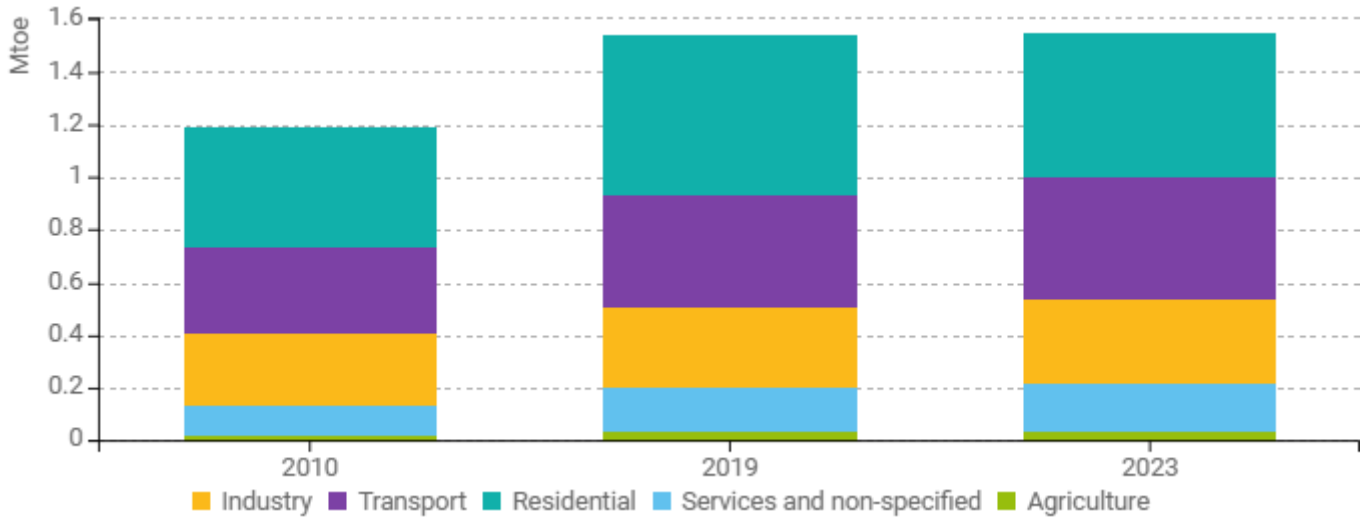
Energy efficiency trends and policies

Overview

Over the past decade, Kosovo's energy use has moved from a period of steady growth to a more stable level. The increasing trend follows and reflects economic development throughout the years. Recent energy consumption data suggests improved energy efficiency, as final energy demand remains relatively flat despite economic growth, with rising end-use consumption as the main upward driver offset by efficiency gains in electricity generation and transformation, while other transformations and non-energy use play a minor role. Households remain the biggest energy users, followed by transport and industry, with the latter increasing over time, driven mainly by non-metallic minerals and chemicals industry as well as other branches. As for transport, road transport remains dominant in the sector.

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



Source: ODYSSEE

Overall, final energy consumption increased significantly between 2010 and 2019, a large sum of which is reflecting energy use in the residential and transport sectors. After 2019, total consumption stabilized up to 2023 indicating improvements in energy efficiency and shifts in consumption patterns, influenced by post-pandemic behavior and energy efficiency policy measures. The residential sector remains the largest energy consumer throughout the period, followed by transport and industry. Energy consumption in services and non-specified activities increased steadily, while agriculture continued to account for a small share.

