
“TOGETHER FOR A CIRCULAR ECONOMY”

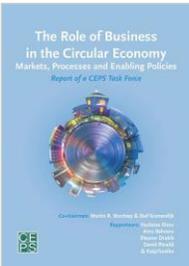
Presentation to Conference of the Ministry of
Economic Development and Technology

November 22nd, 2021

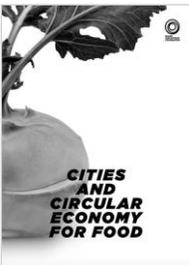
SYSTEMIQ IS A CONSULTANCY, THINK TANK AND INVESTMENT FIRM THAT AIMS TO DRIVE THE DELIVERY OF THE PARIS CLIMATE AGREEMENT AND SUSTAINABLE DEVELOPMENT GOALS



2017
New Plastics Economy
Presents an action plan on how concerted action by the industry could drive a transformation of the plastic packaging sector and deliver positive impacts worldwide.



2018
The Role of Business in the Circular Economy
Identifies key areas that can trigger the necessary changes in the coming years and analyses a number of policy areas.



2019
Cities and Circular Economy for Food
Highlights the enormous environmental damage caused by food production, responsible for ~25% of global greenhouse gas emissions.



2019
Implementing the European Green Deal
Sets out clear policy interventions that can shape a new economic landscape for Europe



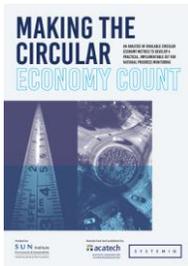
2019
Making Materials Work for Life – Introducing Producer Ownership
While the circular economy holds great economic, social and environmental potential, our current system is stacked against it. It's time for producer ownership.



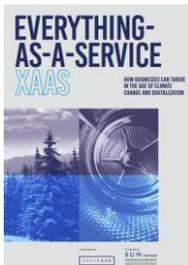
2020
Breaking the plastic wave
Ground-breaking model and publication impacting the global debate on plastic pollution and how to address it



2021
Circular Economy Roadmap für Deutschland
Lays out the roadmap for Germany for a gradual transition to a Circular Economy by 2030



2021
Making the circular economy count
Identifies practical, feasible set of CE metrics that can be applied to support national policymakers in steering the transition

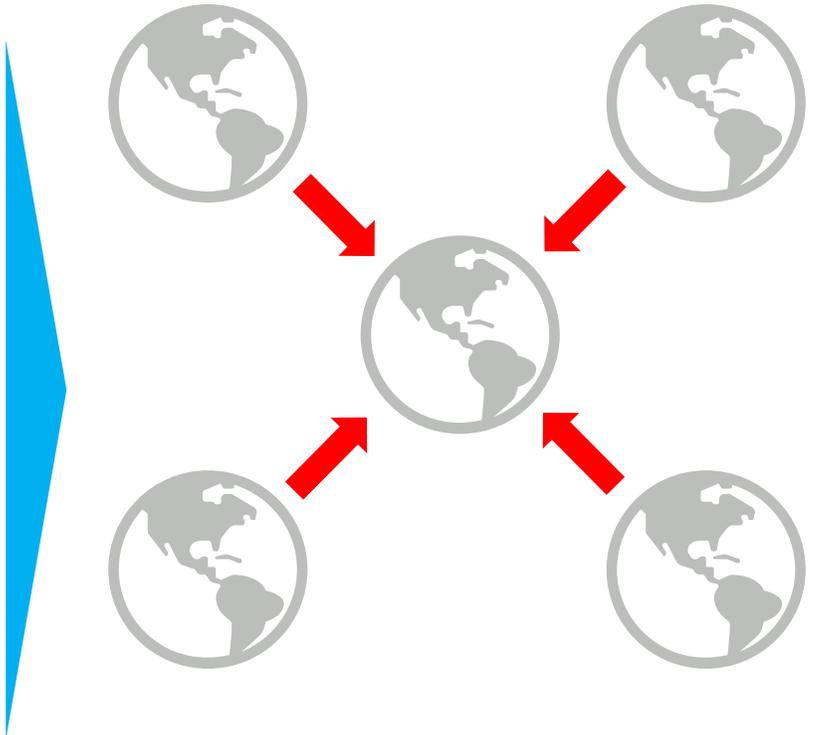
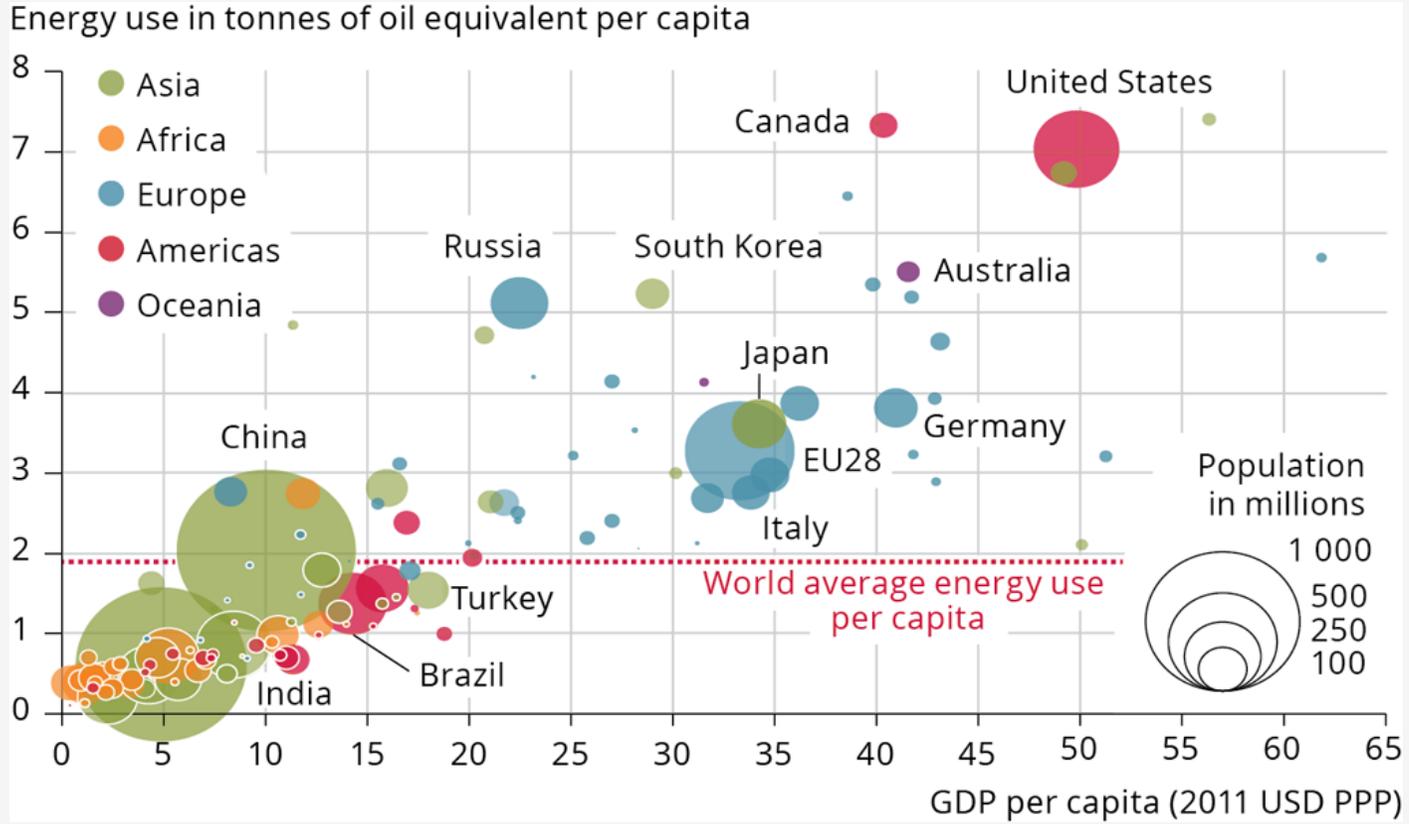


