

“Capacity Building and Strengthening Institutional Arrangement”

Workshop: “Best Available Techniques (BAT)

**EU Directive 96/61/EC Best Available
Techniques (BAT) and Reference
documents on BAT (BREFs)**

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1. Introduction

IPPC (Integrated Pollution Prevention and Control)

The IPPC Directive 96/61/EC lays down a framework requiring Member States to issue operating permits for certain installations carrying on industrial activities described in its Annex 1.

2. Purpose and scope

Article 1, IPPC Directive 96/61/EC

The purpose of this Directive is to achieve integrated prevention and control of pollution arising from the activities listed in Annex 1. It lays down measures designed to prevent or, where that is not practicable, to reduce emissions in the air, water and land from the abovementioned activities, including measures concerning waste, in order to achieve a high level of protection of the environment taken as a whole, without prejudice to Directive 85/337/EEC and other relevant Community provisions.

3. Subject

- The Directive applies to new or substantially changed installations with effect from October 1999 and no later than October 2007 for existing installations.
- These permits must contain conditions based on best available techniques (BAT) as defined in the Article 2.11 of the Directive, to achieve a high level of protection of the environment as a “whole”.

- The term “Best Available Techniques” is defined in Article 2 of the Directive as “the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a “whole.”
- Article 2 goes on to clarify further this definition as follows:

- “techniques” includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;
- “available” techniques are those 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 the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator;
- “best” means most effective in achieving a high general level of protection of the environment as a “whole”.

- Article 16.2 of the Directive requires the European Commission to organise an exchange of information between Member States and the industries concerned on best available techniques, associated monitoring and developments in them. Every three years the EC shall publish the results of the exchanges of information.
- The European IPPC Bureau exists to catalyse an exchange of technical information on best available techniques under the IPPC Directive 96/61/EC and to create reference documents (BREFs) which must be taken into account when the competent authorities of Member States determine conditions for IPPC permits.

- The European IPPC Bureau organises this exchange of information and produces BAT reference documents (BREFs) which Member States are required to take into account when determining best available techniques generally or in specific cases.
- The Bureau carries on its work through Technical Working Groups (TWGs) comprising nominated experts from EU Member States, EFTA countries, Accession countries, industry and environmental NGOs. These experts provide information and data and then review the draft documents the Bureau produces.

- IPPC will apply to a wide range of industrial activities and the objective of the information exchange exercise is to assist the efficient implementation of the directive across the EU.
- The BREFs will inform the relevant decision makers about what may be technically and economically available to industry in order to improve their environmental performance and consequently improve the whole environment.
- Each sector of industry to be covered by the IPPC Directive will be addressed by a specific Technical Working Group (TWG) comprising nominated experts from Member States, EFTA countries, Accession countries, industry and environmental NGOs.

- Each TWG is set up for a limited duration in order to provide information and to review the draft reference documents.
- The reference documents are produced following a set BREF outline and guide as agreed with DG Environment and the IEF (Information Exchange Forum) which gives important foundations for the understanding of best available techniques reference documents (BREFs).
- The objectives of the whole information exchange exercise are to accomplish a comprehensive exchange of information and views and through the publication of reference documents to help to redress any technological imbalances in the European Community.

- Promote the worldwide dissemination of limit values and techniques used in the Community and assist Member States in the efficient implementation of this Directive.
- Reference documents are produced following a set BREF outline and guide as agreed with DG Environment and the Information Exchange Forum (IEF).
- The outline refers to some standard pieces of text already translated into most European languages.
- In particular, the preface to BREFs and the standard introduction to chapters on BAT make important foundations for the understanding of BREFs.

4. Industrial activities

Annex 1 Categories of Industrial Activities referred to in Article 1:

1. Energy industries:
 - Combustion installations with a rated thermal input exceeding 50 MW;
 - Mineral oil and gas refineries;
 - Coke ovens;
 - Coal gasification and liquefaction plants.

2. Production and processing of metals:
 - Metal ore (including sulphide ore) roasting or sintering installations;

- Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tonnes per hour;
- Installations for the processing of ferrous metals:
 - (a) hot-rolling mills with a capacity exceeding 20 tonnes of crude steel per hour
 - (b) smitheries with hammers the energy of which exceeds 50 kilojoule per hammer, where the calorific power used exceeds 20 MW
 - (c) application of protective fused metal coats with an input exceeding 2 tonnes of crude steel per hour.

- Ferrous metal foundries with a production capacity exceeding 20 tonnes per day.

- Installations:
 - (a) for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes;
 - (b) for the smelting, including the alloyage, of non-ferrous metals, including recovered products, (refining, foundry casting, etc.) with a melting capacity exceeding 4 tonnes per day for lead and cadmium or 20 tonnes per day for all other metals;

- Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process where the volume of the treatment vats exceeds 30 m³.

3. Mineral industry

- Installations for the production of cement clinker in rotary kilns with a production capacity exceeding 500 tonnes per day or lime in rotary kilns with a production capacity exceeding 50 tonnes per day or in other furnaces with a production capacity exceeding 50 tonnes per day;

- Installations for the production of asbestos and the manufacture of asbestos-based products;
- Installations for the manufacture of glass including glass fibre with a melting capacity exceeding 20 tonnes per day;
- Installations for melting mineral substances including the production of mineral fibres with a melting capacity exceeding 20 tonnes per day;
- Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain, with a production capacity exceeding 75 tonnes per day, and/or with a kiln capacity exceeding 4 m³ and with a setting density per kiln exceeding 300 kg/m³.

