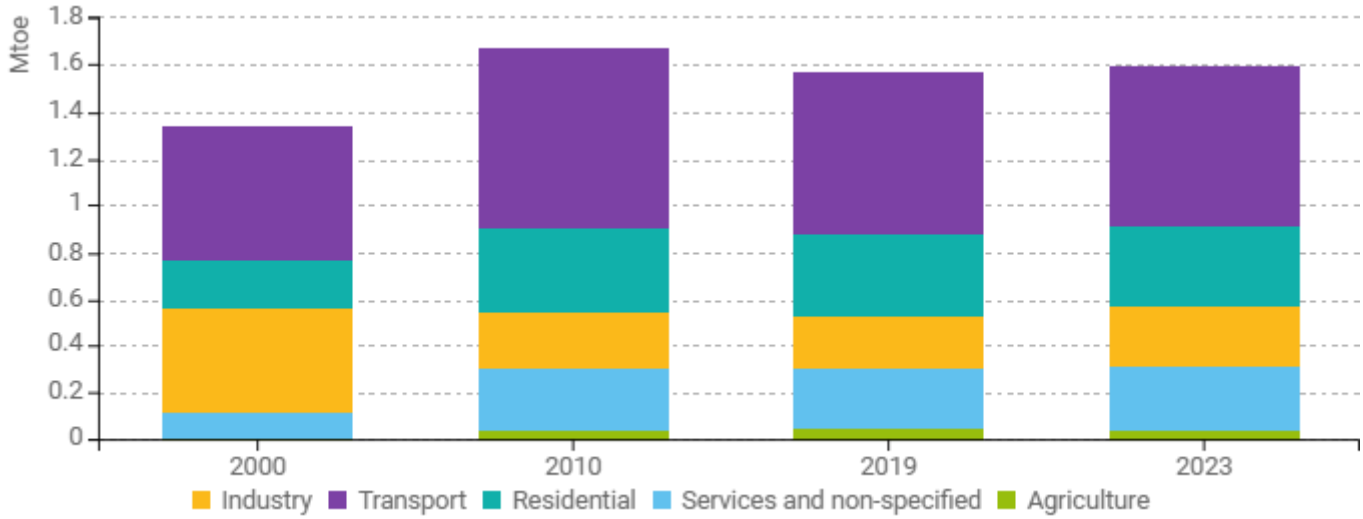
Energy efficiency trends and policies

Overview

Despite the temporary effects of the economic recession of years 2012-2015, final energy consumption in Cyprus was 20% higher in 2023 than in 2000. Increases in energy demand of both transport and buildings (residential and services) have been responsible for this development, while the share of industry in energy consumption has dropped both because of the smaller share of industry in total economic activity in 2023, and thanks to energy efficiency improvements in major industrial plants.

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



Source: ODYSSEE

Overall technical energy efficiency has improved by around 27% (i.e. 1.4% per year) in Cyprus between 2000 and 2023. This has been driven by energy-efficiency improvements in most sectors - buildings, industry and transport. Industry has shown the fastest increase in energy efficiency, mainly because the largest industrial energy consumer is by far the cement industry, which has undergone a major reconstruction and refurbishment of its plants; most of these improvements took place before 2010 (7% per year). Services have demonstrated the slowest energy efficiency improvement, as well as transport until 2016. Over the last nine years (2014-2023) progress in the residential sector has remained stagnant too.

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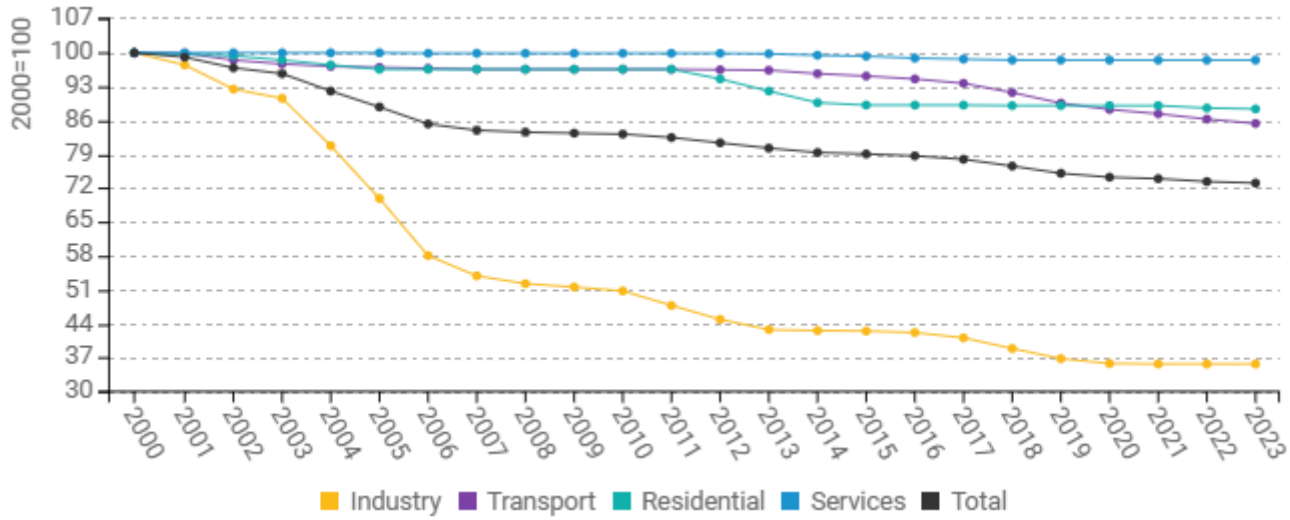
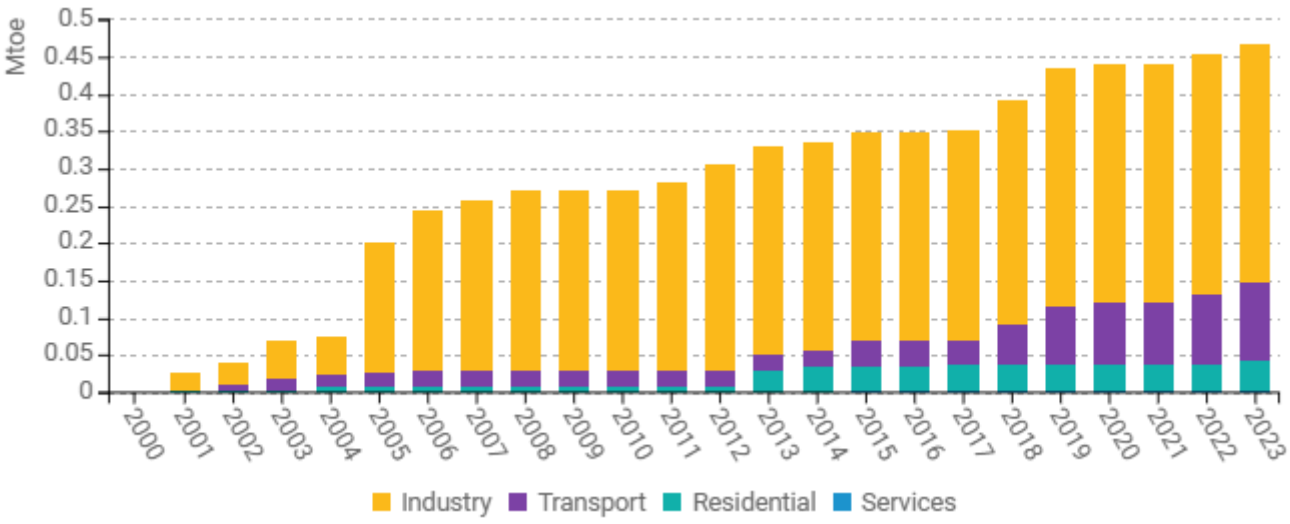
Figure 2: Technical Energy Efficiency Index



Source: ODYSSEE

The evolution of energy savings between 2000 and 2022 reflects the progress in technical energy efficiency shown above. Out of 0.47 Mtoe of total savings, almost 70% came from the industrial sector, and smaller savings are recorded for transport at 22% and the residential sector the remaining. However, pre-2004 sectoral energy statistics must be treated with caution as Cyprus became an EU Member state in 2004, and earlier energy statistics may have not undergone rigorous quality check.

