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Global Mercury Partnership
Partnership Advisory Group
First meeting
Geneva, 31 March – 2 April 2009

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 six 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; and mercury waste management. 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

Section i)	Mercury releases from coal combustion
Section ii)	Mercury cell chlor alkali production
Section iii)	Mercury in products
Section iv)	Mercury transport and fate research
Section v)	Mercury in artisanal and small-scale gold mining
Section vi)	Mercury waste management
Section vii)	Current partner membership list.

Section i)

Business Plan of the Mercury releases from coal combustion partnership area, 4 February 2009

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.

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 NOx, 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 may be revisited in late 2008, upon finalization of the UNEP report on atmospheric emissions (which will include information on trends). This report should enable the partnership to make a more advanced assessment of a baseline scenario and project a goal for 2015 (or beyond).

[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, NOx, 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 UNFCC level), including consideration of alternative energy sources and energy efficiency.

IV. Completed, Ongoing and Planned Partner Efforts and Timelines

- The partnership will develop Guidance for mercury emissions from coal combustion, building on existing information. See proposed process in Annex 1.
- 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: www.chem.unep.ch/mercury/Sector-Specific-Information/Coal_combustion.htm
- 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[2], 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 is working with the United States to hold workshop in 2008 to focus on multi-pollutant control of coal-fired power plants. The Multi-pollutant Workshop is scheduled to be held in Hangzhou, China on November 10 - 14, 2008. The workshop will focus on cost effective controls that provide an integrated approach to the control of NOx, SOx, PM, Hg, and CO2. The first two days, sponsored by US EPA and China's Ministry of Environmental Protection (MEP), will be open to all

[2] Mercury Trust Fund: approximate total funding for coal combustion work to date is $ 6,000 US.

and will provide 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 will consist of US vendor presentations, sponsored by US DOE and China's Ministry of Science and Technology (MOST), and will be closed to all except US and Chinese citizens.

- 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.
- 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.
- Cement Production: The European Cement Association is compiling 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

1.Opportunities for enhancing information/knowledge for donors to consider funding:

- For Emissions Inventories:
  a. Improve current basis of emission inventories and emission factors (encourage regional and global reporting by industries of their mercury emissions) and collaborate with existing information networks (such as those that exist for climate change).
  b. Forecast future emissions scenarios taking into account current and planned actions, including co-benefits of greenhouse gas reductions and other pollutants.
  c. Study the rate of retrofitting emission control technologies (ESP, FGD, SCR) to older, dirtier plants in order to help build capacity to forecast future emissions scenarios.
- Study whether new plants have state-of-the-art efficient coal combustion technologies (super-critical and ultra-supercritical) with at least Electrostatic precipitators (ESP), Flue gas desulphurization (FGD) and Selective Catalytic reduction (SCR) technologies can achieve approximately 50-90% mercury control as a co-benefit of controlling other pollutants.

- Further study of the fate of mercury in coal combustion fly ash, wastes and products (such as gypsum boards and cement).
- Training in areas such as sampling and analysis of coal and coal residues, stack sampling methods and protocols and quality assurance and quality control requirements.

2. Further complementary and specific possible projects (including bilateral projects) for donors to consider funding. Some examples include:

- Support developing county efforts to identify, and implement appropriate multi-pollutant control strategies for this sector taking into account national situation and needs. Identify how such controls can be configured and operated to enhance reduction of both mercury and other pollutants.
- Promote the application of new control technologies for multi-pollutant control in existing facilities, optimizing mercury capture, such as mercury oxidizing additives either in the pre-combustion or in the combustion process.
- Promote fuel switching in small scale industrial and domestic applications of coal.
- Determine whether plants with emission control technologies (ESP, FGD, SCR, fabric filters) are using them correctly. In some cases, the operation of these systems (position, running temperature etc) can be "tweaked" to enhance mercury capture;
- Promote coal washing – this can reduce the mercury in the coal by about 10-50 %, in some cases. NOTE: The operation of these washeries would need to be monitored to ensure the mercury is not simply released in liquid form or transferred to reject coal which is often used illegally as domestic fuel.
- Promote coal switching and blending, if appropriate and feasible – the mercury contents of coals vary, and it may be possible to select coals that give lower mercury emissions. An evaluation is necessary for the potential for coal switching (fire "dirtier" coals at those plants with flue effective gas cleaning technologies and "cleaner" coals at the older, less efficient plants). NOTE: There is also the potential for coal blending to enhance the capture of mercury in ash.
- Raise awareness of the human health risks of domestic coal combustion, due to mercury and other pollutants, particularly in regions with high mercury content coal and/or other pollutants, and build capacity to reduce risks.
- Promote coal beneficiation via gravitational separation achieved in fluidized bed to remove a portion of mercury, sulfur, and ash in the coal and, consequently, reduce Hg and SO_x emissions. Mercury reductions up to 40%, and sulfur reductions of the order of 25% have been achieved with North American lignites). Results are coal-specific. Characterization of coals from different regions to determine effectiveness of this approach is needed. Fortunately, this characterization is not very expensive.
- Promote a low-temperature coal drying process, based on waste heat utilization, to dry high-moisture and washed coals and improve their heating value. This will result in higher generation efficiency, and lower operating cost. Washed coals are easy to dry since surface moisture is easy to remove. Such approach is very suitable for developing countries (India especially where coals are washed to remove ash) due to its simplicity and low cost of operation. **NOTE**: It has to be recognized that this technology simultaneously reduces emissions and improves efficiency. Also, beneficiated coal can be used on-site (i.e., combusted at a power plant or other facility where it is cleaned), and/or produced for the market use to deal with emissions from small point sources (smaller facilities, home heating and cooking, etc.)
- Apply combustion modification technology to increase native mercury capture and simultaneously reduce Hg and NO_x emissions without making capital investments. Training program and instrumentation are needed.

VI. Evaluation

The partnership areas will report biennially to UNEP in accordance with the UNEP reporting format[3]. 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).

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

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

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.

An important opportunity to leverage resources lies in the significant partnership efforts currently underway to address conventional pollution (eg, Sox, NOx, 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 contribute not only financially but also to offer in-kind assistance.
The financial plan should be updated regularly to reflect experience and reassess funding requirements to achieve the objective of the partnership under II.

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 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.

