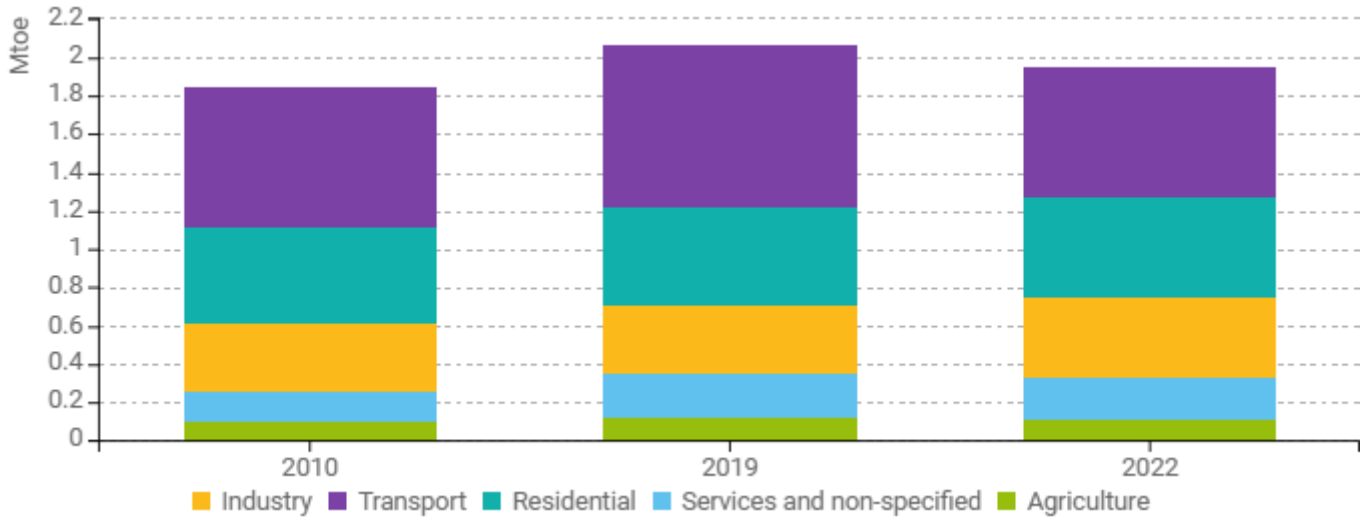
Energy efficiency trends and policies

Overview

In 2022, Albania's total final energy consumption was 1.95 (Mtoe), reflecting a 2% increase compared to 2010 levels. The distribution of energy consumption among sectors in 2022 was as follows: the residential sector, after applying climatic corrections, accounted for around 27%, while the industrial sector consumed 21%. The transport sector represented the largest share, with 35%, followed by the services sector at 11% and the agricultural sector at 5.8%. When compared to 2010, the relative shares of energy consumption by these sectors have remained relatively stable, with no significant shifts observed. shifts observed.

Figure 1: Final energy consumption by sector (with climatic corrections)



Source: ODYSSEE

Both final energy intensity and primary energy intensity have shown consistent improvement from 2010 to 2022, with substantial reductions in the amount of energy required per unit of economic output. The largest yearly reductions occurred in the periods 2019-2020 and 2021-2022, which might be attributed to external factors such as the pandemic or a disastrous earthquake that hit Albania's Industrial area. The primary and final energy intensities showed a decrease by 11.5% and 9.4% from 2021 to 2022, marking a substantial improvement in energy efficiency in the final consumption sector. The overall trends suggest that Albania has made considerable progress in improving energy efficiency over the past decade, with the most pronounced improvements in recent years.

