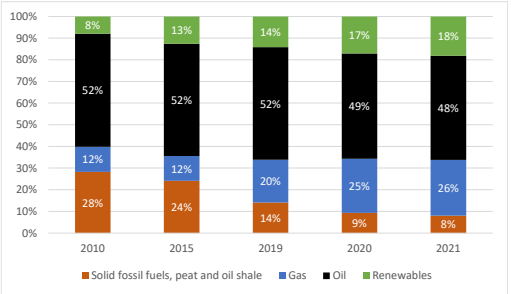
# State of the Energy Union 2023 Greece

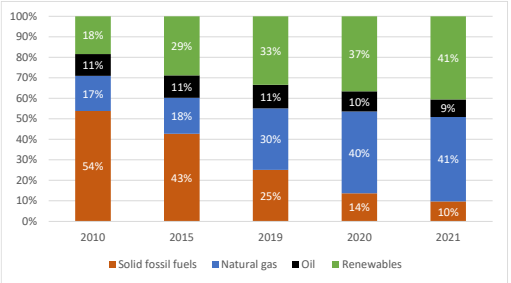
## Key energy figures

Graph 1: **Energy mix**




***Source:*** Eurostat

Graph 2: **Electricity mix**



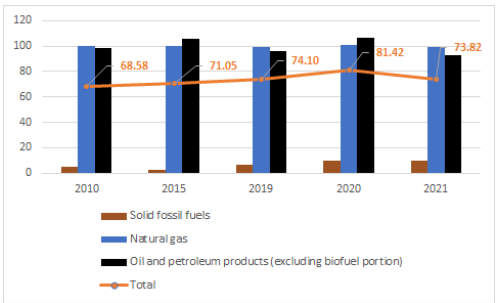

***Source:*** Eurostat

- **Fossil fuels still play an important role** in Greece's energy mix but it expects to phase out coal and oil gradually.
- In the last decade, coal share in the energy mix **reduced sharply** from 26% in 2011 to 8% in 2021, while in the case of oil only a slight reduction from 56% in 2011 to 48% in 2021. On the other hand, gas share in the energy mix has been increasing to reach 26% in 2021.
- In 2021, **renewable energy and natural gas made up the bulk of Greece's electricity mix**, at 41% each.

## Security, solidarity and trust

### 1. DIVERSIFICATION OF ENERGY SOURCES AND REDUCTION OF IMPORT DEPENDENCY

Graph 3: **Import dependency on fossil fuels**




(1) In percentages (%)
(2) Combustible renewables and electricity are excluded
(3) The total amount takes into consideration the energy mix of the country
***Source:*** Eurostat

- Before Russia invaded Ukraine, Greece had a **relatively medium exposure to Russian gas and oil, slightly below the EU average**. However, it is highly dependent on imported fossil fuels in general. This makes its economy particularly sensitive to global price developments, requiring it to step up efforts on the energy transition.

### 2. FLEXIBILITY OF THE ENERGY SYSTEM

- **Energy storage:** Greece does not have any underground gas storage facility.

