



The European Green Deal

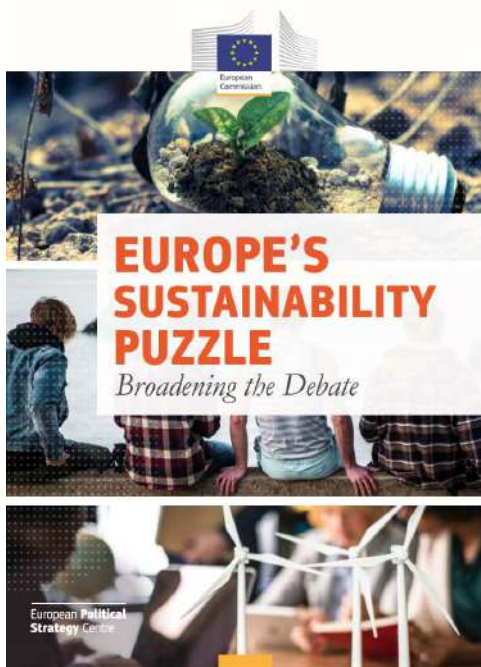
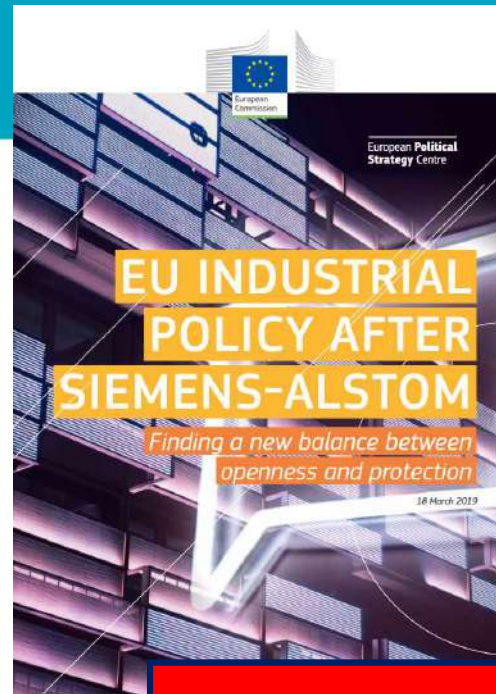
Reinventing the EU's Economy

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European Commission

@SaidElKhadraoui

**Joint Conference on Strengthening the
Industrial Base in Europe**
Brussels 9 October 2019



A Union that strives for more

My agenda for Europe

candidate for President of the European Commission

Ursula von der Leyen

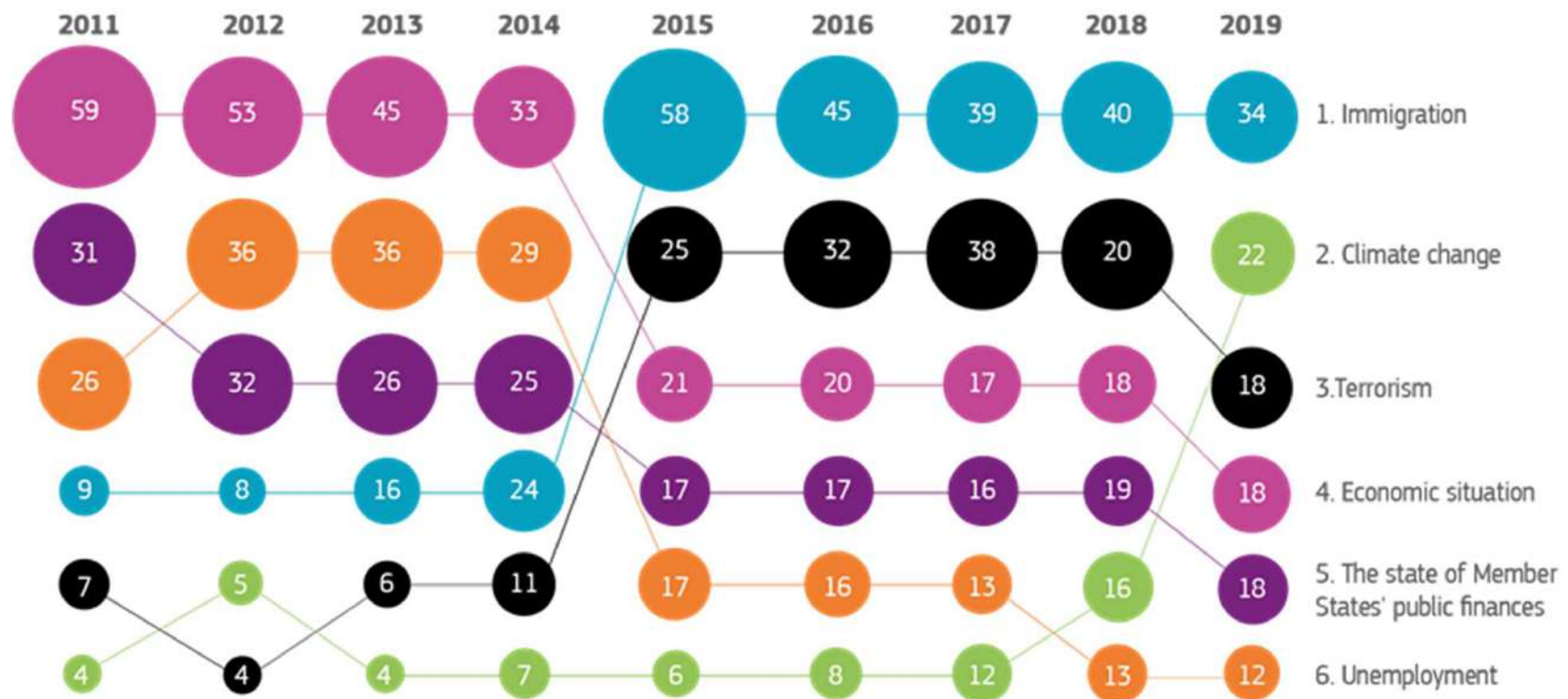


**POLITICAL GUIDELINES FOR THE NEXT
EUROPEAN COMMISSION 2019-2024**

A large red arrow points from the left towards the text.

What do people think?

Most important issues the EU is facing at the moment



What do experts think?

Global Risks: social & environmental risks on top

Top 10 risks in terms of **Likelihood**

- 1 Extreme weather events
- 2 Natural disasters
- 3 Cyberattacks
- 4 Data fraud or theft
- 5 Failure of climate-change mitigation and adaptation
- 6 Large-scale involuntary migration
- 7 Man-made environmental disasters
- 8 Terrorist attacks
- 9 Illicit trade
- 10 Asset bubbles in a major economy

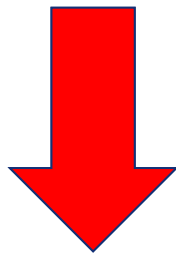
Top 10 risks in terms of **Impact**

- 1 Weapons of mass destruction
- 2 Extreme weather events
- 3 Natural disasters
- 4 Failure of climate-change mitigation and adaptation
- 5 Water crises
- 6 Cyberattacks
- 7 Food crises
- 8 Biodiversity loss and ecosystem collapse
- 9 Large-scale involuntary migration
- 10 Terrorist attacks

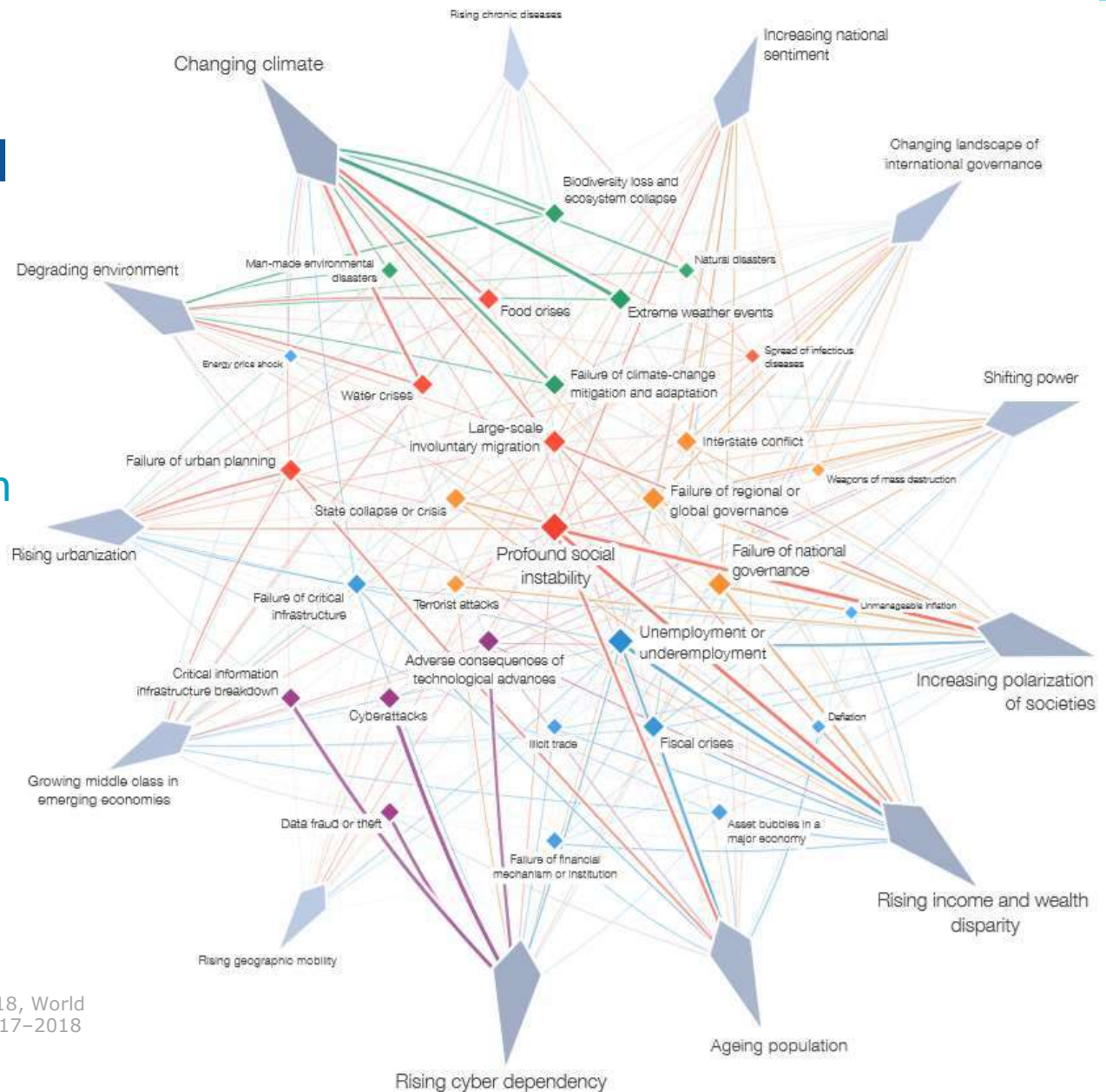
Source: World Economic Forum, The Global Risks Report 2019



