



BALANCE
green and stable

Bringing Sustainability and Environmental Action
Together for Future



Co-funded by the
Erasmus+ Programme
of the European Union

MODULE 3

Self-assessment of SMEs' Environmental Impacts

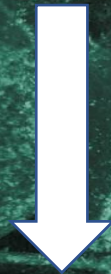
MODULE 3

Self-assessment of SMEs' Environmental Impacts



UNIT 1

Environmental
management



UNIT 2

Environmental
impacts



UNIT 3

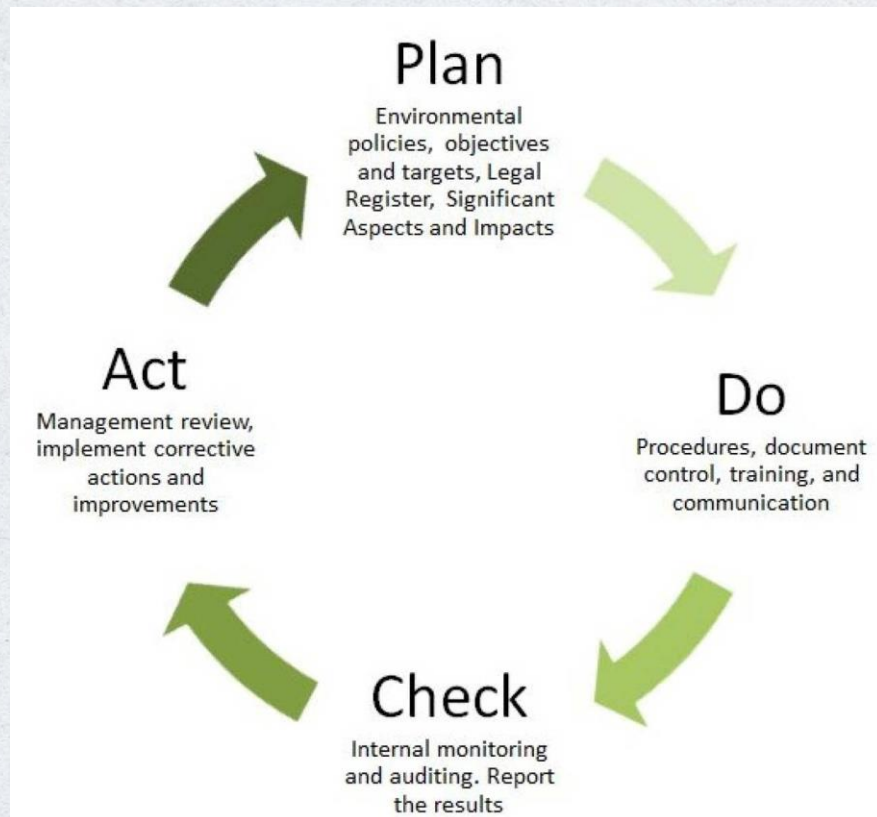
Tools, Indicators
and footprint

UNIT 1

Environmental management

APPLICATION OF ENVIRONMENTAL MANAGEMENT SYSTEMS (EMS) IN SMES

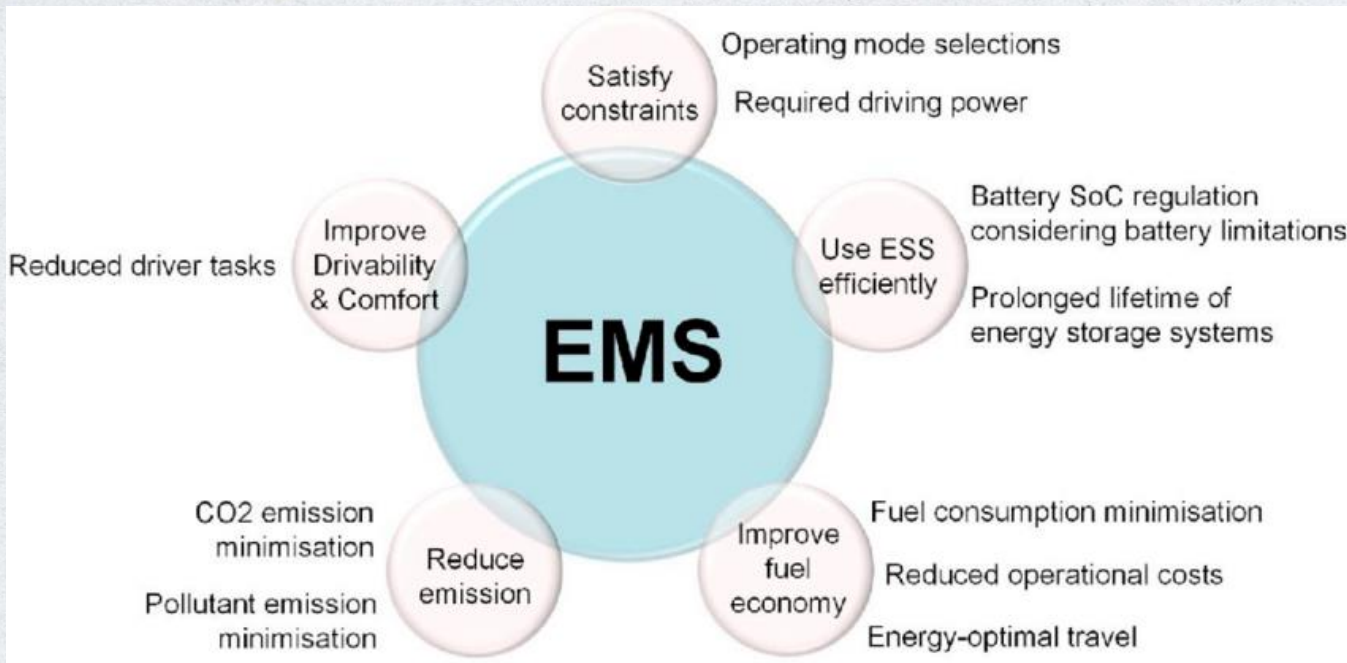
What is an Environmental Management System?



- ✓ It is the framework or method of work followed by an organization in order to achieve a certain behavior.
- ✓ It must define objectives and commitments aimed at the continuous improvement of its operations from an environmental point of view.

APPLICATION OF ENVIRONMENTAL MANAGEMENT SYSTEMS (EMS) IN SMES

What are the objectives of an EMS?



1. Ensure compliance with environmental legislation
2. Establish and promulgate internal policies and operating procedures necessary to achieve the environmental objectives of the business organization.
3. Identify, interpret, assess and prevent the effects that the activity produces on the environment.
4. To determine and specify the volume of resources and the qualification of the appropriate personnel according to the level of existing risks and the environmental objectives assumed.



APPLICATION OF ENVIRONMENTAL MANAGEMENT SYSTEMS (EMS) IN SMES

How do audits help us to define environmental practices?



