

**WHAT CAN I DO ABOUT  
CLIMATE CHANGE AS A  
DEVELOPER... AND A  
HUMAN BEING?**



- > JULIEN
- > DEVELOPER ADVOCATE @ADYEN
- > JAVA MAGAZINE
- > @JLENGRAND
  
- > #MEETUPS #KOTLIN #GARDENING



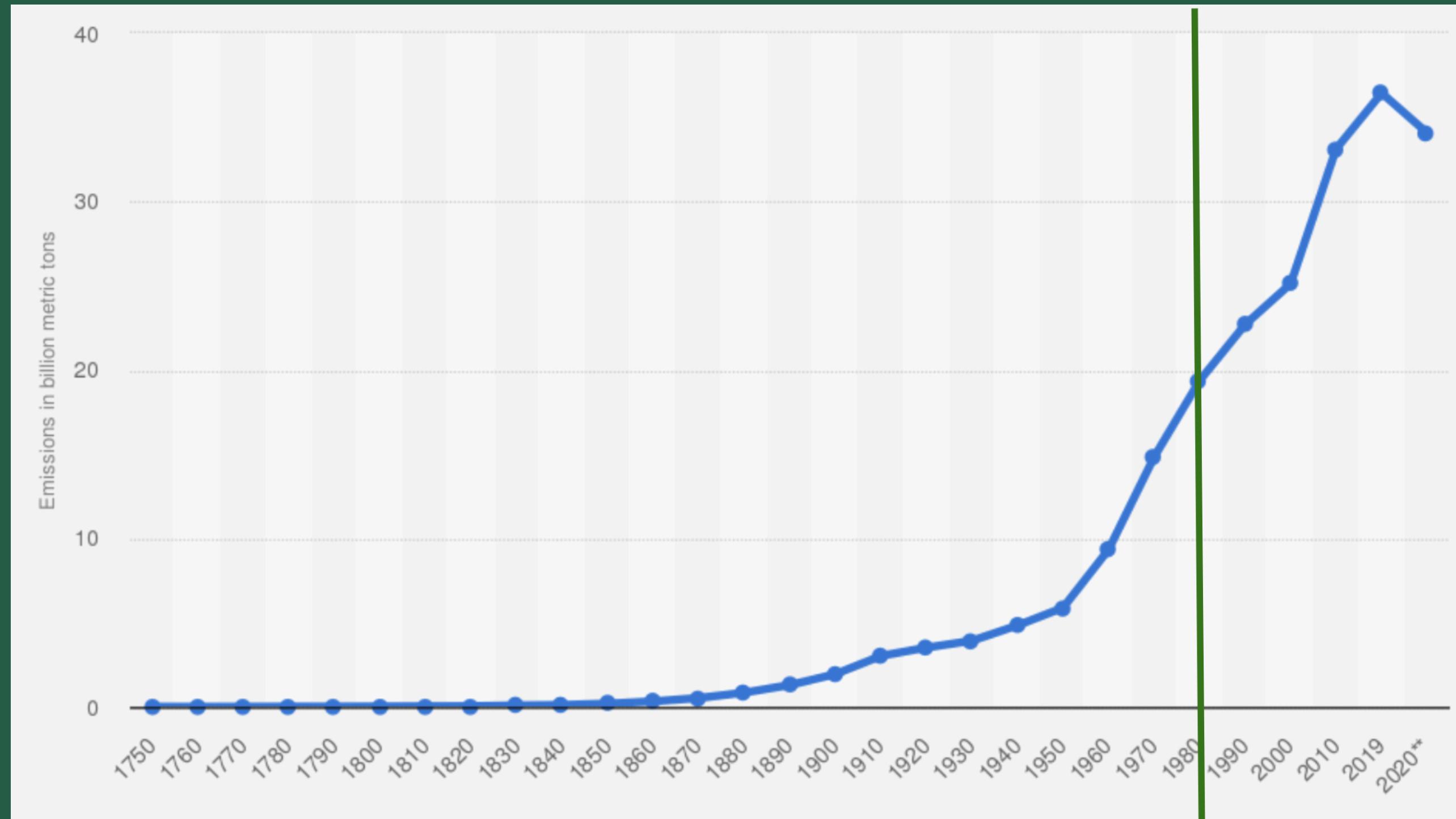
- > ! I'M NOT A CLIMATE SCIENTIST :)
- > 🙌 LET'S DO IT POSITIVELY
- > 🤚 NO POINTING FINGERS



# CONTENT

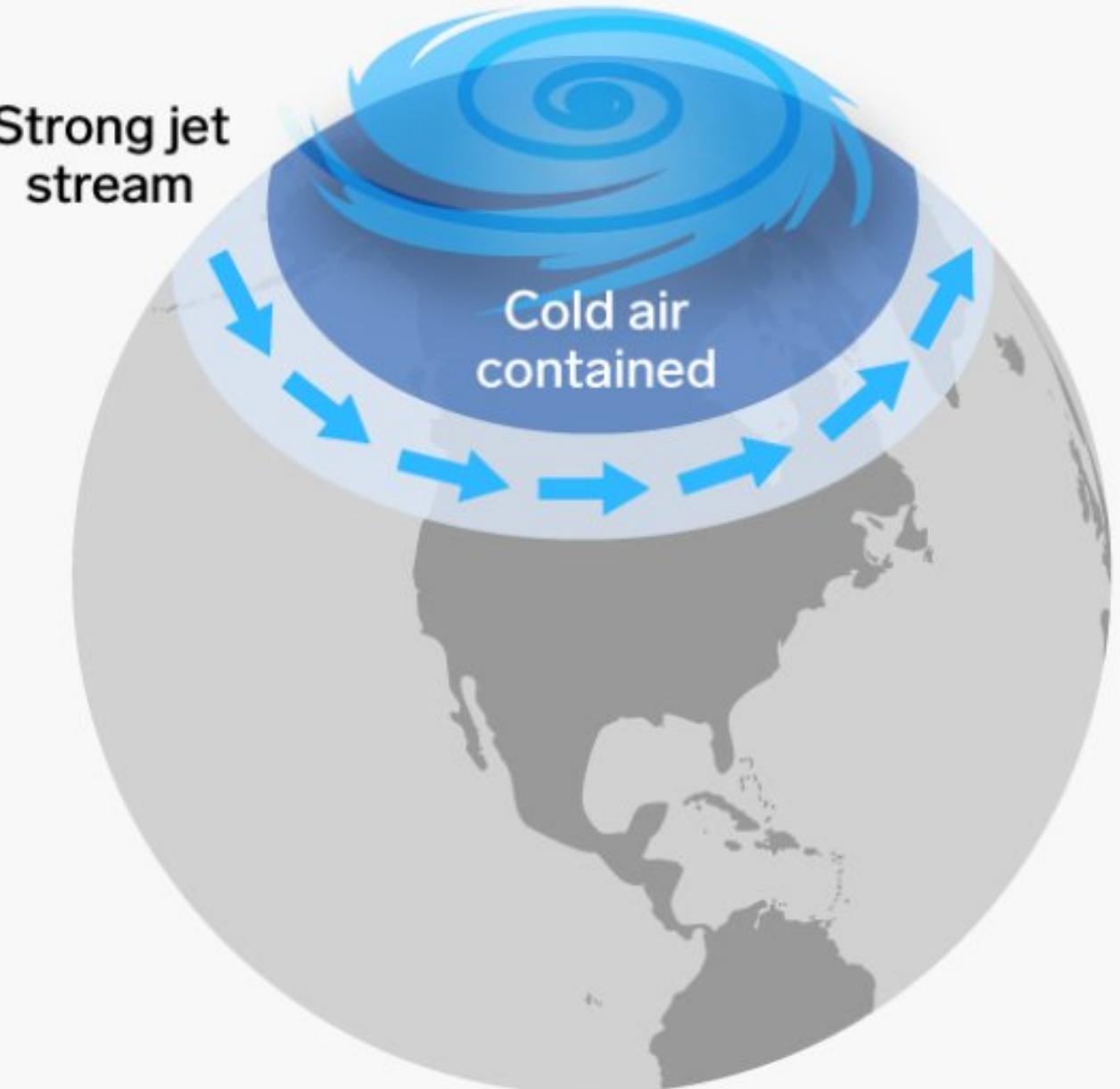
- > CURRENT SITUATION
- > TACKLING IT WITH TECH
- > A PERSONAL TAKE
- > FINAL TIPS!