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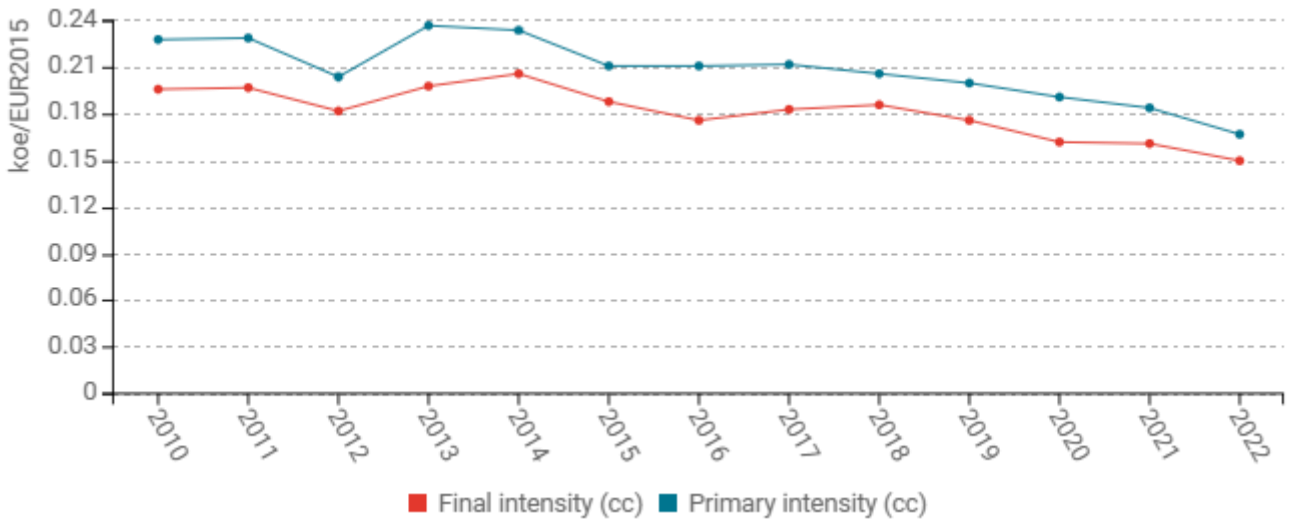
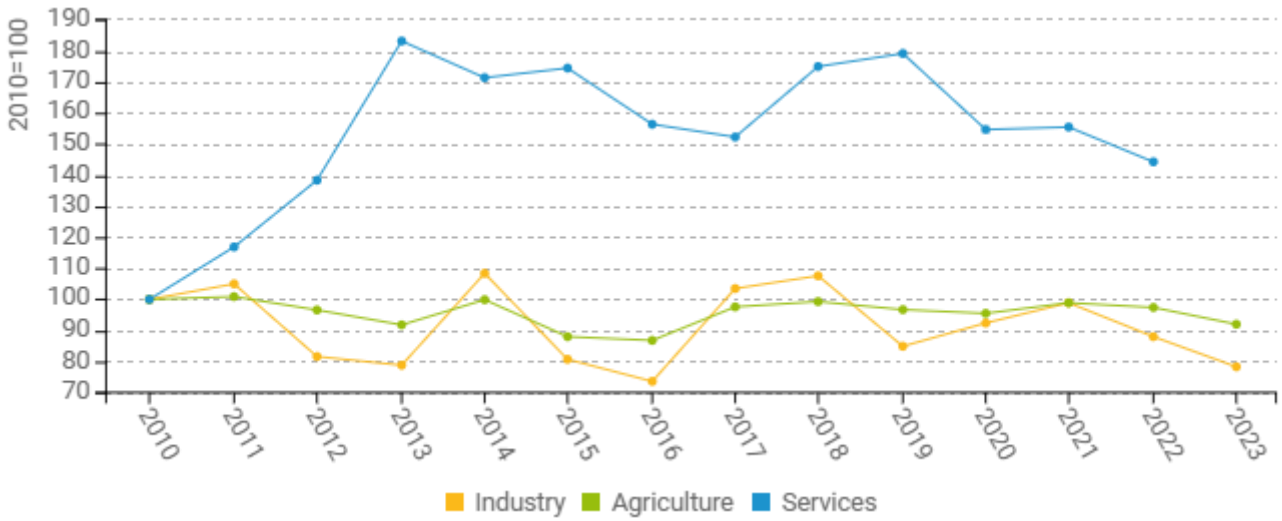
Figure 2: Primary and final intensities (with climatic corrections)



Source: ODYSSEE

The energy intensity of industry shows some fluctuation but a slight overall decline towards 2022. In the early years (2010–2013), the energy intensity was relatively stable, ranging from 0.155 koe/EUR 2015 in 2010 to 0.122 koe/EUR 2013. However, the period from 2014 to 2018 saw a notable increase, peaking at 0.174 koe/EUR 2018, followed by a decline after 2018, reaching 0.133 koe/EUR 2022. This fluctuation may be influenced by several factors, including changes in industrial output, the implementation of energy efficiency measures (new technologies) and potential inconsistencies or inaccuracies in the data. The energy intensity in agriculture has been relatively constant, with a slight decline over time. For example, it dropped from 0.055 koe/EUR 2015 in 2010 to 0.053 koe/EUR 2022, reflecting marginal improvements in energy efficiency in the agricultural sector. The energy intensity of the services sector shows some variability but a general downward trend. The values range from 0.039 koe/EUR 2015 in 2010 to 0.033 koe/EUR in 2022.

