO) standards for small producers to the situation of ASGM, and follow the characteristic Fair Trade grouping of social, economic, labour and environmental development standards.

An associated capacity building project would be integrated into any campaign in order to build continued and assured supply of 'Fair Trade Gold' to consumers. Such a campaign could begin sometime in 2009 when it is believed that Fair Trade Gold will be available on the market.

Micro-finance initiative

There is an opportunity to scope out activity in the context of microfinance. Partners are encouraged to consider this aspect.

VII. RESOURCE MOBILIZATION

Partnerships and the associated business plans are a way of mobilizing funding in a systematic, focused and harmonized way. The Partnerships' 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.

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 Partnership will serve as a mechanism to consolidate and leverage funding for large, strategic projects.

UNIDO is drafting a phase II proposal for a Global Mercury Project to submit to the Global Environment Facility (GEF). Co-financing is currently being scoped for UNIDO GMP Phase II. Limited funding is secured.

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).

UNEP stands ready to assist countries to develop additional proposals addressing mercury issues under the SAICM Quick Start Programme (see www.chem.unep.ch/saicm/qsp.htm).

Administration ¹² and Management Support		Value	Source of Support
Partnership Lead	<ul style="list-style-type: none"> Facilitation and support of the partnership. 	¼ person year	UNIDO / NRDC
Organization Point of Contact	<ul style="list-style-type: none"> Preparing Annual Business Plan. Preparing for meetings. Logging meeting notes, tracking action items. Collaborating with partners to strategically link to overall partnership goals and objectives. 	¼ person year	UNIDO / NRDC
UNEP Secretariat Support	<ul style="list-style-type: none"> Managing the clearinghouse/website. Taking in funding from multiple sources to fund projects. Developing activity proposals in collaboration with partners. Assisting the lead in following up activities by partners. Other tasks as requested. 	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>	In-kind support from USA 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.
Teleconferences	Estimated 3 per year	Teleconference lines	In-kind support from USA
Other	Communication materials		In-kind support from Partners.

VIII. BUSINESS PLANNING PROCESS

The partners and interested stakeholders will need to establish how the future business planning process will operate. It is assumed that the business plan will be reviewed regularly and adjusted accordingly by the partners.

Ideas and thoughts for improving efforts would be welcome on means to identify and establish priorities, how best to take stock of efforts, determine whether the direction of the Partnership or the various projects needs to be reconsidered, and measure the productivity of the efforts under the Partnership.

All partners will have an equal voice in participation. When possible, financial support should be provided to partners from developing countries to attend Partnership meetings.

¹² Administrative support doesn't cover the cost of administering individual projects.

IX. LINKAGES

Development of Emission Inventories

UNEP with support from the Government of Denmark recently updated the 'Toolkit for Identification and Quantification of Mercury Releases' based on initial experiences in using the toolkit. The toolkit is a key information gathering tool available to countries in assessing their national situation.

Contact person: Gunnar Futsaeter, UNEP Chemicals.

Mercury Fate and Transport Partnership.

The ASGM Partnership has a strong interest in improving emissions monitoring, data collection and reporting of mercury use in ASGM; including contributing to published data dissemination to support modelling efforts assessing extent of problem, and against which to demonstrate progress. The ASGM Partnership will link closely with the Fate and Transport Partnership. The process will need to be established.

Mercury in Waste Partnership.

The ASGM Partnership has a strong interest in reducing the amount of mercury present in tailings. Close links will be established with the Mercury in Waste Partnership.

Mercury Supply.

Currently, mercury is easily available with abundant supply from withdrawal from chlor-alkali plants, release of stockpiles, and production as by-product. Market forces are working against the development and adoption of alternatives to mercury use. Greater limitation on trade is likely to increase the price of mercury, resulting in increased financial viability of alternatives, an incentive for research into alternatives, and pressure on mercury users to ensure that it is used in the most efficient and effective manner, with minimal environmental releases. In comparison to an increased mercury price, the cost of technology to minimise or prevent releases to allow re-use also becomes more financially attractive. The Partnership will liaise with the Mercury Supply partnership area.

Contaminated Sites

In accordance to the UNEP Governing Council (GC) decision of 24/3, a report on contaminated sites will be prepared for GC 25 in February 2009. The report will draw upon existing information and provide an analysis on the extent of contaminated sites, the risks to public and environmental health of mercury compound releases from such sites, environmentally sound mitigation options and associated costs and the contribution of contaminated sites to global releases. The partnership may wish to make a contribution to this report - be it in terms of a list of relevant references (required by February 2008) or drafting a section of the report in consultation with the drafting team (required by May 2008). Contact: Gunnar Futsaeter, UNEP (gfutsaeter@chemicals.unep.ch)

X. CURRENT PARTNERS

Please see Part viii of this document for the current list of partners that have submitted letters of support to the UNEP Global Mercury Partnership. There are a number of participating partners that have not officially submitted support letters.

For further details, please go to the list of partner support letters posted at the following web address:

<http://hqweb.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/CurrentPartners/tabid/3437/language/en-US/Default.aspx>

Other partners are welcome to self identify to the partnership.

Part vi)**Business Plan of the Mercury waste management partnership area,
19 August 2010**

(NOTE: This is the business plan version of 1 October 2009 with editorial revisions and updates proposed by UNEP.)

This Business Plan describes the activities of the Mercury Waste Management partnership area of the United Nations Environmental Programme (UNEP) Global Mercury Partnership. It serves as a planning and communication vehicle both for Partners and others.

The purpose of the business plan is to provide a framework for developing and implementing projects. The business plan is to serve as a resource for providing a common, cohesive structure for implementing the UNEP Global Mercury Partnership.

Through UNEP Governing Council Decision 24/3, UNEP is requested, working in consultation with Governments and other stakeholders, to strengthen the UNEP Global Mercury Partnership. The Government of Japan initiated this partnership area in early 2008 as a means of strengthening the UNEP Global Mercury Partnership.

The partnership is open for government and stakeholder participation. In UNEP Governing Council Decision 24/3 part IV paragraph 27, UNEP is tasked with working in consultation with Governments and stakeholders to strengthen the UNEP Global Mercury Partnerships. New activities and partners are encouraged within the UNEP Global Mercury Partnership.

Current partnership area lead:

Mr. Masaru TANAKA
Professor, Environmental Management Department
Tottori University of Environmental Studies
Tottori City, Japan
E-mail : ri53swme@kankyo-u.ac.jp

I. Summary of the Issue

Products containing mercury are not readily identifiable; they enter the waste stream along with other municipal, medical, and industrial waste. Therefore, the mercury concentrations in most waste streams are directly related to the amount of mercury in the products.

This partnership aims to support the objectives of Overall Goal of Partnership; minimize and, where feasible, eliminate unintentional mercury releases to air, water, and land from waste containing mercury and mercury compounds by following a lifecycle management approach.

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.

The objective of this waste partnership is:

- Minimize and, where feasible, eliminate unintentional mercury releases to air, water, and land from mercury waste¹³ by following a lifecycle management approach.

Part of the overall approach to achieve the objective above is to strengthen the capacity of developing countries and countries with economies in transition to effectively deal with mercury waste.

In order to achieve the objective, sound management of mercury-containing wastes should be implemented in the treatment process; reduction of atmospheric emissions of mercury from incineration, environmentally sound disposal of mercury waste including landfilling or recycling and recover operations. Awareness raising and training to increase knowledge and implementation of effective mercury waste treatment methods will be included as well.

III. Priority Actions

The partnership area has the following priority actions:

- a. Identify environmentally sound collection, treatment and disposal techniques for mercury waste following a lifecycle management approach, including:
 1. Identify and characterize mercury contained in waste streams by taking into account contamination level and waste volumes.
 2. Facilitate activities contributing to the finalization of the Draft Basel Convention Guidelines on the Environmentally Sound Management (ESM) of Mercury Waste. Ensure coordination between Secretariat of the Basel Convention and its respective subsidiary bodies.
 3. Implement national projects on ESM of mercury waste that can be used as case studies/demonstration projects.
- b. Assess environmental impacts of current waste management practices and processes, including providing support to countries to assess their national situation (e.g. development of national mercury waste inventories and priority setting) and needs.
- c. Promote awareness and education regarding mercury waste.

¹³ Throughout this document “mercury waste” refers to obsolete mercury, waste containing or contaminated with mercury

IV. Partner Efforts and Timelines

The partners are conducting various projects with regard to mercury waste management. Projects have been classified by the type of wastes they deal with, as shown in the box below.¹⁴

Types of wastes addressed by the partner efforts:

1. Multiple Types of Mercury Wastes
2. Waste Products Containing Mercury (e.g. batteries, fluorescent lamps)
3. Healthcare Wastes (e.g. thermometers)
4. Mine Tailings
5. Sites Contaminated with Mercury Wastes

For each project, (1) the priority action addressed by the project (noted in Section iii of the business plan above) and (2) the stage of waste management addressed by the project are indicated. This information has been provided by the project contact persons. The stages of waste management that the projects address are shown in the box below¹⁵.

