



BEST AVAILABLE TECHNIQUES (BAT)

Workshop on Strategies for Targeted Emission
Reductions from the Indonesian Coal Fleet,
Jakarta

11-13 July 2023

Berrak ERYASA

Environment, Health and Safety Division (EHS)
Environment Directorate (ENV)



Background and Objectives

What are Best Available Techniques?

- State-of-the-art techniques for the prevention and control of industrial emissions,
- To establish legally binding emission limit values and other environmental permit conditions for industrial facilities

Objectives

- **Exchange best practices** across countries that already have a BAT-based permitting system
- **Provide guidance** to countries that seek to adopt a BAT-based approach for the first time
- Achieve **progress towards the SDGs**, notably Target 12.4 on the environmentally sound management of chemicals





The OECD Expert Group on BAT

- **Established in 2015** – increased *tenfold* in size since
- **~150 members from 40+ countries and organisations**
 - OECD member and non-member governments
 - Intergovernmental organisations
 - Environmental NGOs
 - Industry associations
- One face-to-face meeting and one webinar per year
 - 8-10 November 2023, Seville/Spain
- **A fruitful platform** for the exchange of best practices, review of OECD research, etc.





Deliverables of the OECD's BAT project (2016-2024)



Phase I

Act.1- Policies on BAT or Similar Concepts Across the World (2017)

Act.2 -Approaches to Establishing BAT Around the World (2018)

Act.3 - Measuring the Effectiveness of BAT Policies (2019)



Phase II

Act.4 - BAT guidance document (2020)

Act. 5 - Study on value chain aspects of determining BAT (2021)

Act. 6 - Cross-country comparison of selected BREFs (2022)



Phase III

Act. 7 - Cross-country comparison of selected BREFs (P.2)

Act. 8 - Capacity building workshops

Act.9 - Study on identifying emerging technologies for potential BAT determination

All reports available free of charge:
oe.cd/bat



Online Tools

[OECD Home](#) > [Chemical safety and biosafety](#) > [Risk management of chemicals](#) > List of Best Available Techniques Reference Documents by sectors and activities covered by each jurisdiction

List of Best Available Techniques Reference Documents by sectors and activities covered by each jurisdiction

The table below outlines available Best Available Techniques Reference Documents (BREFs) and guidance material from different jurisdictions according to industrial sectors. Readers should keep in mind that sectors can be categorised and defined slightly differently across countries.

Search by sector: [Agriculture](#) - [Forestry](#) - [Food](#) - [Gas & Oil](#) - [Mining](#) - [Non-ferrous metals](#) - [Iron & Steel](#) - [Chemicals](#) - [Cement](#) - [Paper & Pulp](#) - [Power Plants](#) - [Manufacturing](#) - [Construction Materials](#) - [Others in industry](#) - [Infrastructure](#) - [Waste](#) - [Others](#)

Sector	European Union BREFs and BAT Conclusions	The Russian Federation: BREFs	Korea: BREF	All US, NESHAP, HSP5 and Industrial Effluent Guidelines	People's Republic of China: Guidelines on Available Technologies for Pollution Prevention and Control (GATPPCs)	India: Comprehensive Industry Documents (COINDs)	International Finance Corporation's (IFC) EHS Guidelines *Learn more about IFC
Agriculture	* Intensive Rearing of Poultry or Pigs - Available in English , Arabic , Chinese and Russian	* Intensive rearing of pigs * Intensive rearing of poultry	N/A	* Aquaculture (Water)	* Livestock and Poultry Farms	* Cotton Gin Industry	* Poultry Production * Annual Crop Production * Perennial Crop Production * Aquaculture * Mammalian Livestock Production

