International Climate Neogiations & Recent Developments in EU, USA, and China

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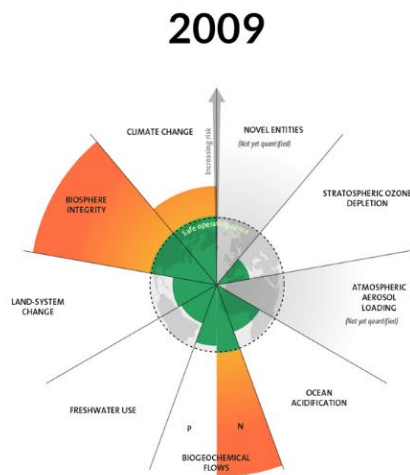# Factors Promoting a Green Transition

- Climate Change and Environment
- Resource Dependency
- Costs
- Supply Chain Vulnerability
- Growth and Jobs
- Competition
- Intra-Generational Equity
- Inter-Generational Equity

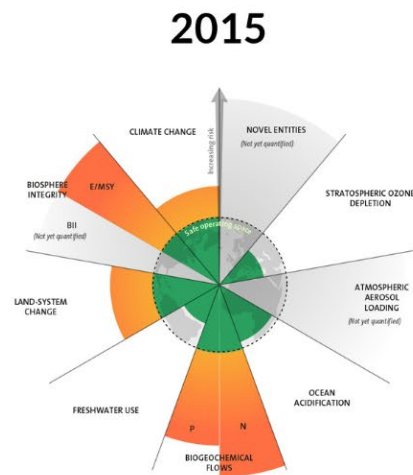# 2012 United Nations Conference on Sustainable Development: Rio de Janeiro

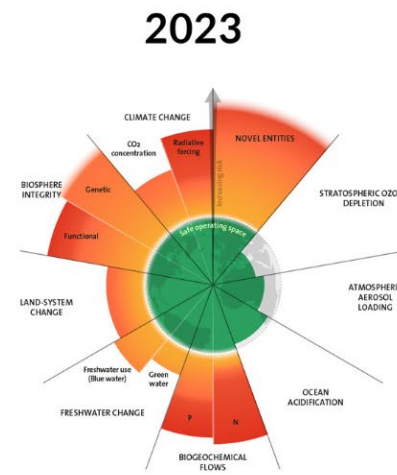Green Economy.

Planetary Boundaries

2009 — 7 boundaries assessed, 3 crossed

2015 — 7 boundaries assessed, 4 crossed

2023 — 9 boundaries assessed, 6 crossed

https://www.stockholmresilience.org
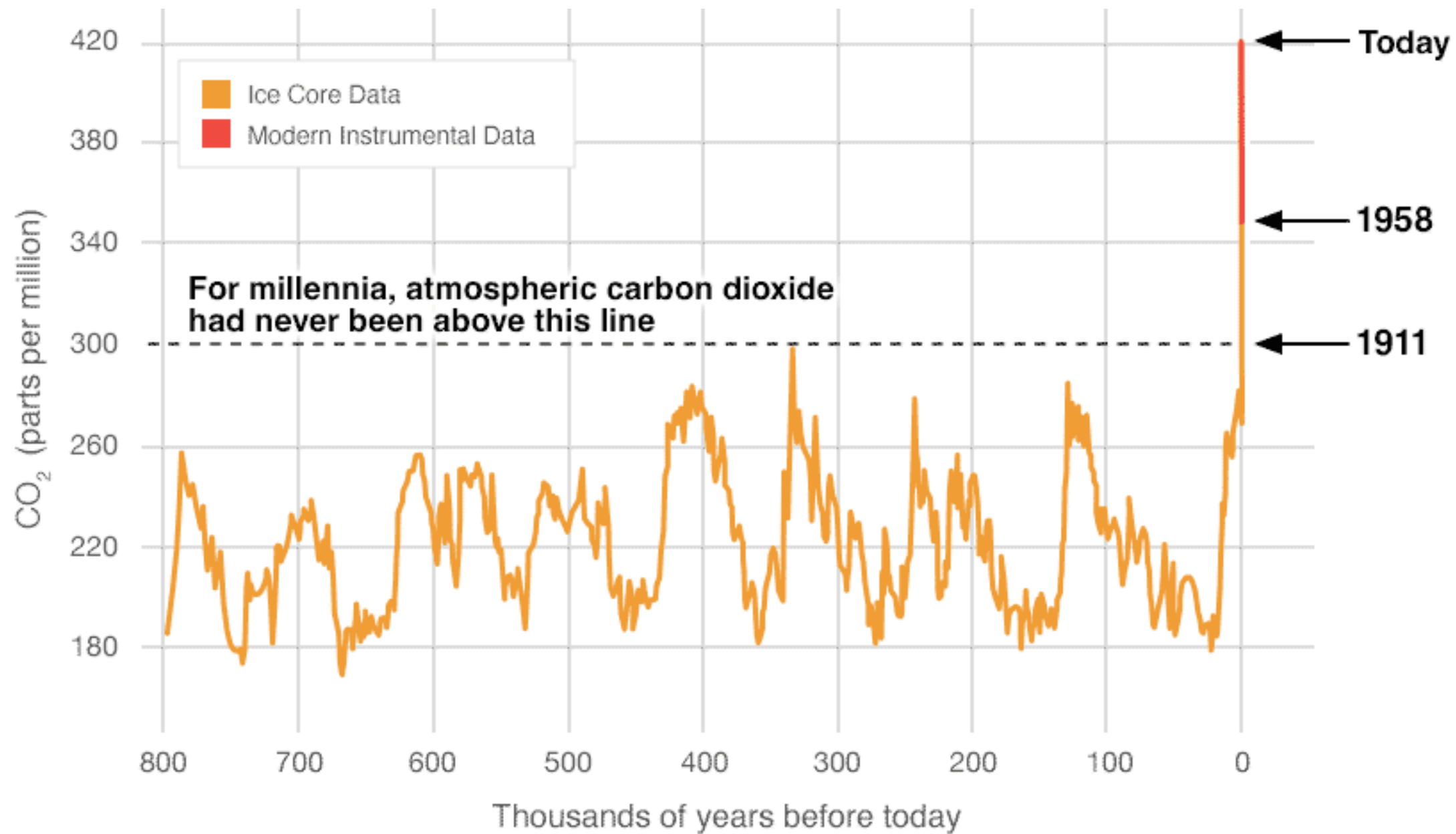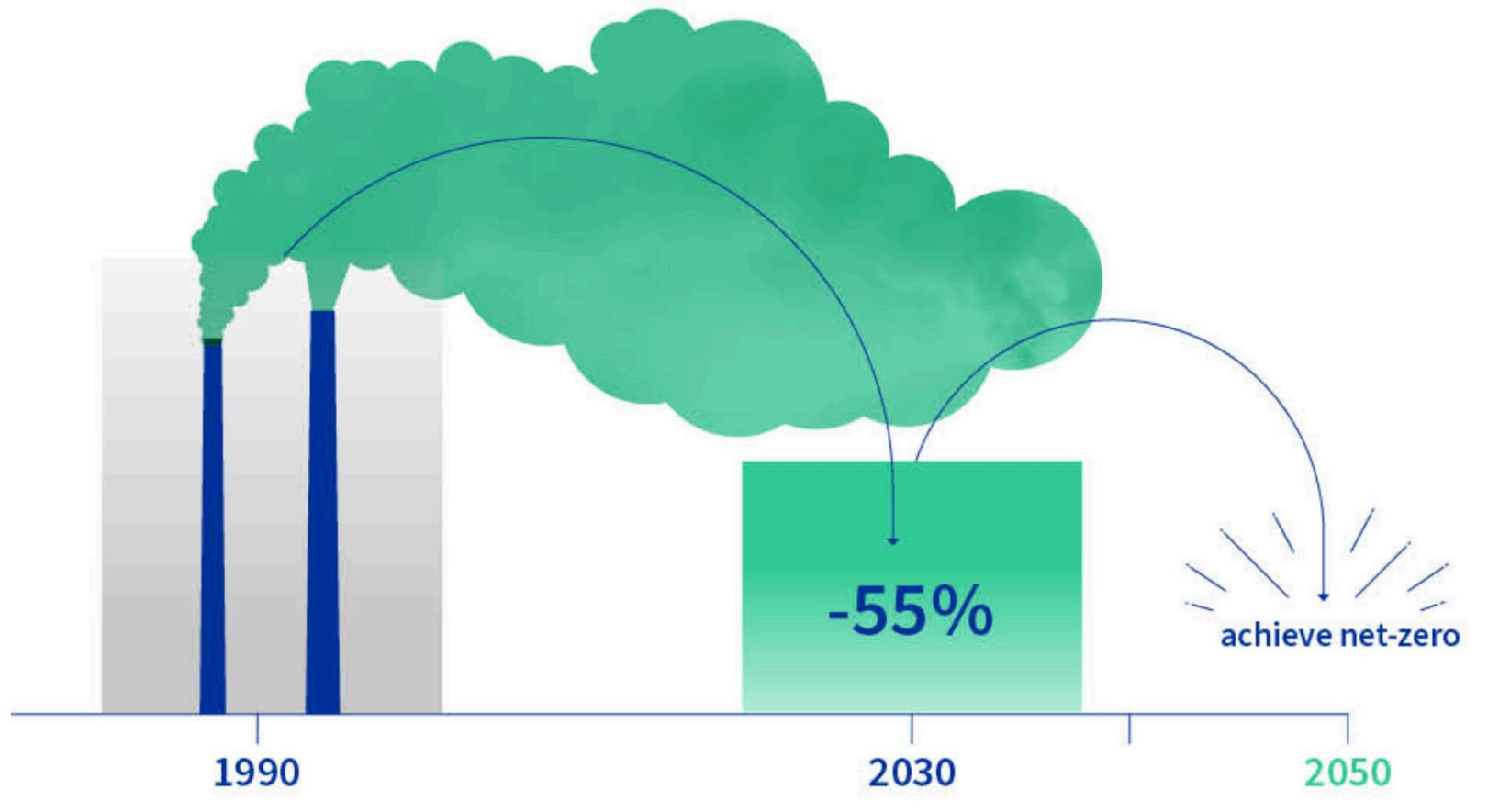
EU Climate Targets: 2050 Climate Neutrality Target

Industrial Innovators
Green Jobs.   5.2 million full time equivalents (2021)
Green Economy. Euro 937 billion output; 369 billion gross value added

Development of key indicators for the environmental economy and the overall economy, EU, 2000–2021

