# **INDUR** : ENVIRONMENTAL IMPACTS OF VIDEO STREAMING

Jérôme Faucheux - Adrien Gaillard - François Michelon - Zhenyu Pu

# Summary

I - Past current and future impacts of ICT

II - The role of end users devices

III - Other environmental impacts than $CO_2$ emissions

IV - Conclusion and development

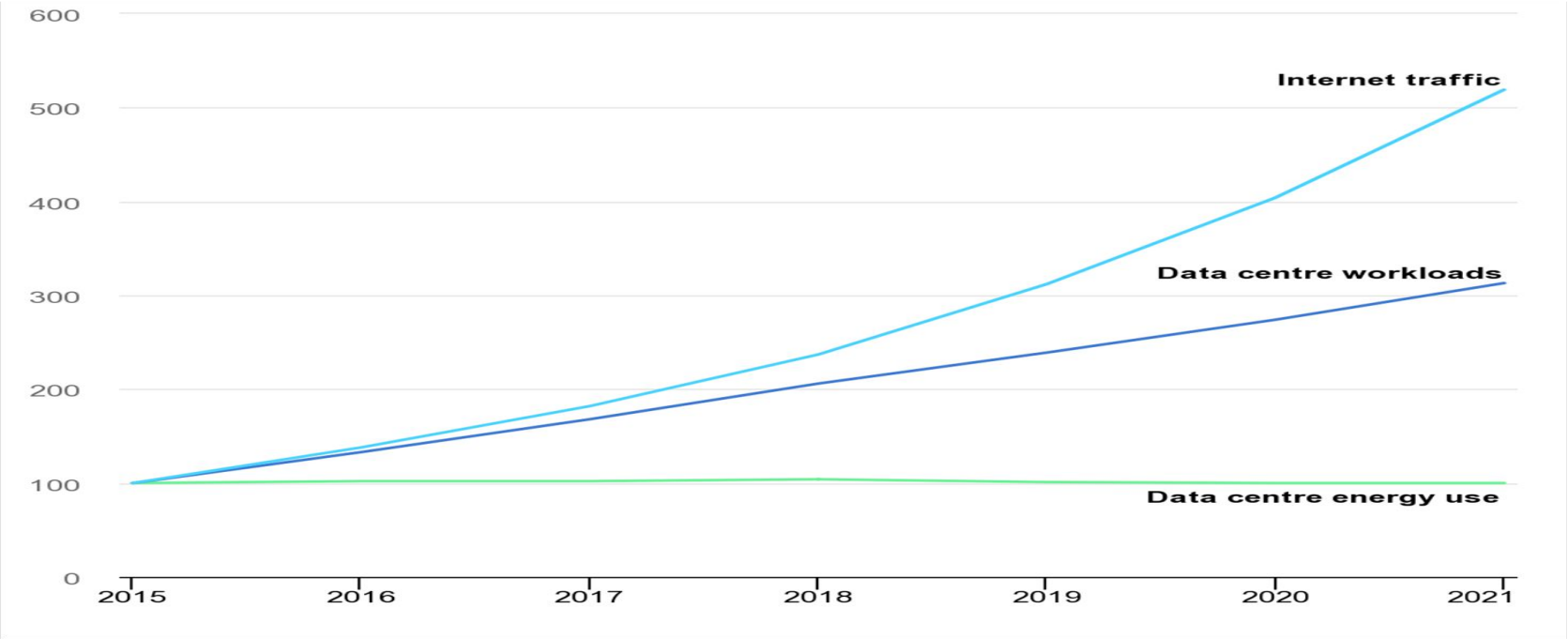
# Past current and future impacts of ICT

# Video streaming and ICT

Video streaming: an entertainment service delivered over the internet

Relies on ICT (Information and Communications Technology) sector.

