Best available techniques and best environmental practices in Minamata Convention on Mercury

Workshop to Promote the Ratification of Technical Protocols of the UNECE Air Convention with Focus on Countries in the EECCA Region

Berlin, 14-15 May 2019
Objective of the Minamata Convention (Article 1)

« (...) to protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. »

- Provisions cover the entire life cycle of mercury, including supply, trade, mercury-added products, industrial processes using mercury, ASGM, emissions to air, releases to land and water, interim storage, waste and contaminated sites.
Minamata Timeline so far

Adoption of text and opening for signature: 10-11 October 2013

Entry into Force: 16 August 2017

First Conference of the Parties (Geneva) 24 to 29 September 2017
President: Switzerland

Second Conference of the Parties (Geneva) 19 to 23 September 2018
President: Switzerland

Third Conference of the Parties (Geneva) 25 to 29 November 2019
President: Zambia
Current status of Ratification, Acceptance, Approval or Accession

As of 26 April 2019, Minamata Convention on Mercury has **108 Parties**.

- **Africa** – 28 Parties
- **Asia and the Pacific** – 25 Parties
- **Central and Eastern Europe** – 12 Parties
- **Latin America and the Caribbean** – 22 Parties
- **Western Europe and others Group** – 20+1 Parties

*Instrument for ratification, acceptance, approval or accession needs to be deposited with the Depositary by 27 August 2019 in order to be a Party from the start of COP-3.*
Article 8 of the Minamata Convention

Controls the emissions of total mercury from

- 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.
Article 8 of the Minamata Convention

4. For its new sources, each Party shall require the use of best available techniques and best environmental practices to control and reduce emissions, as soon as practicable but no later than five years after the date of entry into force. A Party may use emission limit values that are consistent with the application of best available techniques.
Article 8 of the Minamata Convention

5. For its existing sources, each Party shall include in any national plan, and shall implement, one or more of the following measures, as soon as practicable but no more than ten years after the date of entry into force:

(a) A quantified goal;
(b) Emission limit values;
(c) The use of best available techniques and best environmental practices;
(d) A multi-pollutant control strategy that would deliver co-benefits;
(e) Alternative measures to reduce emissions from relevant sources.
Article 8 of the Minamata Convention

7. Each Party shall establish, as soon as practicable and no later than five years after the date of entry into force of the Convention for it, and maintain thereafter, an inventory of emissions from relevant sources.
Article 8 of the Minamata Convention

8. COP 1 shall adopt guidance on:
(a) **Best available techniques and on best environmental practices**; and
(b) Support for Parties in controlling existing sources, in particular in determining goals and in setting emission limit values.

9. COP shall, as soon as practicable, adopt guidance on:
(a) Criteria that Parties may develop to identify relevant sources;
(b) The methodology for preparing inventories of emissions.

10. Parties shall take the guidance into account in implementing the relevant provisions of this Article.
Article 2 (Definitions)

“Best available techniques” means those techniques that are the most effective to prevent and reduce emissions and releases of mercury to air, water and land and the impact of such emissions and releases on the environment as a whole, taking into account economic and technical considerations for a given Party or a given facility within the territory of that Party. In this context:

(i) “Best” means most effective in achieving a high general level of protection of the environment as a whole;
Article 2 (Definitions)

(ii) “Available” techniques means, in respect of a given Party and a given facility within the territory of that Party, those techniques developed on a scale that allows implementation in a relevant industrial sector under economically and technically viable conditions, taking into consideration the costs and benefits, whether or not those techniques are used or developed within the territory of that Party, provided that they are accessible to the operator of the facility as determined by that Party; and

(iii) “Techniques” means technologies used, operational practices and the ways in which installations are designed, built, maintained, operated and decommissioned;
Article 2 (Definitions)

“Best environmental practices” means the application of the most appropriate combination of environmental control measures and strategies;
Forms and guidance documents

At its first meeting, the Conference of the Parties to the Minamata Convention on Mercury adopted forms and guidance to assist Parties with its effective implementation.

These forms and guidance, as adopted, are presented below.
Guidance under article 8 – COP Decision MC-1/4

The Conference of the Parties,

• Decides to adopt the guidance with regard to article 8 on best available techniques and on best environmental practices, and on support for parties in implementing the measures set out in paragraph 5;

• Recognizing that some of the measures described in the guidance may not be available to all parties for technical or economic reasons,

• Requests parties with experience in using such guidance to provide the secretariat with information on that experience, and the secretariat to compile such information and, in consultation with parties and others, to update the guidance as necessary.
Guidance under article 8

- BAT/BEP- - Introduction
- BAT/BEP- - Common Techniques
- BAT/BEP- - Monitoring
- BAT/BEP- - Coal-fired power plants and coal-fired industrial boilers
- BAT/BEP- - Smelting and roasting processes used in the production of non-ferrous metals (lead, zinc, copper and industrial gold)
- BAT/BEP- - Waste incineration facilities
- BAT/BEP- - Cement clinker production facilities
- BAT/BEP- - New and emerging techniques
- Support for parties in implementing the measures for existing sources of mercury emissions
- Guidance on criteria that Parties may develop on a relevant source
- Guidance on the methodology for preparing inventories of emissions
BAT/BEP Guidance – Introduction

• This document presents guidance related to BAT and BEP to assist parties in fulfilling their obligations under Article 8. The guidance does not establish mandatory requirements, nor does it attempt to add to, nor subtract from a Party’s obligations under Article 8.