GOOD ENVIRONMENTAL
PRACTICES





DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Objectives of environmental good practices

These seek to reduce the negative environmental impact caused by activities and processes through changes and improvements in the organization and development of actions:

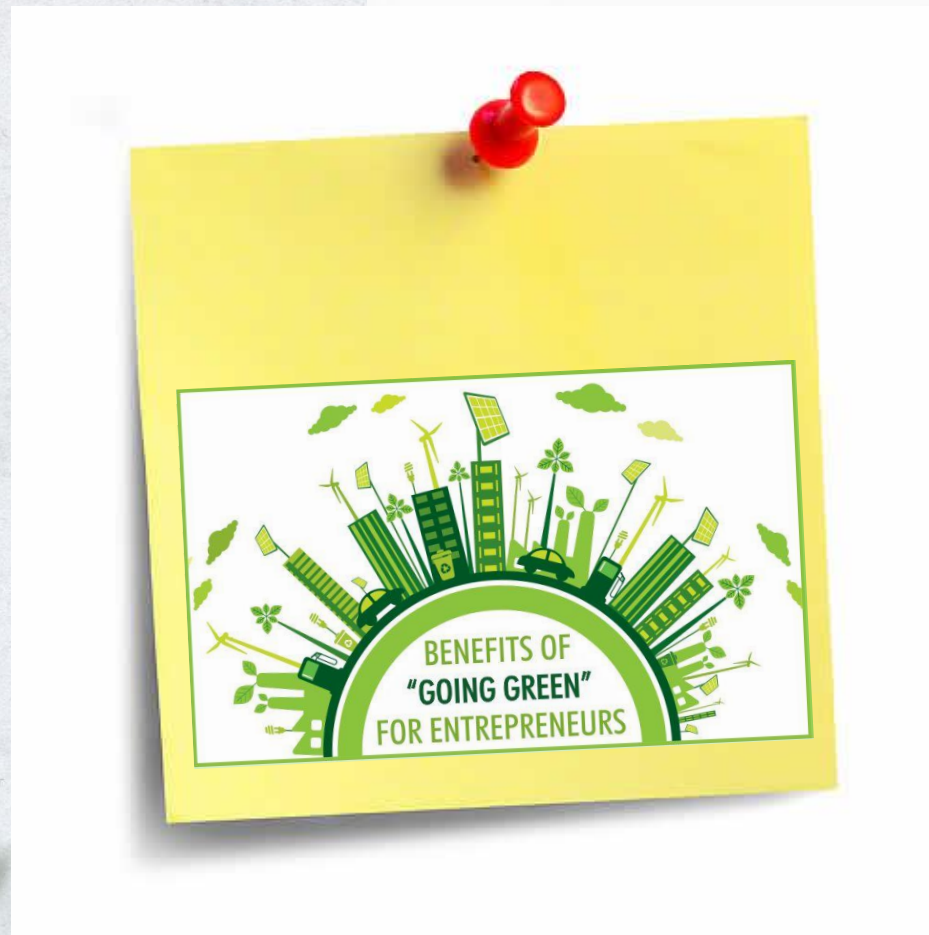
1. *Inventory control or tracking of materials, wastes and emissions*
2. *Material handling improvements*
3. *Production improvements*
4. *Leak and spill prevention and control*
5. *Preventive maintenance*
6. *Selective separation of waste and emissions*



DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Benefits of going green

؟





DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Benefits and opportunities for SMEs for going green

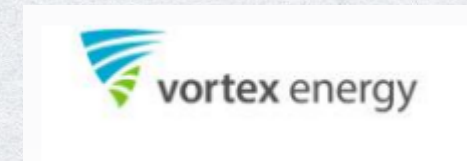
Business benefits of green practices	Generic advantage
Savings from reduced consumption of materials and resources	Lower Cost advantage
Savings from use of increased recycled content	Lower Cost advantage
Improved productivity of resources	Lower Cost advantage
Financial incentives from lending institutions	Lower Cost advantage
Lower premium from insurers	Lower Cost advantage
Lowering environmental risks in business	Lower Cost advantage
Improvement in quality of products	Differentiation advantage
Advantage with some current customers	Differentiation advantage
Advantage in acquiring new customers	Differentiation advantage
Export opportunities due to environmental management	Differentiation advantage
Improved image with customers	Differentiation advantage
Attracting better employees	Differentiation advantage
Better morale of employees	Differentiation advantage





DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Example of Good Environmental Practices - Greece





Co-funded by the
Erasmus+ Programme
of the European Union



DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Example of Good Environmental Practices - Belgium





DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Example of Good Environmental Practices - Cyprus





DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

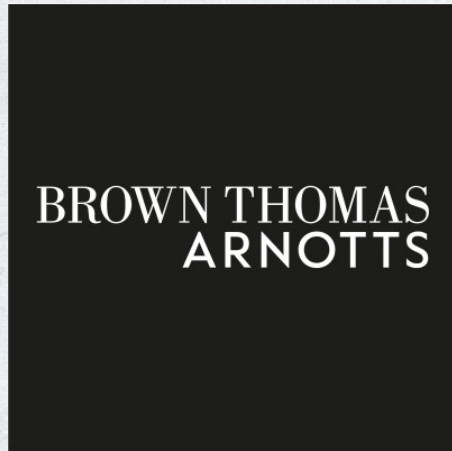
Example of Good Environmental Practices - Greece





DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Example of Good Environmental Practices - Ireland

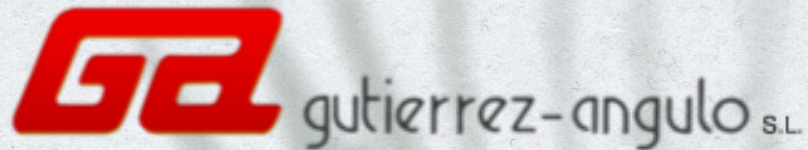




DEFINITION OF GOOD ENVIRONMENTAL PRACTICES

Example of Good Environmental Practices - Spain

ZICLA®



UNIT 2

Environmental aspects

ENVIRONMENTAL ASPECTS DEFINITION AND IDENTIFICATION

What is an environmental aspect?

An environmental aspect is defined as an element of all **activities, services or products of the organization** that interacts or may interact in some form or degree with the environment.

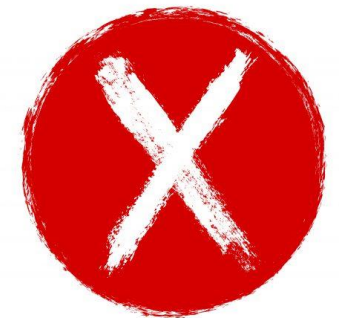
- Aspect
 - Waste generation
 - Material usage
 - Fuel usage
 - Air emissions
 - Chemical consumption
 - Energy consumption

- Not an Aspect
 - Improve air quality – this is an objective
 - Resource depletion – this is an impact
 - Vehicle maintenance – this is a activity
 - Water pollution – this is an impact