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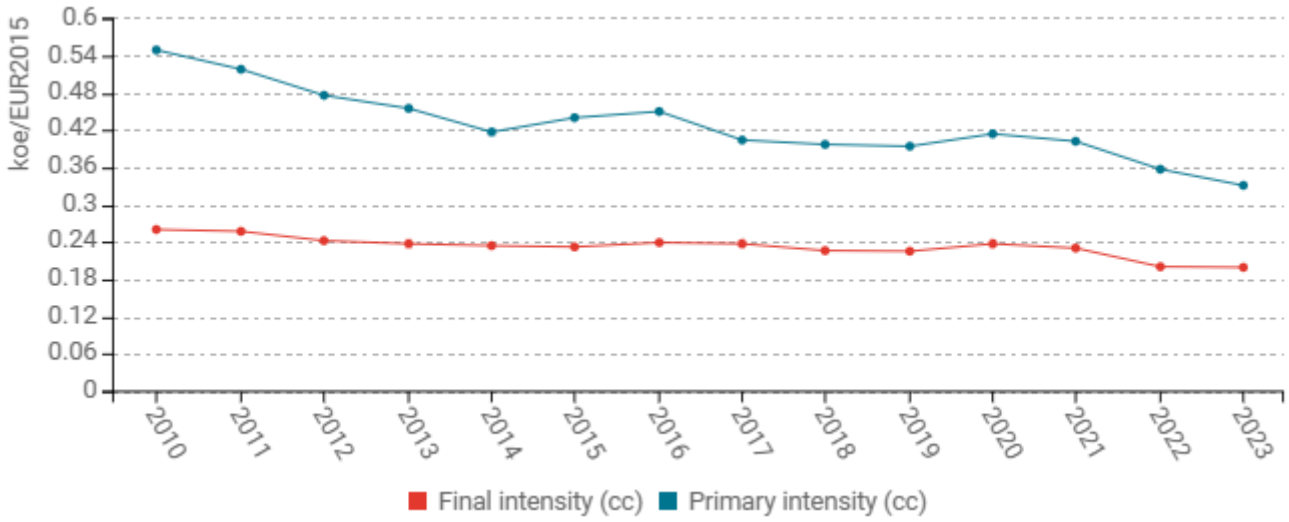
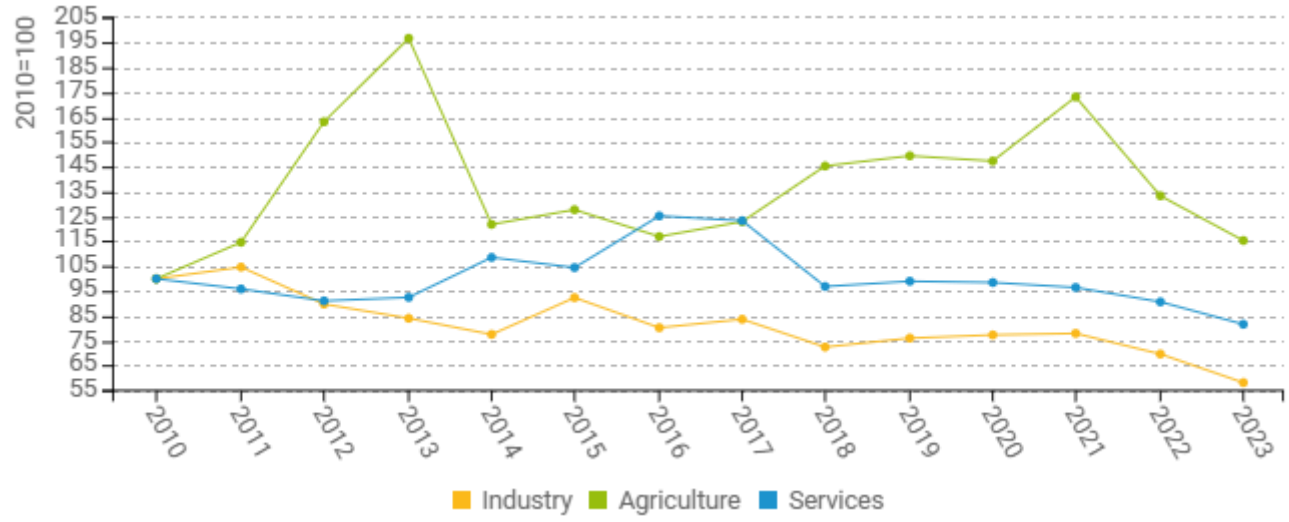
Figure 2: Primary and final intensities (with climatic corrections)



Source: ODYSSEE

Figure 2 reflects the evolution of primary and final energy intensities between 2010 and 2023. Over the period, both indicators display a downward trend, indicating an overall improvement in energy efficiency. Primary energy intensity declines more markedly, reflecting both reduced energy use per unit of economic output and improvements in the efficiency of energy transformation and supply. Final energy intensity also decreased steadily, albeit at a slower pace, suggesting gradual efficiency gains in end-use sectors. Short-term fluctuations can be observed, particularly around 2015–2016 and 2020–2021, but the long-term trend remains clearly downward. The continued reduction in energy intensities highlights cross-sectorial efficiency improvements, and impact of energy efficiency policies.