Figure 3: Final intensity by sector



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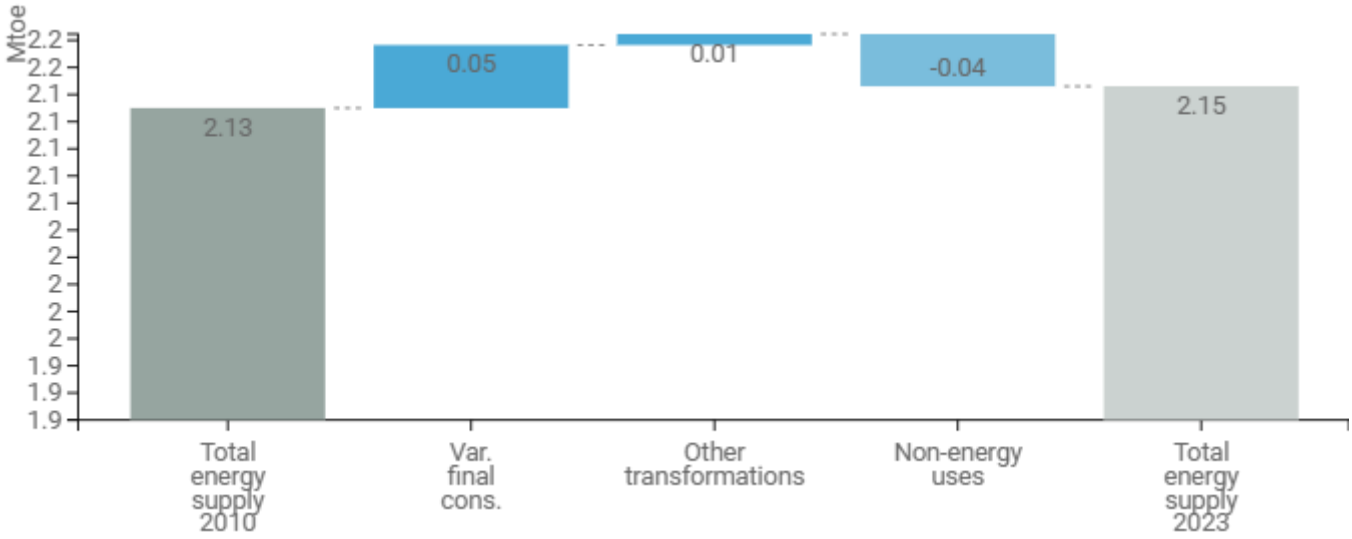
Source: ODYSSEE

The total energy supply in 2022 was only 0.04 Mtoe higher than in 2010 (Figure 4), indicating minimal growth over this period. This moderate progression is in line with the increase in final consumption. This trend suggests that renewable energy sources have not yet made a significant impact in Albania's energy mix. The increase in the consumption for other transformations was offset by a reduction on non-energy uses.

Figure 4: Main drivers of the total energy supply variation



Source: ODYSSEE

Law No. 28/2021 “On some amendments and additions of Law No.124/2015 on energy efficiency has created the basis for implementation of the obligation schemes and alternative measures for distributors, operators and/or suppliers on the energy markets in the Republic of Albania for achieving savings in final energy consumption.1. Setting targets for end-use energy savings (this applies to all energy types, including electricity, gas, and solid fuel), which distribution system operators and / or suppliers energy markets are obliged to apply. 2. From a rough calculation based on benchmark the expected savings will be 37 ktoe in 2030. 3. Implementation of the obligation schemes will contribute to reach the targets: i) on 3% of central government building stock each year to be renovated. ii) on 2% of public building stock each year to be renovated. 4. Setting targets for end-use energy savings (this applies to all energy types, including electricity, gas, and solid fuel), which distribution system operators and / or suppliers energy markets are obliged to apply. 5. From a rough calculation based on benchmark the expected savings will be 37 ktoe in 2030. 6. Implementation of the obligation schemes will contribute to reach the targets: iii) on 3% of central government building stock each year to be renovated. -on 2% of public building stock