LET'S LOOK INTO THE  
SITUATION BEFORE  
DIVING FURTHER

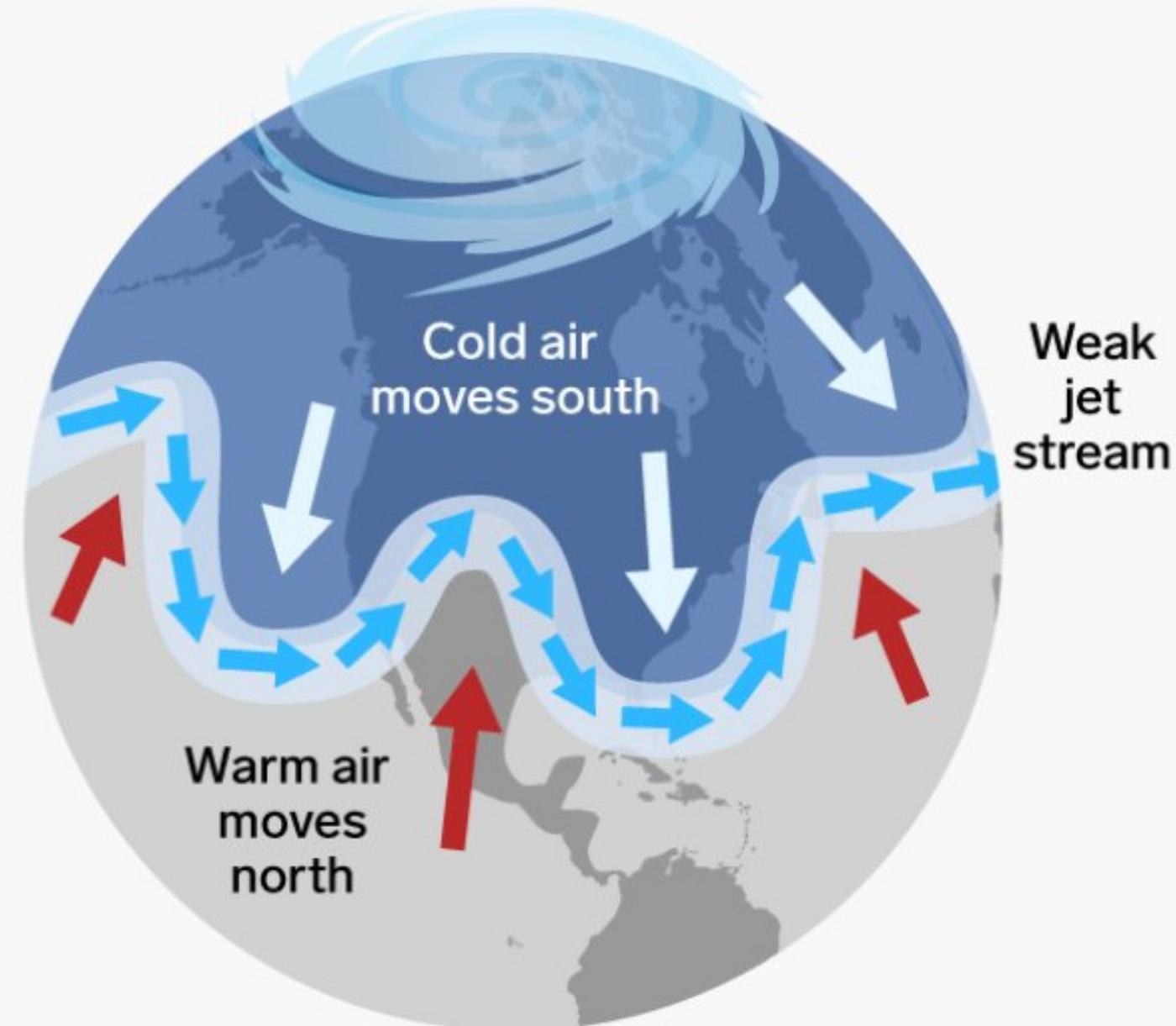


**48% OF WORLD TOTAL GLOBAL EMISSIONS SINCE I WAS BORN**

## Stable polar vortex



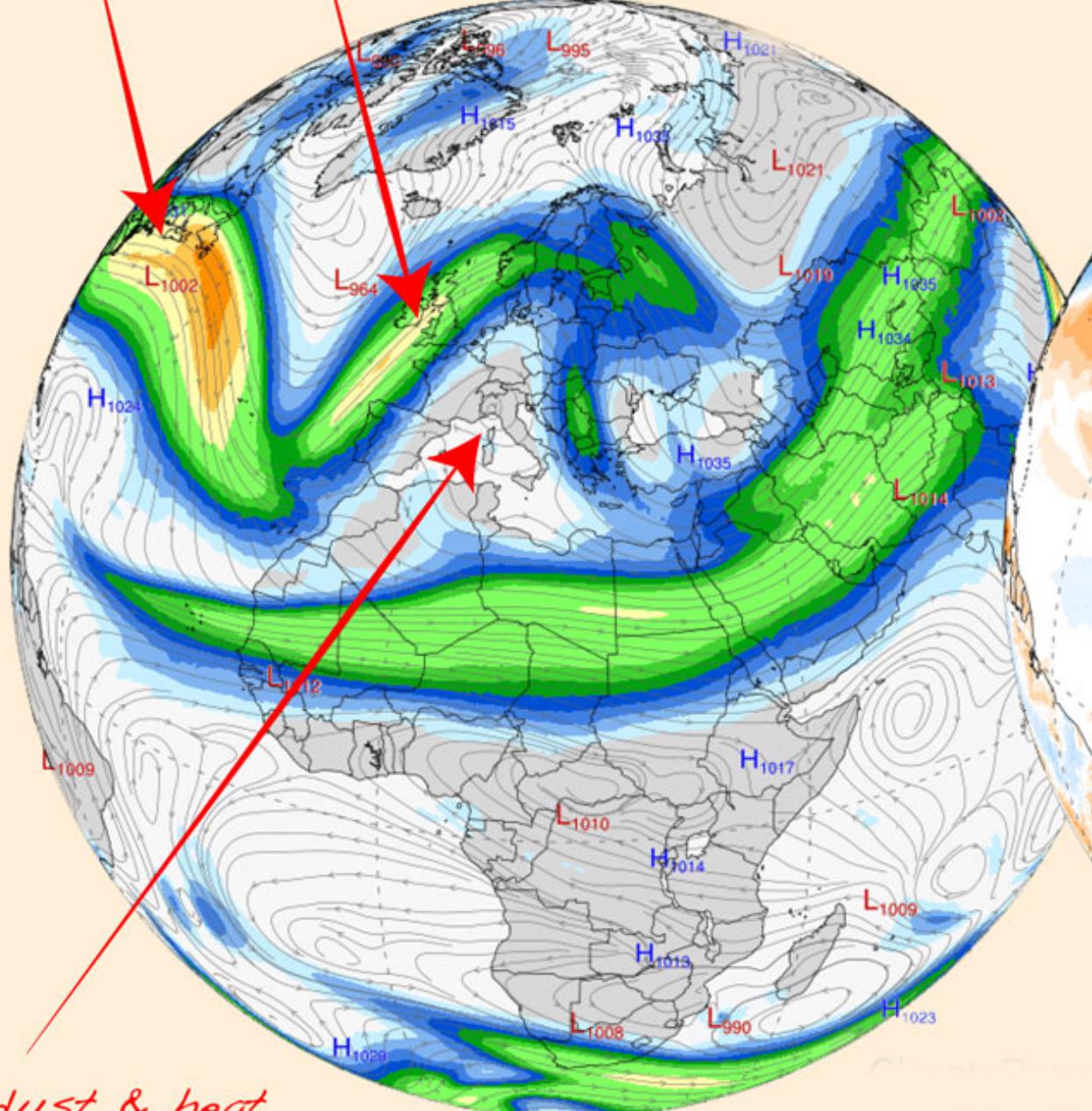
## Wavy polar vortex



GLOBAL "WARMING" IS A BAD TERM.

