



Mercury Policy Project

NGOⁱ Proposal for a Global Mercury Strategy at the 2007 UNEP Governing Council Meeting January 2007

I. Executive Summary

Mercury is highly toxic, causing damage to the nervous system at even low levels of exposure. It is concentrated through the food chain - especially in fish - collects in humans and wildlife, and is particularly harmful to the development of unborn and small children. Mercury travels long distances through the atmosphere across national boundaries and has contaminated global food supplies at levels posing a significant risk.

Since present measures are not sufficient to adequately reduce risks from mercury (see Figures 1 and 2 below), further coordinated actions must be undertaken at global level, including but not limited to the following:

1. Work should start as soon as possible towards a global binding agreement on mercury.
2. The findings of the trade report conducted for the UNEP Governing Council should be fully utilized, and concrete actions should be taken as follows:
3. Global Mercury Demand Reduction
 - a. A global **mercury demand reduction goal** of 50% by 2012 and 70% by 2017, as compared to 2005, should be established (see table in annex).
 - b. Mercury reduction goals should be achieved through the following means:
 - i. Enactment of legislation phasing out the use of hazardous substances in **electrical and electronic equipment** in all countries with a significant electronic products manufacturing base;
 - ii. Ending the use of mercury in the production of **button cell batteries**;
 - iii. Phasing-out most production of mercury **fever thermometers**, and minimizing the production of other **non-electronic mercury-containing measuring equipment**. International institutions, governments, health care institutions and other large purchasers of medical equipment should facilitate the transition in the developing world to non-mercury fever thermometers through their purchasing power and the development of appropriate regulatory frameworks.
 - iv. Ensuring that **mercury-containing products and mercury-using processes** restricted in industrialized countries are not sent to developing countries;
 - v. Phasing out use of the **mercury-cell chlor-alkali process** as soon as possible. To facilitate this conversion to non-mercury technologies, a financial assistance plan for developing nations should be prepared by UNEP for the 25th Governing Council meeting in 2009.
 - vi. Establishing a sector-specific demand reduction goal for **artisanal and small scale gold mining** of 50% by 2017 as recommended by the Global Mercury Project of UNIDO, achievable by eliminating the use of mercury in the processing of whole ore, other practicable measures, and coordinating with other countries and organizations to incorporate mercury reduction techniques into their projects in this sector.
4. Global Mercury Supply Reduction
 - a. A **hierarchy of mercury supply sources** should be established for use in commerce, favoring mercury from byproduct production and the recycling of wastes and products over mercury from primary mining and decommissioned chlor-alkali plants. Primary mining is the least preferred mercury supply source because it creates new mercury and is a significant source of emissions.
 - b. Excess mercury supply should be prevented from entering into global market consistent with this hierarchy through the following means:
 - i. **Restricting mercury exports** from developed nations;
 - ii. Including mercury in the Rotterdam Convention on **Prior Informed Consent** before any mercury waste shipments;
 - iii. **Promoting alternative development to replace primary mining** where it is still conducted;

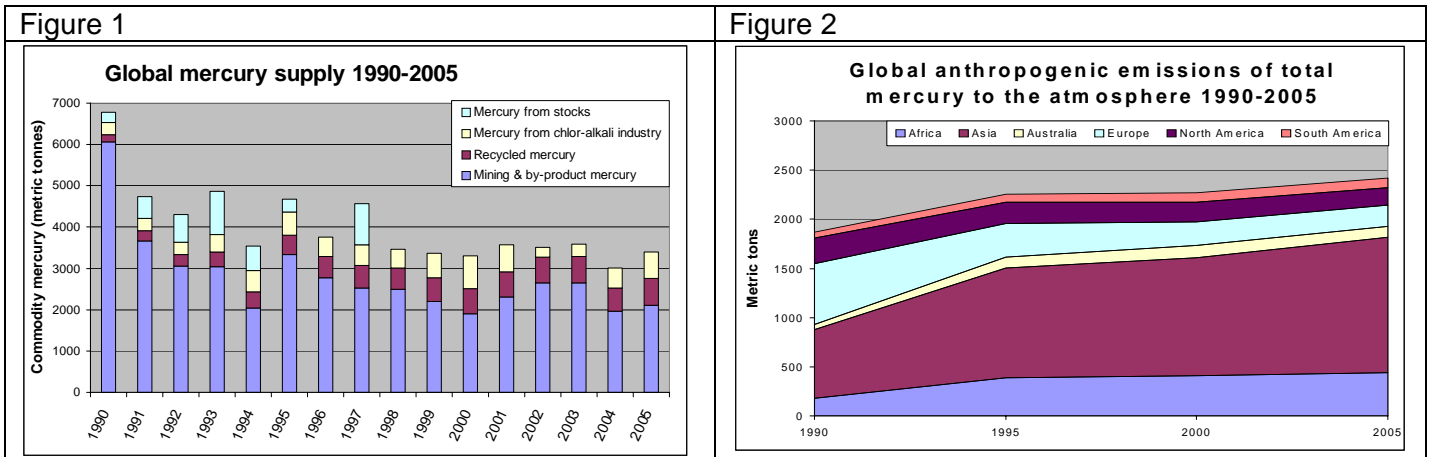
- iv. Establishing a working group to develop recommendations for the coordinated diversion from commerce and **management of mercury from closing chlor-alkali facilities**; and
- v. Identifying options for increasing **mercury by-product production** from zinc smelting and industrial gold production, and simultaneously obtaining mercury emission reduction co-benefits.