Figure 3: Final intensity by sector



Source: ODYSSEE

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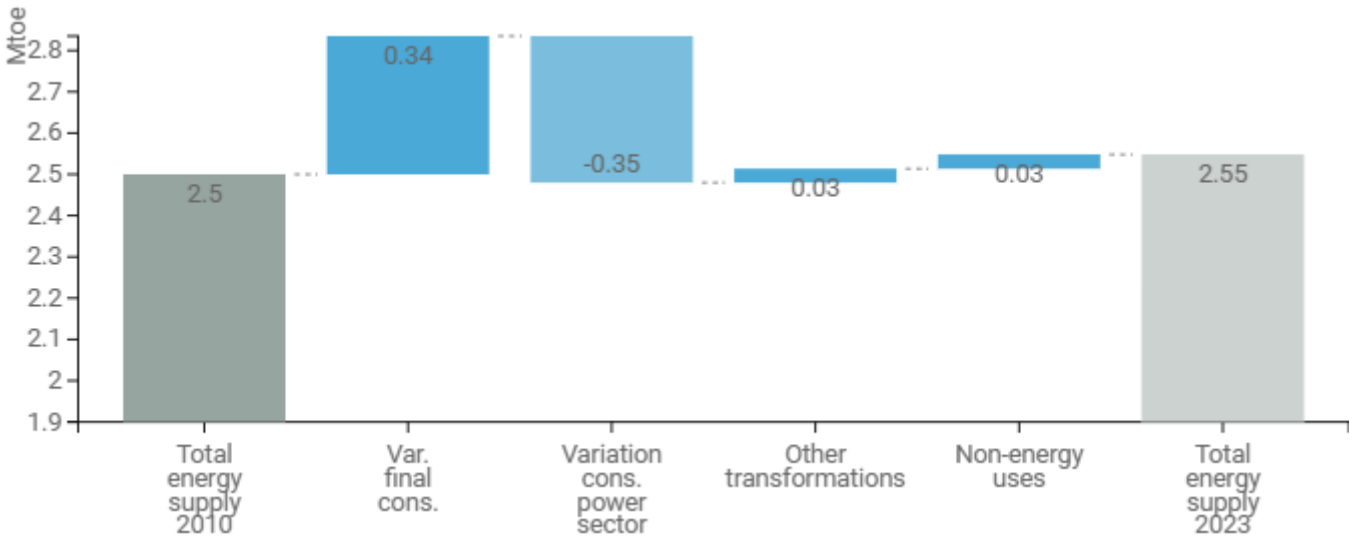
Final energy intensity trends in Kosovo from 2010 to 2023 varies significantly across sectors. Agriculture shows the most volatility, with a sharp rise between 2011 and 2013, peaking at nearly double the 2010 level,followed by a steep decline and ongoing fluctuations. The services sector followed a more stable path, with small increases over time that suggest a gradual rise in energy consumption relative to output. In contrast, industry demonstrates a steady decrease in final energy intensity throughout the period, reflecting consistent improvements in efficiency. Overall, the figure highlights differing sectoral dynamics, underlining the importance of targeted energy efficiency measures adapted to sector-specific characteristics.

Figure 4: Main drivers of the total energy supply variation



Source: ODYSSEE

Figure 4 illustrates the main drivers behind the change in total energy supply between 2010 and 2023. Total energy supply increases slightly from 2.5 Mtoe to about 2.55 Mtoe over the period. The rise in final energy consumption represents the main upward trend, reflecting growing demand across end-use sectors. This increase indicates improved efficiency in electricity generation and transformation. Other transformations and non-energy uses play a relatively minor role in the overall change. Taken together, the decomposition suggests that efficiency gains, particularly in the power sector, contribute to limit total energy supply demand despite rising final demand.

Table 1: Sample of cross-cutting measures

Measures	NECP measures	Description	Expected savings, impact evaluation
Ministry of Economy EE measures/subsidies for households	Yes	The Ministry of Economy of the Republic of Kosovo has launched a series of public calls aimed at promoting energy efficiency and the use of renewable energy sources across Kosovo. These calls primarily target household consumers as well as micro, small, and	