Legend:
- ■ Environmental economy: employment
- ■ Environmental economy: gross value added
- ■ Overall economy: employment
- ■ Overall economy: gross domestic product
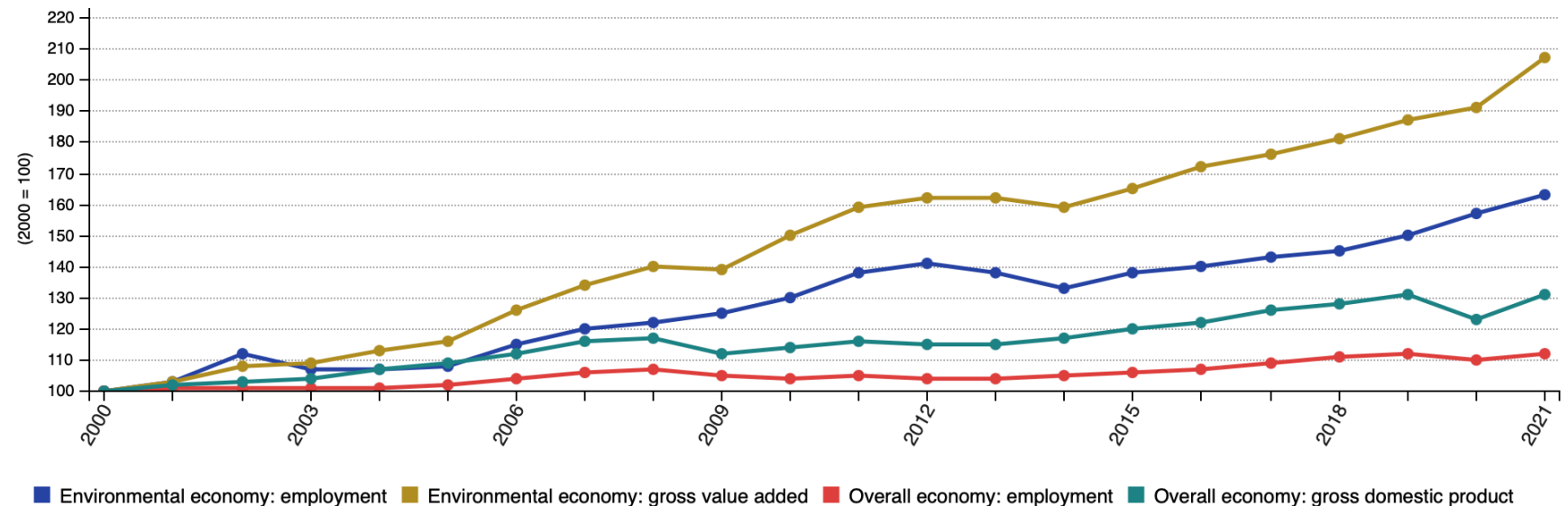
Eurostat estimates for the series Environmental economy: employment and Environmental economy: gross value added

Environmental economy: employment - in full-time equivalents

Index compiled for chain-linked volumes data in EUR million (reference year 2010; at 2010 exchange rates) for Environmental economy: gross value added and Overall economy: gross domestic product

Overall economy: employment - in thousand persons

(Index with base year 2000 = 100)

Source: Eurostat (online data codes: nama_10_a10_e, nama_10_gdp, env_ac_egss1, env_ac_egss2)

eurostat

Greening Growth

Critical raw materials and their supply risk

Technologies

Materials

Sectors

Supply Risk
(sorted largest to smallest)

| Very high | LREEs
HREEs |

| High | Magnesium
Niobium
Germanium
Borates
Scandium |

| Moderate | Strontium
Cobalt
PGMs
Natural graphite |

| Low | Indium
Vanadium
Lithium
Tungsten
Titanium
Gallium, Hafnium
Silicon metal |

| Very low | Manganese
Chromium
Zirconium
Tellurium
Nickel, Copper |

Batteries

Fuel cells

Wind

Traction Motors

PV

Robotics

Drones

3D Printing

ICT

Renewables

e-mobility

Defence & Space

European Commission

THE $105 TRILLION WORLD ECONOMY

2023 GLOBAL GDP

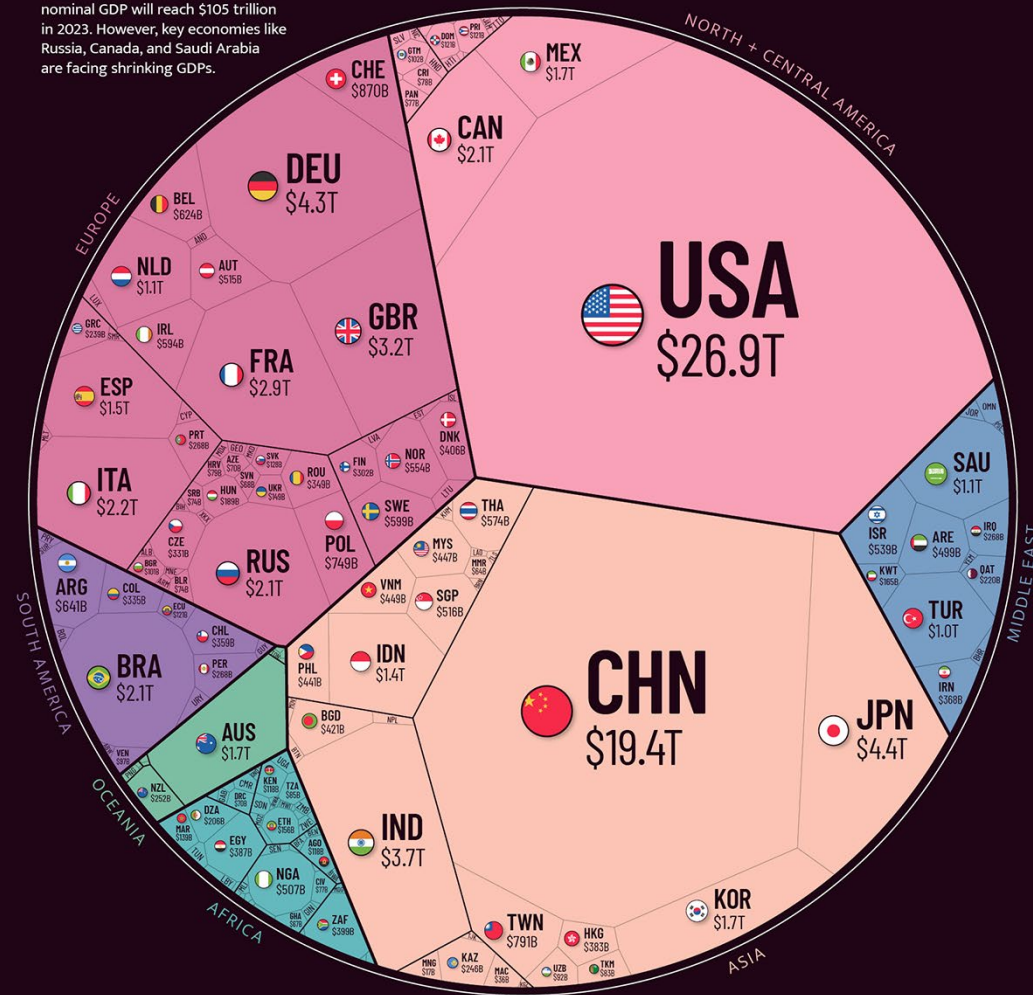According to IMF projections, global nominal GDP will reach $105 trillion in 2023. However, key economies like Russia, Canada, and Saudi Arabia are facing shrinking GDPs.

NORTH + CENTRAL AMERICA

MEX $1.7T
CAN $2.1T
USA $26.9T
PRI $32B
DOM $121B
SLV
GTM $102B
CRI $78B
PAN $77B
HTI

EUROPE

CHE $870B
DEU $4.3T
BEL $624B
NLD $1.1T
AUT $515B
GRC $239B
IRL $594B
GBR $3.2T
FRA $2.9T
ESP $1.5T
PRT $288B
ITA $2.2T
CZE $331B
SRB $74B
HUN $189B
SVK $128B
UKR $160B
ROU $349B
FIN $302B
NOR $554B
DNK $406B
SWE $599B
POL $749B
RUS $2.1T
AZE $79B
HRV $79B
SVN
BGR $101B
BLR $74B

MIDDLE EAST

SAU $1.1T
ISR $539B
ARE $499B
IRQ $268B
KWT $165B
QAT $220B
TUR $1.0T
IRN $368B
OMN

SOUTH AMERICA

ARG $641B
COL $335B
ECU $127B
CHL $359B
BRA $2.1T
PER $268B
VEN $87B

OCEANIA

AUS $1.7T
NZL $252B

AFRICA

KEN $118B
TZA $85B
DRC
CMR
DZA $206B
MAR $139B
ETH $156B
EGY $387B
AGO $118B
NGA $507B
GHA $76B
ZAF $399B
CIV $79B

ASIA

THA $574B
MYS $447B
VNM $449B
SGP $516B
IDN $1.4T
PHL $441B
BGD $421B
CHN $19.4T
JPN $4.4T
IND $3.7T
KOR $1.7T
TWN $791B
HKG $383B
KAZ $246B
MAC $36B
MNG $17B
UZB $92B
TKM $83B

The IMF sees the world economy growing 5.3%, or when adjusted for inflation, 2.8%.

Russia's projected $150B GDP drop is more than Ukraine's total $149B GDP.