5. Financial Assistance

Developed countries should provide **new and additional financial resources** to support these activities in developing nations, and GEF and/or other global institutions should create a financial assistance mechanism to support global mercury activities consistent with the above proposals.

NOTE : GLOBAL MERCURY USE AND RELEASES SINCE 1990s – VERY LITTLE PROGRESS

Figure 1 is derived from the recently published mercury trade report prepared for the UNEP Governing Council, and indicates global mercury use has changed little since 1994 as the developed world exports its excess mercury and outdated technologies to the developing world. Figure 2 is based on the work from Jozef Pacyna and his colleagues, and illustrates that atmospheric mercury releases have actually increased, from sources such as coal combustion, smelting of metal ores (particularly zinc and copper), chlor-alkali plants, and waste handling/disposal of products that contain mercury.



II. NGO Proposal for a UNEP Decision on Mercury (Text and Rationale)

The Governing Council,

Recalling its decisions 21/5 and 21/6 on mercury,

Also recalling decision 23/9 III and IV on mercury where it was decided that the Executive Director should assess at the twenty-fourth session of the Governing Council, on the basis of a progress report, the need for further action on mercury;

Also recalling paragraph 22 (g) of the Plan of Implementation of the World Summit on Sustainable Development;

Also recalling the Strategic Approach to Chemicals Management and especially paragraph 14(d) of the overarching Policy Strategy and paragraphs 8 and 9 of the Global Plan of Action and its activities 57-60;

Noting the Budapest Statement on Mercury, Lead and Cadmium of the Intergovernmental Forum on Chemical Safety;

Acknowledging the actions made by Governments and others in various for a to reduce risks from mercury and mercury compounds;

Taking note of the increased activities in the UNEP Mercury programme;

Welcoming the progress report by UNEP on mercury activities;

Underlining the findings and conclusions of the report from the Executive Director on mercury supply, demand and trade, as requested in decision 23/9, as a basis for considering further actions in those areas;

1. Reiterates the conclusion of the UNEP Global Mercury Assessment that further international action to reduce mercury releases are warranted, and the decision in 23/9 to encourage Governments, the private sector, and international organizations to take immediate and longer-term actions to reduce the risks associated with mercury in products and processes;
2. Acknowledges and accepts generally the findings and conclusions of the report from the Executive Director on mercury supply, demand and trade, as requested in decision 23/9, particularly the general trend of mercury trade from developed nations to developing nations and the urgent need to reduce substantially both global mercury supply and demand, and notes its decision in 23/9 that the report will form a basis for further actions in these areas;
3. Recognizes that current and planned efforts to reduce risks from mercury are not adequate and sufficient for addressing the global challenges posed by this pollutant;

Global Mercury Demand Reduction

4. Concludes that the necessary immediate and longer-term actions to reduce the risks associated with mercury in products and processes will be facilitated by adoption of a global mercury use reduction goal, and finds that a **global use reduction goal of 50% by 2012 and 70% by 2017**, as compared to 2005, is an appropriate global objective based upon the best available information;

Explanation: Global mercury demand is estimated at about 3,500 MT in 2005. Since releases are an inevitable consequence of much of this mercury demand, reducing this demand is the most effective way of reducing the associated releases. As indicated in the annex table, the 50% reduction in global mercury demand over the next five years can be achieved largely through activities targeting batteries, electrical products, measuring devices, and chlor-alkali facilities. Longer-term activities are contemplated to achieve substantial reductions for PVC production and small-scale and artisanal gold mining (particularly the elimination of whole ore amalgamation using mercury, as identified by UNIDO). Global efforts to reduce demand should reflect these priority sectors and the key countries or regions associated with these uses, as specified in paragraph 5 immediately below.

