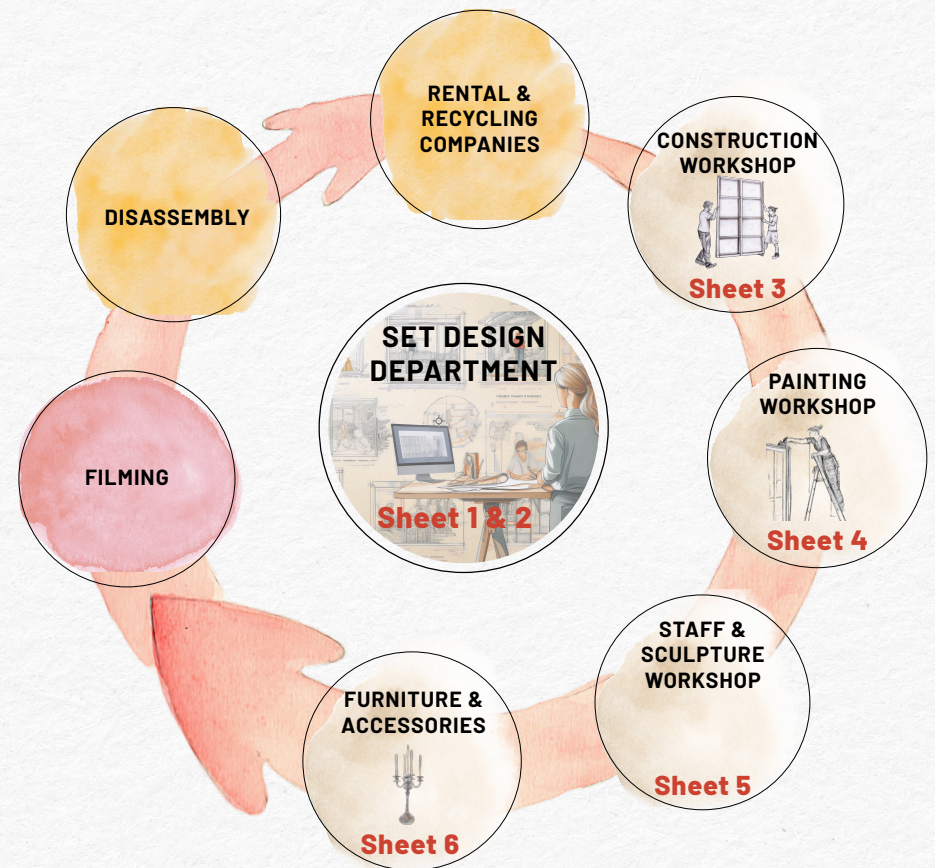# Info Sheet 01

Introduction: Set the framework for your production design

Did you know that production design accounts for an average of 20% of a film production's carbon footprint?

This first fact sheet is an introduction to a series of **six other fact sheets** that will detail **eco-responsible practices at each stage of production design** and offer **concrete solutions** to support the **ecological transition** of production design and **reinvent our practices without sacrificing our teams' creativity!**

RENTAL & RECYCLING COMPANIES

DISASSEMBLY

CONSTRUCTION WORKSHOP
Sheet 3

SET DESIGN DEPARTMENT
Sheet 1 & 2

PAINTING WORKSHOP
Sheet 4

FILMING

STAFF & SCULPTURE WORKSHOP
Sheet 5

FURNITURE & ACCESSORIES
Sheet 6

Info Sheet 01

Film
**PARIS
REGION**

Introduction: Set the framework for your production design

Practical info sheets to help with eco-friendly set design, training teams and reducing waste during film production.

SET DESIGN
DEPARTMENT

written by :

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Vice President of the ADC (Chief Production Designers'
Association)
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Lecturer in the production design department at La Fémis
ECOPROD Award for Maria de Jessica Palud in 2024

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Member of the MAD association, Associated Production Design
Professions
Co-founder of Éco Déco Ciné
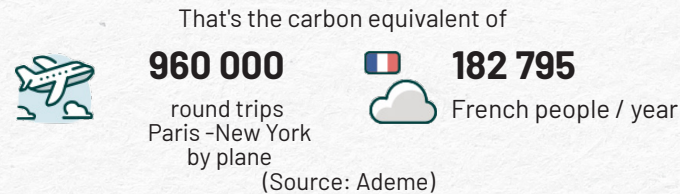Board member of the Ressourcerie du Cinéma