Figure 3: Energy savings by sector



Source: Odyssee

Total energy supply reached 2.25 Mtoe in 2023, a value about 5% higher than in 2000. This progress was mainly driven by the increase in final energy consumption as there was no substantial progress in efficiency of the power generation sector.

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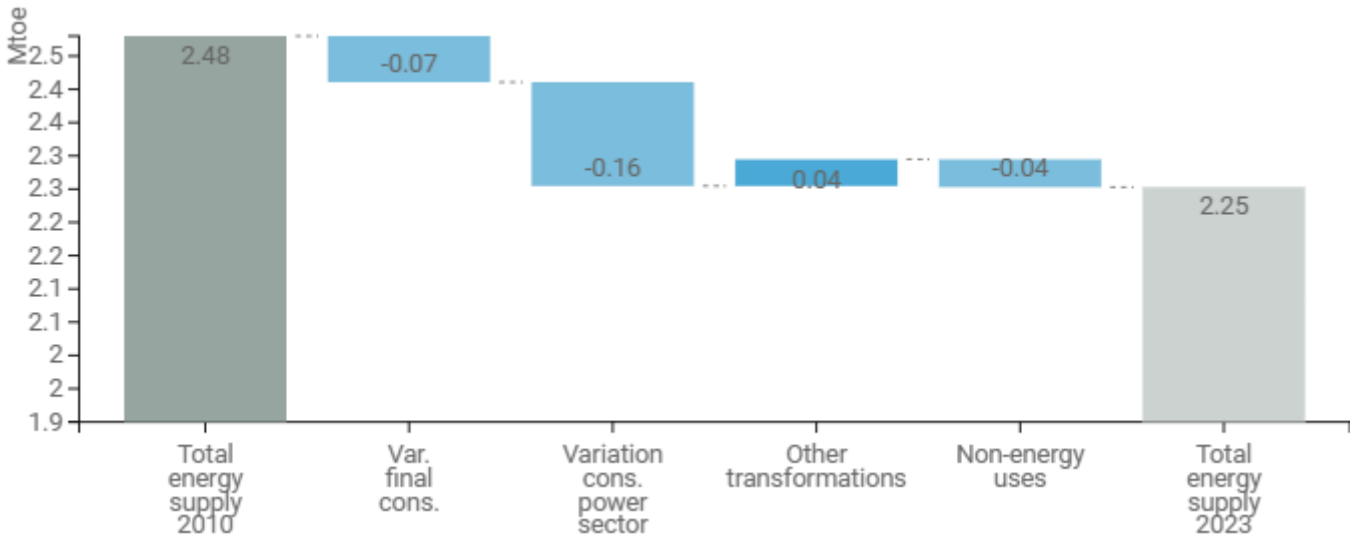
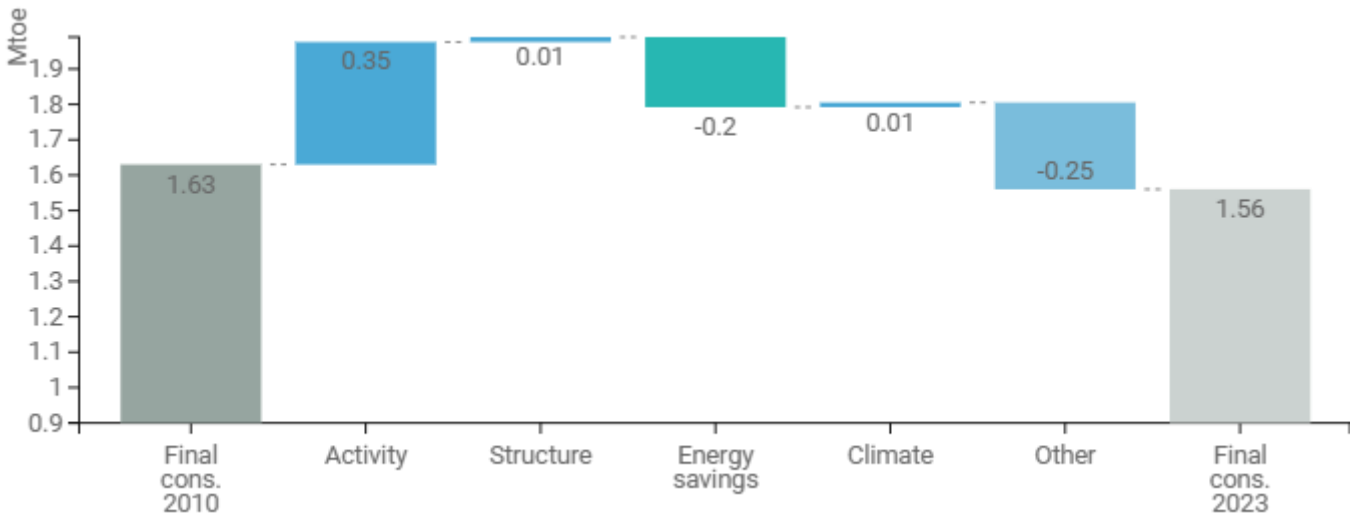
Figure 4: Main drivers of the total energy supply variation



Source: Odyssee

Final energy consumption grew by 0.25 Mtoe, i.e. almost 19% between 2010 and 2023, because of broader economic growth in Cyprus during this period. In the absence of energy savings, however, this increase would have been triple as high (51%).

Figure 5: Main drivers of the final energy consumption variation



Source: Odyssee

Several cross-cutting energy efficiency measures have been adopted during the last years, mainly mandated by the European Union's policy framework and largely financed through EU resources (the Recovery and Resilience Facility and the European Structural and Investment Funds coming from the regular EU budget.

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Table 1: Sample of cross-cutting measures

Measures	NECP measures	Description	Expected savings, impact evaluation
RES and Energy Conservation fee (tax) applied on electricity	Yes	From 2021 onwards it is expected that energy consumption fee (i.e. the contribution to the RES and Energy Efficiency National Fund) that is paid by all consumers of electricity, will be maintained at least to an average value of 0,8 Eurocents/kWh. Compared to the minimum electricity tax level of 0,1 Eurocent per kilowatt-hour foreseen in Directive 2003/96/EC, the RESEE fee leads to higher retail prices of electricity. Energy savings due to this taxation exceeding the minimum EU levels is taken into account, as energy tax imposed for energy efficiency.	0.59 TJ
Implementation of soft measures (information campaigns, trainings, workshops, etc)	Yes	The Ministry of Energy, Commerce and Industry (MECI), places particular emphasis on providing people with information on energy issues, with a view to increasing awareness among citizens and among different professionals. For this purpose, MECI in cooperation with other bodies organise every year, workshops associated with Energy Saving training seminars , energy efficiency awareness campaigns, development of and energy savings tool for citizens, lectures at schools, distribution of leaflets on energy efficiency issues, awareness for taking behavioural changing measures in public sector etc.In addition, MECI participates in the annual 'Save Energy' exhibition organised by Cyprus Employers and Industrialist Federation and distributes material concerning ES and RES technologies and through Facebook, Twitter and YouTube accounts promote, among other things, ES and RES.	0.21 TJ
Energy efficiency in water sector	Yes	The Department of Water Development of Ministry of Agriculture, Rural Development and Environment is planning to implement the following energy efficiency measures during the period 2021-2030: Energy efficient design of water networks. Energy efficiency-based procurement. Predictive maintenance of pumping equipment. Leak detection. Energy efficient water management. Introduction of energy management. The planning is at early stages and the available information is limited.	0.18 TJ