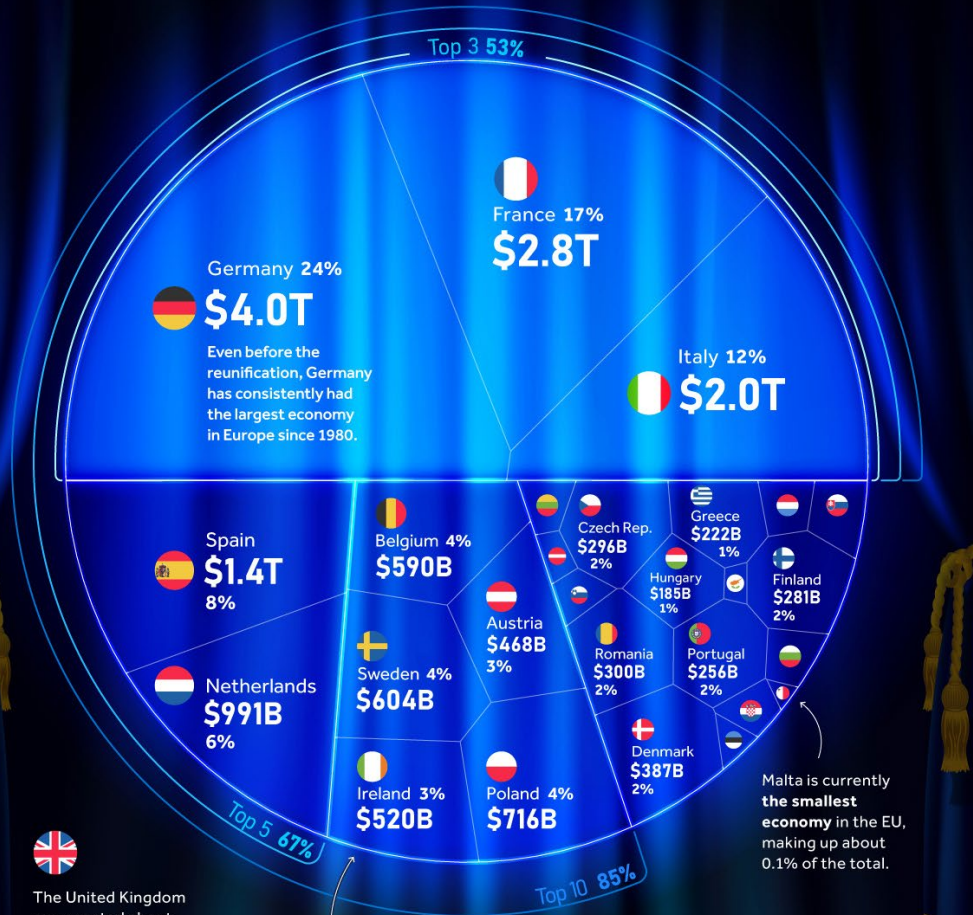**India** dethrones the UK as the 5th largest economy in the world.

China's GDP is expected to grow 7.1% in 2023, ahead of U.S. growth of 5.5%.

European Union Economy

The chart below shows country-level contribution to the overall economy of the European Union (EU).

Top 3 **53%**

France 17%
$2.8T

Germany 24%
$4.0T

Even before the reunification, Germany has consistently had the largest economy in Europe since 1980.

Italy 12%
$2.0T

Spain
$1.4T
8%

Belgium 4%
$590B

Czech Rep.
$296B
2%

Greece $222B
1%

Hungary $185B
1%

Finland $281B
2%

Netherlands
$991B
6%

Sweden 4%
$604B

Austria
$468B
3%

Romania $300B
2%

Portugal $256B
2%

Ireland 3%
$520B

Poland 4%
$716B

Denmark $387B
2%

Malta is currently **the smallest economy** in the EU, making up about 0.1% of the total.

Top 5 **67%**

Top 10 **85%**

The United Kingdom represented about **16%** of the EU's economy when it left in January 2020.

Ireland's GDP **more than doubled** from 2010 to 2020.

Source: International Monetary Fund (2022)

Chart 1: The EU's share of global green tech exports is growing more slowly than China's, but it remains well ahead of the US

2019   2022

Share of global exports of low- carbon technologies (%)

China   USA   EU-27   France   Germany   Italy   Poland   UK
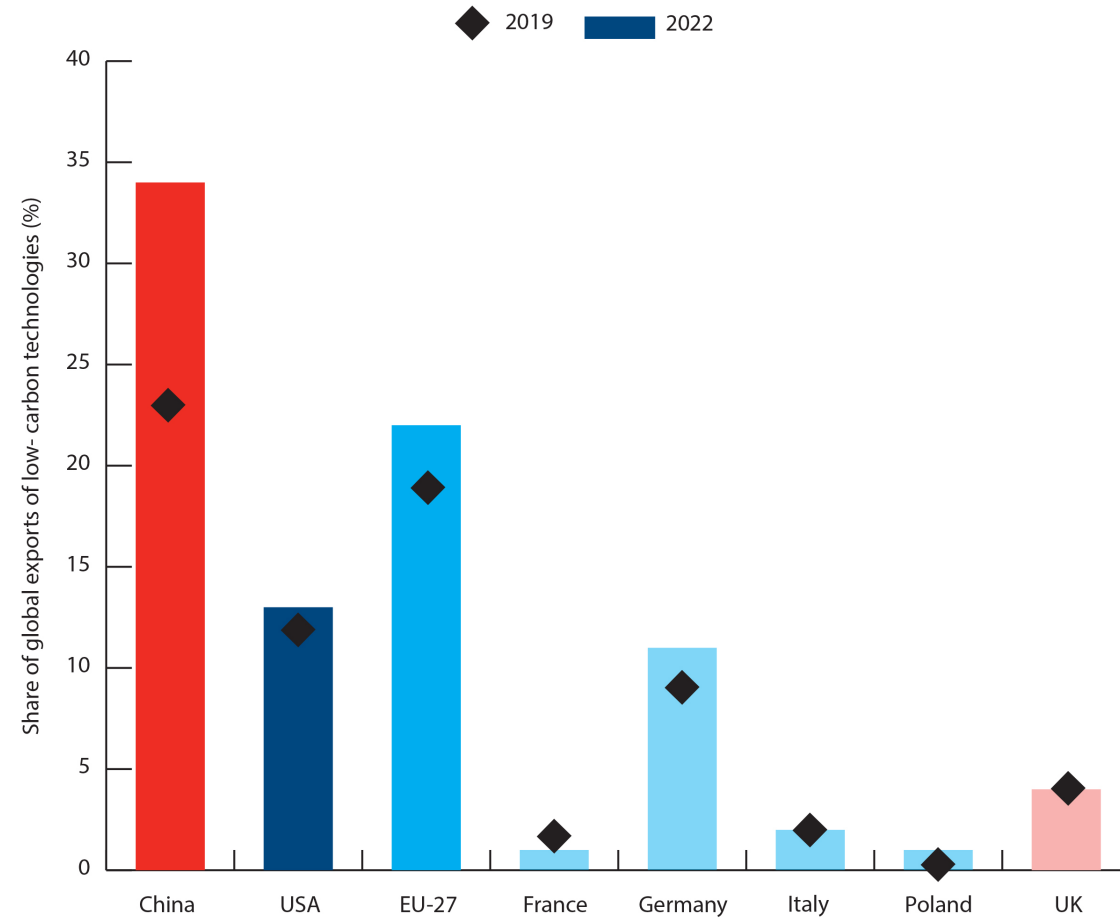
Source: CER analysis of UN COMTRADE data. Exports data are in value terms.

https://www.cer.eu/publications/archive/policy-brief/2023/europe-american-chinese-green-tech

https://www.europarl.europa.eu/RegData/etudes/STUD/2016/570007/IPOL_STU(2016)570007_EN.pdf

Share of manufacturing of total gross added value at basic prices, 2012 (%)

Change in the share of manufacturing as percentage of gross added value at basic prices, 2000-2012 (%)
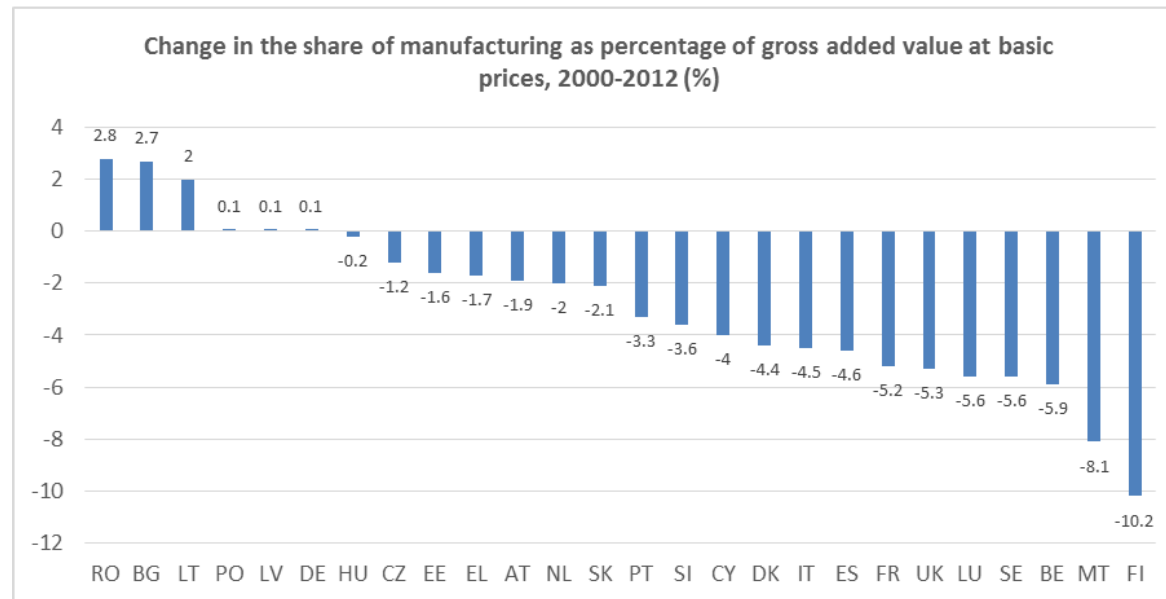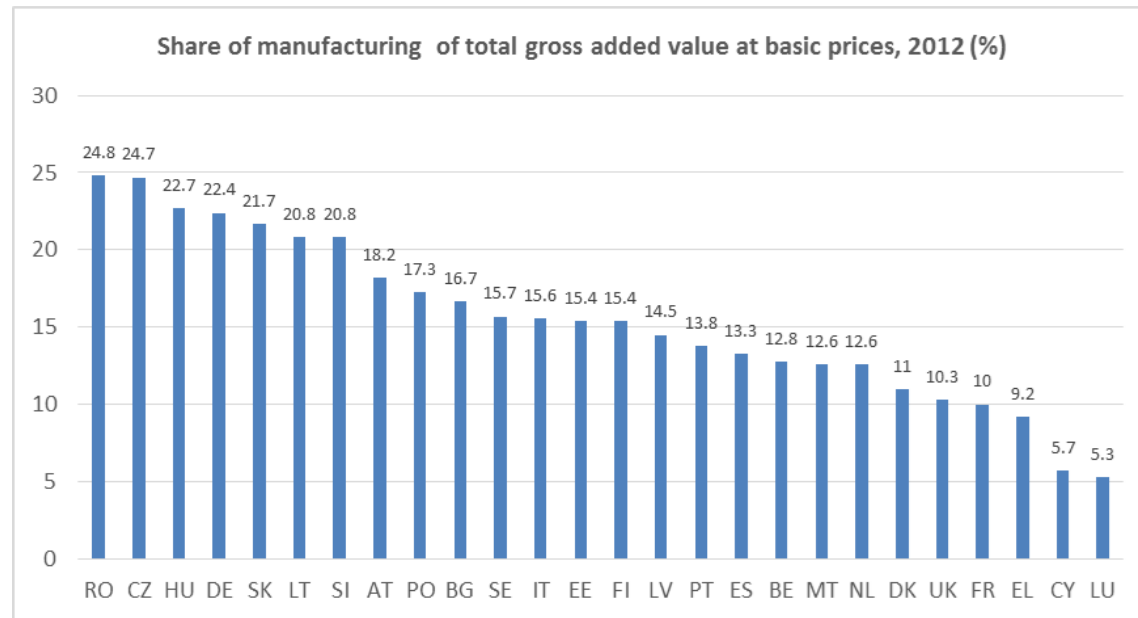
Evolution of EU's value of sold industrial production, 2010-2020