Contents

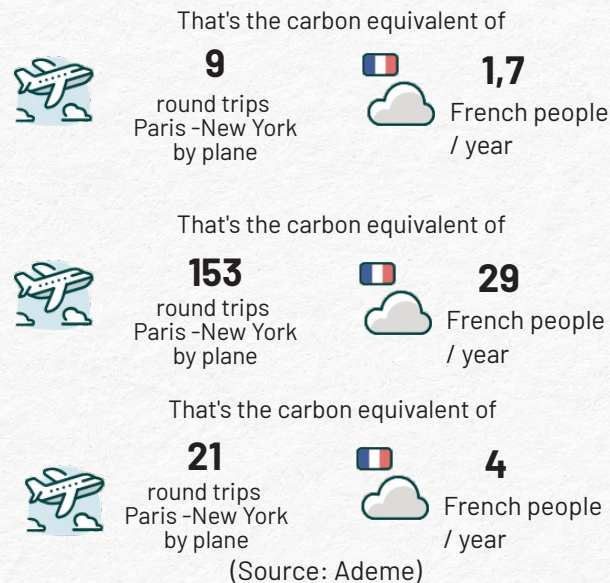# 1 / Understanding and taking action: the sector's carbon footprint

In France, the film and audiovisual industry emits **1,7 millions tons of CO2e per year**, of which 25% is related to the production of works or programs. (Source : Environment and Climate Study: new insights for audiovisual professionals, Ecoprod, 2020)

That's the carbon equivalent of

960 000
round trips
Paris -New York
by plane

182 795
French people / year

(Source: Ademe)

Average GHG emissions by type of audiovisual and film production:

- The production of **one hour of audiovisual programming**, across all genres (films, series, commercials, documentaries), generates on average **16 tons of CO2e.**

That's the carbon equivalent of

9
round trips
Paris -New York
by plane

1,7
French people / year

- The production of a **feature-length fiction** film generates on average **271 tons of CO2e**.

That's the carbon equivalent of

153
round trips
Paris -New York
by plane

29
French people / year

- The production of **one episode of a series** filmed in Paris emits about **38 tons of CO2e**.

(Source : _Carbon'Clap Report and Ecoprod Label 2024_)

That's the carbon equivalent of

21
round trips
Paris -New York
by plane

4
French people / year

(Source: Ademe)