Jet Stream Speed

meandering jetstream

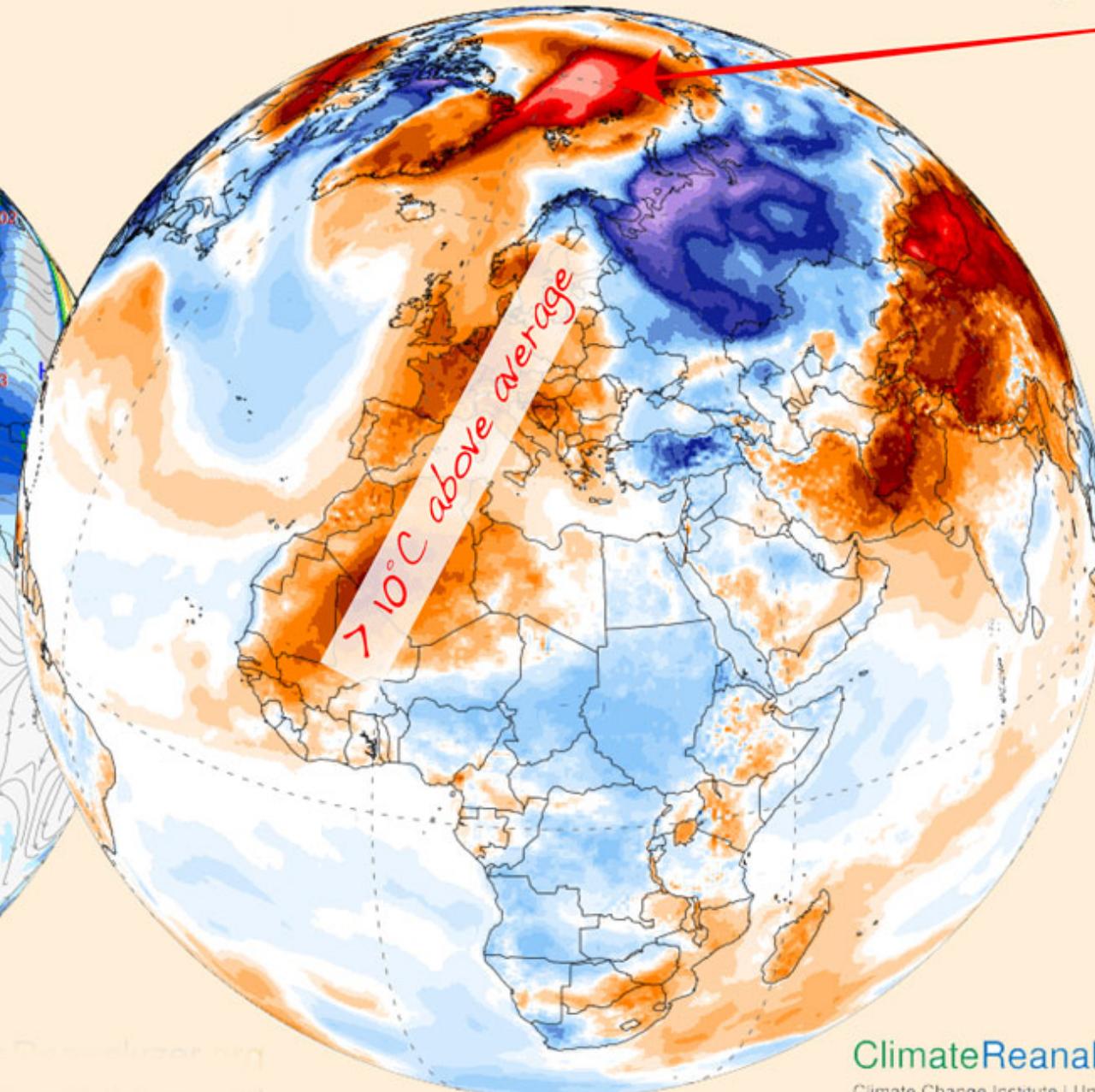


Saharan dust & heat

2m Temperature Anomaly

vs. 1979-2000 average

> 20°C above average



Thomas Ronge  
@RemoteLongitude

CLIMATE CHANGE IS WATCHING DISASTERS HAPPEN ON OTHER  
PEOPLE'S CAMERAS. UNTIL YOU ARE THE ONE FILMING THE  
DISASTER

-- UNKNOWN TWITTER USER

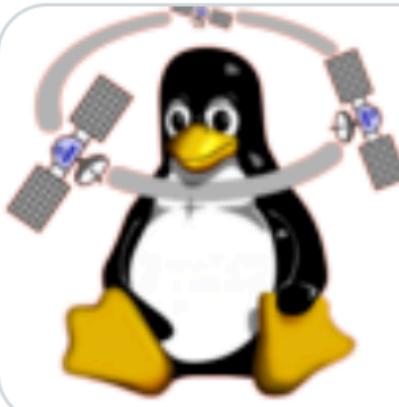


Ariadne Conill  
@ariadneconill

...

TIL: Climate change has resulted in the earth spinning faster, cancelling out leap seconds.

“As I previously said, the reason it will affect live GPS is due to, and I hate to say it, global warming causing the earth to speed up, unexpectedly.”



gitlab.com

GPSD time will jump back 1024 weeks at after week=2180 (...)

I just discovered a lurking problem in the timebase.c module in all of the branches for releases >=3.20: In ...

1:52 PM · Aug 2, 2021 · Twitter for iPhone

# WITH CRAZY EFFECTS



Felix Miller RE100Japan.org #EnergyTransition  
 @\_felix\_miller

...

If we STOPPED ALL #CO2 #EMISSIONS  
NOW...

the earth would only stop warming in 2033 ! !  