(index 2015=100)

2010 95

2011 100

2012 99

2013 97

2014 97

2015 100

2016 103

2017 107

2018 108

2019 108

2020 101

ec.europa.eu/eurostat

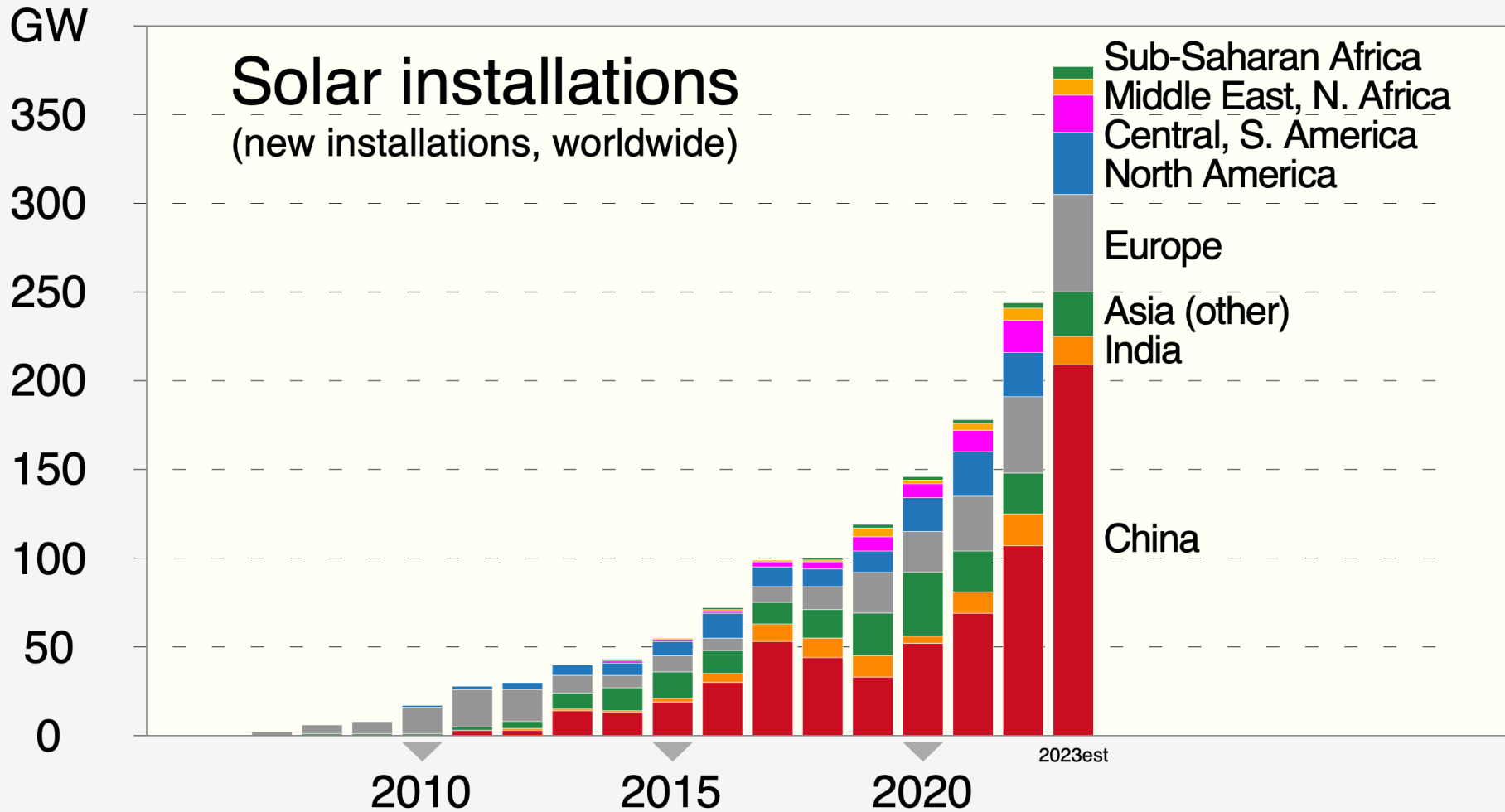**The US and Europe Have a Long Way to Go to Challenge China's Share of Global Manufacturing Capacity**

Clean energy manufacturing capacity by location

Legend: China | US | Europe | Japan | South Korea | Rest of the world

Categories (top to bottom):
- Polysilicon
- Solar wafer and ingot
- Solar cell
- Solar module
- Wind turbine nacelle
- Lithium refining
- Cobalt sulfate refining
- Nickel sulfate refining
- Battery cell
- Battery cathode
- Battery anode
- Battery electrolyte
- Battery separator
- Electrolyzers for hydrogen

X-axis: 0, 20, 40, 60, 80, 100%

Source: BloombergNEF
Note: By factory location. PV, hydrogen and battery components expressed in MW, MWh, m² or tons. Nickel is the class 1 variety, and lithium is in lithium carbonate equivalent. H₂ is hydrogen. Data as of October 2022, except electrolyzers which refer to a 2021 and nacelle data which are for 2020.

BloombergNEF

https://about.bnef.com/blog/the-race-to-localize-clean-technology-supply-chains/

Solar installations
(new installations, worldwide)

Legend: Sub-Saharan Africa, Middle East, N. Africa, Central, S. America, North America, Europe, Asia (other), India, China
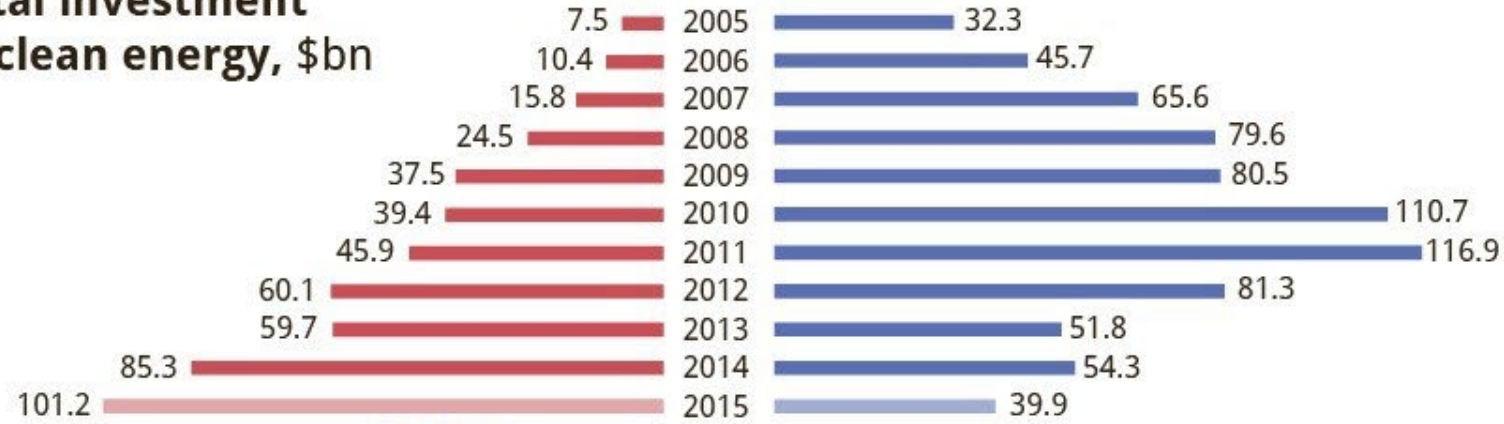
China has already overtaken the EU in clean energy investment

Total investment in clean energy, $bn

China	Year	EU
7.5	2005	32.3
10.4	2006	45.7
15.8	2007	65.6
24.5	2008	79.6
37.5	2009	80.5
39.4	2010	110.7
45.9	2011	116.9
60.1	2012	81.3
59.7	2013	51.8
85.3	2014	54.3
101.2	2015	39.9

In 2015 China spent **2.5x** more on clean energy than the EU

Per Capita, $

As a % of GDP

4x more

China

EU

E3G
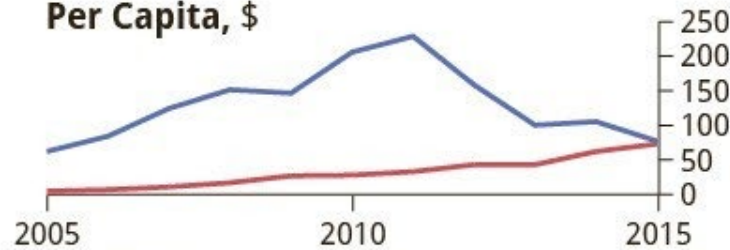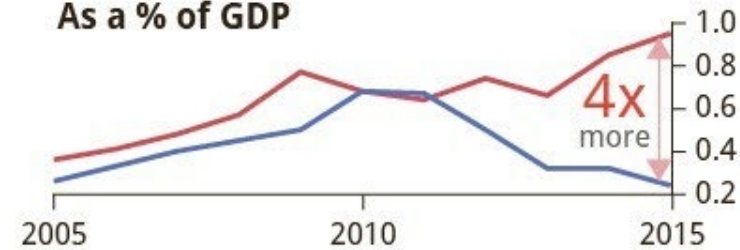
Sources: BNEF; Xinhuanet

One belt, one road – China's new Silk Road

Kazan

Moscow

Irkutsk

Venice

Urumqi

Beijing

Ankara

Kashgar

Piraeus

Tehran

Xi'an

→ Planned Silk Road economic belt

Suez

Gwadar

Kunmin

Fuzhou

→ Planned maritime Silk Road

Kolkata

Chittagong

Haiphong

Member states of AIIB (Asian Infrastructure Investment Bank)

Sittwe

• Harbor with Chinese involvement

Djibouti

Colombo

Singapore

Source: MERICS, DW | 12/2015

Mombasa

Jakarta

© DW

中华人民共和国国家发展和改革委员会

Nationally Determined Contribution (NDC)
to the UN Framework Convention on Climate Change
(UNFCCC)

Long-term goals for 2030
- Peak emissions (with best intentions to peak earlier)
- Reduce emission intensity by 60-65% from 2005 levels
- 20% share of renewables in energy-mix

第14个五年计划 14th Five-Year-Plan sets out targets for 2035

- Highlights main goals for 2021 to 2025

- Energy and climate indicators are included under "new progress of ecological civilisation"

- Calls for "Establishing a modern energy system": construction of eight large-scale clean energy "bases", coastal nuclear power, electricity transmission routes, power system flexibility, oil-and-gas transportation and storage capacity

- 18% reduction target for "CO2 intensity" and 13.5% reduction target for "energy intensity" from 2021 to 2025

- Expanding forest cover from 23.4% (2020) to 24.1% of land by 2025

- Increase non-fossil energy from 15.8% (2020) to about 20% by 2025

- Provincial governments to establish peak emission plans by April 2021
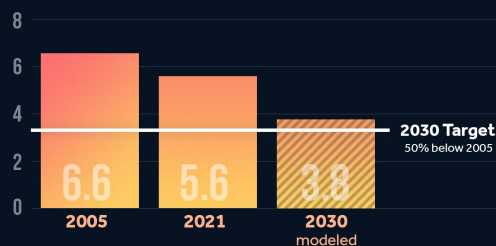
- Sector Specific plans will specify in more detail

See: https://www.carbonbrief.org/qa-what-does-chinas-14th-five-year-plan-mean-for-climate-change

Green Industrial Olympics have begun!