Table 1: Administration and Management Support		**Source of Support**
Partnership Lead	▪ Facilitation and support of the partnership.	IEA Clean Coal Centre
UNEP Secretariat Support	• 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

Table 1: Administration and Management Support		Source of Support
Face to face meetings	Estimated one per year. 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).	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 is undertaking field testing of the 'Toolkit for Identification and Quantification of Mercury Releases' in the Asian region (with five countries: Cambodia, the Philippines, Pakistan, Syria and Yemen). Initial results from this project will start coming forward in early 2008 and will help provide valuable insights to these countries and to the UNEP Global Mercury Partnership in strategic activities in moving forward. UNEP will report on this activity to the Partnerships. Partners are also asked to feed known information to UNEP from these countries. Contact person: Brenda Koekkoek, 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 section vii 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 the list of participating partners, please go to the current business plans posted at the following web address:
www.chem.unep.ch/mercury/partnerships/new_partnership.htm

Annex 1 to the Mercury from Coal Combustion Business Plan:
Proposed Process for Development of Best Available Techniques/ Best Environmental Practices (BAT/BEP) Guidance for mercury emissions from coal combustion.

Format

The document could exist in a number of forms. It is suggested to be a flow chart with an accompanying guide book (including a more extensive flow-chart (possibly even an interactive model) with a more extensive work book).

Basis

There are a number of documents, such as the BAT Reference Documents (BREFS) produced by the European Commission and reports produced under the United Nations for Economic Commission for Europe (UNECE) Convention on Long-range Transboundary Air Pollution (LRTAP), already published describing best available methodologies for mercury control on industrial installations. Some of these documents have a large amount of details.

There are also numerous papers on BAT for coal combustion. These papers are sometimes commercially biased or aimed at plants already complying with other emission requirements (such as SOx and NOx).

Moreover, the state of the art of mercury control is fluid and advancing rapidly and so a detailed document could quickly become dated and inaccurate. The partnership area document would be a simplified summary guide to help various audiences (some of whom are not experts in this field) to determine whether there are simple and economic options for mercury control open to them.

A simplified flow diagram of common coal fired plant configurations could be prepared highlighting the points where mercury control can be actualized economically – e.g., coal selection/blending, coal washing, combustion optimization, optimization of existing pollution control systems and so on. The user could then select an area where they think they could make changes to their own system and, by either clicking on the link (if the document is online and interactive) or look up an appropriate chapter to obtain more detailed information.

The document could also provide a list of end-of-the-pipe mercury-specific control technologies (such as activated carbon injection, other sorbent injection, and so on) but would do so in a general manner without commercial bias.

The initial document should be kept relatively simple to ensure that it is easy to handle by the user. Individual chapters/sections would be written concisely and simply by an expert in that area (a partnership member, if possible). The document could consider the various situations of countries, cost effectiveness of various options, feasibility, and other relevant factors. Nevertheless, it should be written and edited by experts with no commercial, political or economic bias and should be peer reviewed.

The document would not be intended to be a complete guide to mercury control at coal-fired plants but rather a summary with simple and easy to follow guidance and suggestions. Moreover, the document would not be overly prescriptive, providing just narrowly defined options for mercury control. Instead the document would be written as to provide adequate flexibility, with a number of various options to achieve mercury reductions considering various relevant factors, etc. The document would link to more detailed information and to contact information for experts who are willing to help with each of the different technology options.

Organization of the work (to be confirmed):
A coordinating group comprising of representatives of IEA Clean Coal Centre, UNEP Chemicals, and other partners will oversee the development of the guidance document. The coordinating group will establish the expert network and arrangements for producing the guidance document, and agree/direct the strategy for the work. The coordinating group will provide periodic updates and opportunities to provide input to partners.

Table 2: Workplan

Activities	**Timeline**
1. Preparatory discussion: partnership to develop a work-plan and an outline of the guidance document.	June 2008
2. Engage an organization to set an initial outline	By October 2008
3. Outline of the guidance document to be consulted upon	
4. Individual Experts Draft Chapters of Guidance Document	
5. First draft guidance document.	
6. Partner review period	
7. Final draft report with incorporated comments	
8. Partner review period	
9. Final Document	

Budget

Activities	**Cost in USD**
Development of the report by individual experts:	
• Data collection, assessments, writing of the individual chapters	Expected to be mostly in-kind support
Production of the report	
• review processes, writing	
• editing, layout, graphical production	
▪ coordination, overall assessments, secretariat support	
Total costs	

Document contents
The document would cover suggested response measures from OEWG I including:
1. coal blending/switching
2. enhanced plant efficiency
3. ESP/Baghouse/FGD/SCR effects
4. specific mercury control options (such as activated carbon injection, etc.)
5. disposal/utilisation of ash (including cement and gypsum manufacture) – EPA has noted expertise to offer in this area.
6. efficiency and cost-benefit

Section ii)

Business Plan of the Mercury cell chlor alkali production partnership area, 4 February 2009

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.

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 consumption[4]) 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.

[4] 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

Reduction of Mercury Release and Consumption in Russia: Completed mercury audits at all three chlor-alklali 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 (Rostechnadzor), UNEP Chemicals, Arctic Council and World Chlorine Council (WCC).
Contact: Eleonora Barnes, USEPA, barnes.eleonora@epa.gov, 202-564-6473

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

Mercury Emissions and Use Reporting
The World Chlorine Council will report 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.
2006 data posted at: *www.chem.unep.ch/mercury/Sector-Specific-Information/Chlor-alkali_facilities.htm*
Partners: World Chlorine Council (WCC) and member industries and organizations
Contact: Rob Simon, WCC, Robert_Simon@americanchemistry.com

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

Letter of Interest: UNEP sent a letter to all governments that are believed to have chlor alkali facilities in their country in July 2009. The intention was to generate interest in the partnership and obtain information that will help strengthen/inform the partnership area in moving forward. So far, responses have been received from the United States, Finland and Serbia. This information is available to partners to better understand the needs of the partners. UNEP looks to partners for guidance on how and whether to track more specific information from other countries with mercury cell chlor alkali facilities.
Contact: Brenda Koekkoek, UNEP Chemicals, +41 22 917 88 67, bkoekkoek@chemicals.unep.ch

Storage Project in South America: UNEP will initiate a project with partners in South America to assist in preparing the region for retirement of large quantities of mercury (including from chlor alkali facilities). 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:

- Broaden representation on the Partnership to include additional governments and stakeholders, particularly governments that still have chlor-alkali facilities and/or those that are working to phase them out.
- Encourage governments to ban new mercury-cell facilities and promote conversion by sharing information on, for example, costs, benefits, and other financial incentives.
- Enhance information/knowledge, to include analysis of economic benefits of switching to non-mercury processes, and improve information and tracking of mercury from decommissioned sources.
- Further develop mercury use and releases inventories.
- 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[5]. 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.*

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.