ENVIRONMENTAL ASPECTS DEFINITION AND IDENTIFICATION



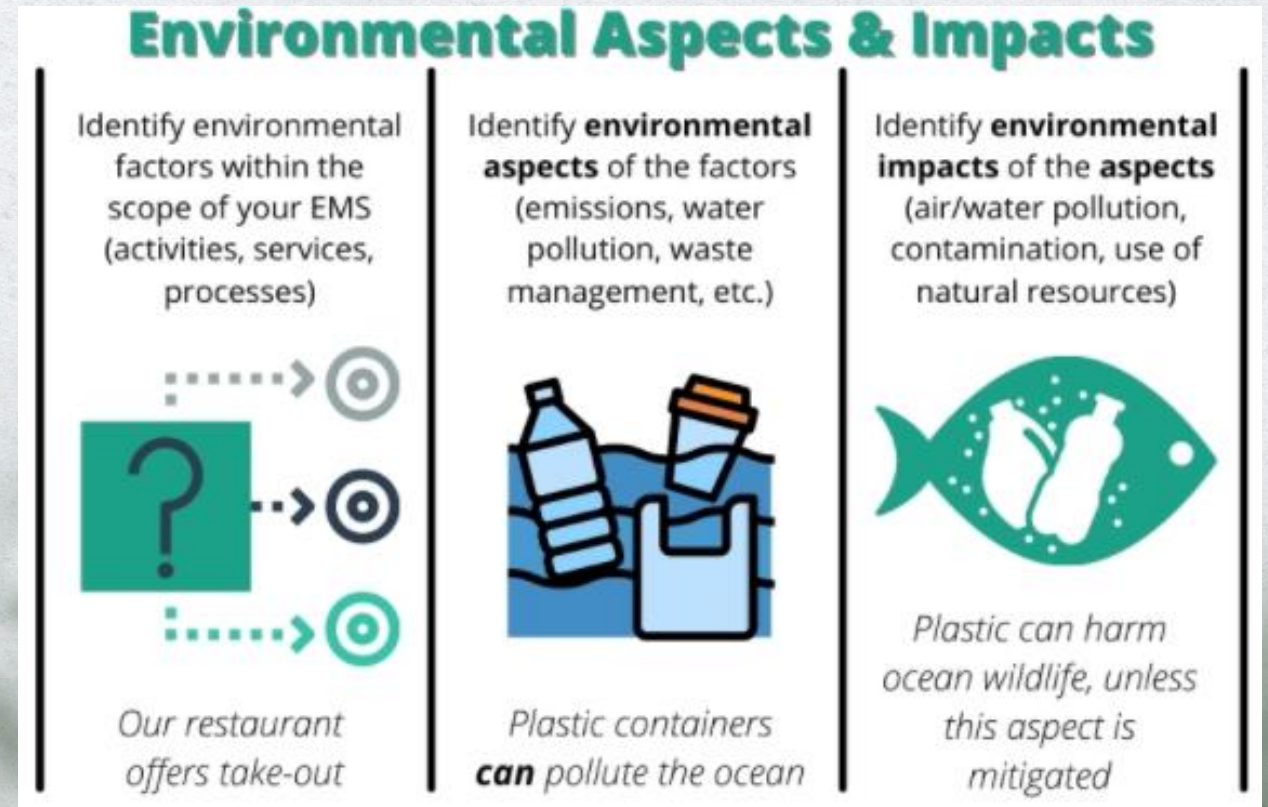
Are those
environmental
aspects?





ENVIRONMENTAL ASPECTS DEFINITION AND IDENTIFICATION

What is an
environmental
aspect?





ENVIRONMENTAL ASPECTS DEFINITION AND IDENTIFICATION

Typology of environmental aspects

Environmental Aspect (unit of measurement)	Environmental Impact
Clear water consumption (m ³)	Depletion of natural resources
Irrigation water consumption (m ³)	Depletion of natural resources
Carton and packaging consumption (Kg/device)	Depletion of natural resources
Electric energy consumption (kWh/used)	Depletion of natural resources
Paper consumption (recycled) (n° of packets/person)	Depletion of natural resources
Waste electrical and electronic equipment – RAEE's (Kg/device)	Water and soil contamination
Fluorescent residues (units)	Water and soil contamination
Alkaline batteries, lithium cell batteries and lithium residues (kg)	Water and soil contamination
Plastic residue (kg)	Water and soil contamination
Toner and ink cartridge residues (units/printer)	Water and soil contamination
Carton and packaging residues (kg/device)	Water and soil contamination
Office paper residues (kg per employee)	Water en soil contamination

Environmental Aspect	Environmental Impact
Non-hazardous residue from assemblers, installers, mechanical suppliers and PCIs suppliers	Water and soil contamination
Hazardous residue from assemblers, mechanical suppliers, PCIs suppliers, dangerous waste managers	Water and soil contamination
RAEE's (management of end-of-life equipment)	Water and soil contamination
Gasoil/Gasoline consumption (vehicles belonging to subcontracted assemblers, installers and residue managers)	Depletion of natural resources
Exhaust gas emissions (vehicles belonging to subcontracted assemblers, installers and residue managers)	Air pollution
Gasoil/Gasoline consumption (employee vehicles)	Depletion of natural resources
Exhaust gas emissions (employee vehicles)	Air pollution

Environmental Aspect	Environmental Impact
Flooding (water spillage)	Water and soil contamination
Flooding (residual flooding)	Water and soil contamination
Fire (fire residue)	Water and soil contamination
Fire (water consumption to extinguish fire)	Depletion of natural resources
Fire (water spillage resulting from extinction)	Water and soil contamination
Fire (emission of combustion gases)	Air pollution, water and soil contamination. Visual impact.
Refrigerant gas leaks from AA installations	Greenhouse effect

DIRECTS

INDIRECTS

ASSOCIATED WITH EMERGENCY SITUATIONS



ENVIRONMENTAL ASPECTS DEFINITION AND IDENTIFICATION

What are the most significant environmental aspects of your company?



MAIN ENVIRONMENTAL IMPACTS TO BE ASSESSED

What is an environmental impact?

An environmental impact is defined as **any change to the environment, whether adverse or beneficial**, resulting from a facility's activities, products, or services. In other words it is the effect that people's actions have on the environment.





MAIN ENVIRONMENTAL IMPACTS TO BE ASSESSED

Environmental impact assessment

Follow the link to the

LEOPOLD MATRIX

tutorial to know more

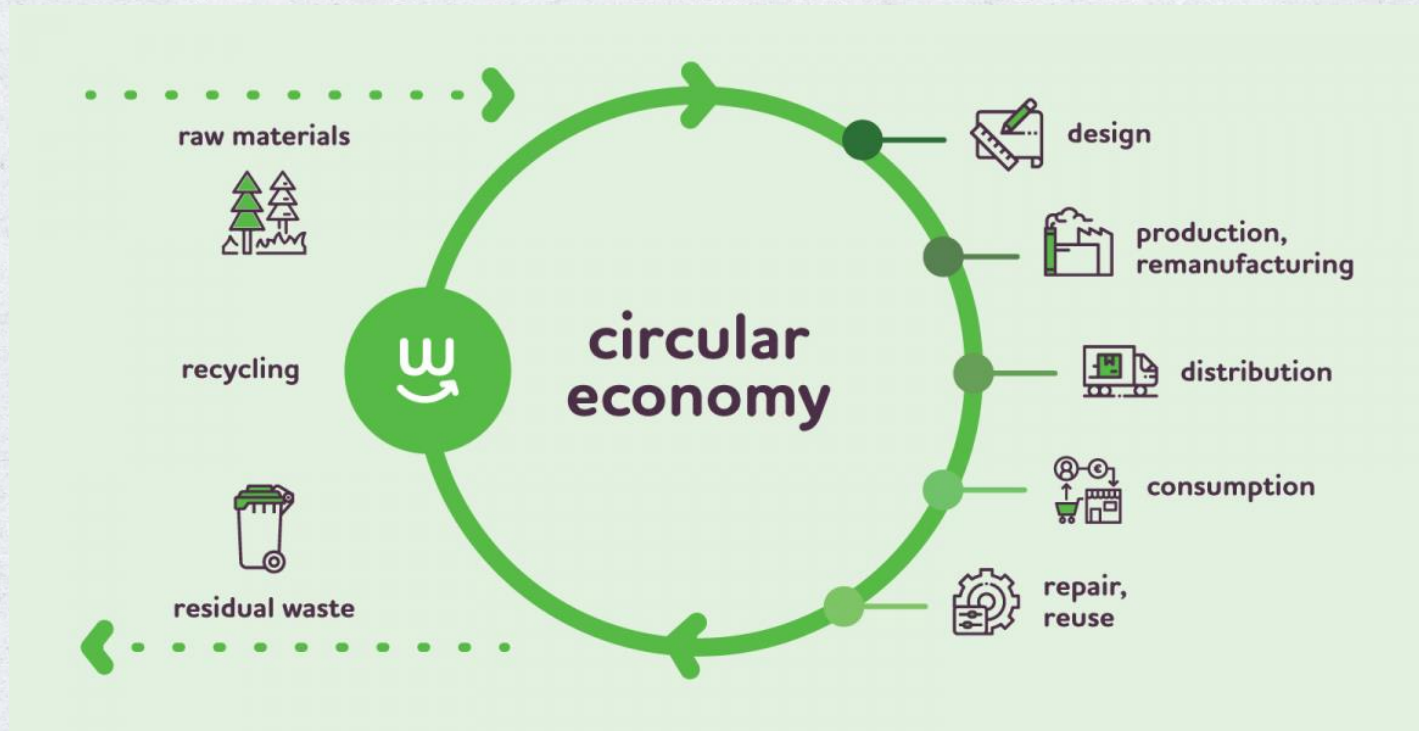
Table 1. Matrix of magnitude of the impact of factors on environmental components for WF, “Kladovo”

