

Emissions associated with waste

I - Presentation of the source of emissions

Waste-related emissions correspond to emissions that occur at the end of the life of products, production waste, construction waste and the management of this waste.

Waste-related greenhouse gas emissions account for **just 3%¹ of France's total territorial emissions**. **Waste storage accounts for 81%** of these emissions. Although waste-related emissions appear low compared with other emissions, the National Low Carbon Strategy forecasts a reduction in emissions from the sector of :

37% by 2030
compared with 2015

66% by 2050
compared with 2015

As part of the fight against the environmental impact of waste, various European laws aim to regulate its treatment. The main objectives are **to reduce the amount of waste sent to landfill and to increase the amount of waste recovered**.

Companies can help to reduce the amount of waste they produce by implementing a number of measures. As waste treatment is a national issue, the aim for companies is to reduce waste production at source.

II - Presentation of levers and best practices

Levers in **green** are easy to implement and offer significant gains in terms of GHG emissions, while the **orange** levers are more difficult to implement, but offer significant gains in GHG emissions, and finally the **blue** levers are easy to implement, but offer lower GHG emission gains.

1. Reducing emissions linked to the processing of office waste

- 1.1 Encourage zero-waste initiatives in offices
- 1.2 Reduce electronic waste
- 1.3 Give a second life to end-of-life items

2. Reduce emissions linked to the treatment of industrial waste

- 2.1 **Optimise industrial processes to limit losses**
- 2.2 Set up composting facilities for vegetable waste

3. Reduce emissions from catering waste

- 3.1 Set up specific collections for different types of waste

¹ 15 MtCO₂eq according to the 2022 report by the High Council for the Climate.

1. Reducing emissions linked to the processing of office waste

1.1 ENCOURAGE ZERO-WASTE INITIATIVES IN OFFICES

■ On average, an employee produces between **120 to 140 kg of waste per year**, of which **75% is paper waste** ;

■ Implement a **zero waste approach** based on the 5Rs rule:

1. REFUSE > **2. REDUCE** > **3. REUSE** > **4. RETURN TO THE EARTH** > **5. RECYCLE**

■ Make **reusable crockery** (plates, glasses, cups, cutlery, etc.) and fabric bags available for buying lunches in restaurants to avoid the use of single-use plastics?

■ Suggest using **reusable Tupperware** for bringing lunch or collecting food from restaurants (some restaurants even offer a price reduction to customers with their own Tupperware)

■ Provide ashtrays protected from wind and rain. One **cigarette butt** can pollute up to **500 litres of water**

■ Make employees aware of the need to reduce printing (one tip is to keep printers distant from offices)

■ Set up sorting and recycling bins for paper (and plastic, as well as glass?)

1.2 REDUCE ELECTRONIC WASTE

■ Waste electrical and electronic equipment (WEEE) covers a wide range of products that can have a significant impact on the environment due to the potential presence of toxic materials. In 2020 :

- **49% collection rate** (Source : Ordeec) ;
- **65% target** ;

By applying the 5 Rs of zero waste, the actions to be taken are:

- Think about the **equipment needed** to run the business, i.e. avoid unnecessary equipment
- Acquire **second-hand (or reconditioned?) appliances** that are **easy to repair**
- Offer to **sell equipment** that the company wishes to get rid of
- Offer **employees the chance to buy** equipment that is renewed
- Encourage **repair** and **extend the life** of IT equipment. Do not replace functional equipment.
- Send inoperable equipment to the **right waste stream**

For example, a "Bring your Own Device" policy aimed at sharing business and personal equipment helps to reduce the amount of potential waste. Laptops, business phones (dual SIM) and small IT equipment (keyboard, mouse, etc.,) can easily be shared.

1.3 GIVE A SECOND LIFE TO END-OF-LIFE ITEMS

■ The 5Rs method of the zero waste approach can be applied within the company. As well as electronic equipment, all the equipment in the premises can be bought **second-hand** and put back on the **second-hand market** when it is renewed.

2. Reduce emissions linked to the treatment of industrial waste

2.1 OPTIMISE INDUSTRIAL PROCESSES TO LIMIT LOSSES

- Optimise industrial processes :
 - **Limit material losses** during cutting.
 - **Maintain machines** to avoid production faults.
 - Join forces with other companies to create a symbiotic relationship and promote **industrial ecology** and **the circular economy**.
 - Eliminate **unnecessary packaging** and single-use plastic packaging.
- Draw up **specifications** for the sustainable treatment and traceability of waste. Carry out audits to ensure compliance with best practice.