- (1) The stage of waste management addressed by the project
- a. Development of policy framework
 - b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products)
 - c. Collection/separation of mercury-containing wastes
 - d. Interim storage of collected mercury-containing products
 - e. Recovery of mercury from mercury-containing products and byproducts
 - f. Removal of mercury in flue gas and wastewater from waste management activities
 - g. Stabilization and solidification of mercury-containing wastes
 - h. Final disposal of mercury-containing wastes
 - i. Other (please specify: _____)

¹⁴ Among the projects that deal with the same types of wastes, the projects that are already completed are listed first, followed by those that are on-going and under planning. Among the projects that deal with the same type of wastes and are at the same phase of implementation (i.e. completed, on-going or under planning), the projects that are implemented at the multilateral level are listed first, followed by those that are implemented at the bilateral, then the national, and then the local level.

¹⁵ This categorization has been conducted in response to the suggestions made in the Partnership Advisory Group Meeting held in March to April 2009 and in the Second Waste Management Partnership Area Meeting held in Tokyo, March 2010.

A. Partner Efforts at a Glance (Detailed project information is followed by this table)

Type of waste addressed	Name of project	Phase of project	Level of intervention	Implementing agencies	#
1. Multiple Types of Mercury Wastes	Development of Basel Convention Technical Guidelines on Other Wastes (other than those for the Environmentally Sound Management of Waste Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury)	Completed	Multilateral	- Secretariat of the Basel Convention	1
	Mercury Waste Management Project	Completed	Multilateral	- UNEP Chemicals - Governments of Burkina Faso, Cambodia, Pakistan, Philippines, and Chile - Financial support from Government of Norway	2
	(Basel Convention) Draft Technical Guidelines for the Environmentally Sound Management of Waste Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury	On-going	Multilateral	- Secretariat of the Basel Convention - With support from Japan	3
	Sub-regional Capacity Building and Technical Assistance Project on Mercury Waste in Health and Other Sectors in LAC Region	On-going	Multilateral ¹	- Secretariat of the Basel Convention (SBC) - BCCC in Uruguay - Governments of Argentina, Uruguay and Costa Rica	4
	Mercury Storage and Waste Project	On-going	Multilateral	- UNEP/DTIE Chemicals Branch in coordination with the Secretariat of the Basel Convention.	5
	Development of Draft BAT/BEP Guidance on Reduction of Mercury Releases from Waste Management	On-going	Multilateral	- UNEP Partnership Programme - Japan (Ministry of the Environment) - Other partners	6
	Environmental Sound Management of Mercury Containing Wastes	Under Planning	National	- National bodies of Syria	7
2. Waste Products Containing Mercury	Bilateral Project Between Arkhangelsk and Norway (with focus on fluorescent lamps and wastes from wood processing industry)	Completed	Bilateral	- County Administration of Arkhangelsk - The Norwegian Pollution Control Authority - The County Governor of Hordaland in Norway	1
	Mercury Dental Amalgam Collection and Recovery in	On-going	Local	- State of Massachusetts	2

Type of waste addressed	Name of project	Phase of project	Level of intervention	Implementing agencies	#
	Massachusetts, USA				
	Put on the Batteries with Batteries	On-going	National	<ul style="list-style-type: none"> - Alianza Contaminación Cero Ecologic - S.A. Gabriela Batista Visual Artist - PNUMA/ROLAC 	3
3. Healthcare wastes	Revision of the Guideline “Safe Management of Wastes from Health Care Activities”	On-going	Multilateral	- World Health Organization Department of Health Security and Environment	1
	UNDP GEF Healthcare Waste Project	On-going	Multilateral	<ul style="list-style-type: none"> - Funding Agency: Global Environment Facility - Implementing Agency: United Nations Development Program - Principle Cooperating Agencies: World Health Organization and Health Care Without Harm 	2
	Environmentally Sound Implementation of Healthcare Waste Management Plan in Nigeria	On-going	National	- Government of Nigeria	3
4. Mine tailings	Technical/Chemical and Economic Assessment of Mercury-containing and Hg-contaminated Tailings from the Mining Sector in Developing Countries	Completed	Multilateral	<ul style="list-style-type: none"> - UNEP Chemicals - Governments of Chile and Ghana - GRS as subcontractor 	1
	The Model Study in the Philippines for the Establishment of the Mercurial Environmental Pollution Improvement Program	On-going	Multilateral	<ul style="list-style-type: none"> - Department of Science and Technology, Philippines - Metals Industry Research & Development Center, Philippines - Geological Survey of Denmark and Greenland - Japan Atomic Energy Agency 	2
5. Sites Contaminated with Mercury Wastes	Peerless Green Initiative: Kodaikanal Mercury Thermometer Plant Pollution Assessment and Integrated Waste Management	On-going	Local	<ul style="list-style-type: none"> - Peerless Green Initiatives - EVIDENCE, India (NGO) - SDDIT, India (NGO) - Department of Forestry, India - Government of India, Eco-Tribunal - Anna University, Chennai (proposed) - National Atomic Laboratory, Hyderabad (proposed) 	1
	Mercury Contamination of a Water-catchment at an at-risk Eco-sensitive Rainforest Inhabited by Disenfranchised Tribals Caused by Pollution	Under Planning	Local	<ul style="list-style-type: none"> - Peerless Green Initiatives - EVIDENCE, India (NGO) - SDDIT, India (NGO) - Department of Forestry, India - Government of India, Eco- 	2

Type of waste addressed	Name of project	Phase of project	Level of intervention	Implementing agencies	#
	from Mercury Thermometer Factory in Kodaikanal, Tamil Nadu, India			Tribunal - Anna University, Chennai (proposed) - National Atomic Laboratory, Hyderabad (proposed)	

B. Detailed Information on Partner Efforts by Types of Wastes Addressed

1. Multiple Types of Mercury Wastes

Target waste	Multiple Types of Mercury Wastes (Household wastes, incineration and landfilling of wastes)
Phase of project	<input checked="" type="checkbox"/> Completed <input type="checkbox"/> On-going <input type="checkbox"/> Under planning Technical guidelines above have been adopted by the Conference of the Parties (COP)
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	1.1 Development of Basel Convention Technical Guidelines on Other Wastes (other than those for the Environmentally Sound Management of Waste Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury)
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams <input checked="" type="checkbox"/> a.2. Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste <input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories) <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products) <input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes <input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products <input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts <input checked="" type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities <input checked="" type="checkbox"/> g. Stabilization and solidification of mercury-containing wastes <input checked="" type="checkbox"/> h. Final disposal of mercury-containing wastes
Implementing agency, partners	Secretariat of the Basel Convention
Aim of project	To promote environmentally-sound management of waste
Achievements up to present	Basel Convention Technical Guidelines of relevance have been developed and adopted by the Parties to the Basel Convention, namely: environmentally sound management of household waste; technical guidelines on the incineration on land; and technical guidelines on specially engineered landfills (already developed and adopted)
Project starting/	- Technical Guidelines on Wastes Collected from Households adopted in COP 2,

completion date	1994 - Technical guidelines on the incineration on land adopted in COP 3, 1995 - Technical guidelines on specially engineered landfills adopted in COP 3, 1995
Contact information	- Person in charge: Ibrahim Shafii, Secretariat of the Basel Convention (SBC) - E-mail address: ibrahim.shafii@unep.org
URL	http://www.basel.int/meetings/sbc/workdoc/techdocs.html
Last updated on	21/06/2010

Target waste	Multiple Types of Mercury Wastes
Phase of project	<input checked="" type="checkbox"/> Completed <input type="checkbox"/> On-going <input type="checkbox"/> Under planning Final workshop scheduled in Aberdeen, 21-23 June 2010 Final report under preparation
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	1.2 Mercury Waste Management Project
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.1. <u>Identification and characterization of mercury in waste streams</u> <input checked="" type="checkbox"/> a.2. <u>Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste</u> <input checked="" type="checkbox"/> a.3. <u>Implementation of national projects on ESM of mercury waste as case studies/demonstration projects</u> <input checked="" type="checkbox"/> b. <u>Assessment of environmental impact of waste management practices (including development of mercury emission inventories)</u> <input checked="" type="checkbox"/> c. <u>Promotion of awareness and education regarding mercury waste</u> (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. <u>Development of policy framework</u> <input checked="" type="checkbox"/> c. <u>Collection/separation of mercury-containing wastes</u>
Implementing agency, partners	- UNEP Chemicals - Governments of Burkina Faso, Cambodia, Pakistan, Philippines, and Chile - Financial support from Government of Norway
Aim of project	- To increase the technical capacity to manage mercury waste in an environmentally sound manner; - Contribution to the further development of the Draft Basel Technical Guidelines
Activities	1. Review of the national mercury inventories; 2. Prioritization of mercury sources and the corresponding sectors; 3. Development of a national mercury waste management plan; 4. ESM application in selected sources and sectors; 5. Sampling and mercury analysis of environmental and human samples; 6. Final national reports and final project report; lessons learned; evaluation of project.
Achievements up to present	Final global workshop held June 2010 <Burkina Faso> · Project manager and team assigned · National workshop held in Ouagadougou, 9-11 November 2009 · National samples analyzed · Final workshop 2010 <Cambodia> · Inception workshop in June/July 2009