CARBON FOOTPRINT is a measure of the total amount of greenhouse gas (GHG) emissions emitted directly or indirectly by an activity, individual, organisation, event or product. It is commonly expressed in carbon dioxide equivalents (CO2e).
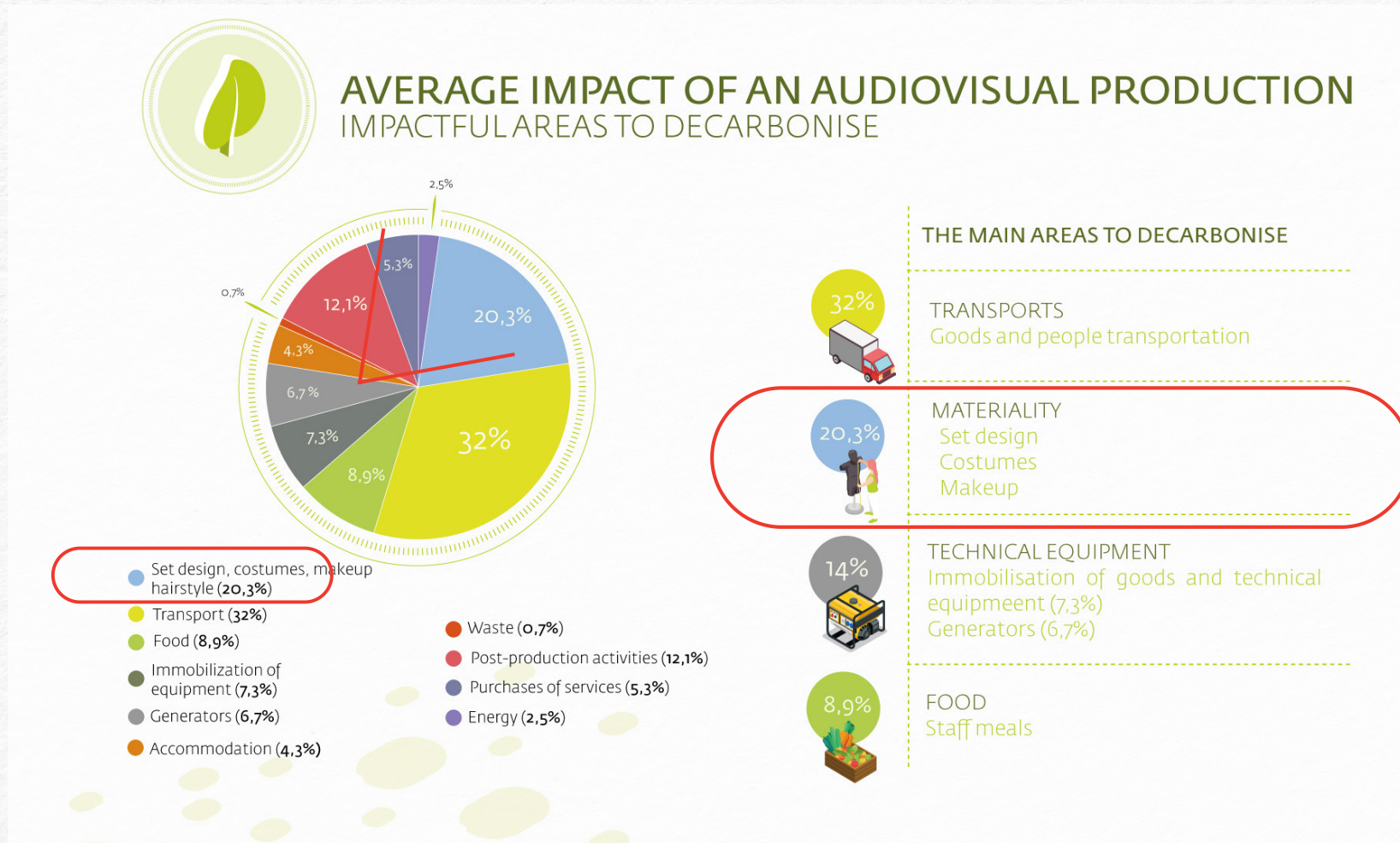
THE CNC'S ACTION PLAN!
Since January 1, 2024, producers who want to get CNC (national) funding have to provide two carbon footprint assessments (a preliminary one and a final one) for their live-action projects (feature films, short films, series, single-episode dramas, or documentaries). This measure of eco-conditionality for funding has also been extended to video games and animation since March 1, 2025.

→ **These figures highlight the importance of implementing eco-responsible practices in the audiovisual industry to reduce its environmental impact.**

1

1 / Understanding and taking action: the sector's carbon footprint

→ **Production design (construction and dismantling) and costumes account for** 20% **of a film production's carbon footprint**

AVERAGE IMPACT OF AN AUDIOVISUAL PRODUCTION
IMPACTFUL AREAS TO DECARBONISE

2,5%
5,3%
0,7%
12,1%
20,3%
4,3%
6,7%
7,3%
8,9%
32%

THE MAIN AREAS TO DECARBONISE

32% **TRANSPORTS**
Goods and people transportation

20,3% **MATERIALITY**
Set design
Costumes
Makeup

14% **TECHNICAL EQUIPMENT**
Immobilisation of goods and technical equipmeent (7,3%)
Generators (6,7%)

8,9% **FOOD**
Staff meals

Legend:
- Set design, costumes, makeup hairstyle (20,3%)
- Transport (32%)
- Food (8,9%)
- Immobilization of equipment (7,3%)
- Generators (6,7%)
- Accommodation (4,3%)
- Waste (0,7%)
- Post-production activities (12,1%)
- Purchases of services (5,3%)
- Energy (2,5%)

© Ecoprod
(Source : *Eco-production Impact Study*, Ecoprod, 2024)

2

2/ Overview of resources

In addition to its carbon footprint, **production design departments use a significant amount of raw materials** that are often expensive, increasingly scarce, and sometimes difficult to obtain quickly—such as wood, the shortage of which during COVID-19 highlighted our reliance on this resource.