[5] UNEP will develop a systematic reporting format and timeline for the partnership areas to follow.

Table 2: Administration and Management Support (will vary across the Partnerships)		**Source of Support**
Partnership Lead[6]	▪ 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	• 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 section vii 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 the list of participating partners, please go to the current business plans posted at the following web address: www.chem.unep.ch/mercury/partnerships/new_partnership.htm

Section iii)

Business Plan of the Mercury in products partnership area, 4 February 2009

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.

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)[7]

Global mercury demand (metric tonnes)[8]	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	300-600	200
Dental use	240-300	270
Measuring and control devices	150-350	125
Lighting	100-150	125
Electrical and electronic devices	150-350	110
Other (paints, laboratory, pharmaceutical, cultural/traditional uses, etc.)	30-60	40
Total	3,000-3,900	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).

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.

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

[8] 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) Objectives[9]

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.[10] 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.[11] 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

[9] 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."

[10] 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."

[11] Recent CRC/NRDC research suggests a figure at the top end of this range, which would likely raise the 2015 "status quo" projection.

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.

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.[12] 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.

[12] 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 bewteen 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).

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.

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. Partnership Area objective(s) and priority action(s) are addressed through each project identified below.[13] Also identified is the stage of each specific project and a contact person from whom to get further information.

- ***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)
    - Phase or Stage of Project: Completed August 2007
    - Contact: Shen Yingwa, SEPA, shenyw@crc-sepa.org.cn
    - **Priority Actions: 1, 2, 3, 7**
    - **Objective: 2 – Measuring and control devices**

- ***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: Vincent Jugault, Vincent.JUGAULT@unep.ch
    - **Priority Actions: 2, 5**
    - **Objective: All**

- ***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

[13] Partners are encouraged to implement activities that will strategically meet the targeted objectives.

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)
- Phase or Stage of Project: Completed December 2007
- Contact: Josh Karliner, HCHW, josh@hcwh.org
- **Priority Actions: 1, 2, 7**
- **Objective: 2 – Measuring and control devices**

- ***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)
  - Phase or Stage of Project: Completed January 2008
  - Contact: M. Desiré Ouedraogo, desireouedraogo@yahoo.fr
  - **Priority Action: 6**
  - **Objective: 1 – Batteries**

- ***Chile Hospitals Assessment Project***: Develop and implement hospitals assessment and reduction/elimination of mercury-containing products in Chile.
  - Partners: Chile, HCWH, United States
  - Estimated Date for Completion: March 2009
  - Costs: $60,831 USD (United States)
  - Phase or Stage of Project: Site visits completed July and October 2008; inventory and other reporting ongoing
  - Contact: Thomas Groeneveld, U.S. EPA, groeneveld.thomas@epa.gov
  - **Priority Actions: 1, 2, 3, 5, 7**
  - **Objective: 2 – Measuring and control devices**

- ***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 the country that addresses the variety of activities that mercury use in Chile entails.
  - Partners: Chile, United States, UNEP, UNITAR
  - Estimated Date for Completion: October 2008
  - Costs: $30,000 USD (UNEP Mercury Trust Fund)

- Phase or Stage of Project: Initial awareness-raising workshop completed April 2007; national skills-building workshop – "Risk Management Decision Making and PRTRs" completed November 2007; situation analysis and capacity assessment in support of mercury inventory development completed January 2008; mercury release inventory (including consideration of releases from mercury products) completed April 2008; risk management plan for mercury completed August 2008 (currently under execution); strategy on "Integration of Mercury Inventory in a National PRTR" completed August 2008 (currently under execution); national workshop – "Institutionalizing a Mercury PRTR and Developing a Mercury Risk Management Plan" completed August 2008; final project report anticipated October 2008; training on mercury-containing products management and reporting for customs officials (new project/TBD)
- Contact: Vera Barrantes, UNITAR, vera.barrantes@unitar.org
- **Priority Actions: 6, 7**
- **Objective: TBD**

- ***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
  - Estimated Date for 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, barnes.eleonora@epa.gov
  - **Priority Actions: 2, 3, 5, 8**
  - **Objective: 2 – Measuring and control devices**

- ***Costa Rica Hospitals Assessment Project***: Develop and implement hospitals assessment and reduction/elimination of mercury-containing products in Hospital Nacional de Ninos and Hospital de San Ramon in San Jose, Costa Rica.
  - Partners: Costa Rica, United States
  - Estimated Date for Completion: March 2009
  - Costs: $75,318 USD (United States)
  - Phase or Stage of Project: On-site visit completed December 2007; preliminary report completed March 2008; implementation phase initiated; interim implementation report completed January 2009
  - Contact: Thomas Groeneveld, U.S. EPA, groeneveld.thomas@epa.gov
  - **Priority Actions: 1, 2, 3, 5, 7**
  - **Objective: 2 – Measuring and control devices**

- ***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
    - Estimated Date for Completion: October 2008
    - Costs: $30,000 USD (UNEP Mercury Trust Fund)
    - Phase or Stage of Project: Draft guidance for risk-management plan including consideration of releases from mercury products completed October 2007; National Skills Building Workshop on Risk Management Decision Making and PRTRs completed February 2008; Mercury Emissions Inventory completed April 2008; mercury release inventory (including consideration of releases from mercury products) completed August 2008; risk management plan for mercury completed August 2008; national workshop – "Institutionalizing a Mercury PRTR and Developing a Mercury Risk Management Plan" completed September 2008; final project report anticipated October 2008; training on mercury containing products management and reporting for customs officials (new project/TBD)
    - Contact: Vera Barrantes, UNITAR, vera.barrantes@unitar.org
    - **Priority Actions: 6, 7**
    - **Objective: TBD**