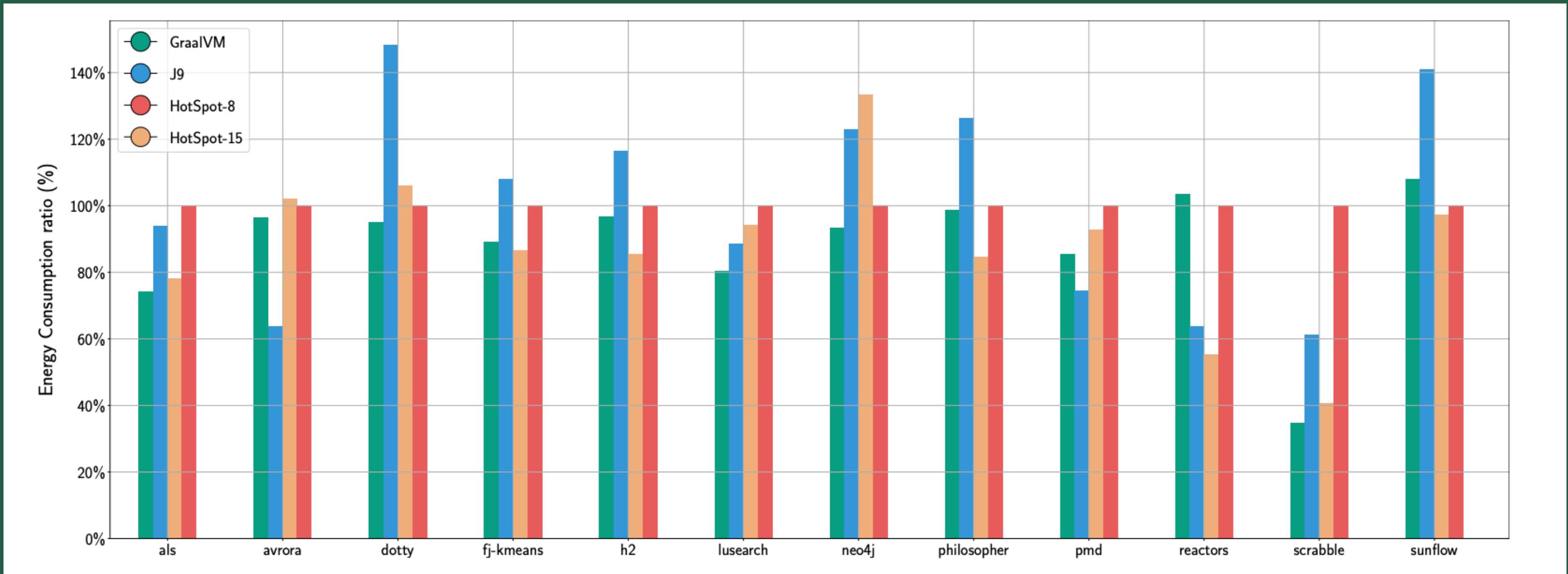


AND A LOT OF LATENCY

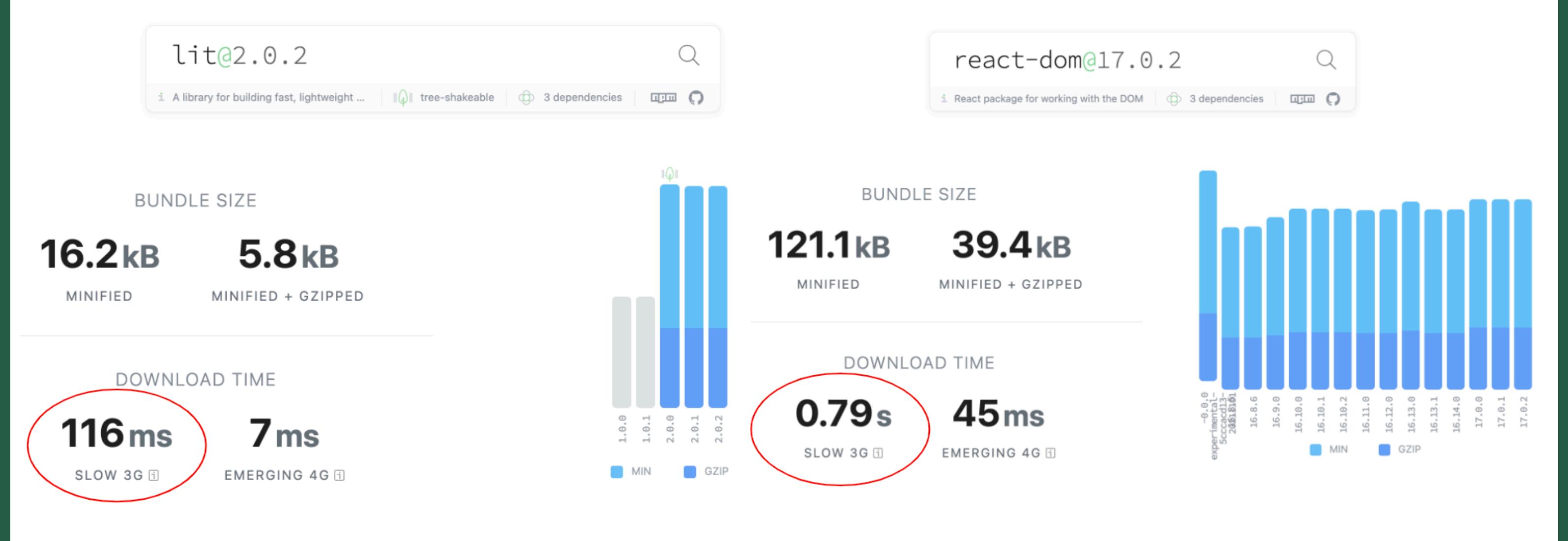
SO LET'S GET TO IT

**REDUCE  
REUSE  
RECYCLE**

DO YOU REALLY NEED  
99.99999%



THE VERSION OF YOUR TOOLS MATTER



ALSO. MAYBE YOU DON'T NEED A FRAMEWORK

## **CO<sub>2</sub> per transaction**



**0.43 tCO<sub>2</sub>**



**0.01 tCO<sub>2</sub>**



**0.00000033 tCO<sub>2</sub>**

# CHOICE OF TECHNOLOGY MATTERS

# Nike says it's 'actively working' to fix its broken smart sneakers

19 

*No timeline on a fix, though*

By Ashley Carman | @ashleyrcarman | Feb 21, 2019, 2:00pm EST

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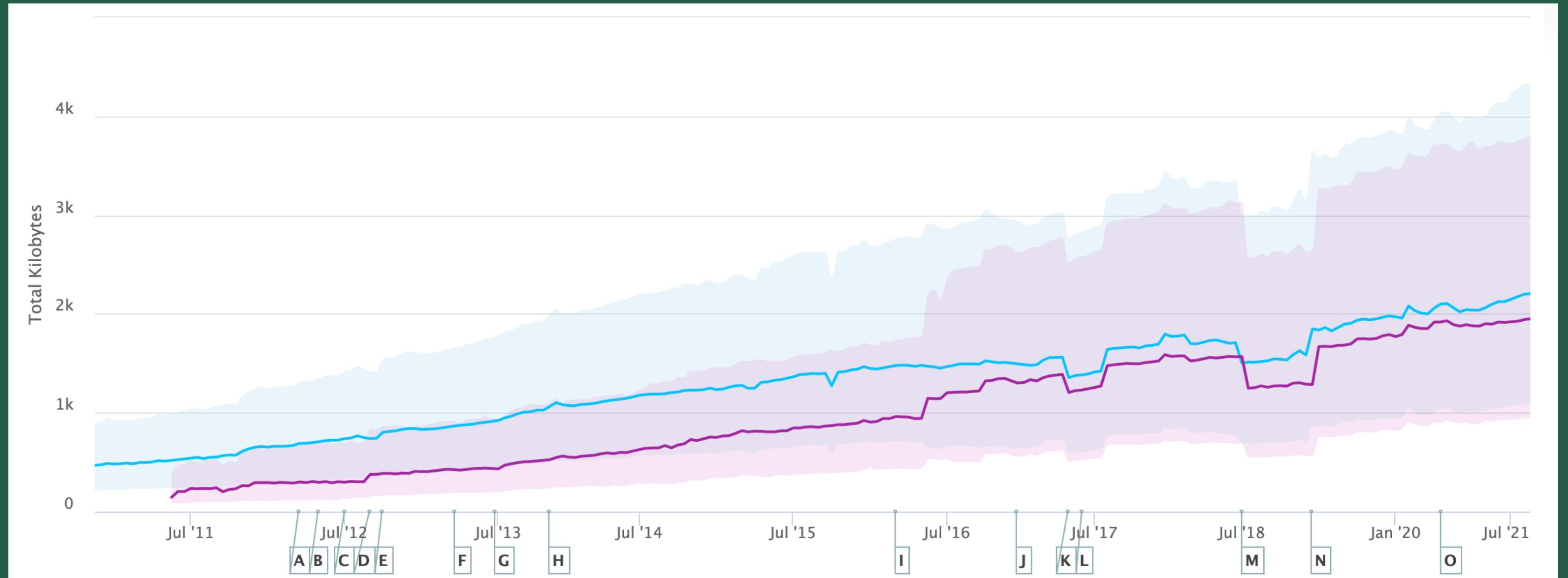
**SUBSCRIBE**