Issues are very
much **connected**



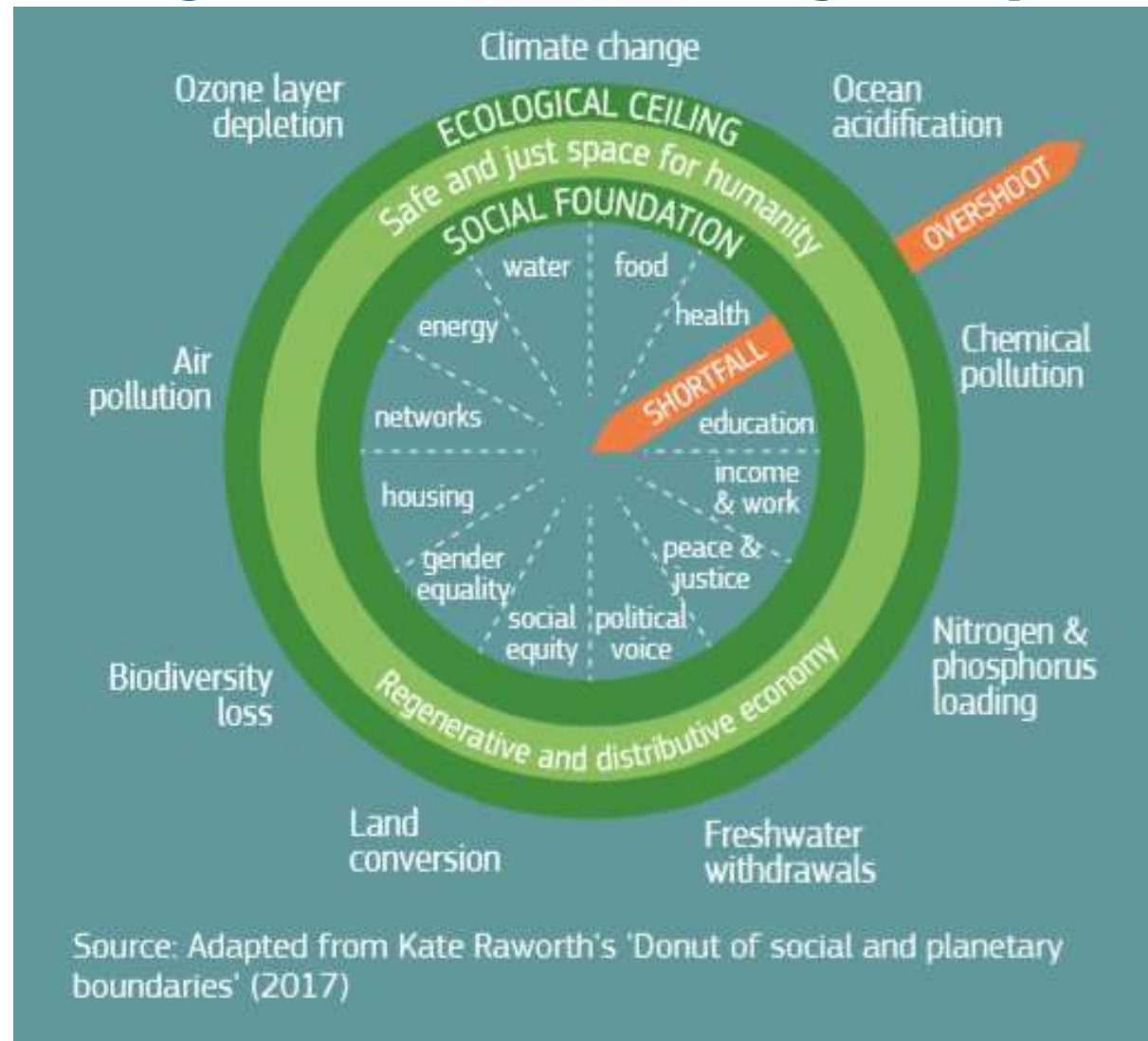
What does this mean in
terms of **strategy
development** and
policy making?



Sustainable Development is therefore **more than ticking the boxes of the 17 SDGs**

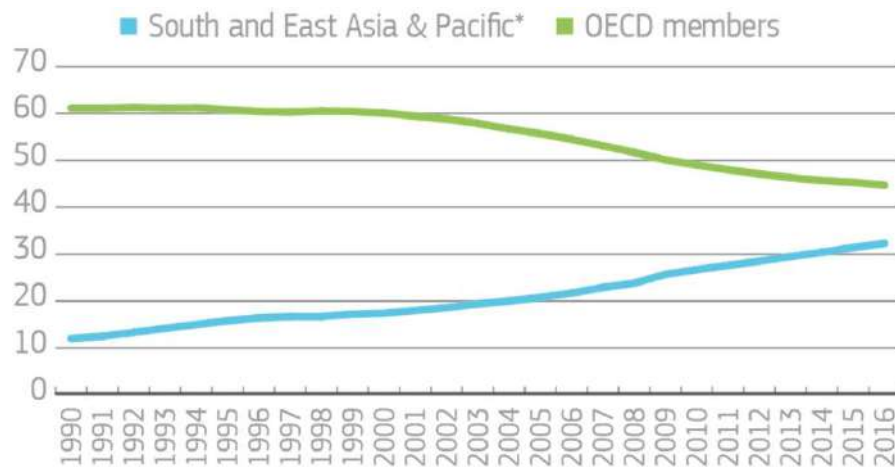


In other words: how to get in the **'safe and just space for humanity'**?



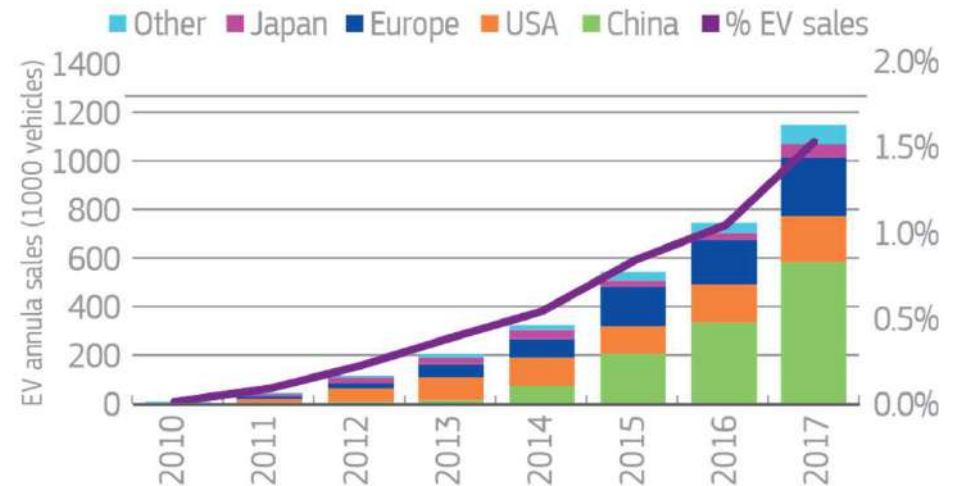
In a world where the Global Economy is Shifting East & Geopolitics is everywhere

Share of developing Asia in total world GDP
(constant 2011 international \$ PPP)

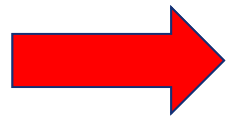


Source: World Bank

Annual sales of electric vehicles



Source: Joint Research Centre, Bloomberg New Energy Finance



Chinese companies needed less than 15 years to take over the **solar photovoltaic sector**

Top 10 manufacturers of solar panels/cells, 2004 to 2018

Production 2001

- 1 Sharp
- 2 Kyocera
- 3 Shell solar
- 4 BP solar
- 5 Astropower
- 6 Sanyo
- 7 Isofoton
- 8 RWE Solar
- 9 Mitsubishi
- 9 Photowatt

Production 2004

- 1 Sharp
- 2 Kyocera
- 3 BP solar
- 4 Q-Cells
- 5 Mitsubishi
- 6 Shell Solar
- 7 Sanyo
- 8 Schott Solar
- 9 Isofoton
- 10 Motech

Production 2009

- 1 First Solar
- 2 Suntech
- 3 Sharp
- 4 Q-Cells
- 5 Yingli
- 6 JA Solar
- 7 Kyocera
- 8 Trina Solar
- 9 SunPower
- 10 Gintech

Production 2010

- 1 Suntech
- 2 First Solar
- 3 Yingli Solar
- 4 JA Solar
- 5 Sharp
- 6 Q-Cells
- 7 Gintech
- 8 Motech
- 9 Trina Solar
- 10 Kyocera

Production 2017-2018

- 1 Jinko Solar
- 2 Trina Solar
- 3 Canadian Solar
- 4 JA Solar
- 5 Hanwha Q Cells
- 6 GCL-SI
- 7 LONGi Solar
- 8 Risen Energy
- 9 Shunfeng
- 10 Yingli Green

In 2018

8 out of 10 Global manufacturers did not exist in 2010

7 out of 10 Global manufacturers are Chinese companies





















No 'Global' manufacturer of Solar Cells

Sources: Luxembourg Ministry of the Economy, Photon International, Joint Research Centre, PV-Tech.org