2021
XaaS - Everything-as-a-Service
Describes how businesses can thrive in the age of climate change and digitalization



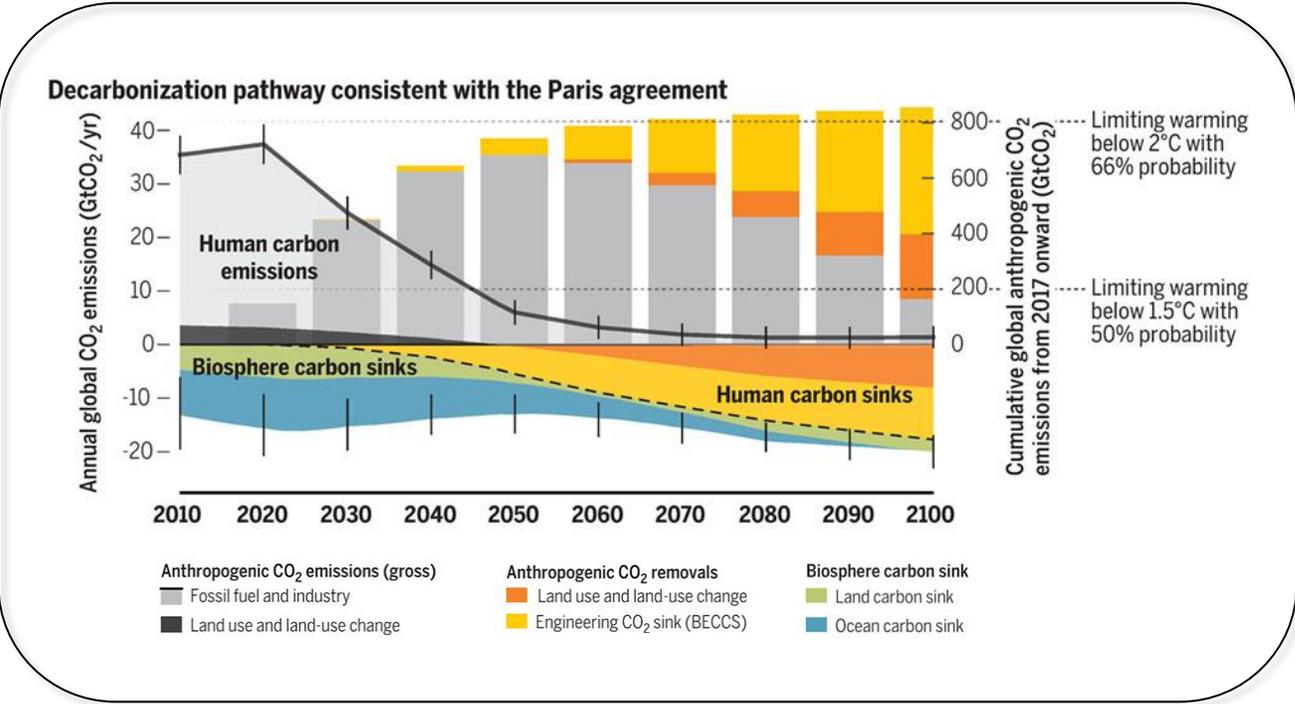
OUR CURRENT, 'LINEAR', ECONOMIC MODEL IS NOT SUSTAINABLE...