# Integrated internal energy market

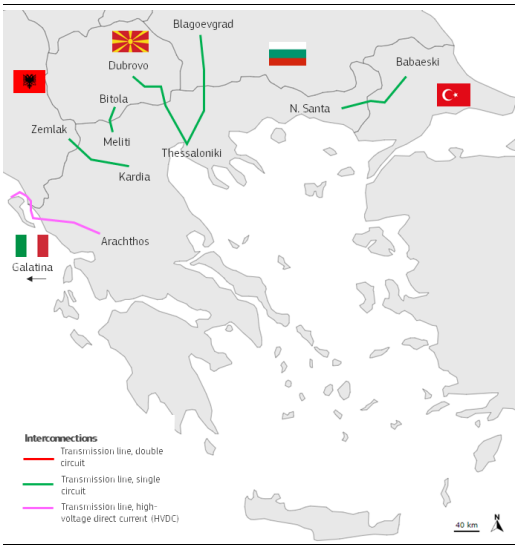
## 1. ELECTRICITY INTERCONNECTIVITY

| 2023 | 2030 target |
|---|---|
| 5.60% | At least 15% |

***Source:*** DG ENER's own calculation based on ENTSO-E

## 2. ENERGY TRANSMISSION INFRASTRUCTURE

Map 1: **Cross-border electricity interconnections**



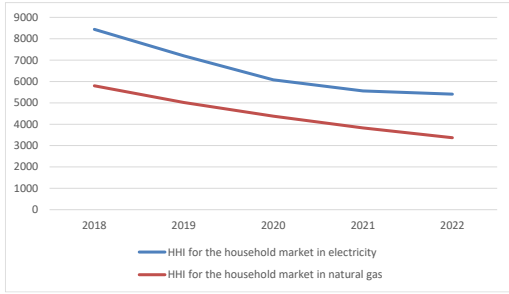

***Source:*** European Commission map recreation (based on ENTSO-E)

Map 2: **Cross-border gas interconnections**


***Source:*** European Commission map recreation (based on ENTSO-G)

## 3. MARKET INTEGRATION

Graph 4: **Index of concentration (HHI) for the household markets in electricity and natural gas**




***Source:*** CEER 2023 out of ACER´s Energy Retail and Consumer Protection 2023 Market Monitoring Report

- In 2022, in Greece the market share of the three largest suppliers reached 74% for electricity, and 70.2% for natural gas.

### Rollout of electricity smart meters

- Data on the % of household consumers equipped with smart meters in 2022 is not available. (1)

(1) ACER, CEER. Energy Retail and Consumer Protection, 2023 Market Monitoring Report.

## 4. ENERGY POVERTY AND JUST TRANSITION

Table 1: **Energy poverty**

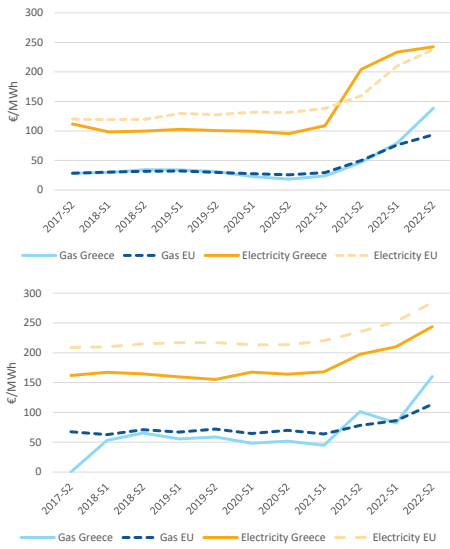
| | Greece | | | EU | | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2020 | 2021 | 2022 |
| Arrears on utility bills (households %) | 28.2% | 26.3% | 34.1% | 6.5% | 6.4% | 6.9% |
| Inability to keep home adequately warm (household %) | 17.1% | 17.5% | 18.7% | 7.5% | 6.9% | 9.3% |
| Population living in dwelling with presence of lead, damp and rot (population %) | 12.5% | : | : | 14.8% | : | : |

***Source:*** Eurostat

- **Just transition plan:** The Greek Territorial Just transition plans outline the coal mining and fossil fuel -powered stations in Western Macedonia, Megalopolis and in the islands of North-South Aegean and Crete. They set out how the Just Transition Fund (JTF), with a national allocation of 1.375 € billion, will support the development of clean energy, industry and trade, smart agricultural production, sustainable tourism, and technology and education. Coal phase-out commitment by 2028.

## 5. ENERGY PRICES

Graph 5: **Energy retail prices for industry (top) and households (bottom)**

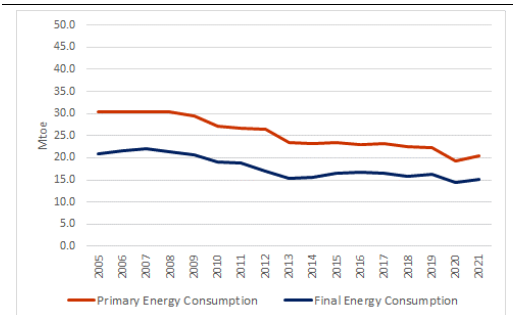



(1) On electricity, the band consumption is for DC households and ID for industry
(2) On gas, the band consumption is D2 for households and I4 for industry
***Source:*** Eurostat