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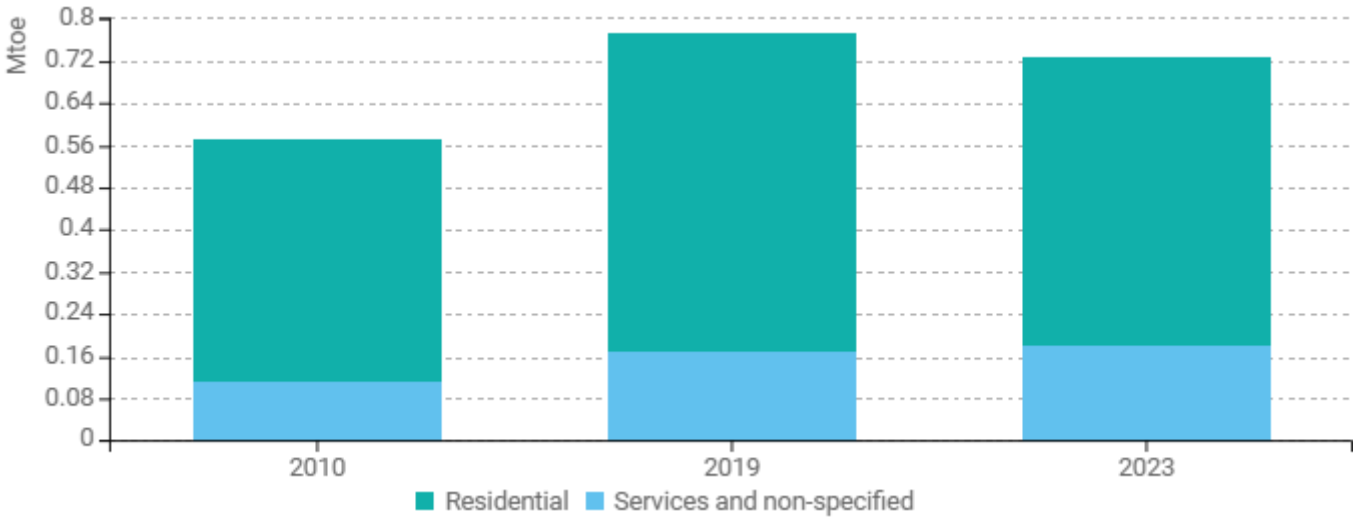
		medium-sized enterprises (MSMEs), with the objective of reducing energy consumption, lowering energy costs, and supporting the transition toward cleaner and more sustainable energy solutions. The measures supported through these calls include investments in energy-efficient heating equipment, such as heat pumps and efficient biomass stoves, as well as renewable energy systems, notably solar thermal systems for domestic hot water and photovoltaic systems for self-consumption. Several calls are specifically tailored to households, while others are designed to support MSMEs in improving their energy performance and increasing the use of renewable energy in their operations.	

Source: MURE

Buildings

Energy consumption in buildings in Kosovo increased between 2010 and 2019, while consumption in the services sector grew more moderately. From 2019 to 2023, total energy use in buildings declined slightly, driven by reduced residential consumption, while services remained broadly stable. This recent trend coincides with the increased implementation of energy efficiency measures in buildings and greater attention to energy saving. Over the period, household electricity consumption per capita grew faster than total household energy use, while space-heating energy use showed fluctuations but an overall upward trend. Overall, energy efficiency improvements are increasingly influencing energy use patterns in the building sector.

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



Source: ODYSSEE

Between 2010 and 2019, the graph shows noticeable increase in energy consumption in buildings, largely driven by rising demand in the residential sector, while energy use in the services sector increases moderately. From 2019 to

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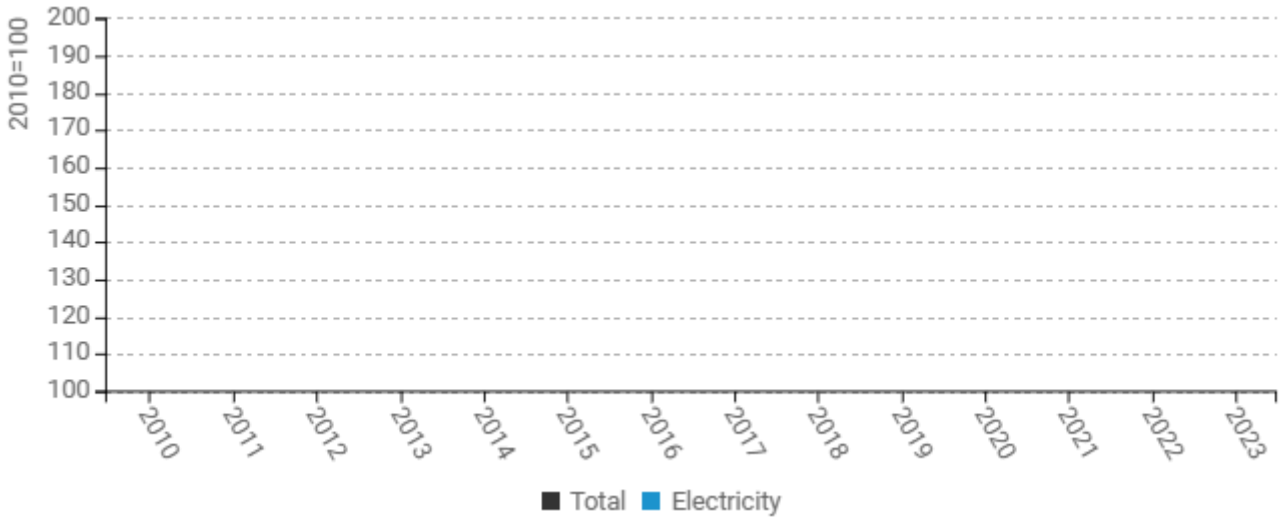
2023, total energy consumption in buildings declines slightly, mainly as a result of reduced residential energy use, while consumption in the services sector remains broadly stable. This recent trend reflects a combination of factors, including increased awareness of energy efficiency, the gradual adoption of improved insulation, efficient heating technology, and changes in household behavior. Overall, the observed trend suggests that energy efficiency measures in buildings are beginning to have a tangible impact, supporting long-term improvements in energy performance and contributing to climate and energy objectives.