We can see the future, if everyone lives like a North American

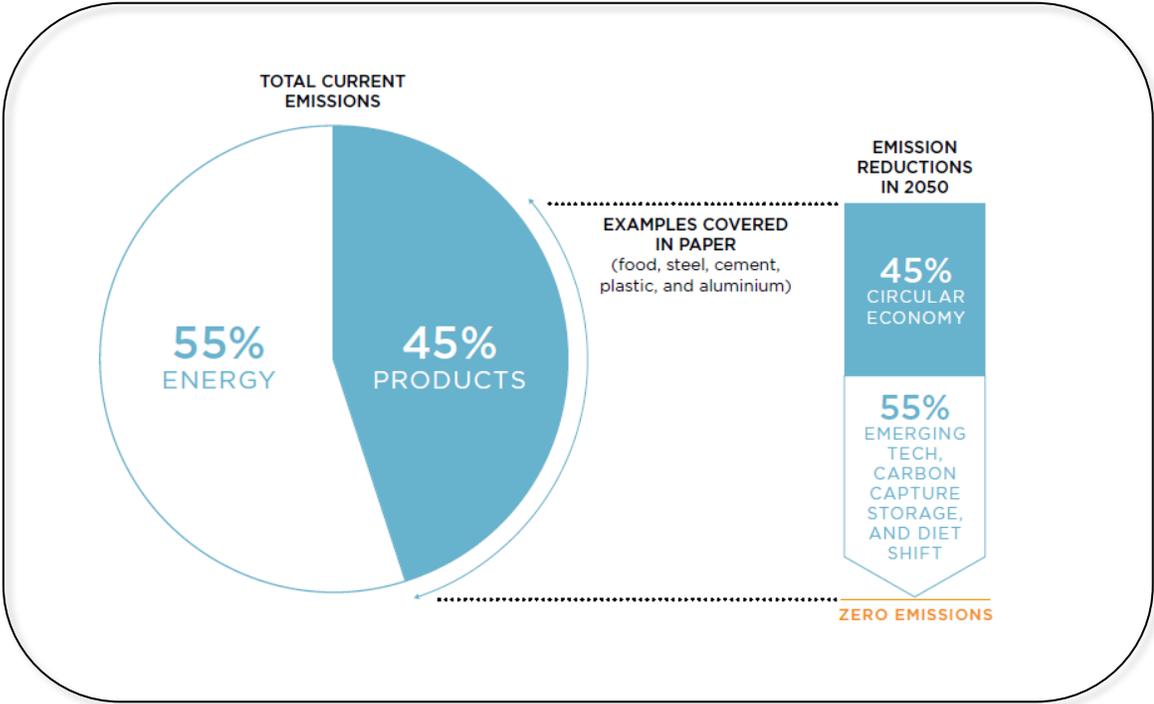


Dig, Use, Dispose

CIRCULAR ECONOMY APPROACHES CAN HELP DECARBONISE OUR ECONOMY IN LINE WITH THE PARIS AGREEMENT



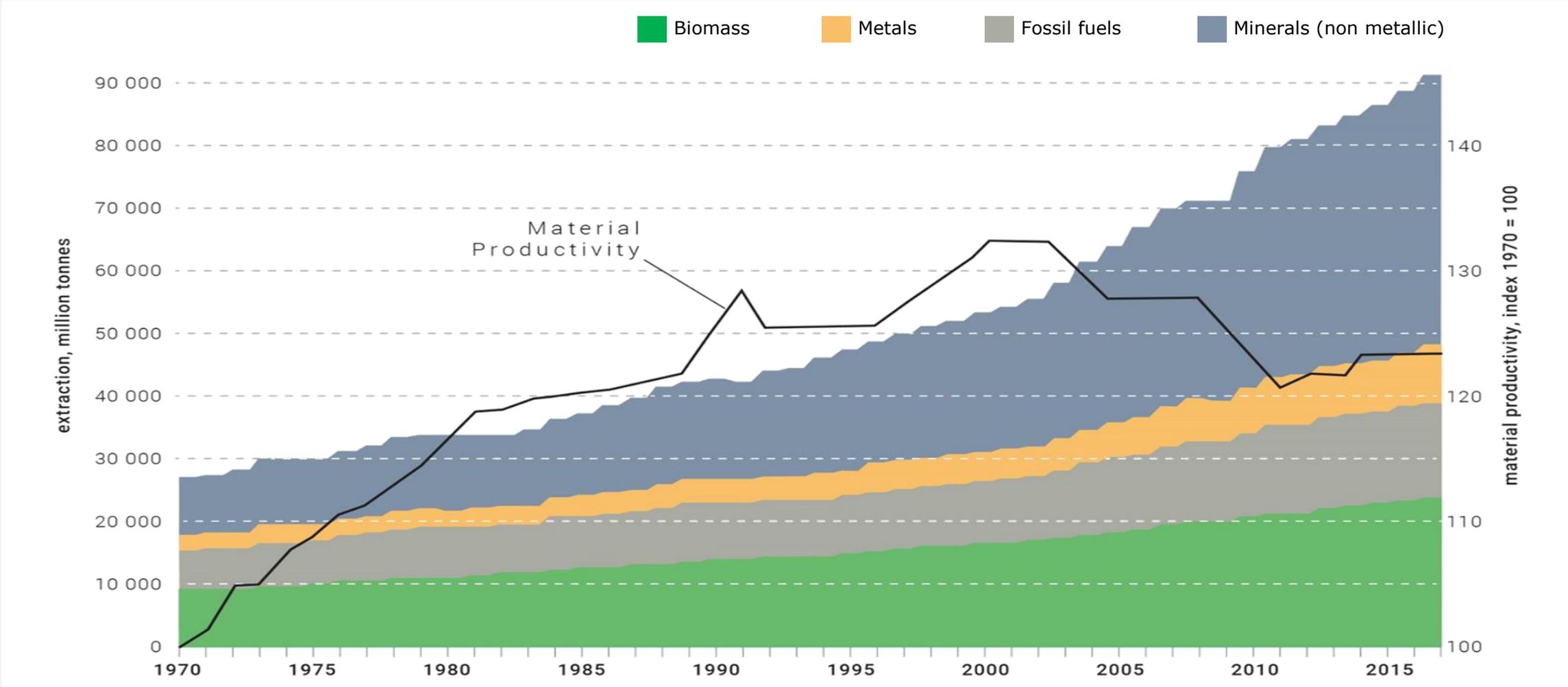
Source: Rockström, J. et al. PNAS August 14, 2018 115 (33) 8252-8259