5. In furtherance of the adoption of these global mercury use reduction goals,

a. Recognizes the availability of **mercury-free electronic products (including but not limited to tilt switches, relays, and thermostats)** at comparative cost and equal or superior quality to products containing mercury, acknowledges the restrictions on mercury in electronic products enacted by the European Union and the consideration of similar legislation in other countries, and urges all governments and the private sector in countries with a significant electronic product manufacturing base to take appropriate measures such that these mercury content restrictions will be the global norm no later than 2010;

Explanation: The EU RoHS Directive¹ is becoming the global standard for the mercury content of these products, and UNEP should encourage and hasten the adoption of this standard over the next 4 years, particularly in manufacturing centers in the developing world.

b. Recognizes the growing production of **mercury free button cells** by a variety of manufacturers, acknowledges the commitment by some battery producers to completely eliminate the use of mercury in button cell battery production by 2011, and urges all governments and the private sector in countries where button cell batteries are manufactured to take appropriate measures such that the production of button cell batteries without mercury becomes the global norm by 2012;

Explanation: The technology for making mercury-free button cell batteries is now available. Battery manufacturers in the USA voluntarily committed to 100% mercury free production by 2011. UNEP should encourage similar voluntary and legal commitments in other large battery manufacturing nations over the next 5 years.

c. Reiterates its decision in 23/9 urging Governments, the private sector, and international organizations to take appropriate action, including the introduction of bans or restrictions on uses where warranted to reduce the risks of exposure related to mercury products, and finds that **non-electronic measuring equipment** (such as sphygmomanometers, manometers, barometers, and hydrometers) should be considered a high priority for such action given the volume of mercury used globally to produce measuring equipment and the potential for breakage of these products during manufacture, use, and disposal;

d. Urges manufacturers of **mercury-containing fever thermometers** to expedite the transition to non-mercury fever thermometers in the developing world by substantially increasing the availability of non-mercury fever thermometers at reasonable cost, and invites international organizations, Governments, health care institutions and other large purchasers of medical equipment to facilitate the transition in the developing world to non-mercury fever thermometers through their purchasing power;

e. Establishes a **global goal of ending the production and sale of mercury fever thermometers by 2012** where non-mercury alternatives are available at reasonable cost;

Explanation: Alternatives to mercury-containing measuring equipment are used throughout much of the developed regions of the world. Global availability awaits increased production and reduced prices from companies serving the developing world. Starting with fever thermometers, UNEP should encourage manufacturers of measuring equipment to accelerate the transition in the developing world, where mercury releases from these products are particularly likely due to waste management challenges.

f. Reiterates its decision in 23/9 urging Governments, the private sector, and international organizations to take appropriate action, including the introduction of bans or restrictions on uses where warranted to reduce the risks of exposure related to mercury processes such as chlor-alkali facilities, and acknowledges the voluntary and legislative actions in a growing number of countries to phase-out their mercury cell chlor-alkali facilities within the next five years;

g. Recognizes the energy reduction and associated economic and environmental benefits of the alternative non-mercury membrane chlor-alkali production process, finds that financial assistance (such as the availability of low interest loans) will likely facilitate the transition to the membrane production

¹ Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0095:EN:HTML>

process in developing countries and countries in transition, invites international lending and development organizations as well as donor nations to provide appropriate mechanisms for the requisite financial assistance, and requests the Executive Director to develop a financial assistance plan in consultation with such organizations and nations for presentation to the Governing Council at its 25th session capable of achieving a **phase-out of the mercury cell chlor-alkali process worldwide by 2015 or the earliest possible time thereafter**;

Explanation: Since the non-mercury membrane technology is typically cheaper to operate (due to lower energy costs) than the mercury cell process, the conversion to the membrane process is beneficial both economically and environmentally. However, a principal obstacle for conversion from mercury cells is access to low cost capital to finance the conversion and thereby achieve the desired environmental outcomes. UNEP should facilitate these conversions by educating and coordinating with international development and lending institutions, and developing a roadmap with these institutions, for providing the required assistance through existing and new programs. At least some of these funds may become available through carbon credit programs due to the potential energy savings from conversions to the membrane technology.