Opportunities: Europe is strong in Clean Technologies

Largest companies by market capitalisation

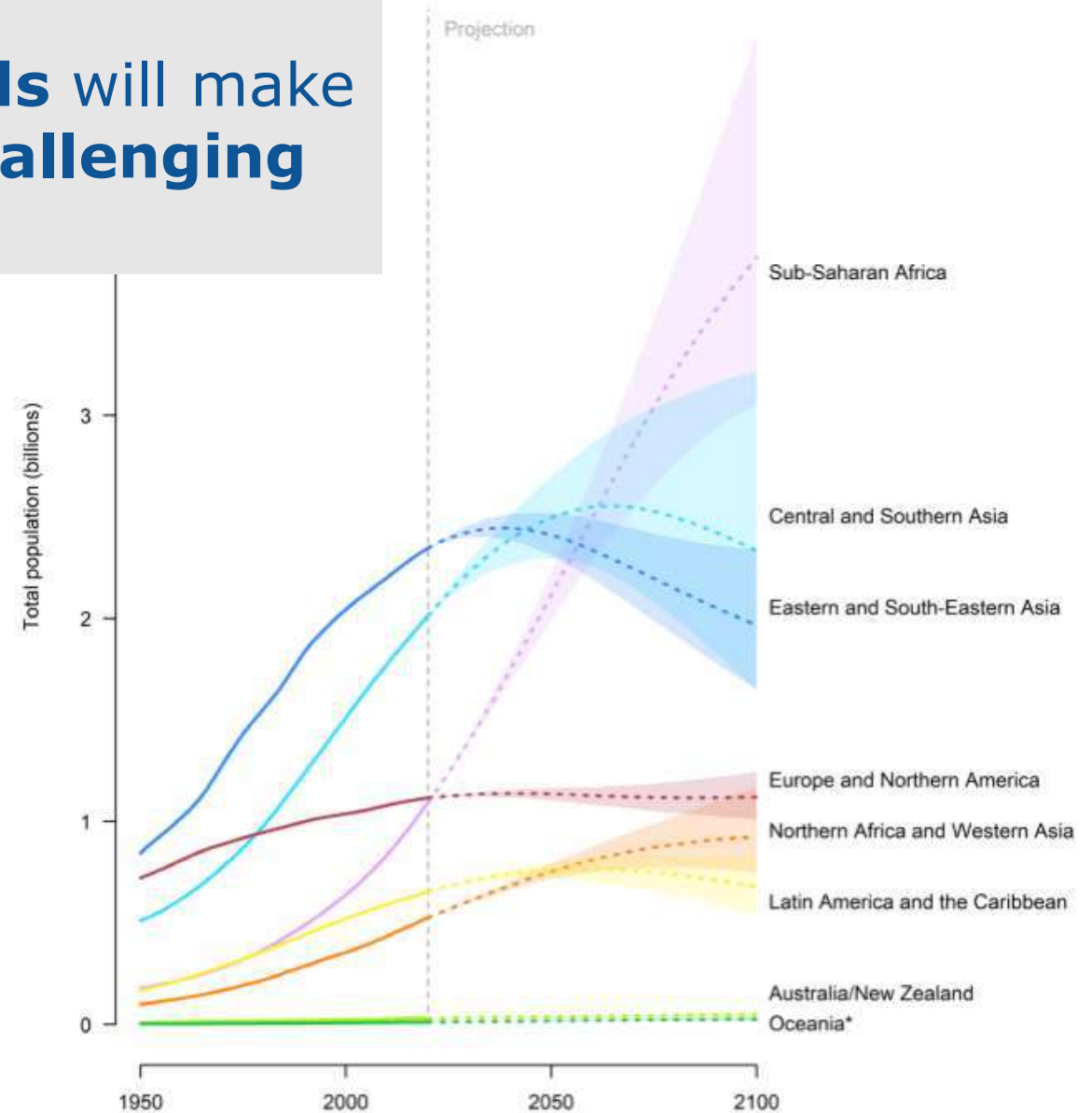
	Rank	Company Name	Market Cap. (billion Euro)
	1	Tesla Inc	46.47
	2	Orsted A/S	26.19
	3	Verbund AG	15.08
	4	Vestas Wind Systems A/S	13.70
	5	BYD Co Ltd	13.67
	6	Samsung SDI Co Ltd	12.96
	7	Novozymes A/S	11.18
	8	Sociedad Quimica y Minera de Chile SA	9.86
	9	Daqo New Energy Corp	9.20
	10	Siemens Gamesa Renewable Energy SA	8.82
	11	NIO INC - ADR	7.43
	12	EDP Renovaveis SA	6.87
	13	Kingspan Group PLC	6.67
	14	Xinjiang Goldwind Science & Technology Co Ltd	5.79
	15	Meridian Energy Ltd	5.52
	16	China Longyuan Power Group Corp Ltd	5.21
	17	Energy Absolute PCL	5.20
	18	Nibe Industrier AB	5.08
	19	Cree Inc	4.60
	20	Universal Display Corp	4.56

Source: New Energy Global Innovation Index (NEX), 7 February 2017

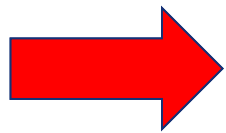
And where
Demographic Trends will make
things even **more challenging**



Source: UN Population



How to translate this into the next European Commission's European Green Deal?

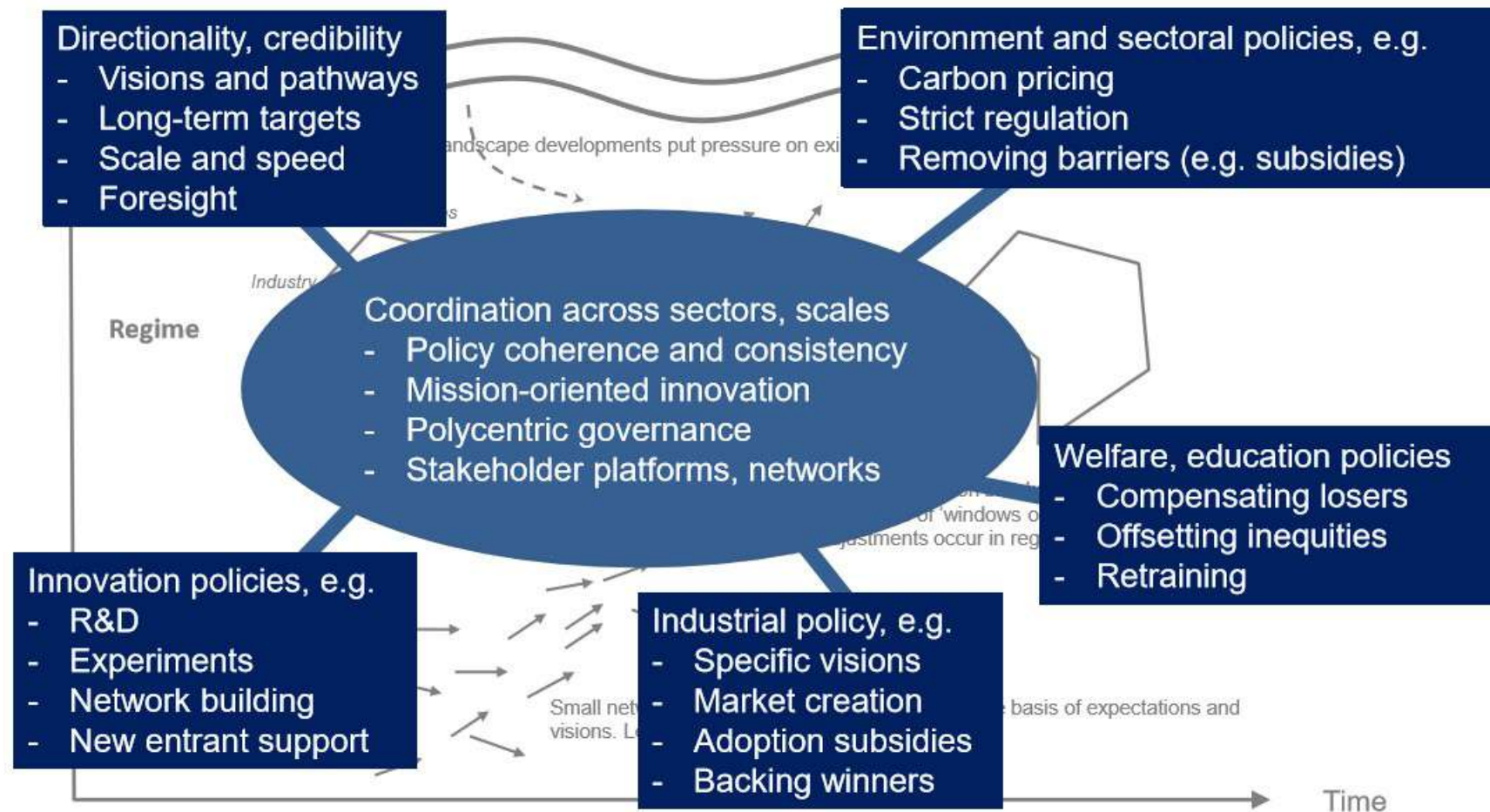


An impressive number of
policy initiatives across the
board



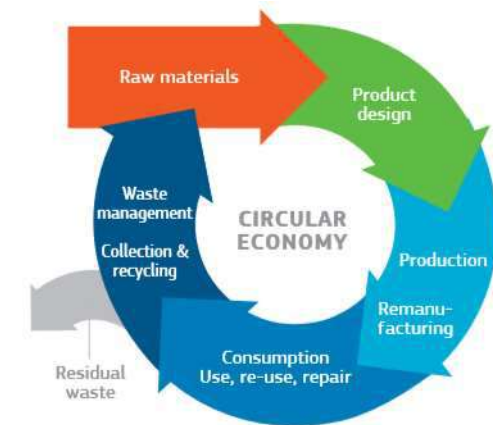
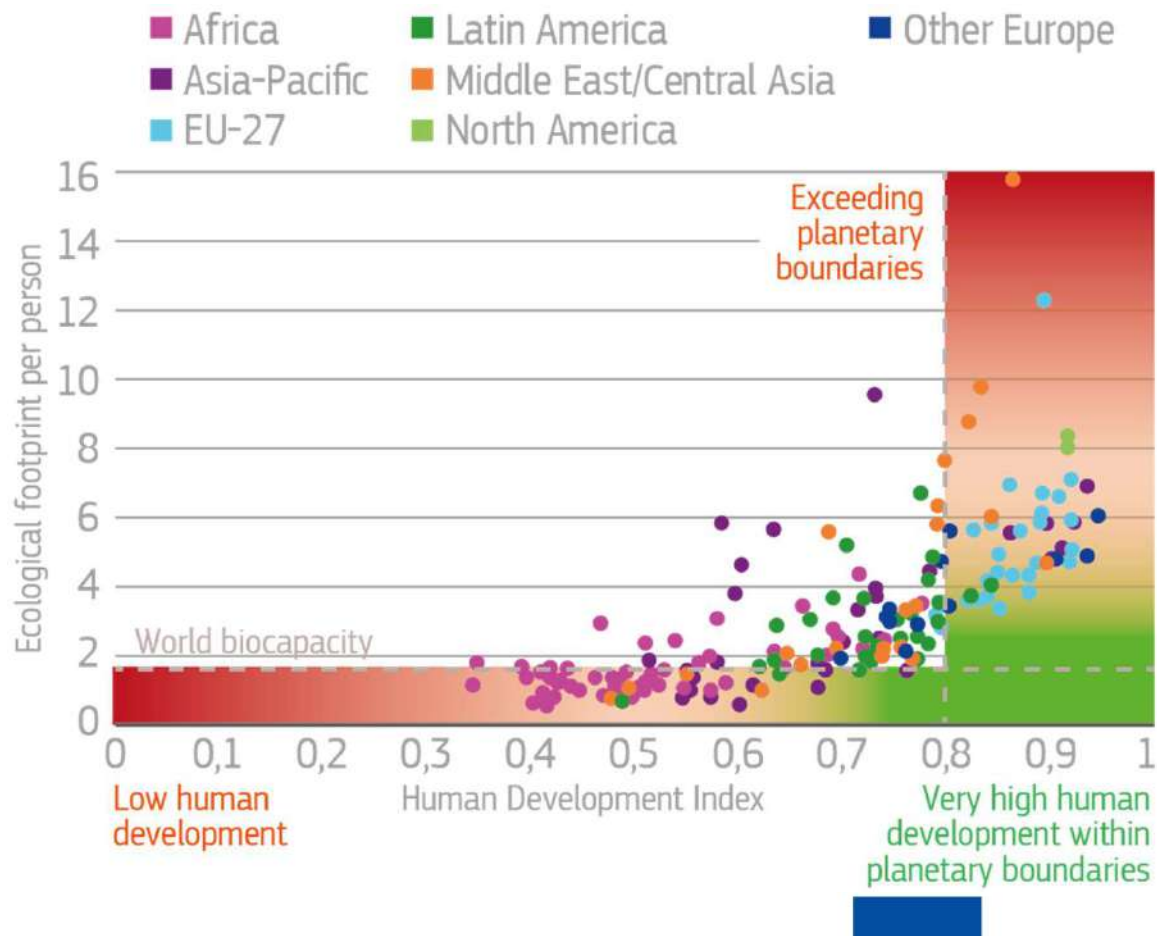
European Climate Law to enshrine the 2050 climate-neutrality target into law □ Emission Trading System extension □ Carbon Border Tax □ Energy Taxation Directive review □ Industrial and Innovation Strategy with a dedicated SME strategy □ Just Transition Fund □ European Climate Pact □ Strategy for Green Financing □ Sustainable Europe Investment Plan (€1 trillion) and turning parts of the EIB into Europe's Climate Bank □ Increase the EU target for 2030 to 55% (based on social, economic and environmental Impact Assessments) and lead international negotiations to increase the level of ambition of other major emitters by 2021 □ Biodiversity Strategy for 2030 □ "Farm to Fork" Strategy □ Cross-cutting strategy to move towards a zero pollution ambition and protect citizens' health □ New Circular Economy Action Plan (textiles and construction) and Single Use Plastics Strategy □ Highest trade standards of climate, environmental and labour protection □ Comprehensive strategies on Africa and the neighbourhood □ Conference on the Future of Europe and a European Democracy Action Plan □ Refocus the European Semester into an instrument that integrates the SDGs □ Action Plan to fully implement the European Pillar of Social Rights