Buildings

In recent years, energy consumption in Albania’s building sector has remained stable, with only modest variations. After reaching about 0.750 Mktoe in 2019, consumption declined slightly to around 0.737 Mtoe in 2023, with approximately 6 % attributed to the residential sector, confirming the dominant role of households in building energy demand. Throughout this period, buildings consistently accounted for around 37–38 % of Albania’s total

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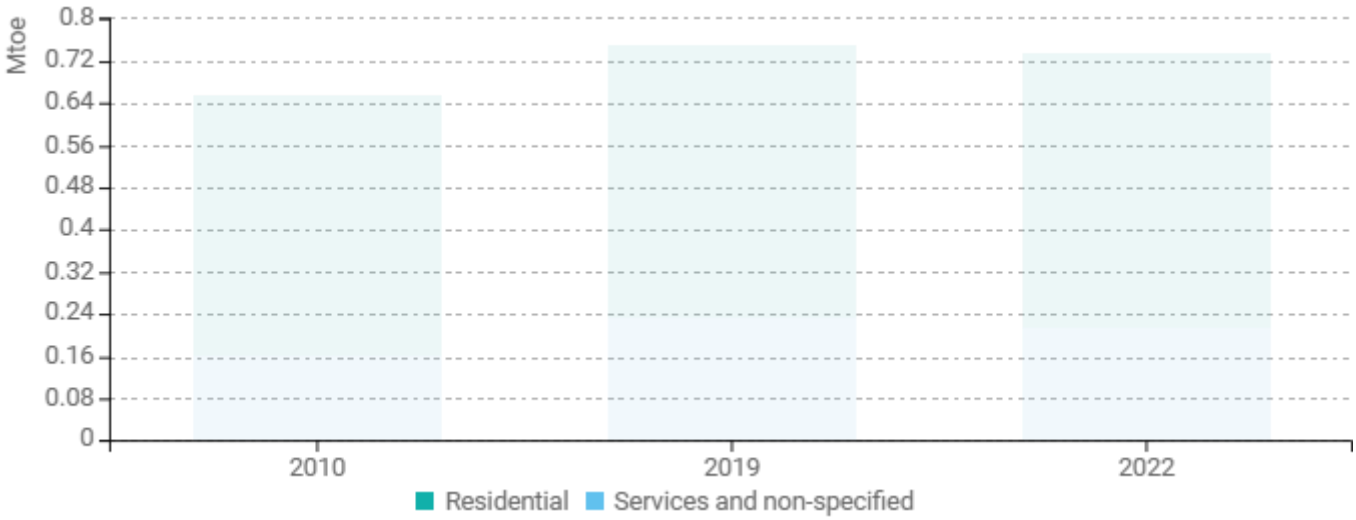
final energy consumption, a notably high share.This situation is particularly significant given that a large part of the building stock remains inadequately heated or cooled. Poor thermal insulation, outdated construction practices, and inefficient heating and cooling systems often result in relatively high energy use, despite low comfort levels. The observed stability in consumption, therefore, reflects persistent structural inefficiencies rather than major efficiency improvements.In 2022, energy use in the building sector remained at a similar level, indicating that no substantial structural changes had yet taken place. Factors such as urbanization, climatic conditions, household income, and tourism-related activity continue to influence demand, but without significantly altering overall trends. Overall, these patterns underline ongoing inefficiencies in the building sector and highlight the urgent need to improve building energy performance through stronger standards and accelerated renovation of the existing building stock.

Figure 5: Final energy consumption in buildings (with climatic corrections)



Source: ODYSSEE

According to the ODYSSEE–MURE energy efficiency indicators, Albania's energy consumption structure in 2024 continues to reflect the strong influence of the residential building sector. Households remain one of the largest consumers of final energy, second only to transport, with demand mainly driven by space heating and cooling, domestic hot water and household appliances. Residential electricity consumption increased further in 2024 compared with the previous year, reflecting both rising comfort expectations and the continued expansion of the housing stock. This development is closely linked to sustained construction activity: over the period 2021–2024, building permits issued each year averaged around 7 million m², of which approximately 75–80 % were allocated to residential buildings. Urbanization, migration towards major cities, tourism-related investment and real-estate development continue to underpin demand for new housing. As a result, the residential sector accounts for around one quarter to one third of Albania's total final energy consumption, confirming its structural importance within the national energy balance. In contrast, the service sector shows a more stable and comparatively lower energy demand, estimated at about 10–12 % of final consumption. Nevertheless, the growing role of tourism has encouraged additional hotel and accommodation developments, particularly in coastal and urban areas, gradually increasing energy needs. Overall, the 2024 ODYSSEE indicators highlight the central role of residential buildings in shaping Albania's energy demand and the importance of targeted energy-efficiency measures in this sector.