- ***Health Care Cooperative Agreement to Provide Technical Support for Mercury Reduction in Hospitals*** (Pending): 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: TBD
    - Costs: $1,000,000 USD; year-one budget: $315,000 USD (United States)
    - Phase or Stage of Project: Grant review completion anticipated in January 2009.
    - Contact: Clarence Lewis, U.S. EPA, lewis.clarence@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
    - Estimated Date for Completion: March 2009
    - Costs: $50,000 USD (United States)
    - Phase or Stage of Project: Site visit and initial inventory completed November 2008; mercury management and reduction plans under development
    - 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:*** Develop a healthcare facility pilot project in Mexico to establish a template for mercury reduction initiatives in other healthcare facilities. Expected to begin in 2007.
    - Partners: Mexico, United States, HCWH, North American Commission for Environmental Cooperation (NACEC)
    - Estimated Date for Completion: December 2008
    - Costs: $125,000 USD ($105,000 USD – NACEC; $20,000 USD HCWH)
    - Phase or Stage of Project: Completed December 2007; NACEC-funded project to communicate with most other hospitals in Mexico is approved for 2008
    - 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 Products Inventory Update:*** Assist Mexico in developing a mercury-containing products and alternatives inventory through a market study and updating existing product databases. The inventory will compile 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 Phase 1 report 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.
    - Partners: Mexico, United States, NACEC
    - Date of Completion: December 2008
    - Costs: $30,000 USD (United States and NACEC)
    - Phase or Stage of Project: Phase 1 report describing preliminary product use and import/export quantities completed December 2007; workshop to share findings of report being planned held October 2008; report describing Mexican mercury market report and Mexican mercury products and alternatives database completed December 2008
    - Contact: Luke Trip, Program Manager NACEC, ltrip@cec.org and Gustavo Solorzano Ochoa, CENICA-INE-SEMARNAT, gsolorza@ine.gob.mx
    - **Priority Action: 6**
    - **Objective: TBD**

- ***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**

- ***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
    - Estimated Date for Completion: October 2008
    - Costs: $30,000 USD (UNEP Mercury Trust Fund)
    - Phase or Stage of Project: Draft guidance for risk-management plan completed October 2007; Mercury Emissions Inventory including consideration of releases from mercury products completed; National Skills Building Workshop on Risk Management Decision Making and PRTRs held February 2008; risk management plan for mercury completed August 2008 (currently under execution); strategy on "Integration of Mercury Inventory in a National PRTR" completed September 2008; national workshop – "Institutionalizing a Mercury PRTR and Developing a Mercury Risk Management Plan" completed September 2008; mercury release inventory (including consideration of releases from mercury products) anticipated October 2008; final project report anticipated October 2008; training on mercury containing products management and reporting for customs officials (new project/TBD)
    - Contact: Vera Barrantes, UNITAR, vera.barrantes@unitar.org
    - **Priority Actions: 6, 7**
    - **Objective: TBD**

- ***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
    - Estimated Date for 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, barnes.eleonora@epa.gov
    - **Priority Actions: 2, 3, 5**
    - **Objective: 3 – Electrical and electronic equipment and 4 – Lighting**

- ***Regional Workshops on Elimination of Mercury in Health Care:*** 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)
    - Estimated Date for Completion: December 2008.
    - Phase or Stage of Project: Three of four workshops completed (South East Asia, Latin America, Southern Africa) with the fourth (South Asia) to take place in December 2008; all three events achieved their stated objectives and have resulted in significant, tangible movement toward the phase-out of mercury in the health care sector in host countries and broader regions.
    - Contact: Josh Karliner, HCWH, josh@hcwh.org
    - **Priority Actions: 3, 8**
    - **Objective: TBD**

- ***South Africa Assessment*** (Pending): 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: TBD
    - Contact: Craig Boljkovac, UNITAR, craig.boljkovac@unitar.org
    - **Priority Actions: 6, 7**
    - **Objective: TBD**

- ***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
    - Costs: $100,000 USD (UNEP Mercury Trust Fund)
    - Phase or Stage of Project: Completed May 2007; meeting report available at http://www.chem.unep.ch/mercury/Sector-Specific-Information/Docs/Hg_workshopBangkok_HgRedAsiaPac1719May2007-11.pdf
    - Contact: Desiree Narvaez, UNEP, DNarvaez@chemicals.unep.ch
    - **Priority Action: 7**
    - **Objective: All**

- ***Strengthening Regional and National Capacities in Central America:*** Three-part initiative with mercury initiative 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 final hospitals inventory for product substitution completed xxxx 2008; Honduras working to complete inventory; development of inventories in Dominican Republic and Nicaragua ongoing
- Contact: Sue Slotnick, U.S. EPA, slotnick.sue@epa.gov

➢ **Priority Action: 1, 3, 4, 6, 7, 8**

➢ **Objective: All**

V. OPPORTUNITIES

Projects (including bilateral projects) targeted towards meeting business plan objectives are encouraged, and could include the following topic areas: (1) developing sector-related product substitution strategies – Priority Action 3; (2) researching alternatives to mercury use for energy efficient lighting – Priority Actions 2, 3, 4; (3) pursuing international standards for accurate, mercury-free, high-quality medical devices and other health care products, including certain vaccinations – Priority Actions 2, 3, 4; (4) developing, implementing, and replicating model policies at municipal, state/provincial, and national levels to eliminate mercury use in products and assure its safe storage and disposal (including procurement policies) – Priority Actions 1, 2, 5, 7; (5) maintain and make available listings of project reports and other relevant guidelines, codes of practice – Priority Actions 6, 7; (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 increased collaboration with other key international organizations such as the World Health Organization; build upon industry engagement such as the World Business Council for Sustainable Development, and encourage additional governments and stakeholders to partner.
- Consideration of sub-categories within the products sector may help focus the business planning process (consumer product and health care sectors)
- Review existing BAT/BEP guidance for new and existing sources. Amend and supplement as appropriate to provide mercury guidance and expand outreach to developing countries in sharing and implementing such guidance.
- Promote bilateral and multilateral aid and investment to foster the industrial transition to global production of affordable, high quality non-mercury products.
- Explore possibilities for economic and financial incentives as well as loans for technology conversion/change over.
- Pursue international standards for mercury content in compact fluorescent lamps.
- Identify major manufacturers of mercury-containing products, set standards for mercury content, and share BAT/BEP on the reduction of mercury content.
- Encourage governments with positive or successful experience on mercury substitution and technology changeover to share experiences such as legislative/regulatory measures, financial incentives, capacity-building, and awareness-raising.
- Strengthen and increase the scope of global efforts to address and reduce the use of mercury-containing dental amalgam.

VI. PERFORMANCE MEASUREMENT AND REPORTING

The partnership areas will report biennially to UNEP in accordance with the UNEP reporting format.[14] Reporting will include tracking partnership activities and partner contributions as well as assessing effectiveness, and measuring the impact of partnership activities on the achievement of the overall goal. In this section, the partnership areas shall:

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

VII. RESOURCE MOBILIZATION

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

Partners are encouraged to contribute not only financially but also to offer in-kind assistance. For example, the 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).