Source: Ellen Macarthur Foundation / Material Economics

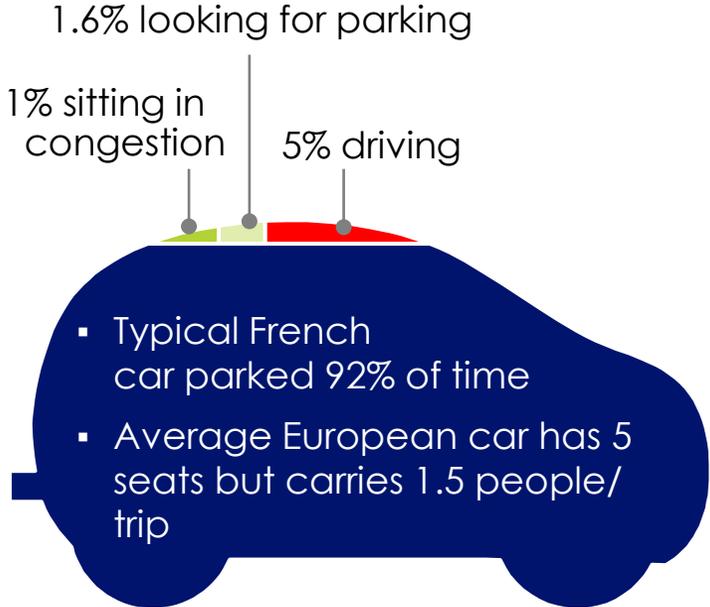
YET GLOBAL MATERIAL PRODUCTIVITY IS DECLINING – NOT GROWING

Worldwide resource extraction and resource productivity, 1970-2017

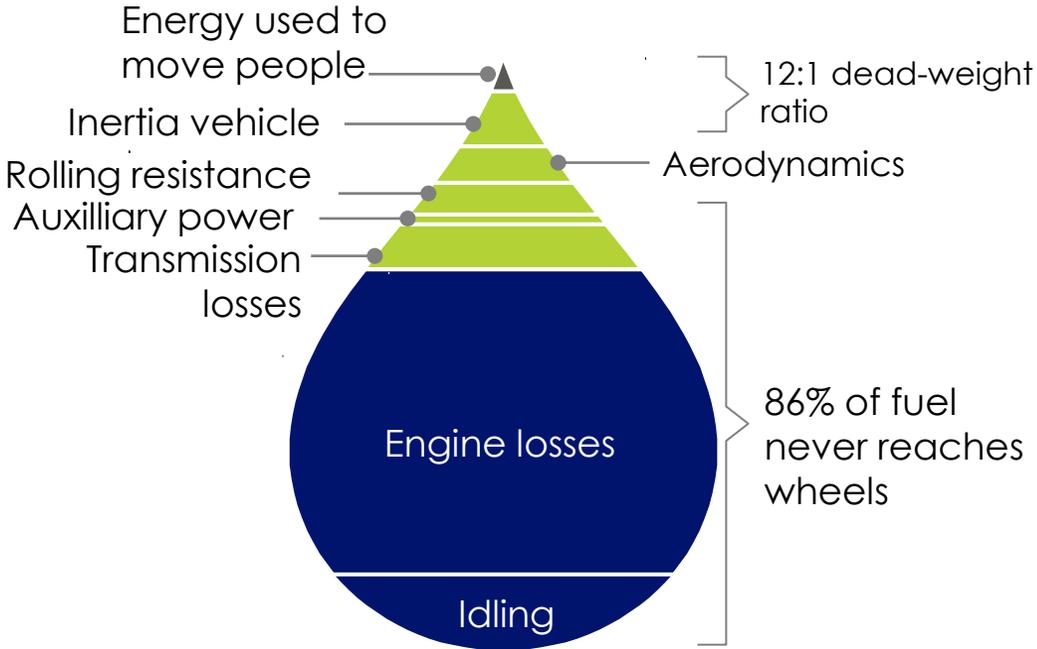


STRUCTURAL WASTE IS EMBEDDED IN MANY SYSTEMS – EXAMPLE MOBILITY

Car utilisation

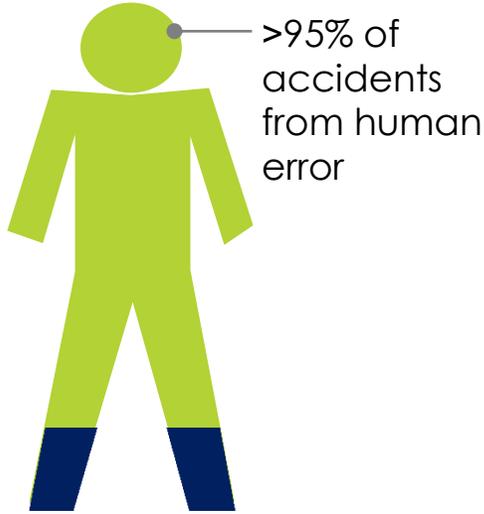


Tank-to-wheel energy flow - gasoline



Deaths and injuries/year on road

30,000 deaths in accidents and 4x as many disabling injuries

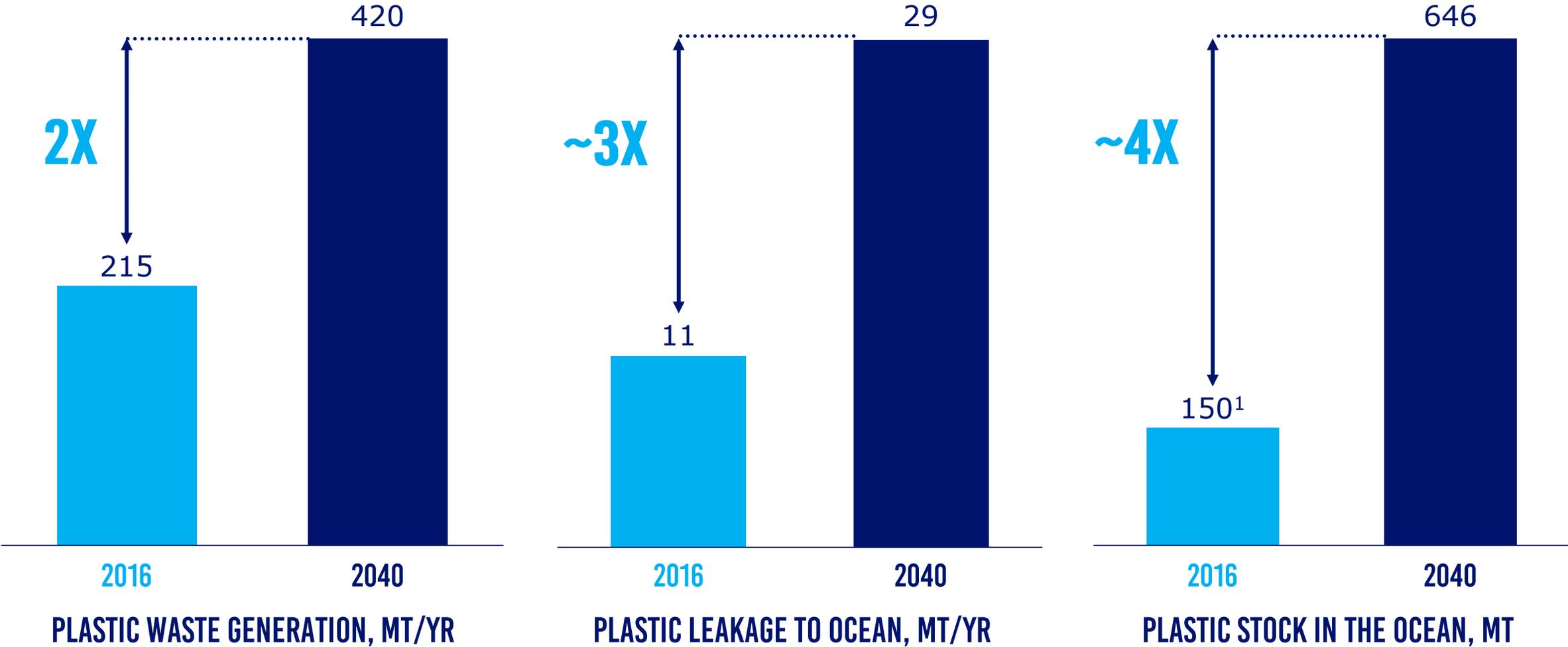


LAND UTILISATION:

- Road reaches peak throughput only 5% of time and only 10% covered with cars then
- 50% of most city land dedicated to streets and roads, parking, service stations, driveways, signals, and traffic signs

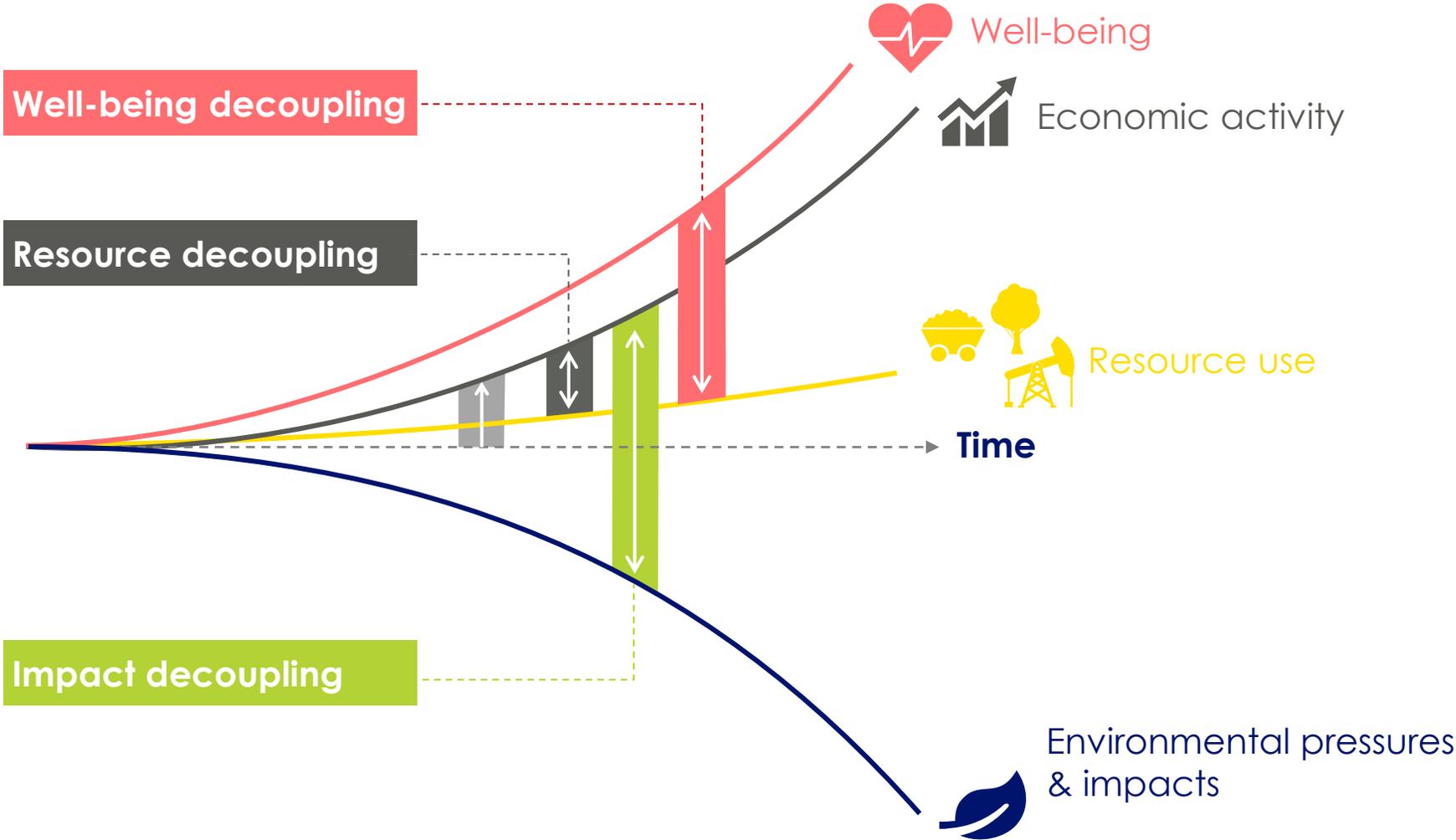
POLLUTION GROWS ON A GLOBAL SCALE – EXAMPLE PLASTICS

MUNICIPAL SOLID WASTE PLASTIC



Source: SYSTEMIQ and Pew Charitable Trusts (2020) "Breaking the Plastic Wave"

RADICAL CIRCULAR ECONOMY APPROACHES REQUIRE TRIPLE DECOUPLING, DEMATERIALISATION AND DEMAND SHIFTS – THIS IS NOT JUST RECYCLING!



THE EUROPEAN UNION HAS EMBRACED CARBON NEUTRALITY AND CIRCULARITY AS THE NEW NORMAL AND WILL INCREASE REGULATORY PRESSURE