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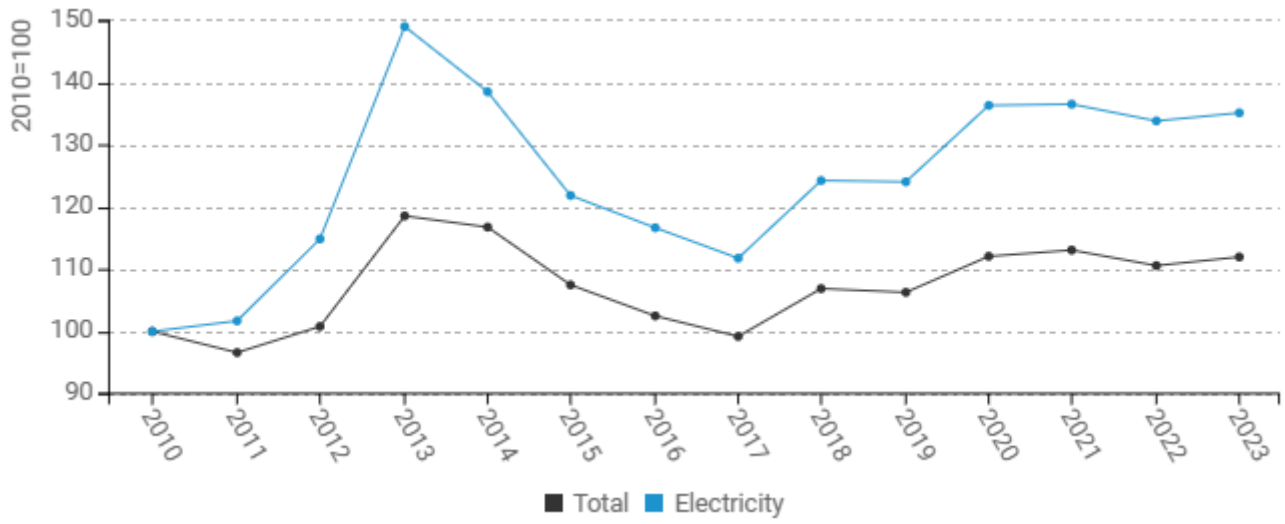
Figure 6: Energy and electricity consumption in households per capita (with climatic corrections)



Source: ODYSSEE

Albania's energy consumption has evolved unevenly over time, shaped by policy interventions, demographic developments, and exceptional circumstances. Prior to 2013, widespread electricity theft and non-payment of bills created a high level of informality, leading to systematic underreporting of energy use. The introduction of strict enforcement measures in 2013, including substantial fines and criminal penalties, significantly reduced these practices. As a result, previously informal electricity consumption was incorporated into official statistics, causing a marked increase in reported demand.Between 2014 and 2017, energy consumption declined, largely due to demographic changes. During this period, Albania experienced significant outward migration, particularly among younger age groups. While only partially reflected in national data, Eurostat records approximately 160,000–170,000 first-time asylum applications, with broader estimates placing total emigration between 200,000 and 300,000 people. Given Albania's population size, this population decline contributed to lower overall energy demand.In subsequent years, consumption gradually recovered as population levels stabilized. Energy use peaked in 2020–2021 due to increased residential demand during COVID-19 containment measures. Looking ahead, projections indicate a modest increase in energy consumption in the transport and services sectors, driven primarily by rapid growth in tourism.