h. Establishes a sector-specific demand reduction goal for **artisanal and small scale gold mining (ASM)** (as recommended by the Global Mercury Project of UNIDO) of 50% by 2017 achievable largely by eliminating the use of mercury in the processing of whole ore, requests the Executive Director to coordinate with countries and other organizations to incorporate this mercury reduction goal into their ASM related activities and undertake activities to help meet this goal, requests the Executive Director to prepare and publish educational materials on the elimination of mercury in whole ore amalgamation as needed, and requests the Executive Director to prepare a report to the Governing Council at its 25th session on progress made on these activities and the elimination of mercury in whole ore amalgamation.

Explanation: Small-scale and artisanal gold mining (ASM) is likely the largest mercury demand sector globally. In its report to UNEP, UNIDO identified priority areas for mercury reduction in ASM, first and foremost the elimination of mercury in the amalgamation of whole ore, as well as the increased use of retorts and mercury-free technologies for alluvial deposits. UNIDO indicated a 50% or more reduction goal in ASM mercury use over the next 10 years is both achievable and desirable with complementary efforts in education, technical transfer and assistance, and restricting the global supply of mercury. Through this resolution, the Governing Council would adopt the UNIDO recommended 50% global reduction goal, and request the Executive Director to work with all relevant countries and institutions to affirm and strive to achieve this goal. The Executive Director is requested to convene, educate and otherwise encourage such countries and organizations to adopt this goal as their own, incorporate the goal into their projects and other activities, and facilitate the achievement of the goal through action on the ground rather than additional study or the creation of more bureaucracy.

Global Mercury Supply Reduction

6. Notes that the global supply of mercury consists of four major sources (primary mining, byproduct production, the closure of mercury chlor-alkali facilities, and the recycling of wastes and products), finds that the global supply of mercury will exceed demand as more mercury chlor-alkali plants close or convert and global demand is substantially reduced, and reiterates its decision in 23/9 regarding **the need to curb the introduction into commerce of excess mercury supply**;

Explanation: Critical to achieving the benefits of mercury demand reduction is obtaining parallel reductions in global mercury supply. Failure to achieve these supply reductions will result in excess mercury supply in the global marketplace, which will act to negate the demand reductions by encouraging new or expanded mercury uses through lower prices.

7. Concludes that the following global consensus on which sources of mercury should be diverted from commerce would maximize the environmental benefits of global use reduction efforts:

a. **Primary mining is the least preferred mercury supply** source because it creates new mercury and often causes significant mercury releases during production;

b. **Diverting from commerce excess mercury from closing chlor-alkali facilities is warranted** given the large volumes of mercury which become available at the time of closure and the level of control which can be exercised over this supply;

c. **Byproduct mercury production** from precious metal mining (particularly industrial gold mining) and base metal smelting (particularly zinc smelting) is a preferred source of mercury for introduction into commerce because byproduct production typically captures mercury that would otherwise be released into the environment;

d. **Mercury recovered from product and waste recycling**, when conducted in an environmentally safe and protective manner, is a preferred source of mercury for introduction into commerce because that mercury could otherwise be released into the environment during handling and disposal;

Explanation: If the global benefits of mercury supply and demand reduction are to be fully realized, the supply sources causing the most mercury releases or which are not associated with preventing mercury releases should be reduced first. Primary mercury mining creates new mercury and causes the most mercury releases from production, and thus should be terminated as soon as possible. Thousands of tons of mercury will become available soon from closing mercury cell chlor-alkali plants, and are an easily segregated mercury source to prevent excess global mercury supply. In contrast, mercury recovered from waste recycling and byproduct production represents mercury captured that may otherwise be released, and thus should be encouraged while the mercury is needed to meet demand.