However, these precious and exhaustible **natural resources are mostly thrown away once filming is complete,** even though they could be reused for other purposes.
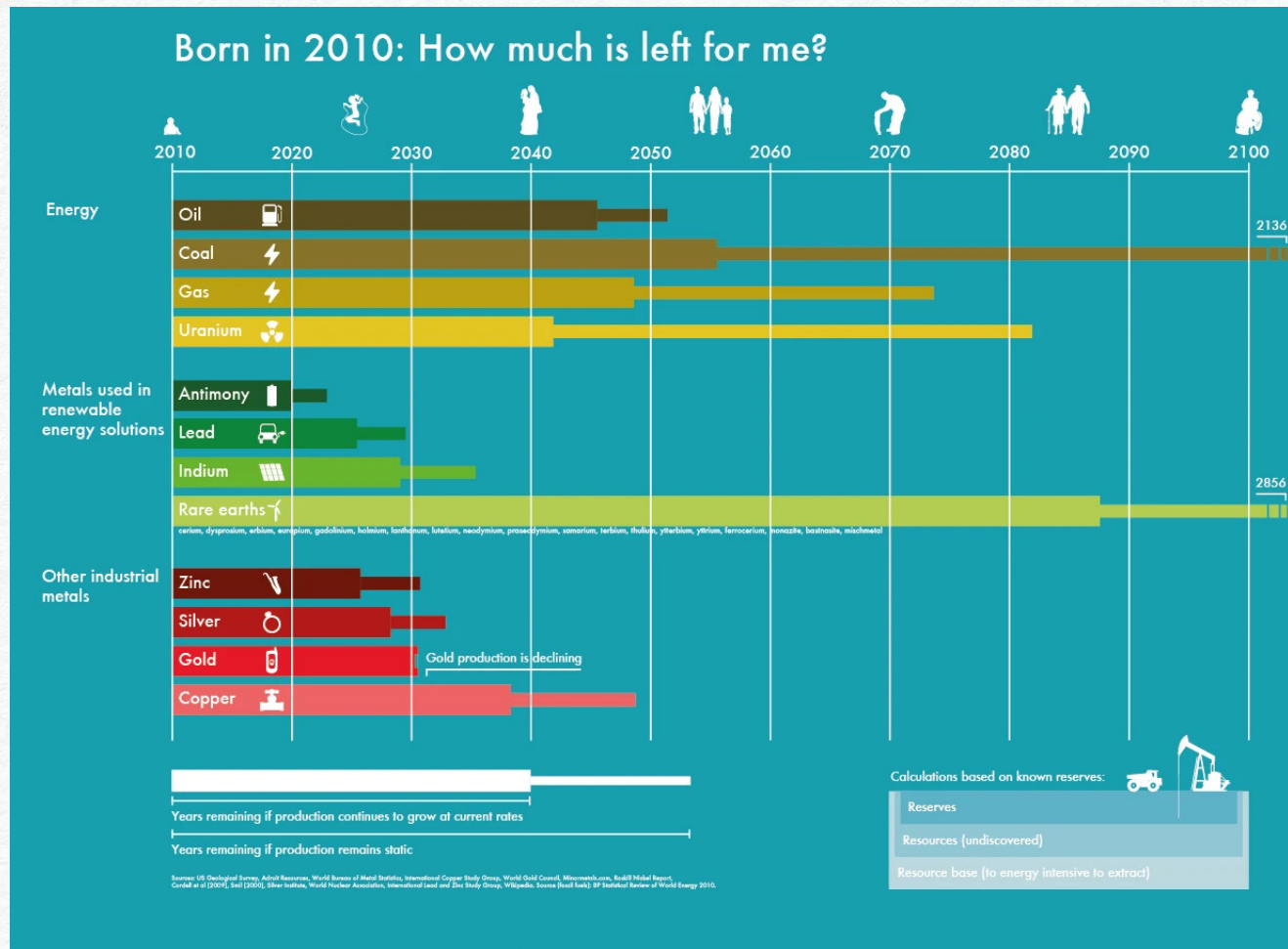
- An **average feature film** generates around 15 tons **of waste.** (Source : La Ressourcerie du Cinéma).

- Currently, 80% **of the sets built are destroyed** after only a few weeks of filming.

- In Paris Region, 40 % **of audiovisual and performing arts waste has no known outlet.**
(Source: *Survey Circul'art: "waste management and prevention in the audiovisual and performing arts sectors", 2017*)

→ This model leads **to massive waste of raw materials**, which are becoming increasingly scarce. This is why we need **to work in a different way**!