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



Source: ODYSSEE

Over the 13-year period, household electricity consumption per capita increases at a significantly faster pace than total household energy consumption. This trend points to a structural shift in household energy use, characterized by a growing reliance on electricity in everyday life. The sharp increase observed in 2021 is closely linked to the effects of the COVID-19 pandemic. In contrast, 2022 shows a marked decline in total household energy consumption, reflecting reduced overall energy use, influenced by behavioral adjustments, higher energy prices, and energy-saving responses. In 2023, both electricity consumption and total household energy use increased again. Overall, these developments underline the growing role of electricity in the residential energy mix and emphasize the importance of sustained energy efficiency measures to manage rising demand while advancing long-term decarbonization objectives. Despite this reduction, electricity consumption remained at relatively elevated levels, suggesting that electricity has become an increasingly essential component of household energy demand.

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

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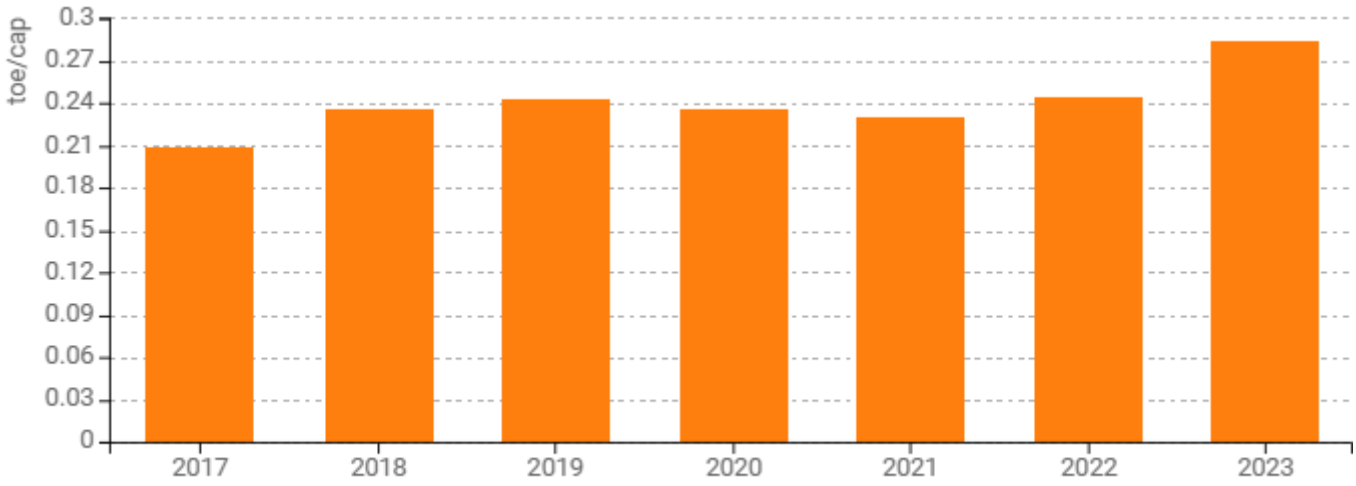
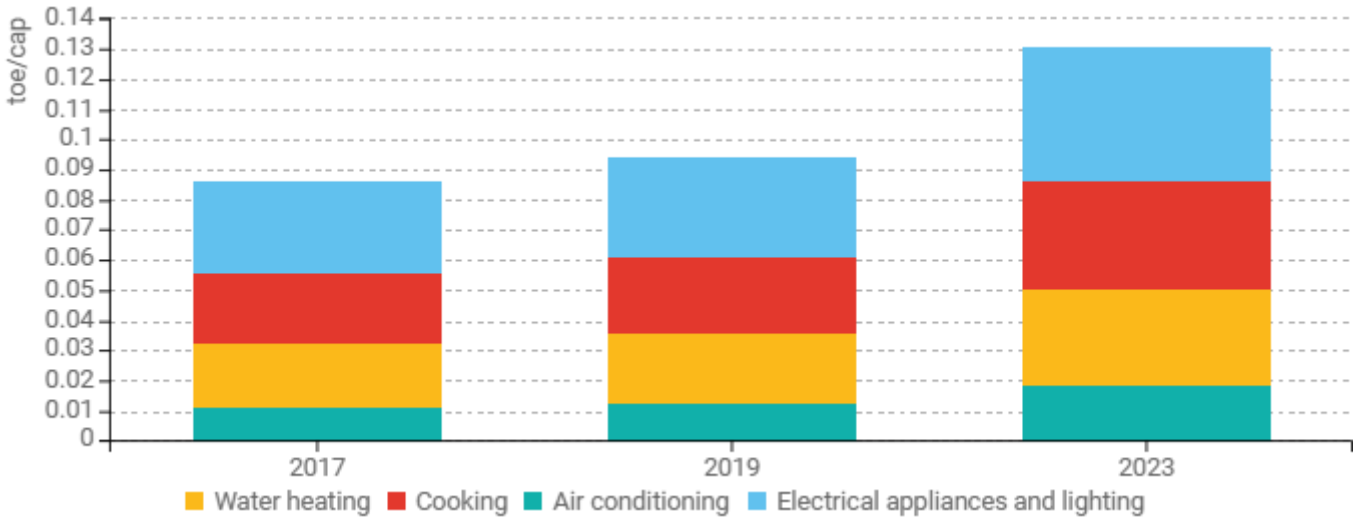