Source: MURE

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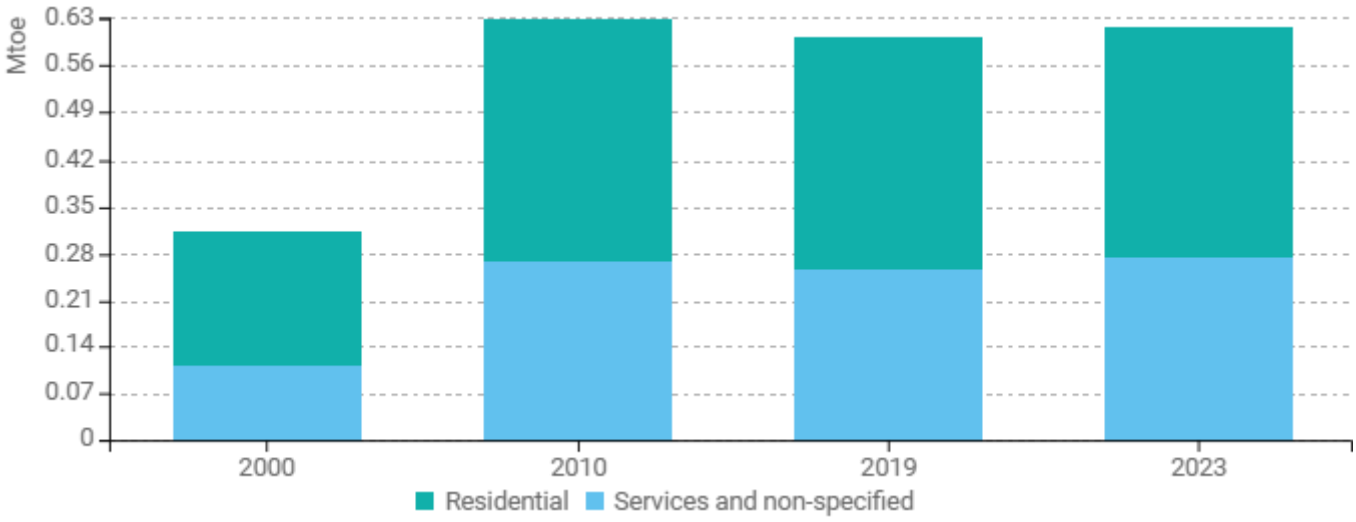
Buildings

Reflecting economic growth and the increase in the number and size of residential and service sector's buildings, energy consumption has more than doubled between 2000 and 2010 but has remained essentially stable since 2010 as growth in activity was counterbalanced by energy efficiency improvements.

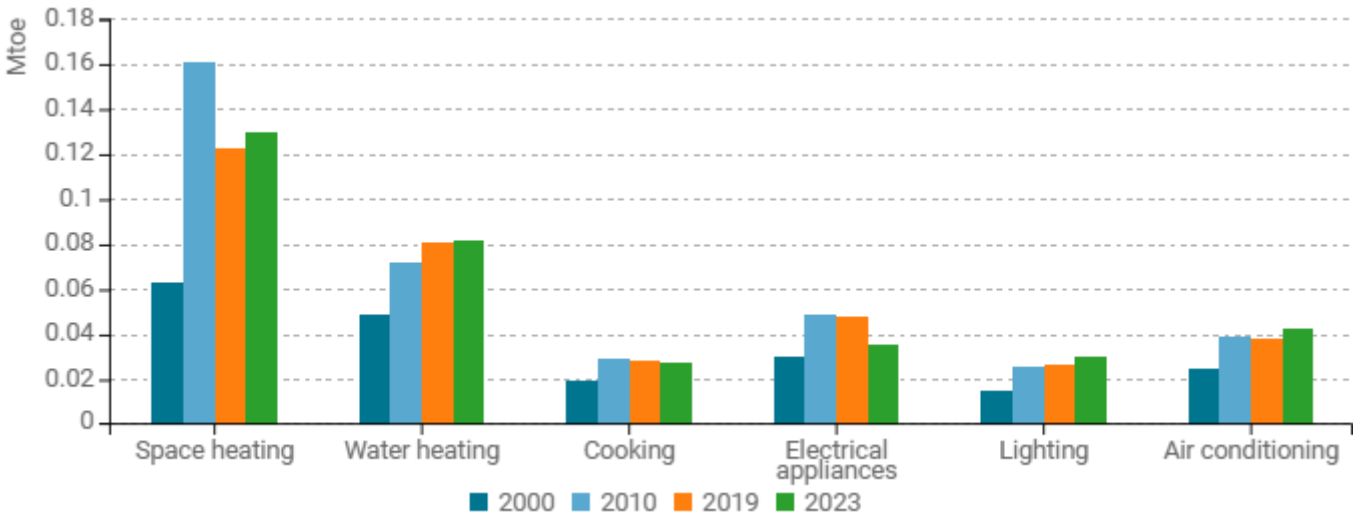
Figure 6: Final energy consumption in buildings (with climatic corrections)



Source: Odyssee

The share of main end uses in residential energy consumption has not changed significantly in the last decade. Apart from space heating which constitutes 37% of the final energy consumption, electrical appliances and water heating are responsible for the highest final energy consumption (23% in total in 2023). It has to be noted, however, that the latter use is predominantly satisfied through solar water heaters.

Figure 7: Energy consumption by end-use of households (with climatic corrections)



Source: Odyssee

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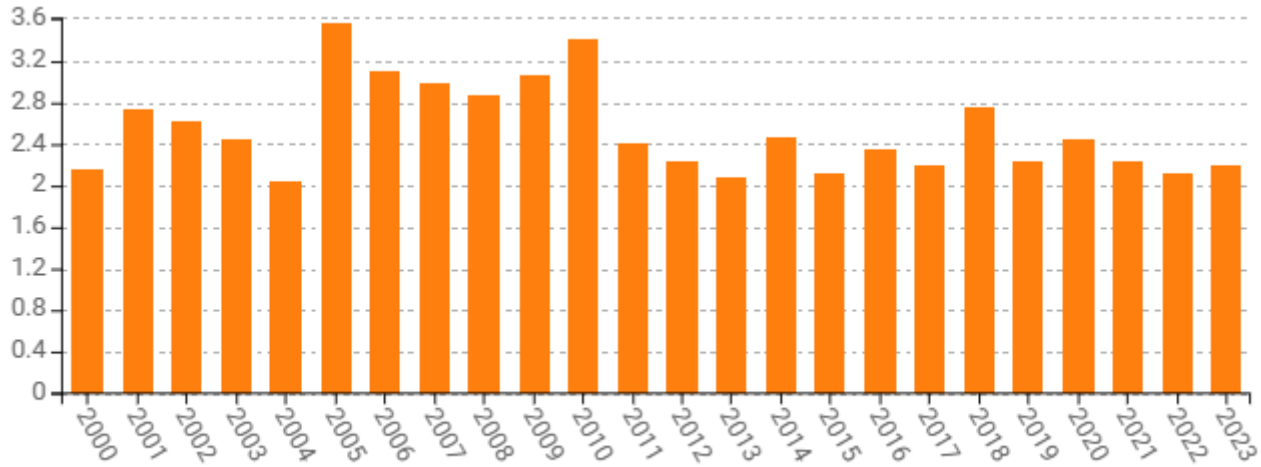
Residential energy consumption of space heating per area unit has remained essentially constant in the last decade, fluctuating around 2.5 kg of oil equivalent per square metre (2.5 koe/m2) on average.