[14] UNEP will develop a systematic reporting format and timeline for the partnership areas to follow.

Table 2: Administrative[15] and Management Support (will vary across the Partnerships)		**Value**	**Source of Support**
Partnership Lead[16]	▪ Facilitation and support of the partnership.	¼ person year	In-kind support from USA
Organization Point of Contact	• Preparing Business Plan. • Preparing for meetings. • Logging meeting notes, tracking action items. • Collaborating with partners to strategically link to overall partnership goals and objectives.		In-kind support from USA
UNEP Secretariat Support	• 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. 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).	Teleconference lines Travel support	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	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 would serve to provide a cohesive structure or framework for ensuring that individual projects are able to be linked to the larger goals outlined in Section II of the business plan. As such, there should be a more structured process for individual projects to communicate on a regular basis, to obtain technical and outreach support, and to ultimately record, learn from and build upon successes and outcomes.

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

[15] Administrative support does not cover the cost of administering individual projects.

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

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, Artic Council Action Plan, United Nations Cleaner Production Centers and the World Health Organization (e.g., development of mercury-related health care policies).

X. PARTNERS

Please see section vii 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 the list of participating partners, please go to the current business plans posted at the following web address:
www.chem.unep.ch/mercury/partnerships/new_partnership.htm

For more information, please contact Thomas Groeneveld at groeneveld.thomas@epa.gov, or Desiree Narvaez at DNarvaez@chemicals.unep.ch.

Please visit the following web address for additional information on the Global Mercury Partnerships:
www.chem.unep.ch/mercury/partnerships/new_partnership.htm

Section iv)

Business Plan of the Mercury air transport and fate research partnership area, 7 August 2008

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.

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
• Coordination in conducting research projects related to partnership objectives and scope on national/regional/global scales on cross-cutting issues of the mercury cycle.	• 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.)	• Joint research proposal to be submitted in the framework of the European Commission FP7. (Italy)
• Develop global, coordinated network of measurements for assessing levels of mercury and its species in the atmosphere – improving the comparability among measurements and observations	• 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 (Canada, South Africa) • 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)	• 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) • 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.)
• 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	• IPY projects on mercury transport, cycling and deposition of mercury to the Polar environment (Canada)	
• Develop a global, commonly accepted modeling framework for source-receptor relationships assessment at global and regional scales	• 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.)	
• Develop global emissions inventories, e.g., by filling current gaps in geographic and source	• Maintain and make available national mercury emissions information (Canada, United States)	

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	(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/wocq/collaborators.html) (U.S.)	
• Build capacity, including through the provision of training programs, related to partnership objectives and scope monitoring, modeling and other tools in countries where necessary	• South Africa held a Hg analytical training programme in conjunction with international Hg experts	
• Build on existing international activities work already underway internationally, e.g., GEOSS, Arctic Council, UNECE-HTAP, WMO, AMAP	• Canada will co-author the next AMAP mercury assessment • 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

The Partnership has met three times. 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.

Each country and organization's initial contributions are provided in the section "Specific Contributions" of the F&T website (http://www.cs.iia.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).

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.
- Explore opportunities for 'mercury issue' outreach with International Polar Year 2008 activities
- 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

(This is to identify accomplishments of the activities undertaken by the Partnership)

The partnership areas will report biennially to UNEP in accordance with the UNEP reporting format[17].
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.

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.

[17] UNEP will develop a systematic reporting format and timeline for the partnership areas to follow.

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 has proposed 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.iia.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 on which are available information on all Partnerships, www.chem.unep.ch/mercury/ partnerships/default.htm

XI. Partners

Please see section vii 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 the list of participating partners, please go to the current business plans posted at the following web address:
www.chem.unep.ch/mercury/partnerships/new_partnership.htm

Appendix A of the Mercury air transport and fate research business plan

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 recognizes that it is uniquely placed to contribute to the UNEP report. Accordingly, it will coordinate the development of a contributing 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 partnership report will be coordinated with UNEP, recognizing that UNEP is a partner in this Partnership. The Partnership report materials will be structured and written so as to be able to easily integrated into the UNEP report, with the text developed so as to communicate with policymakers as well as with the scientific community.

Drafts of the partnership report chapters will be provided to UNEP by 31 January 2008. Each leading author of the chapters will be invited to present his/her contribution at the workshop of F&T to be held in Rome in April 2008. The F&T workshop will be a joint workshop with the annual UNECE-HTAP Task Force meeting: this will allow the benefit of participation of a larger number of experts, and will assure a stronger consistency of results presented in the partnership report and a UNECE-HTAP report that is due in February 2009. The authors of each chapter will subsequently revise, within 4 weeks of the workshop, their chapter(s) based on the discussion during the April 2008 workshop and comments provided by partners and other experts, and resubmit the revised chapters to the Chair of the F&T. The Chair of F&T will circulate the revised draft chapters among all partners and will prepare the final draft edition of the partnership report in the second half of May 2008 and, following clearance by the F&T Partners, submit it to UNEP for information. Publication of the partnership report through other means will also be considered.

In order to assure a timely flow of information between F&T and the UNEP Report preparation, the F&T partners will remain active in responding as appropriate to review comments on the draft F&T report chapters, as requested by UNEP, that are received during the review of the draft UNEP report, and the Chair of the F&T will participate in the Coordination Committee overseeing the development of the UNEP report.

The preparation of the partnership report is a step forward from the UNEP 2002 GMA report and from the synthesis papers prepared by five expert panels at the last International Conference on Mercury as a Global Pollutant (ICMGP) held in Madison, USA in August 2006 which have been published in Ambio (February 2007). In particular the five papers of the Madison Conference are introduced by the Madison Conference Declaration in which a concise and up to date overview of major pending scientific and policy questions are presented (see Ambio, vol.36, 2-65).

In order to meet the time schedule and objectives of the overall UNEP Report, the F&T Chair will manage the preparation of the partnership report through the involvement of world leading scientists on different aspects of atmospheric mercury emissions, transport and deposition. The preparation of the F&T report will be developed through different steps as reported below, undertaken by the coordinating committee and supported by F&T partners where indicated:

1) Identification of the contributors for the information required for the partnership report.
2) Contributing and leading authors of each chapter will be formally invited to provide information in an appropriate format, with a mention of the 2008 workshop.
3) Contributors to submit required information to the coordinating committee by January 31, 2008. All contributions to be provided to F&T partners for their review.