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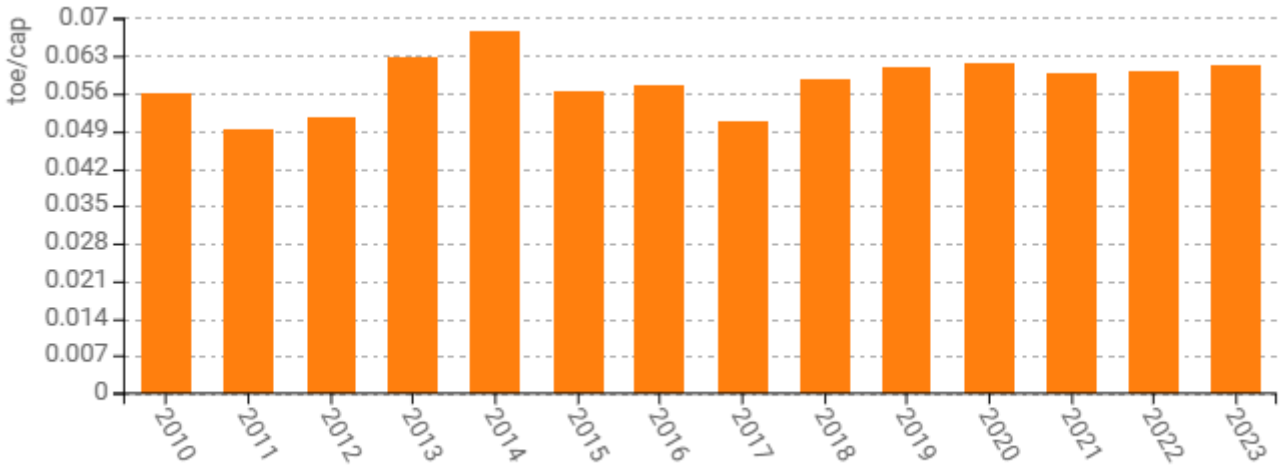
Figure 7: Energy consumption per capita for space heating in households (with climatic corrections)



Source: ODYSSEE

Space heating in Albanian dwellings faces significant challenges due to economic, cultural, and infrastructural factors. Most households rely on individual and often inefficient heating systems, such as wood-burning stoves, electric heaters, or liquefied petroleum gas (LPG). Biomass, primarily firewood, remains a common heating source due to its affordability, particularly in rural areas, raising concerns related to indoor air quality and deforestation.A major constraint is the low thermal efficiency of the residential building stock. Many older buildings lack adequate insulation, resulting in substantial heat losses. Energy-efficient measures, including insulated walls and double-glazed windows, are not widely adopted, especially in less affluent households. Heating demand is highly seasonal, with sharp increases during harsh winters in mountainous regions, while coastal areas experience milder conditions. Urban households generally have better access to electricity and alternative heating options, whereas rural areas rely more heavily on wood and coal, highlighting a pronounced urban–rural divide.In 2013, strict penalties for electricity theft brought informal consumption into official statistics, leading to a spike in reported heating energy use in 2014. Large population outflows then contributed to a decline in heating consumption per dwelling of around 25% between 2014 and 2017. The partial return of migrants resulted in a peak of approximately 0.24 toe per dwelling in 2020–2021. From 2021 onward, a minor increase in heating consumption per dwelling is observed, continuing modestly through 2022 and 2023.

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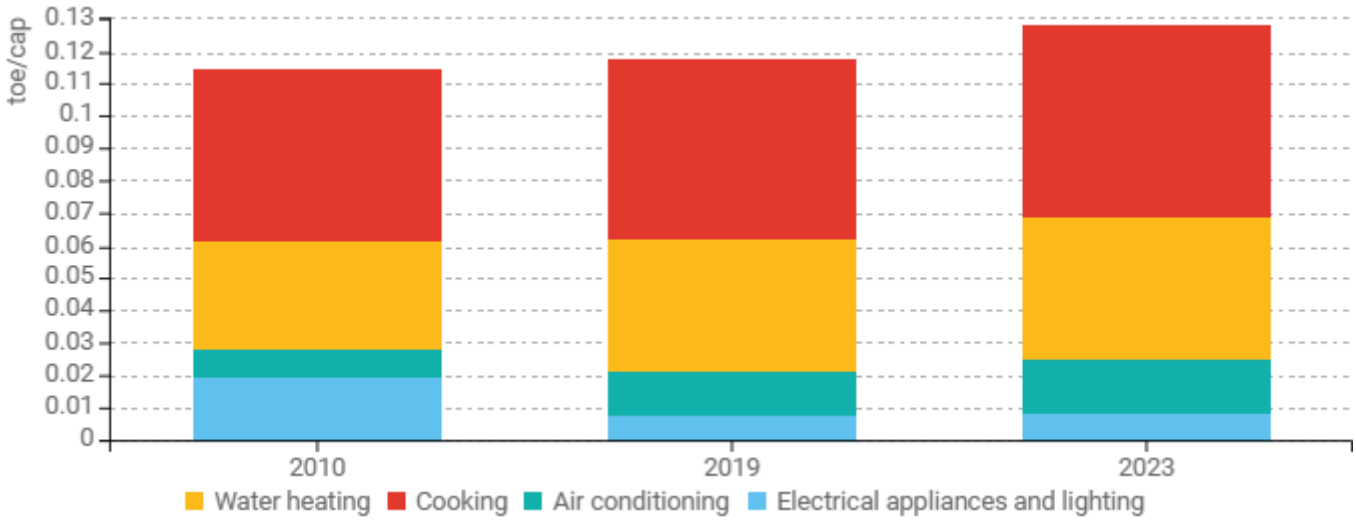
Figure 8: Energy consumption per capita by end-use in households (except space heating)