Carbon-neutral EU by 2050



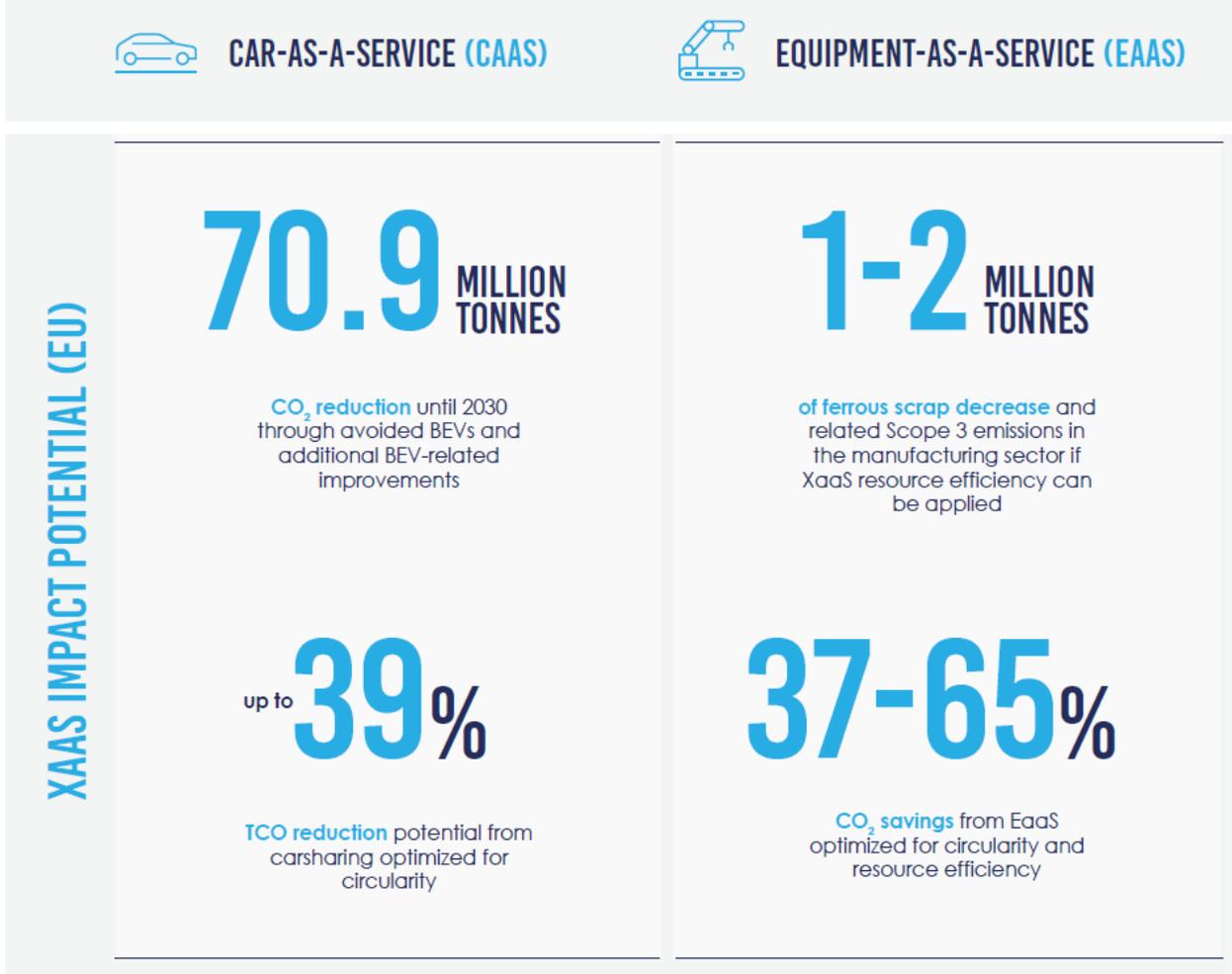
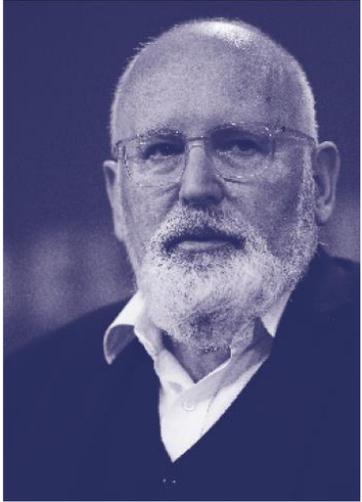
“The European Green Deal is our new growth strategy. It will help us cut emissions while creating jobs.

- **Ursula von der Leyen**
President of the European Commission

To support circular design of all products, the Commission will...

- Prioritize **reducing and reusing** materials before recycling
- Integrate mandate on **recycled content** levels
- Support **research and innovation** on transport, including **batteries**, clean hydrogen and **low-carbon steel**
- **Stop exporting waste** outside of the EU
- Emphasise **renting and sharing** sustainable goods and services

PRODUCT-TO-SERVICE SHIFTS HAVE BEEN PRIORITISED AS A KEY CIRCULAR ECONOMY LEVER



“We need innovative circular business models that are increasingly service-oriented and drastically reduce our dependency on primary resource extraction....this is an important contribution to one of the key priorities of the European Green Deal and its Circular Economy Action Plan”

Frans Timmermans
Executive Vice-President of the European Commission



CONSUMER BEHAVIOUR IS CHANGING RAPIDLY; COMPANIES ARE ADAPTING

Consumers increasingly seeking out more sustainable products...

- A recent EIU report indicated that **searches for sustainable goods increased by >70%** between 2016 and 2020 globally⁽¹⁾
- In 2019, a survey suggested ~85% of respondents believe their behavior can have a positive impact and **>60% are less willing to buy products from companies with poor sustainability performance**⁽²⁾
- Sales of **plant-based foods grew 43%** from 2018 to 2020, compared to just 17% growth for total U.S. retail food sales⁽³⁾

... and companies are responding accordingly

- **Amazon** launched 'Climate Pledge Friendly' to make it easier for customers to search and shop for sustainable products
- **PepsiCo** invested \$3.2 billion in SodaStream to avoid ~67 billion single-use plastic bottles by 2025
- **Ikea** commits to be 100% circular by 2030

(1) "An Eco-wakening: Measuring global awareness, engagement and action for nature", Economist Intelligence Unit, May 2021; (2) Survey: Consumer sentiment on sustainability in fashion, McKinsey, July 2020; (3) Learning from Consumers: How shifting demands are shaping companies' circular economy transition, ING, 2019 (3) Good Food Institute, April 2021; company websites

...AND CAPITAL MARKETS RECOGNIZE THEIR VALUE

○ Market valuation (in bn USD)

■ Dematerialized product service systems

■ Incumbent business model

Sustainable product transformations



>1

8.5

Gap

1% CAGR for revenues (2013-2019); low ESG rating

Patagonia:

6% CAGR revenue (13-19); 1% for planet, sustainability at the core of strategy

143

911

VW:

~2.8mn cars sold in 2020; 3.4 mn in 2019

Tesla

~500K cars sold in 2020; <370K in 2019

Utility/service-oriented transformations



9
105

Accor:

760,000 own rooms

Airbnb:

Access to 6 million rooms

55
88

BMW:

~2.5mn cars sold in 2020

Uber:

5 million drivers, globally

Radical systems transformations



8
82

Lufthansa:

Heavily affected by global pandemic

Zoom:

4x growth in market cap (vs. Dec 2019)