2.2 SET UP COMPOSTING FACILITIES FOR VEGETABLE WASTE

- To reduce the amount of waste produced by an industrial site, it may be worth setting up a green waste composting site. Many sites have green areas that require maintenance (lawn cutting, tree pruning, bush trimming, etc.), and this waste can be composted directly on site to reduce the amount of waste transported.

3. Reduce emissions from catering waste

3.1 SET UP SPECIFIC COLLECTIONS FOR DIFFERENT TYPES OF WASTE

- The main types of catering waste are:
 - Food leftovers (raw or cooked)
 - Cardboard packaging
 - Plastic packaging
 - Oils and fats
- Specific collection streams exist to optimise the recycling of materials :
 - **Plastic and cardboard waste recycling streams** : material recovery or energy production
 - **Composting or methanisation of organic waste** : local production of compost or biogas
 - [Treatment of oils and fats](#) to produce biofuels

III - Case study



**Blue Phoenix
Group**

The Blue Phoenix Group specialises in the treatment of incinerator bottom ash (IBA) from waste-to-energy plants. Through its 22 treatment plants and 5 metal recovery plants in the Netherlands, Germany, France, the United Kingdom, the United States and Australia (operations due to start in early 2024), the Group's aim is to divert waste from landfill by reintegrating aggregates and secondary metals into the value chain.

The Group strives to improve the quality and circularity of its products by focusing on R&D and innovation. While in the UK 100% of waste is diverted from landfill, where aggregates are sold mainly to construction projects, legislation differs in other countries. In the Netherlands, for example, to meet the requirements of the Dutch Green Deal, BPG has developed an innovative new washing solution for cleaner aggregates. BPG is also exploring new market shares, such as filling with IBA to partially replace cement in concrete production. In 2022, the Group had succeeded in diverting 1.9 million tonnes of IBA from landfill (or 70% of the total materials treated).

BPG is seeking to reduce its emissions by decarbonising operations throughout the value chain. In 2021, two pilot projects were launched, one on solar energy and the other on voltage optimisation. 466 solar panels were installed at two UK sites, generating 120,000 kWh per year, or 20% of the total electricity consumption of the two sites. Similarly, the voltage optimisation technology project installed in England aims to save around 10% of total electricity consumption on site. BPG is also looking into ways of improving energy efficiency by evaluating the use of HVO (Hydrotreated Vegetable Oil). Another key point in BPG's climate roadmap concerns the optimisation of transport, whether between the waste treatment centre and the treatment site, between treatment and recovery sites, or downstream to deliver materials to foundries or construction projects.

Finally, the recovery of IBA resources can reduce greenhouse gas emissions when compared with primary products. The quantification of savings began in 2021 by comparing the footprint of secondary products with that of their primary counterparts. This assessment showed that 254,000 tonnes of CO₂ were saved by using secondary materials rather than primary materials (ferrous, aluminium and copper).

IV - Openness to other environmental issues

Reducing GHG emissions associated with waste can have co-benefits on other environmental issues.

- **Impact on biodiversity** : waste leaving the sorting system or processed in non-compliant facilities can have an impact on biodiversity by altering natural environments, changing the feeding habits of species, etc.
- **Atmospheric pollution** : the treatment of waste for energy recovery (incineration) can be responsible for the emission of certain particles into the atmosphere.
- **Depletion of fossil resources** : waste is a source of raw material through material recycling. Recovering it can help to avoid drawing on current fossil resources and thus slow down their depletion.
- **Marine pollution** : untreated waste, particularly plastic, can be transported by rivers to the ocean, where it is responsible for significant pollution and the formation of a "plastic continent".
- **Soil pollution** : some untreated waste can have a major impact on soil quality. Some pollutants are persistent and can have an impact over several generations.