- US Inflation Reduction Act $369 Billion for clean energy & to cut emissions. Cut ghg emissions 42% below 2005 levels by 2030

- Bi-partisan Infrastructure Act

2030 EMISSION CUTS
WITH THE INFLATION REDUCTION ACT

Annual GHG emissions (Gt CO2-e)

2030 Target
50% below 2005

6.6 — 2005
5.6 — 2021
3.8 — 2030 modeled

Projected 2030 greenhouse gas emissions with the Inflation Reduction Act.
Source: Jenkins et al, REPEAT Project (August 12, 2022).

CLIMATE CENTRAL

US federal government's average annual climate spending ($ billions)

- Inflation Reduction Act 2022
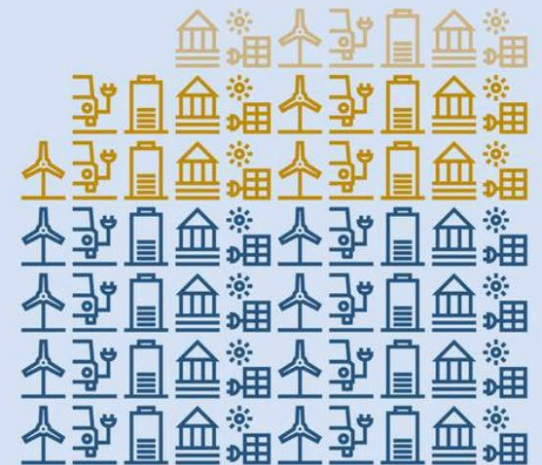- Infrastructure Investment and Jobs Act 2021
- CHIPS and Science Act 2022

$4bn $6bn $22bn $66bn

27 May

Council gives final approval to the net-zero industry act
The Council adopted a regulation on establishing a framework of measures for **strengthening Europe's net-zero technology manufacturing ecosystem**, better known as the 'net-zero industry act'.

These new rules will facilitate the **conditions for investments in green technologies** by:

- simplifying permit granting procedures

- supporting strategic projects, based on specific criteria contributing to decarbonisation

- facilitating access to markets for net-zero technological products

- defining rules for public incentives

- enhancing the skills of the European workforce

The objective is **to cover 40% of the EU's needs** in strategic technology products, such as solar photovoltaic panels, wind turbines, batteries and heat pumps.
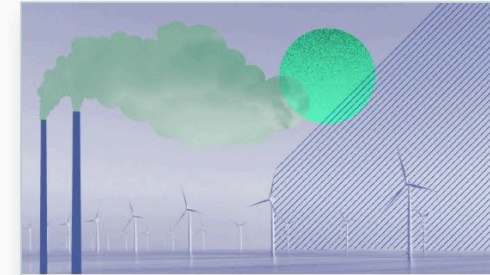
Net-zero industry act: a benchmark for the manufacturing capacity of strategic net-zero technology products (infographic)

→

Objectives of the net-zero industry act:

to **promote investments** in the production capacity of key products that ensure the EU's climate neutrality goals

to **create a simple legal framework** for EU-based net-zero industries

to cover **40%** of domestic needs in the EU with domestically-produced clean technologies by 2030
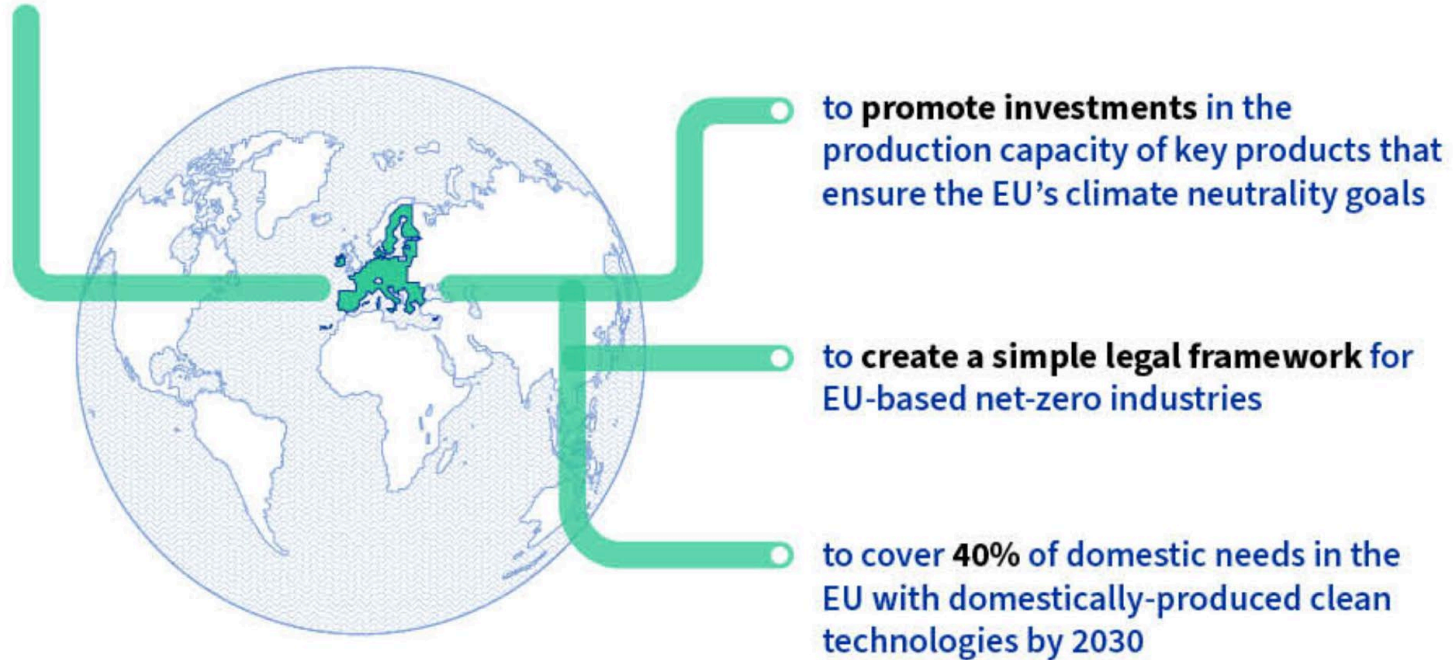
Solar photovoltaic and solar thermal

by 2025

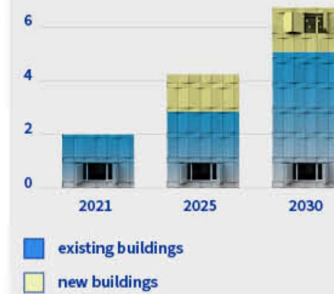Objectives of over 320 GW of newly installed solar photovoltaic capacity

by 2030

600 GW

Could deliver:

€60 billion of GDP per year in Europe and 400 000 new jobs
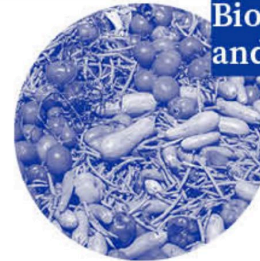
Onshore wind and offshore renewables

Capacity will have to grow from 204 GW in 2022 to more than 500 GW in 2030

by 2030

At least 42.5% of renewables

Batteries

Collection targets:

- portable batteries targets are 63% in 2027
- batteries from light means of transport, the target are 51% in 2028
- material recovery targets for lithium will be 50% by 2027

by 2030

73%

61%

80%

Heat pumps

million units

	2021	2025	2030

- existing buildings
- new buildings

by 2030

predictions are that heat pumps will lower Europe's gas demand for heating in buildings by at least 21 billion cubic meters

Biomethane and biogas

In 2021 biogas and biomethane production represented the same amount of natural gas consumption of Belgium, 196TWh

by 2030

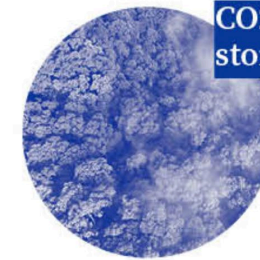EU biomethane production must reach 35 billion (bcm) per year

CO_2 capture and storage (CCS)

CCS is expected to grow to 80 million tonnes of CO_2 and reach at least 300 million tonnes in 2040

by 2030

annual injection capacity of at least 50 million tonnes of CO_2 in storage sites located in the EU, its exclusive economic zones or on its continental shelf

Grid technologies

by 2024

77% of EU consumers will have smart meters for electricity and 44% will have one for gas

GLOBAL MARKET:
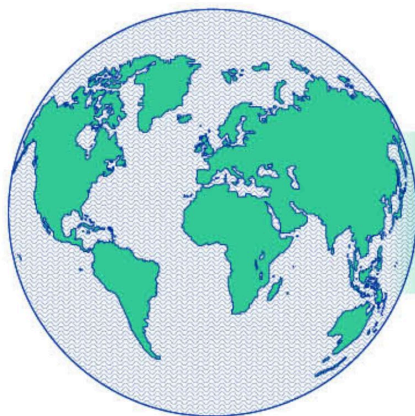
The net-zero technology global market is worth about

by 2030

€600 billion

HOW:

→ faster permit-granting processes to construct, extend change and operate net-zero manufacturing projects

- 12 months for projects of less than 1 GW annually
- 18 months for larger projects
- support from a "one-stop shop"

→ a simple legal framework for EU-based net-zero industries

→ **fostering innovation**: member states will be able to support **innovation** by creating net-zero regulatory sandboxes

→ **access to markets** by stimulating consumer demand and **public procurement**

→ **net-zero Europe platform** as a coordination mechanism for discussion, information exchange and sharing of best practices on issues related to this regulation

→ **enhancing skills (skills academies):** developing the skilled workforce and quality jobs required for net-zero industry in Europe

2011 Roadmap to a Resource Efficient Europe (COM (2011)571)

- proposed ways for how Europe can transform into a sustainable economy by 2050 by increasing resource productivity, decoupling economic growth from resource use and its environmental impact, finding ways to tackle inconsistencies in policies and addressing market failures.