Source: ODYSSEE

Energy consumption per capita for space heating shows moderate fluctuations over the period 2017–2023 but follows an overall upward trend. After increasing between 2017 and 2019, space-heating consumption declines slightly up to 2021, before rising again in 2022 and reaching its highest level in 2023. These year-to-year variations reflect a combination of climatic conditions and behavioral effects, while the longer-term increase indicates sustained demand for space heating.

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



Source: ODYSSEE

Household energy consumption per capita increased between 2017 and 2023, with growth observed across all end-uses shown in the figure. Electrical appliances and lighting remain the largest component of household energy consumption per capita over the whole period and show a steady increase, contributing significantly to the overall rise. Energy use for cooking and water heating also increased between 2017 and 2023, though at a more moderate

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pace. Energy consumption for air conditioning, while remaining the smallest end-use, shows a clear upward trend, particularly after 2019, reflecting a growing penetration and use of cooling equipment.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Municipal Energy Efficiency Project (MEEP)	Yes	The Municipal Energy Efficiency Project (MEEP), supported by the World Bank, the European Union, and the Government of Kosovo, is an initiative aimed at improving energy efficiency in municipal facilities across Kosovo. Managed by the Kosovo Energy Efficiency Fund (KEEF), the project supported municipalities in reducing energy consumption in public buildings and street lighting systems. Participating municipalities received comprehensive services from KEEF, starting with energy audits and extending through to the implementation of energy-saving measures. These measures included the insulation of walls and attics, replacement of windows and doors, upgrading of heating and ventilation systems, and the modernization of lighting and street lighting. The goal was to create more energy-efficient municipal infrastructure, contributing to reduced energy use and long-term savings.	
IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES FOR INDIVIDUAL RESIDENTIAL HOUSES	Yes	The Emergency Energy Efficiency Measures for Individual Residential Houses project, implemented by the Kosovo Energy Efficiency Fund (KEEF), aims to reduce household energy consumption while improving comfort and living conditions for residents across Kosovo. The initiative is supported by the European Union under the IPA Energy Support Package, coordinated by the Government of Kosovo, and implemented by KEEF. Through public calls for applications, KEEF invited homeowners to apply for subsidies to implement targeted energy efficiency measures in their homes. Eligible interventions included thermal insulation of external walls and roofs, as well as the replacement of external windows and doors. These measures were designed to deliver measurable energy savings, lower energy costs for households, and contribute to national climate and energy objectives. Based on disbursements up to January 2026, a total of 3,560 households have benefited from the scheme, with total financial support amounting to €12.76 million. The completed first and second public calls, together with disbursements from waiting	9.09 ktoe/a