	Envisaged impact factors	PROJECT ACTIVITIES									Sum of IF values by types and bio. comp..	Average values
		Placement of wind turbines	Foundation of columns	The use of building materials	Substation construction	Transmission line construction	Construction of internal roads	Operation of construction equipment	Waste material Treatment	Project exploitation		
PHYSICAL COMPONENTS	Water	0	0	0	0	0	0	0	0	0	0	0.00
	Microclimate	0	0	0	0	0	0	0	0	0	0	0.00
	Land	1	2	1	1	1	1	2	2	1	12	1.33
	Erosion	0	0	0	0	0	0	0	0	0	0	0.00
	Air	0	0	0	1	0	2	3	1	0	7	0.77
	Noise	1	1	1	2	1	2	3	0	2	14	1.55
BIOLOGICAL COMPONENTS	Diversity of flora	0	1	0	0	1	0	1	1	0	4	0.44
	Diversity of fauna	2	1	1	1	1	0	2	2	2	12	1.33
	Ornithofauna	2	1	1	1	1	0	2	2	2	12	1.33
	Chiropteran fauna	2	1	1	1	1	0	2	2	2	12	1.33
	Barriers/corridors	2	1	1	1	1	0	1	1	2	10	1.11
SOCIO-CULTURAL COMPONENTS	Landscape	2	2	1	2	1	1	1	3	2	15	1.66
	Land use	1	2	1	1	1	1	1	2	1	11	1.22
	Economy	0	0	0	0	0	0	0	0	0	0	0.00
	Cultural heritage	0	2	0	0	0	0	0	0	0	2	0.22
	Accidents	2	0	0	1	0	0	0	2	2	7	0.77
Cumulative values of IF according to environmental factors		15	14	8	12	9	8	18	18	16		
Average		0.93	0.87	0.50	0.75	0.56	0.50	1.12	1.12	1.00	IF = 0.82	



DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

What is a circular economy?



Watch the following
video to better
understand what the
[circular economy](#) is and
some examples of it

[In this video the European
Commision helps us become
greener and more circular](#)



DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

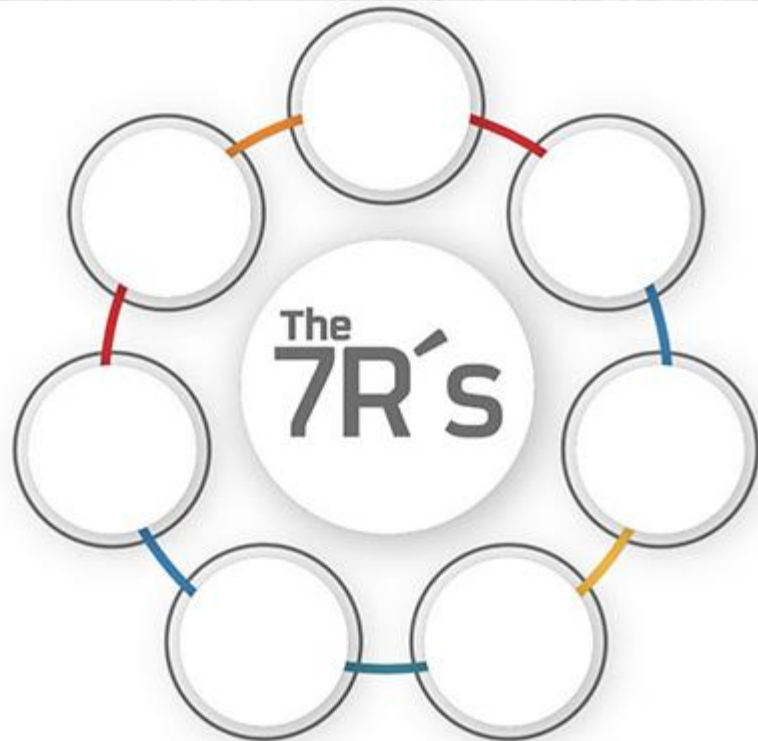


Benefits and challenges of the Circular Economy

- Protects the environment: it reduces emissions, minimizes the consumption of natural resources and reduces waste generation.
- Benefits the local economy.
- Drives employment growth.
- Promotes resource independence.

DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Benefits and challenges of the Circular Economy



Up till now, there have been 3Rs established. However, there are currently 7R to be considered. Which are all 7R represented in the Circular Economy?

DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Benefits and challenges of the Circular Economy