	<ul style="list-style-type: none"> · Identification of sectors and sources of mercury release · Development of draft waste management plan · National samples analyzed · Final workshop, June 2010 <p><Pakistan></p> <ul style="list-style-type: none"> · National inception workshop held (30 July 2009) and final workshop planned (late May 2010) · Identification of priority areas · National samples analyzed · Final workshop 2010 <p><Chile></p> <ul style="list-style-type: none"> · Coordination committee established · National workshop held (Nov 2009) · mercury analysis by CENMA · 4 national coordination meetings · Development of draft waste management plan · Information workshop for Andacello mine, remediation plan, 19 March 2010 · National samples analyzed for mercury <p><Philippines></p> <ul style="list-style-type: none"> · 1st National Workshop held (Feb 16, 2010) · Identification of priority areas · Final workshop 2010
Budget	USD 499,000, funded by Government of Norway
Project starting/ completion date	Project starting date: 08/2008 Project completion date: 06/2010
Contact information	Dr. Heidelore Fiedler, UNEP Chemicals Tel.: +41 (22) 9178187; e-mail: heidelore.fiedler@unep.org
URL	http://www.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/WasteManagement/WasteManagementProject/tabid/3538/language/en-US/Default.aspx
Last updated on	07/07 /2010

Target waste	Multiple Types of Mercury Wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	1.3 (Basel Convention) Draft Technical Guidelines for the Environmentally Sound Management of Waste Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury
Contribution to Partnership Area objectives	<p>(1) <u>Priority action addressed by the project</u></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams <input checked="" type="checkbox"/> a.2. Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste <input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories) <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste

	(2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products) <input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes <input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products <input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts <input checked="" type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities <input checked="" type="checkbox"/> g. Stabilization and solidification of mercury-containing wastes <input checked="" type="checkbox"/> h. Final disposal of mercury-containing wastes
Implementing agency, partners	Secretariat of the Basel Convention, with support from Japan
Aim of project	Development of the Basel Convention Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Mercury
Achievements up to present	5th draft was presented to OEWG7 (May 2010) and will be presented to COP10 (Nov. 2011)
Project starting/ completion date	Development of the Technical Guidelines started in 2007
Contact information	- Person in charge: Ibrahim Shafii, Secretariat of the Basel Convention (SBC) - E-mail address: ibrahim.shafii@unep.org
URL	5th draft is and available on the Basel Convention website at: http://www.basel.int/techmatters/mercury/guidelines/010110.doc
Last updated on	21/06/2010

Target waste	Multiple Types of Mercury Wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	1.4 Sub-regional Capacity Building and Technical Assistance Project on Mercury Waste in Health and Other Sectors in LAC Region
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.2. Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste <input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories) <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products) <input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes <input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products <input checked="" type="checkbox"/> h. Final disposal of mercury-containing wastes
Implementing	Secretariat of the Basel Convention (SBC), BCCC in Uruguay,

agency, partners	Governments of Argentina, Uruguay and Costa Rica
Aim of project	To develop inventories of Mercury wastes in the health sector and other sectors, to promote environmentally-sound management of Mercury containing wastes according to the Basel Convention technical guidelines. To build a temporary storage facility in one participating country.
Activities	<ul style="list-style-type: none"> - Development of three national inventories in the health sector and/or other sectors - Development of three ESM plans for Mercury wastes management in the health sector and/or in other sectors - Awareness raising
Achievements up to present	<ul style="list-style-type: none"> - Coordinator contracted; - Agreement on national activities with partners in pilot countries; - Identification of priority economic sectors in the pilot countries.
Budget	Funding from United States, additional co-funding received from Norway and Spain
Project starting/ completion date	Starting date: 11/2009
Contact information	<ul style="list-style-type: none"> - Person in charge: Francesca Cenni, Secretariat of the Basel Convention (SBC) - E-mail address: francesca.cenni@unep.org
Last updated on	21/06/2010

Target waste	Multiple Types of Mercury Wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning Currently conducting the desk study
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	1.5 Mercury Storage and Waste Project
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams <input checked="" type="checkbox"/> a.2. Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste <input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories) <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework
Implementing agency, partners	UNEP/DTIE Chemicals Branch in coordination with the Secretariat of the Basel Convention.
Aim of project	<ul style="list-style-type: none"> • To fill-in the gaps between the storage- and waste-related activities supported through the UNEP Global Mercury Partnership and other outputs of the Partnership in order to address the management of wastes consisting of, containing or contaminated with mercury in a coherent manner. • To assess horizontally or as part of overall hazardous waste management planning the outcomes and experiences of storage- and waste-related activities supported through the UNEP Global Mercury Partnership in participating countries.
Activities	1. Desk study to compile existing information of results, gaps, experiences, guidelines, etc. from projects/activities underway or completed;

	<p>2. Global consultation meeting to assess the materials, identify priority areas/issues and propose practical output; design of the pilots in three developing countries. Possibly to be held back-to-back with the Global Mercury Partnership Advisory Group meeting in September 2010;</p> <p>3. Pilot study addressing model or typical situations in three developing countries facing mercury waste problems; preparation of a user-friendly and integrative guidance document (three different scenarios)</p>
Achievements up to present	Planning of workshop to join mercury waste partnership achievements with mercury storage partnership achievements
Budget	600,000 Norwegian Kronen (approx. USD 100,000)
Project starting date and completion date	Starting date: April 2010 Completion date: December 2010
Contact information	Dr. Heidelore Fiedler, UNEP Chemicals Tel.: +41 (22) 9178187; e-mail: heidelore.fiedler@unep.org further contacts for storage Desiree Narvaez, UNEP Chemicals, e-mail desiree.narvaez@unep.org ; at SBC Ibrahim Shafii, e-mail ibrahim.shafii@unep.org
Last updated on	22/07/2010

Type of waste	Multiple Types of Mercury Wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	1.6 Development of Draft BAT/BEP Guidance on Reduction of Mercury Releases from Waste Management
Contribution to Partnership Area objectives	<p>(1) <u>Priority action addressed by the project</u></p> <p><input type="checkbox"/> a.1. Identification and characterization of mercury in waste streams</p> <p><input checked="" type="checkbox"/> a.2. Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste</p> <p><input type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects</p> <p><input type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories)</p> <p><input type="checkbox"/> c. Promotion of awareness and education regarding mercury waste</p> <p>(2) <u>The stage of waste management addressed by the project</u></p> <p><input checked="" type="checkbox"/> a. Development of policy framework</p> <p><input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products)</p> <p><input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products</p> <p><input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts</p> <p><input checked="" type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities</p> <p><input checked="" type="checkbox"/> g. Stabilization and solidification of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> h. Final disposal of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> i. Other (please specify: remediation of contaminated sites)</p>
Implementing agency, partners	UNEP Partnership Programme, Japan (Ministry of the Environment) and other partners
Aim of project	To review available information on existing Best Available Techniques (BAT) / Best Environmental Practices (BEP) for relevant sources, and to develop specific mercury guidance as technical guidance for implementation of several parts of the Basel Convention Technical Guidelines for the Environmentally Sound Management of

	Waste Consisting of Elemental Mercury and Wastes containing or Contaminated with Mercury (hereinafter referred to as Basel Technical Guidelines).
Activities	To compile information about BAT/BEP cases and other practical information that help readers of the Basel Technical Guidelines to implement the principles of mercury waste management described in the said guidelines.
Achievements up to present	Initial Draft has been developed and discussed at the Mercury Waste Management Partnership Area meeting in March 2010. The contents of the first draft about principles of waste management will be integrated into the draft Basel Technical Guidelines. The BAT/BEP Guidance will include BAT/BEP cases.
Budget	
Project starting/ completion date	Started in June 2008 and to be completed by January 2011.
Contact information	Ministry of the Environment, Japan: Tel +81-3-5521-8260 (and private consultant)
Last updated on	25/06 /2010

Type of waste	Multiple Types of Mercury Wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input checked="" type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	1.7 Environmental Sound Management of Mercury Containing Wastes
Contribution to Partnership Area objectives	<p>(1) <u>Priority action addressed by the project</u></p> <p><input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams</p> <p><input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories)</p> <p><input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste</p> <p>(2) <u>The stage of waste management addressed by the project</u></p> <p><input checked="" type="checkbox"/> a. Development of policy framework</p> <p><input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products)</p> <p><input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products</p> <p><input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts</p> <p><input checked="" type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities</p> <p><input checked="" type="checkbox"/> g. Stabilization and solidification of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> h. Final disposal of mercury-containing wastes</p>
Implementing agency, partners	National bodies of Syria
Aim of project	Minimizing the releases and impacts of hazardous mercury – containing waste to the environment and human beings.
Activities	<p>(1) Developing the inventory of mercury and its compounds containing wastes through expansion of inventory process to combine the public, private and common sectors.</p> <ul style="list-style-type: none"> - Preparing forms for gathering data on the type and quantity of mercury containing wastes which are obtained out of the various bodies' activities and the manner of dealing with such wastes (separation, gathering, transport, treatment, storage and disposal). - Gathering and analyzing information.