• In determining BAT, each Party will take account of its national circumstances. It is recognized that some of the control measures described in this guidance may not be available to all parties for technical or economic reasons. Financial support, capacity building, technology transfer, or technical assistance are made available as elaborated in Articles 13 and 14 of the Convention.
The process for selecting and implementing BAT could be expected to include the following general steps.

- Step 1: establish information about the source, or source category.
- Step 2: identify the full range of options of emission control techniques.
- Step 3: identify technically viable control options.
- Step 4: select the control technique options which are the most effective for the control and reduction of emissions.
- Step 5: determine which of these options can be implemented under economically and technically viable conditions.
BAT and BEP for coal combustion

Best available techniques

1. Primary measures to reduce the mercury content of coal - Coal washing, selection or blending

2. Measures to reduce mercury emissions during combustion - Fluidized bed boiler, resulting in much higher percentages of particulate mercury in flue gas, which leads to high mercury removal efficiency of downstream fabric filters (FF) or electrostatic precipitators (ESP)

3. Mercury removal by co-benefit of conventional air pollution control system - mainly used for the removal of PM (ESP, FF or a combination of both), SO2 (dry or wet flue gas desulfurization, FGD), and NOX (Selective catalytic reduction, SCR), but can result in substantial reductions in mercury emissions as a co-benefit.

4. Dedicated mercury control technologies - including activated carbon injection technology or the use of additives.
BAT and BEP for coal combustion

Best environmental practices

1. Identifying key process parameters - including mercury input control in coal and related monitoring

2. Consideration of energy efficiency for whole plant

3. Maintenance of air pollution control system and removal efficiency

4. Environmentally sound management of the plant

5. Environmentally sound management of coal combustion residues
Article 9: Releases

Article 9 concerns controlling and reducing releases of mercury and mercury compounds to land and water from the relevant point sources not addressed in other provisions of the Convention.

COP 2 established a group of technical experts that will prepare a report including a list of any significant anthropogenic point source of release categories, along with a suggested roadmap and structure for the development of draft guidance on methodologies for preparing its inventories, for possible adoption by COP 3.

As a next step, the group will develop draft guidance on standardized and known methodologies for preparing inventories for possible adoption by COP 4.

Article 9 provides that COP shall adopt guidance on best available techniques and on best environmental practices.
Article 10: Interim storage

COP 2 adopted Guidelines on the environmentally sound interim storage of mercury other than waste mercury, regarding:

- Overall management

- Environmentally sound interim storage - location; construction of interim storage facilities; containers for the storage of mercury and mercury compounds; movement of mercury and mercury compounds; education and training of staff; repair, testing and maintenance; and emergency measures

- General guidance on health and safety

- Risk communication

- Closure of a facility

- Information regarding transport of mercury and mercury compounds
Article 11: Waste

Article 11 provides that each Party shall take appropriate measures so that mercury waste is managed in an environmentally sound manner, taking into account the guidelines developed under the Basel Convention.

Basel COP adopted in 2015 technical guidelines on the environmentally sound management of wastes consisting of, containing or contaminated with mercury or mercury compounds (UNEP/CHW.12/5/Add.8/Rev.1), including the following:

- Identification and inventory
- Sampling, analysis and monitoring
- Waste prevention and minimization
- Handling, separation, collection, packaging, labelling, transportation and storage
- Environmentally sound disposal
- Reduction of mercury releases from thermal treatment and landfilling of waste
- Remediation of contaminated sites
- Health and safety
- Emergency response
- Awareness and participation
Article 12: Contaminated sites

COP 2 reviewed draft guidance on the management of contaminated sites, and requested the Secretariat to revise the draft based on the further input from parties and other stakeholders, for possible adoption by COP 3.

The draft guidance consists of the following:

- Site identification and characterization
- Engaging the public
- Human health and environmental risk assessments
- Options for managing the risks posed by contaminated sites - soil treatment and Water treatment technologies
- Evaluation of benefits and costs
- Validation of outcomes
- Cooperation in developing strategies and implementing activities for identifying, assessing, prioritizing, managing and, as appropriate, remediating contaminated sites
Specific International Programme

Article 13 Financial mechanism: Specific International Programme (SIP) to support Capacity-Building and Technical Assistance

Third meeting of the Governing Board Geneva, 14-15 Feb 2019
• The Governing Board agreed on revised application guidelines for the Second Round of applications.
• Round opened on 5 March.
• Funding received so far: USD 2.2 million.
Launch of Second Round

Specific International Programme – Second Round of Applications open until 14 June 2019

The Second Round of applications to the Specific International Programme will be open between 5 March and 14 June 2019. Eligible Parties are invited to submit their applications for project funding between USD50,000 and USD250,000 by following the Application Guidelines and submitting the following documents:

- Form A – Project Application;
- Form B – Project Budget; and
- Form C – Letter of Transmittal.
1. LAUNCH
Secretariat launches Second Round of applications with revised guidelines as endorsed by the Governing Board

5 March

2. APPLICATION DEADLINE
Parties prepare and submit applications by deadline of 14 June

14 June

3. SCREENING & APPRAISAL
Secretariat screens and appraises applications based on the Guidelines

June-July

4. APPROVAL
Governing Board meets to review and approve applications, matching successful projects to available funds

18-19 September

6. IMPLEMENTATION ARRANGEMENTS
Secretariat concludes legal agreements with all approved projects under the Second Round

December

5. NOTIFICATION
Secretariat communicates outcome of Governing Board meeting to all applicants
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