V - Further information

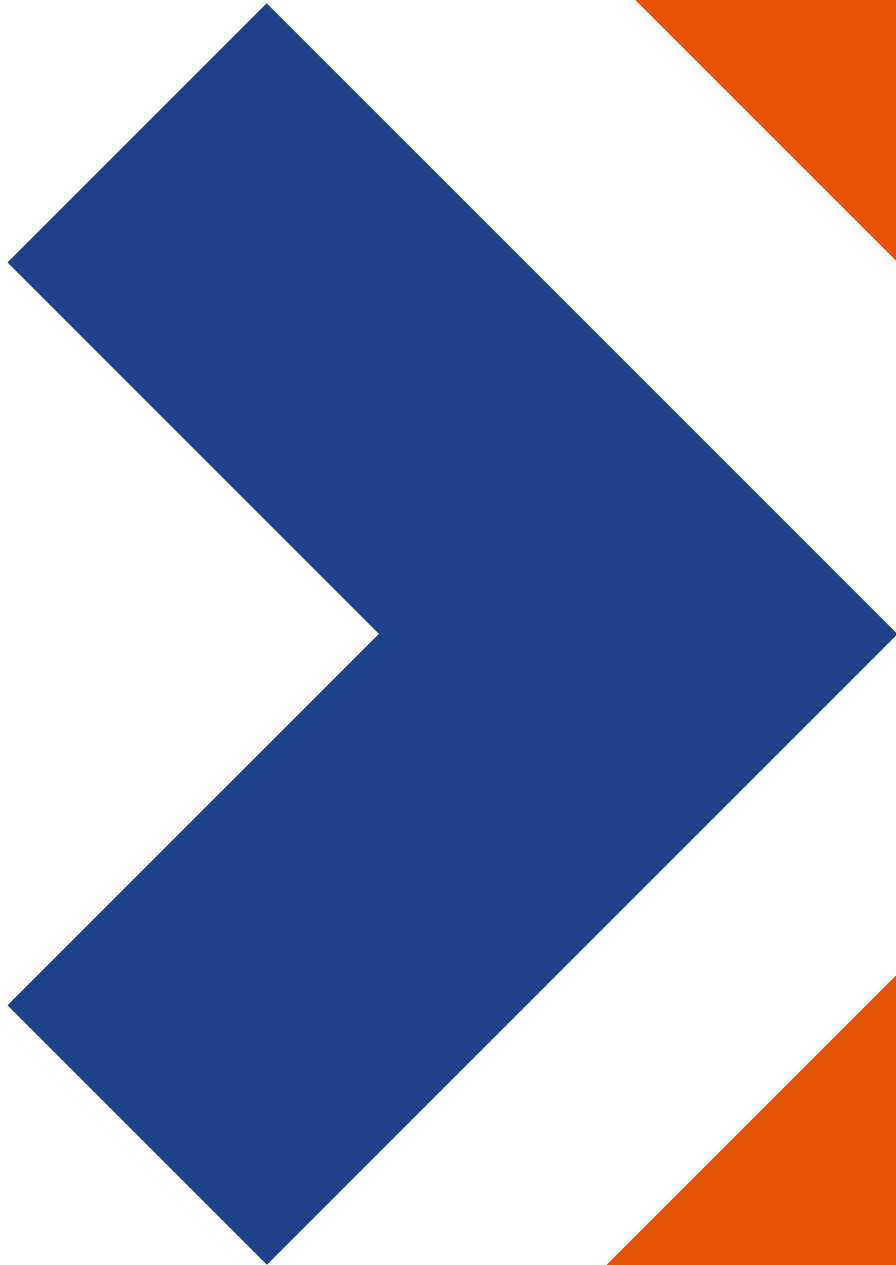
Here are a few resources to explore the issue of waste-related emissions in greater depth:

- [For more information on WEEE](#)
- [To find out more about waste paper](#)
- [To find out more about digital waste and the sharing of IT equipment](#)

VI - Appendice

Regulatory method version 5	Item	GHG Protocol	Category
Category		Scope	
1. Direct GHG emissions	Emissions from direct and mobile combustion sources, non-energy processes, etc.	Scope 1 (direct)	Emissions from direct and mobile combustion sources, non-energy processes, etc.
2. Indirect emissions associated with energy	Indirect emissions linked to electricity consumption and others	Scope 2 (indirect) Generation of energy consumed	Indirect emissions linked to electricity consumption and others
3. Indirect emissions associated with transport	Goods transport, commuting, etc.		Scope 3 (indirect)
4. Indirect emissions associated with products purchased	Purchases of goods and services, fixed assets, upstream leasing assets, etc.	Use of products sold, investments, etc.	
5. Indirect emissions associated with products sold	4.3 Waste management	5. Waste generated by operations	
	Use of products sold, investments, etc.	1.2 End-of-life treatment of products sold	
6. Other indirect emissions	5.3 End of life of products sold		
	6.1 Other indirect emissions		

Emissions item concerned by the sheet
 Emissions item not concerned by sheet



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