	<ul style="list-style-type: none"> - Identifying work priorities and national needs. (2) Developing separating system (3) Capacity Building (4) Raising awareness on health and environmental risks of mercury and its compounds and Encouraging to use alternatives (5) Laboratories developing
Achievements up to present	The national inventory of mercury releases 2008-2009 Asian Pilot Project+ the national action plan has been executed
Budget	200,000 USD
Project starting date and completion date	Starting date: January 2011 Completion date: June 2012
Contact information	<ul style="list-style-type: none"> - Person in charge: Engineer Eyad Ibrahim - Syrian Contact Person of Mercury Programme - Ministry of State for Environmental Affairs- Syrian Arab Republic - E-mail address: eyad-ib@hotmail.com, EyadI2002@yahoo.com
Last updated on	25/5/2010 by Syrian Arab Republic

2. Waste Products Containing Mercury

Type of waste	Waste Products Containing Mercury (Florescent lamps, hazardous waste from wood processing industry)
Phase of project	<input checked="" type="checkbox"/> Completed <input type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input type="checkbox"/> Multilateral <input checked="" type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	2.1 Bilateral Project Between Arkhangelsk and Norway (with focus on fluorescent lamps and wastes from wood processing industry)
Contribution to Partnership Area objectives	<p>(1) <u>Priority action addressed by the project</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> a.1. Identification and characterization of mercury in waste streams <input type="checkbox"/> a.2. Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste <input type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories) <input type="checkbox"/> c. Promotion of awareness and education regarding mercury waste <p>(2) <u>The stage of waste management addressed by the project</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> a. Development of policy framework <input type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products) <input type="checkbox"/> c. Collection/separation of mercury-containing wastes <input type="checkbox"/> d. Interim storage of collected mercury-containing products <input type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts <input type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities <input type="checkbox"/> g. Stabilization and solidification of mercury-containing wastes <input type="checkbox"/> h. Final disposal of mercury-containing wastes <input type="checkbox"/> i. Other (please specify: _____)
Implementing agency, partners	County Administration of Arkangelsk, The Norwegian Pollution Control Authority and The County Governor of Hordaland in Norway
Aim of project	To reduce generation of hazardous waste containing mercury. Particular attention is

	given to fluorescent tubes and energy saving light bulbs as these contain up to ten times more mercury than in Europe. Collection of hazardous waste, particularly from the wood processing industry, is also addressed.
Activities	
Achievements up to present	Three workshops are carried out, two in Arkhangelsk and one in Norway.
Budget	Cost: Approx. 50,000 USD
Project starting/ completion date	Project completion date: 2008
Collaboration with other partnership areas, activities under international conventions	
Contact information	Mr. Håkon Oen, Norwegian Pollution Control Authority, Tel: + 47 22573400
URL	
Last updated on	(Date/Month/Year)

Type of waste	Waste Products Containing Mercury (Dental amalgam)
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input checked="" type="checkbox"/> Local
Name of Project	2.2 Mercury Dental Amalgam Collection and Recovery in Massachusetts, USA
Contribution to Partnership Area objectives	<p>(1) <u>Priority action addressed by the project</u></p> <p><input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams</p> <p><input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories)</p> <p><input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste</p> <p>(2) <u>The stage of waste management addressed by the project</u></p> <p><input checked="" type="checkbox"/> a. Development of policy framework</p> <p><input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products)</p> <p><input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities</p>
Implementing agency, partners	State of Massachusetts
Aim of project	Reduce mercury inputs to waste water and pollution attributable to wastewater and biosolids treatment and disposal.
Activities	Regulation requiring installation of amalgam separators was adopted in 2006. In Phase I, from 2004- 2006, incentives were provided for early compliance while regulations were being developed and adopted, and in Phase II, it became mandatory for dental practices to install amalgam separators for each dental chair where waste amalgam is generated
Achievements up to present	<ul style="list-style-type: none"> - More than 70% of dentists certified under the voluntary compliance program - Regulations mandating the use of amalgam separators adopted on schedule in 2006

	- Compliance of audits indicate more than 95% of covered practices installed separators
Project starting/ completion date	Initiative started in 2004. The regulation requiring installation of amalgam separators was adopted in 2006
Contact information	C. Mark Smith, Ph.D., M.S., Massachusetts Department of Environmental Protection 1 Winter Street, Boston, MA 02108 c.mark.smtih@state.ma.us
URL	http://www.mass.gov/dep/service/dentists.htm
Last updated on	01/07/2010

Type of waste	Waste Products Containing Mercury (Batteries)
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input checked="" type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	2.3 Put on the Batteries with Batteries
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products) <input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes <input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products <input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts <input checked="" type="checkbox"/> g. Stabilization and solidification of mercury-containing wastes <input checked="" type="checkbox"/> h. Final disposal of mercury-containing wastes <input checked="" type="checkbox"/> i. Other (please specify: Cero Mercury Hospital & Clinics facilities in Panama)
Implementing agency, partners	Alianza Contaminación Cero, Ecologic, S.A. Gabriela Batista Visual Artist, PNUMA/ROLAC
Aim of project	Promote alternatives to dry batteries use and collect & dispose properly used dry batteries from homes, schools, universities and businesses
Activities	Battery users in schools, houses, and small businesses keep the used batteries in plastic bottles and to periodically bring them to specific collection points for interim storage and final disposition. Promote local, national and regional legislation for an integral management of mercury containing products.
Achievements up to present	24 collection points installed, 6 business partners in the program, National environmental Agency interest in the national implementation by 2010-2013, ½ ton of products containing mercury/elemental mercury or approximately 500 kg had been collected in the 1 st year. 500 people directly approach and 500,000 approached by national media. Member of the Cero Mercury Committee at the National Bio security Board in Panama. Developed interest in several central America countries as well in Colombia and Jamaica.
Budget	US\$ 60,000
Project starting/ completion date	July 2009 to December 2013

completion date	
Contact information	Mr. Jorge G Conte B, Director/Founder, Alianza Contaminacion Cero (jconte23@yahoo.com),
Last updated on	21/06/2010

3. Healthcare wastes

Target waste	Healthcare wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning Close to final
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	3.1 Revision of the Guideline “Safe Management of Wastes from Health Care Activities”
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products) <input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes
Implementing agency, partners	World Health Organization Department of Health Security and Environment
Activities	This guidance document describes the elements on the ESM of waste from health care facilities, including wastes containing mercury.
Achievements up to present	Under revision leading to the second edition
Contact information	Yves Chartier, World Health Organization (chartier@who.int)
Last updated on	26/07/2010

Target waste	Healthcare wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning Implementation of project activities in each country
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	3.2 UNDP GEF Healthcare Waste Project
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams <input checked="" type="checkbox"/> a.2. Contribution to the finalization of the Draft Basel Convention Guidelines on the ESM of Mercury Waste <input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories) <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste

	(2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> b. Reduction of mercury-containing wastes (e.g. substitution of mercury-containing products) <input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes <input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products
Implementing agency, partners	Funding Agency: Global Environment Facility Implementing Agency: United Nations Development Program Principle Cooperating Agencies: World Health Organization and Health Care Without Harm
Aim of project	Our global project is demonstrating and promoting the use of best practices and techniques for healthcare waste management in seven countries (Argentina, India, Latvia, Lebanon, Philippines, Senegal and Vietnam). The goal is to protect public health and the global environment from the impacts of dioxin and mercury releases.
Activities	The project focuses primarily on activities such as promoting the use of non-burn waste treatment technologies, improved waste segregation practices and the use of appropriate alternatives to mercury-containing devices. These activities are reflected in the following eight project objectives, which are detailed further in the project's logical framework matrix (PDF): <ol style="list-style-type: none"> 1. Establish model facilities and programs to exemplify best practices in healthcare waste management. 2. Deploy and evaluate commercially available, non-incineration healthcare waste treatment technologies appropriate to the needs of each country. 3. Develop, test, manufacture and deploy affordable, small-scale non-incineration technologies for use in sub-Saharan Africa. 4. Introduce and evaluate the use of mercury-free devices in model facilities. 5. Establish or enhance training programs to build capacity for the implementation of best practices and technologies both within and beyond the model facilities and programs. 6. Review and update relevant policies. 7. Disseminate project results and materials to stakeholders and hold conferences or workshops to encourage replication. 8. Make project results on demonstrated best techniques and practices available for dissemination and scaling-up regionally and globally.
Achievements up to present	Please refer to our February 2010 project update at the following link: http://gefmedwaste.org/downloads/Project%20Update%20February%202010.pdf
Budget	Total Project Budget: \$23,296,949 USD Total Mercury Component Budget: \$999,500 USD (including co-financing)
Project starting date and completion date	03/2008-06/ 2012
Contact information	- Person in charge : Dr. Jorge Emmanuel, Chief Technical Advisor, UNDP GEF Healthcare Waste Project - E-mail address: jorge.emmanuel@undpaffiliates.org
Last updated on	09/06/2010

