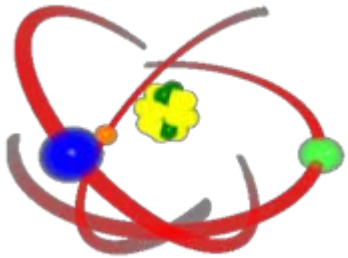
Key Reasons for Addressing Mercury Now – Through Globally Coordinated Action



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USEPA Surplus Mercury Stakeholder Mtg.

July 25, 2007
Denver, Colorado

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Mercury Policy Project & Zero Mercury Working Group*

- **Mercury Policy Project** was formed in 1998 to reduce mercury uses, releases and exposure to mercury at local, national and international levels
- The **Zero Mercury Working Group** was formed in 2005 to achieve ‘Zero’ emissions, demand and supply of mercury, with the aim of reducing mercury in the environment in EU and globally

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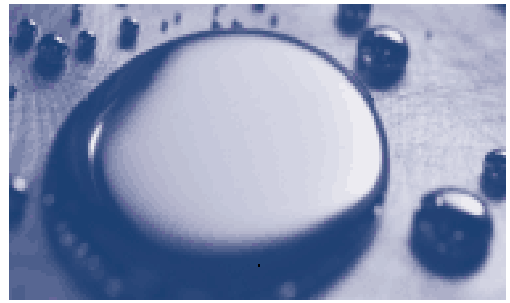
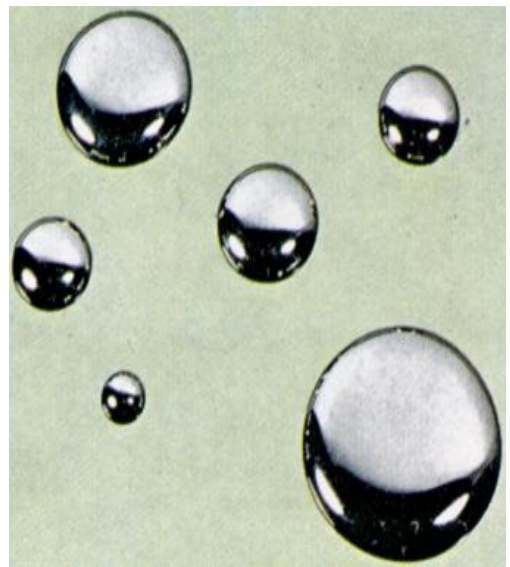
Presentation Overview

1. Mercury is a Global Pollutant Warranting International Action
2. Global Mercury Demand Reduction – Goals, Priorities, Approaches
3. Supply Reduction and Management – Source Preferences, Curbing Excess Supplies, Trade Implications





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Mercury Pollution: Global Problem Warranting International Solutions

- 3-5 fold increase; mercury cycling threatens global fish supply
- Primary exposure risk for pregnant women, children & sub-populations dependent on fish & mammals
- Artisanal & Small-Scale Gold Miners (ASM) experience acute health impacts
- W.H.O. (2005): **"…mercury may have no threshold below which some adverse health effects do not occur."**

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Trends in Global Mercury (Hg) Use

- Reductions in Hg use in industrial countries has led to surplus
- Excess Hg readily available to developing countries w/latest “gold rush” driving demand
- Around 80% of all Hg used today is in developing countries
- Continuing demand due in part to lack of awareness and incentives to choose Hg-free products and technologies
- USA 2004 mercury exports largely went to:

  Vietnam (79 MT), Mexico (64 MT), India (63 MT), and Peru (47 MT). About half of 2005 exports went to Netherlands from where a trader likely exported it to the developing world. Other 2005 exports went to Guyana (19 MT), India (19 MT), Mexico (25 MT), Chile (4 MT), Colombia (6 MT), and the Philippines (4 MT).