0
294

Blockbuster

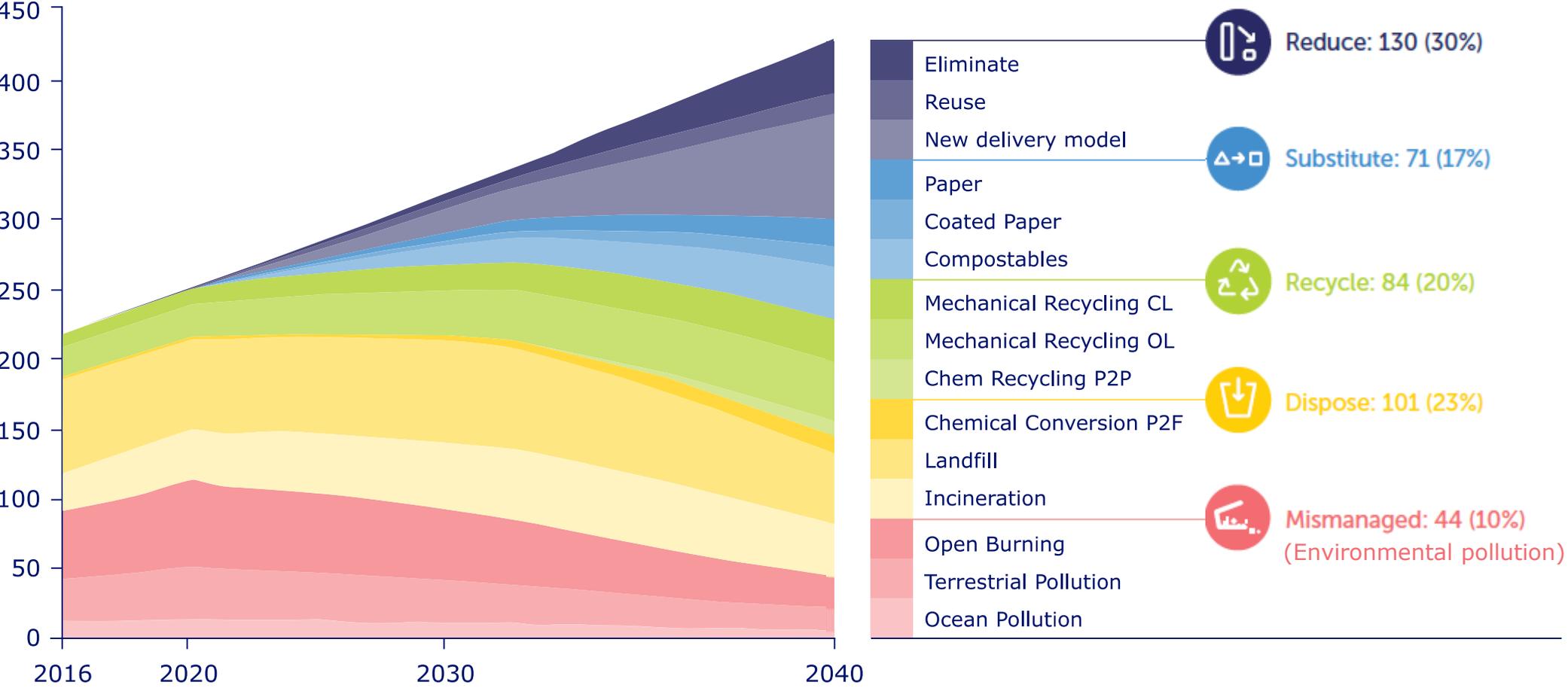
Filled bankruptcy

Netflix:

25 bn revenue (2020)

CIRCULAR ECONOMY APPROACHES OFFER CREDIBLE SYSTEMIC SOLUTIONS – E.G. PLASTICS

mT/y of MSW plastic waste under the system change scenario



TOGETHER FOR A CIRCULAR ECONOMY

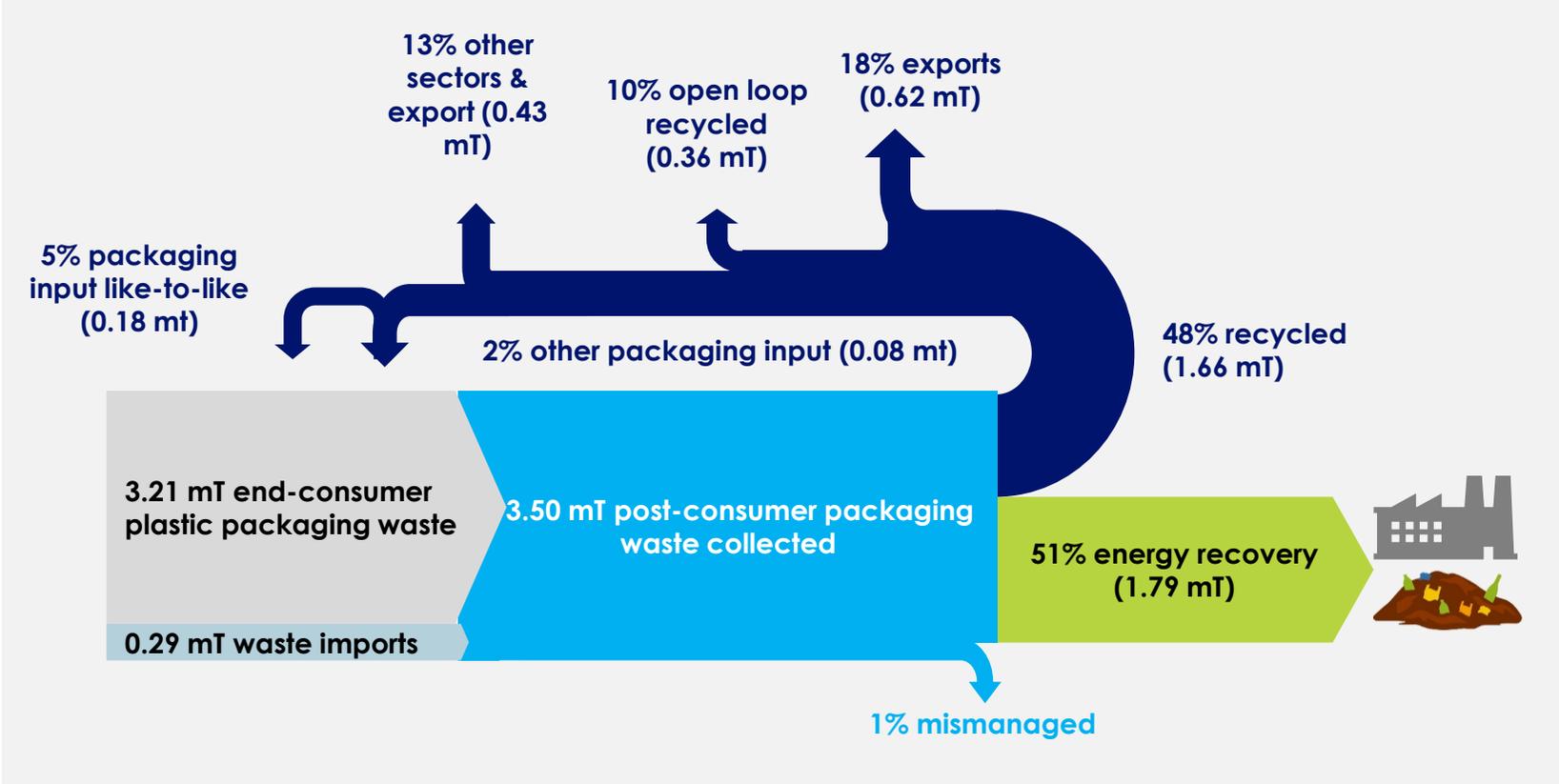
BEN.DIXON@SYSTEMIQ.EARTH



THANK YOU

THE GERMAN PLASTIC PACKAGING SYSTEM IS LINEAR...