Target waste	Healthcare wastes
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning
Level of intervention	<input type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input checked="" type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	3.3 Environmentally Sound Implementation of Healthcare Waste Management Plan in Nigeria
Contribution to	(1) <u>Priority action addressed by the project</u>

Partnership Area objectives	<input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes <input checked="" type="checkbox"/> d. Interim storage of collected mercury-containing products
Implementing agency, partners	Government of Nigeria
Aim of project	Provide an approach to the management of healthcare waste that is safe for healthcare facilities, waste handlers, the public and the environment as well as being cost effective and practical.
Activities	Development and implementation of Action Plan, Guidelines, and Policy/Bill for healthcare waste
Achievements up to present	Completion of inventory and Action Plan, Guidelines, and Policy/Bill for healthcare waste management including healthcare wastes containing mercury.
Budget	
Project starting/ completion date	Project started 2002 with inventory. Implementation will start as soon as FEC approves the establishment of NSC. Currently, Awaiting FEC approval to establish NSC. Implementation has not started.
Contact information	- Dr. Aisha Usman Mahmood (aishaddly@yahoo.com) - Mr. John Adefemi Adegbite (johnadefemiadegbite@yahoo.com) - Dr. Livinus Nnamdi Nwamkwo (nnamdi2livi@yahoo.com)
Last updated on	25/06/2010

4. Mine tailings

Target waste	Mine tailings
Phase of project	<input checked="" type="checkbox"/> Completed <input type="checkbox"/> On-going <input type="checkbox"/> Under planning Final deliveries available shortly
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input type="checkbox"/> Local
Name of Project	4.1 Technical/chemical and Economic Assessment of Mercury-containing and Hg-contaminated Tailings from the Mining Sector in Developing Countries
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams <input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects <input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories) <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> a. Development of policy framework <input checked="" type="checkbox"/> i. Other (please specify: Identification of mercury contaminated sites; economic feasibility study)
Implementing	UNEP Chemicals, Governments of Chile and Ghana

agency, partners	GRS as subcontractor
Aim of project	The project aims for a feasibility study on the options that the mercury or the precious metal content in tailings – as a sellable product – will pay for the environmentally sound remediation of such sites.
Activities	National activities carried out at national level; reports almost finalized.
Achievements up to present	Study on technical-economical feasibility authored by GRS (report accepted; publication in preparation)
Budget	Grant: USD 200,000
Project starting/ completion date	Starting date: 1/12/2008 Termination date: 31/12/2009
Contact information	Dr. Heidelore Fiedler, UNEP Chemicals Tel.: +41 (22) 9178187; e-mail: heidelore.fiedler@unep.org
URL	http://www.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/Addendum/tabid/3536/language/en-US/Default.aspx
Last updated on	07/07/2010

Type of waste	Mine tailings
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning Currently at the initial stage
Level of intervention	<input checked="" type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input checked="" type="checkbox"/> Local
Name of Project	4.2 The Model Study in the Philippines for the Establishment of the Mercurial Environmental Pollution Improvement Program
Contribution to Partnership Area objectives	(1) <u>Priority action addressed by the project</u> <input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in tailings <input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste (2) <u>The stage of waste management addressed by the project</u> <input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts <input checked="" type="checkbox"/> i. Other: Removal of mercury from mine tailings
Implementing agency, partners	Department of Science and Technology, Philippines Metals Industry Research & Development Center, Philippines Geological Survey of Denmark and Greenland Japan Atomic Energy Agency
Aim of project	Extract mercury from tailings produced by small-scale /artisanal gold miners
Activities	Building and testing pilot mercury extraction plant
Achievements up to present	Determining suitable testing sites for the pilot plant and carry out preliminary sampling and analysis of the tailings for mercury and gold
Budget	75,000 \$US
Project starting date and completion date	January 1 st , 2010 December 31 th , 2011
Contact information	- Peter W. U. Appel. Geological Survey of Denmark and Greenland - E-mail address: pa@geus.dk
Last updated on	24/06/2010

5. Sites Contaminated with Mercury Wastes

Type of waste	Sites contaminated e with mercury
Phase of project	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Under planning Currently at the initial phase of investigation and assessment implemented and on-going.

Level of intervention	<input type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input checked="" type="checkbox"/> Local
Name of Project	5.1 Peerless Green Initiative: Kodaikanal Mercury Thermometer Plant Pollution Assessment and Integrated Waste Management
Contribution to Partnership Area objectives	<p>(1) <u>Priority action addressed by the project</u></p> <p><input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams</p> <p><input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects</p> <p><input checked="" type="checkbox"/> b. Assessment of environmental impact of waste management practices (including development of mercury emission inventories)</p> <p><input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste</p> <p>(2) <u>The stage of waste management addressed by the project</u></p> <p><input checked="" type="checkbox"/> a. Development of policy framework</p> <p><input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts</p> <p><input checked="" type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities</p> <p><input checked="" type="checkbox"/> i. Other (please specify: Remediation of site contaminated with waste containing mercury)</p>
Implementing agency, partners	<p>Peerless Green Initiatives, Chennai, India; Judicial Branch, Eco-Tribunal Supreme Court, Gov't of India UNEP Mercury Program Partners (TBD) UNITAR UNIDO Anna University, Chennai (proposed) National Atomic Laboratory, Hyderabad (proposed)</p> <p>Private stakeholders and NGO's</p>
Aim of project	Assure proper remediation of the areas affected by the release of mercury into the environment by a former mercury thermometer manufacturing plant located in the ecologically sensitive residential location of Kodaikanal, India
Activities	Risk analysis and environmental impact assessment of the proposed technical environmental remediation measures (on-site); Detailed planning and engineering design of affected areas (off-site); Public awareness and health risk prevention; Remediation training, public and private sector capacity building and exchange of good practices; Establishment of an environmental monitoring system; Project coordination.
Achievements up to present	Comparative analysis and environmental impact of the proposed technical environmental remediation measures and the risk of contamination during the proposed waste management plan has been achieved. Investigation of the scope of affected areas has been hypothesized. Preliminary plan for the sampling and testing of affected areas is underway, the balance of planning and engineering design of affected areas to be drafted contingent on testing results and analysis. Formation of strategic alliances and capacity building is on-going. Public awareness campaign has resulted in ground-support and appreciation of human and environmental risks. Plan of coordination has been drafted and business plan is drafted, subject of revision based on findings of sample studies. Pro-action by stakeholders through Government of India Judiciary is ongoing with intent to compel good practices and expanded scope of impact assessment. analysis
Budget	\$85,000USD (First Phase)
Project starting date and	October 2009 January 2012

completion date	
Contact information	- Person in charge: Frank Costanzo, Peerless Green Initiatives - E-mail address: frank@peerlessgreen.net
Last updated on	01/06/2010

Type of waste	Sites contaminated with mercury wastes
Phase of project	<input type="checkbox"/> Completed <input type="checkbox"/> On-going <input checked="" type="checkbox"/> Under planning
Level of intervention	<input type="checkbox"/> Multilateral <input type="checkbox"/> Bilateral <input type="checkbox"/> National <input checked="" type="checkbox"/> Local
Name of Project	5.2 Mercury Contamination of a Water-catchment at an at-risk Eco-sensitive Rainforest Inhabited by Disenfranchised Tribals Caused by Pollution from Mercury Thermometer Factory in Kodaikanal, Tamil Nadu, India
Contribution to Partnership Area objectives	<p>(1) <u>Priority action addressed by the project</u></p> <p><input checked="" type="checkbox"/> a.1. Identification and characterization of mercury in waste streams</p> <p><input checked="" type="checkbox"/> a.3. Implementation of national projects on ESM of mercury waste as case studies/demonstration projects</p> <p><input checked="" type="checkbox"/> c. Promotion of awareness and education regarding mercury waste</p> <p>(2) <u>The stage of waste management addressed by the project</u></p> <p><input checked="" type="checkbox"/> a. Development of policy framework</p> <p><input checked="" type="checkbox"/> c. Collection/separation of mercury-containing wastes</p> <p><input checked="" type="checkbox"/> e. Recovery of mercury from mercury-containing products and byproducts</p> <p><input checked="" type="checkbox"/> f. Removal of mercury in flue gas and wastewater from waste management activities</p> <p><input checked="" type="checkbox"/> i. Other (please specify: Remediation of site contaminated with waste containing mercury)</p>
Implementing agency, partners	Peerless Green Initiatives EVIDENCE, India (NGO) SDDIT, India (NGO) Department of Forestry, India Government of India, Eco-Tribunal Anna University, Chennai (proposed) National Atomic Laboratory, Hyderabad (proposed)
Aim of project	<p>This project is in tandem with PGI's related project to assess the contamination of public and private lands outside the perimeter of a mercury thermometer plant at the Eastern spur of the Western Ghats, Kodaikanal, Tamil Nadu, India. Both projects are designed to offer a platform for a model integrated plan for the waste management of at least 400kg of mercury deposited in the soil during the 18 year operation of the subject factory until its closing in 2001. The site has been 'static' insofar as no remediation plan has been implemented and accordingly offers researchers an opportunity to study the migration of mercury from an area that last tested eight years ago. It is also a project that can highlight the mission of the Programme in that the polluted area is flanked on one side by residential properties and a State protected endangered rain forest that is number 18 on Conservation International's 'hot spot' list. As such, this particular prong of the overall Kodaikanal scheme involves the empirical sampling and analysis of water and sediment in the catchment area of the factory. 80% of ground water run-off from the factory site is channeled from the factory property where it drops precipitously over 1000 meters into a catchment that travels 30 kilometers to a water reservoir used for agro-irrigation and drinking water. Along this 30km journey, down the mountain-valley (the Lower Palanis) passing numerous tribal settlements who use the water in its untreated form for washing, cooking, drinking, livestock and agriculture. Thus far the tribals and natural capital advocates have been disenfranchised from the proposed action plan mainly due to only random and selective off-site testing of soil sediment and water by a private environmental</p>