**YOUR SCIENTISTS WERE SO PREOCCUPIED WITH WHETHER OR NOT THEY COULD. THEY DIDN'T STOP TO THINK IF THEY SHOULD.**  
- DR IAN MALCOLM, JURASSIC PARK

# Principles of Green Software Engineering

[Endorse the principles](#)[Join the newsletter](#)

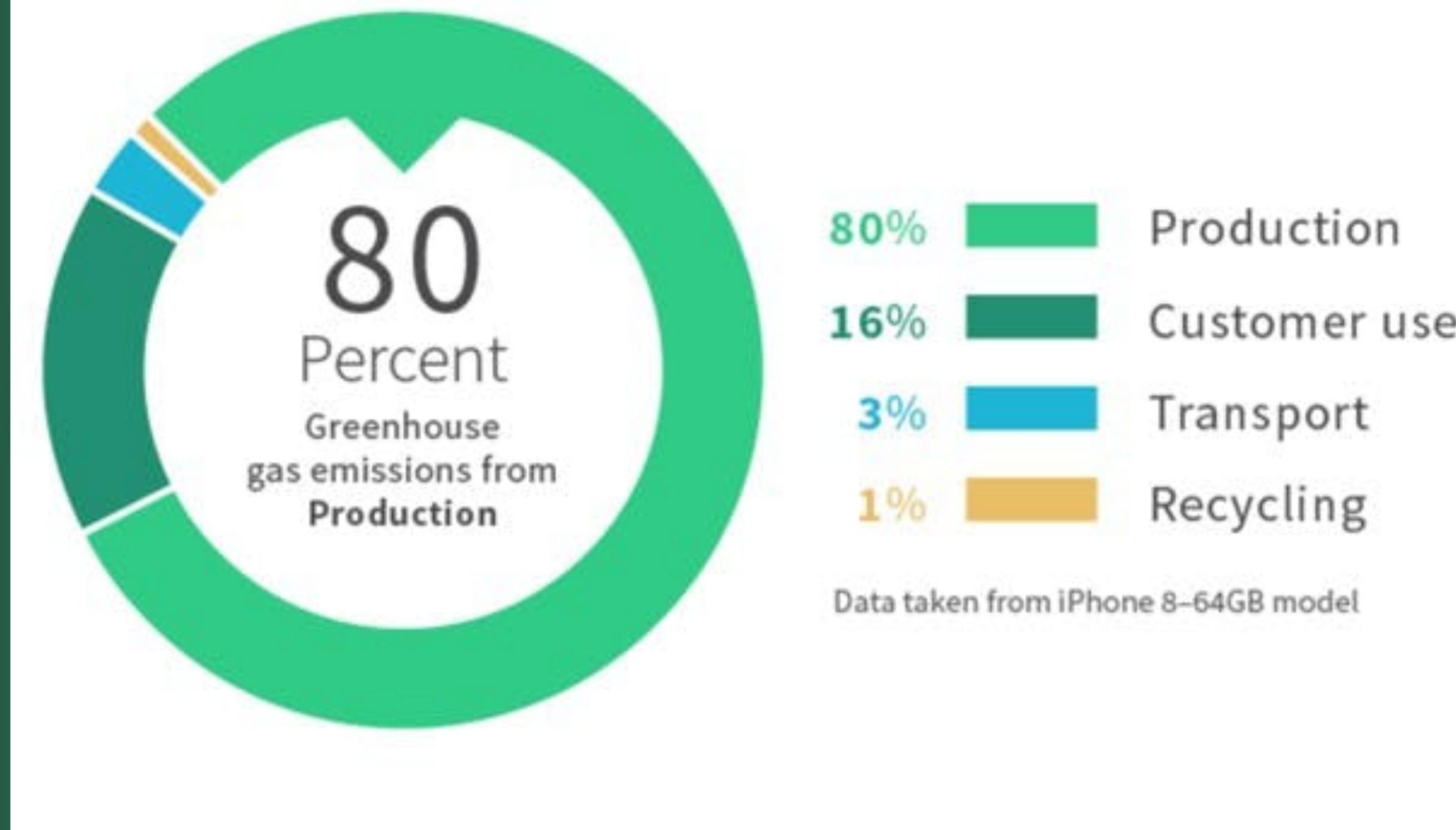
## PRINCIPLES OF GREEN SOFTWARE ENGINEERING



AVERAGE WEB PAGE SIZE RAISED BY **1240%** IN 10 YEARS

THE CONSUMENTENBOND ESTIMATES THE AVERAGE LIFESPAN AT  
2.5 YEARS.

## Greenhouse Gas Emissions of a Smartphone



# YOUR USERS' SMARTPHONE

**BUYING ONE NEW PHONE TAKES AS MUCH ENERGY AS RECHARGING  
AND OPERATING A SMARTPHONE FOR AN ENTIRE DECADE**

BUT WAIT A SECOND. . .