# Energy efficiency

## 1. ENERGY EFFICIENCY

Graph 6: **Primary and final energy consumption**

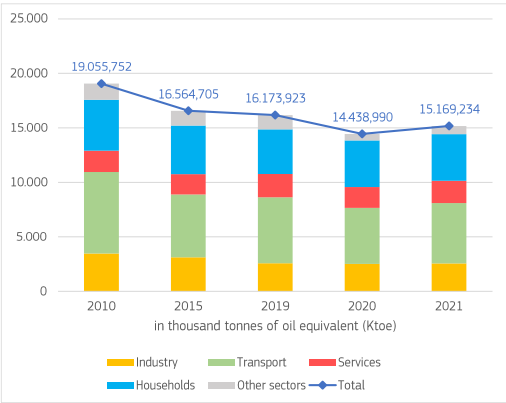



***Source:*** Eurostat

- In 2021, Greece's **Primary Energy Consumption (PEC)** amounted to 20.33 Mtoe, 8.8% lower than in 2019, while its **Final Energy Consumption (FEC)** amounted to

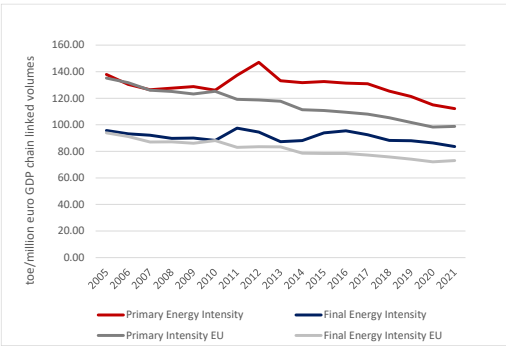
15.17 Mtoe, 6.2% lower than in 2019, despite the COVID-19 crisis recovery.

Graph 7: **Final energy consumption by sector**




***Source:*** Eurostat

Graph 8: **Primary and final energy intensity**




***Source:*** Eurostat

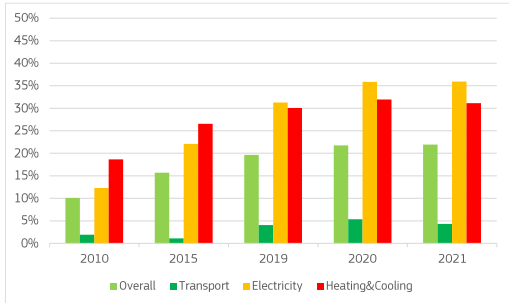
## 2. ENERGY SAVINGS IN BUILDINGS

- In 2020, there were **4.63 million** of **residential buildings** in **Greece**.
- As per its 2020 Long Term Renovation Strategy (LTRS), **Greece** targets to achieve **-8%** of energy savings **by 2030** compared to **2015** in the building sector.
- In 2021, the final energy consumption of residential buildings **decreased by 1.53%** compared to 2019.
- As per the European Heat Pump Association (EHPA), there are no data available for Greece.

# Decarbonisation and climate action

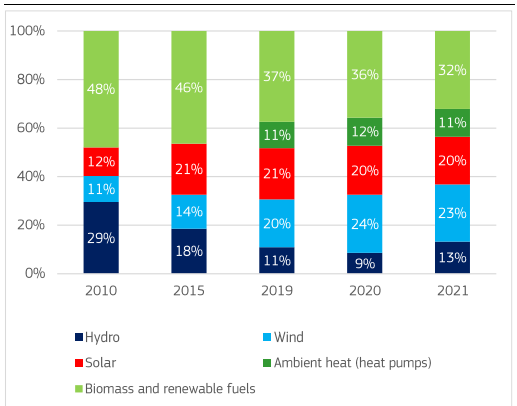
## 1. SECTORAL SHARE OF RENEWABLE ENERGY