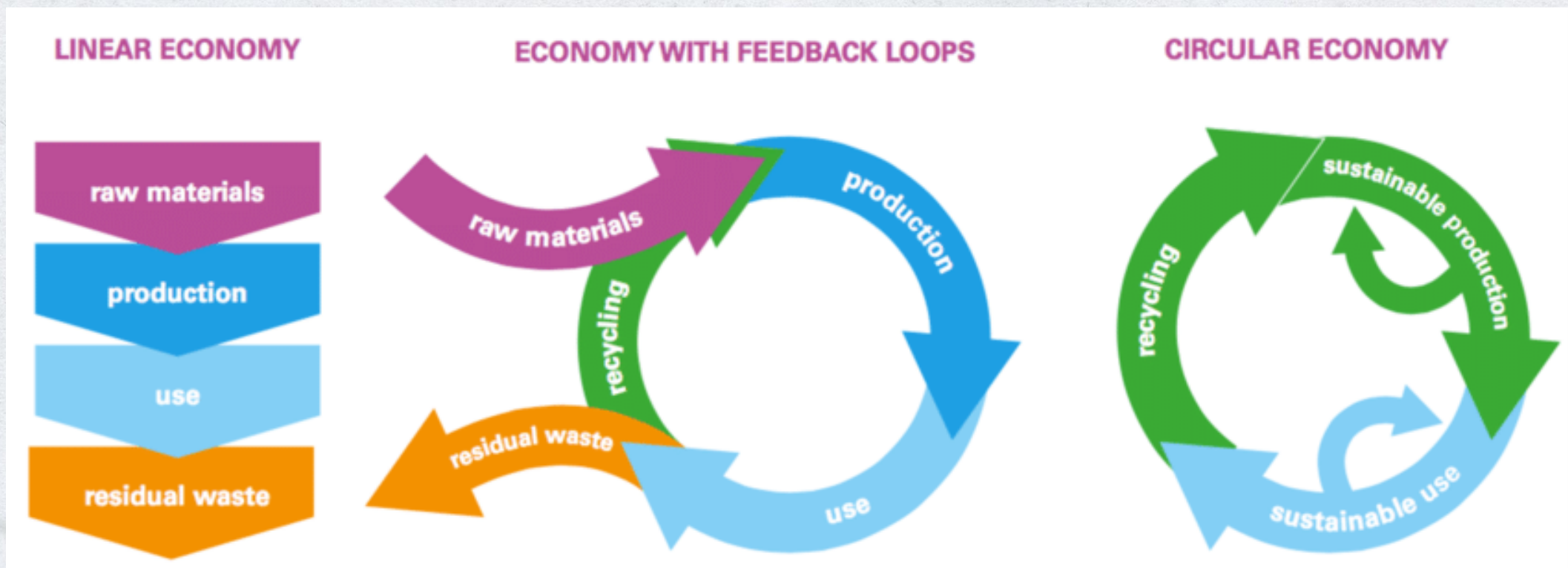


- **Redesign:** Thinking and designing products so that their manufacturing process consumes fewer raw materials, extends their lifecycle, and generates less waste.
- **Reduce:** If we reduce consumption, we avoid the generation of waste, the use of raw materials, and therefore reduce the impact on the environment.
- **Reuse:** Reusing or repurposing products to extend their lifecycle.
- **Repair:** Repairing is cheaper, and avoids the use of new raw materials, saves energy, and does not generate environmental waste.
- **Renovate:** Update old objects so that they can be reused, e.g. furniture.
- **Recycle:** Promote best practices in waste management and use what you can as raw material to manufacture new products.
- **Recover:** Give new uses to products that are going to be discarded.



DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

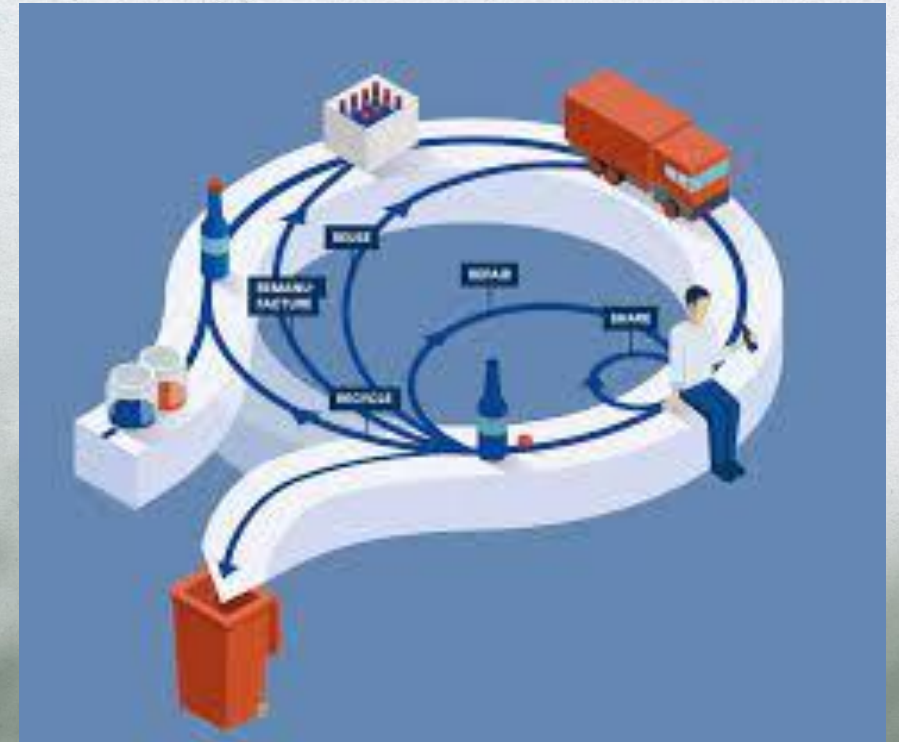
From a Linear to a Circular Economy



DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Circular business models

1. Business models based on a circular value chain
2. Collaborative models
3. Servitization is another possible business model.
4. Business model focused on extending the life of a product through repair, maintenance, upgrading, second-hand market and remanufacturing.
5. Business model focused on recovering value from waste at the end of the product life cycle, including both materials and energy.



DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Circular business models

1. COORDINATING CIRCULAR VALUE CHAINS THROUGH DATA

Creating products,
from recycle to reuse



[Globechain](#)



[Building As
Material Banks](#)

DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Circular business models

2. CIRCULAR PRODUCT DESIGN

Creating products,
from recycle to reuse.



[Adidas](#)



[Protix](#)

DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Circular business models

3. USE, REUSE, SHARE, AND REPAIR

Creating durable goods from recycled and reused parts can be inputs for downstream circular business models.



[Circos](#)



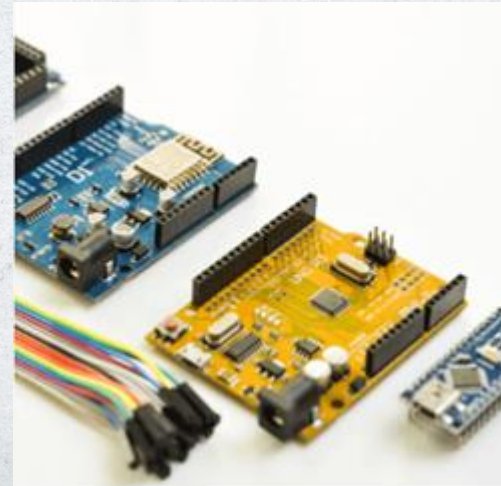
[Philips Refurbished Systems](#)

DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Circular business models

4. COLLECTION & REVERSE LOGISTICS

Close the material life-cycle
loop by creating products
that can be upcycled,
repurposed, and re-sold.



Re-Tek



H&M

DETERMINING THE CURRENT STATUS OF A COMPANY WITH RESPECT TO THE CIRCULAR ECONOMY

Circular business models

5. SORTING & PREPROCESSING

Finding alternative value
in the parts that make a
product whole



[Urban Mining Co.](#)



[Mr Green Africa](#)

