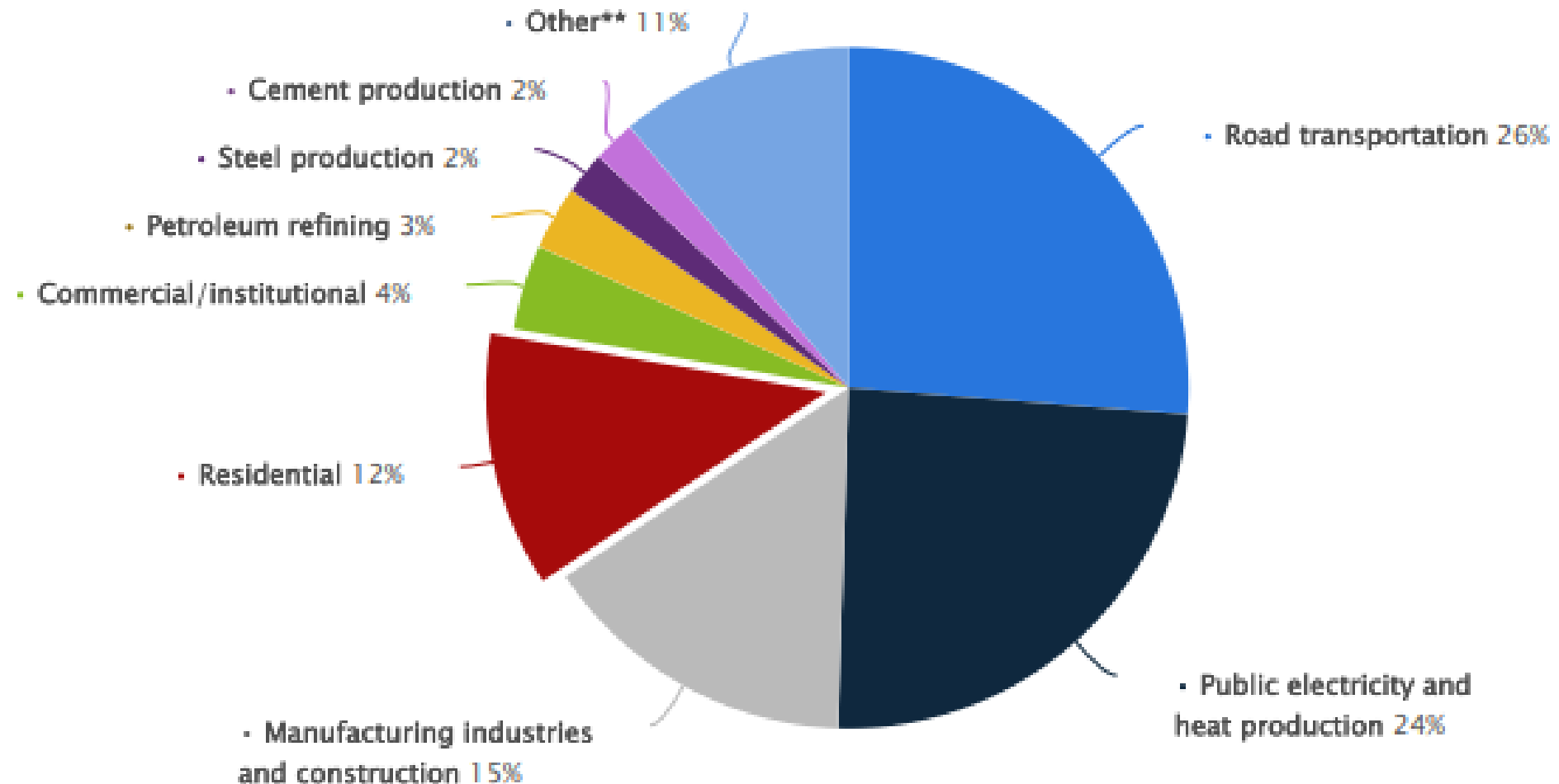


Green Transition in the EU

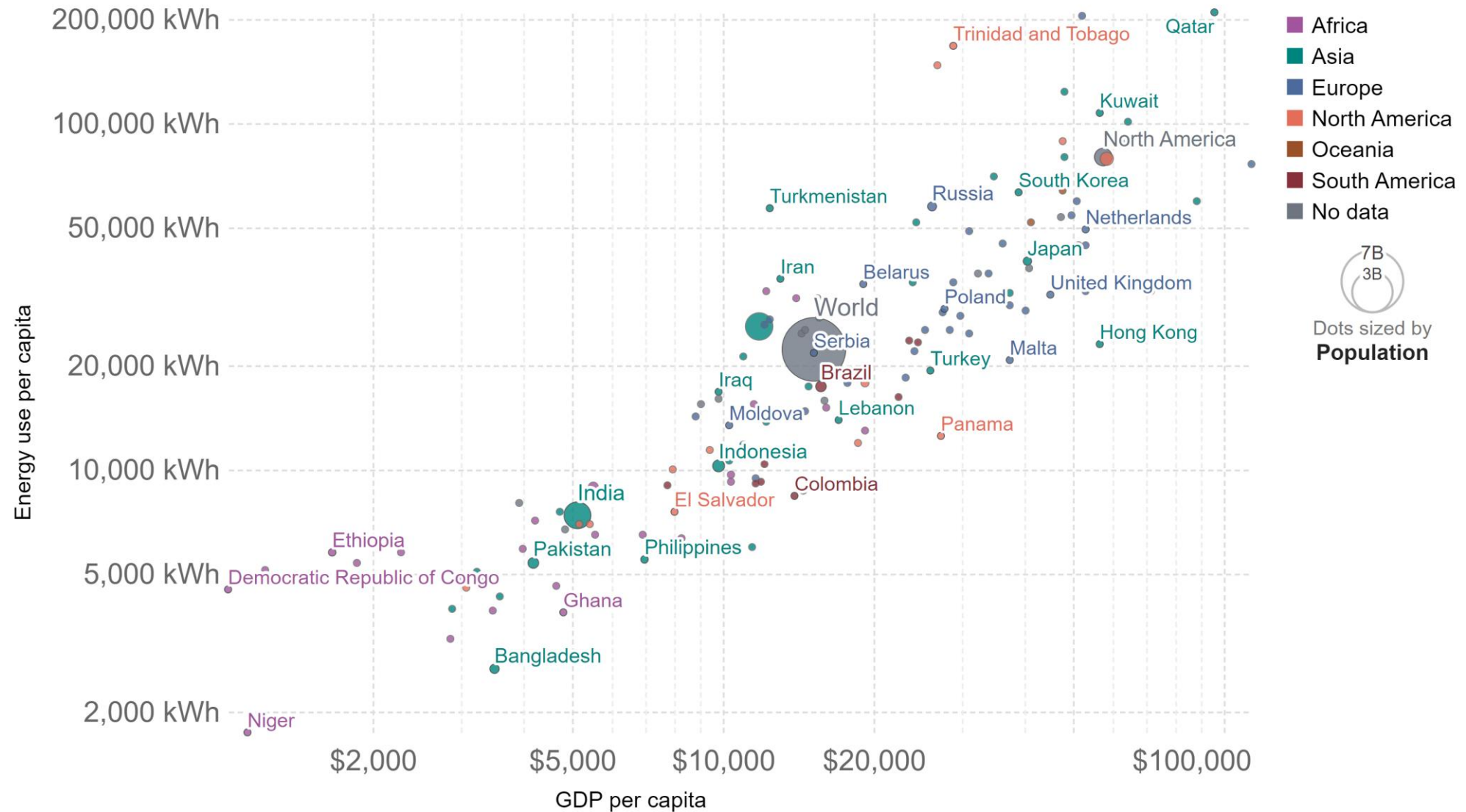
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Carbon dioxide emissions in the EU in 2020



GDP per capita vs. energy use, 2015

Annual energy use per capita, measured in kilowatt-hours per person vs. gross domestic product (GDP) per capita, measured as constant international-\$.



An Energy Policy for Europe

Three pillars:

- Sustainability
- Security of supply
- Competitiveness

2007

The Energy Union

Five pillars:

- Security, Solidarity and trust
- A fully integrated internal energy market
- Energy Efficiency
- Climate action-decarbonisation
- R&I and competitiveness

2015

The EU Green Deal

Eight Policy areas:

- Climate Action
- Clean Energy
- Biodiversity Measures
- From Farm to Fork & Sustainable Agriculture
- Sustainable Industry
- Building and renovating
- Sustainable mobility
- Eliminating pollution

2019

Priorities

Targets

2009

The 2020 Climate and Energy Package

2020 targets

- - 20 % GHG emissions, compared to 1990;
- 20 % share of RES (binding targets at national level);
- 20 % energy efficiency.
- 10 % interconnection

2014

The 2030 Climate and Energy Framework

2030 targets

- **At least - 40 % GHG emissions, compared to 1990;**
- **At least 27 % share of RES;**
- **At least 27 % energy efficiency**
- **15 % electricity interconnection**

2018

The Clean Energy Package

Update of 2030 targets

- **At least - 40 % GHG emissions, compared to 1990;**
- **At least 32 % share of RES (binding target at Union level);**
- **At least 32.5 % improved energy efficiency**
- **15 % electricity interconnection**

2019+

The EU Green Deal

Update of 2030 GHG target, climate neutrality by 2050

- Updated GHG emission target of **at least - 55 % by 2030, compared to 1990**
- **Net-zero carbon emissions by 2050**

EGD

- 1) Increasing the EU's climate ambition for 2030 and 2050 (55% by 2030, climate neutral continent by 2050).
- 2) Supplying clean, affordable and secure energy (EE, RES, secure supplies, digitalized and fully interconnected market...). Strategies on hydrogen, methane, offshore RES, the European Battery Alliance...
- 3) Clean industry and circular economy (focus on energy intensive industries, climate neutral and circular products). GD Industrial Strategy, Circular Economy Action Plan...
- 4) From farm to fork (incl. the reform of CAP).
- 5) Building and renovating in an energy and resource efficient way (Renovation Wave strategy, circular economy design, digitalization, climate proof construction of housing).