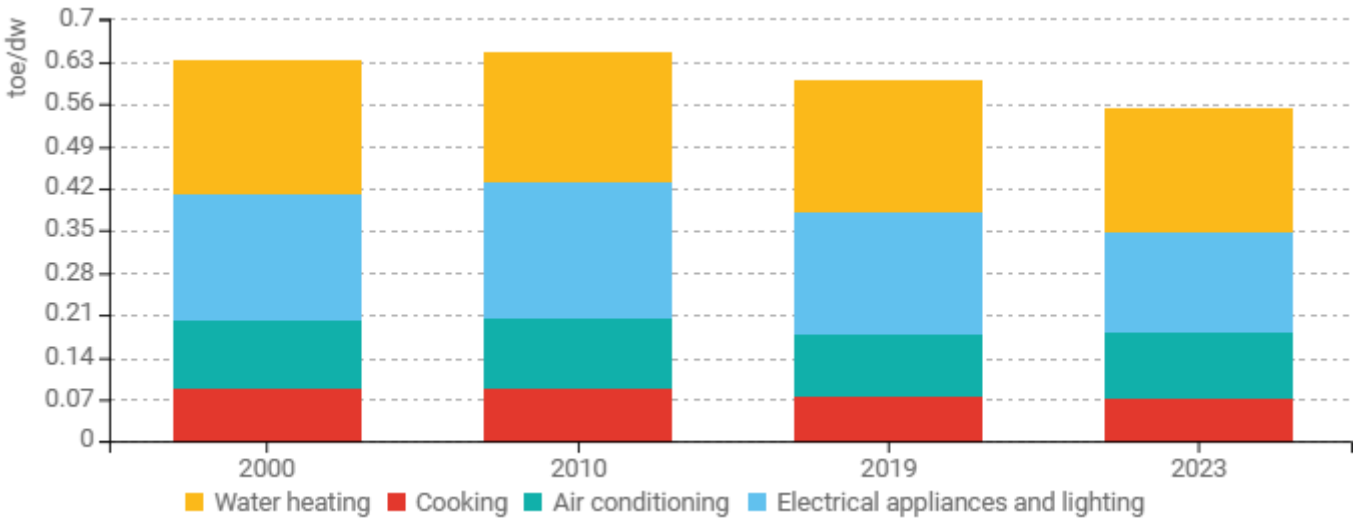
Figure 8: Energy consumption of household space heating per m2 (with climatic corrections)



Source: ODYSSEE

Residential energy consumption (except space heating) has remained almost stable since 2000, which seems to be the result of the composite effect of improved energy performance of new buildings and some energy renovations in existing buildings on the one hand, and greater size and comfort of more recent buildings on the other hand. The share of main end uses in energy consumption has not changed significantly.

Figure 9: Energy consumption per dwelling by end-use (except space heating)



Source: ODYSSEE

Electricity consumption per dwelling has remained stable since 2000. Thermal uses account for a substantial fraction of electricity consumption (23% in 2023) because of the widespread use of heat pumps and other electric

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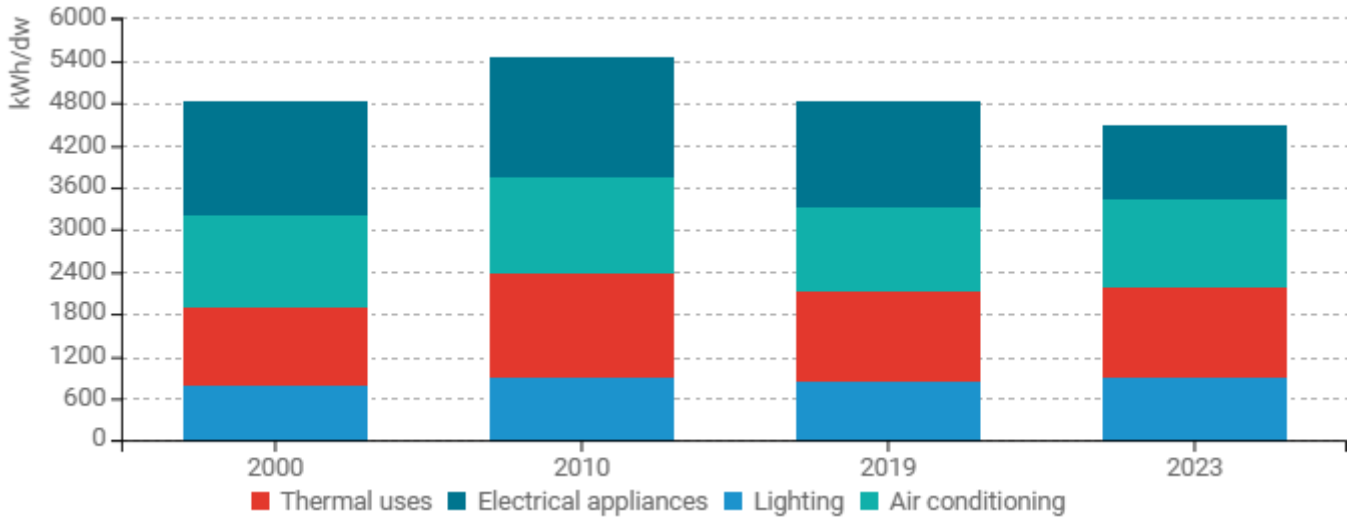
systems for space heating (e.g. storage heaters and electric stoves). Obviously, the consumption of air conditioners and electric appliances is also significant (28% and 23% in 2023 respectively).

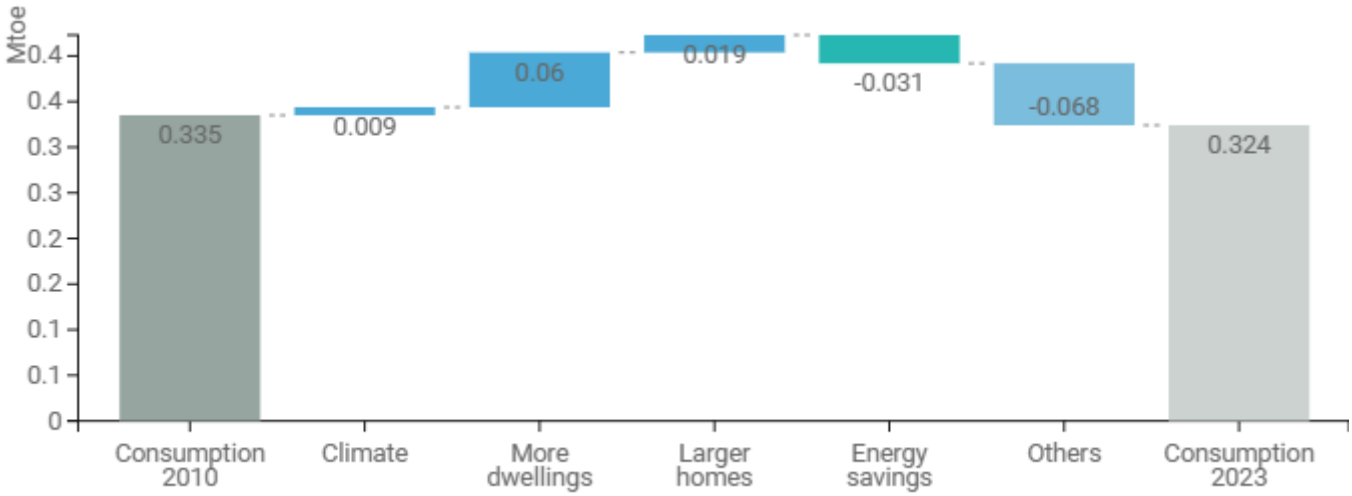
Figure 10: Electricity consumption per dwelling by end-use (with climatic corrections)



Source: Odyssee

Residential energy consumption increased by around 0.15 Mtoe between 2000 and 2023. The increase in the number and size of dwellings has contributed by 0.21 Mtoe, while energy efficiency improvements have only partly counterbalanced this growth (by -0.045 Mtoe).

