

# Mercury Containing Waste Management in China

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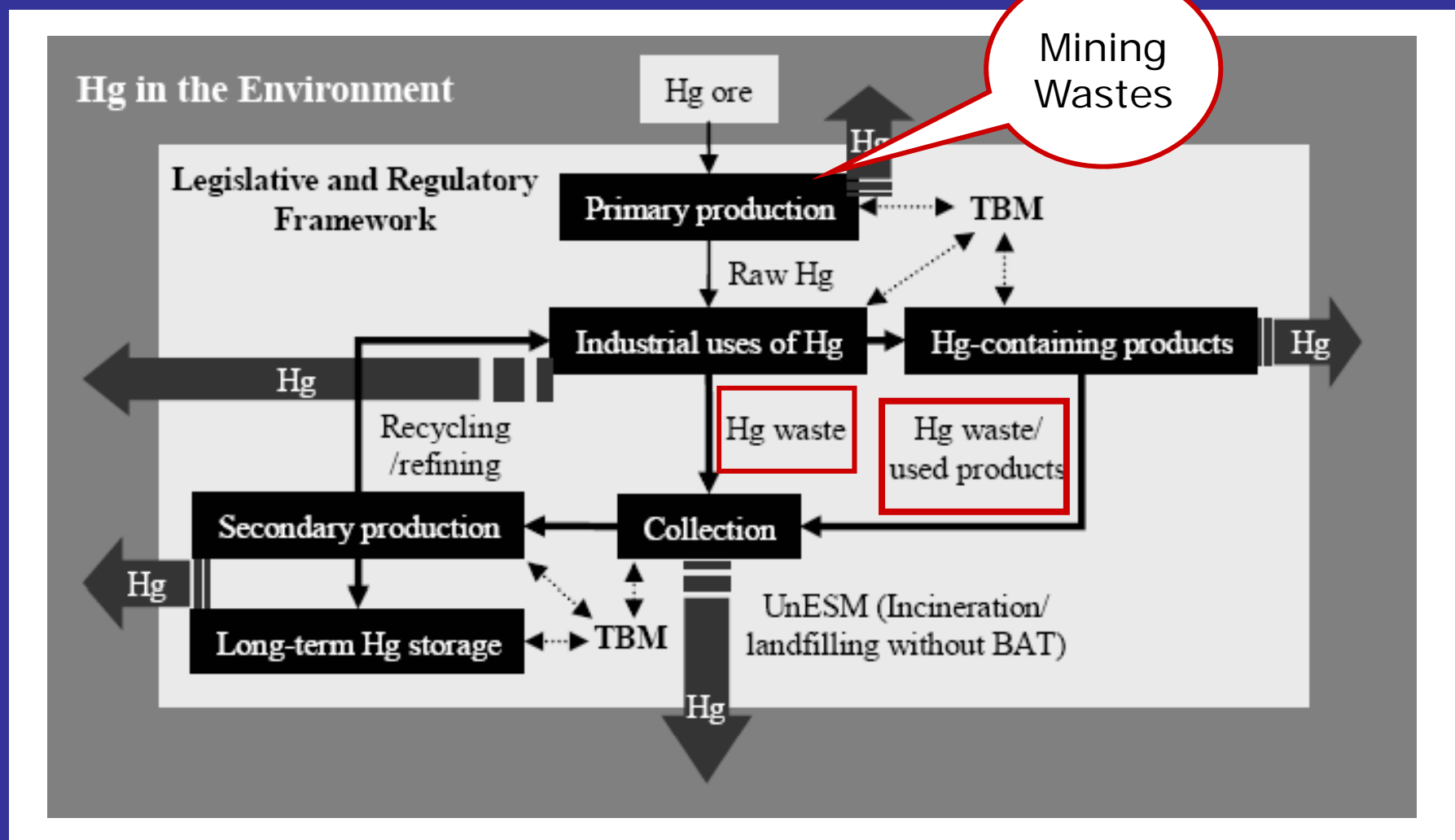
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# Outline

- ❑ Generation
- ❑ Main waste types
- ❑ Treatment
- ❑ Management

# Main sources- generation



# Main Hg-wastes

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## □ Wastes from primary mining



Mullock  
采矿弃石



Tailing wastes  
尾砂库

# Main Hg-wastes

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□ industrial wastes

e.g. spent catalyst

waste activated carbon

# Main Hg-wastes

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- Hg-wastes from used Hg-containing products
  - Used FLs and CFLs,
  - Used batteries
  - Used Thermometers and phygmomanometers
  - others



## New trends

### --- Energy-saving lamps usage

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- Promote the use of high efficiency energy-saving lamps
- Gradually eliminate high pressure mercury lamp
- Raise the proportion of energy-saving fluorescent lamps

-----need to enhance the collection and treatment facilities for used energy-saving fluorescent lamps

# Hg-waste treatment

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The operation of Hg-waste treatment facility will obtain national license.