4) Preparation of the draft UNEP report by coordinating committee or others designated by the committee as appropriate
5) Review of draft UNEP report (peer review by July 15, national review by July 30 2008). The UNEP report will then be finalized in a separate process.
6) Each leading author will be invited to present his/her contribution to the partnership report at the workshop of F&T to be held in Rome in April 2007. Possibility to elaborate the contribution in a chapter for the workshop (partnership?) report.
7) The F&T workshop will be a joint workshop with the annual UNECE-HTAP Task Force meeting, this will allow to get a great benefit by the participation of a larger number of experts and will assure a stronger consistency of results presented in the F&T report and UNECE-HTAP report. The latter due also on February 2009. Contact with the UNECE-HTAP Task Force co-coordinators, Dr. Andre Zuber of the European Commission and Dr. Terry Keating of the U.S.EPA have been established for the organization of the joint Mercury Sessions and for sponsoring the travel expenses of the invited experts. A financial contribution from UNEP Chemicals for the workshop will be highly appreciated. A meeting of the F&T partnership will be held concurrent with the April 08 workshop.
8) Based on the discussion that will take place during the April 2008 workshop and comments provided by partners and other experts, the authors of each chapter will revise within 4 weeks their chapter and send back to the Chair of the F&T for inclusion in the partnership report. F&T partners to also be provided with the revised chapters and summary chapters for final review and approval prior to publication.
9) The Chair of F&T will prepare the final draft edition of the partnership report in the second half of May 2008 and, following clearance by the F&T partners, submit it to UNEP for information.
10) In order to assure a timely flow of information between the partnership report and UNEP Report preparation, the F&T partners will remain active in responding, as appropriate, to review comments on the draft partnership report chapters, as requested by UNEP, that are received during the review cycle of the draft UNEP report.

Structure of the F&T 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

III. 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.iia.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 leaded 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.iia.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.iia.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.iia.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.iia.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.

IV. 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 projects 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.

V. 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.

VI. 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., SOx 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 is undertaking field testing of the 'Toolkit for Identification and Quantification of Mercury Releases' in the Asian region. In doing so, UNEP is working with Yemen, Pakistan, Cambodia, the Philippines and Syria in developing initial mercury inventories and associated action plans. Initial results from this project will start coming forward in early 2008 and will help provide valuable insights to these countries and to the UNEP Global Mercury Partnership in strategic activities in moving forward. Funded through the UNEP Mercury Trust Fund: approximate total funding is $240,000 USD. There is some potential support from the Government of Japan for the results workshop, anticipated for March 2008.

Contact person: Brenda Koekkoek, 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. A first draft will be produced by May 2008. This deadline is critical in order to deliver results to the 25th session of Governing Council. The partnership will produce a mercury assessment report that will feed directly into the UNEP emissions report as a major contribution. A draft report will be produced by the partnership by 31 January 2008. In addition, the partnership, through its chair will participate in a 'Coordination Group' responsible for overseeing the process of developing and delivering the UNEP report, and for the coordination and harmonization as far as possible of the activities under the F&T partnership, AMAP and UN ECE HTAP.

Contact Person: Gunnar Futsaeter, UNEP Chemicals.

Section v)

Business Plan of the Mercury in artisanal and small-scale gold mining partnership area, 4 February 2009

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.

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 almalgamation.
   - 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[18]. 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.

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

[18] UNEP will develop a systematic reporting format and timeline for the partnership areas to follow.

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 projects 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'at'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. Working with UNEP, the overall Partnership lead would help to facilitate communication and provide administrative and management support (see Table on the following page) to ensure that individual activities or projects are supported and connected to the larger, overall strategic goals of the Partnership.

Funding for Partnership Activities:

Partners can develop specific initiatives, work with non-partners, or pursue projects consistent with partnership objectives. It is hoped that the 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 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 proposals addressing mercury issues under the SAICM Quick Start Programme (see www.chem.unep.ch/saicm/qsp.htm) and is currently exploring possibilities with interested countries in South America and Asia.

Administration [19]and Management Support		Value	Source of Support
Partnership Lead[20]	• Facilitation and support of the partnership.	¼ person year	UNIDO (supported by donors)
Organization Point of Contact	• 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 (supported by donors)
UNEP Secretariat Support	• 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. 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).	Teleconference lines Travel support	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.

[19] Administrative support doesn't cover the cost of administering individual projects.

[20] For the ASGM Partnership, the lead is UNIDO. The partner lead and the point of contact may be merged, pending the case

IX. LINKAGES

Development of Emission Inventories.

UNEP is undertaking field testing of the 'Toolkit for Identification and Quantification of Mercury Releases' in the Asian region (with five countries: Cambodia, the Philippines, Pakistan, Syria and Yemen). Initial results from this project will start coming forward in early 2008 and will help provide valuable insights to these countries and to the UNEP Global Mercury Partnership in strategic activities in moving forward. Potential efforts under the Mercury in Products Partnership could be identified and developed as a result of this activity. UNEP will report on this activity to the ASGM Partnership. In particular, the Philippines and Cambodia expect to gain insights in the ASGM sector. Partners are also asked to feed known information to UNEP from these countries. Contact person: Brenda Koekkoek, 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 Mary 2008). Contact: Gunnar Futsaeter, UNEP (gfutsaeter@chemicals.unep.ch)

X. CURRENT PARTNERS

Please see section vii 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 the list of participating partners, please go to the current business plans posted at the following web address:
www.chem.unep.ch/mercury/partnerships/new_partnership.htm

Section vi)

Business Plan of the Mercury waste management partnership area, 7 August 2008

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.

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. The partnership area puts priorities in such actions:

- Identify environmentally sound collection, disposal and treatment techniques for mercury waste following a lifecycle management approach, including:
- Assess environmental impacts of current waste management practices and processes, including providing support to countries to assess their national situation and needs.
- Promote awareness and education of issues related to mercury waste.

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 waste[21] 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, disposal and treatment techniques for mercury waste following a lifecycle management approach, including:
    - Identify and characterize mercury contained in waste streams by taking into account contamination level and waste volumes.
    - 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.
    - 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 and needs.

[21] Throughout this document “mercury waste” refers to obsolete mercury, waste containing or contaminated with mercury

c. Promote awareness and education regarding mercury waste.

IV. Opportunities

This section addresses areas where the partnership has the potential to become active. Since the partnership is just starting, there are not yet ongoing activities but the following opportunities have been identified so far. New activities will be included as they are being identified.

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).

V. Partner efforts and timelines

This is a proposed new partnership area. There are currently no activities directly implemented through the partnership area. National governments, international organization and NGO are conducting and will plan various activities related to the mercury waste management. In the future, this section might be separated in accordance with the players.