Figure 11: Main drivers of the energy consumption variation in households



Source: ODYSSEE

As with total residential energy consumption, the increase in the number and size of dwellings has been primarily responsible for the rise in space heating consumption between 2000 and 2023. It has been only partly counterbalanced by energy efficiency improvements.

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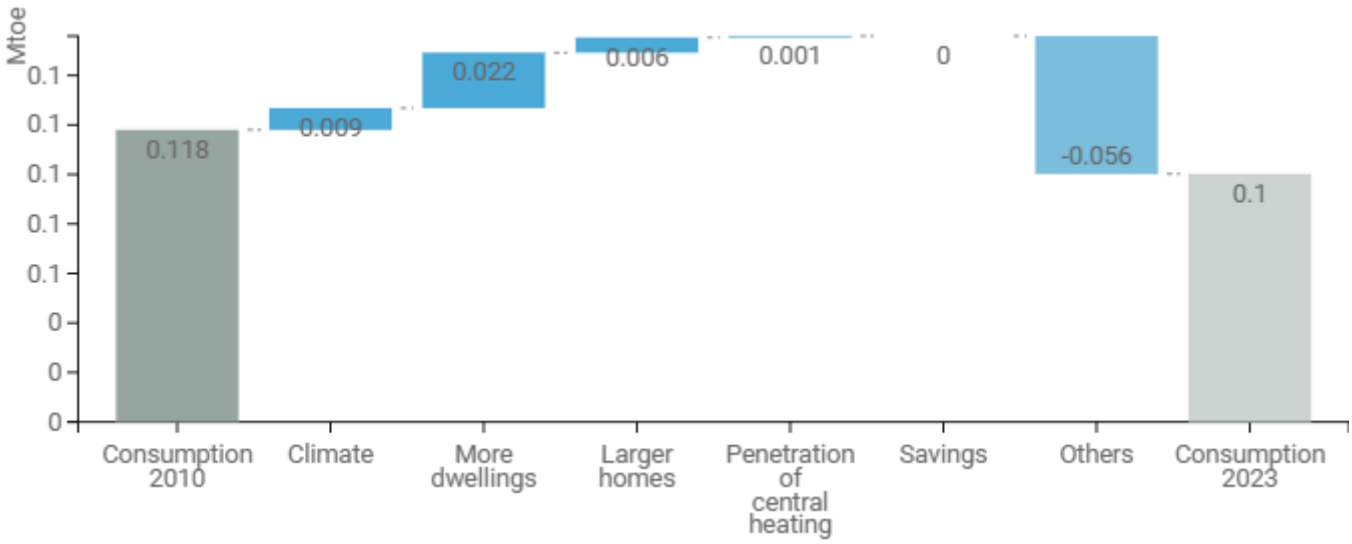
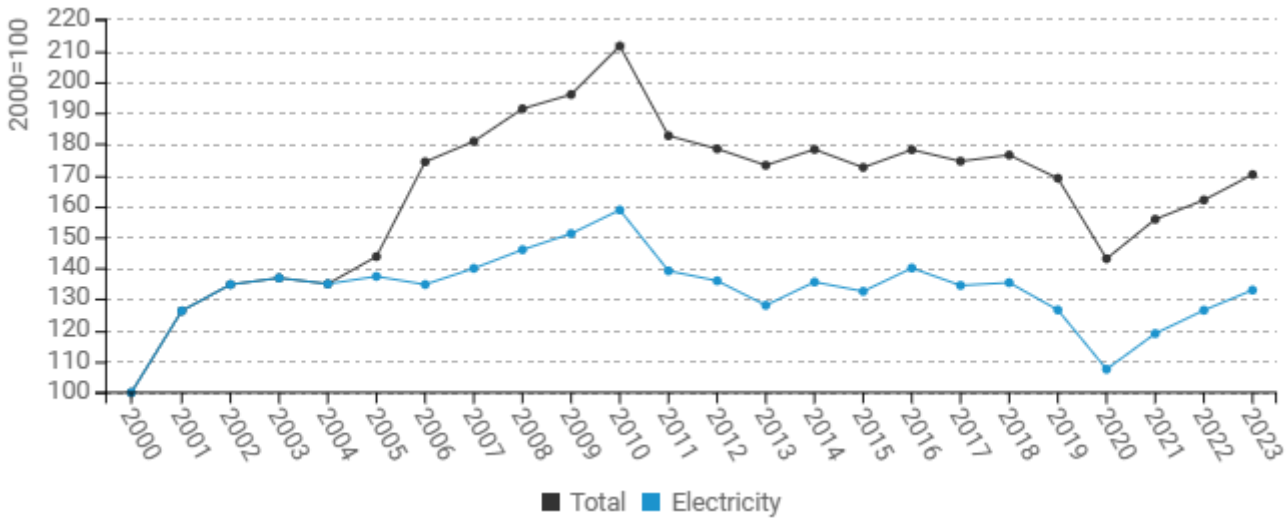
Figure 12: Main drivers of the space heating consumption variation of households



Source: Odyssee

Energy consumption per employee in the service sector of Cyprus has fluctuated over the last fifteen years, reflecting the mixed effects of the economic downturn of 2012-2015, the pandemic of 2020-2021, and gradual energy efficiency improvements. The sector relies on electricity by more than 80% to cover its energy needs.

Figure 13: Energy and electricity consumption per employee in services (with climatic corrections)



Source: ODYSSEE

Several energy efficiency measures have been adopted during the last years in the buildings sector, mainly mandated by the European Union's policy framework and largely financed through EU resources (the Recovery and Resilience Facility and the European Structural and Investment Funds coming from the regular EU budget.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Grant Scheme for the Encouragement of the use of RES and Energy Saving in Dwellings - Category 3A : Installation of a Photovoltaic System in households	Yes	Financial support is given for the installation of net-metering or virtual net-metering PV systems in existing residential buildings for which the application for a building permit was filed before 01.01.2017..Higher grant is provided for residential consumers in mountain areas. The Scheme is funded from the Renewable Energy Sources and Energy Conservation Fund.	0.01 TJ
Grant Scheme for the installation of photovoltaic systems for the charging of electric and hybrid plug-in vehicles in households.	Yes	The Grant Scheme is a measure to promote the use of RES electricity in transport. The Scheme provides financial incentives, for the installation of Photovoltaic Systems (up to 2kW), chargers and batteries in existing residences for the charging of electric or plug-in hybrid vehicles.In addition, the Scheme seeks to collect information on the charging of electric vehicles and/or hybrid plug-in vehicles in Cyprus.	0.07 TJ
Grant Scheme for the Encouragement of the use of RES and Energy Saving in Dwellings - Category 3B : Installation of a Photovoltaic System in the	Yes	Financial support is given for the installation of net-metering or virtual net-metering PV systems in houses of vulnerable electricity consumers (families with low income, disability persons etc.). Higher grant is provided to vulnerable consumer compered to non vulnerable (see PaM 7) The Scheme is funded from the Renewable Energy Sources and Energy Conservation Fund.	0.01 TJ