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		lists and ongoing applications, are expected to deliver annual energy savings of approximately 105.8 GWh, equivalent to 9.09 ktoe per year. In addition, the project contributes to estimated CO_2 emission reductions of 37.6 kt per year, demonstrating a significant positive impact on both energy efficiency and environmental sustainability in the residential sector.	
Energy Efficiency Measures for Multi-Apartment Buildings	Yes	The project targets the improvement of energy performance in residential buildings with multiple housing units, aiming to reduce energy consumption, lower emissions, and enhance living conditions for residents. The initiative supports municipalities and beneficiary families by financing comprehensive energy efficiency renovations at building level. The project has been implemented across 13 municipalities, covering a total of 28 multi-apartment buildings and benefiting approximately 785 families, corresponding to around 4,635 individual beneficiaries. The total value of the project is estimated at €6.4 million, reflecting a significant public investment in improving the residential building stock. Implemented energy efficiency measures have resulted in estimated annual energy savings of approximately 6.39 GWh, equivalent to 0.58 ktoe per year, contributing to an annual reduction of around 2 kt of CO_2 emissions. These results underline the project's contribution to improving energy efficiency in dense residential areas, reducing energy costs for households, and supporting Kosovo's broader climate and energy objectives through scalable, building-level interventions.	0.58 ktoe/a

Source: MURE

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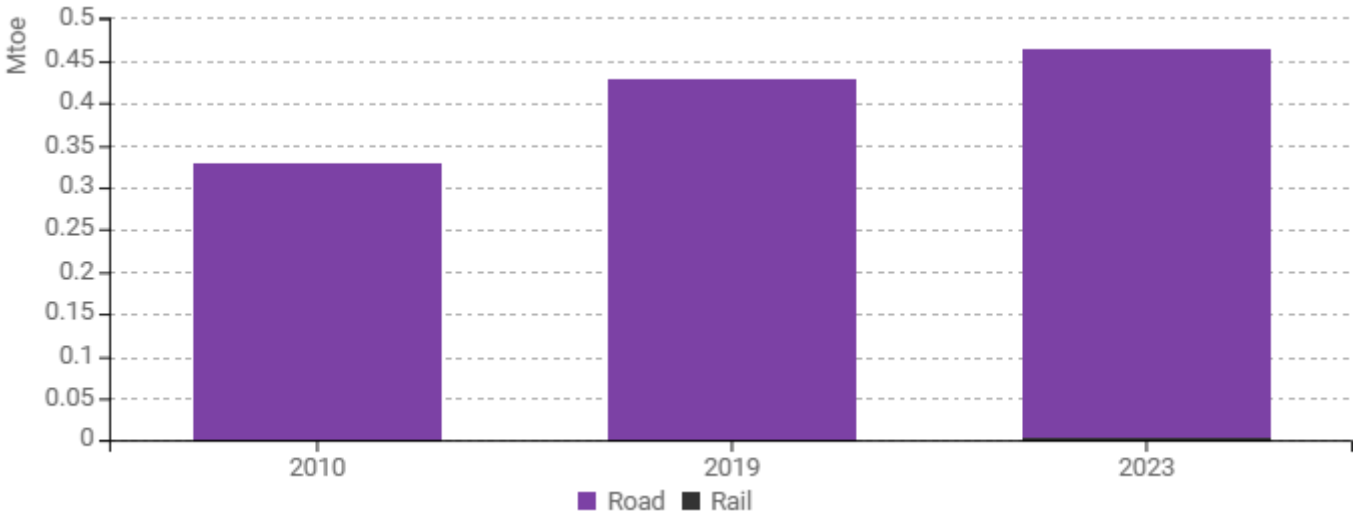
Transport

The transport sector is dominated by road transport, while rail plays a comparatively minor role. Improving energy efficiency and shifting toward lower-carbon modes remain central to long-term decarbonization efforts.

Figure 9: Transport energy consumption by mode



Source: ODYSSEE

Figure 9 shows transport energy consumption by mode in 2010, 2019, and 2023. Total consumption increased steadily over the period, with road transport accounting for the vast majority in all years. Rail consumption remained marginal and relatively stable. The upward trend between 2019 and 2023 indicates a rebound and continued growth in transport activity.