4. Chemical industry

Production within the meaning of the categories of activities contained in this section means the production on an industrial scale by chemical processing of substances or groups of substances listed below:

- Chemical installations for the production of basic organic chemicals, such as:
 - (a) simple hydrocarbons;
 - (b) oxygen-containing hydrocarbons such as alcohols, aldehydes, ketones, carboxylic acids, esters, acetates, ethers, peroxides, epoxy resins;
 - (c) sulphurous hydrocarbons;

- d) nitrogenous hydrocarbons such as amines, amides, nitrous compounds,
nitro compounds or nitrate compounds, nitriles, cyanates, isocyanates;
- (e) phosphorus-containing hydrocarbons;
- (f) halogenic hydrocarbons;
- (g) organometallic compounds;
- h) basic plastic materials (polymers synthetic fibres and cellulose-based fibres)
- (i) synthetic rubbers
- (j) dyes and pigments
- (k) surface-active agents and surfactants.

- Chemical installations for the production of basic inorganic chemicals, such as:
 - (a) gases, such as ammonia, chlorine or hydrogen chloride, fluorine or hydrogen fluoride, carbon oxides, sulphur compounds, nitrogen oxides, hydrogen, sulphur dioxide, carbonyl chloride;
 - (b) acids, such as chromic acid, hydrofluoric acid, phosphoric acid, nitric acid, hydrochloric acid, sulphuric acid, oleum, sulphurous acids;
 - (c) bases, such as ammonium hydroxide, potassium hydroxide, sodium hydroxide;

- (d) salts, such as ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate
- (e) non-metals, metal oxides or other inorganic compounds such as calcium carbide, silicon, silicon carbide.
- Chemical installations for the production of phosphorous-, nitrogen- or potassium-based fertilisers (simple or compound fertilisers).

- Chemical installations for the production of basic plant health products and of biocides.
- Installations using a chemical or biological process for the production of basic pharmaceutical products
- Chemical installations for the production of explosives.

5. Waste management

Without prejudice of Article 11 of Directive 75/442/EEC or Article 3 of Council Directive 91/689/EEC of 12 December 1991 on hazardous waste:

- Installations for the disposal or recovery of hazardous waste as defined in the list referred to in Article 1 (4) of Directive 91/689/EEC, as defined in Annexes II A and II B (operations R1, R5, R6, R8 and R9) to Directive 75/442/EEC and in Council Directive 75/439/EEC of 16 June 1975 on the disposal of waste oils (2), with a capacity exceeding 10 tonnes per day;

- Installations for the incineration of municipal waste as defined in Council Directive 89/369/EEC of 8 June 1989 on the prevention of air pollution from new municipal waste incineration plants (3) and Council Directive 89/429/EEC of 21 June 1989 on the reduction of air pollution from existing municipal waste-incineration plants (4) with a capacity exceeding 3 tonnes per hour;

- Installations for the disposal of non-hazardous waste as defined in Annex II A to Directive 75/442/EEC under headings D8 and D9, with a capacity exceeding 50 tonnes per day;
- Landfills receiving more than 10 tonnes per day or with a total capacity exceeding 25 000 tonnes, excluding landfills of inert waste;

6. Other activities

- Industrial plants for the production of:
 - (a) pulp from timber or other fibrous materials
 - (b) paper and board with a production capacity exceeding 20 tonnes per day

- Plants for the pre-treatment (operations such as washing, bleaching, mercerisation) or dyeing of fibres or textiles where the treatment capacity exceeds 10 tonnes per day
- Plants for the tanning of hides and skins where the treatment capacity exceeds 12 tonnes of finished products per day
- (a) Slaughterhouses with a carcase production capacity greater than 50 tonnes per day
- (b) Treatment and processing intended for the production of food products from:
 - animal raw materials (other than milk) with a finished product production capacity greater than 75 tonnes per day;
 - vegetable raw materials with a finished product production capacity greater than 300 tonnes per day (average value on a quarterly basis);
- (c) Treatment and processing of milk, the quantity of milk received being greater than 200 tonnes per day (average value on an annual basis)

- Installations for the disposal or recycling of animal carcasses and animal waste with a treatment capacity exceeding 10 tonnes per day;
- Installations for the intensive rearing of poultry or pigs with more than:
 - (a) 40 000 places for poultry
 - (b) 2 000 places for production pigs (over 30 kg), or
 - (c) 750 places for sows
- Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating, with a consumption capacity of more than 150 kg per hour or more than 200 tonnes per year
- Installations for the production of carbon (hard-burnt coal) or electrographite by means of incineration or graphitization.

- See also the IPPC web page of DG Environment at:

<http://www.ec.europa.eu/comm/environment/ippc/index.htm>

- CD by the Office for Official Publications of the European Communities "Reference Documents on Best Available Techniques (Council Directive 96/61/EC): First edition (multilingual)" ISBN 92-894-3678-6:

<http://ec.europa.eu/comm/environment/pubs/industry.htm>

5. References

- <http://www.ec.europa.eu/comm/environment/ippc/index.htm>
 - **Integrated Pollution Prevention and Control (IPPC):**
IPPC Directive 96/61/EC
 - <http://ec.europa.eu/comm/environment/pubs/industry.htm>