No silver bullet: a mixture of policy tools will have to be activated jointly



Requires a new socio-economic model

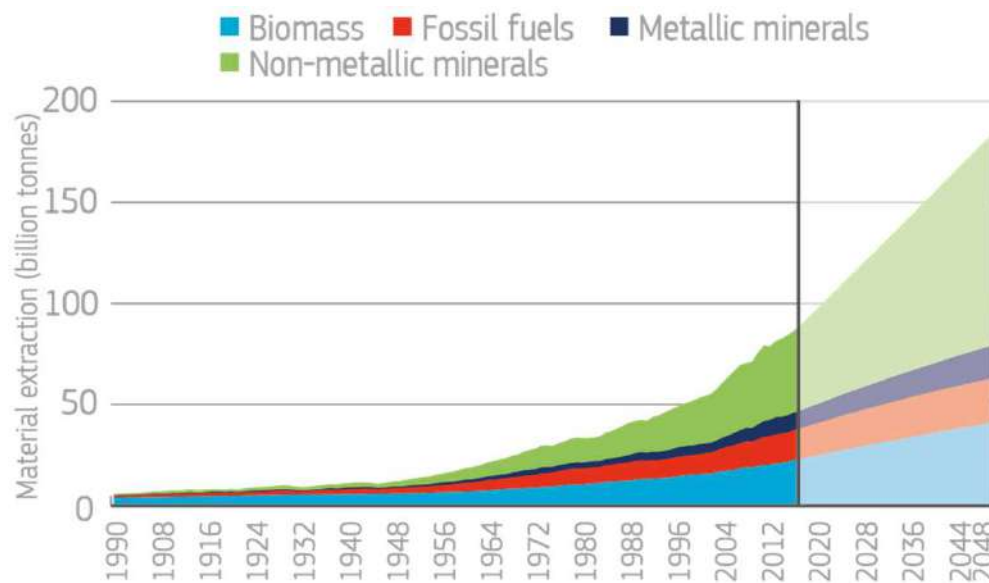
Not a single country has achieved a high human development within planetary boundaries



← How to get there?

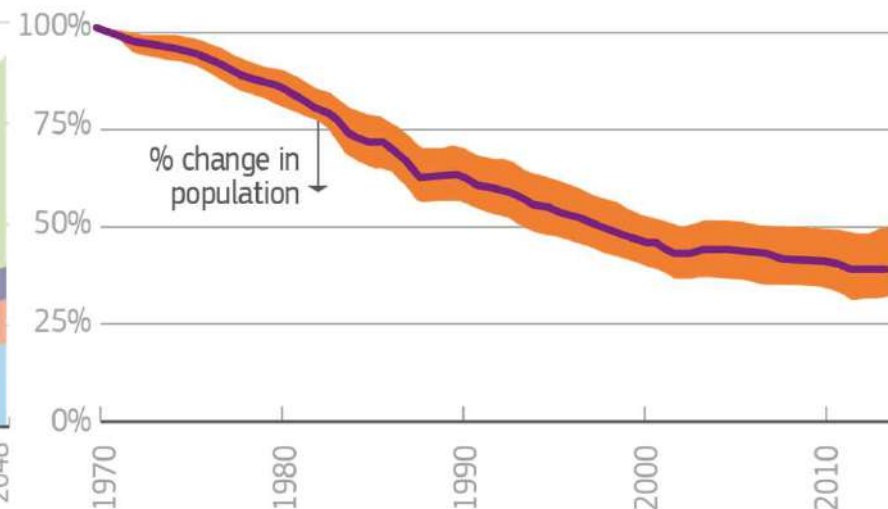
Should we redefine success?

Global **material extraction** is growing continuously



Source: European Commission, EIP on Raw Materials, Raw Materials Scoreboard 2018, based on UN Environment Programme (historic data) and Hatfield-Dodds et al. (2017) (projections).

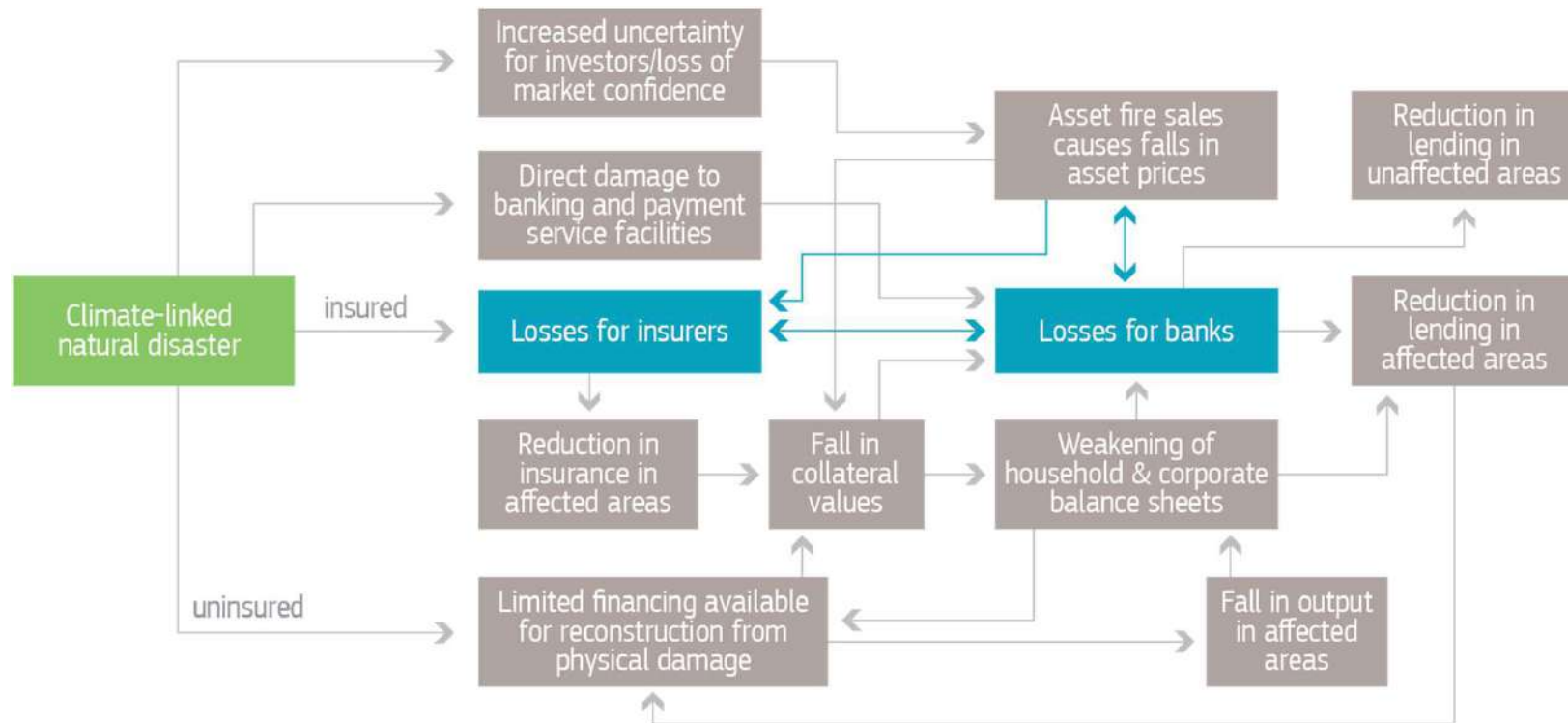
Since 1970, **60% of the world's vertebrate animals have been wiped out**



Source: Living Planet index, WWF/ZSL. Note: shaded areas show the statistical uncertainty surrounding the trend
Visual source: The Guardian