Table 3: Sample of policies and measures implemented in the transport sector

Measures	NECP measures	Description	Expected savings, impact evaluation
	Yes		

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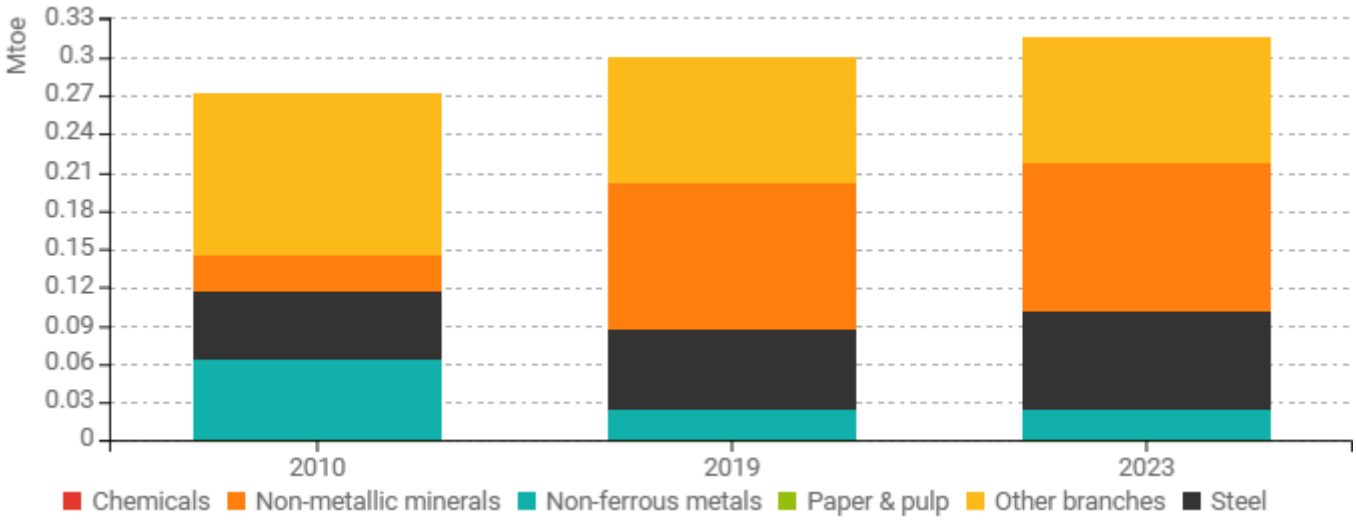
Industry

Industry represents a significant share of final energy consumption, reflecting the structure and intensity of economic activity. Energy demand varies across branches depending on production processes, material use, and technological efficiency. Structural changes and modernization influence long-term consumption patterns.

Figure 10: Final energy consumption of industry by branch



Source: ODYSSEE

Figure 10 illustrates final energy consumption by industrial branch in 2010, 2019, and 2023. Overall consumption increased over time, driven mainly by non-metallic minerals, chemicals, and other branches. Steel and non-ferrous metals showed more moderate fluctuations, while paper and pulp remained limited. The gradual increase by 2023 suggests sustained industrial activity alongside potential efficiency improvements in energy-intensive branches.

Table 4: Sample of policies and measures implemented in the industry sector

Measures	NECP measures	Description	Expected savings, impact evaluation
The Clean Energy Grant Scheme	Yes	The Clean Energy Grant Scheme has a budget of €1,000,000 and aims to support all Micro, Small, and Medium Enterprises (MSMEs) as well as large businesses that have entered the liberalized electricity market, with primary or secondary activities in production and processing. The scheme co-finances investments that improve energy performance and reduce electricity costs through: (i) renewable energy generation (solar photovoltaic and solar thermal systems), (ii) storage of electricity generated from solar photovoltaic systems through batteries, (iii) energy efficiency	

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		measures in business buildings, and (iv) equipment that reduces energy consumption in production lines. Special focus will be given to enterprises most affected by the open electricity market, whose projects aim to increase energy efficiency and the use of renewable energy. By financing these investments, the scheme seeks to stimulate private sector engagement in Kosovo's energy transition through the use of sustainable production technologies, increased energy efficiency, and reduced operating costs. The Clean Energy Grant Scheme is implemented through three separate public calls, which include the following measures: • Measure 1: Support for solar energy systems and battery systems for electricity storage. • Measure 2: Support for energy efficiency measures in business buildings. • Measure 3: Support for equipment that reduces energy consumption in production lines	

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