Graph 9: **Share of renewable energy sources**




(1) In % of gross final consumption of energy
***Source:*** Eurostat

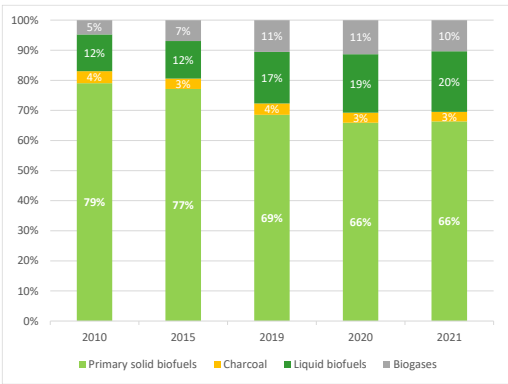
Graph 10: **Renewable energy mix**




(1) In % of gross final consumption of energy
***Source***: Eurostat

## 2. BIOENERGY DEMAND

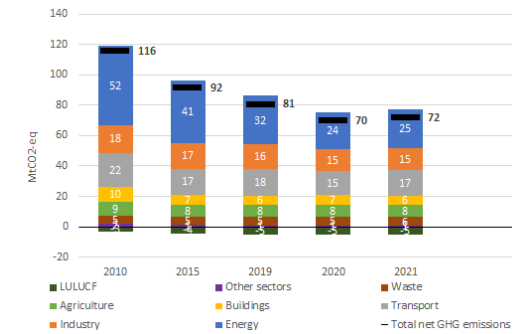
Graph 11: **Bioenergy mix**




(1) Composition of bioenergy, in % of gross inland consumption of energy
***Source:*** Eurostat

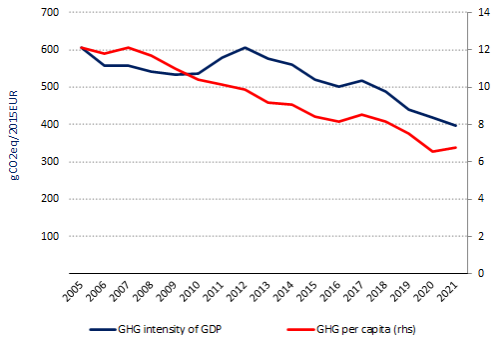
## 3. GREENHOUSE GAS EMISSIONS

Graph 12: **Greenhouse gas emissions by sector**




(1) Energy sector refers to electricity and heat production and petroleum refining.
(2) Industry includes fuel combustion in manufacturing and construction and emissions in industrial processes and product use.
(3) Buildings include emissions from energy use in residential and tertiary buildings, and energy use in agriculture and fishery sectors.
(4) Total net GHG emission including LULUCF and excluding international aviation.
***Source:*** EEA

Graph 13: **GHG per capita and GHG intensity of GDP**



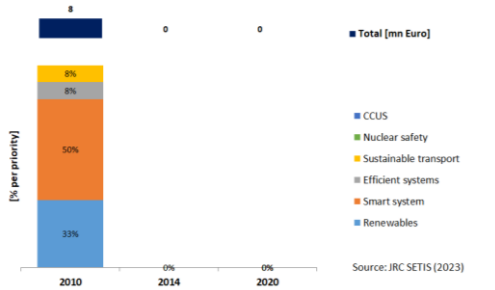

(1) Total greenhouse gas emissions, including LULUCF and excluding international aviation.
***Source:*** Greenhouse gas inventory 1990-2021 (EEA). Real GDP in 2015-prices (AMECO, European Commission). Population (Eurostat).

- With 397 gCO2eq/2015EUR, Greece lies above the EU average in terms of GHG intensity of GDP.
- With 7 tonnes of CO2 equivalent per capita, Greece is within the EU average in terms of GHG emissions per capita.
- For more detailed information on country profiles see Progress made in cutting emissions (europa.eu).

# Research, innovation and competitiveness

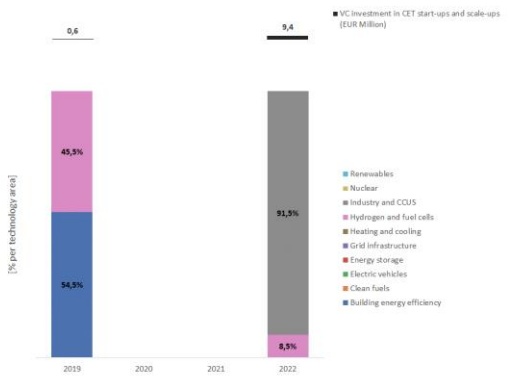
## 1. INVESTMENT IN R&I

Graph 14: **Public investment in Energy Union R&I priorities**




(1) Firms typically use venture capital to expand, break into new markets, and grow faster. Venture capital is essential for the growth of innovative firms and it is key to foster the EU's competitiveness and to strengthen the EU's technology sovereignty in the clean energy sector.
***Source:*** JRC SETIS 2023