# HOW MANY OF YOU . . . ?



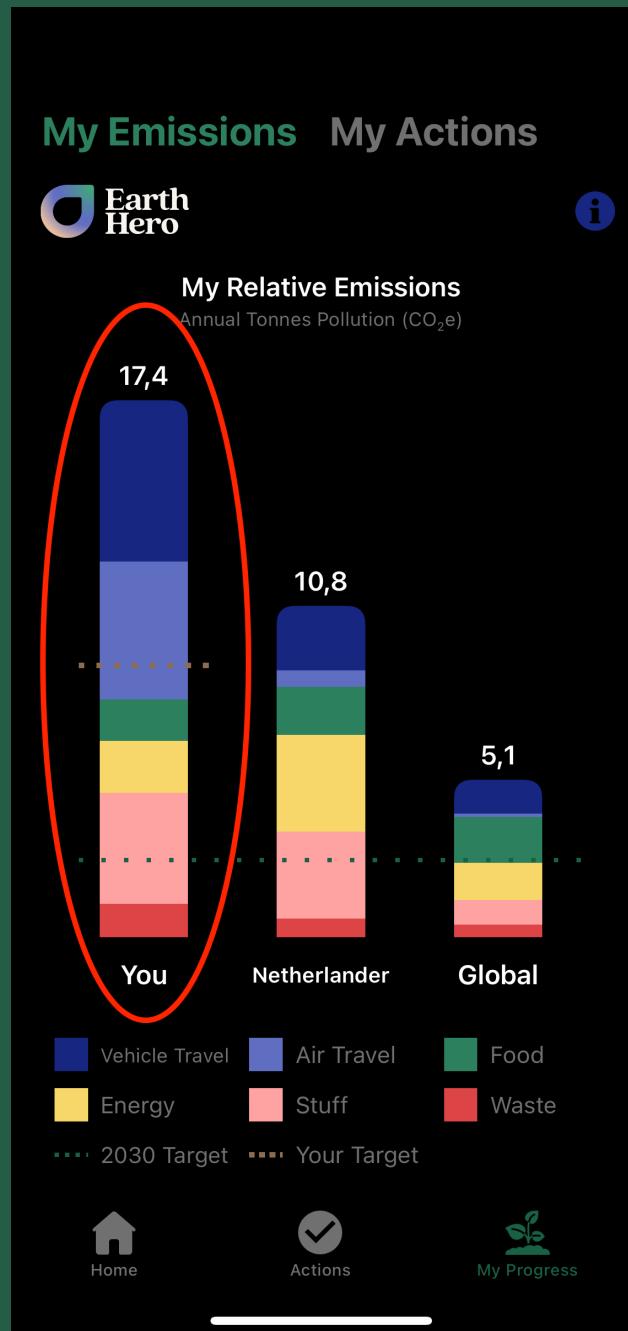
The new MacBook Pro

**IF YOU'RE ASKING YOUR KIDS TO  
EXERCISE, THEN YOU BETTER DO IT.  
TOO. PRACTICE WHAT YOU PREACH.**

# A DIVE INTO MY CARBON FOOTPRINT

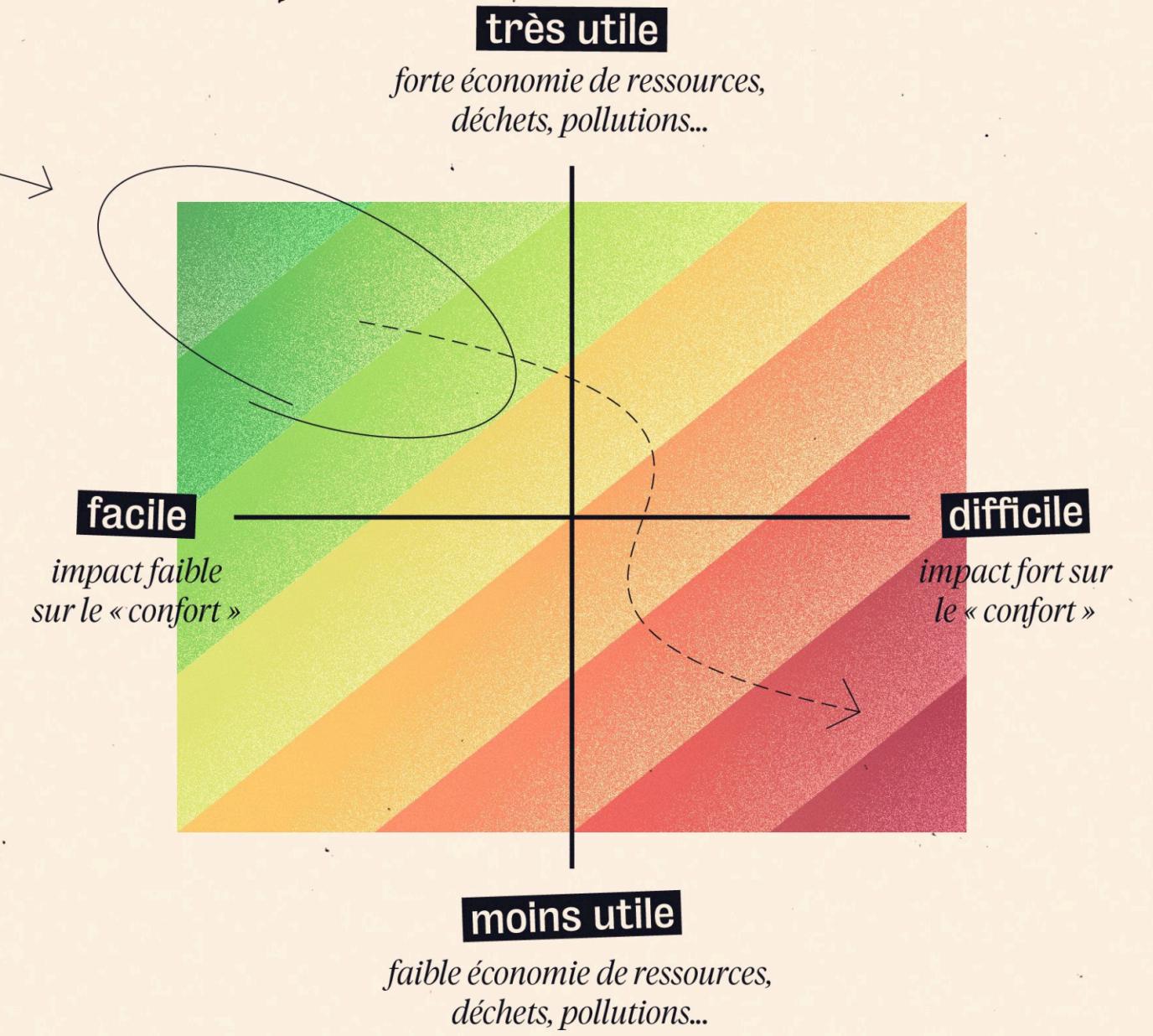
## CO<sub>2</sub> EMISSIONS IN A NUTSHELL

- > GLOBAL AVERAGE : 4.5 TONS / PERSON / YEAR
- > AVERAGE NETHERLANDS : 8.42 TONS / PERSON / YEAR
- > TARGET : 3 TONS / PERSON / YEAR

