

## GENERAL INFORMATION: IMPLEMENTATION OF ESM OF WASTES

This is the first of a series of technical fact sheets to support the implementation of environmentally sound management (ESM) practices for hazardous wastes or other wastes in accordance with the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. This fact sheet provides general information that is common to ESM of different waste streams. Other fact sheets in the series, each tailored for a different target audience (e.g. recyclers or governments), provide more information for specific waste streams, namely e-waste, waste vehicles, healthcare or medical waste, waste lead-acid batteries, waste oils, and waste pneumatic tyres.

The factsheets are intended to serve as a low-threshold document providing the respective target groups with a quick overview of the most important aspects related to ESM of the particular waste streams. They should not be used as the sole source of information, but rather as a starting point to assist the target audience in understanding the issues involved and as a guide to additional and more comprehensive information, if needed. The fact sheets should help raise awareness and increase the use of existing guidance documents in view of a better implementation of ESM on the ground. More detailed information in the form of technical guidelines and guidance documents with respect to the ESM of various waste streams and disposal operations is available on the Convention website<sup>(19)</sup>.

### What is waste under the Basel Convention?

“Wastes”, as defined by the Convention, are substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law. Annex I to the Convention, as further clarified in Annexes VIII and IX, lists those wastes that are classified as hazardous and subject to the control procedures under the Convention. Annex II to the Convention identifies those wastes that require special consideration (known as “other wastes”, which primarily refers to household wastes). Wastes other than those listed in Annexes I and II to the Convention that are defined or considered as hazardous wastes under the national legislation of a Party of export, import or transit also fall under the Convention.

“Disposal”, as defined by the Convention, refers to operations specified in Annex IV to the Convention, and includes final disposal operations in Annex IVA and recovery operations in Annex IVB.

Further guidance on certain terms used in the Convention, including the terms “waste” and “disposal”, is available in the glossary of terms [adopted by the Conference of the Parties<sup>(21)</sup>]. In case of doubt as to whether the Basel Convention control procedure should apply to a particular transboundary

movement, the national competent authority should be contacted for guidance<sup>(20)</sup>.

### Environmentally sound waste management

Environmentally sound management (ESM) of hazardous wastes or other wastes, as defined in the Convention, means taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.

Managing hazardous or other wastes in an environmentally sound manner is a fundamental obligation of Parties to the Basel Convention. The framework for the ESM of hazardous wastes and other



Source : Joost Meijer

wastes, developed to improve the effectiveness of the Convention, establishes a common understanding of what ESM encompasses, identifies tools to support and promote its implementation, and identifies strategies to implement ESM of wastes<sup>(1)</sup>. General guidance on ESM has also been developed by the OECD<sup>(2)</sup>.

To ensure that wastes are managed in an environmentally sound manner, governments should foster continual improvement within the waste management sector, including the development and implementation of measures to ensure facilities operate according to ESM practices. This can be in a step-wise manner, taking into consideration the protection of the

environment and the technical, operational and economic feasibility of doing so, while working toward continually improving environmental performance.

A number of technical guidelines have been adopted under the Basel Convention for the ESM of specific waste streams, such as biomedical and healthcare waste, waste lead-acid batteries, waste oils and used and waste pneumatic tyres. Technical guidance for the use of Best Available Techniques (BAT) in waste treatment industries and waste incinerators has been published by the European Commission in the form of “BAT Reference Documents” (BREFs)<sup>(3,4)</sup>. In addition, BREFs covering specific industrial sectors contain information on relevant aspects of waste treatment (e.g. non-ferrous metal processes). BREFs are a useful tool to identify BAT, their performance, and costs (investment and operating costs). Guidance has also been developed under the Stockholm Convention on Persistent Organic Pollutants on how to reduce or eliminate unintentionally produced Persistent Organic Pollutants (POPs) by using BAT and Best Environmental Practices (BEP)<sup>(5)</sup>. Among other source categories, the BAT/BEP guidance addresses emissions from waste management installations such as waste incinerators, secondary metal production, shredder plants for the treatment of waste vehicles, cement kilns firing hazardous waste, and waste oil refineries.