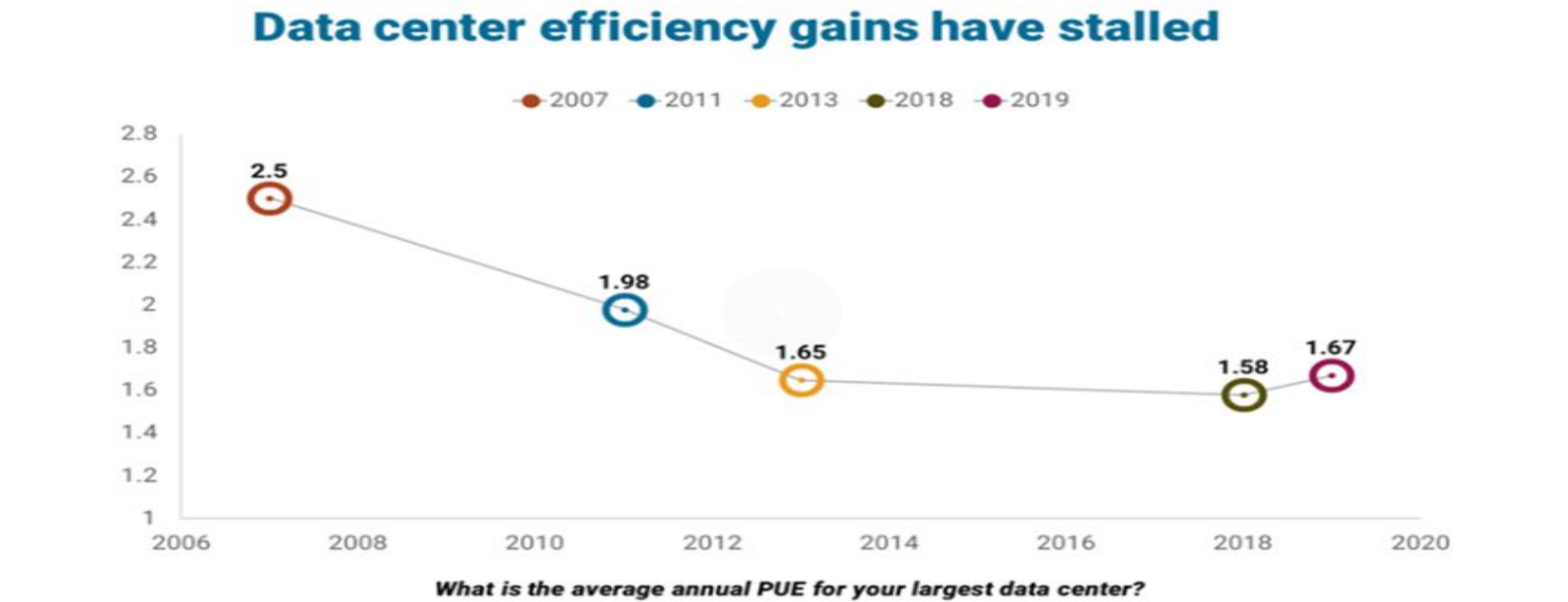
# Historical carbon footprint



# Future trends in video streaming carbon emissions

- Consumption of video streaming is growing quickly
- More demands for data centers from new technologies
- Slow efficiency gains of current technologies