Sustainability risks are financial risks

Possible impacts of climate-related natural disasters on the economy

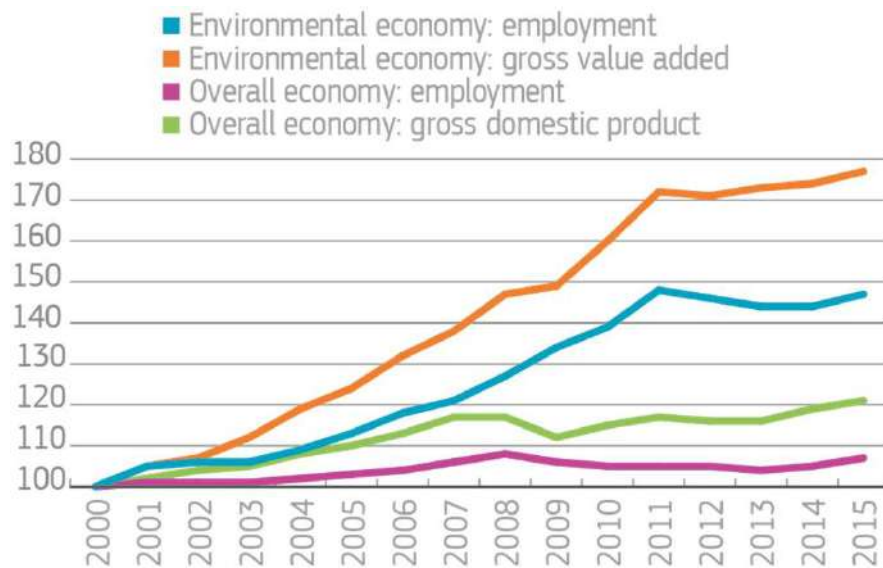


Source: Bank of England



Opportunities need to be made visible and captured

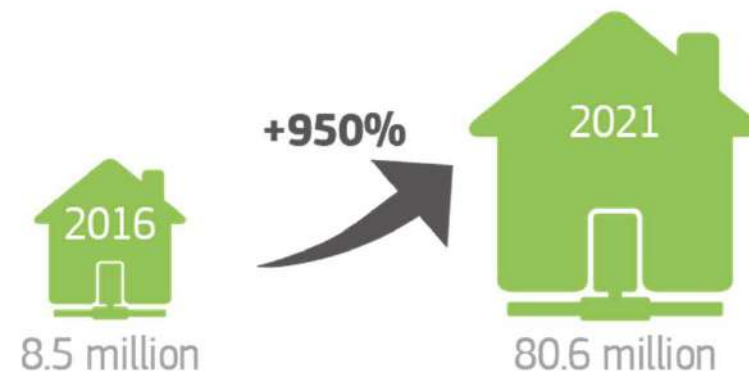
Environmental economy growing faster than overall economy



Source: Eurostat, European Commission

The number of smart homes in the EU is expected to increase tenfold by 2021

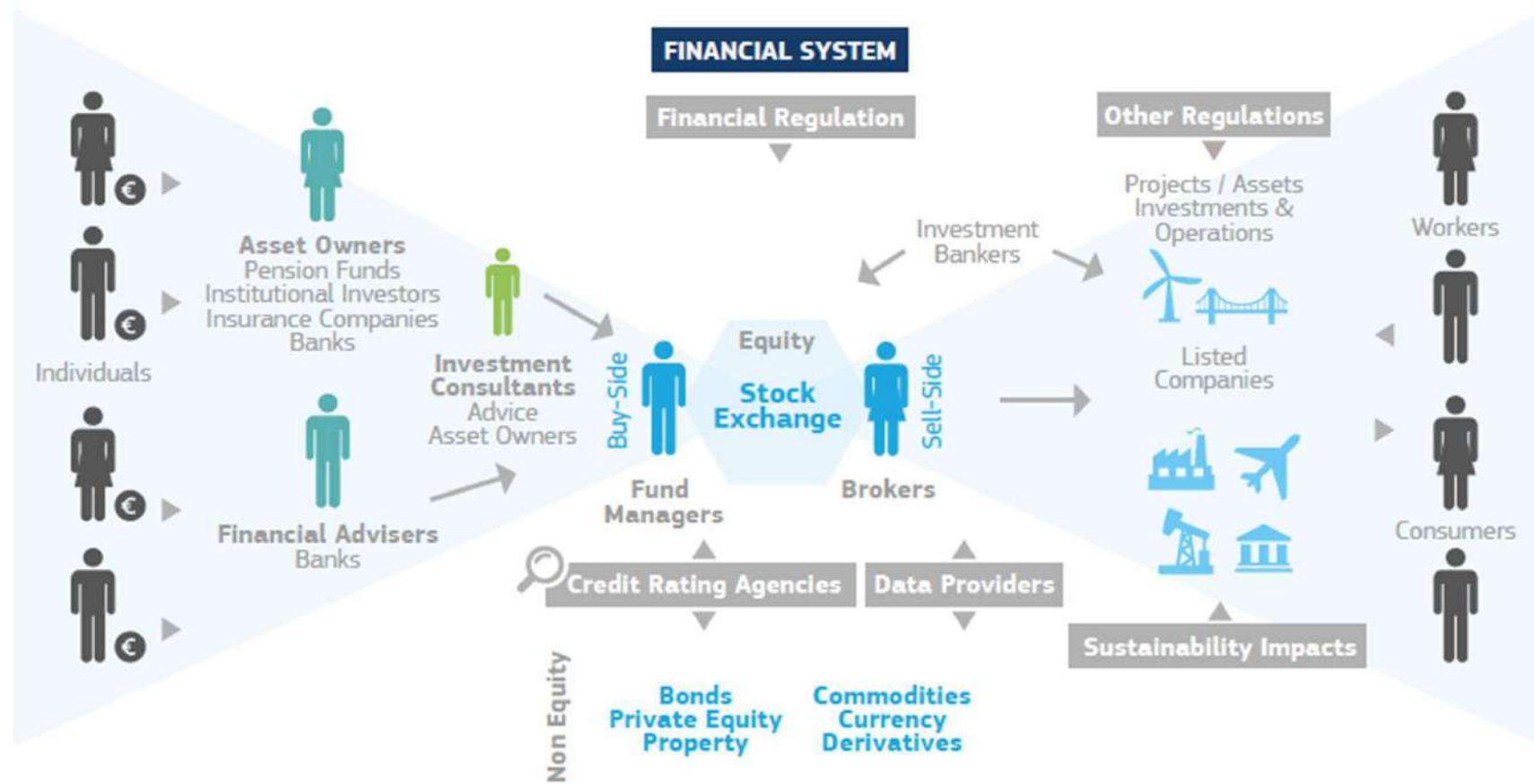
Smart homes* in the European Union



*Homes which use digitally controlled lighting, heating, ventilation, air conditioning, security, as well as home appliances

Source: European Commission

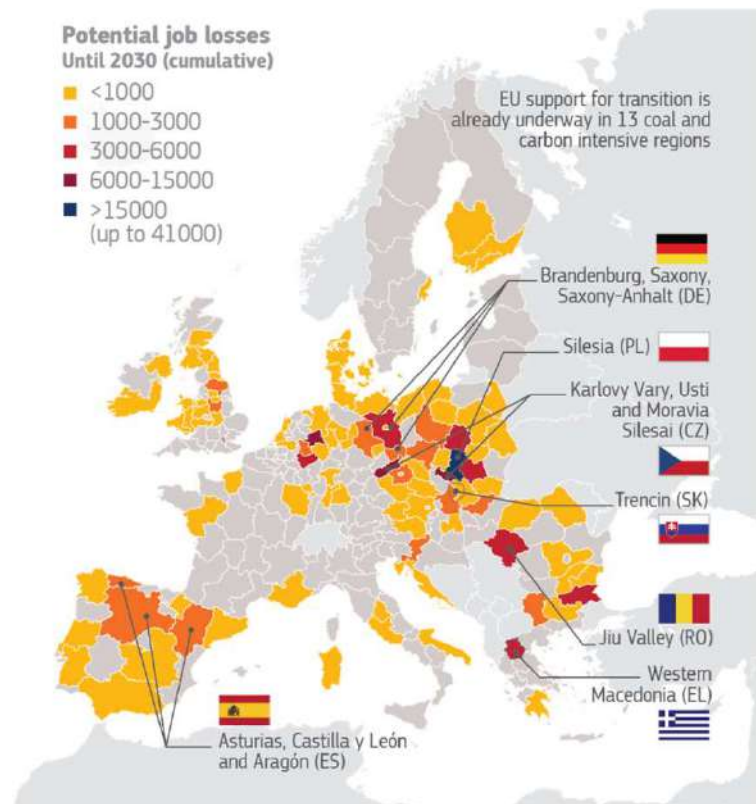
All actors throughout the finance value chain will have to be on board



Source: Aviva Investors, European Political Strategy Centre

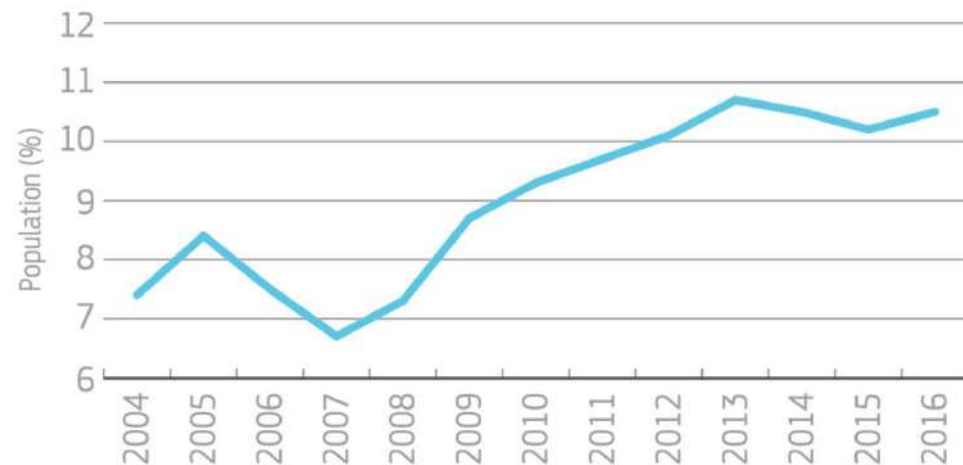
There is the risk of overlooking the intersections between social & environmental policy, thereby compromising both

EU **planning well ahead** for the transition in coal regions



Source: European Commission (DG JRC, DG REGIO).