8. To facilitate global mercury supply management in a manner which curbs the introduction into commerce of excess mercury supply consistent with these preferences,

a. Notes the magnitude of **mercury trade** from the developed nations to developing countries and countries in transition, acknowledges the decision by the Department of Defense of the United States of America to store rather than sell the excess mercury it owns, acknowledges the proposal adopted by the European Commission to prohibit mercury exports by 2011, urges Governments and the private sector in developed nations with significant mercury exports to take similar measures to address anticipated excess global mercury supplies, and supports the inclusion of mercury into the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade to discourage this trade of mercury in the interim;

Explanation: The high level of mercury exports from the developed world to the developing world is well documented in many reports, including the UNEP trade report. This trade is morally unacceptable, and globally counterproductive, since the trade leads to the increased use and releases of mercury in ways often banned or eliminated in the developed world, resulting in acute mercury exposures locally, and the contamination of important food sources regionally and globally.

b. Reiterates its decision in 23/9 requesting that Governments and the private sector **curb primary mining**, and encourages international organizations and donor nations to facilitate alternative development where primary mining is conducted;

Explanation: With the termination of new mining in Spain and Algeria, the Kyrgyz Republic emerges as the only significant country where primary mining is conducted for export to the global market. A maximum of 600 MT/yr of mercury is produced in the Kyrgyz Republic. Since anticipated global demand reductions will exceed 600 MT/yr over the next five years, and increased mercury supply from product recycling and byproduct production can be expected over this time frame as well, this mined mercury will contribute to an excess global mercury supply. Therefore, immediate and meaningful action is encouraged to facilitate a transition from mercury mining through alternative development in the Kyrgyz Republic. China is the other remaining significant primary mining nation, but it produces mercury almost entirely for domestic consumption. Thus, it is reasonable to expect that China's primary mercury production will decline as domestic mercury demand declines.

c. Requests the Executive Director to create a working group to develop technical and policy recommendations for consideration by Governments, the private sector, international organizations, and

the Governing Council at its 25th session regarding the **diversion from commerce of mercury from closing chlor-alkali plants** and the proper management of such mercury;

Explanation: Just as the EU has begun a process for coordinating the segregation and management of mercury from its closing mercury cell chlor-alkali plants, a similar process will be needed globally so that the management is conducted in both an economically efficient and environmentally safe manner. This level of coordination will be required over the long-term as segregation strategies are developed and implemented, so a working group is an appropriate mechanism for performing this coordination. Financial and other forms of assistance are contemplated to encourage the participation of developing nations in this process, thus international financing and development organizations are envisioned as part of this working group. UNEP will assume the role of facilitator, and may from time to time retain experts to perform required analyses. Actual implementation of the activities will likely occur through regional and other mechanisms.

d. Recognizes the growing body of information **indicating base metal smelters and industrial gold mining** are substantial but poorly studied sources of global mercury emissions, and requests the Executive Director to convene technical meetings as needed, and to prepare a report for consideration by the Governing Council at its 25th session which estimates global mercury emissions from base metal smelting (**particularly zinc and copper smelting**), and **industrial gold mining** based on the mercury content of the ores and installed/maintained emissions control equipment, delineates the options for reducing such emissions, describes the opportunities for byproduct recovery to achieve the emissions reduction, estimates the potential additional byproduct production of mercury if some or all of those opportunities were pursued, and provides a basis for consideration for further actions in this area;

Explanation: Base metal smelters (particularly zinc and copper smelters) and industrial gold mining activities are increasingly identified as very large but previously underestimated sources of global mercury releases. To date, there is no authoritative estimate of global mercury releases from these sources, particularly because important data gaps remain in areas such as the mercury content of ores in some parts of the world and the level of mercury emission controls employed and maintained at many facilities. UNEP should be charged with the responsibility of convening global experts in these areas, identifying and filling in data gaps within available resources, and producing an authoritative estimate of global mercury emissions from these facilities. In addition, recognizing that at least one well known emissions control process for these facilities can capture and ultimately produce mercury for resale, UNEP should estimate how much mercury is and potentially could be produced if global mercury releases from these facilities are effectively controlled.

Financial Assistance

9. Recognizes the extent to which developing countries can effectively implement the activities specified in this resolution can depend on the commitment from developed countries to provide the requisite financial resources;

10. Requests that developed countries provide **new and additional financial resources** to enable developing countries and countries with economies in transition to meet the costs of achieving globally significant mercury demand reductions and undertaking supply reduction activities in accordance with the mercury supply preferences specified above;

11. Requests that GEF and/or other global institutions create a mechanism for the provision of financial resources needed to facilitate the implementation of this resolution in developing nations;

Explanation: To date, international financing organizations have principally targeted those activities covered by international treaties for substantial financial assistance to the developing world. Recognizing the substantial global attention already devoted to mercury through UNEP, WHO, UNIDO, and many regional organizations, and the importance of addressing global mercury pollution now in a meaningful way, UNEP should call upon GEF and/or other institutions to provide the necessary resources starting in 2007, focusing on those countries, sectors, and activities integral to achieving the results sought by the UNEP GC resolution.