- highlighted the need to address pricing to reflect the real costs of resource use and environmental degradation

- sustainable consumption and production

- promoted thinking of waste as a resource and the concept of ecosystem services.

seventh Environmental Action Program (2013-2020)

- 1.) protecting, conserving, and enhancing the Union's natural capital,

- 2.) turning the Union into a resource-efficient, green, and competitive low-carbon economy;

- 3.) safeguarding the Union's citizens from environment-related pressures and risks to health and wellbeing;

- 4.) improving implementation of environmental legislation;

- 5.) increasing knowledge about the environment and widening the evidence base for policy;

- 6.) securing investment for environment and climate policy and accounting for the environmental costs of any societal activities;

- 7.)improving the integration of environmental concerns into other policy areas and ensuring coherence when creating new policy;

- 8.) making the Union's cities more sustainable; and

- 9.) helping the Union address international environmental and climate change challenges more effectively

http://ec.europa.eu/environment/action-programme/.

European Green Deal

History Industrie 4.0

German BMBF initiates the Science Union to identify future High Tech Trends with high impact on society

First Appearance of the word *Industry 4.0*

Final report of the Science Union on *Industry 4.0*

BMBF-Report "Securing the future of German manufacturing Industry" Recommendations for implementing the strategic initiative *Industry 4.0*

Foundation of the Platform *Industry 4.0* by 3 industry associations

2010   **2011**   **2012**   **2013**   **2014**

Publicity and Demonstration

First I4.0 Demonstrator by smart factory

Revised I4.0 Demonstrator by smart factory

New I4.0 Demonstrator by smart factory and industry

Governmental Funding

Federal Ministry of Education and Research

Federal Ministry of Economics and Technology

Funding program Industrie 4.0 (Research)

Funding program Industrie 4.0 (Application)

200 (x2) Mio€

INDUSTRY 4.0 - the digital transformation

3rd platform, innovation accelerators, OT and manufacturing meet in transformation

CYBERSECURITY
INTERNET OF THINGS
AUGMENTED REALITY
CLOUD COMPUTING
BIG DATA
SYSTEM INTEGRATION
AUTONOMOUS ROBOTS
SIMULATION
ADDITIVE MANUFACTURING

INDUSTRY 4.0

FROM INDUSTRY 4.0 TO FOURTH INDUSTRIAL REVOLUTION

1

Mechanization
Steam engines
Water/steam power
New manufacturing
Iron production
Textile industry
Mining and metallurgy
Machine tools
Steam factories

2

Technological
Electrification
Production line
Mass production
Globalization
Engines/turbines
Broad adoption
of telegraph,
gas, water supply

3

Computer /Internet
Digital manufacturing
PLC/Robotics
IT and OT
Digitization
Automation
Electronic/digital
Networks
Digital machines

4

Convergence IT /OT
Autonomous machine
Advanced robotics
Big Data/Analytics
Internet of Things
Digital ubiquity/Cloud
Smart factory
Machine learning & AI
Cyber Physical

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS

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1 KEINE ARMUT

2 KEIN HUNGER

3 GESUNDHEIT UND WOHLERGEHEN

4 HOCHWERTIGE BILDUNG

5 GESCHLECHTER-GLEICHHEIT

6 SAUBERES WASSER UND SANITÄR-EINRICHTUNGEN

7 BEZAHLBARE UND SAUBERE ENERGIE

8 MENSCHENWÜRDIGE ARBEIT UND WIRTSCHAFTS-WACHSTUM

9 INDUSTRIE, INNOVATION UND INFRASTRUKTUR

10 WENIGER UNGLEICHHEITEN

11 NACHHALTIGE STÄDTE UND GEMEINDEN

12 NACHHALTIGE/R KONSUM UND PRODUKTION

13 MASSNAHMEN ZUM KLIMASCHUTZ

14 LEBEN UNTER WASSER

15 LEBEN AN LAND

16 FRIEDEN, GERECHTIGKEIT UND STARKE INSTITUTIONEN

17 PARTNER-SCHAFTEN ZUR ERREICHUNG DER ZIELE

ZIELE FÜR NACHHALTIGE ENTWICKLUNG

---

1 貧困を なくそう

2 飢餓を ゼロに

3 すべての人に 健康と福祉を

4 質の高い教育を みんなに

5 ジェンダー平等を 実現しよう

6 安全な水とトイレ を世界中に

7 エネルギーをみんなに そしてクリーンに

8 働きがいも 経済成長も

9 産業と技術革新の 基盤をつくろう

10 人や国の不平等 をなくそう

11 住み続けられる まちづくりを

12 つくる責任 つかう責任

13 気候変動に 具体的な対策を

14 海の豊かさを 守ろう

15 陸の豊かさも 守ろう

16 平和と公正を すべての人に

17 パートナーシップで 目標を達成しよう

SUSTAINABLE DEVELOPMENT GOALS

2030年に向けて 世界が合意した 「持続可能な開発目標」です

أهداف التنمية المستدامة

٦ المياه النظيفة والنظافة الصحية

٥ المساواة بين الجنسين

٤ التعليم الجيد

٣ الصحة الجيدة والرفاه

٢ القضاء التام على الجوع

١ القضاء على الفقر

١٢ الاستهلاك والإنتاج المسؤولان

١١ مدن ومجتمعات محلية مستدامة

١٠ الحدّ من أوجه عدم المساواة

٩ الصناعة والابتكار والهياكل الأساسية

٨ العمل اللائق ونمو الاقتصاد

٧ طاقة نظيفة وبأسعار معقولة

أهداف التنمية المستدامة

١٧ عقد الشراكات لتحقيق الأهداف

١٦ السلام والعدل والمؤسسات القوية

١٥ الحياة في البرّ

١٤ الحياة تحت الماء

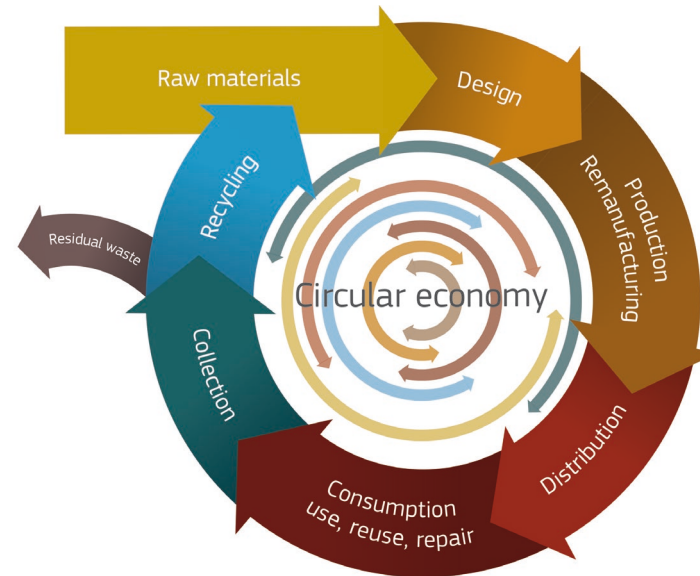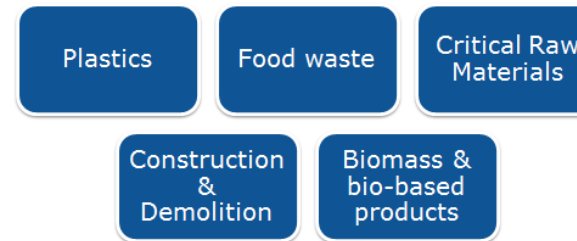١٣ العمل المناخي

Linear Economy

Circular Economy

Circular material flows called for

- Reducing industry emissions will entail coordinated action throughout value chains to promote all mitigation options, including demand management, energy and materials efficiency, circular material flows, as well as abatement technologies and transformational changes in production processes. Progressing towards net zero GHG emissions from industry will be enabled by the adoption of new production processes using low and zero GHG electricity, hydrogen, fuels, and carbon management.

Circular Economy Package 2015

CIRCULAR ECONOMY
Closing the loop
AN AMBITIOUS EU CIRCULAR ECONOMY PACKAGE

5 Main Areas of Action

Production

Secondary raw materials

Innovation & Investment

Consumption

Waste Management

Priority Sectors

Plastics

Food waste

Critical Raw Materials

Construction & Demolition

Biomass & bio-based products

- Creating synergies between environment and business
- Long-term vision and targets on waste management, internal market rules for products, environment and consumer protection, addressing regulatory obstacles and enforcement issues, innovation and investment

Circular Economy Package 2022

- make sustainable products the norm in the EU (Sustainable Products Initiative)

- empower consumers and public buyers

- Ecodesign laws 2022-2024

- Textile strategy

- Construction Products regulation

Corporate Sustainability Reporting

- **DIRECTIVE (EU) 2022/2464 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