Graph 14: **Venture capital investment in clean energy technology (start-ups and scale-ups)**

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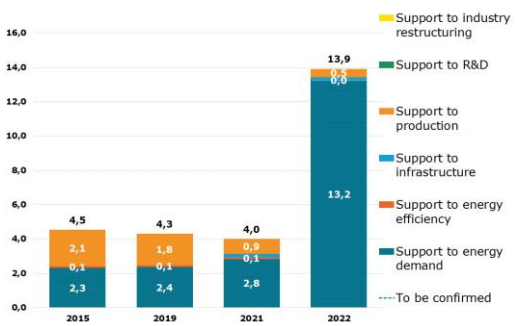
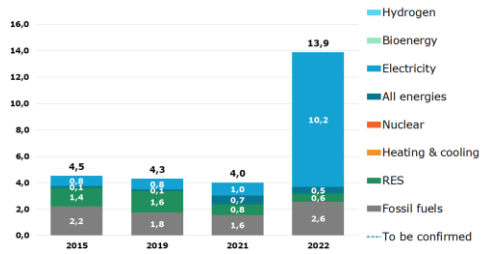
## 2. ENERGY SUBSIDIES

Graph 15: **Energy subsidies by purpose**




(1) Subsidies in EUR 2022 billion
(2) Some 2022 data were not fully available or validated at the time the study was completed (August 2023). For missing 2022 values, 2021 data were taken as a basis for an estimate. The estimated data are referred to as 'to be confirmed' in the graphs and indicated by hatching.
***Source:*** Enerdata. Inventory of energy subsidies in the EU27 - 2023 edition

Graph 16: **Energy subsidies by carrier**

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# European Semester 2023

**Country Specific Recommendation (Energy):**

Reduce reliance on fossil fuels and further accelerate the diversification of energy supply routes. Further expand the deployment of renewable energy by completing and enforcing the new legal frameworks for streamlining the licensing process of new renewable energy installations and for offshore wind farms, increasing electricity network and storage capacity, promoting the decentralised production of renewable energy, including self-consumption, and putting in place legislative frameworks for the production of renewable hydrogen and biomethane. Step up the delivery of measures that improve energy efficiency, including targeted measures for energy-poor households and the installation of smart meters, and policy efforts aimed at the provision and acquisition of the skills needed for the green transition. Support the decarbonisation of the transport sector, in particular by promoting electric vehicles.[(2)]

For more information see the 2023 European Semester Country Report.

[(2)] Council of the European Union 9829/1/23

## National Energy and Climate Plan (NECP)

- **The draft updated NECP** was not submitted yet to the European Commission.
- For more information see the dedicated webpage of the European Commission on the NECPs.

## Recovery and Resilience Plan (RRP) and REPowerEU chapter

- **The Greek RRP was approved by the Council on 13 July 2021.**
- The implementation of the measures proposed in the RRP would allow Greece to access **EUR 17.8 billion in grants** and **EUR 12.7 billion in loans**.
- **37.5%** of these funds are **allocated** for measures contributing to **climate objectives**.
- The Commission **disbursed so far EUR 11.1 billion to Greece.** A 3rd payment request was submitted on 16 May 2023 and it's currently under assessment.
- On 31 August 2023 Greece submitted a **request to revise its RRP**, adding a **REPowerEU chapter**.
- The amended RRP takes into account the **revised RRF grant allocation** for Greece decreased to EUR 17.43 billion. It includes also the EUR 769.22 million **REPowerEU grant allocation** and EUR 25.6 million **voluntary transfer from the Brexit Adjustment Reserve**. Greece has also requested EUR 5 billion **additional loans**. The **total amount available** is therefore EUR 18.22 billion in grants and EUR 17.73 billion in loans.
- For more information visit the Recovery and Resilience Scoreboard.