## Policy instruments

A variety of policy instruments can be used to promote ESM of hazardous wastes and other wastes. These include extended producer responsibility; unit based pricing (pay-as-you-throw, waste volume charges); landfill bans and taxes; removal of virgin material subsidies; materials, product and chemical bans and restrictions; eco-labelling; green government purchasing; marketable permits; and recycling credit programmes.

The OECD database on instruments used for environmental policy and natural resources management provides information on environmentally related taxes, fees and charges, tradable permit systems, deposit refund systems, environmentally motivated subsidies and voluntary approaches used in environmental policy in various countries<sup>(8)</sup>.

## Extended Producer Responsibility

Extended producer responsibility (EPR) extends a producer’s responsibility for a product to the post-consumer stage of its life cycle. Policy approaches based on EPR can be used by governments to encourage environmentally sound recycling schemes. Practical manuals on EPR and financing systems for ESM are being developed by the expert working group on environmentally sound management<sup>(23)</sup>. The



Source: <http://www.electronicstakeback.com/>

OECD<sup>(6)</sup> and the European Commission have also published guiding principles on EPR<sup>(7)</sup>.

There are four basic categories of EPR instruments: take-back requirements (product take-back); economic and market-based instruments (deposit/refund schemes, advanced disposal/recycling fees, material taxes, upstream combination of taxes/subsidies); regulation and performance standards (minimum recycled content); and accompanying information-based instruments. Take-back requirements and economic instruments can be used to meet policy objectives by assigning responsibility for the management of products that have become waste. In addition, performance standards can be established to specify a particular percentage of recycled materials to be used in a product.

Clear policy goals (e.g. source reduction, waste prevention) and programme objectives (e.g. reducing the amount of waste going to final disposal) should be established for designing an effective EPR scheme. Products, product groups or waste streams should be matched with the most appropriate EPR policy mechanism, and decisions on whether to make the programme voluntary or mandatory, or to use a combination of the two (e.g. negotiated agreements), should be made early on. Targets for collection, reuse, recycling, and recovery may be set. Any EPR programme needs to address “free-riding”, “orphan” and “existing” products.

## Capacity

Parties are required to ensure the availability of adequate disposal facilities for the environmentally sound management of hazardous wastes and other wastes to the extent possible, located within their own territory. Building sufficient domestic infrastructure and capacity to ensure availability of adequate facilities to undertake waste management operations allows

wastes to be managed in close proximity to where they are generated, minimising the need for them to be exported. The Basel Convention is based on the principle that transboundary movements of wastes should be reduced to a minimum consistent with the



Source: <http://www.dep.wv.gov/>

environmentally sound and efficient management of such wastes.

In order to develop an understanding of waste management and disposal capacity needs, governments should prepare and maintain an inventory of hazardous and other wastes, including of recovery and disposal capacity.

As provided for by Article 13, paragraph 3, of the Basel Convention, Parties are required to inform each other of disposal options operated in their territories. This information can be found in the Convention's online reporting database.

## Permitting, Licensing or Authorising

Permitting, licensing or authorising, and control of installations and activities by designated authorities is essential for ensuring the ESM of hazardous wastes and other wastes. Waste management facilities should hold a licence, permit or other authorization and practice ESM. By requiring facilities to operate in an environmentally sound manner, permits, licenses or authorisations help protect human health and the environment, as well as ensure that facility operators or enterprises adopt and pay for their pollution control measures.

Some facilities and activities could be exempt from the requirement for an environmental permit, license or authorization, subject to compliance with certain requirements including registration. Likewise, simplified permitting, licensing or authorization processes could be considered for small and medium sized enterprises (SMEs) that cause negligible environmental impacts. A tiered approach based on the

potential risk to the environment and human health of the proposed activities is used by some countries<sup>(9)</sup>.

Integrated permitting is considered more effective than media-specific approaches (e.g. permits that only address air pollution or only address protection of surface water) in linking long-term environmental strategies for reducing pollution and making economic growth environmentally sustainable<sup>(10)</sup>. Integrated permitting means that regulators must set permit conditions so as to achieve a high level of protection for the environment as a whole. These conditions are commonly based on use of the concept of BAT, which balances the benefits to the environment as a whole against the costs to the operator. By way of this concept, integrated permitting attempts to prevent waste generation and emissions and, where that is not feasible, to reduce them to acceptable levels<sup>(11)</sup>.