# Management and Control Measures

# National Law and regulation

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- **Law of the People's Republic of China on Prevention of Environmental Pollution Caused by Solid Waste**



- Collection, Transportation, Storage, Treatment, and Disposal of Hg-containing HW shall follow relevant regulations, especially, should be conducted with HW operation license.

- **Measures on Hazardous Waste Operation Permits**

- Hg – containing HW operation license issued by MEP

# National Policies

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- ISW Listed on national HW catalogue 
- Catalog of solid waste to be banned import
  - Mercury-containing waste is listed in the catalogue 

# Mercury containing –HW (16)

Code	Processes
071-003-29	天然气净化过程中产生的含汞废物
092-001-29	“全泥氰化-炭浆提金”黄金选矿生产工艺产生的含汞粉尘、残渣
092-002-29	汞矿采选过程中产生的废渣和集（除）尘装置收集的粉尘
231-007-29	使用显影剂、汞化合物进行影像加厚（物理沉淀）以及使用显影剂、氨基化汞进行影像加厚（氧化）产生的废液及残渣
261-051-29	水银电解槽法生产氯气过程中盐水精制产生的的盐水提纯污泥
261-052-29	水银电解槽法生产氯气过程中产生的废水处理污泥
261-053-29	氯气生产过程中产生的废活性炭
265-001-29	氯乙烯精制过程中使用活性炭吸附法处理含汞废水过程中产生的废活性炭
265-002-29	氯乙烯精制过程中产生的吸附微量氯化汞的废活性炭

# Mercury containing –HW (16)

Code	Processes
394-003-29	含汞电池生产过程中产生的废渣和废水处理污泥
397-001-29	含汞光源生产过程中产生的荧光粉、废活性炭吸收剂
411-001-29	含汞温度计生产过程中产生的废渣
261-054-29	卤素和卤素化学品生产过程产生中的含汞硫酸钡污泥
900-022-29	废弃的含汞催化剂
900-023-29	生产、销售及使用过程中产生的废含汞荧光灯管
900-024-29	生产、销售及使用过程中产生的废汞温度计、含汞废血压计



## Other policies related to Hg-containing HWM

- While dismantling electronic wastes, mercury-containing switches shall be removed, and separately collected, stored, utilized and disposed.
- Government encourages to establish the collection system for used FLs and CFLs tubes and corresponding funding mechanisms
- In 2004, Government encouraged HW treatment center to have capacity for collection and treatment of social Hg-containing hazardous wastes such as used batteries that contain mercury and FLs and CFLs

# Standards for pollution control on Mercury

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- Pollution control standard for hazardous wastes incineration ([GB 18484-2001](#)) – **0.1mg/m<sup>3</sup>**
- Standard for pollution control on the municipal solid waste incineration( [GB 18485-2001](#))– **0.2mg/m<sup>3</sup> (average)**
  - updating, new suggested standard is **0.1mg/m<sup>3</sup>**
- Standard for pollution control on landfill of the hazardous wastes ([GB18598-2001](#)) – Organic mercury: **<0.001mg/L**; Mercury: **<0.25 mg/L**
- Standard for pollution control on HW storage ([GB18597-2001](#))

# Standards for pollution control on Mercury

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- Identification standard for hazardous wastes - leaching toxicity of pollutants (GB 5085.3-2007)
  - Methylmercury: <10ng/L;
  - Ethylmercury: <20ng/L;
  - Total mercury:  $\leq 0.1$ mg/L

Waste with mercury content larger than the standard value will be categorized as hazardous waste



# Thank you for your attention!

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Chinese Research of Environmental Sciences (CRAES)

<http://www.craes.cn/cn/english/welcome.html>

Ministry of Environment Protection (MEP)

<http://english.mep.gov.cn/>