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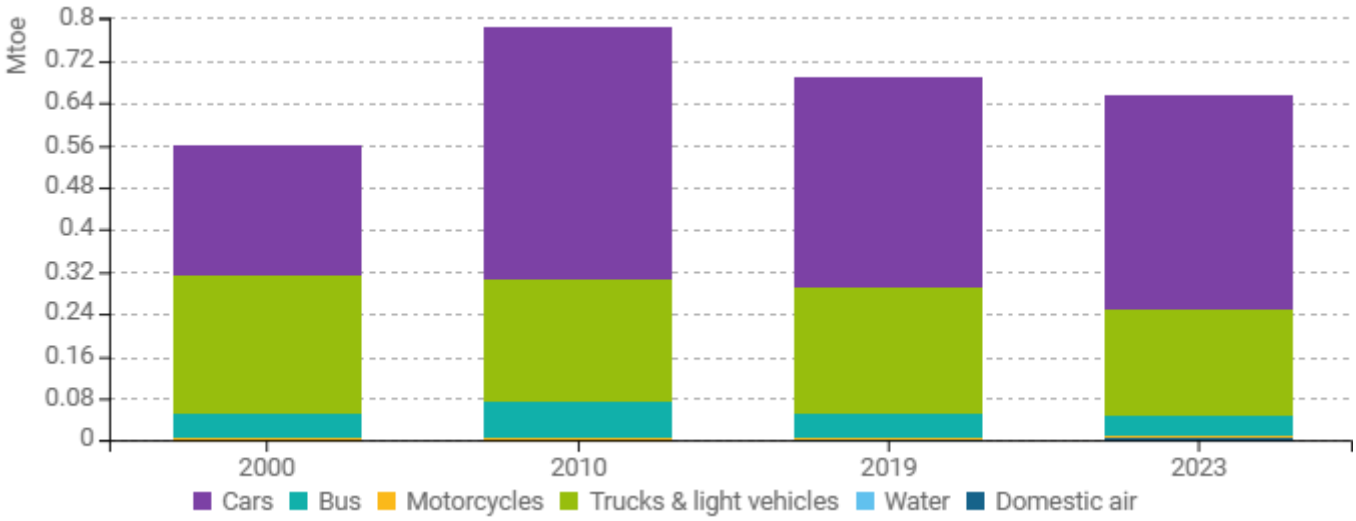
homes of vulnerable electricity consumers			

Source: MURE

Transport

Transport accounts for half of final energy consumption in Cyprus, and cars are responsible for more than half of transport's energy use. This is due to the very low use of public transport, despite recent investments in public buses which have not been adequate to induce a significant modal shift.

Figure 14: Transport energy consumption by mode



Source: ODYSSEE

Attempts to strengthen the public transport system, which consists of urban and interurban buses, have only had a small effect up to now. Therefore, the share of cars in total passenger traffic has remained very high in Cyprus - over 84%.

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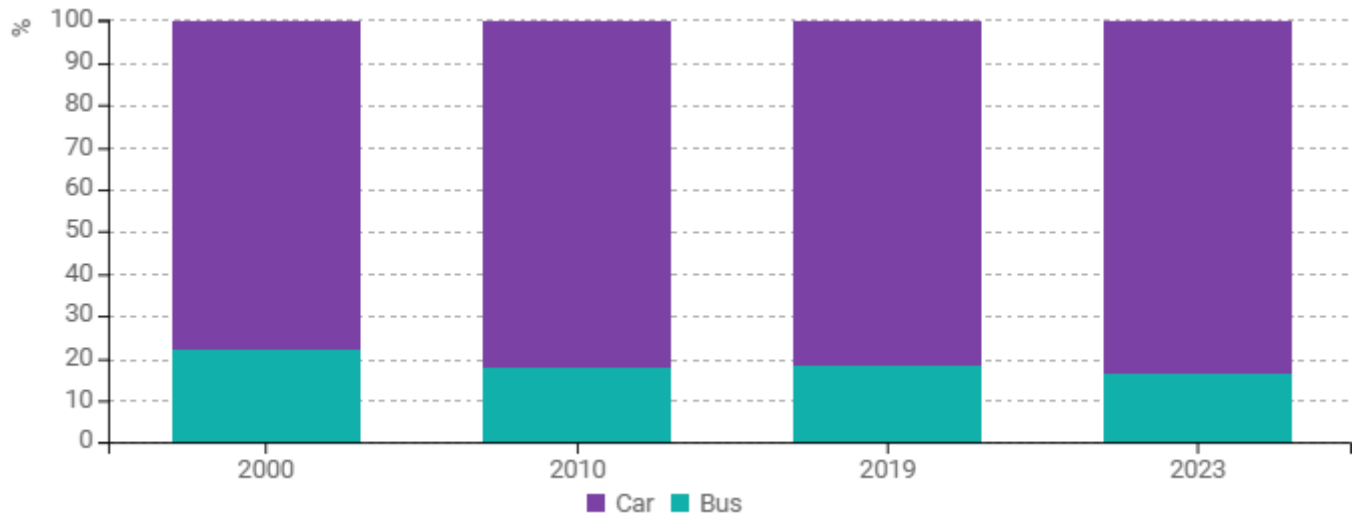
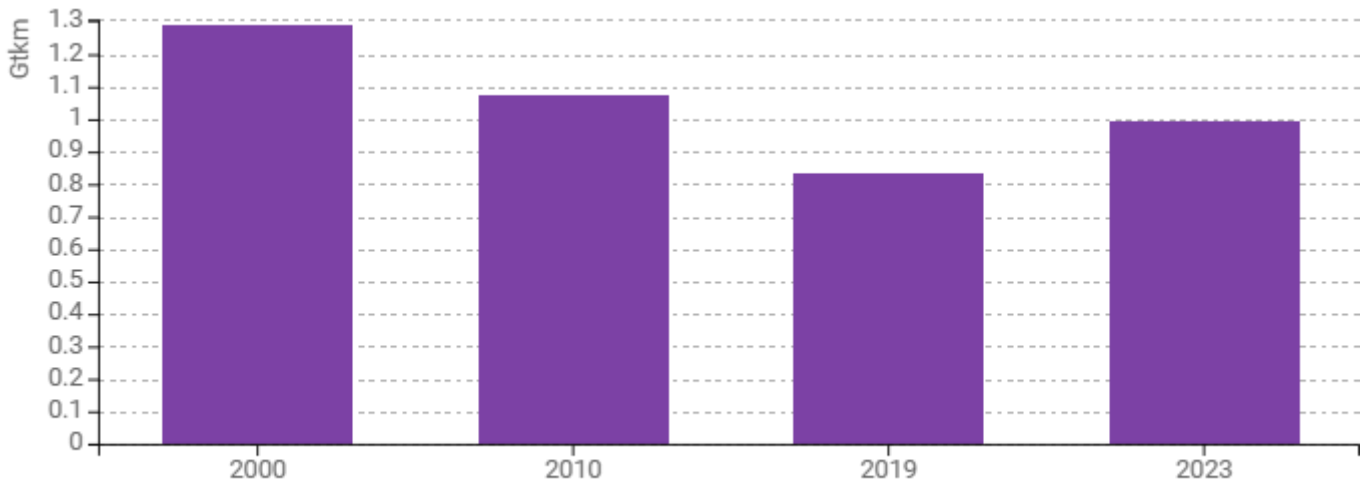
Figure 15: Modal split of inland passenger traffic



Source: ODYSSEE

Inland freight transport is conducted only with trucks. Freight mobility has rebound in the last two years due to increased economic activity.