EGD

- 6) Shift to sustainable and smart mobility (90 % reduction of GHG by 2050). High-speed rail across Europe, automated mobility, climate neutral cities, zero-emission cars, vessels, large aircraft.
- 7) Preserving and restoring ecosystems and biodiversity (EU's biodiversity to recover by 2030; afforestation, organic farming, reduction of pesticides...). The EU Biodiversity Strategy.
- 8) A zero pollution ambition for a toxic-free environment (preserving biodiversity, reduction of pollution from excess nutrients, sustainable alternative for chemicals...).
- 9) Leave no one behind (Just Transition Mechanism).

EGD roadmap

- 2019 - EU Green Deal.
- 2020 - Green Deal Investment Plan and Just Transition Mechanism.
- 2020 - Climate Law.
- 2021 - Fit for 55 Package.

<ul style="list-style-type: none">• a 40% share of renewable energy sources (RES) in the EU's energy mix• a 36% energy efficiency target for final energy consumption• Revision of the EU Emissions Trading System• A Carbon Border Adjustment Mechanism• Review of the Effort Sharing Regulation• Revision of the Energy Tax Directive• Amendment of the Renewable Energy Directive	<ul style="list-style-type: none">• Amendment of the Energy Efficiency Directive• Inclusion of greenhouse gas emissions and removals from LULUCF• Directive on deployment of alternative fuel infrastructure• CO2 emission performance standards for vehicles• Social Climate Fund• Methane emission reduction• Energy performance of buildings• Revision of the Third Energy Package for gas...
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EGD roadmap

- 2021 - EU framework to decarbonize gas markets, promote hydrogen and reduce methane emission.
- 2022 - REPowerEU .

=> In general, all EU actions and policies are now expected to contribute to the Green Deal objectives.

EU ETS

- Designed to drive a shift from fossil fuels' energy generation, polluting transport and industry, to a climate-neutral future.
- Power and heat generation, energy-intensive industry sectors - oil refineries, steel works, production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, acids, bulk organic chemicals...
- To be expanded to maritime, road transport and buildings.
- Heavily criticized for increasing the prices of energy.

Carbon Border Adjustment Mechanism (CBAM)

- Certain goods (cement, electricity, fertilizers, aluminium, iron, steel...) imported into the EU will need (from 2026) to surrender CBAM emission certificates mirroring the existing ETS for such goods produced in the EU.
- To provide even playing field between EU and non-EU high emission products.
- Where goods are imported from countries with mandatory carbon price the number of certificates may be reduced.
- To comply with WTO rules to limit trade disputes and legal uncertainty.
- To force the rest of the world to decarbonize (politics through the trade and regulation).