	engineering company hired by the polluter and managed by a former employee of the polluter. Lastly, the program allows for the opportunity to 'update' the proposed action plan to come into line with the 2007 Basel Convention as the guidelines for waste management did not exist at the time the plan was authored in 2006. This could also serve as an excellent opportunity for India to distance itself from comparisons to the Union Carbide/Bhopal tragedy; and demonstrate that its environmental policies are developing along with its economic transition.
Activities	To avoid redundancy, the general activity requirements are detailed in PGI's previously filed Information Report. Distinct to this program is a need for an integrated approach for the testing and waste streams of mercury in the water catchment as well as potentials for re-contamination through waste management process. Retrospective long term study of affects of mercury on tribals is an area in need of development and international humanitarian cooperation.
Achievements up to present	Petition to Eco-Tribunal of Supreme Court under polluter-pays principle is underway and provide framework for Government and UNEP intervention, analysis and capacity building. The entire data-set of existing testing, evaluation, proposed plan for waste management, reports of Pollution Control Board and other monitoring agencies have been fully reviewed and are being uploaded into digital format for the ease of international advisers and partnership review. A plan of action has been detailed including scope of project, necessary inputs and potentials for meaningful program success. Public awareness and capacity building has resulted in a firm foundation of understanding of necessary
Budget	\$75,000USD
Project starting/ completion date	July 2010-July 2012
Contact information	Person in charge: Frank Costanzo, Peerless Green Initiatives E-mail address: frank@peerlessgreen.net
Last updated on	21/06/2010

Relevant activities under other partnership areas

The following activities are conducted under other partnership areas. For more details on these projects, please see the Business Plans of the corresponding partnership area.

Mercury-Containing Products

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.

Projected Completion Date: Cooperative Agreement – August 2008; Ongoing through 2012

Contact: Ibrahim Shafii, Ibrahim.shafii@unep.ch

Hospital Projects: Demonstration programs to significantly reduce mercury containing products and waste have been implemented to date in China (Beijing), Buenos Aires, Chile, Costa Rica, and Mexico. Also 4 regional workshops took place in 2008 to promote alternatives to mercury in the health care sector in developing countries.

Contact: Josh Karliner, HCHW, josh@hcwh.org or Thomas Groeneveld, U.S. EPA, groeneveld.thomas@epa.gov

Artisanal and Small-scale Gold Mining

The ASGM partnership area is working to demonstrate ways of overcoming barriers to the adoption of best practices and pollution prevention measures that limit the mercury contamination of international waters from artisanal and small-scale gold mining. Appropriate waste treatment will contribute to reduce the of mercury in wastewater. (See details in Business plan of the Artisanal and Small Scale Gold Mining (ASGM) partnership area).

Mercury Supply and Storage

With the support of the Government of Switzerland, Norway and the USA, the Government of Kyrgyzstan is working to assess and take action regarding the world's last remaining known primary mercury mine with the cooperation of UNITAR, UNEP and ZOI Environment Network. (See details in Business plan of the Supply and Storage partnership area).

OTHER ACTIVITIES

In addition, the USEPA conducts related projects as follows.

- Partnership with Russian Association of Chlorine Industry to implement a project on environmentally-safe management of mercury waste, as described in the chlor-alkali business plan.
- Activities with Arctic Contaminants Action Program of the Arctic Council to develop an Integrated Hazardous Waste Management Strategy. Regulations for safe storage of mercury surplus and mercury waste (e.g. pesticides) are being developed under this program.
- A project in Kazakhstan titled: "Bio-remediation monitoring of mercury contamination at Pavlodar Chemical plant."

V. Opportunities:

Possible actions in response to the priority actions include the followings:

Priority action a): Identify environmentally sound collection, disposal and treatment techniques for mercury waste following a lifecycle management approach.

- Develop a training manual for countries to apply the Draft Basel Convention Technical Guidelines on Environmentally Sound Management of Mercury Waste, including sector specific guidance.
- Review available information on existing Best Available Techniques (BAT) / Best Environmental Practices (BEP) for mercury waste management. In doing so, cooperate with other partnership areas.
- Gather and share existing information on good practices (both institutional and technical) starting initially with the segregation of waste containing mercury from others and sound recovery of mercury from waste.
- Target pilot projects on mercury waste management in cooperation with other institutions or organizations (e.g., the Basel Convention). Such projects may include waste collection and transport, separation, segregation or recovery technologies and may address air emissions, landfill design and operation including evaporation and seepage water, and use of appropriate stabilization/solidification technologies.

Priority action b): Assess environmental impacts of current waste management practices and processes, including providing support to countries to assess their national situation, interests and needs.

- Enhance information/knowledge, including improving release inventories (including the Mercury Toolkit, EMEP Guidebook and national/regional Pollutant Release and Transfer Registers) with an emphasis on mercury waste streams.
- Assess the importance of mercury waste in the national mercury inventories and make suggestions for the improvement of the UNEP Mercury Toolkit.
- Promote safe handling procedures for collection, transportation and management for the segregated mercury wastes and waste handling devices.

Priority action c): Promote awareness and education on mercury waste:

- Develop and disseminate educational materials including practical and simple advice on steps to deal with current mercury waste issues of concern (e.g., what to do with discarded mercury fever thermometers, sound temporary storage and safeguarding solutions).

VI. Evaluation

The partnership areas will report biennially to UNEP in accordance with the UNEP reporting format, which includes the report on progress in terms of the Partnership Area Progress Indicators.

Progress indicators

The Waste Management Partnership Area has developed its own progress indicators, which correspond to its priority actions. The indicators have been categorized as (1) output indicators and (2) process indicators, as shown in the table below.

Objective/Action	Indicator of Progress	Type of Indicator
Overall Objective: Minimize and, where feasible, eliminate unintentional mercury releases to air, water and land from mercury waste by following a lifecycle management approach.	Estimated amount of mercury diverted from waste stream by the implementation of the projects under the Partnership (including estimates of impacts of pilot projects implemented in a country)	Output Indicator
	Number of Partners	Process Indicator
Priority Action a: Identify environmentally sound collection, treatment and disposal techniques for mercury waste following a lifecycle management approach	Available information on identification and characterization of mercury contained in waste streams	
	Completion of BAT/BEP Guidance Document that supplements the Basel Convention Technical Guidelines on the ESM of Mercury Waste	
	Number of national projects on ESM of mercury waste implemented	
	Amount of financial resources for projects aimed for reducing releases of mercury from waste management	
Priority Action b: Assess environmental impacts of current waste management practices and processes, including providing support to countries to assess their national situation and needs (e.g. development of national mercury waste inventories and priority setting)	Number of countries that prepared national inventory of mercury waste, if possible, mercury release estimation from waste treatment and waste dumping	
	Number of countries with national policy frameworks/action plans with regard to mercury waste management ⁴	
Priority Action c: Promote awareness and education regarding mercury waste.	Number of projects to promote awareness and education regarding mercury waste	

The latest evaluation report is available as an Information Document to the second meeting of the Partnership Advisory Group, Document UNEP(DTIE)/Hg/PAG.2/INF 6 - Reporting of the mercury waste management partnership area.

VII. Resource Mobilization

Partners are encouraged to contribute financially and also to offer in-kind assistance.

Partners can develop specific initiatives, work with non-partners, or pursue projects consistent with the partnership objectives. It is hoped that the UNEP Global Mercury Partnership will serve as a mechanism to consolidate and leverage funding for large, strategic projects.

Partners are encouraged to apply for funding to relevant funders and regional organizations. Developing countries and countries with economies in transition can submit requests for funding to UNEP under the UNEP Mercury Small Grants Program (*see* www.chem.unep.ch/mercury/Overview-&-priorities.htm). UNEP and other partner implementing agencies 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).

VIII. Business Planning Process

Business planning will take place annually for the partnership area. Business planning will be undertaken in close collaboration with the partners and the relevant Partnership Areas such as the Mercury-Containing Products Partnership Area.

The process in developing and reviewing business plans will be outlined in this section. Partnerships will take stock of efforts and test direction and productivity in moving forward and will adjust planning accordingly.

The business plan will be periodically reviewed and updated to reflect progress in implementation and changing circumstances. The arrangements for Administrative and Management Support are set out in Table 2 below.