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NGO Best Estimates – 2005 Global Mercury Demand

Sector	2005
Batteries	400
Chlor-alkali	620 (535 net)
Measuring Devices	250
Switches/Relays	250
Lighting	120
Dental	270
Artisanal and Small-scale Gold Mining	800-1,000
PVC	700 (350 net)
Other	50
Total	3,460 to 3,660

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Anticipated Global Hg Demand Reduction

- UNEP trade report provides two demand reduction scenarios: “status quo” assuming few additional measures are taken and “focused mercury reduction” in which additional measures are taken by key countries
- Under status quo scenario, UNEP predicts 535 MT demand reduction by 2015 (from mid-point 2005 estimate)
- Under focused reduction scenario, UNEP predicts 1115 MT demand reduction by 2015

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2012 Priority Global Hg Demand Reduction Sectors

- Batteries
- Electronic Products
- Measuring Devices
- Chlor-alkali Facilities
- Other sectors

Closed Hg-cell chlor-alkali plant in Spolana Vurmeta, Czech Republic

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Phase-out Hg in Electronics, Batteries

- Mercury is in switches & relays primarily, found in products such as pumps, thermostats, etc.
- **Goal to leverage EU RoHs Directive into global norm**
  - China & Japan developing similar laws & some US states already have laws
- USA manufacturers to produce only Hg-free button cells starting in 2011
- **Goal to obtain similar commitment from other manufacturers &/or governments**

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Phase-out Hg Measuring Devices

1. Ban Hg in thermometers, barometers, hydrometers, blood pressure cuffs, etc.
2. Strengthen EU Directive to include consumer & non-consumer devices, thus creating global legal benchmark
3. Look to UNEP, WHO to leverage purchasing power & encourage manufacturers to embrace Hg-free transition, bring prices down
4. **Global goal: ending production of Hg fever thermometers by 2012** or when alternatives available & reasonably priced

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Phase-out Hg Cell Chlor-Alkali Facilities

- 600+ tons Hg used annually to refill cells; disproportionate amount in developing countries
- Alternative membrane technology uses less energy, thus cheaper to operate
- Principal barrier is access to low cost capital
- Request UNEP to develop financial assistance plan for industry conversion in developing world
- **Establish goal of 2015 or soon as possible for phase-out of Hg cell technology**

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Other 2012 Global Hg Demand Reduction Sectors

1. Dental – Hg reductions due to cosmetic preferences, health concerns and regulations
2. PVC – Achieve greater catalyst use efficiencies in China, and begin transition to Hg-free alternative processes
3. ASM - Some possibility for reduction by focusing on eliminating whole ore amalgamations

Tooth care in children

Child panning for gold

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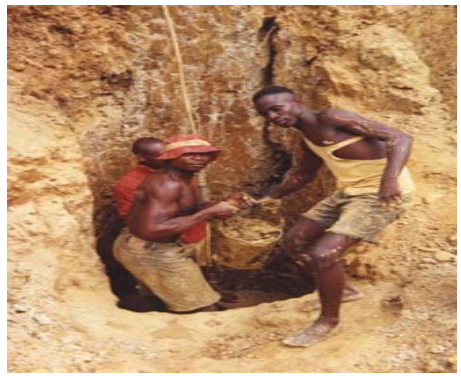
2017 Global Hg Demand Reduction Goal

70% reduction goal depends on three factors:

1. Phase-out date for Hg-cell chlor-alkali facilities
2. Rate of transition to Hg-free VCM production in China
3. Pace of Hg use reduction in artisanal & small-scale gold mining (**10 year goal for ASM is 50% Hg reduction**)



Miners extracting ore

Miner burning Hg

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Hg Demand Reduction Projections

Sector	2005	2012	2017
Batteries	400	50	25
Chlor-alkali	620 (535 net)	300	0
Measuring Devices	250	75	50
Switches/Relays	250	50	50
Lighting	120	150	110
Dental	270	135	75
Artisanal & Sml-scale gold mining	800-1,000	600	400
PVC	700 (350 net)	550	300
Other	50	25	10
Total	3,460 to 3,660	1,885	1,020

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Supply Side Hg Reduction Needed

- Without parallel supply reductions, excess quantities in marketplace are likely to occur, potentially undermining prior demand reduction
- Benefits of demand reduction not achieved if most polluting supply sources still utilized
- Marketplace cannot reduce supply by itself, because of subsidies for employment, erratic Hg-cell chlor-alkali phase-outs, etc.

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Summary: Elements of a Global Hg Reduction Strategy

- Close primary Hg mines
- Reduce, phase out Hg uses when alternatives readily available, cost effective and affordable
- Utilize UNEP & UNIDO GMP Hg trade reports
- Restrict Hg exports from developed countries

- Develop plans to reduce Hg use in ASM
- Close Hg-cell chlor-alkali plants
- Store surplus Hg
- Thank you

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