On-going current efforts on mercury waste management:

1. Several Basel Convention Technical Guidelines of relevance have been developed and adopted by the Parties to the Basel Convention, namely: the technical guidelines on environmentally sound management of household waste; technical guidelines on the incineration on land; and technical guidelines on specially engineered landfills. These guidelines are currently being reviewed by the Basel Convention Open-Ended Working Group.

2. Cooperation on mercury waste between UNEP Chemicals and the Basel Convention is on-going. The eighth Conference of the Parties to the Basel Convention included a new Strategic Plan focus area on mercury wastes in the 2007-08 biennium. Currently there are two main work area components being conducted by the Basel Convention Secretariat, in cooperation with UNEP Chemicals.
   - **Component I:** draft of the technical guidelines on the Environmentally Sound Management (ESM) of mercury wastes;
   - **Component II**: a capacity-building and technical assistance programme to reduce risk and prevent pollution from mercury.
     - In order to contribute to the finalization of the draft guidelines on the ESM of mercury waste, country projects in Asia, Africa, and Latin America are under way. The projects which will test the applicability and usefulness of said guidelines will be funded by UNEP Chemicals and the SBC, respectively, in parallel. Proposed activities include: prioritization of mercury waste sources from the mercury inventory results; planning for national mercury waste management; application of the guidelines through training and awareness raising; human and environmental sampling analysis (with the assistance of the Japan National Institute for Minamata Disease); and an evaluation of the guidelines by key stakeholders.

3. The World Health Organization Department of Health Security and Environment is currently finalising a revised edition of the "Health Care Waste Management Manual". This guidance document describes the elements on the ESM of waste from health care facilities, including wastes containing mercury.

4. A UNDP-GEF project on "Demonstrating and promoting BAT/BEP for reducing health-care waste to avoid environmental releases of dioxins and mercury" is also underway in 8 countries (Argentina, Philippines, Lebanon, Latvia, Vietnam, India, and Senegal). This project is aimed at promoting environmentally sound technologies, demonstrating alternatives, and implementing waste management programs related to dioxin and mercury in the health sector.

5. Each country has related projects that are underway or have been completed. Some countries and organizations that have given the examples cited in this paper (below) responded to a call for the information through the partnership.

MULTILATERAL

JICA Training Course Hazardous Waste Management and Appropriate Disposal for Asia:

Aim of the project: To assist officials of national and local governments in Asian countries enhancing capacities for planning hazardous waste management policies suitable to their conditions through providing them with basic knowledge and Japan's experiences in hazardous waste management
Partners: Asian countries, Japan International Cooperation Agency, Japan Environmental Sanitation Center
Projected Completion Dates: 2009
Phase or Stage of Project: This training course has been provided once every year since 2007.
Contact: Japan Environmental Sanitation Center +81-44-288-4895

Development of BAT/BEP technical guidance for implementation of important part of Basel Guideline for sound management of waste containing mercury

Aim of the 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 Basel Guideline.
Partners: Japan and others (tbd)
Projected Completion Dates: 2010
Phase or Stage of Project: Recently commenced.
Contact: Ministry of the Environment, Japan (and private consultant) +81-3-5521-8260

BILATERAL

Arkhangelsk

Bilateral project between Arkhangelsk and Norway.

Aim of the 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.

Partners: County Administration of Arkangelsk, The Norwegian Pollution Control Authority and The County Governor of Hordaland in Norway.

Projected Completion Dates: 2008

Cost: Approx. 50,000 USD

Phase or stage of project: Three workshops are carried out, two in Arkhangelsk and one in Norway.

Contact: Mr. Håkon Oen, Norwegian Pollution Control Authority, Tel: + 47 22573400

Russia

Multilateral projects between Russia, Denmark, USA and Norway.

Aim of the project: To reduce mercury releases from waste in Russia. These projects are conducted under ACAP (Arctic Contaminants Action Program). The projects cover: Handling of hazardous waste containing mercury, installing carbon filter/mercury cleaning at a coal plant and Partnership for the phase out of mercury in chlor-alkali industry.

Dates of completion: The projects are running from 1999 to 2008 with economic support from Norway, Denmark and USA.

Partners: Norwegian Pollution Control Authority,

Projected Completion Dates: 2008

Cost: Norwegian funds; Approx. 10,000 USD.

Phase or stage of projects: TO BE ADDED

Contact: Ms. Bente Sleire, Norwegian Pollution Control Authority, Tel: +47 22573400

South Africa

Bilateral project between South Africa and Norway.

Aim of the project:
To develop a national strategy on reduction of, handling and disposal of hazardous waste

Partners: Department of Environmental Affairs and Tourism (DEAT), the Norwegian Pollution Control Authority (SFT)

Projected Completion Dates: 2010

Cost: Approx. 320,000 USD

Phase or stage of project: under planning

Contact: Ms. Barbro Thomsen, Norwegian Pollution Control Authority, Tel: + 47 22573400

NATIONAL

Nigeria

Environmentally Sound Implementation of Healthcare Waste Management Plan in Nigeria.

Nigeria has carried out an inventory on Healthcare Waste and has developed an Action Plan, Guidelines, and Policy / Bill for healthcare waste management including healthcare wastes containing mercury.

Cross Reference

Under the mercury in products partnership area, work is underway to address mercury waste resulting from the phase out of mercury in hospitals and health care facilities in selected pilot projects as follows (see details in the Mercury – Containing Products Partnership Area Business Plan).

China Hospitals Project: Demonstration programs at two Beijing hospitals to significantly reduce mercury containing products and waste.

Partners: China (Beijing), United States, Healthcare Without Harm (HCWH)

Projected Completion Dates: September 2007

Phase or stage of project: Completed

Contact: Shen Yingwa, SEPA, shenyw@crc-sepa.org.cn

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: Product Partnership countries needing assistance with building capacity for managing mercury waste, United States, Basel Convention Secretariat,

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

Contact: Vincent Jugault, Vincent.JUGAULT@unep.ch

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, Healthcare without Harm, UNEP

Projected Completion Dates: January 2008

Costs: Project was funded from the UNEP Mercury Trust Fund at $95,000 USD.

Phase or stage of project: Nearing completion of preliminary report

Contact: Josh Karliner, HCHW, josh@hcwh.org

Chile Hospitals Assessment Project: Develop and implement Develop and implement hospitals assessment and reduction/elimination of mercury-containing products Chile.