Table 2: Administration and Management Support (will vary across the Partnerships)		Source of Support
Partnership Lead	<ul style="list-style-type: none"> ▪ Facilitation and support of the partnership. 	Japan (Prof. Dr. TANAKA)
Organization Point of Contact	<ul style="list-style-type: none"> • Preparing Business Plan. • Preparing for meetings. • Logging meeting notes, tracking action items. • Collaborating with partners to strategically link to overall partnership goals and objectives. 	Japan, Ministry of the Environment
UNEP Secretariat Support	<ul style="list-style-type: none"> • Managing the clearinghouse/website. • Taking in funding from multiple sources to fund projects. • Developing activity proposals in collaboration with partners. • Assisting the lead in following up activities by partners. • Other tasks as requested. 	UNEP Chemicals
Face to face meetings	<p>Estimated once 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>Japan, Ministry of the Environment hosts the meeting when the budget is available</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	In case of necessity	Japan, Ministry of the Environment

IX. Linkages

The Waste Management Partnership Area will closely work with other Partnership Areas such as the following. In particular, close cooperation with the Mercury-Containing Products is expected, as that area is the upstream of the waste management issues.

- Mercury-Containing Products
- Artisanal and small scale gold mining
- Reductions from the Chlor-Alkali Sector
- Reduction of Mercury Release from Coal Combustion
- Supply and Storage

Possible collaboration areas with some of the Partnerships Areas include the followings:

<p><Mercury-Containing Products></p> <ul style="list-style-type: none"> • Coordinate activities and meetings (e.g. input to and utilization of Draft Basel Convention Technical Guidelines and BAT/BEP Guidance Document) • Identify and design joint projects to meet objectives of the two Partnerships • Enhance communication (attending meetings)

<Supply and Storage>

- Input to and usage of Draft Basel Convention Technical Guidelines and BAT/BEP Guidance Document
- (Identification of gaps of two Partnerships)

X. Partners

Please see Part viii of this document for the current list of partners that have submitted letters of support to the UNEP Global Mercury Partnership. There are a number of participating partners that have not officially submitted support letters.

For further details, please go to the list of partner support letters posted at the following web address:

<http://hqweb.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/CurrentPartners/tabid/3437/language/en-US/Default.aspx>

Other partners are welcome to self identify to the partnership.

Part vii)**Proposed business Plan of the Mercury supply and storage partnership area, 19 October 2009**

This document describes a proposed business plan for a ‘Mercury Supply and Storage partnership area’ within the United Nations Environment Programme (UNEP) Global Mercury Partnership. This business plan is an updated version of the UNEP proposed business plan previously drafted in consultation with stakeholders during the first meeting of the mercury Ad hoc Open-ended Working Group, the Meeting of Partners that took place from 1-3 April 2008, and publicly through the UNEP mercury web-page.

The purpose of the business plan is to provide a framework for developing and implementing mercury storage and supply related activities and projects. The business plan is to serve as a resource for providing a common, cohesive structure for activities related to the safe storage of mercury, and to future supply related activities.¹⁶

The proposed business plan recognizes that mercury supply and trade are priority areas for the Intergovernmental Negotiating Committee (INC) deliberations to prepare a legally binding instrument on mercury. Accordingly, the proposed business plan targets activities which will provide input into the INC process, supports potential mechanisms in the instrument to reduce the global supply and trade of mercury by further reducing the global mercury supply in the short-term, and strives to achieve the intended results before the instrument becomes effective.

At the March 31-April 2 2009 UNEP Global Mercury Partnership Advisory Group meeting, the Zero Mercury Working Group was identified as the interim lead for this proposed partnership area. The partnership is open for government and stakeholder participation.

Interim partnership area lead:

Mr. Michael Bender
 Mercury Policy Project/
 Zero Mercury Working Group
 Montpelier, VT USA
 Tel.: +1 802.223.9000
 E.mail: Mercurypolicy@aol.com

¹⁶ For the purposes of this business plan, the terms “storage” and “sequestration” are used interchangeably, and refer to the safe long-term management of mercury so that it is not introduced or reintroduced into commerce. The use of the term “storage” is not intended to signify a particular type of management for this mercury.

I. Summary of the Issue

- In order to effectively reduce the quantities of mercury circulating in the atmosphere and biosphere, it is widely agreed that there is a need to reduce the supply of, and demand for, mercury worldwide.
- Reduction of the global mercury supply is an important way of encouraging equivalent or greater reductions in mercury demand, particularly for uses where regulatory strategies for reducing demand may have limited effectiveness such as small-scale gold mining.
- As part of a larger regulatory strategy to reduce the amount of mercury available to the biosphere, a number of countries or regions have taken steps domestically or regionally to reduce the mercury supply. For example:
 - The European Union has agreed to a ban on mercury exports and to a storage obligation for surplus mercury from major sources beginning in 2011, and is now in the process of preparing detailed legislation on safe storage requirements.
 - The United States Government stores 100% of its federal mercury stocks (about 5600 tons) in order to keep it from the marketplace, the U.S. Congress recently enacted legislation prohibiting the export of non-federal mercury beginning in 2013, and by the same date, the US Department of Energy will provide storage capacity for this non-federal mercury.
 - Sweden, Norway and Denmark have banned the export of elemental mercury, among other restrictions on mercury.
 - Assessment reports of excess mercury supply in Asia, and Latin America and the Caribbean, are available; these assessment reports describe the projected quantities and sources of excess mercury supply in the respective regions (2010-2050) and the required mercury storage capacities.¹⁷
- Mercury is an element that cannot be destroyed nor converted into another substance. Domestic and global policies designed to decrease the production, use, import, and export of mercury must be accompanied by access to viable, safe and secure long term storage for mercury stockpiles.

Sources of Mercury Supply

- **Primary Mercury:** Mercury generated from mining operations where mercury production is the principal objective. Over the last several decades, primary mining for export was conducted by a small number of nations (Spain, Slovenia, Kyrgyzstan and Algeria), and by China, which to date, has mostly provided for its own domestic market. The only large-scale mines that are currently active are in Kyrgyzstan and China. Primary mercury mining is the least preferred source of mercury because it adds new mercury to the global mercury reservoir and the activity itself releases significant quantities of mercury into the environment.
- **By-product Mercury:** Mercury generated as a by-product of certain non-mercury mining and smelting activities. The extent of byproduct generation at a given facility depends upon the mercury concentration in the ore and the nature of pollution control activities at the facility. Additional pollution control requirements could increase the quantity of byproduct mercury generated globally.
- **Secondary Mercury:** Mercury is generated from the recycling or reprocessing of wastes (i.e., remediation of mine tailings) and products, particularly in the developed world. This is a growing source of mercury in response to environmental regulation designed to prevent mercury releases during waste management.
- **Chlor-alkali Mercury:** Large quantities of mercury can become available when mercury cell chlor-alkali plants close or convert to non-mercury processes (i.e., membrane technology). Storing mercury from closing or converting chlor-alkali facilities, can be a very cost effective way to reduce the global mercury supply because large quantities are already aggregated at one location.

¹⁷ The reports are available at http://www.chem.unep.ch/mercury/storage/main_page.htm.

II. Proposed 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.

The supply and storage partnership area will contribute to the following objective, consistent with the priorities set out in paragraph 19 of GC 24/3: Minimization and where feasible, elimination of mercury supply considering a hierarchy of sources, and the retirement of mercury from the market to environmentally sound management.

Specifically, the supply and storage partnership area will aim to reduce the global supply of mercury by 50% by 2013, when compared to the supply available in 2005 as documented in the most recent UNEP trade report. According to the trade report (UNEP/GC/24/INF/17/Appendix 1 – November 2006), the global mercury supply in 2005 was 3,000-3,800 MT. Using the mid-range value of 3,400 MT, and recognizing the EU and USA export bans are already projected to reduce the annual global mercury supply by about 1,100 MT, this partnership will seek to reduce the global mercury supply by an additional 600 MT by 2013 (See Proposed Priority Actions immediately below).

III. Proposed priority actions

Proposed priority actions are intended to achieve the 50% global supply reduction goal. The Partnership will seek to achieve a 600 MT annual global mercury supply reduction by 2013 through the following actions:

- Working with partners to reduce or eliminate the export of mercury from large scale primary mining;
- Assessing options and technologies for storing any excess mercury supply;
- Supporting programs that provide for the long term storage or sequestration of mercury stocks from byproduct and chlor-alkali sources; and/or
- Facilitating the implementation of export ban legislation in additional countries or regions.

IV. Partner efforts and timelines

Kyrgyzstan Primary Mercury Mining Project

- The Government of Kyrgyzstan operates the last remaining primary mercury mine known to export mercury. The mine is located in Khaidarkan in the Ferghana Valley and recently produced 300-350 MT of mercury annually.
- Action to assist Kyrgyzstan to close the Khaidarkan mine has been recognized as a priority by the international community. Technical and socio-economic assessment reports were initiated through funding of the Governments of Switzerland (200,000 chf) and the United States of America (35,000 USD) in late 2007 and implemented jointly by UNEP and UNITAR.
- On the national level, the Kyrgyzstan project is led by the State Agency of Environmental Protection and Forestry in cooperation with other government agencies and stakeholders through the Inter-ministerial Working Group established for this purpose. Phase I of the project is expected to wrap-up in August 2009.
- Further support will be required to assist Kyrgyzstan in any future transition process. UNEP hosted an international forum on this topic on Sunday October 18 2009 at the OEWG in order to inform the international community about the options for consideration in moving forward and to open a dialogue between the Kyrgyz Republic and the international community. A report from this meeting will be available following the OEWG.