Figure 16: Inland freight traffic (only road in Cyprus)



Source: ODYSSEE

Energy intensity of passenger cars, expressed in energy consumption per passenger-kilometre, has gradually declined in the last decade (by -2.9% per year between 2010 and 2023) as a result of improved fuel economy of new cars, especially the hybrid type.

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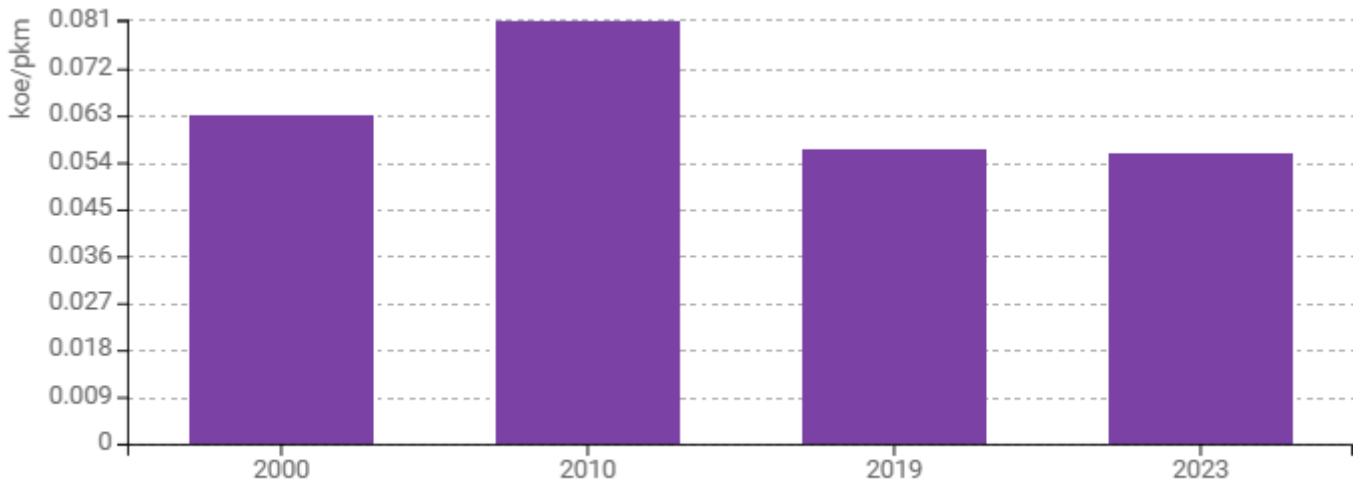
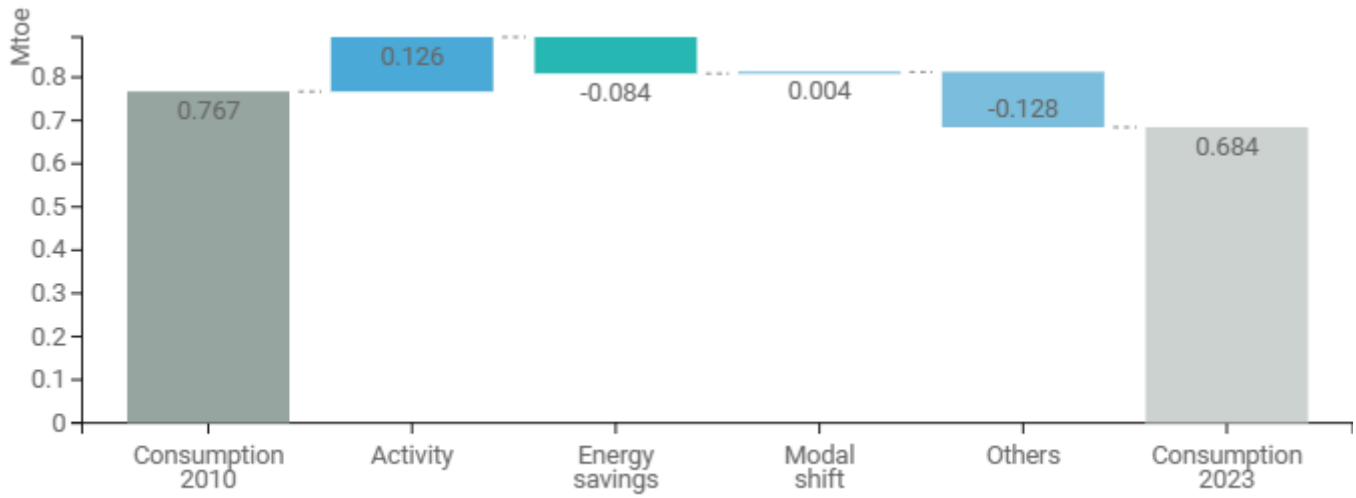
Figure 17: Energy consumption of cars per passenger-km



Source: ODYSSEE

Despite some energy efficiency improvements because of the gradual renewal of the stock of motor vehicles, increases in total passenger kilometres and tonne kilometres travelled have been stronger; therefore, total energy consumption of transport has risen by 0.09 Mtoe, or 16%, between 2000 and 2023.

Figure 18: Main drivers of the energy consumption variation in transport



Source: ODYSSEE

Policies and measures to improve the energy efficiency of transport have focused on economic incentives (excise taxes on motor fuels and CO2-based annual circulation taxes of cars) as well as on the implementation of the 'Clean Vehicles Directive' for low-emission buses.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Excise tax on road transport fuels exceeding the minimum levels as required in Directive 2003/96/EC	Yes	According to Directive 2003/96/EC, minimum EU-wide levels of excise taxes are 0,359 Euros/litre for unleaded petrol, 0,330 Euros/litre for automotive diesel and 0,021 Euros/litre for heating gasoil. Energy savings from taxation measures which exceeded the minimum levels of taxation applicable to fuels as required in Directive 2003/96/EC were taken into account.	8.36 TJ
Vehicle excise duty based on CO2 emissions.	Yes	This measure relates to the tax imposed on vehicles with a view to reducing CO2 emissions, which has been in force since 2014. The latest amendment to the Motor Vehicles and Road Traffic Law (Law N.47(I)/2019) has revised the method of calculating the motor vehicle registration fees beyond the CO2 parameter. More specifically, higher fees are now charged for vehicles emitting more than 120 g/km. Furthermore, an additional fee is included based on the 'Euro' technical specifications of vehicles.	0.09 TJ
Use of buses with low or zero emissions	No	• Complementary measure of limited scope • Incorporation into the terms of the new public transport contracts • Harmonization and implementation of European Directives and the 'Clean Vehicles Directive' etc. • Provide more incentives for tourist buses to convert to renewable energy sources engines	0.03 TJ

Source: MURE

Industry

Final energy consumption of the industrial sector has dropped substantially over the last two decades because of the decline in industrial economic activity. The non-metallic minerals sector, dominated by the cement industry, is currently the only energy-intensive industrial activity and is responsible for more than half of industrial energy use.