Partners: Chile, Health Care without Harm, United States, Basel Convention Secretariat

Projected Completions Dates: On-site visit – TBD; Project completion – TBD

Phase or stage of project: Project under development – will be similar in scope to Costa Rica Hospitals Assignment

Contact: Thomas Groeneveld, U.S. EPA, groeneveld.thomas@epa.gov

Costa Rica Hospitals Assessment Project: Develop and implement hospitals assessment and reduction/elimination of mercury-containing products in Hospital Nacional de Ninos in San Jose, including an pilot project with the Basel Convention Secretariat to reduce and manage mercury waste in hospitals in Costa Rica.

Partners: Costa Rica, United States, Basel Convention Secretariat

Projected Completions Dates: On-site visit – December 2007; Project completion – June 2009

Phase or stage of project: On-site visit and preliminary report completed; implementation phase initiated

Contact: Thomas Groeneveld, U.S. EPA, groeneveld.thomas@epa.gov

Mexico Healthcare Project: Develop a healthcare facility pilot project in Mexico to establish a template for mercury reduction initiatives in other healthcare facilities. Expected to begin in 2007.

Partners: Mexico, United States, Healthcare without Harm, North American Commission for Environmental Cooperation (NACEC)

Projected Completion Date: January 2008

Phase or stage of project: Project completed December 2007; NACEC-funded project to communicate with most other hospitals in Mexico is approved for 2008

Contact: Luke Trip, Program Manager, NACEC, ltrip@cec.org and Alfonso Flores Ramirez, CENICA-INE-SEMARNAT, alfonso.flores@semarnat.gob.mx

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: Health Care Without Harm and UNEP with sponsorship and/or participation in each workshop from national ministries of health and environment, WHO and health care professionals associations.

Projected Completion Dates: December 2008.

Phase or Stage of project: Three of four workshops completed(South East Asia, Latin America, Southern Africa) with the fourth (South Asia) to take place in December 2008. All three events achieved their stated objectives and have resulted in significant, tangible movement toward the phase-out of mercury in the health care sector in host countries and broader regions.

Contact: Josh Karliner, International Team Coordinator, Health Care Without Harm, josh@hcwh.org

Under the ASGM partnership area, UNIDO conducts the Global Mercury Project (GMP) which began in August 2002. The GMP will 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 wastewater which contains mercury. (see details in Business plan of the Artisanal and Small Scale Gold Mining (ASGM) Partnership Area).

With the support of the Government of Switzerland and USA(EPA), UNITAR (in cooperation with UNEP Chemicals and UNEP GRID-Arendal) is working with the Government of Kyrgyzstan to assist with assessing and taking action regarding the world's last remaining known primary mercury mine. The project, which is advised by an international group of advisors and a national steering committee (to be formed), starts in 2008 and aims to regularly report progress under the supply partnership.

US (EPA) conduct 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."

VII. Performance measurement and reporting

The partnership areas will report biennially to UNEP in accordance with the UNEP reporting format[22]. 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).

[22] UNEP will develop a systematic reporting format and timeline for the partnership areas to follow.

VIII. 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 mercury in 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.

In accordance with Section 4 of the Overarching Framework for the UNEP Global Mercury Partnership, 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.

Table 2: Administration and Management Support (will vary across the Partnerships)		**Source of Support**
Partnership Lead[23]	▪ Facilitation and support of the partnership.	Japan (Prof. Dr. TANAKA)
Organization Point of Contact	• 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	• 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	Estimated one per year. All attempts will be made to host face to face meetings of the partnerships in the	Japan, Ministry of the Environment hosts the meeting in the beginning of year (venue: tbd)

	most cost effective way (e.g. back-to-back with other related meetings and have the ability to call in).	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	In case of necessity	Japan, Ministry of the Environment

IX. **Partners**

Please see section vii 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 the list of participating partners, please go to the current business plans posted at the following web address:

www.chem.unep.ch/mercury/partnerships/new_partnership.htm

X. **Linkages**

- Artisanal and small scale gold mining
- Reductions from the Chlor-Alkali Sector
- Reduction of Mercury Release from Coal Combustion
- Mercury containing products
- Others (e.g. supply, longer-term storage)

Section vii) Current Partner Membership List

As of 4 February 2009, the UNEP Global Mercury Partnership is comprised of the following partners[24]:

		Coal Combustion	Artisanal Gold Mining	Chlor alkali	Products	Air transport and fate research	Waste Management
	Partners						
Government							
1.	Guinea Conakry						
2.	Liberia		x		x		x
3.	Malawi				x		x
4.	Nigeria	x	x		x		x
5.	United States of America	x	x	x	x	x	x
6.	Zanzibar						
Intergovernmental Organization Partners							
7.	United Nations Industrial Development Organization		x		x		x
8.	World Health Organization				x		
9.	International Energy Agency – Clean Coal Centre	x					
Non-Governmental Organization Partners							
10.	Association for Responsible Mining (ARM)		x				
11.	Centre de Recherche et d'Education pour le Développement (CREPD) – Cameroon		x		x		x
12.	Day Hospital Institute for Development & Rehabilitation (DHIDR - Egypt)				x		
13.	Ecologic / Grupo Parques Nacionales Panamá / Alianza Contaminación Cero (GPNP – Panama)				x		x
14.	Gulf Tankers Co. – Kuwait						
15.	Informer, Sensibiliser, Eduquer sur les Polluants Organiques Persistants en Cote d´Ivoire (ISE-POPS-CI)	x	x		x		x
16.	Pollution Control Association (PCA) – Liberia		x				x
17.	Pro-Biodiversity Conservationists in Uganda (PROBICUO) – Uganda				x		x
18.	World Medical Association				x		x
Others							
19.	ARCADIS – USA	x			x		x
20.	Centre for Ecological Economica Norwegian Institute for Air Research (CEE-NILU)						
21.	Illinois Institute of Technology (Herek L. Clack)	x					
22.	Italian National Research Council (CNR)					x	
23.	Institute for Combustion Science and Environmental Technology, Western Kentucky University (ICSET)	x			x	x	x
24.	MineResearch		x				
25.	Niksa Energy Associates (NEA)	x					
26.	Sang-Joon Yoo (individual)					x	
27.	Tshingua University	x					

[24] Please note that this is a list of partners that have submitted letter of support to the UNEP Global Mercury Partnership as specified in the Overarching Framework UNEP Global Mercury Partnership. There are a number of participating partners that have not submitted official support letters. Partners are encouraged to submit support letters to UNEP at mercury@chemicals.unep.ch.