



Best Available Techniques and Best Environmental Practices

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Provisions of Article 8

- Article 8 concerns controlling and where feasible reducing emissions of mercury and mercury compounds through measure to control emissions from the point sources falling within the source categories listed in annex D
- For new sources, each Party shall require the use of best available techniques and best environmental practices
- For existing sources, each Party shall implement one or more of the measure:
 - A quantified goal
 - Emission limit values
 - BAT/BEP
 - Multi-pollutant control strategy
 - Alternative measures

Coverage of Article 8

- Article 8 covers sources in 5 categories listed in Annex D
 - Coal-fired power plants
 - Coal-fired industrial boilers
 - Smelting and roasting processes used in the production of non-ferrous metals (lead, zinc, copper and industrial gold)
 - Waste incineration facilities
 - Cement clinker production facilities

Guidance on emissions within the convention

Article 8 refers to four guidance documents to be adopted by the Conference of the Parties:

- Best Available Techniques and Best Environmental Practices (7/6/Add1)
- Support for Parties in implementing measures for existing sources, in particular guidance on determining goals and setting emission limit values (7/6/Add2)
- Guidance on criteria relating to relevant sources (7/6/Add3)
- Guidance on the methodology on preparing inventories of emissions (7/6/Add4)

Diplomatic Conference

- *Established* a group of technical experts, as a subsidiary body from all UN regions, with 2 co-chairs and made up of experts in pollution control and/or one or more of the source categories in Annex D,
- Group to take into account experience gained through, inter alia, the UNEP Global Mercury Partnership,
- Invited the participation of eight experts from industry and civil society as observers.
- Invited input from other governments, intergovernmental organizations, industry and civil society organizations to assist it in completing its work;

Overview of BAT/BEP guidance

- Guidance includes some common sections relevant to all source categories:
 - Introduction
 - How to select the «best available techniques»
 - Common techniques
 - Monitoring
- Also includes chapters specific to each source category (note that the two 'coal' source categories are presented as a single chapter)

Nature of guidance

- It's guidance, to help Parties: it's not mandatory, and it doesn't limit national discretion.
- It doesn't define what is BAT: it provides information about a range of techniques to help Parties make decisions
- Parties' decisions will need to take account of national circumstances
- The guidance reflects the knowledge and information available to the group at the time it was written: the guidance should be a living document, which improves and develops over time.

Coal-fired power plants and coal-fired industrial boilers

- Mercury emission control technologies are generally similar for all coal-fired boilers.
- Mercury emissions from coal-fired combustion plants are affected by a number of variables:
 - ① mercury concentration and speciation in coal
 - ② coal type and composition
 - ③ type of combustion technology
 - ④ control efficiency of existing pollution control systems

Coal-fired power plants and coal-fired industrial boilers

- BAT/BEP
 - Primary measures to reduce the mercury content of coal
 - Coal washing, selection or blending (does not alone constitute BAT)
 - Measures to reduce mercury emissions during combustion
 - Use of a fluidized bed boiler (does not alone constitute BAT)
 - Mercury removal by co-benefit of conventional APCS¹s
 - Combination of SCR, ESP and FGD can remove mercury up to 95% and result a concentration of less than 1 µg/Nm³ of mercury in the flue gas.
 - Combination of SCR, FF and FGD can remove mercury up to 99% and result a concentration of <0.5 µg/Nm³ of mercury in the flue gas.

¹ Air Pollution Control Systems

Coal-fired power plants and coal-fired industrial boilers

➤ BAT/BEP

➤ Dedicated mercury control technologies

- Activated carbon injection technology has been adopted for coal-fired power plants in the United States.
- The operations of activated carbon injection technology in the United States show that the mercury concentration in flue gas after activated carbon injection and fabric filters may be lower than $1 \mu\text{g}/\text{Nm}^3$.

➤ BEPs

- Improving the energy efficiency for whole plant
- improving the efficiency of APCs
- environmentally sound management of the plant
- environmentally sound management of coal combustion residues

Coal-fired power plants and coal-fired industrial boilers

- Major issues raised in public comment phase
 - Performance levels of BAT
 - Cross-media effects of control measures
 - Costs of the control measures
 - Emerging techniques
 - Mercury monitoring issues

*as a daily average, or average over the sampling period, at reference conditions 273 K, 101.3 kPa, 10 per cent oxygen and dry gas



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Questions

<http://www.mercuryconvention.org/Convention/Formsandguidance/tabid/5527/language/en-US/Default.aspx>