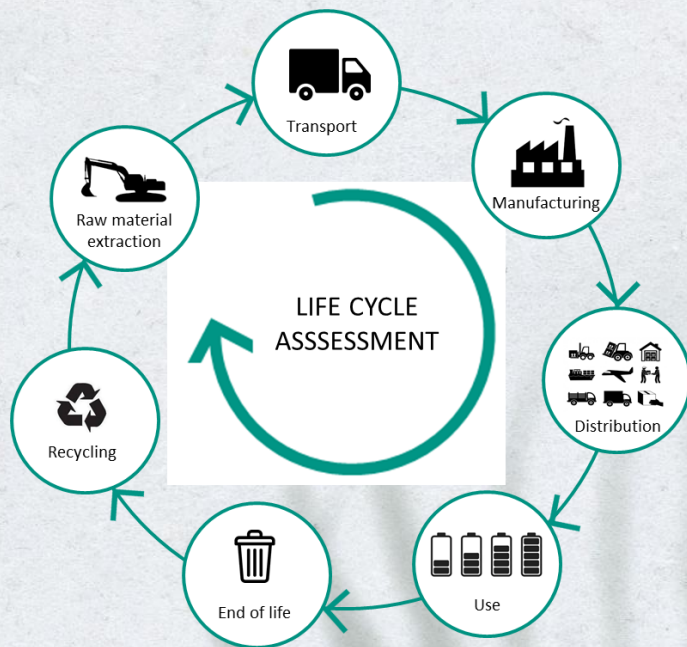
UNIT 3

Tools, Indicators and Footprint



TOOLS AND INDICATORS BY SECTOR

INTRODUCTION



LIFE CYCLE ANALYSIS



ENVIRONMENTAL FOOTPRINT

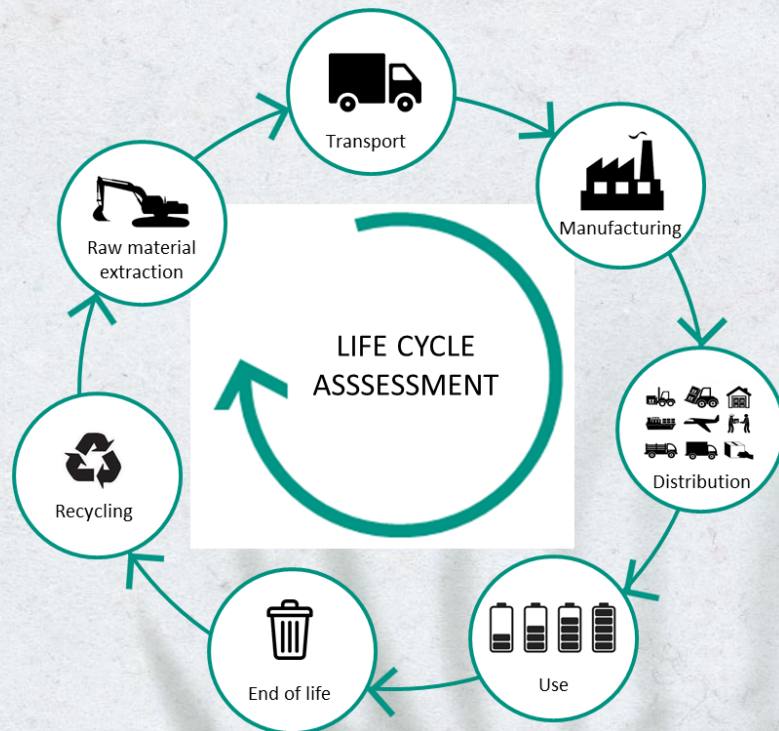


ENVIRONMENTAL PRODUCT DECLARATION



TOOLS AND INDICATORS BY SECTOR

Life Cycle Analysis



1. What is it?
2. What is it for?
3. What are the steps to follow?

If you want to know more about the Life Cycle Analysis, please click on the following [Video](#)

TOOLS AND INDICATORS BY SECTOR

Environmental footprint



Watch this [video](#) to get a better understanding of the environmental footprint.

TYPES

1. Product environmental footprint
2. Organizational environmental footprint

COMPONENTS

1. Carbon footprint
2. Water footprint
3. Ecological footprint

TOOLS AND INDICATORS BY SECTOR

Environmental footprint

Which activities do you think contribute the most to your company's environmental footprint?

Differentiate between those that contribute to the water footprint, carbon footprint and ecological footprint.





TOOLS AND INDICATORS BY SECTOR

Environmental product declaration (EPD)



is an **independently verified and registered document that communicates transparent and comparable information about the life-cycle environmental impact of products in a credible way**

An Environmental Product Declaration (EPD) report tells **the life cycle story of a product in a single, comprehensive report**. The EPD provides information about a product's impact upon the environment, such as global warming potential, smog creation, ozone depletion and water pollution.

What is [an EPD?](#) (Environmental Product Declaration) in Detail



CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

What is carbon?

When you see the term ‘carbon emissions’, it may well be referring to the emissions of all of the greenhouse gases



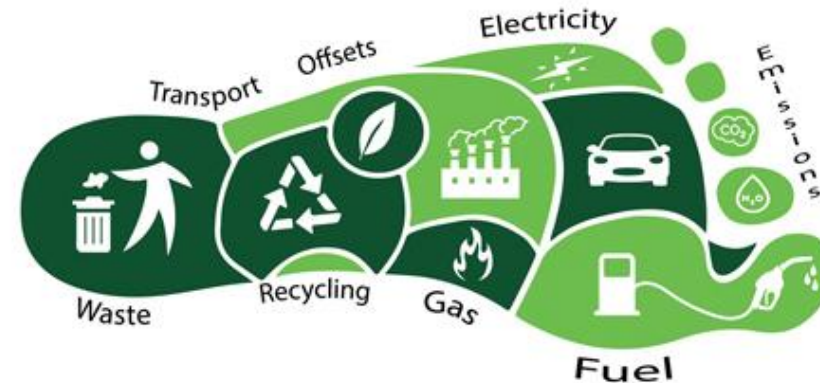


CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

What is carbon footprint?