2/ Overview of resources

Infographic _Born in 2010: How much is left for me ?_ **by Peter Stouthuysen, Circular Flanders*, 2014.**
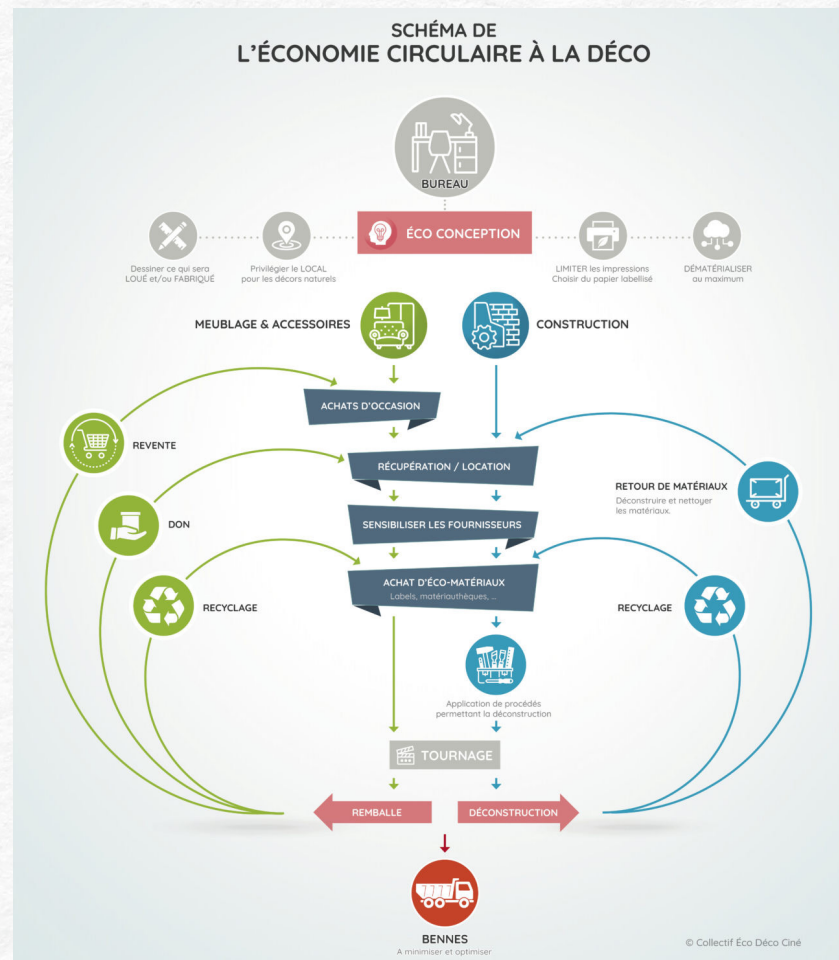

© Circular Flanders

*Circular Flanders is the network and inspiration center for the Flemish circular economy (CE) in Belgium. This is a partnership between governments, businesses, civil society, and the knowledge community, which will work together to develop strategies, policies, and actions.

3/ The '3Rs' of Circular Economy

There are simple alternatives and solutions: designing sets differently, planning for the separation of materials to facilitate their reuse, renting rather than buying, etc. In short, it is about stopping to throw things away and adopting a circular approach. **Changing our practices means reducing the environmental impact of production design without sacrificing creativity! This is a crucial turning point for the future of cinema.**

© Éco Déco Ciné

REDUCE

The best waste is the waste we don't produce! Reducing waste is possible by planning ahead when you make a purchase.

➜ Refuse unnecessary items
➜ Prioritize reusable materials and products
➜ Encourage renting
➜ Reduce packaging

REUSE

➜ Build so that materials can be separated during deconstruction
➜ Donate to recycling centers or other organizations rather than throw things away.
➜ Buy used rather than new
➜ Reuse and transform existing materials and decorative elements to give them a second life.

RECYCLE

Recycling means reusing the raw materials of an object to create a new one and reduce waste. This requires energy, can generate certain types of pollution, and cause materials to lose their properties, so this solution should only be used if the objects and materials are no longer reusable.