Source: ODYSSEE

Space heating and cooking remain the dominant energy end uses in Albanian dwellings, accounting for around one-third of total household energy consumption each. Water heating represents the next largest share, followed by air conditioning, while electrical appliances and lighting contribute the smallest portion of overall demand. Between 2010 and 2023, unit energy consumption per dwelling shows a moderate upward trend, driven mainly by increases in water heating and cooling demand. The growth in water heating consumption is largely linked to the widespread use of individual electric water heaters, particularly in residential buildings, despite the gradual uptake of solar water heating systems in recent years. New construction and tourism has also contributed to higher hot water demand. Electricity consumption for appliances and lighting has declined since 2010. This reduction reflects the large-scale replacement of incandescent bulbs with LED lighting, as well as increased penetration of more energy-efficient household appliances. Although enforcement of appliance energy-efficiency regulations remains limited, market-driven consumer choices—especially the preference for higher efficiency classes—have played an important role. Air conditioning demand has increased steadily over time, reflecting rising living standards, improved affordability of cooling systems, and growing expectations for indoor comfort.

Table 2: Sample of policies and measures implemented in the building sector

Measures	NECP measures	Description	Expected savings, impact evaluation
Energy Performance Certificate	Yes	In 2020, Albania adopted the Decision on the approval of the procedures and conditions for the certification of the energy performance of buildings, including the model, content, and registration rules for the Energy Performance Certificate (EPC). Following the adoption of secondary legislation on energy auditing,	2.09 PJ

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		the EPC system became operational in 2021. By 2024, the EPC framework is fully integrated into the national legal and institutional system and is primarily applied to new buildings and major renovations, as part of the building permit and compliance procedures. Energy performance certification is carried out by licensed energy auditors, and certificates are registered with the national authority, contributing to the monitoring of building energy performance. The measure supports: the implementation of minimum energy performance requirements for buildings, the monitoring of energy efficiency levels in the building stock, the promotion of energy-efficient construction and renovation practices, and Albania's alignment with EU energy efficiency and climate objectives, in line with the Energy Performance of Buildings Directive (EPBD). While the certification system is operational, its application to the existing building stock remains limited and represents a key area for further development. Ongoing legislative updates and policy initiatives aim to strengthen enforcement, improve data availability through EPC registries, and expand the role of EPCs in renovation planning and energy efficiency policy design.	

Source: MURE

Transport

The transport sector is dominated by road transport, covering almost 98% of total consumption in 2010 and 95% in 2022. The consumption of water transport has increased by 267% during this period, but it still accounts for only 5% of consumption in 2022. We observe that the consumption of domestic air transport and rail transport is recorded as zero. This is consistent with the current situation in Albania, where domestic air transport is minimally utilized, and the railway system is not in operation. However, with ongoing investments, it is expected that the railway sector will see future development and increased utilization in the coming years.