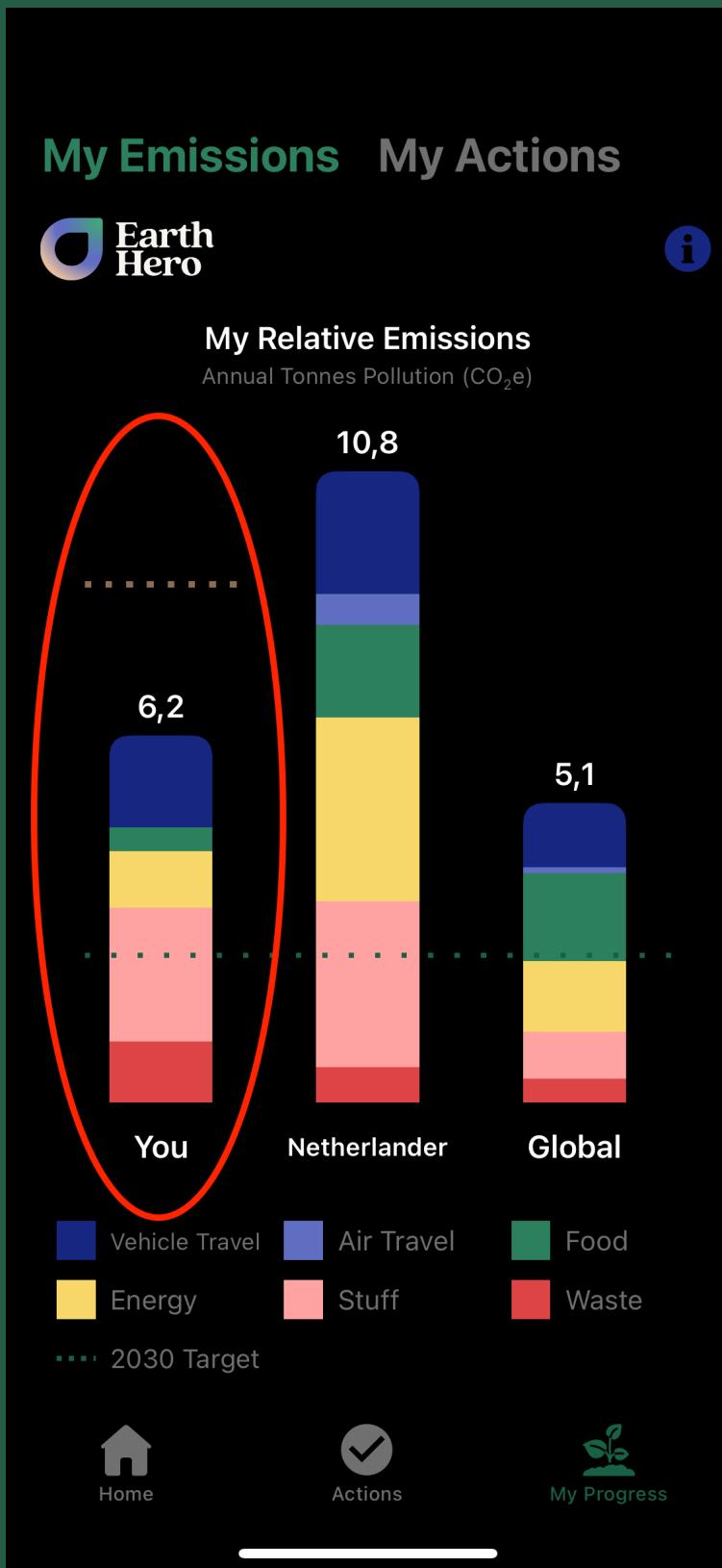
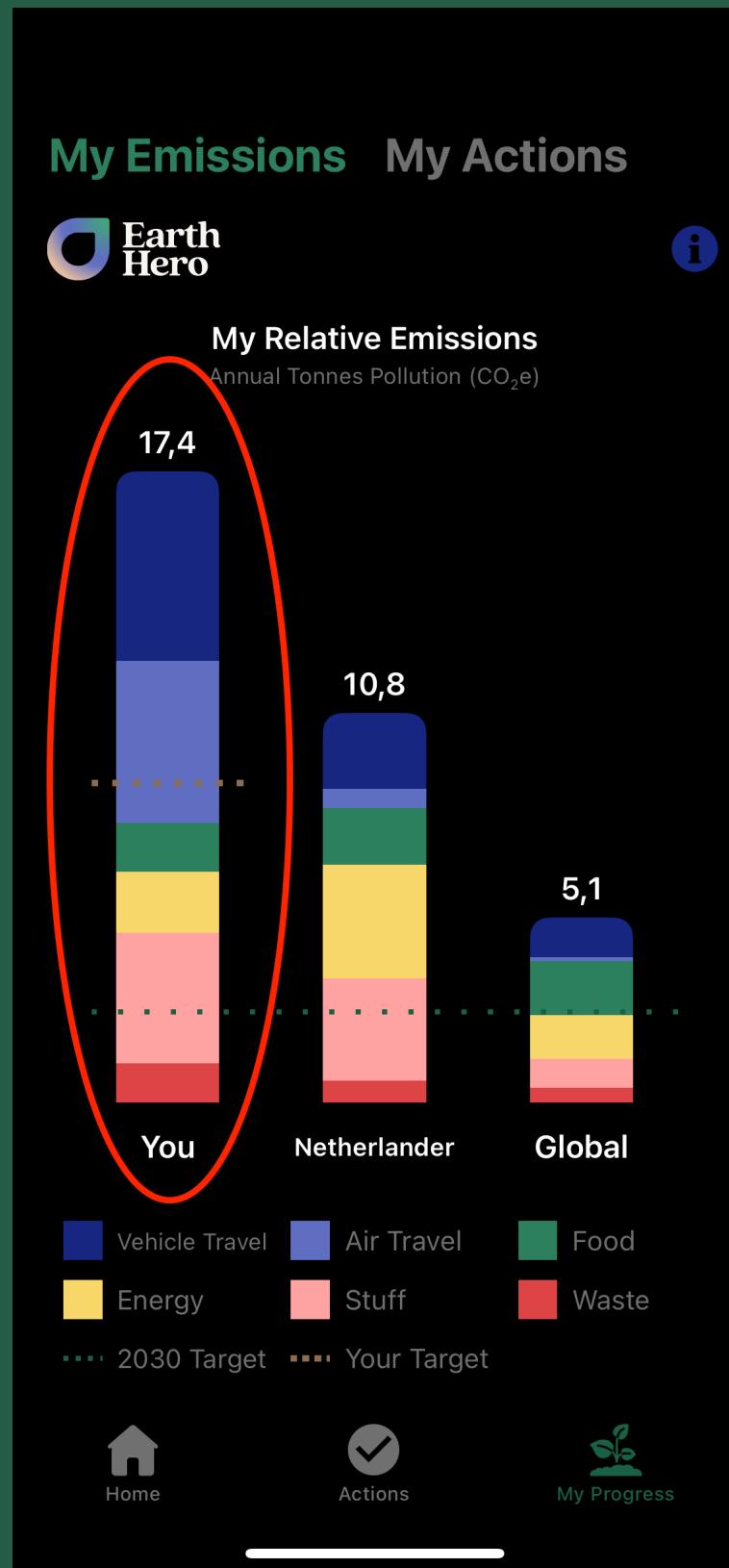


# MY FOOTPRINT IN 2018

- > TECH REPRESENTS ONLY 1/3 OF MY EMISSIONS
- > OVER HALF IS ME TRAVELLING
- > A TRIP TO SAN FRANSISCO = ROUGHLY 2 TONS OF CO2



LET'S PRIORITIZE





WE ARE NOT PERFECT. WE DON'T NEED TO BE ZEALOTS



BUT WE DO NEED TO BE PASSIONATE



AND BRING THE NEXT GENERATION WITH US



# The Lengrand-LAmbert

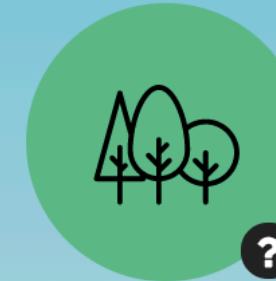
Member #29769



**6 months**  
climate positive



**16.38t**  
of carbon reduction



**263**  
trees in your forest

**WE CAN COMPENSATE FOR WHAT WE CAN'T REDUCE.**

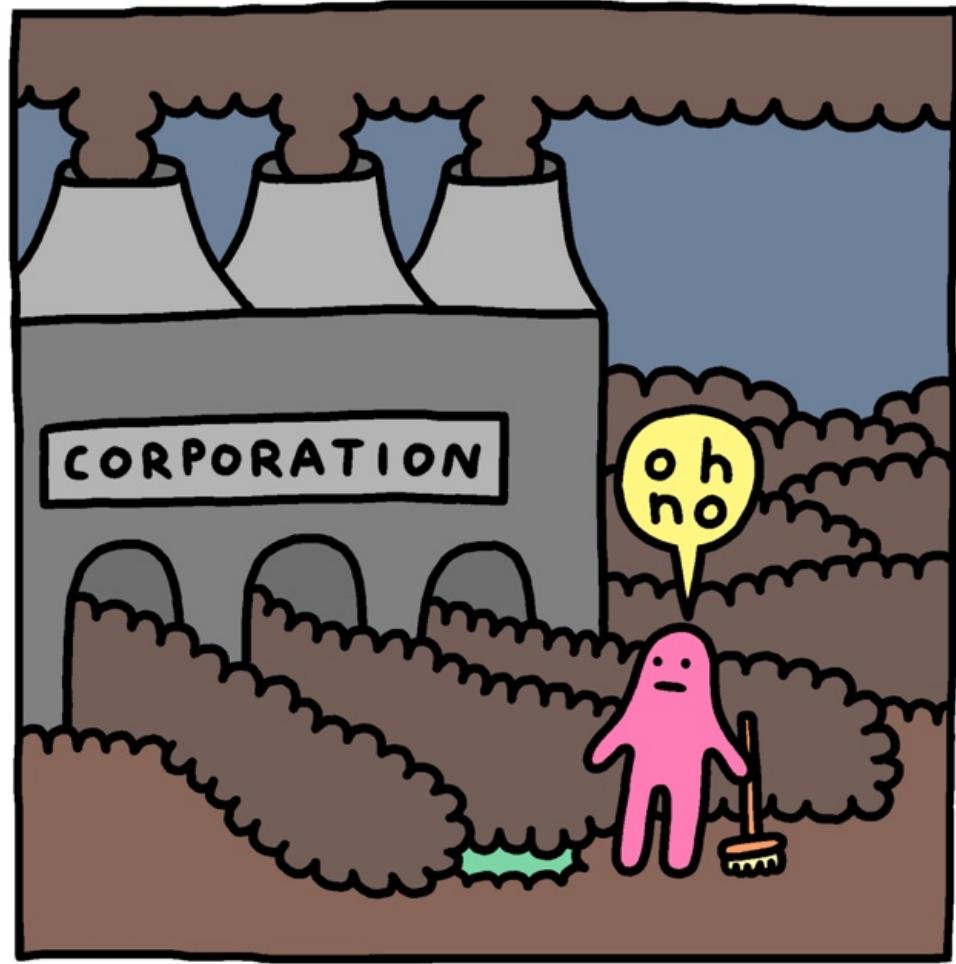
# SOME ADDITIONAL THOUGHTS

**GLOBALLY, THE RICHEST 10% ARE THOSE WITH INCOMES ABOVE  
ABOUT \$35,000 A YEAR...**

**IF WE ARE NOT THE CHANGE, WHO IS ?**

THE RICHEST 10% OF THE GLOBAL POPULATION, ARE RESPONSIBLE  
FOR ABOUT 52% OF GLOBAL EMISSIONS ...