➜ Sorting: put plastic packaging, paper, metal, etc., in the recycling bin
➜ Furniture, electrical and electronic appliances should be taken to a waste disposal center, a retail outlet, or, if they are in good condition, donated.
➜ Put batteries and light bulbs in store collection bins

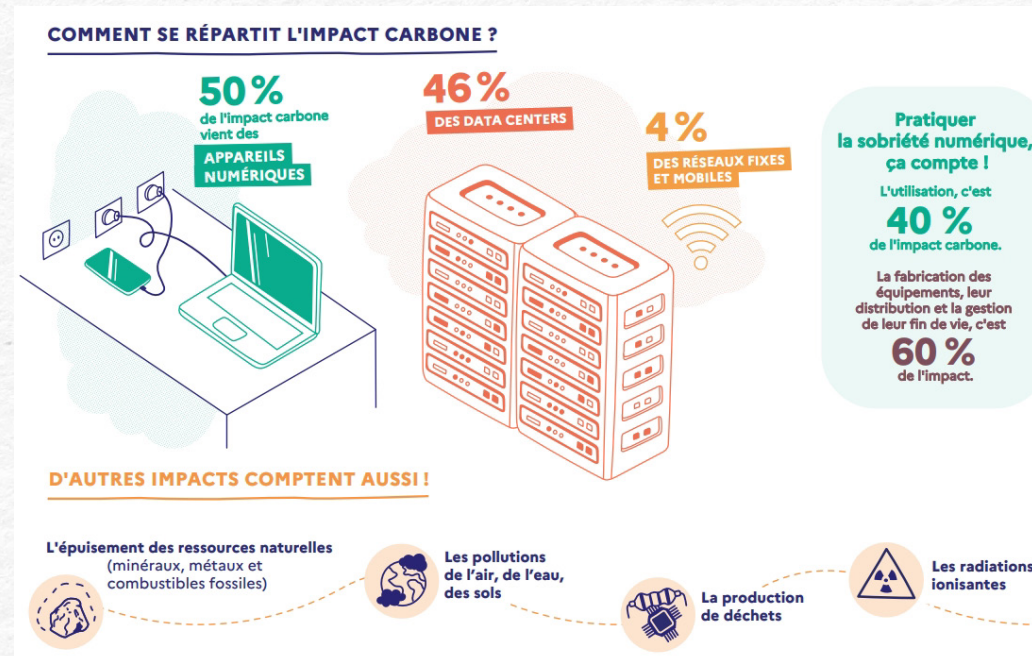# 4/ Digital technology's impact on the production design department

Head Set Designer
First Assistant
Set Assembler

The impact of digital tools on the environment may seem insignificant due to the apparent "immateriality" of the process, but it is important to remember that all the equipment, servers, and data centers required for digital technology are very real. They require a large amount of energy and primary resources (metals, minerals, water, land, etc.) for the manufacture and use of equipment, as well as for data storage.

In 2022, digital technology accounted for 4.4% of France's carbon footprint, slightly less than the total emissions of the country's heavy goods vehicle sector. (Source : Report on *the Environmental Impact Assessment of Digital Technology in France*, ADEME, 2025.)

© ADEME / Bear Ideas
(Source : Poster *What are the environmental impacts of digital technology?*, ADEME, 2025. 2022 figures)

4/ Digital technology's impact on the production design department

Digital pollution is widespread and multifaceted, which is why it is important to raise awareness about it even in everyday practices: emails, web searches, videos, photos, streaming, equipment replacement, etc.
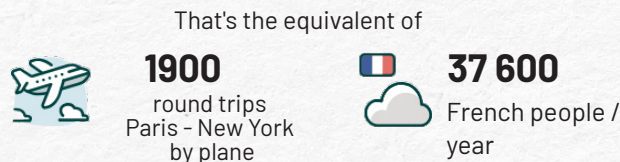
Case study: emails

- **Spam** that ends up in junk mail = **0.03 g of CO2e.**
- **A short email** sent and received on a laptop = **0.3 g of CO2e.**
- **A long email** (10 minutes to write and 3 minutes to read) sent and received on a laptop = **17 g of CO2e.** (Source : Carbon Literacy Project, 2020)

Please note: the environmental cost of an email increases with the number of recipients it is sent to.