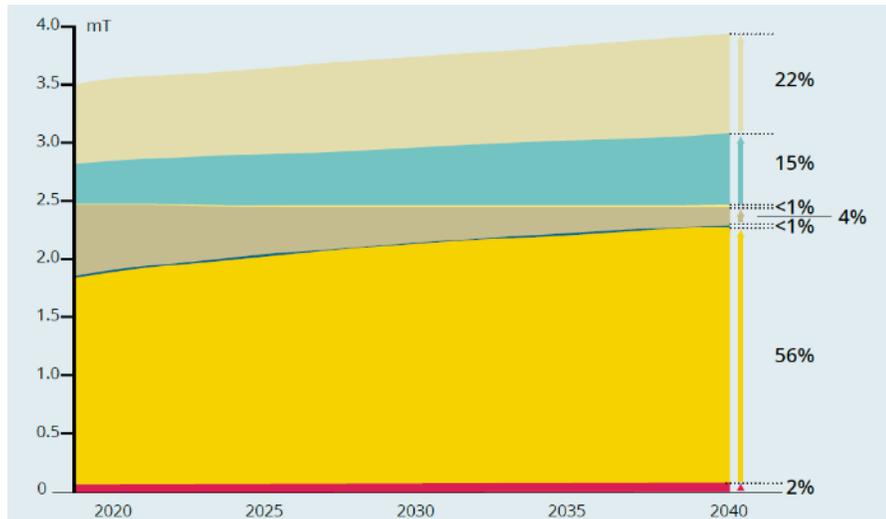
- **THE THROWAWAY ECONOMY IS WASTEFUL:** HIGH RESOURCE CONSUMPTION - IN 2018, THERE WERE 18.9 MILLION TONNES OF PACKAGING WASTE / 3.5 M T OF PLASTIC IN GERMANY. RISING TREND.
- TODAY, 89% OF ALL PACKAGING IS STILL MADE FROM VIRGIN MATERIAL, WHILE OVER 50% OF OUR PACKAGING WASTE (CA. 1.6 MILLION TONNES) IS INCINERATED
- **...AND THREATENS THE CLIMATE:** PLASTIC PACKAGING CONTRIBUTES SIGNIFICANTLY TO GREENHOUSE GAS EMISSIONS (15.3MT CO2EQ P.A.)



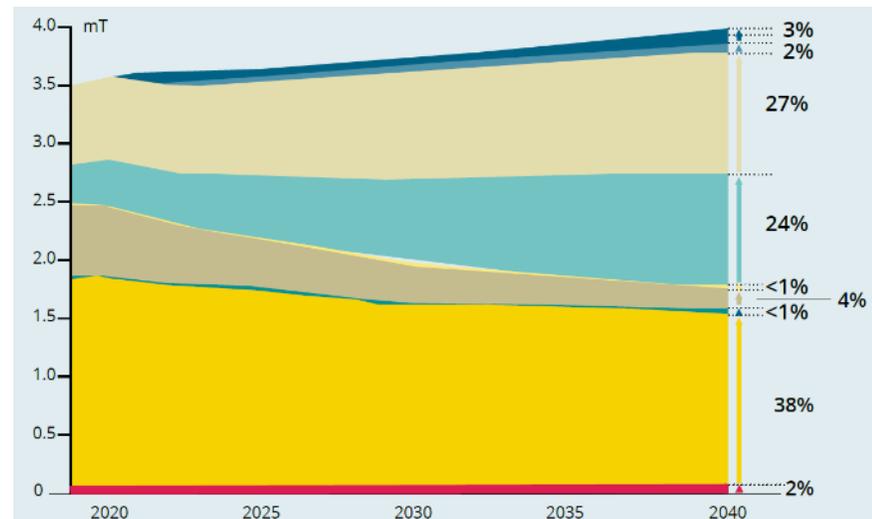
...AND RISKS REMAINING FAR FROM A CIRCULAR ECONOMY IN THE NEXT DECADES

THE VISION OF A WASTE-FREE, CLOSED-LOOP PLASTICS PACKAGING INDUSTRY IS CURRENTLY STILL FAR FROM REALITY

Business-as-usual Scenario (BAU)



Reduce & Substitute Scenario



- Reduce Eliminate
- Reduce NDM
- CL Recycling
- OL Recycling
- Chemical P2P
- Exports
- Chemical P2F
- Incineration
- Mismanaged

Under a "business-as-usual" (BAU) scenario, **plastic volumes for packaging are expected to grow moderately**: about 0.6% per year or 14% by 2040.

The existing obligations are **not sufficient to enable the transition** to a circular economy in packaging.

GOOD NEWS: A SYSTEM CHANGE IS POSSIBLE

USING ALL THE LEVERS AT OUR DISPOSAL, WE CAN INITIATE SYSTEMIC CHANGE

- THE ANALYSIS SHOWS THAT GERMANY CAN REDUCE THE TOTAL VOLUME OF WASTE BY 40% BY 2040
 - DECLINE THE CONSUMPTION OF NEW PLASTICS BY 60%
 - ELIMINATE THE INCINERATION OF WASTE FOR ENERGY GENERATION BY 70%
- IN THIS WAY, MORE THAN 20 MILLION TONNES OF PLASTIC CAN BE SAVED BY 2040 - MORE THAN SIX TIMES THE ANNUAL CONSUMPTION OF PLASTIC PACKAGING IN GERMANY.
- THIS WOULD BE AN EFFECTIVE BUILDING BLOCK FOR CLIMATE PROTECTION: 68 MILLION TONNES OF GREENHOUSE GASES COULD BE SAVED BY 2040.

System Change Scenario (SCS)