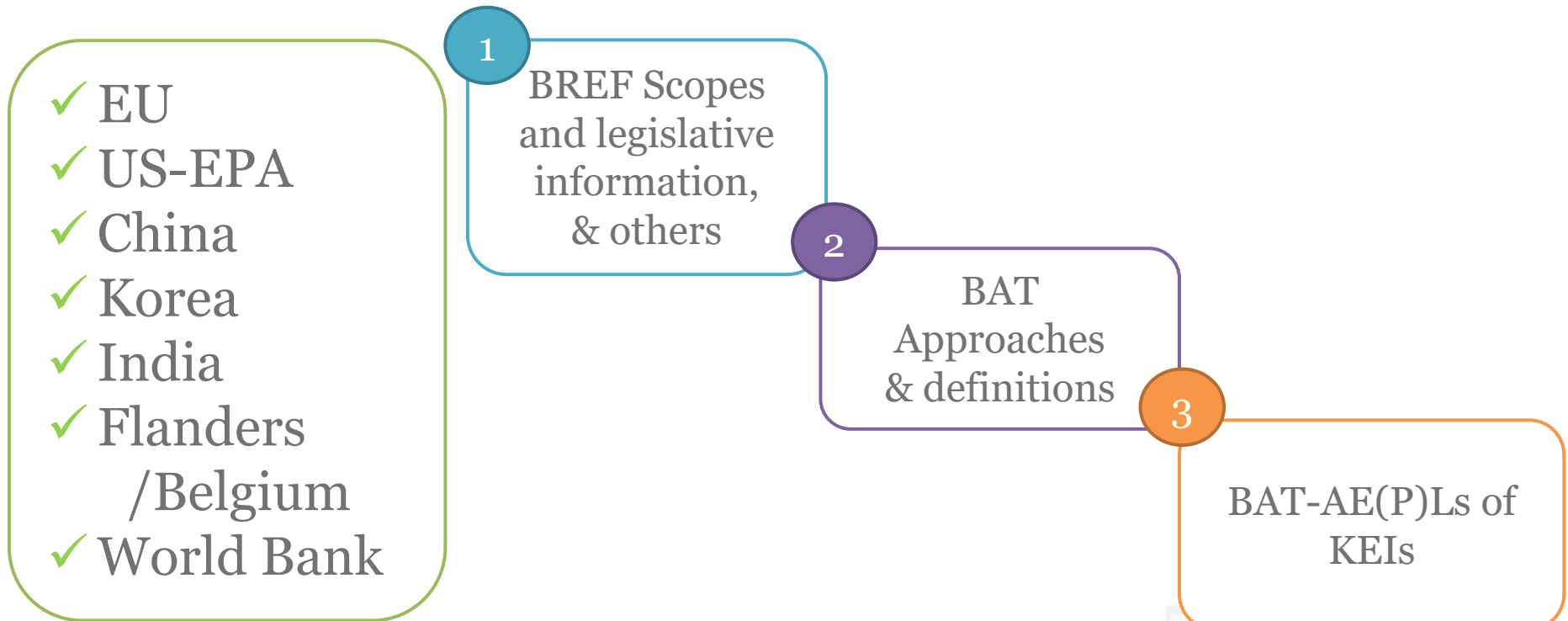
[Link available: oe.cd/bat](https://www.oecd.org/bat)



Activity 7

Cross-country analysis of BREFs

- **Qualitative and quantitative BAT used to prevent control of a number of key-environmental indicators (KEIs)**





Activity 7

Cross-country analysis of BREFs

Focus sectors (2022)

1. Thermal Power Plants
 - Coal-fired
 - Gas-fueled
2. Cement Production
 - Portland
3. Textile manufacturing
 - pre-treatment & dyeing techniques

Focus sectors (2023)

1. Iron & Steel production
2. Paper & Pulp production
3. Waste Incineration





Activity 7

Iron and Steel Production

1. Sinter plants
2. Pelletisation plants
3. Coke oven plants
4. Blast furnaces
5. Basic oxygen steelmaking and casting
6. Electric arc furnace
7. Direct reduction plants

BAT-AE(P)Ls

Air Emissions

- Nitrogen Oxides (NO_x)
- Sulphur Oxides (SO_x)
- Dust/PM (2.5 and 10)
- Carbon dioxide (CO₂)
- Heavy metals (mercury)
- Dioxins
- Hydrochloric acid (HCl)
- Ammonia (NH₃)
- ..

Water Releases

- COD - BOD
- Heavy Metals
- Cyanide
- Total Hydrocarbons
- Sulphides (SO₂)
- Total Nitrogen (TN)
- ..

Associated BAT



Activity 8

Capacity building workshops

Knowledge & experience from the EG



Countries setting BAT-based permitting systems

Vietnam – Ministry of Natural Resources and Environment (MONRE)
Workshop in October 2023





Activity 9

Identifying emerging technologies for potential BAT determination

- collecting and assessing **emerging techniques**, including Technology Readiness Level

How is innovation addressed or promoted when determining BATs?

- Develop a network of experts by mapping the organisations



Thank you!

- Follow up:
 - Berrak ERYASA: berrak.eryasa@oecd.org

<https://www.oecd.org/chemicalsafety/risk-management/best-available-techniques.htm>