Efficiency of buildings

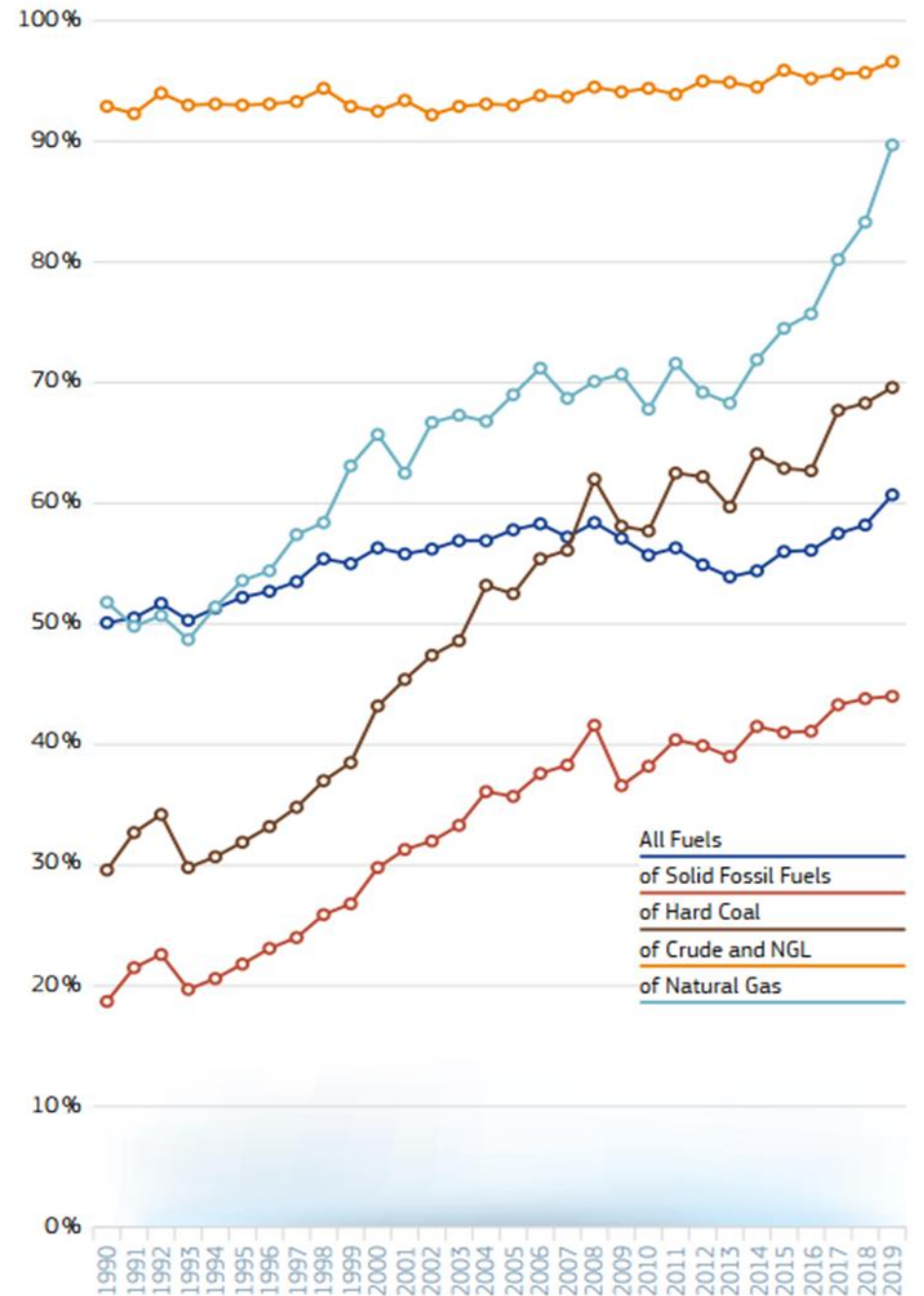
- Savings + tackling the energy poverty.
- Minimum requirements for energy performance of new buildings and units.
- Plans for increasing the number of nearly zero-energy buildings.
- Energy certification.
- Renovation of public buildings (at least 3% of them annually).
- 49% of RES in buildings by 2030.

Decarbonization of vehicles

- At least 30 million zero-emission cars on EU roads by 2030.
- Only zero-emission cars to be registered from 2035.
- Road transport covered by EU ETS from 2026.
- CO₂ targets (performance standards) for cars in the EU.

„Windmills of Freedom“ vs. „traditional energy resurrection“

- Decarbonization rebranded as a source of security?



REPowerEU – Short-term measures

- Common purchases of gas, LNG and hydrogen via the EU Energy Platform.
- New energy partnerships with reliable suppliers, including future cooperation on renewables and low carbon gases.
- Rapid roll out of solar and wind energy projects combined with renewable hydrogen deployment to save around 50 bcm of gas imports.
- Increase the production of biomethane to save 17 bcm of gas imports.
- Approval of first EU-wide hydrogen projects by the summer.
- An EU Save Energy Communication with recommendations for how citizens and businesses can save around 13 bcm of gas imports.
- Fill gas storage to 80% of capacity by 1 November 2022.
- EU-coordination demand reduction plans in case of gas supply disruption.

REPowerEU – Medium-term measures by 2027

- New national REPowerEU Plans under the modified Recovery and Resilience Fund – to support investment and reforms worth €300 billion.
- Boosting industrial decarbonisation with €3 billion of frontloaded projects under the Innovation Fund.
- Faster permitting of renewables.
- Investments in an integrated and adapted gas and electricity infrastructure network.
- Raising the EU-wide target on efficiency for 2030 from 9% to 13% (compared to 2020).
- Increase the European renewables target for 2030 from 40% to 45%
- New EU proposals to ensure industry has access to critical raw materials.
- To increase energy efficiency in the transport sector.
- A hydrogen accelerator to build 17.5 GW by 2025 of electrolysers to fuel EU industry with homegrown production of 10 million tonnes renewable hydrogen.
- A modern regulatory framework for hydrogen.

Sources

KPMG (2022): European Green Deal policy guide

Statista (n.d.): Distribution of carbon dioxide emissions in the European Union in 2020, by key source

Florence School of Regulation (2022): The EU Green Deal.

Eurointelligence (n.d.) (multiple posts)