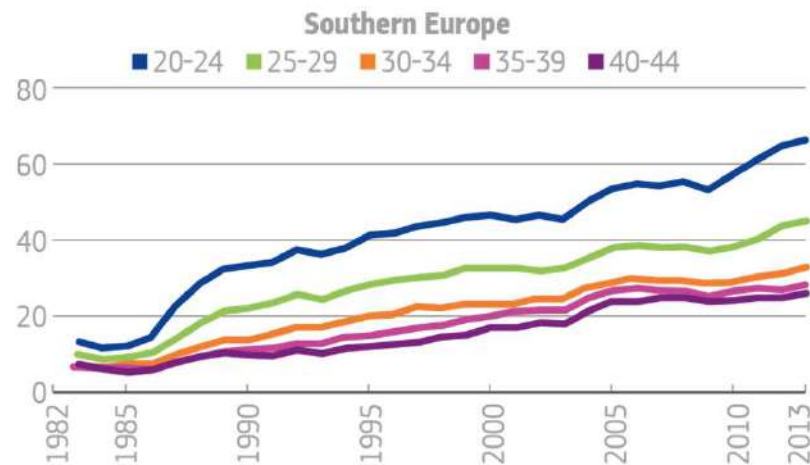
More Europeans **unable to pay their utility bills** in recent years



Source: Eurostat, Energy poverty indicator

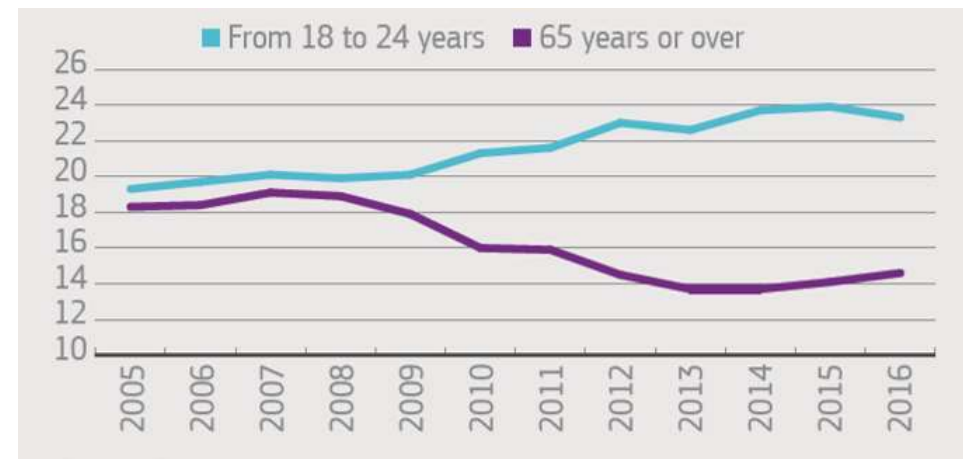
New forms of employment require a reinvention of the Social Contract

Intergenerational divide: the incidence of non-standard employment



Source: World Bank, 2018

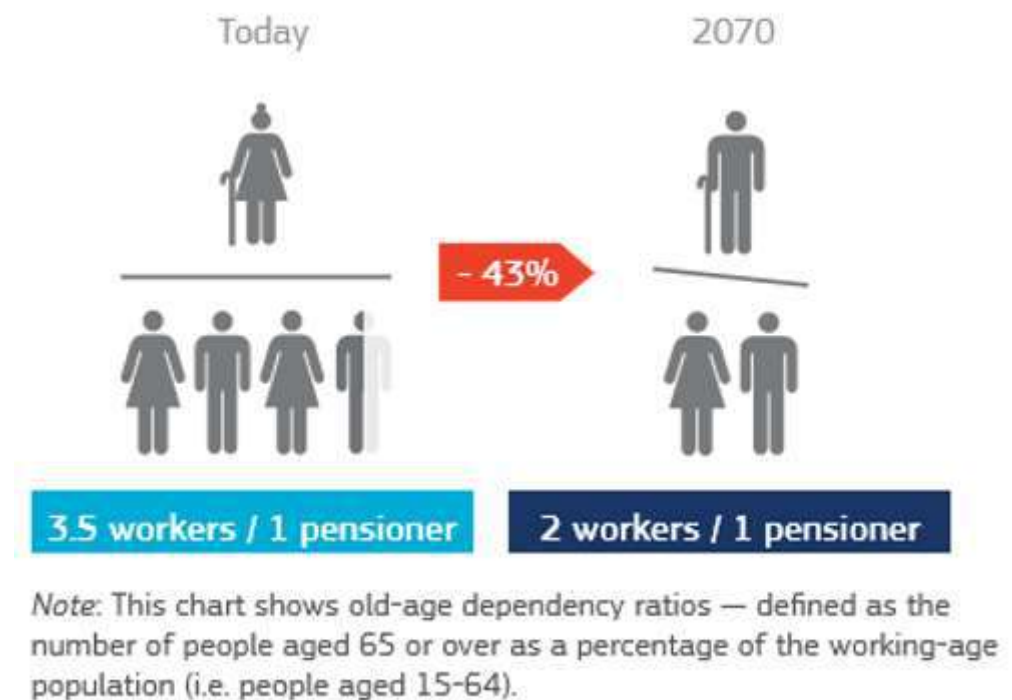
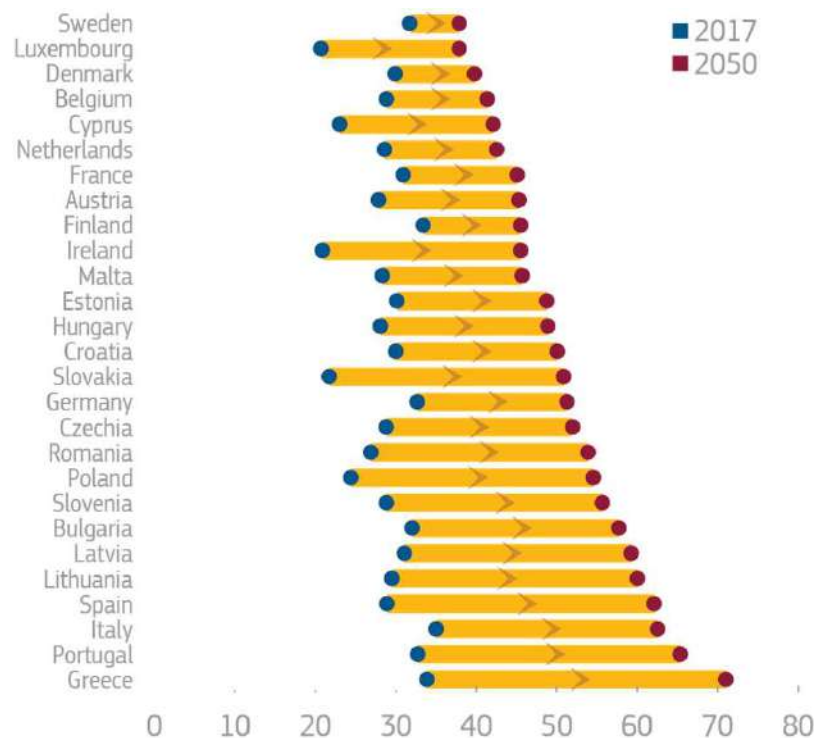
At risk of poverty, percent of total



Source: Eurostat

Fiscal unsustainability: about demographic ageing and more

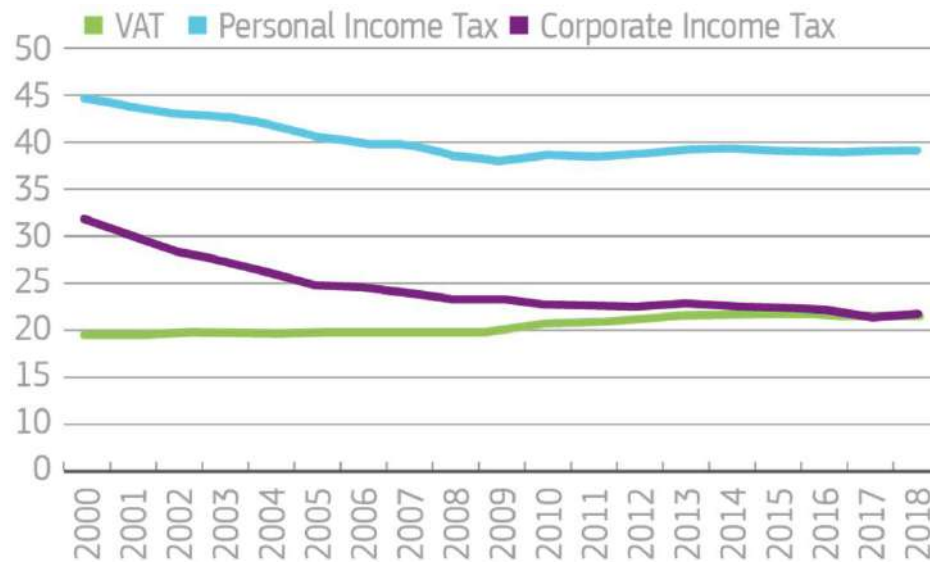
The old-age dependency ratio will continue rising across Europe



Note: This chart shows old-age dependency ratios — defined as the number of people aged 65 or over as a percentage of the working-age population (i.e. people aged 15-64).

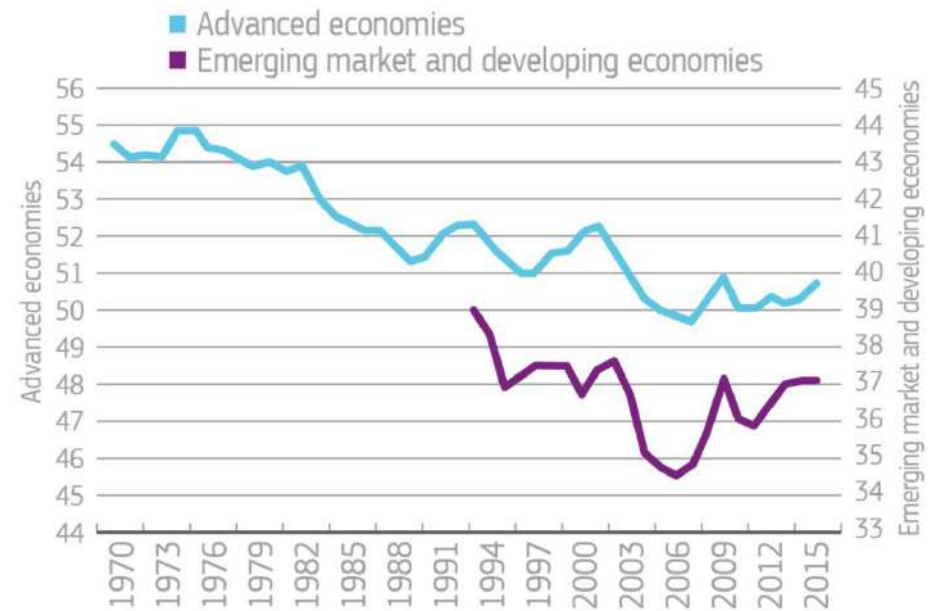
Sources of revenue are coming under ever greater pressure

Evolution of taxes over time, OECD countries, indexed to 2000



Source: OECD

The share of national income paid to workers has been declining in many countries



Source: IMF, 2017

What about the outsourcing of unsustainable practices?