- **of 14 December 2022**

- **amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting**

- **(Text with EEA relevance)**
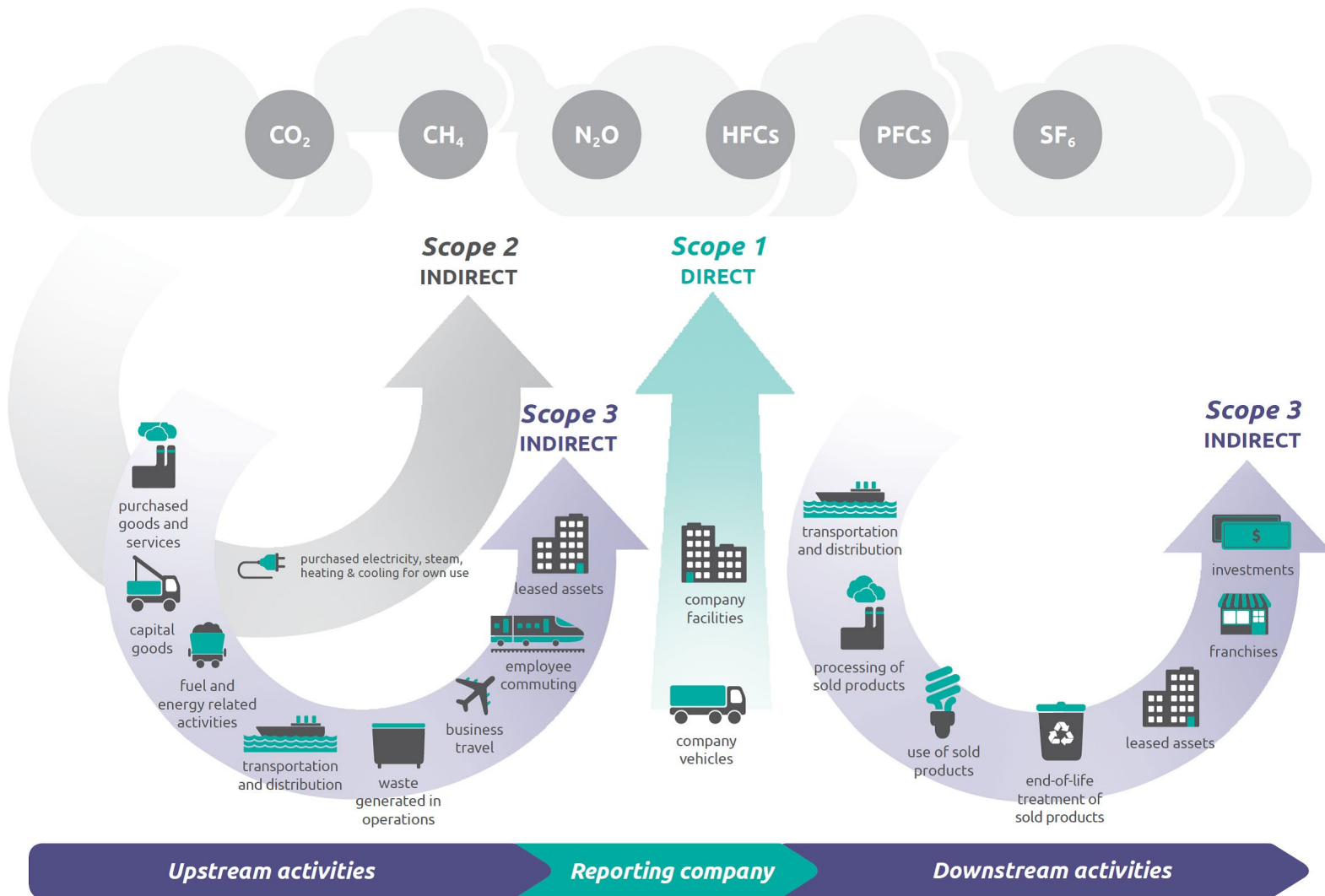
Source: WRI/WBCSD Corporate Value Chain (Scope 3) Accounting and Reporting Standard (PDF), page 5.

Plastics directive (2019/904)

- introduced a ban starting in 2021 on the most common one-way plastics found on European beaches, including single-use plastic plates and cutlery, cotton buds, straws and stirrers, and expanded polystyrene foam food and drink containers.

- 90 percent of plastic beverage bottles must be collected separately by 2029 and plastic bottles must contain 25% recycled content by 2025 and 30% by 2030.

Chemical Industry

Chemicals supply many strategic value chains
The chemical industry is indispensable to Europe's strong and sustainable economy of the future, as chemicals are present in almost every strategic value chain.
https://cefic.org/policy-matters/chemical-industry-green-deal/how-can-europes-chemical-industry-help-deliver-on-the-green-deal/

EU: SUSTAINABLE CHEMICALS FOR A CIRCULAR ECONOMY
To better understand the extent to which substances of concern are present in products, and to ensure their safe handling by waste operators, companies will from 5 January 2021 have to submit data to a new European Union database managed by the European Chemicals Agency. The database, known as SCIP (Substances of Concern In Products), was mandated by a 2018 revision of EU waste laws.
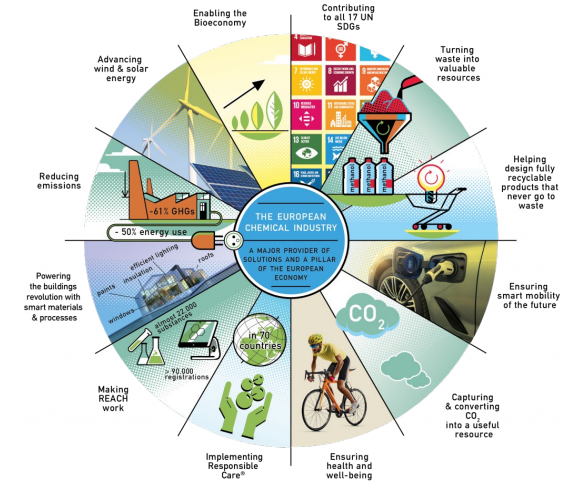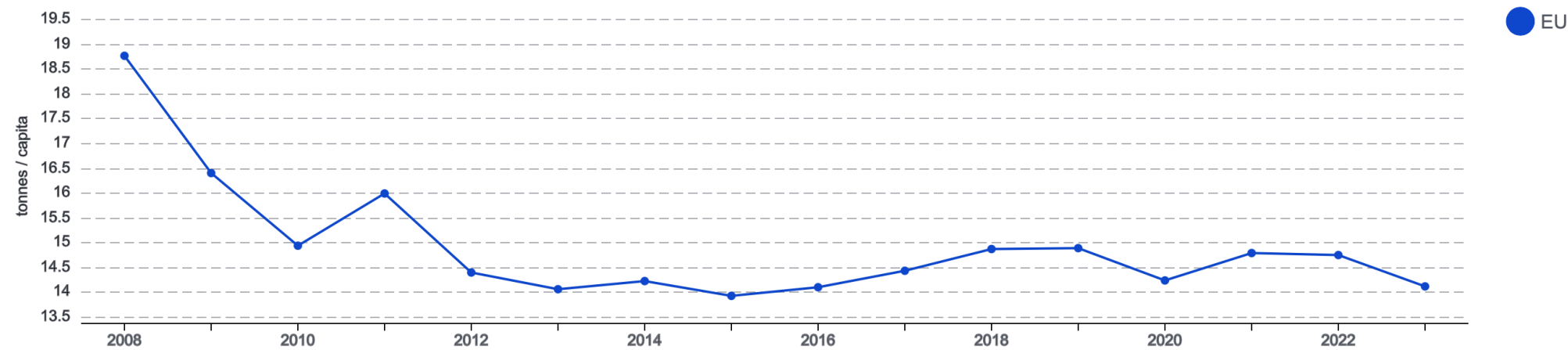
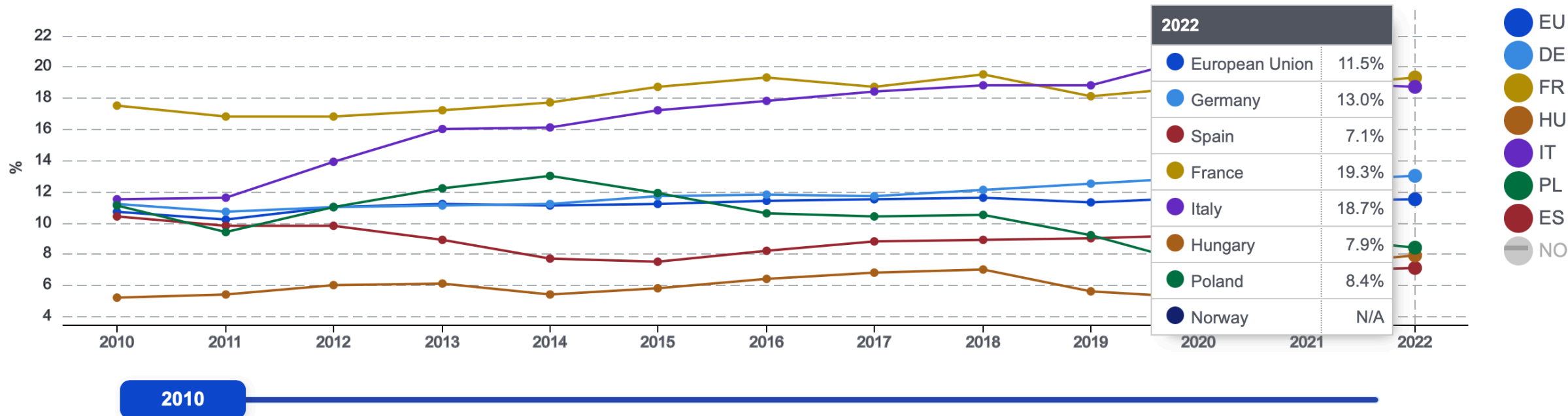# Raw material consumption (RMC) by main material category

Total | tonnes per capita

Source: Eurostat

Data is available for a limited number of EU countries.
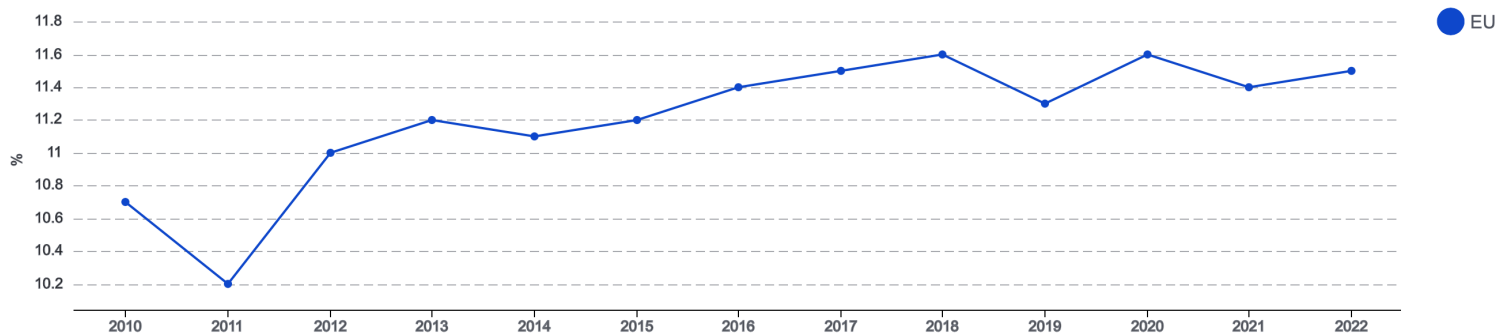
Circular material use rate

