

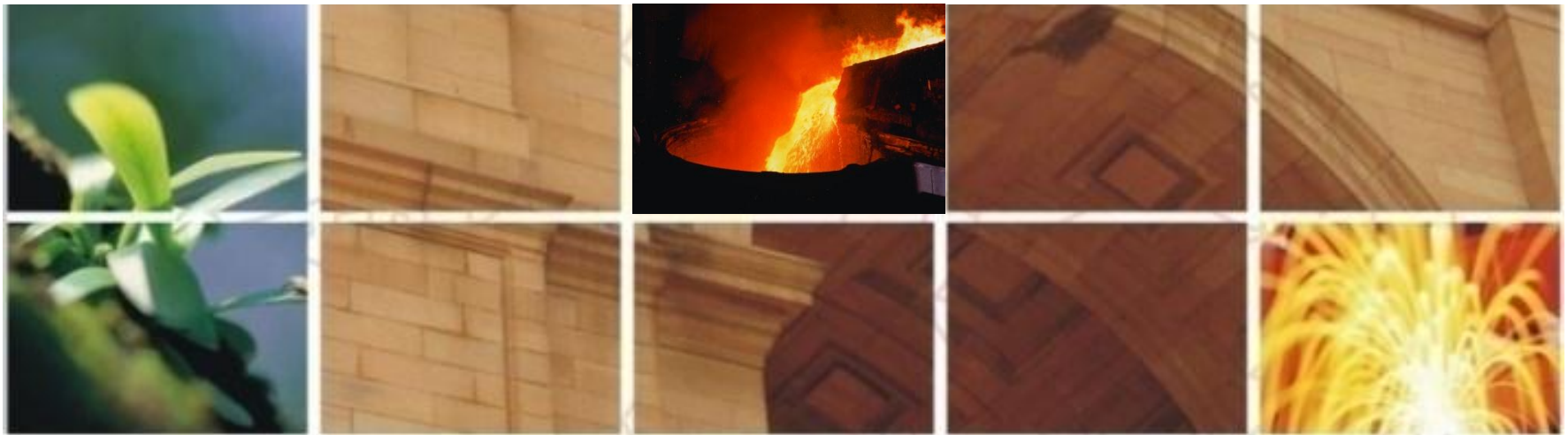


**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH



# “Best Available Techniques Reference Document for Pulp & Paper Sector”

February 27, 2013





# 1. The definition and the determination of BAT



## Definition of BAT according to Art. 3 para. 10 IED

**Best** = most effective with respect to the prevention and – where that is not practicable – the reduction of emissions and the impact on the environment as a whole

**Available** = developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not it is used in the respective Member State

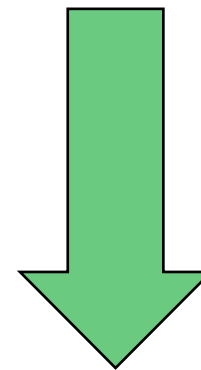
**Technique** = includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned



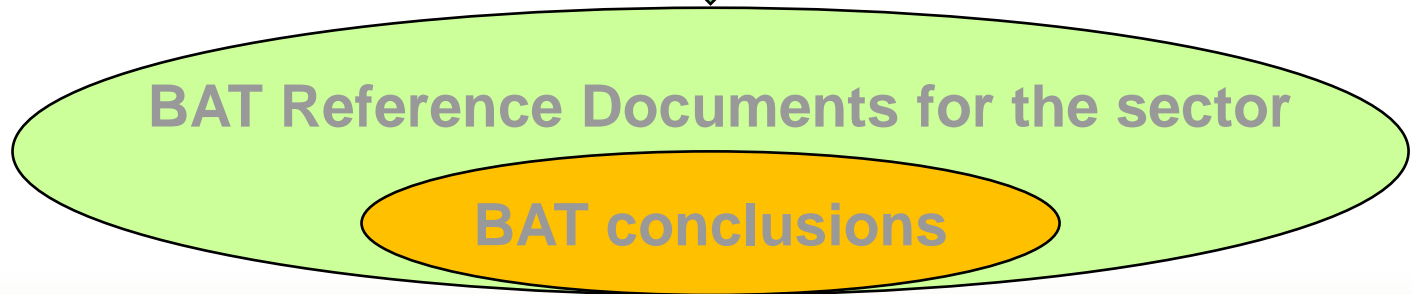
# What is BAT for a particular industrial sector?

BAT for a particular industrial sector is identified by an **information exchange process** for each sector between

- EU Member States
- Industry concerned
- Environmental NGOs
- EU Commission



**Outcome of the  
information  
exchange  
process**





## 2. The content of BAT Reference Documents



# The content of BREFs

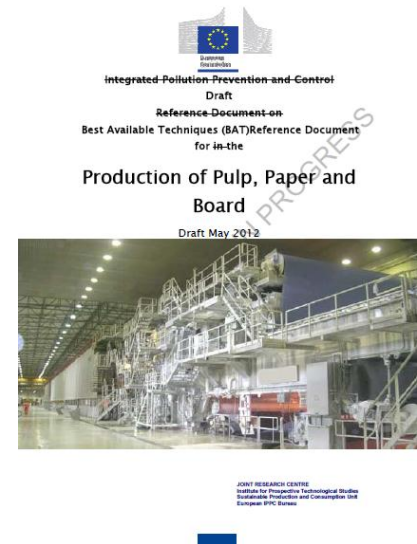
General outline of the BREFs:

Preface, **Scope**

1. General information about the sector concerned
2. Applied processes and techniques
3. Current emission and consumption levels
4. **Techniques to consider in the determination of BAT**
5. **Best available techniques (BAT) conclusions**
6. Emerging techniques
7. Concluding remarks and recommendations for future work

References, Glossary of terms and abbreviations

Annexes (dependent upon relevance and availability of information)





## **PROCESS DESCRIPTION, RISK TO THE ENVIRONMENT, & CONTROL TECHNIQUES**

- Description of Process
- Risk to the Environment
- Control Techniques

### **BAT FOR THE MANUFACTURE OF BOARD**

- Introduction
- BAT - General Preventative Measures & Prevention of Environmental Impact
- BAT - Minimisation of Environmental Impact
- BAT - Management and Treatment of Residues
- BAT ASSOCIATED EMISSION LEVELS
- Emission Levels for Discharges to Air
- Emission Levels for Discharges to Water
- COMPLIANCE MONITORING
- Monitoring of Emissions to Air
- Monitoring of Aqueous Emissions
- Monitoring of Emissions to Groundwater
- Monitoring of Solid Waste



## **In particular, this document covers the following processes and activities:**

- chemical pulping:
- kraft (sulphate) pulping process
- sulphite pulping process
- mechanical and chemi mechanical pulping
- recovered paper processing with and without deinking
- papermaking and related processes.

## **This document does not address the following activities:**

- Production of pulp from non-wood fibrous raw material (e.g. yearly plant pulp).
- Stationary internal combustion engines.
- Combustion plants of less than 5 MWth rated thermal input.





<b>Reference document</b>	<b>Subject</b>
Industrial Cooling Systems (ICS)	Industrial cooling systems, e.g. cooling towers, plate heat exchangers
Economics(ECM) and Cross-Media Effects	Economics and cross-media effects of techniques
Emissions from Storage (EFS)	Emissions from tanks, pipework and stored chemicals
Energy Efficiency (ENE)	General energy efficiency
	Generation of steam and electricity in pulp and paper
Large Combustion Plants (LCP)	mills by combustion plants with a rated thermal input of $\geq 50$ MWth
General Principles of Monitoring (MON)	Emissions and consumption monitoring
Waste Incineration (WI)	Waste Incineration
Waste Treatments Industries (WT)	Waste Treatment



There are also a number of **environmentally relevant processes and operations**, which do **not specifically relate to the pulp and paper production** and so will only be mentioned briefly in this document. These include:

- occupational safety and hazard risk
- storage and handling of chemicals
- raw water treatment
- cooling and vacuum systems
- monitoring of emissions



# Good housekeeping in recovered paper handling and storage

## Description

## Outdoor storage of recovered paper with concrete paving



**Unloading and storage of loose recovered paper in an enclosed facility with a roof**



**Recovered paper storage in bales under roof**



## Achieved environmental benefit

Good housekeeping of recovered paper handling and storage does not have significant negative impacts on environment, safety and public health.

## Cross-media effects

The sorting on site will create additional residues the mill has to take care of, a residue that otherwise accumulates at the offsite collection yards.

## Operational data

- Sorted bales mostly stored in the open air, in some cases under a roof.
- Recovered paper stored should be placed on a concrete-paved area with rainwater drainage and/or containment for contaminated flows.
- The contaminated rainwater is preferably collected and treated in a waste water treatment plant; uncontaminated rainwater, e.g. from roofs can be discharged separately.



## **Applicability**

Measures/techniques can be applied in new and existing mills.

## **Economics**

No information submitted.

## **Driving force for implementation**

Requirements from competent authorities and permits.

## **Example plants**

At the UPM Steyrermühl paper mill, AT, mixed recovered paper is stored under a roof. Most mills in Germany place recovered paper stored in the open air on a concrete-paved area with rainwater drainage. Collected contaminated rainwater run-off is treated in the biological waste water treatment plant.



## 3. Further Steps: Scope of Cooperation



# Scope of Cooperation

- Pulp & Paper sector one of the priority sectors where the technical cooperation could focus on. To understand need for environmental improvement in Pulp & Paper sector, strategic actions to be planned hence the overall scope of cooperation can be :
  - **Exchange of knowledge and experiences, including reference documents;**
  - Developing customised BREF documents for India;
  - **Undertaking pilot measures on demonstration purpose in identified industries/sectors;**
  - Promoting dialogue among various stakeholders;
  - **Training/capacity building of PCBs;**
  - Facilitate technology transfer to industries as per requirements.





## 7. Further information

- Download of all BREF documents (EIPPCB Website)  
<http://eippcb.jrc.es/reference/>
- Special link for the iron & steel BREF and related documents:  
<http://eippcb.jrc.es/reference/i&s.html>
- Industrial emissions website of the EU Commission  
<http://ec.europa.eu/environment/air/pollutants/stationary/index.htm>
- European Pollutant Release and Transfer Register (E-PRTR)  
<http://prtr.ec.europa.eu>
- Sustainable production website of the German Federal Environment Agency  
<http://www.umweltbundesamt.de/nachhaltige-produktion-anlagensicherheit-e/index.htm>