Setting the right conditions within permits, licenses or authorizations, and taking into account technical, legal and practical aspects of the particular waste management facility is of utmost importance to ensure its operation while still protecting human health and the environment. Permits, licenses or authorizations may cover: construction requirements; permitted waste types; waste acceptance procedures; pre-treatment requirements; storage requirements; closure and aftercare requirements; emission limits; emission control; emission monitoring; alert system; emergency plan; employee training; records maintenance; offences and penalties; inspections; third-party auditing and certification; proof of financial standing; financial guarantee<sup>(12)</sup>.

## Certification and Auditing Systems

Environmental management systems (EMS) can help organisations identify and manage their environmental impacts as well as their compliance with environmental legislation. Companies can become certified (e.g. using ISO, EMAS or industry standards) by demonstrating to an accredited, independent, third-party auditor that they meet specific standards to safely manage wastes. An organization can, however, achieve the same benefits from an EMS whether or not it pursues certification. Non-standardised systems can in principle be equally effective provided that they are properly designed and implemented.

## Enforcement

ESM of wastes requires a regulatory and enforcement infrastructure that ensures compliance with applicable laws, measures and regulations<sup>(22)</sup>.

Environmental enforcement programmes should utilize a balance of strategies: education and assistance; compliance incentives (e.g. recognition programmes); monitoring and inspections; and fair and differentiated non-compliance responses<sup>(13)</sup>.

Inspections are the backbone of most enforcement programmes. By standardizing inspection procedures, enforcement officials can help ensure that all facilities are treated equally and that all the appropriate information is gathered. Effective environmental enforcement deters illegal traffic, including the use of penalties that make non-compliance costlier than compliance<sup>(13)</sup>.

Specific guidelines and criteria are needed to distinguish compliance from non-compliance, to help ensure that all members of the regulated community are treated consistently and that enforcement is perceived as fair. Fairness, and perception of fairness, is critical to the credibility of an enforcement programme<sup>(13)</sup>.

Competent authorities should have access to adequate physical, technical, and financial resources for their mandate and scope of work. Inspectors require training in a broad range of skills, including legal, technical, administrative and communication<sup>(13)</sup>.

## Transboundary Movements

Appropriate legal, administrative and other measures need to be taken to implement and enforce the provisions of applicable international and regional instruments in relation to the transboundary movement (TBM) of wastes, including the Basel Convention. Legislation should be introduced to prevent and punish illegal traffic.

Parties have an obligation to ensure that TBMs are reduced to a minimum consistent with environmentally sound and efficient management. Hazardous wastes or other wastes should be exported only if the state of export does not have the technical capacity and facilities to dispose of them in an environmentally sound manner or the wastes in question are required as raw material for recycling or recovery in the state of import. TBMs should not be allowed to occur when there is a reason to believe that the wastes in question will not be managed in an environmentally sound manner<sup>(14,15)</sup>. To this end, the Basel Convention requires the exporter and disposer to conclude a contract specifying environmentally sound management of the wastes in question. Prohibitions or restrictions in place in states of export, transit and/or import should be respected<sup>(16)</sup>.

When competent authorities consent to a TBM, it should be conducted in a manner to protect human health and the environment. Packing, labelling and transport of the wastes should be in conformity with generally accepted and recognised international rules and standards<sup>(17)</sup>.

TBMs must not commence from the state of export until the written consent of the state of import is received and confirmation of the existence of a contract specifying the ESM of the wastes in question. The disposer is required to inform the exporter and

competent authority of the state of export of receipt of the wastes and completion of the disposal as specified in the notification<sup>(18)</sup>.

