

STANDARD GUIDANCE

(COP 24) Waste and Emissions

A. Definitions and applicability

Wastes and emissions are solid, liquid or gaseous materials that are released, discarded or no longer needed. Wastes and emissions can cause pollution and impact on the environment if not properly managed. In the jewellery supply chain, the main forms of waste include hazardous substances, air and water emissions, and general operational waste.

Source:

- Summarised from *RJC Code of Practices (2013)*

The **Waste and Emissions** section of the COP is applicable to all Facilities which generate waste.

The **Wastes and Emissions** section of the COP should be read and implemented alongside the **Hazardous Substances, Environmental Management, Use of Energy and Water**, and **Impact Assessment** sections.

B. Issue background

In business, the creation of waste may be directly related to operating processes including raw material management, processing, and the output quality of products. Waste can also be generated from indirect sources such as through infrastructure development, administration and transportation. Effective waste management entails having suitable measures in place for the handling, storage, transport, and disposal of wastes, together with a commitment to waste minimisation.

As waste disposal is attracting increasingly higher costs, waste reduction can create financial benefits as well as environmental benefits. Cleaner production, eco-efficiency and life-cycle approaches, for example, call for industrial processes and products to be re-evaluated and redesigned to reduce environmental impact. Taking this approach, companies can often minimise the waste being generated in the first place, or find uses for waste products in other processes.

The approaches taken to manage waste vary, based on the waste characteristics, the nature of the operation and the available local and national waste facilities. However there are basic principles of waste reduction that apply everywhere. These are to *reduce* the amount of waste produced, *reuse* waste materials, *recycle* if they cannot be used in their existing form, and *recover* resources (such as energy) from wastes. The final measure is then to ensure safe disposal of residual wastes.

Air emissions are of increasing international concern because of their potential contribution to global climate change. Common emissions include carbon dioxide and monoxide, sulphur oxides, nitrous oxides, fluorides, and ozone depleting substances. Water emissions can occur through surface runoff, groundwater leaching, liquid spills, and discharges of waste water. Examples specific to mining include acid mine drainage, and leakage from heap leaching processes or tailings dams. Both air and water emissions are attracting increasingly strict regulatory limits and reporting requirements in many countries. Some countries have introduced emissions trading schemes, creating incentives for accurate measurement and incremental reductions.

General waste may be generated at all points of the jewellery supply chain. Depending on the business, general waste may include wood and paper products, plastics, food and plant items, metal items, office consumables, outdated site or office equipment, and commercial or shop discards, for example. The separation of waste streams within the business is an essential first step to their responsible management. Opportunities for reducing, reusing, recycling and resource recovery should be sought, though these will vary between different businesses and in different countries.

Box X: Understanding wastes

Waste products may be considered as being either liquid, solid or gaseous. The following information can help waste streams to be assessed in more detail:

- Sources;
- Composition;
- Separation;
- Quantities;
- Flow/production rates;
- Transfer of wastes;
- Storage;
- Treatment; and
- Destination/pathways and disposal.

C. Key regulations***International standards***

For companies, the most recognised standard for environmental management systems is the ISO14000 family of standards, developed by the International Organisation for Standardisation (ISO). Companies can use these as a framework for developing their own systems, and may seek certification if their approach complies with the standard. The ISO standard does not address performance.

The Global Reporting Initiative is a widely accepted international standard for sustainability reporting. An important component of the standard is public disclosure of company wastes and emissions. There is a core framework that is applicable to all organisations, and supplements have been developed for particular sectors such as mining.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989) is the most comprehensive global environmental agreement on hazardous and other wastes. The Convention aims to protect human health and the environment against the adverse effects resulting from the generation, management, transboundary movements and disposal of hazardous and other wastes.

The Bamako Convention bans the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa (1991). The Bamako Convention uses a format and language similar to that of the Basel Convention, but is much stronger in prohibiting all imports of hazardous waste. Additionally, it does not make exceptions on certain hazardous wastes (like those for radioactive materials) made by the Basel Convention.

The Zero Waste International Alliance was established to promote positive alternatives to landfill and incineration and to raise community awareness of the social and economic benefits to be gained when waste is regarded as a resource base.

The International Finance Corporation (IFC) Performance Standard 3 – Resource Efficiency and Pollution Prevention (2012) provides detailed requirements and associated guidance for waste and hazardous materials management. The Standard covers requirements for:

- Avoiding generation of hazardous and on-hazardous waste
- Where waste generation cannot be avoided, measures to reduce its quantity and where possible, recover, reuse and recycle the materials should be considered.
- Waste disposal in accordance with local laws and in an environmentally sound matter. This includes restrictions and permitting associated with of trans-boundary movement of waste.

National law

Regulation on environmental waste issues is often complex with varying responsibilities at national, state and/or local levels. Most countries have detailed environmental legislation and regulatory processes, usually overseen by specific government departments or statutory authorities. The issue of waste management is

prominent and there are usually limits on the nature of disposal of many materials, according to impact, material type and quantity. In some jurisdictions, there are incentives for voluntary waste reduction. It is essential to be aware of all relevant legislation, associated regulations and key bodies in the jurisdictions of operation.