It is the amount of greenhouse gases that a business produces



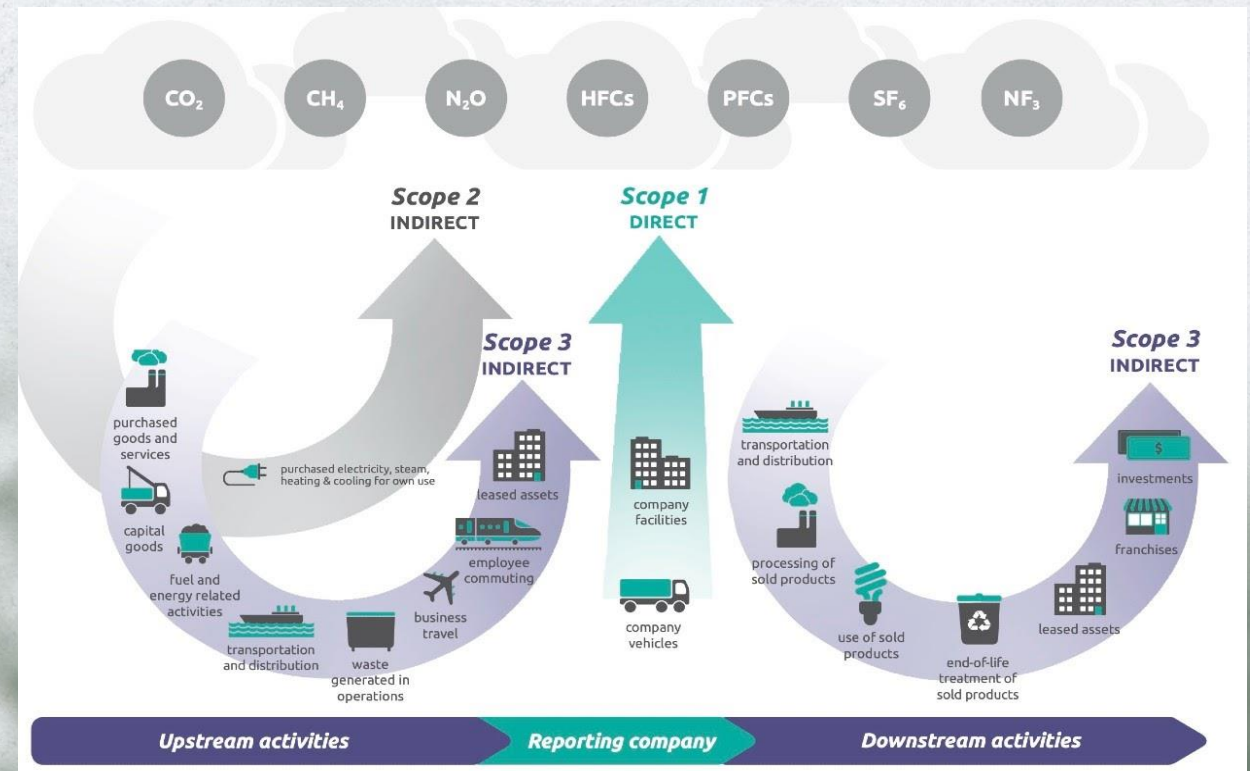


CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

What are Scope 1, Scope 2 and Scope 3 emissions?

Is a measurement of the greenhouse gases which your business produces

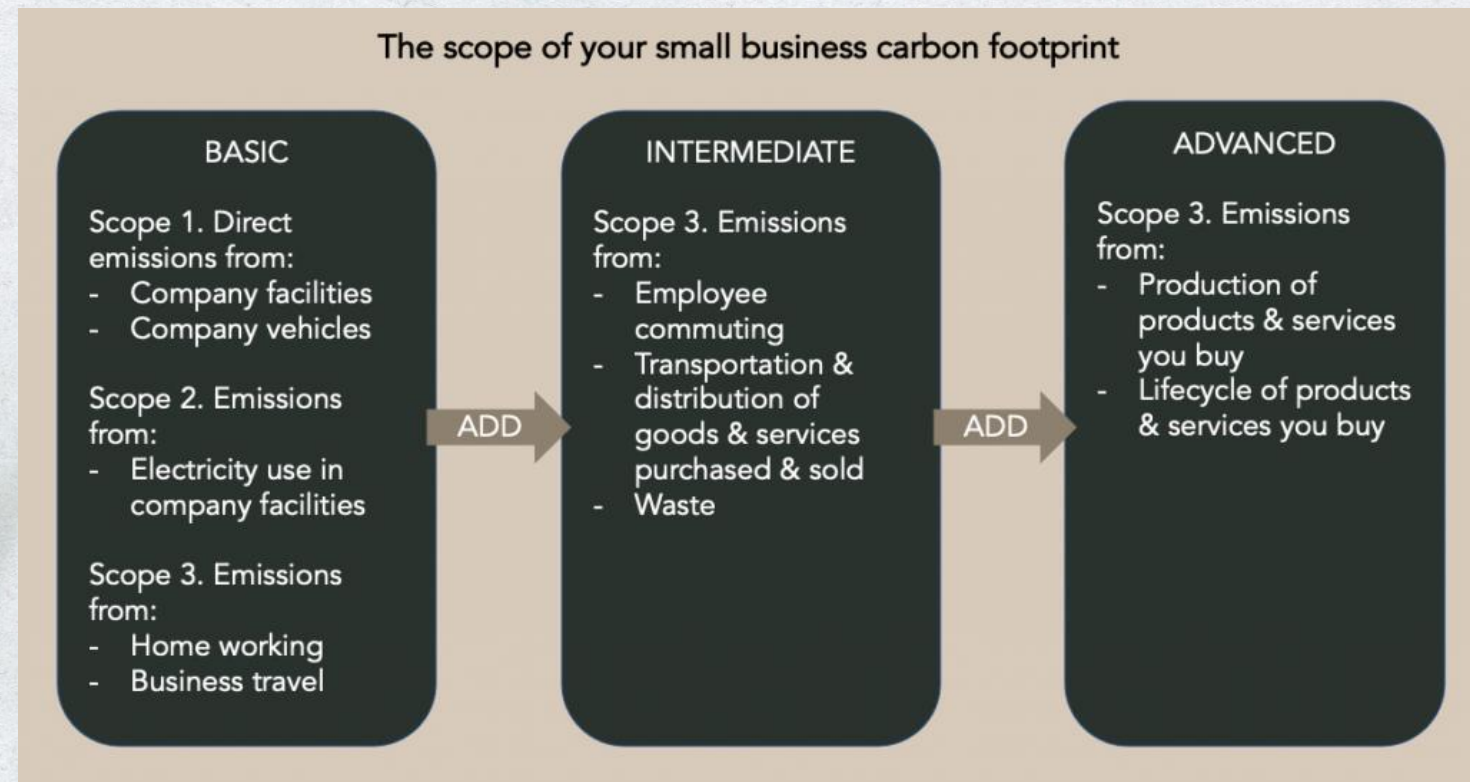




CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

Step 1: Decide on the scope





CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

Step 2: Decide on a baseline year and gather the data

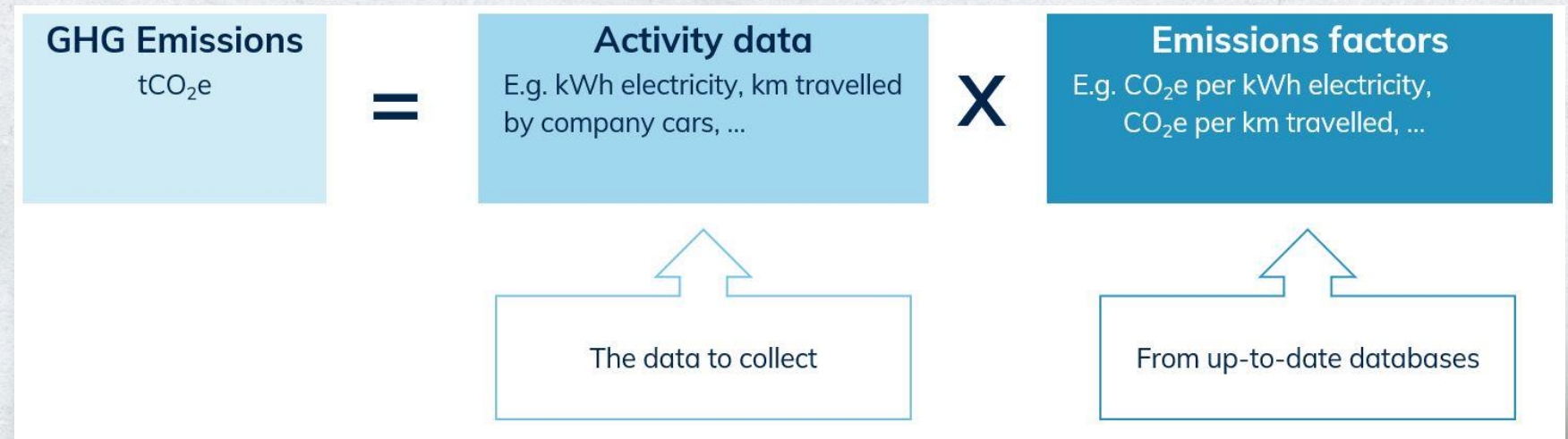
Activity	Source of data
Heating / cooling company facilities	Total kilowatt hours used from gas bills.
	Total litres and type(s) of top-up gases for any air conditioning units, from servicing bills. If you rent part of a building and do not have a separate bills, you will need to estimate your usage – a percentage of the overall bill which is equivalent to your percentage of the overall floorspace of the building, for example.
Operating company vehicles	Litres of fuel purchased from invoices and receipts (more accurate); or
	Vehicle mileage from vehicle log books/odometers (less accurate) Plus the vehicle type(s) used for the journeys.
Electricity use in company facilities	Total kilowatt hours used from electricity bills. If you rent part of a building and do not have a separate electricity bill, you will need to estimate your electricity usage – a percentage of the overall bill which is equivalent to your percentage of the overall floorspace of the building, for example.
Home working	Number of employee days worked from home, which might be available from timesheets or might just need to be estimated.
Business travel	Mode of travel (car, train, plane etc) and distance travelled for each journey taken.
	Mode of travel can be identified from expenses claims. If distance travelled isn't also captured in those claims, this



CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

Step 3: Calculate your emissions

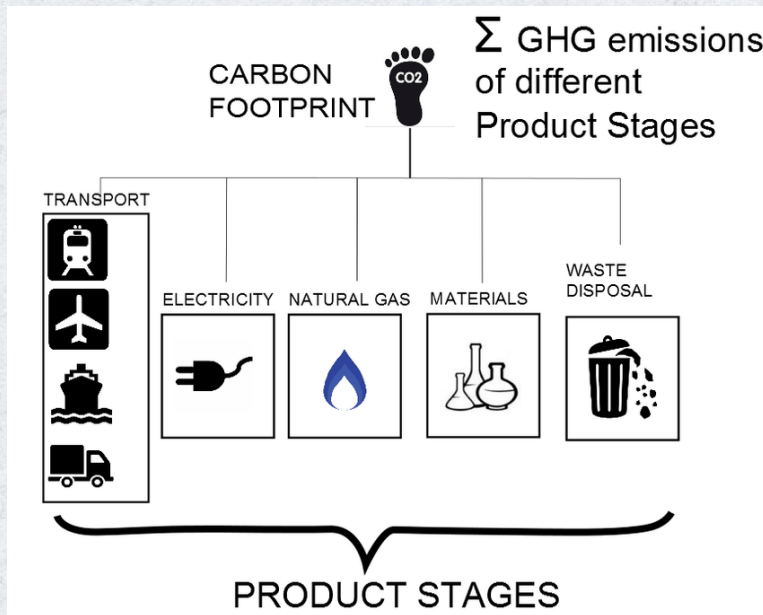




CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

WHAT SHOULD I DO WITH MY SMALL BUSINESS CARBON FOOTPRINT?



CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

HOW CAN I REDUCE THE CARBON FOOTPRINT OF MY SMALL BUSINESS?



HOW TO REDUCE YOUR COMPANY'S CARBON FOOTPRINT

Every day, workplaces around the world are taking steps to reduce their carbon footprint. Here are some practical and cost-effective ways your company can reduce theirs.

Shred-it!
Every person in the UK consumes the equivalent to **4.48** trees per year for the purpose of paper alone.

The average office worker uses **10,000** sheets of paper each year of those **68%** are wasted (1)

It takes **70%** less energy and water to recycle paper.


then to create new paper from trees.


By developing a green office policy that champions the **Three R's** **REDUCE, REUSE, RECYCLE** you can drastically reduce your company's carbon footprint.

But our shredding services protect more than just our planet, we protect your confidential data too.

Secure consoles are regularly emptied by trained and security-vetted staff, before documents are securely destroyed using proprietary cross-cut shredder technology. The entire process is tracked via a handheld scanning device and a Certificate of Destruction is issued after every shred.

Our document destruction services securely recycle 100% of all shredded paper. Once documents have been destroyed, Shred-it bales all shredded paper and sends it to a paper mill where it is pulped - with impurities and printing ink removed - which is then used to create new paper products.

 **Secure Recycling**





CARBON FOOTPRINT CALCULATION FOR SMES

The complete beginners guide to carbon footprint for your small business

HOW CAN I REDUCE
THE CARBON FOOTPRINT
OF MY SMALL BUSINESS?

Your Emissions

Your gas usage creates
carbon pollution.

+ 5 TONS of CO₂



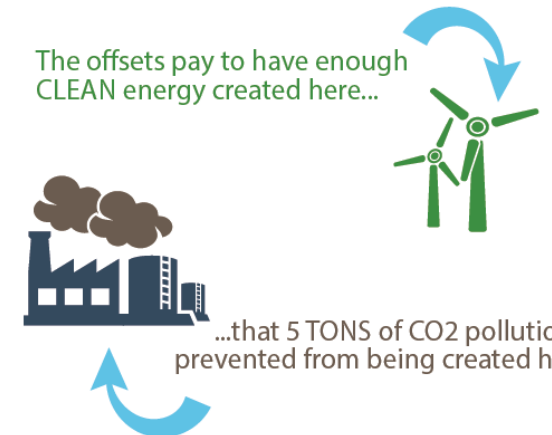
Average usages generates about
5 metric tons of CO₂ emissions annually.

Your Offsets

Carbon offsets prevent or
reduce carbon pollution.

- 5 TONS of CO₂

The offsets pay to have enough
CLEAN energy created here...



...that 5 TONS of CO₂ pollution is
prevented from being created here!



CARBON FOOTPRINT CALCULATION FOR SMES

CARBON FOOTPRINT CALCULATION BENEFITS

- Improves the company's competitiveness at the international level. It allows the company to access markets that were previously closed to it.
- Provides the opportunity to describe quantitatively and verifiably the environmental performance of your products/services from a full life cycle point of view and in an objective manner.
- It is used as an informative tool for the procurement and purchase of other products and services. Its classification into groups allows comparisons to be made between functionally equivalent products.
- It can be checked and validated by an independent third party to ensure the credibility and veracity of the information contained in the EPD.



Co-funded by the
Erasmus+ Programme
of the European Union



BALANCE
green and stable

CARBON FOOTPRINT CALCULATION FOR SMES

CARBON FOOTPRINT CALCULATION METHODOLOGIES

ipcc
INTERGOVERNMENTAL PANEL ON
climate change



CARBON FOOTPRINT CALCULATION FOR SMES

SECTORIAL TOOLS FOR CARBON FOOTPRINT CALCULATION

Tools designed for any sector of activity





CARBON FOOTPRINT CALCULATION FOR SMES

SECTORIAL TOOLS FOR CARBON FOOTPRINT CALCULATION

ELECTRONIC ELECTRICITY



BUILDING AND CONSTRUCTION MATERIALS





Co-funded by the
Erasmus+ Programme
of the European Union



BALANCE
green and stable

CARBON FOOTPRINT CALCULATION FOR SMES

SECTORIAL TOOLS FOR CARBON FOOTPRINT CALCULATION

PACKAGING

 RPC Superfos

FURTURINE

 GreenGiants

CARBON FOOTPRINT CALCULATION FOR SMES

ONLINE CALCULATORS

 **ICROA** International
Carbon Reduction
& Offset Alliance


[SafeClimate]


myclimate
Protect our planet


atmosfair


greenprint


ceroCO₂


WWF


UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY


GREENPEACE

mycarbonfootprint.eu


AIRFRANCE


Earth
Lab



BALANCE
green and stable



THANK YOU!



Co-funded by the
Erasmus+ Programme
of the European Union