China and India produce carbon-intensive products for consumption by Americans and Europeans



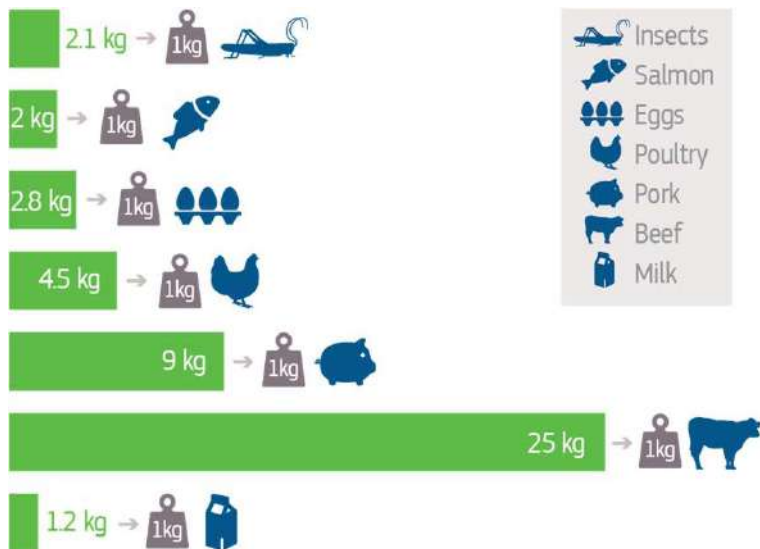
Source: KGM & Associates; Global Efficiency Intelligence, 2018 'The Carbon Loophole in Climate Policy: Quantifying the embodied carbon in trade products'



'Others should...': Individual consumption is the elephant in the room

Meat is the most resource-inefficient form of food

Land area needed to produce one unit of protein by food type (in m²)



Source: Our World in Data, Clark & Tilman, 2017

Where one lives also matters

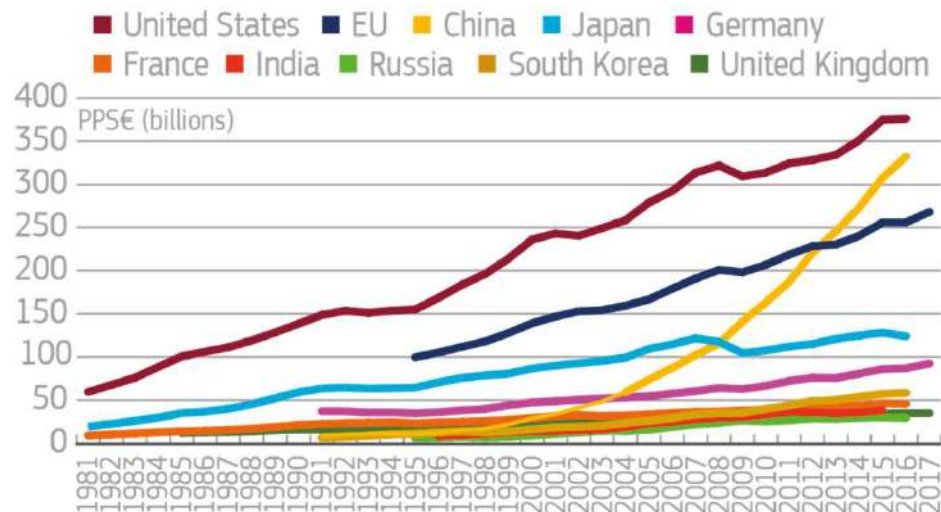
Average carbon emissions per household by selected neighbourhood types (tonnes)



Source: Country of Cities

Innovation may not always lead to sustainable outcomes

Total R&D expenditure in billions of current purchasing power standards, 1981-2017



Source: Values extracted by DG Research and Innovation, European Commission, based on data from Eurostat, OECD, UNESCO

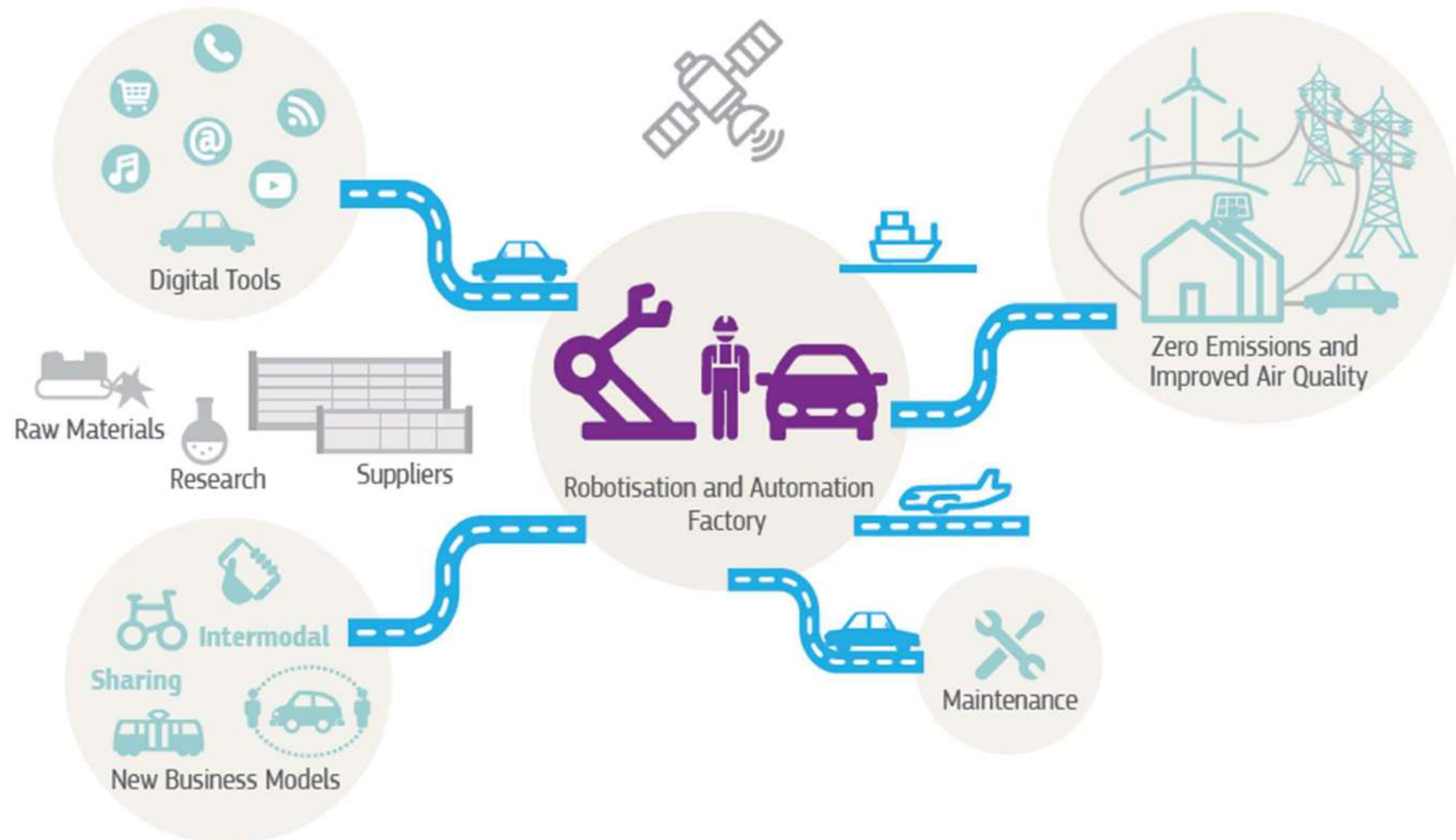


In practice? A more strategic approach is required

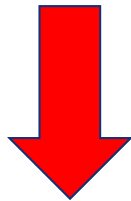
➤ Tomorrow's Mobility System



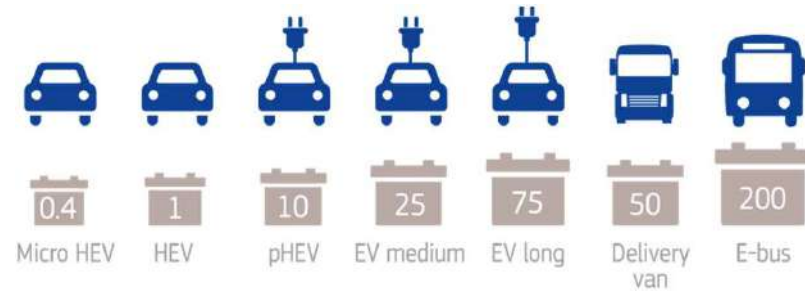
The transition towards a low-emission mobility: an increasingly complex eco-system



A wide range of complementary regulatory and enabling measures have been adopted which will accompany the low-emission **ever more electrified** mobility transition



We should not be naïve: the **competition** is fierce
Asia is leading on Battery manufacturing



It's not only about cars

Global EV lithium-ion battery manufacturing capacity



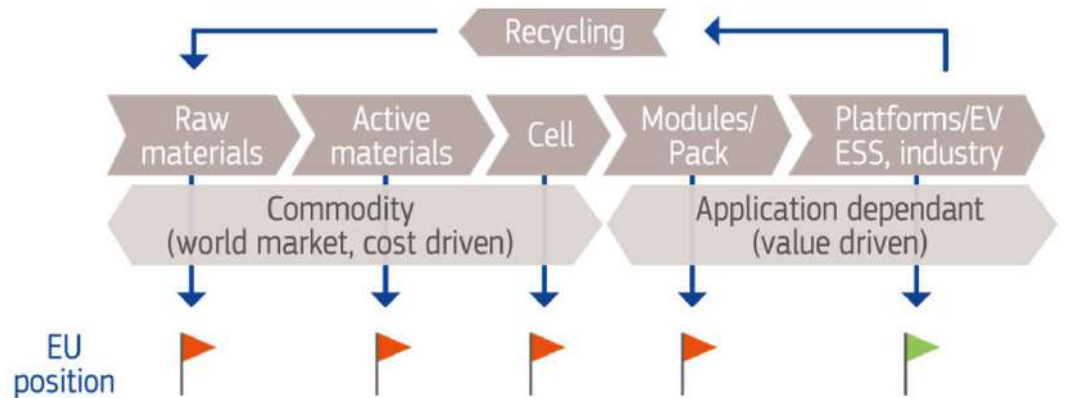
2017 capacity:
90 GWh/year

2021 planned* capacity:
290 GWh/year

Source: Bloomberg New Energy Finance (2017)

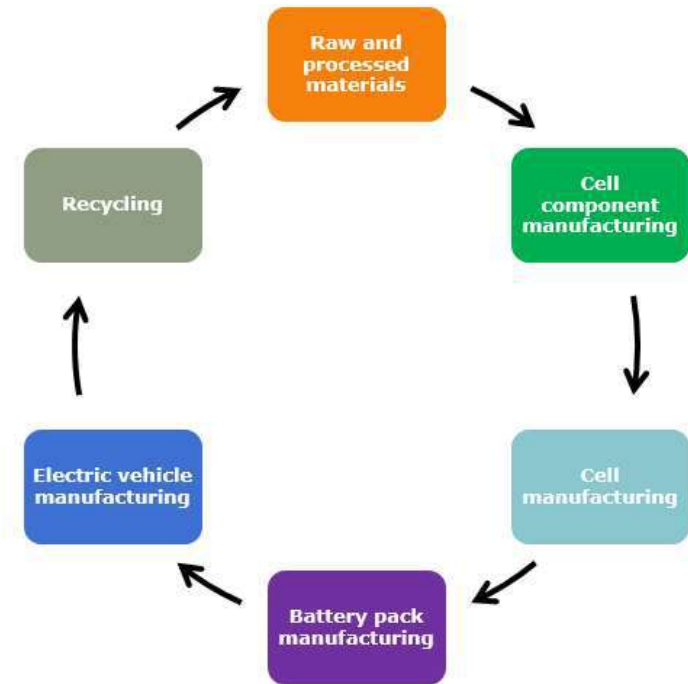


How is Europe doing?