Penalties for non-compliance vary from country to country, but can include significant fines and may extend to criminal liability. Infringement or violation of waste disposal or emissions rules can jeopardize operating licences and other permits. Significant impacts may require remediation to be undertaken at the company's cost.

D. Suggested implementation approach

- **COP 24.1: Identify wastes and emissions:** *Members shall identify significant wastes and emissions to air, water and land generated in their business processes.*

Points to consider:

- All business processes and activities should be reviewed to identify significant wastes and emissions. Identify inputs and outputs associated with key activities and identify waste streams to air, waterways, sewers, land and other offsite disposal routes.
- Conduct a risk assessment to determine when wastes and emissions are 'significant'. Whether wastes and emissions are significant may depend on a number of factors, including volume, composition and toxicity, sensitivity of the receiving environment, intensities of discharges, and regulatory requirements. Wastes and emissions that have the potential to harm the environment and/or are hazardous and require special handling and disposal, and/or are subject to licensing or permits should be considered significant.
- Note that the risk assessment should be appropriate to the business' circumstances and should identify where issues may arise, the likelihood of occurrence and potentially deficient procedures. See the RJC Risk Assessment Toolkit for a general risk assessment template that can be used, particularly for small to medium enterprises. Alternatively Members may use their own risk assessment process.
- Consider opportunities to generate employee awareness of responsible management of wastes and to encourage employees to raise waste management concerns with management.

- **COP 24.2: Management of identified wastes and emissions:** *Members shall responsibly manage the identified wastes and emissions by:*

- Taking into account environmental impact considerations alongside cost considerations;*
- Applying the principles of reduce, recover, re-use and recycle to reduce environmental impact where applicable ;*
- Discharging or disposing wastes and emissions in compliance with Applicable Law, or where Applicable Law does not exist, by adopting prevailing international standards.*

Points to consider:

- Members should ensure they are aware of Applicable Law relating to wastes and emissions for all operations. All wastes and emissions must comply with applicable regulatory limits.
- If operations are located in jurisdictions with weak regulatory systems, Member's wastes or emissions should comply with relevant international standards. Prevailing international standards include those discussed in Section C of this guidance chapter.
- Written policies and procedures should be established for monitoring and controlling all identified significant wastes and emissions, with roles and responsibilities clearly defined.
- The hierarchy for control and abatement of emissions or waste in order of the most preferred to the least preferred option is elimination, substitution, reduction, treatment and disposal:
 - **Elimination** is where the emission or waste is no longer exists. For example a waste stream is no longer generated or produced.

- **Substitution** involves the replacement of one raw material or a process with another which results in lower or less hazardous emissions or waste.
- **Mitigation** involves methods to reduce the impact associated with the emission or waste and may involve re-use and recycling practices where economically and technically feasible. .
- **Treatment** of emissions or waste is on the lower end of the control and abatement hierarchy. Emissions or wastes are treated in order to reduce the impacts to the environment.
- **Disposal** is the least preferred option of environmental management, and applies mainly to waste generation.
- Consider a specific assessment using qualified experts to identify and characterise wastes and emissions, calculate costs and liabilities, develop performance metrics and targets, and identify options for improved waste management. Options may include:
 - Technical measures (e.g. pollution control equipment, bunding);
 - Operational controls (e.g. better defined procedures, controls on hours of operations);
 - Production controls (e.g. restricting and controlling the types of materials used in the production process);
 - Management controls (e.g. better supervision, clearly defined responsibilities and authorities); and
 - Training.
- Conduct due diligence regarding the selection and management of waste contractors. This includes a review of the licences held by the waste transporter and disposal site which match the nature of the waste materials and periodic audits of the waste contractors. Responsible waste management should be incorporated into contractor selection criteria and contract documents.

Check:

- ✓ Have you identified significant wastes and emissions streams from all company operations? Can you show how this been done, is it documented?
- ✓ Are you aware of applicable law and comply with all regulatory limits?
- ✓ Have you identified opportunities to reduce wastes and emissions?
- ✓ Can you demonstrate measures taken to reduce, recover, re-use or recycle wastes or emissions?
- ✓ Are significant wastes and emissions monitored regularly and subject to a policy and procedures for responsible management?
- ✓ Is responsible waste management part of your overall environmental management system?

E. Further information

The following websites have further information on waste management:

- Bamako Convention on the ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa
www.ban.org/Library/bamako_treaty.html
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
www.basel.int/
- Environment Protection Authority – Waste Assessment (Victoria (Australia))
www.epa.vic.gov.au/bus/resource_efficiency/waste_assessment.asp
- Global Reporting Initiative (GRI)
www.globalreporting.org/Pages/default.aspx
- International Cyanide Management Code – For the Gold Mining Industry
www.cyanidecode.org/
- International Finance Corporation (IFC) Performance Standard 3 – Resource Efficiency and Pollution Prevention (2012)

http://www1.ifc.org/wps/wcm/connect/25356f8049a78eeeb804faa8c6a8312a/PS3_English_2012.pdf?MOD=AJPERES

- International Organisation for Standardisation (ISO) 14000 – Environment Management
www.iso.org/iso/iso_catalogue/management_standards/iso_9000_iso_14000/iso_14000_essentials.htm
- Sustainable Business Associates – Download Tools
www.sba-int.ch/1083-Download_Tools
- Zero Waste International Alliance
www.zwia.org