# Future trends in ICT carbon emissions footprint



# II. The role of end users devices

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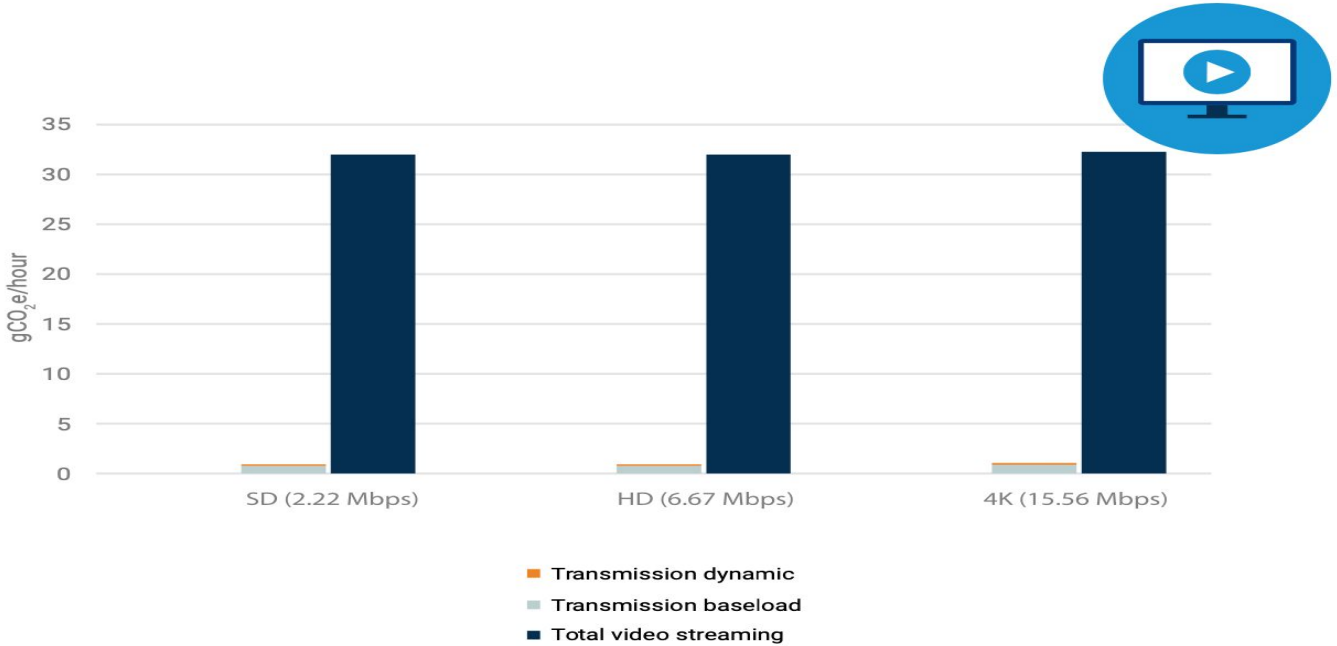
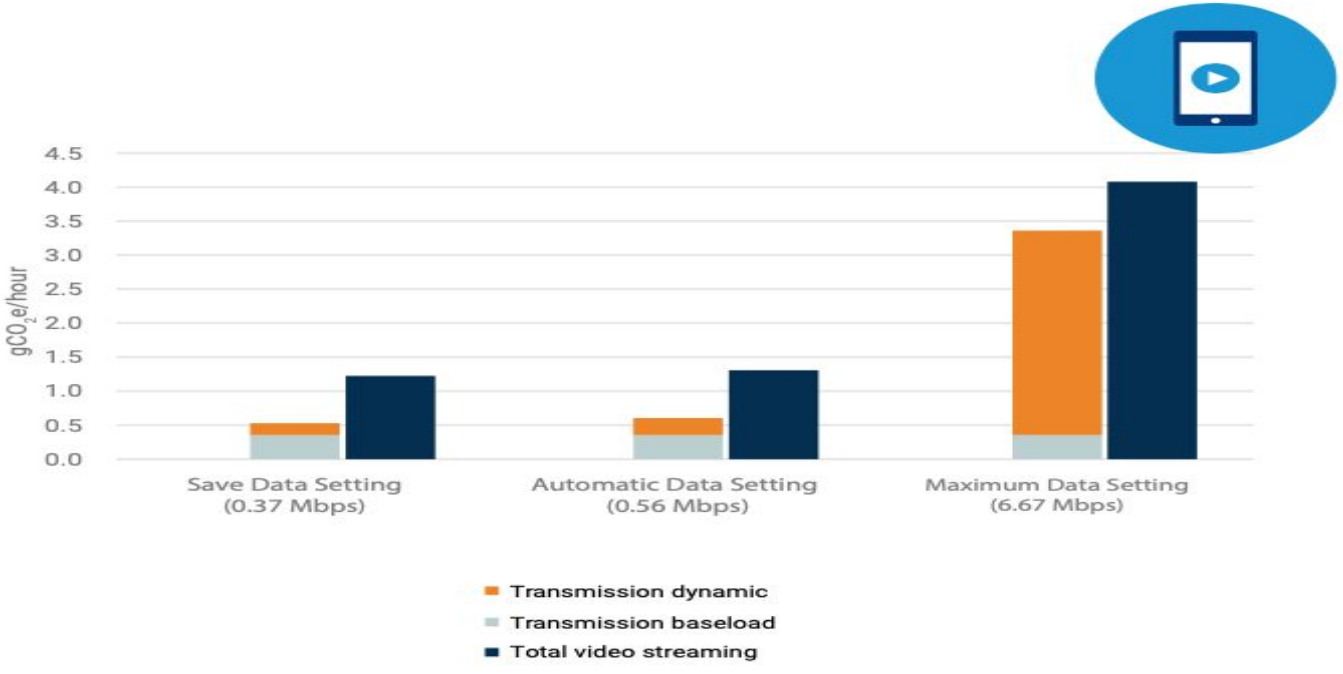