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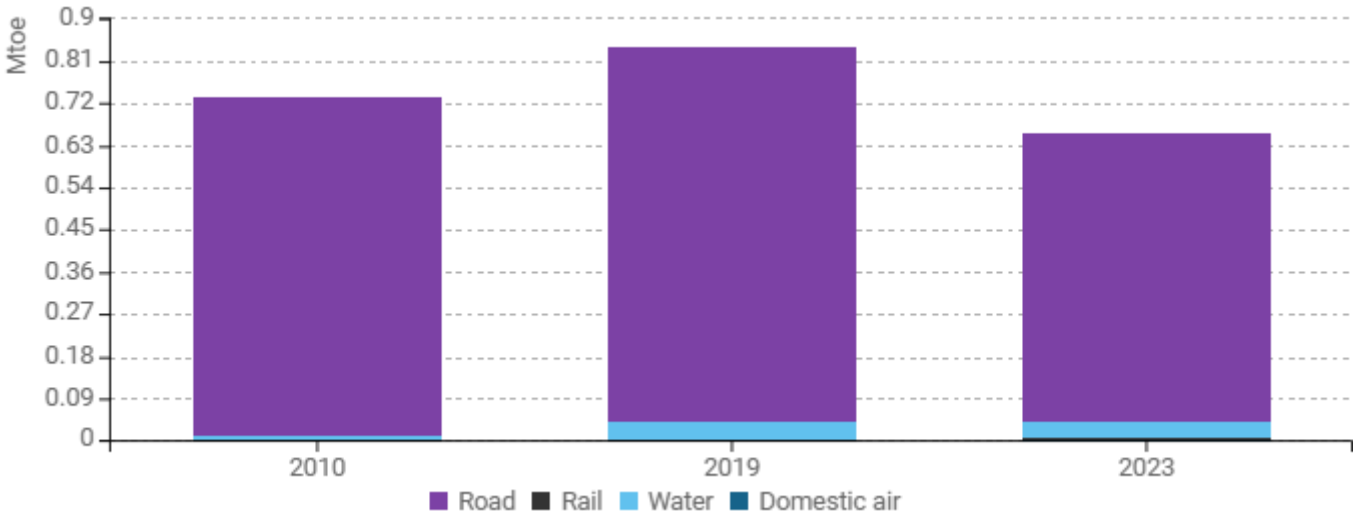
Figure 9: Transport energy consumption by mode



Source: ODYSSEE

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Industry

In 2022, final energy consumption in the industrial sector reached 0.42 Mtoe, marking a 17% increase compared to 2010. A significant portion of this consumption—nearly half—was concentrated in the non-metallic minerals sector, with the cement industry playing a major role in driving energy demand.

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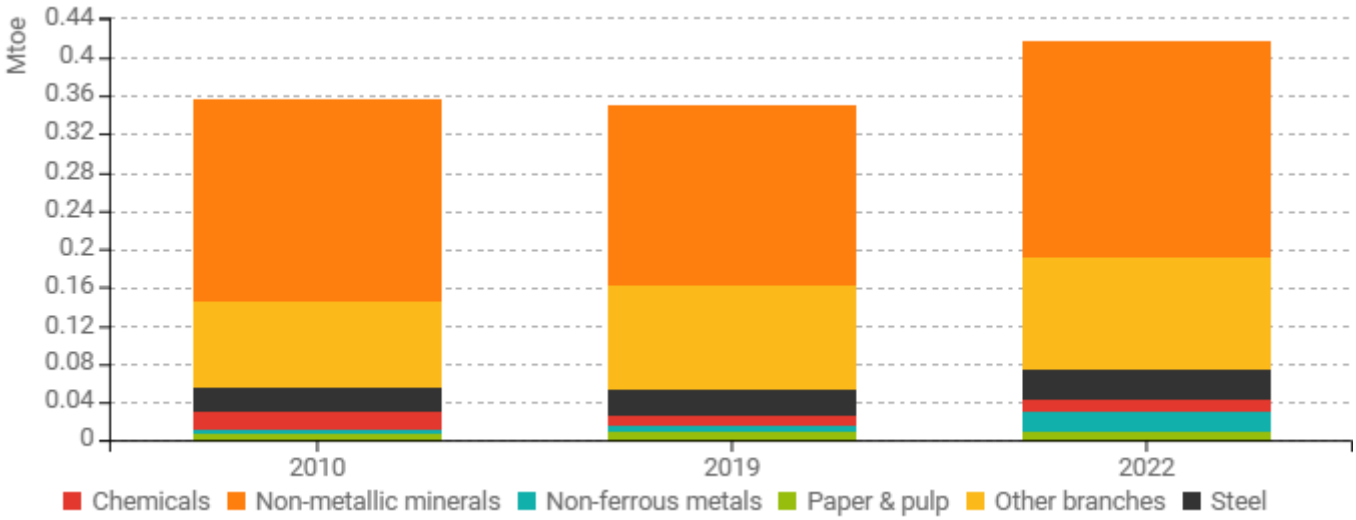
Figure 10: Final energy consumption of industry by branch



Source: ODYSSEE

Energy audits for industrial operators assess energy consumption, losses, and efficiency potential, issue energy certificates, and ensure compliance with energy savings targets. Focused on large energy consumers and SMEs, these audits aim to implement energy efficiency (EE) measures. By adopting these measures, industries can achieve at least a 4% energy savings target, contributing to overall energy efficiency improvements and fulfilling regulatory obligations for energy management.

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