Global Mercury Developments and Their Implications for US Policy

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Topics to be Covered

- Timeline for mercury treaty development and implementation
- Scope of the mercury treaty
- Possible mercury supply and trade reduction measures
- Possible mercury demand reduction measures
- Possible air emission reduction measures

Global Mercury Treaty Timetable

October 18-24, 2009	OEWG, Bangkok
June 2010	INC 1, Sweden
January 2011	INC 2, Tokyo?
October 2011	INC 3
June 2012	INC 4
January 2013	INC 5, Conclusion
February 2013	UNEP GC/GMEF
Second half of 2013	Diplomatic conference to sign treaty

Global Mercury Treaty Timetable

- Treaty goes into effect in 2015/2016?
- Treaty provision effective dates sometime after 2015-2016
- Different effective dates for various requirements anticipated

Scope of Mercury Treaty

- GC Decision requests INC to develop "comprehensive and suitable" approach to mercury, including provisions which:
  - Reduce supply of mercury and enhance storage capacity
  - Reduce international trade
  - Reduce demand in products and processes
  - Reduce atmospheric emissions
  - Specify arrangements for technical and financial assistance

Global mercury supply (2007)

Main mercury sources	Metric tonnes/year
Primary mercury mining	**1300-1600**
By-product mercury recovery	**400-600**
Chlor-alkali facilities	**700-900**
Recycling of mercury catalysts, wastes and products	**600-800**
Mercury stocks	**As needed (+)**
TOTAL	3100-3900+

Possible Supply and Trade Reduction Measures

- Ban on new primary mercury mining
- Phase out of existing primary mercury mining (China, Kyrgyzstan)
- Restrictions of global trade in mercury and certain mercury compounds

- USA Gap Analysis: Prohibit primary mercury mining and export ban for certain mercury compounds (see EPA Report to Congress)

Summary of Global Mercury Demand UNEP (2006)

Global mercury demand (2005)	**Metric tonnes**
Small-scale/artisanal gold mining	650-1,000
Vinyl chloride monomer (VCM) production	600-800
Chlor-alkali production	450-550
Batteries	300-600
Dental use	240-300
Measuring and control devices	150-350
Lighting	100-150
Electrical and electronic devices	150-350
Other (paints, laboratory, pharmaceutical, cultural/traditional uses, etc.)	30-60
Total	**3,000-3,900**

Principal Uses of Mercury in China: Inventories and Published Literature

	Reporting Year	Hg Consumption (MT)	Recent Trend
VCM/PVC	2004	610	+++
Measuring Devices	2005	295	++
Small-Scale Gold Mining	2006	120-250	?
Batteries	2004	154	---
Lamps	2005	64	+
Total		1243-1373	++

Product/Process Category	2005 Global Demand (Metric Tons)	2015 UNEP Partnership Goal (Metric Tons)
Chlor-Alkali	450-550	250
Batteries	300-600	Less than 50
Electronic Devices	150-350	Less than 50
Measuring and Control Devices	150-350	Less than 50
Lighting	100-150	Less than 100
Dental	240-300	Less than 230
Other (lab, cultural uses, etc)	30-60	Less than 30

Global Product Mercury Demand Status Quo and Partnership Goals

Possible Global Demand Reduction Measures

- Phase out dates for certain products and processes with available alternatives
  - Switches and relays
  - Measuring Devices
  - Batteries, including button cells
  - VCM if non-mercury catalyst foreseen
  - Chlor-alkali production
  - Others? New uses?
- Restrictions on global trade of restricted products and production technology

USA Gap Analysis for Possible Global Demand Reduction Measures

- Federal product manufacturing or sales bans
- Phase out of remaining mercury cell chlor-alkali plants
- Prohibition against use of mercury for PVC/VCM manufacture
- Export ban for restricted mercury products

Possible Air Emission Reduction Measures

- BAT/BEP requirement and/or national emission reduction targets
- BAT/BEP approach focus on priority sources
  - Coal combustion
  - Ore processing (gold mining, lead/zinc smelting)
  - Waste incineration
  - Cement production

USA Gap Analysis for Possible Air Emission Reduction Measures

- Existing or anticipated CAA regulations may be sufficient for coal-fired power plants, waste incineration, and cement production
- Gold mining controls now mandated under Nevada law – need federal rules?
- Meet BAT/BEP for other ore processing and coal combustion units?

Conclusions

- New federal requirements will likely be needed
- Reliance solely on existing federal law may not be achievable or effective
- Until now, activity often at the state level – treaty will require enhanced federal role
- Roles and responsibilities of states under new federal legislation will be critical policy area, particularly for products