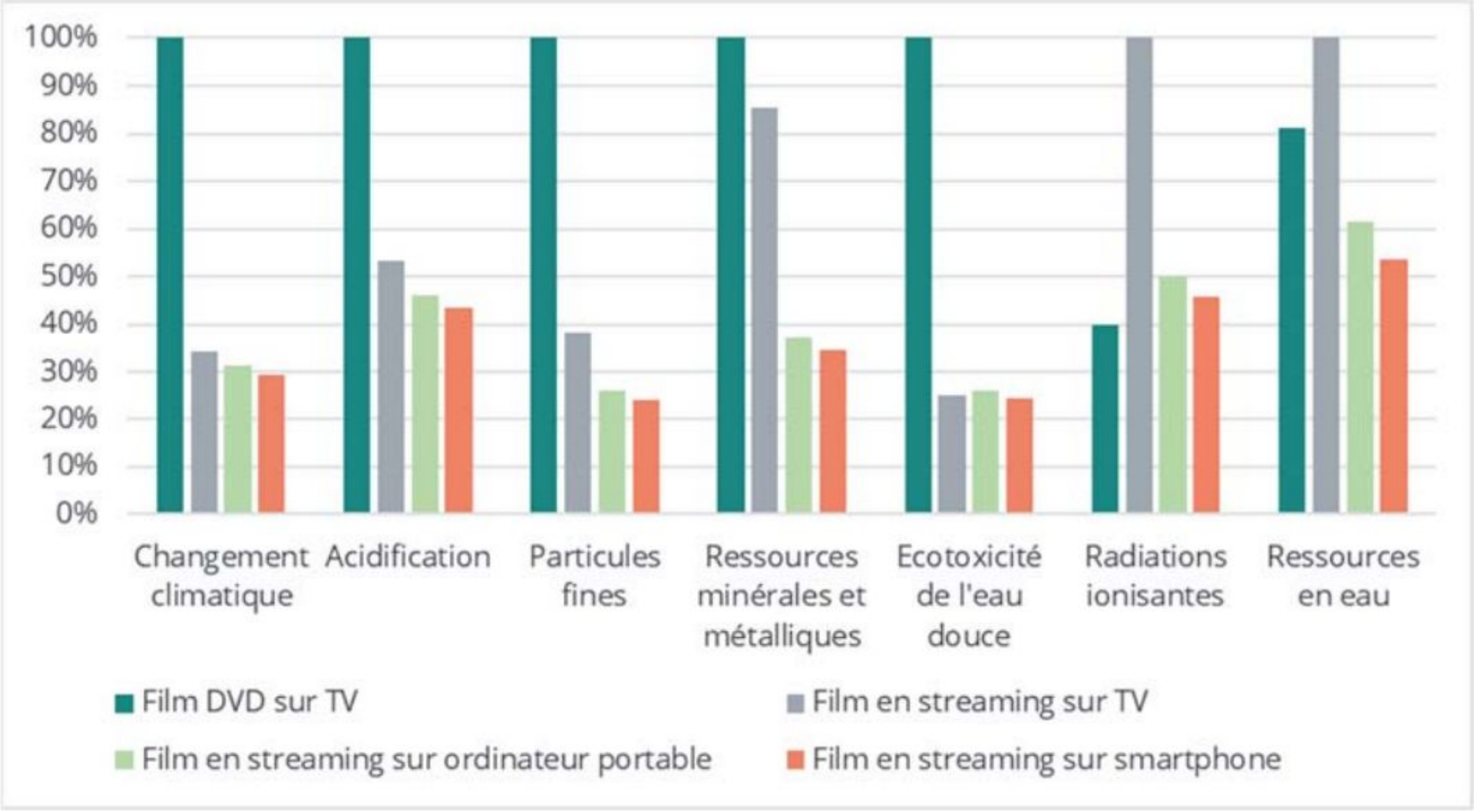
# The role of end users devices

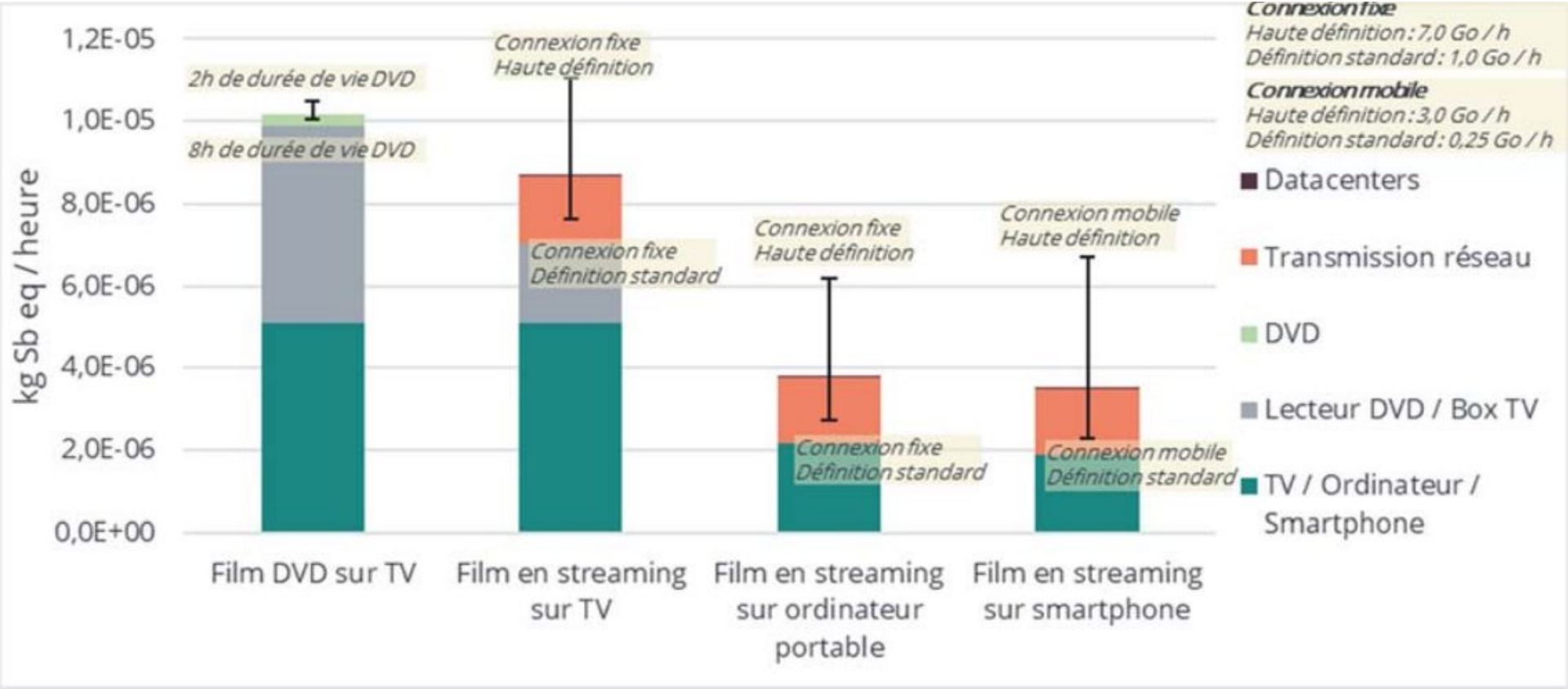


# III. Other environmental impacts than $CO_2$ emissions

# 4 film consumption scenarios' impacts on the environment

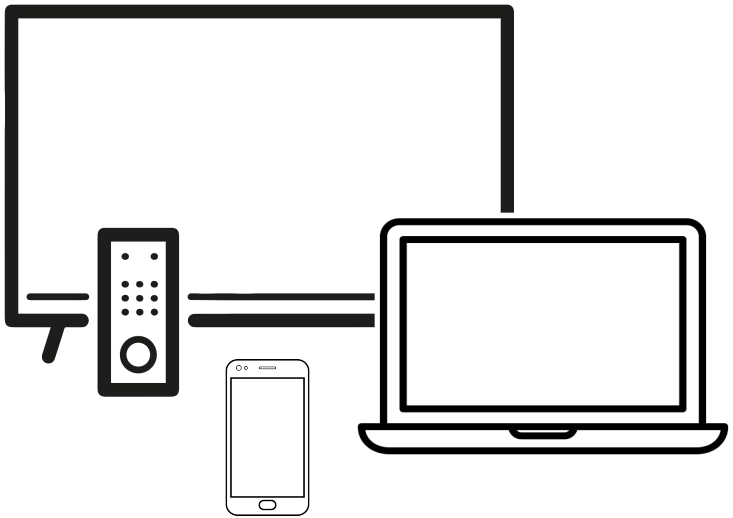
VS

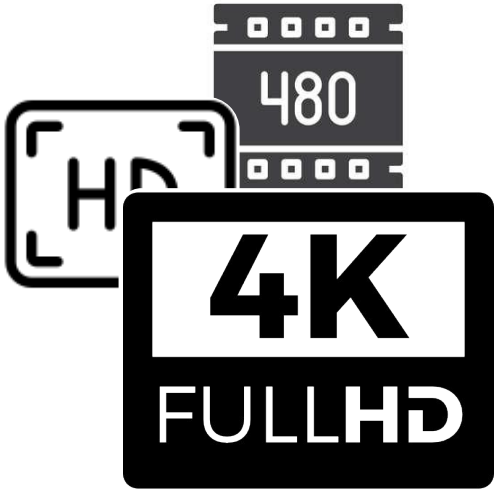

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Changement climatique
Acidification
Particules fines
Ressources minérales et métalliques
Ecotoxicité de l'eau douce
Radiations ionisantes
Ressources en eau
Film DVD sur TV