"WE ARE JUST 1% OF EMISSIONS".



[webcomicname.com](http://webcomicname.com)

**'IT'S THE BIG CORPORATIONS'. TRUE BUT**

- > **WE BUY THEIR PRODUCTS**
- > **WE WORK THERE**
- > **WE VOTE**

**Just 100 companies responsible for 71% of global emissions, study says**

**A relatively small number of fossil fuel producers and their investors could hold the key to tackling climate change**



▲ An oil rig exploring for oil and gas. A new report says more than 50% of global industrial emissions since 1988 can be traced to just 25 companies. Photograph: Dazman/Getty Images/iStockphoto

Just 100 companies have been the source of more than 70% of the world's greenhouse gas emissions since 1988, according to a new report.

## Adyen launches Restore, enabling climate action at checkout



Download the image above to use for your publication

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### How we became climate neutral

To move forward, we looked at the footprint we left behind

Carbon negative commitment

Removing carbon from the atmosphere is an essential way to slow the accumulation of greenhouse gases and mitigate our impact on a warming climate. Shopify is committed to investing **at least \$1 million USD each year into carbon sequestration.**

<https://www.shopify.com> › about › environment

[Environment - Shopify](#)



## FIGHT CLIMATE CHANGE.

Unlike their  $\frac{1}{4}$  lb U.S. beef counterparts, original Beyond Burgers can be made by generating 90% fewer Greenhouse Gas Emissions. \*Univ. Of Michigan, 2018, Environmental impact of the original Beyond Burger vs  $\frac{1}{4}$  lb. U.S. beef. Life Cycle Analysis

## Decrement carbon: Stripe's negative emissions commitment



# AND MANY ARE COMMITTING

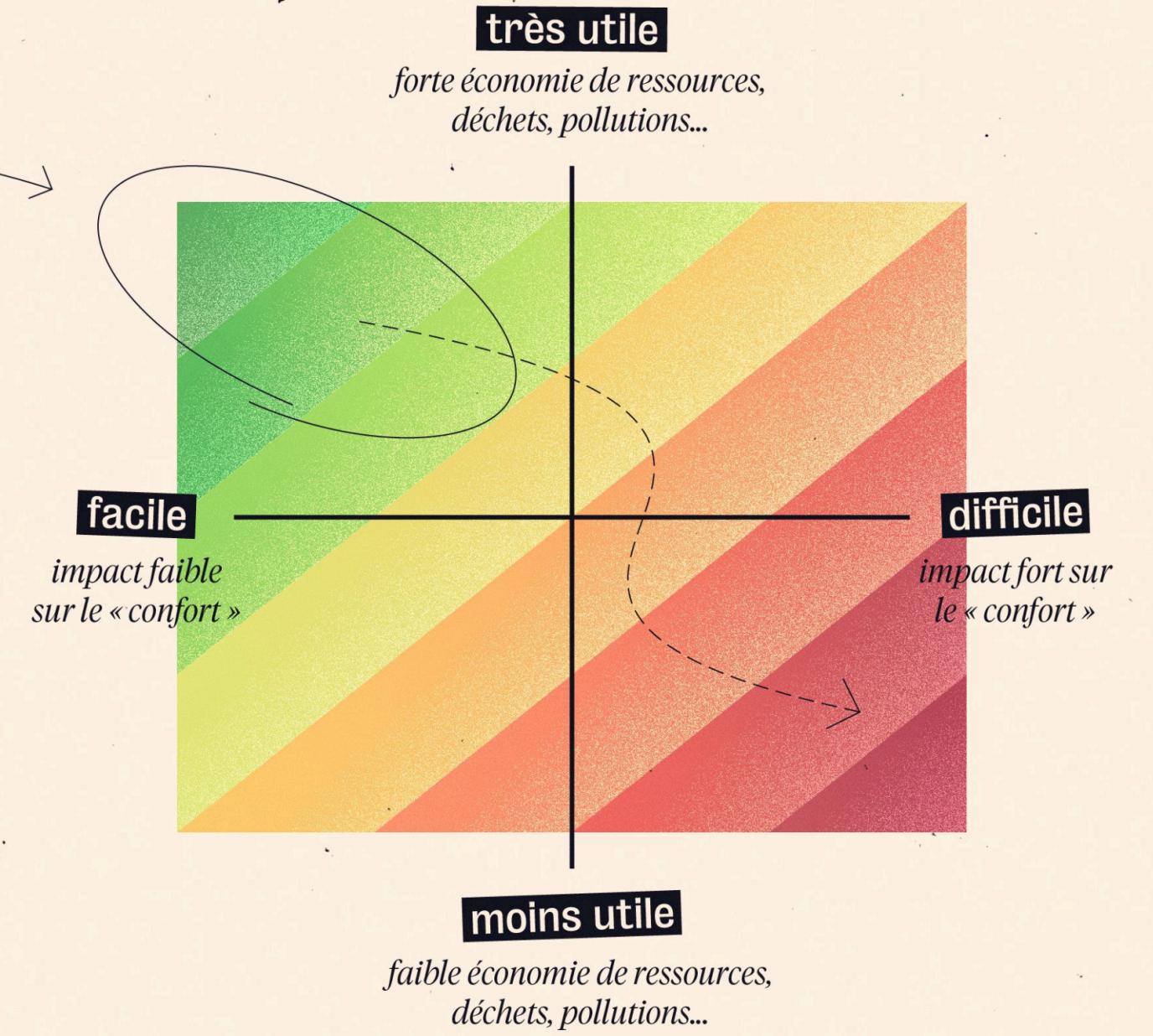
The research found **an hour of streaming emits the equivalent of about 55 grams of carbon dioxide into the atmosphere**, based on a user in Europe. About half the emissions come from the device used itself, with larger and older technology harming the environment the most. 11 Jun 2021

<https://fortune.com/2021/06/11/netflix-streaming-small-carbon-footprint/> :

**Netflix has a small carbon footprint according to Carbon Trust**

CHECK YOUR FACTS

# FINAL TIPS!



# PRIORITIZE



**NO DOOMING**

**BEST TIME TO BE ALIVE. DON'T LOSE HOPE**

IT'S **REALLY** NOT TOO LATE. BUT WE NEED TO ACT NOW.



**REDUCE  
REUSE  
RECYCLE**

## SOURCES :

- > [HTTPS://GITHUB.COM/JLENGRAND/CLIMATE-CHANGE-QUICKIE/](https://github.com/jlengrand/climate-change-quickie/)
- > [HTTPS://TWITTER.COM/JLENGRAND/STATUS/1454068295225708551?s=21](https://twitter.com/jlengrand/status/1454068295225708551?s=21)