## References

- (1) Framework for the Environmentally Sound Management of Hazardous Wastes and Other Wastes. <http://www.basel.int/Implementation/CountryLedInitiative/EnvironmentallySoundManagement/ESMFramework/tabid/3616/Default.aspx>
- (2) OECD (2007) Guidance Manual for the Implementation of the OECD Recommendation C(2004)100 on Environmentally Sound Management (ESM) of Waste. <http://www.oecd.org/env/waste/environmentallysoundmanagementofwaste.htm>
- (3) European Commission (2006) Reference Document on Best Available Techniques for the Waste Treatments Industries. <http://eippcb.jrc.ec.europa.eu/reference/>
- (4) European Commission (2006) Reference Document on Best Available Techniques for Waste Incineration. <http://eippcb.jrc.ec.europa.eu/reference/>
- (5) Guidelines on Best Available Techniques and Provisional Guidance on Best Environmental Practices Relevant to Article 5 and Annex C of the Stockholm Convention on POPs. <http://chm.pops.int/Implementation/BATBEP/BATBEPGuidelinesArticle5/tabid/187/Default.aspx>
- (6) OECD (2001) Extended Producer Responsibility: A Guidance Manual for Governments. <http://www.oecd.org/env/tools-evaluation/extendedproducerresponsibility.htm>
- (7) European Commission (2014) Development of Guidance on Extended Producer Responsibility [http://ec.europa.eu/environment/waste/pdf/target\\_review/Guidance%20on%20EPR%20-%20Final%20Report.pdf](http://ec.europa.eu/environment/waste/pdf/target_review/Guidance%20on%20EPR%20-%20Final%20Report.pdf)
- (8) Database on Instruments Used for Environmental Policy and natural resources management <http://www2.oecd.org/ecoinst/queries/>
- (9) Environment Agency (2014) Operational Risk Appraisal (Opra). <https://www.gov.uk/government/collections/operational-risk-appraisal-opra>
- (10) OECD (1999) Environmental Requirements for Industrial Permitting. Volume 1: Approaches and Instruments. [http://www.oecd-ilibrary.org/environment/environmental-requirements-for-industrial-permitting\\_9789264172586-en](http://www.oecd-ilibrary.org/environment/environmental-requirements-for-industrial-permitting_9789264172586-en)
- (11) OECD (2005) Integrated Environmental Permitting Guidelines for EECCA Countries. <https://www.oecd.org/env/outreach/35056678.pdf>
- (12) European Commission (2012) Guidance on Permitting and Inspection of Waste Management Operations.

# FactSheet

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- <http://ec.europa.eu/environment/waste/framework/inspections.htm>
- (13) INECE (2009) Principles of Environmental Compliance and Enforcement Handbook.  
<http://inece.org/resource/principles/>
- (14) Guidance Elements for Detection, Prevention and Control of Illegal Traffic in Hazardous Waste.  
<http://www.basel.int/Implementation/Publications/GuidanceManuals/tabid/2364/Default.aspx>
- (15) Instruction Manual on the Prosecution of Illegal Traffic of Hazardous Wastes or Other Wastes.  
<http://www.basel.int/Implementation/Publications/GuidanceManuals/tabid/2364/Default.aspx>
- (16) Notifications of decisions to prohibit or restrict import or export of hazardous or other wastes.  
<http://www.basel.int/Countries/ImportExportRestrictions/tabid/1481/Default.aspx>
- (17) United Nations Recommendations on the Transport of Dangerous Goods; International Maritime Dangerous Goods Code.
- (18) Guide to the Control System.  
<http://www.basel.int/Implementation/Publications/GuidanceManuals/tabid/2364/Default.aspx>
- (19) [www.basel.int](http://www.basel.int)
- (20) A database of country contacts is maintained on the Basel Convention website:
- <http://www.basel.int/Countries/CountryContacts/tabid/1342/Default.aspx>
- (21) The Glossary of terms [was adopted by the thirteenth meeting of the Conference of the Parties (BC-13/...)]. [http://www.\[...\]](http://www.[...])
- (22) For general guidance on the enforcement of environmental legislation you may for example refer to:
- UNEP (2006) Manual on Compliance with and Enforcement of Multilateral Environmental Agreements.  
[http://www.unep.org/delc/portals/119/UNEP\\_Manual.pdf](http://www.unep.org/delc/portals/119/UNEP_Manual.pdf)
  - UNEP (2005) Judicial Handbook on Environmental Law.  
<http://unep.org/delc/Portals/119/publications/Judicial-Handbook-Environmental-Law.pdf>
- (23) Draft practical manuals on EPR and financing systems for ESM available in document UNEP/CHW.13/INF/8.  
<http://www.basel.int/TheConvention/ConferenceoftheParties/Meetings/COP13/tabid/5310/Default.aspx>