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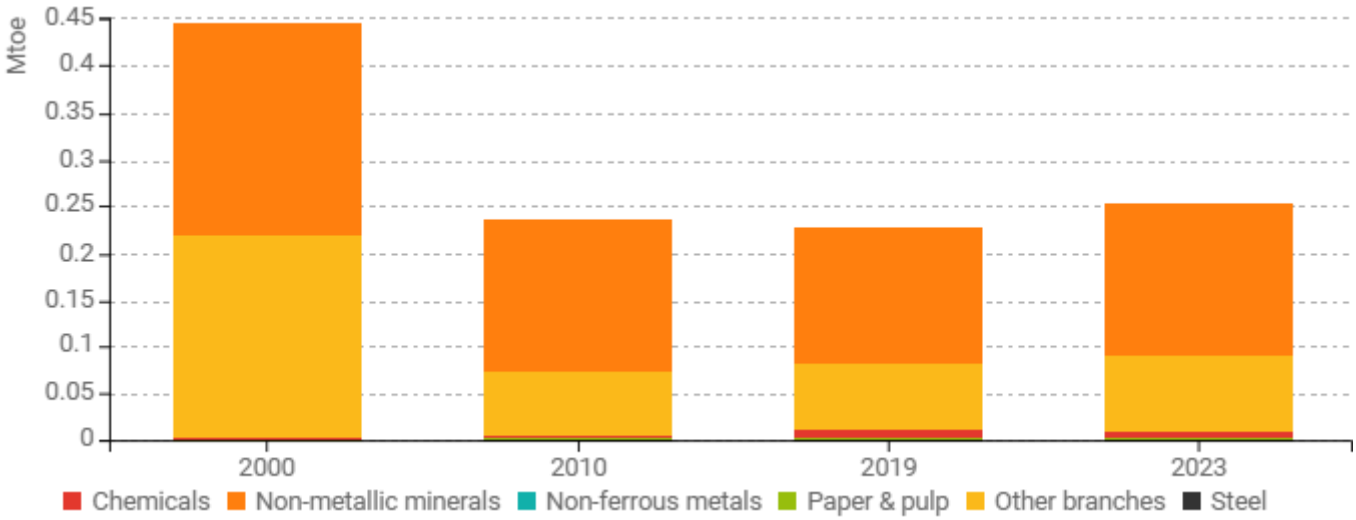
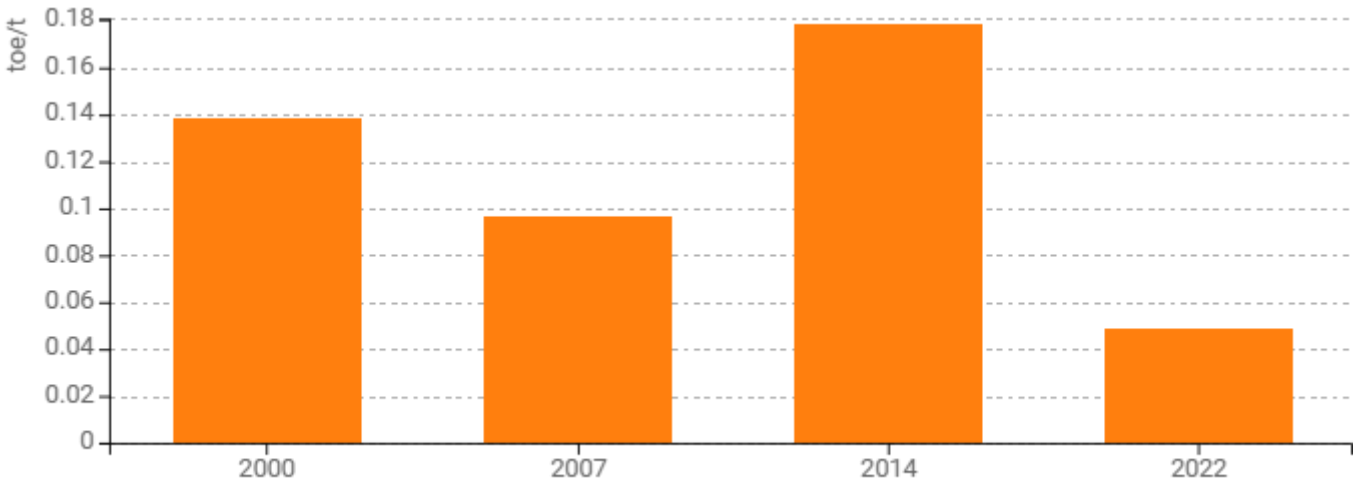
Figure 19: Final energy consumption of industry by branch



Source: ODYSSEE

Unit consumption of the cement industry has overall declined. A temporary increase after 2012 was due to a drop in the load factor of the cement plant because production of cement dropped substantially in 2013-2015 with the decline of the Cypriot construction industry due to the economic downturn.

Figure 20: Unit consumption of cement (toe/t)



Source: ODYSSEE

Energy savings in the industrial sector, primarily in the cement industry, helped reduce final energy consumption by 0.43% (-0.19 Mtoe) between 2000 and 2023, despite a slight increase in industrial output after the pandemic. Small structural changes (i.e. a shift towards less energy intensive industrial activities) have also contributed to reduce consumption.

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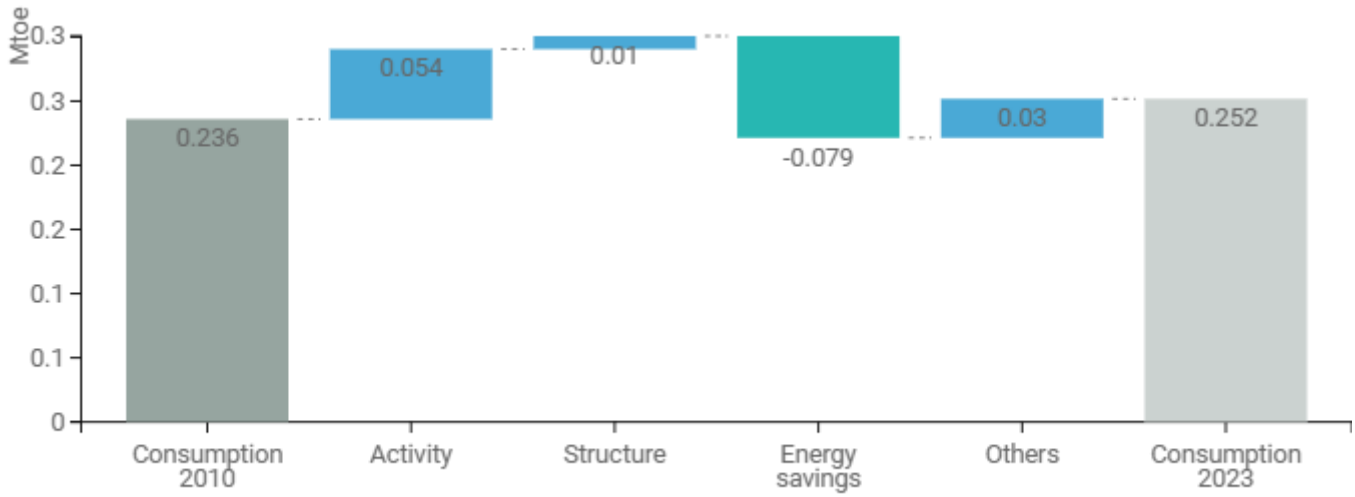
Figure 21: Main drivers of the energy consumption variation in industry



Source: ODYSSEE

Policies and measures in industry are included in the cross-cutting measures and (when applicable) to the broader policies and measures related to the buildings sector - there are special clauses for including energy renovations in enterprises as part of the broader support schemes for building renovations. A special support scheme for energy efficiency improvements in businesses has not been successful so far but was re-announced in December 2024 and is expected to induce some investments in 2025-2026.

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