% of material input for domestic use

2022	
European Union	11.5%
Germany	13.0%
Spain	7.1%
France	19.3%
Italy	18.7%
Hungary	7.9%
Poland	8.4%
Norway	N/A

Legend: EU, DE, FR, HU, IT, PL, ES, NO

2010

Source: Eurostat - access to dataset
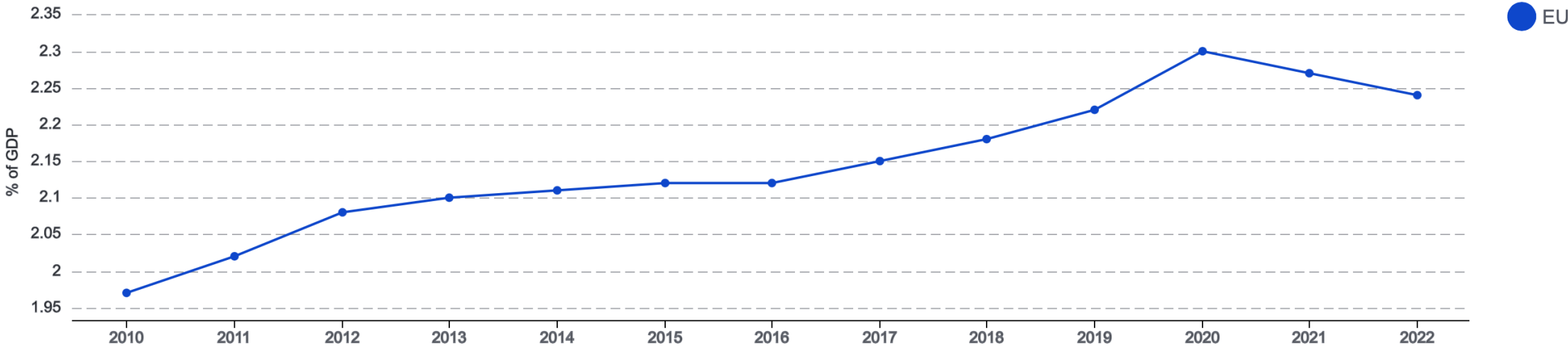
Circular material use rate

% of material input for domestic use

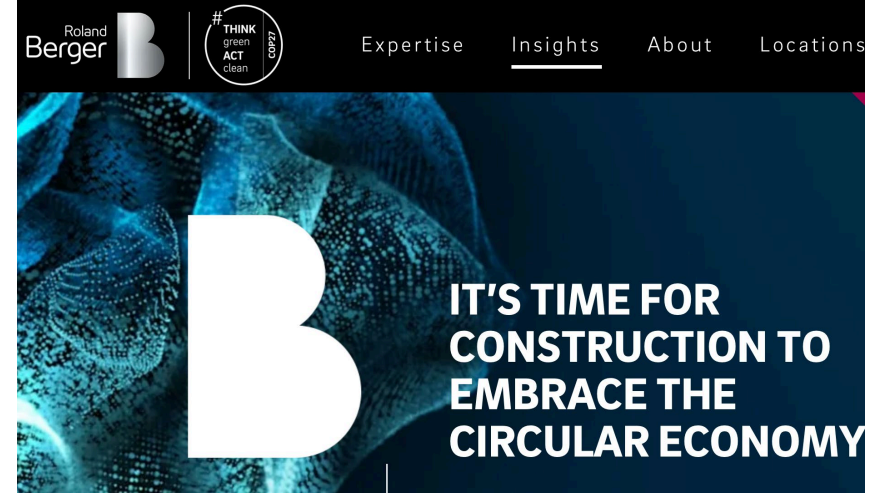

EU

Source: Eurostat
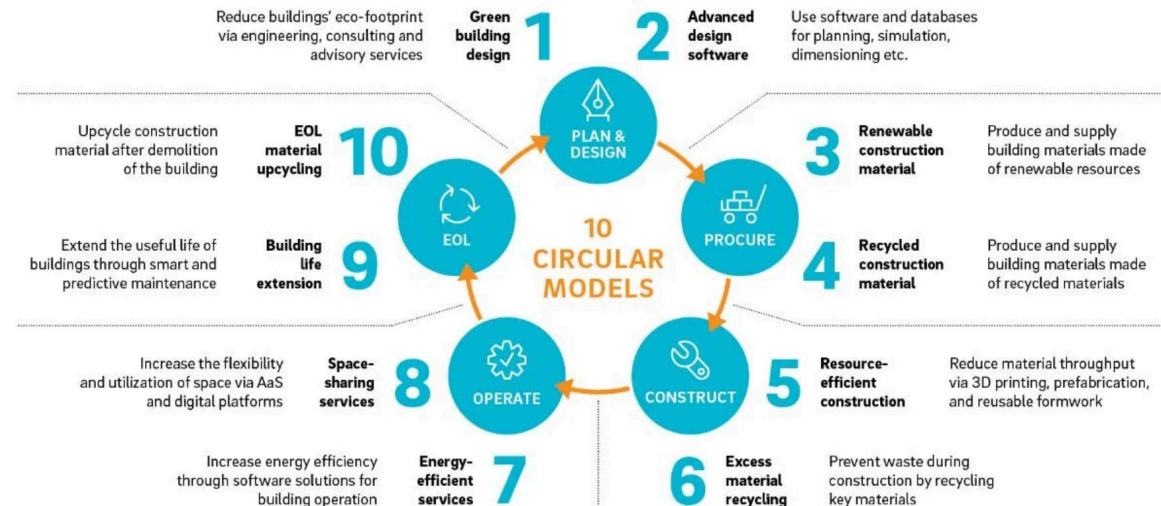
Gross domestic expenditure on R&D

Total | % of GDP

Source: Eurostat

Globally CONSTRUCTION responsible for:

IT'S TIME FOR CONSTRUCTION TO EMBRACE THE CIRCULAR ECONOMY

40% global CO_2 Emissions

30% extraction natural resources

25% of solid waste

10 circular business models for more sustainable construction

Reduce buildings' eco-footprint via engineering, consulting and advisory services — **Green building design** — 1

2 — **Advanced design software** — Use software and databases for planning, simulation, dimensioning etc.

Upcycle construction material after demolition of the building — **EOL material upcycling** — 10

3 — **Renewable construction material** — Produce and supply building materials made of renewable resources

Extend the useful life of buildings through smart and predictive maintenance — **Building life extension** — 9 — EOL — PLAN & DESIGN — PROCURE

4 — **Recycled construction material** — Produce and supply building materials made of recycled materials

10 CIRCULAR MODELS

Increase the flexibility and utilization of space via AaS and digital platforms — **Space-sharing services** — 8 — OPERATE — CONSTRUCT — 5 — **Resource-efficient construction** — Reduce material throughput via 3D printing, prefabrication, and reusable formwork

Increase energy efficiency through software solutions for building operation — **Energy-efficient services** — 7

6 — **Excess material recycling** — Prevent waste during construction by recycling key materials

Source Roland Berger

Revised Construction Products Regulation

1.8.   Sustainable use of natural resources of construction works

The construction works and any part of them shall be designed, constructed, used, maintained and demolished in such a way that, throughout their life cycle, the use of natural resources is sustainable and ensures the following:

(a)   use of raw and secondary materials of high environmental sustainability and thus with a low environmental footprint;

(b)   minimizing the overall amount of raw materials used;

(c)   minimizing the overall amount of embodied energy;

(d)   minimizing the overall use of drinking and brown water;

(e)   reuse or recyclability of the construction works, parts of them and their materials after demolition.

https://ec.europa.eu/docsroom/documents/49315

Press release

10-04-2024 - 17:48
20240408IPR20303

European Parliament

Parliament gives its final approval to the revised construction products regulation

• Publication of standards to become faster and more efficient.

• All product information to be made available in a single place via Digital Product Passport.

• Inclusion of used construction products to boost reuse and remanufacturing.

REGULATION (EU) 2023/1542 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 12 July 2023

concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

- Addresses the whole life cycle of batteries (from small household batteries to large vehicle and industrial batteries) from the sourcing of materials and battery design to the treatment of used batteries

- Introduces mandatory requirements on sustainability (such as carbon footprint rules, minimum recycled content, performance and durability criteria), safety and labelling for the marketing and putting into service of batteries, and requirements for end-of-life management.

EU strategy for sustainable and circular textiles

- **Objectives**
- The strategy aims to create a greener, more competitive sector that is more resistant to global shocks.
- all textile products placed on the EU market are durable, repairable and recyclable, to a great extent made of recycled fibres, free of hazardous substances, produced in respect of social rights and the environment
- "fast fashion is out of fashion" and consumers benefit longer from high quality affordable textiles
- profitable re-use and repair services widely available
- the textiles sector is competitive, resilient and innovative with producers taking responsibility for their products along the value chain with sufficient capacities for recycling and minimal incineration and landfilling

Ecolabelling

- In 2019, more than 77,000 products carry the EU the Ecolabel, across such categories as hard floor coverings, indoor paints, cleaners, tissue paper, textiles, electronics, and tourist accommodations (https://ec.europa.eu/environment/ecolabel/images/Evolution_nb_products_services.png).

- European Commission, "The Ecolabel Catalogue," http://ec.europa.eu/ecat.

Specific policies

Plastics

- EU action on plastic production and pollution to contribute to a circular economy.

Waste and recycling

- EU action on waste management, treatment and recycling.

Circular economy at the global level

- The EU is leading the way to a circular economy at the global level.

Critical raw materials

- The EU's action plan on critical raw materials, and list of these materials.

Industrial emissions

- EU action to reduce industrial emissions.

Sustainable products

- EU measures to make sustainable products the norm in the EU.

Textiles

- EU action to address the production and consumption of textiles.

Tools and instruments

EU Ecolabel

- The EU's label of environmental excellence, helping consumers make greener choices.

European Circular Economy Stakeholder Platform

- Bringing together stakeholders active in the broad field of the circular economy in Europe.

Sustainable buildings – Level(s)

- A common European approach to assess and report on the sustainability of buildings.

EU Environmental Technology Verification

- Promoting the uptake of green technologies through a verification process.

Eco-management and audit scheme

- The EU's management instrument for companies to improve their environmental performance.

Green public procurement

- A voluntary instrument to green public purchasing.

Raw materials initiative

- The EU's strategy for tackling the issue of access to raw materials in the EU.

Eco-innovation action plan

- Eco-innovation and green technologies are key to the circular economy.

Circular economy monitoring framework

- Monitor the progress of EU countries towards a circular economy.

European Innovation Partnership on Raw Materials

- Bringing together stakeholders on innovative approaches to the challenges related to raw materials.

Green Deals going Local

- https://cor.europa.eu/en/engage/Pages/green-deal.aspx

- https://sustainablecities.eu/mannheim-message/local-green-deals/