- Strong**
 - Research in future active materials
 - Pack development, BMS
 - Applications/System integration
- Lagging**
 - Raw material supply
 - Active materials (industry)
 - Cell manufacturing (low volume, non-competitive in mass markets)
- Neutral**
 - Recycling - globally under-developed area
 - Research and Innovation in all non active materials area

Source: JRC, InnoEnergy, EPSC



The European batteries market is **projected to increase** by a factor 4 to 10 between today and 2025

250 billion market by 2025

What is Europe's response?

FROM

- Vehicle-centered **emission targets**
- Fragmented support in **innovation and infrastructure**



TO

- 3 Mobility packages addressing **supply and demand** of low-emission vehicles with regulatory and enabling measures
- New **Industrial Policy Strategy**
- The **European Battery Alliance** as a result of the 2017 Mobility Packages
- **Strategic Action Plan** on the way forward adopted in May 2018

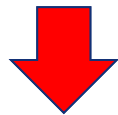


The way forward

HOW?



The European Commission supports efforts of the European industry, Member States and the European Investment Bank, to **establish a competitive manufacturing chain**, capture sizeable markets and boost jobs, growth and investment across Europe.



- **Project team approach**
- **Industry-led comprehensive workstream** with more than 120 European (and non-European) stakeholders representing the whole value chain
- Dialogue with EU **Member States**

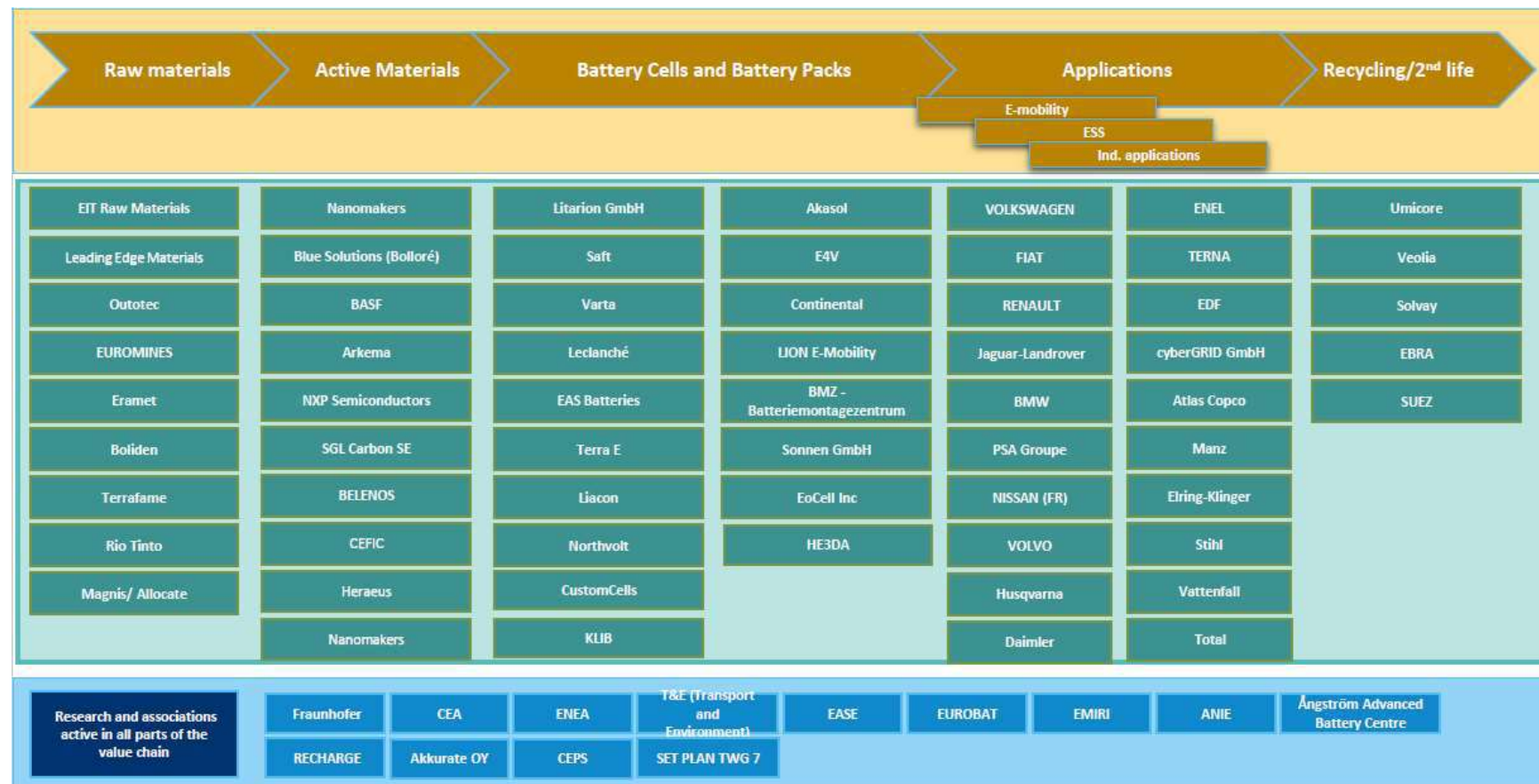
BATTERY ACTION PLAN

- Securing the supply of **raw materials**
- Supporting **projects** covering different segments of the battery value chain, including cell manufacturing
- **Research and innovation** to support a competitive batteries value chain
- Making Europe the global leader in **safe and sustainable** battery technology
- Developing and strengthening a **skilled workforce**
- Creating and enforcing an enabling and regulatory framework that is supportive of **battery demand**



A new way of working together

Participants of Battery Alliance workshops 2017-2018 (Industry)



What's next?

IT'S HAPPENING

But will it be a **battery value chain in Europe** or a **European battery value chain**?



Share   

- Ambitious program of research, development and industrialization for advanced high-density lithium-ion (Li-ion) and Solid-State new generations of batteries
- European industrial champions from at least three countries will work together to harness European expertise and technology leadership
- Support from European and national authorities key to success

Paris, February 22nd, 2018

Chinese lithium-ion battery manufacturer Contemporary Amperex Technology Ltd. intends to build a factory in Europe.

Bloomberg reports that CATL is considering three countries – Germany, Poland, Hungary, which strongly support battery investments and are close to EV assembly facilities.

Poland was already chosen by LG Chem, while Hungary got the nod from Samsung SDI.

For CATL, it would be its first factory outside of China, but that's the way to go as the European market is expanding. Among customers, BMW was mentioned.

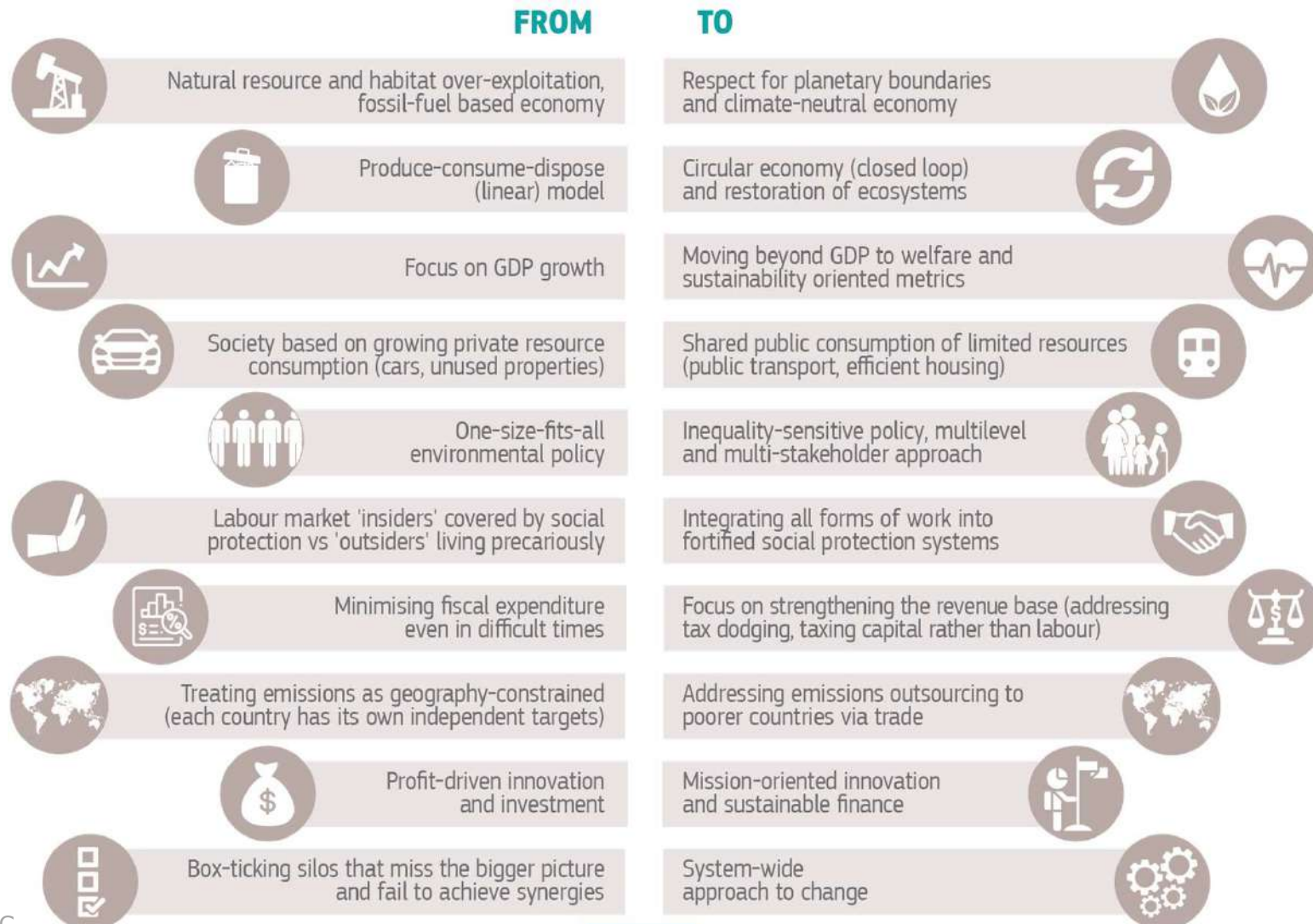
There are no numbers, but Bloomberg suggests that CATL's capacity in Europe will be bigger than Tesla's Gigafactory.



FOLLOW-UP

- **Secure implementation** of the Action Plan
- Continue **engagement with stakeholders** (social partners and member states)
- Reflect on:
 - ways to **speed-up** delivery (e.g. developing standards takes 4 years!)
 - how this approach could be used for **other strategic sectors**

Time for systemic change



**Thank you for
your attention**

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