- Information is available at:

<http://hqweb.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/SupplyandStorage/Activities/tabid/4505/language/en-US/Default.aspx>

Contact:

Brenda Koekkoek, UNEP, +41 22 917 8867.

Craig Boljkovac, UNITAR, Tel: +41 22 917 8471.

Mercury Storage Projects

- UNEP Mercury storage projects are currently being implemented in the Asian region, and in the Latin America/Caribbean region. Kick-off meetings sponsored by UNEP and the Zero Mercury Working Group (ZMWG) were held in March and April 2009 respectively, where reports estimating the quantities of excess mercury expected in these regions through 2050 were reviewed and evaluated.
- Follow-up activities in these regions will include selection of Executive Committees and preparation of additional analyses of the options available for long-term sequestration of mercury in these parts of the world.
- The options analysis for the Asia Region should be completed by October 2009, and the options analysis for the Latin America/Caribbean region should be completed by March 2010. UNEP will provide follow-up support to mercury storage activities in these regions.

Contact Person:

Desiree Narvaez, UNEP Chemicals, dnarvaez@chemicals.unep.ch Tel: + 41 22 917 8865.

Michael Bender, ZMWG, Mercurypolicy@aol.com Tel.:+ 1 802 223 9000.

The Government of Norway has supported UNEP's overall supply and storage initiatives (1,000,000 USD).

Please note: We call for your proposals on your activities to be listed here.

V. Potential Strategies/Opportunities

- Support additional bilateral projects to support transition away from primary mercury mining to an industries or activities that are more environmentally sound and economically sustainable.
- Encourage the sequestration of mercury from decommissioned plants in the chlor-alkali industry and from byproduct mercury generated by the large scale mining industry.
- Encourage development and implementation of national policies which sequester rather than export mercury in countries with significant mercury exports.
- Support to options analysis/ feasibility studies and follow-up work on mercury sequestration in Asia Pacific and Latin America/Caribbean regions, and initiation of storage projects in other regions.

VI. Performance measurement and reporting

The partnership area will report biennially to UNEP. Reporting will include monitoring performance (tracking partnership activities and partner contributions) as well as assessing effectiveness (measuring supply reductions achieved to the extent possible).

An update on activities related to mercury supply and the environmentally sound storage of mercury was provided as an information document to the first meeting of the Intergovernmental Negotiating Committee (INC 1), UNEP(DTIE)/Hg/INC.1/INF/10.

VII. Resource Mobilization

A government will be sought to lead or co-lead this partnership as soon as possible.

Partners are encouraged to contribute financially and also to offer in-kind assistance. Partners can develop specific initiatives, work with non-partners, or pursue projects consistent with partnership objectives. It is hoped that the UNEP Global Mercury Partnership will serve as a mechanism to consolidate and leverage funding for large, strategic projects.

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

In terms of the Kyrgyz Republic mining project, priority actions have been identified as: (i) Reduction of most immediate threats posed by the mine site to the environment and the local population; (ii) Promotion of investment in other industrial activities in the region; (iii) Promotion of local alternative employment in the region. Although the current situation in the Kyrgyz Republic has posed challenges for project implementation, the project is expected to proceed. UNITAR is assisting the preparation of a Global Environment Facility (GEF) proposal for priority action one with possible co-financing from the Government of Norway. The United States has recently offered a grant of 200,000 USD in new financing to support the promotion of local alternative employment in the region and has been supporting the development of a feasibility to help promote investment in industrial activities in the region. The Government of Switzerland has also pledged 250,000 Swiss Franc to the future trust fund for the project. Further funds are being sought to support these important efforts in the Kyrgyz Republic.

VIII. Business Planning Process

Business planning would take place annually for the partnership area. Partnerships will take stock of efforts and test direction and productivity in moving forward and will adjust planning accordingly.

IX. Potential partners

Please see Part (viii) of this document for the current list of partners that have submitted letters of support to the UNEP Global Mercury Partnership. There are a number of participating partners that have not officially submitted support letters.

For further details, please go to the list of partner support letters posted at the following web address:

<http://hqweb.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/CurrentPartners/tabid/3437/language/en-US/Default.aspx>

Other partners are welcome to self identify to the partnership.

X. Linkages

- Mercury in waste partnership area, particularly storage aspects. Coordination with projects on the environmentally sound management of mercury waste (UNEP Chemicals-SBC projects in Burkina Faso, Cambodia, Chile, Pakistan, Philippines and the USEPA-SBC projects in Argentina, Costa Rica, and Uruguay (joint project with Products partnership area).
- Chlor alkali partnership area. Activities aimed at phasing out mercury cell chlor-alkali facilities should be coordinated with this partnership regarding the fate of the mercury at the closing or converting facilities.
- Products partnership area (in addition to Products-Wastes projects with the SBC). Coordination with hospitals and schools projects geared to reduce the use of mercury containing equipment and products, as well as to explore possibilities for proper storage and disposal. In addition, the Products partnership is seeking to expand its work to develop mercury products and emissions inventories.

Part viii) Current Partner Membership List, 30 June 2010

<u>Partner</u>	<u>Partnership areas</u>						
	ASGM	Mercury Cell Chlor alkali	Air transport & fate research	Products	Coal Combustion	Waste	Supply and Storage
<u>Government</u>							
1	Burkina Faso	√		√	√	√	
2	Cambodia	√					√
3	Canada		√		√		
4	Germany						√
5	Guinea Conakry	√	√	√	√	√	√
6	Italy (+ Scientific Community)		√				
7	Liberia	√		√		√	
8	Madagascar			√			
9	Malawi			√		√	
10	Mali	√		√		√	
11	Nigeria	√		√	√	√	
12	Philippines	√		√		√	
13	Switzerland						√
14	Syrian Arab Republic			√		√	
15	United States of America	√	√	√	√	√	√
		8	2	5	10	5	12
<u>IGO</u>							
16	Basel Convention			√		√	√
17	European Commission				√		
18	UNIDO	√		√		√	
19	WHO			√			
		1	0	0	3	1	2
<u>NGO</u>							
20	Asociación Argentina de Médicos por el Medio Ambiente (AAMMA)			√		√	
21	Alliance for Responsible Mining (ARM) - Colombia	√					
22	Artisanal Gold Council	√	√	√		√	
23	Balifokus	√					
24	Ban Toxics	√		√		√	
25	BioDiversity Reseach Institute		√				
26	Blacksmith Institute	√				√	
27	Centre pour l'Environnement et le Développement RDC	√					√
28	CREPD - Cameroon	√		√		√	
29	DHIDR - Egypt			√			
30	Earthworks	√					
31	Envrionmental Health Council		√			√	
32	Grupo Parques Nacionales Panama			√		√	√
33	HCWH			√			

34	IPEN - International POP's Elimination Network	√	√	√	√	√	√	√
35	ISDE				√		√	
36	ISE-POP-CI Cote d'Ivoire	√			√	√	√	
37	IUGS-GEM	√		√		√	√	
38	Kyrgyz Mining Association	√						√
39	NRDC	√						
40	PCA - Liberia	√					√	
41	Pollution Probe							
42	PROBICOU - Uganda				√		√	
43	Responsible Jewellery Council	√						
44	The Money Stone	√						
45	Uganda Network on Toxic Free Malaria Control (UNETMAC)				√		√	
46	World Chlorine Council		√					√
47	World Dental Federation				√		√	
48	World Medical Association				√		√	
49	Zero Mercury Working group	√	√	√	√	√	√	√
50	Zoï environment network	√				√	√	
		18	3	6	15	5	18	6
	Others							
51	ARCADIS - USA				√	√	√	
52	Department of Toxicology Faculty of Chemical Science and Pharmacy USAC						√	
53	Environmental Visual artist						√	√
54	Geological Survey of Denmark and Greenland	√					√	
55	Geological Survey USA					√		
56	Herek L. Clack					√		
57	ICSET			√	√	√	√	
58	IEA - CCC					√		
59	Macquarie University			√		√		
60	MineResearch	√						
61	NEA - USA					√		
62	OIKON - Institute for Applied Ecology			√	√	√	√	
63	Peerless Green Initiatives			√	√		√	
64	Reaction Engineering International					√		
65	Sang-Joon Yoo			√				
66	State Key Laboratory of Coal Combustion - Huazhong University of Sciences and Technology					√		
67	Transparence S.A.	√						
68	Tsinghua University					√		
69	TÜV Theinland Immissionsschutz und Energiesysteme GmbH			√		√		
70	Vosteen Consulting GmbH					√		
		3	0	6	4	13	7	1
	Total	30	5	17	32	24	39	10