- The carbon footprint of a **stored email** is equivalent to an average of **10 g of CO2e/year**, due to storage in data centers that require constant cooling. (Source : Cleanfox)

These figures may seem fairly insignificant when considered individually, but nearly **1.4 billion emails are sent every day in France!**
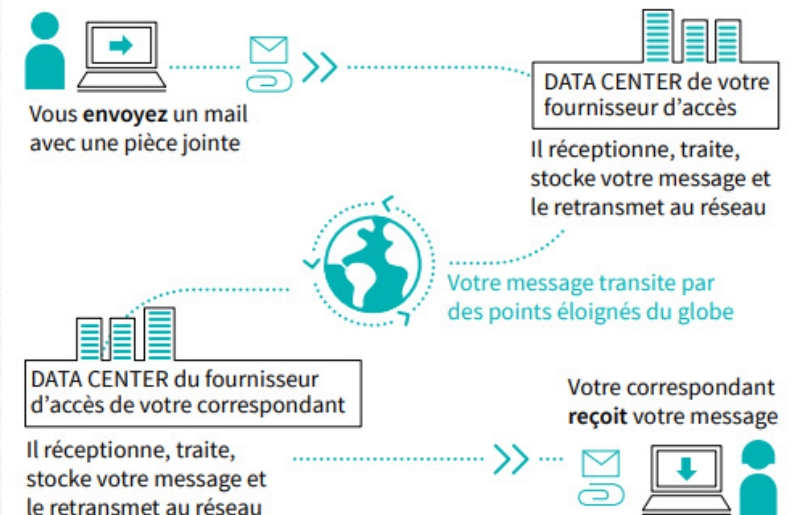
That's the equivalent of

1900 round trips Paris - New York by plane

37 600 French people / year

(Source: Ademe)

In all, 8 to 10 billion emails are exchanged **every hour** worldwide (excluding spam)**.**

Les e-mails et les requêtes web

L'impact de l'envoi d'un mail dépend du poids des pièces jointes, du temps de stockage sur un serveur mais aussi du nombre de destinataires. Multiplier par 10 le nombre des destinataires d'un mail multiplie par 4 son impact.

L'ENVOI D'UN MAIL : COMMENT ÇA MARCHE ?

Vous **envoyez** un mail avec une pièce jointe

DATA CENTER de votre fournisseur d'accès
Il réceptionne, traite, stocke votre message et le retransmet au réseau

Votre message transite par des points éloignés du globe

DATA CENTER du fournisseur d'accès de votre correspondant
Il réceptionne, traite, stocke votre message et le retransmet au réseau

Votre correspondant **reçoit** votre message

L'impact d'une requête web dépend du temps de recherche et du nombre de pages consultées. On divise par 4 les émissions de gaz à effet de serre en allant directement à l'adresse du site.

© ADEME / Agence Giboulées
(Source : Guide *La face cachée du numérique* , ADEME, 2021)

4/ Digital technology's impact on the production design department

A few recommendations and eco-friendly actions for digital sobriety:

- **Prioritize the purchase of refurbished electronic equipment.** This helps offset the carbon footprint of their manufacture over more years and avoid the emissions associated with manufacturing new equipment.

- **Turn off computers and lights** in the evening and during lunch breaks.

- **Use AI consciously and moderately:** generating a single image with the help of an AI model such as Midjourney consumes up to **12 liters of water** (source: *MIT Tech Review & University of California Riverside*) and **as much energy as a full smartphone charge** (source*: Power Hungry Processing: Was, Driving the Cost of AI Deployment ?, Institute for AI, 2024*).

- **Use Wi-Fi to read and write emails, but especially to download attachments:** Wi-Fi consumes 10 times less energy than 4G!

- **Prefer audio calls to video calls.** In the case of videoconferencing, avoid adding effects (blur or virtual background) if possible.

- **Choose eco-friendly file transfer services** (FileVert or other)**.**

- **Prefer data exchange via USB drives or hard drives** rather than sending large attachments.

- **Avoid replying to emails containing attachments** (photos of locations or other "heavy" documents) as much as possible, **avoid using the "reply to all" function** unless necessary, and **avoid signatures or banners with images.**

- **Sort your emails and empty your inbox** (manage emails with or without attachments and spam).

- **Choose an eco-friendly search engine** (Ecosia or another).

Sheet produced as part of the Circul'Art 3 project
With the support of ADEME and Paris Region

filmparisregion.com