Treaty Development Process

12. Concludes that a global legally binding instrument would facilitate and enhance the effectiveness of efforts to reduce the risks to human health and the environment arising from the releases of mercury;
13. Underlines that such an instrument should promote the activities identified in this resolution and other actions consistent with reducing global mercury, supply, demand, and releases;
14. Concludes that such an instrument, in addition to mercury, must be open for the possibility to include other chemicals of global concern should this be warranted;
15. Recognizes that further international action should incorporate the expeditious development of such a global, legally binding instrument. The instrument should be developed in such a manner as to recognize and build upon other related activities and instruments to reduce releases of mercury and other chemicals of global concern, taking into account the special concerns of developing countries and countries with economies in transition.
16. Requests the Executive Director to prepare and convene, together with relevant international organizations, an intergovernmental negotiating committee with a mandate to prepare an international legally binding instrument to reduce releases of mercury and other chemicals of global concern; and
17. Also requests the Executive Director, to facilitate the negotiations, to prepare an analysis of different options how to develop a legal framework for mercury and other chemicals of global concern, including options on how to address these substances in existing instruments.

NGO Mercury Demand Scenario

| Sector | 2005 | 2012 | 2017 | Comments – Path to Reduction |
|-------------------------|----------------------|-------|-------|---|
| Batteries | 400 | 50 | 25 | Global Phase-out of Hg in button cells |
| Chlor-alkali | 620 (535 net) | 300 | 0 | Global phase-out by 2015; India meeting its current commitment to phase out by 2012 |
| Measuring Devices | 250 | 75 | 50 | State action achieves tipping point in USA; EU and China prohibit sale |
| Switches/Relays | 250 | 50 | 50 | EU and China RoHS Directive; state action in USA reaches tipping point |
| Lighting | 120 | 150 | 110 | Use of fluorescents peak in 5 years, then alternatives grow |
| Dental | 270 | 135 | 75 | Dental use reduces in response to cosmetic preferences and regulatory actions |
| Small-scale gold mining | 800- 1,000 | 600 | 400 | Global focus on elimination of mercury use in amalgamation of whole ore and other available techniques for reducing mercury use – see UNIDO report to UNEP |
| PVC | 700 (350 net) | 550 | 300 | Most demand in China; catalyst efficiency gains to slow rate of growth and then obtain reductions; progress on alternative production technique to begin transition by end of 10 year period |
| Other | 50 | 25 | 10 | Vaccines/paints, etc. |
| Total | 3,460 to 3,660 | 1,885 | 1,020 | Keys to achieving desired demand reductions over next 10 years are: phase-out of Hg in button cell production in China, EU, and Japan; achieving phase-out in measuring equipment production in EU and China; progress on mercury-cell chlor-alkali phase-out; more efficient use of VCM catalyst in China; restricting mercury supply to increase prices for ASM; and elimination of whole ore amalgamation in ASM |

ⁱ Environmental NGOS include

The **Zero Mercury Working Group**, www.zeromercury.org, is an international coalition of more than 48 public interest non-governmental organizations from around the world formed in 2005 by the European Environmental Bureau and the Mercury Policy Project/Ban Mercury Working Group. The aim of the group is to reach “Zero emissions, demand and supply of mercury, from all sources we can control, towards eliminating mercury in the environment at EU level and globally.”

The **European Environmental Bureau, (EEB)**, www.eeb.org, is a federation of more than 140 environmental citizens’ organisations based in all EU Member States and most Accession Countries, as well as in a few neighbouring countries. These organisations range from local and national, to European and international. The aim of the EEB is to protect and improve the environment of Europe and to enable the citizens of Europe to play their part in achieving that goal.

The **Natural Resources Defense Council** is a private, U.S. not-for-profit environmental organization that uses science, law, and the support of more than 600,000 members nationwide to protect the planet’s wildlife and wild places, and to ensure a safe and healthy environment for all living things.

The **Mercury Policy Project**, a project of the Tides Center and co-founder of the Ban Mercury Working Group, works at the local, national, and international level to promote policies and programs to indefinitely store surplus mercury; and reduce/eliminate anthropogenic mercury uses and releases, trade in mercury, and human, ecological and wildlife exposures to mercury. See www.mercurypolicy.org.