Film en streaming sur TV
Film en streaming sur ordinateur portable
Film en streaming sur smartphone


1,2E-05
1,0E-05
8,0E-06
6,0E-06
4,0E-06
2,0E-06
0,0E+00
kg Sb eq / heure
2h de durée de vie DVD
8h de durée de vie DVD
Connexion fixe
Haute définition
Connexion fixe
Définition standard
Connexion fixe
Haute définition
Connexion fixe
Définition standard
Connexion mobile
Haute définition
Connexion mobile
Définition standard
Film DVD sur TV
Film en streaming sur TV
Film en streaming sur ordinateur portable
Film en streaming sur smartphone
Connexion fixe
Haute définition : 7,0 Go / h
Définition standard : 1,0 Go / h
Connexion mobile
Haute définition : 3,0 Go / h
Définition standard : 0,25 Go / h
Datacenters
Transmission réseau
DVD
Lecteur DVD / Box TV
TV / Ordinateur / Smartphone

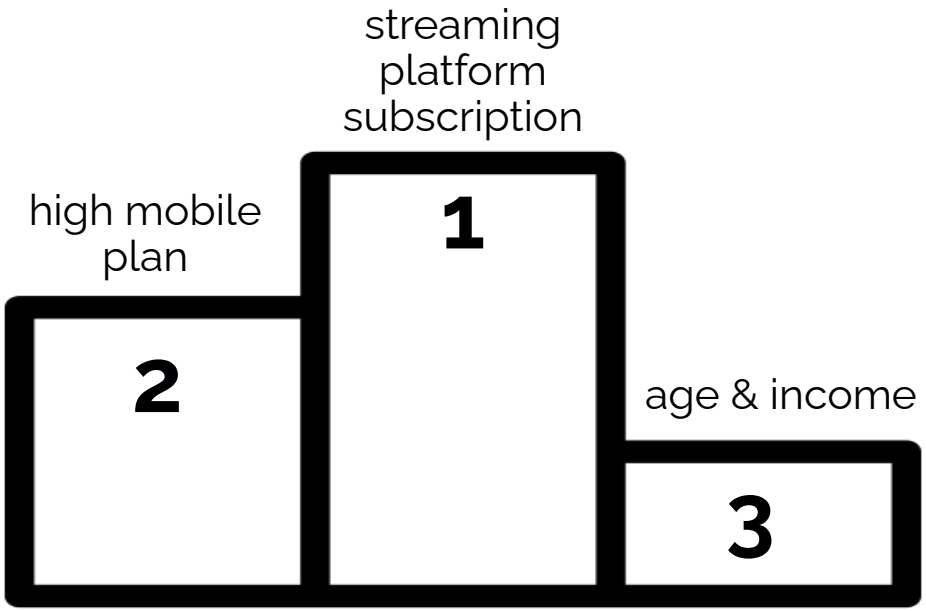
# IV. Conclusion and developments

# Viewing device rather than video setting





# Paid platform, mobile data plan, age and income



# Rebound effect

# 3 different types of environmental knowledge

- system knowledge
- action knowledge
- effectiveness knowledge