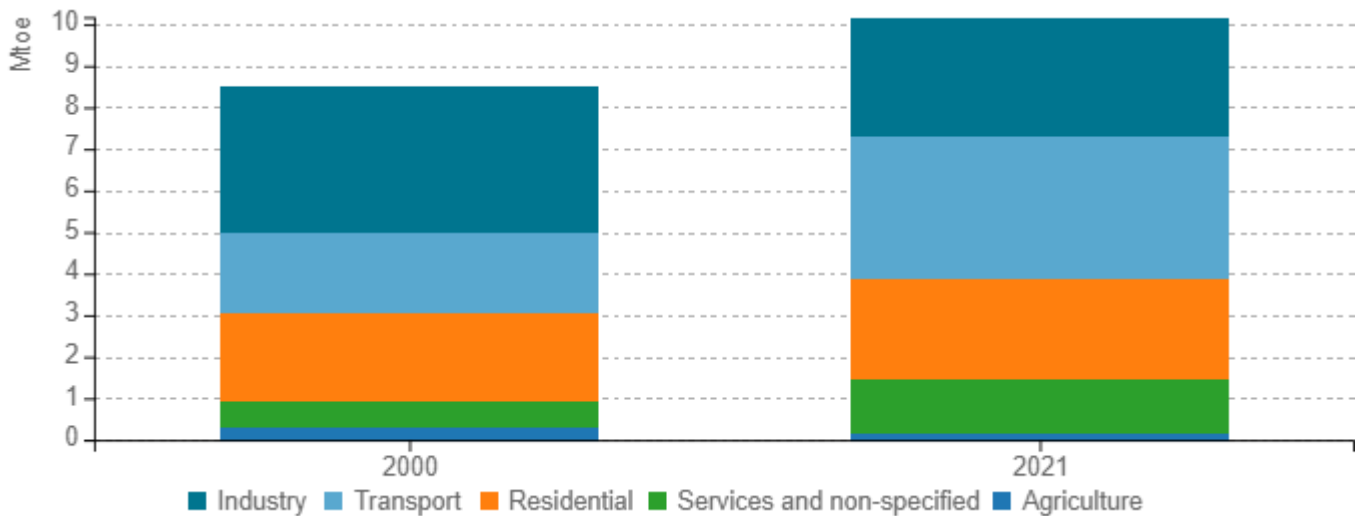


# Energy efficiency trends and policies

## Overview

Final energy consumption in 2021 was only 19.5% higher than in 2000 despite significant economic growth over the same period. In 2021, GDP is twice higher compared to the level in 2000 or 102% growth. Final energy intensity in 2021 was 39% lower than in 2000.

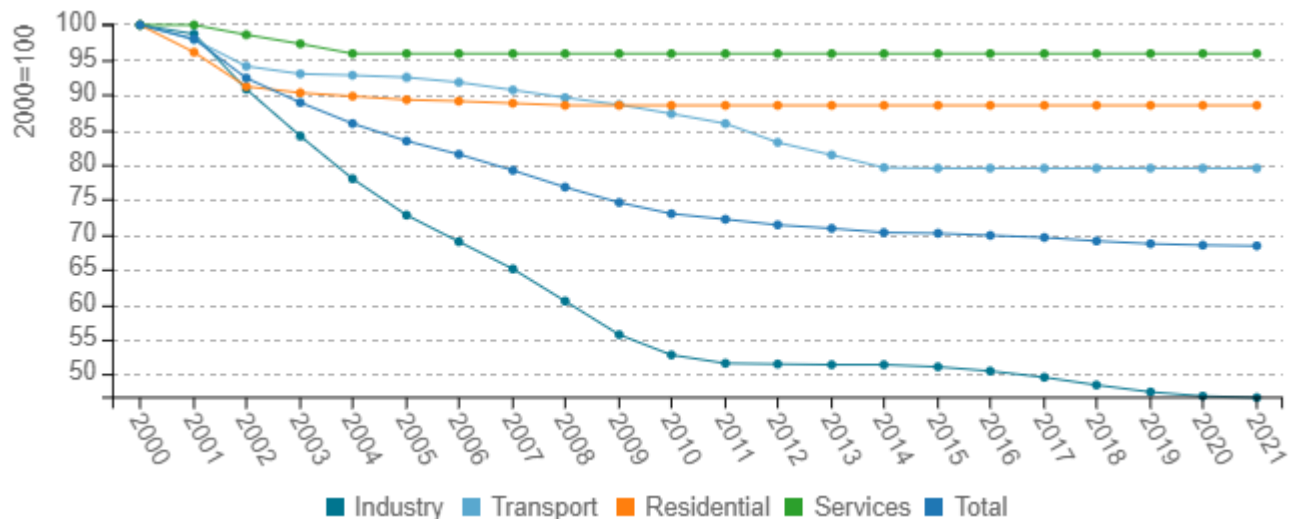
Figure 1: Final energy consumption by sector (normal climate)



Source: ODYSSEE

Overall energy efficiency as measured by ODEX improved by 31.6% from 2000 to 2021. The highest progress was registered in industry (53.3%), followed by the transport (20.5%), residential (11.5%) and in services (4.1%).

Figure 2: Technical Energy Efficiency Index



Source: ODYSSEE



**Table 1: Sample of cross-cutting measures**

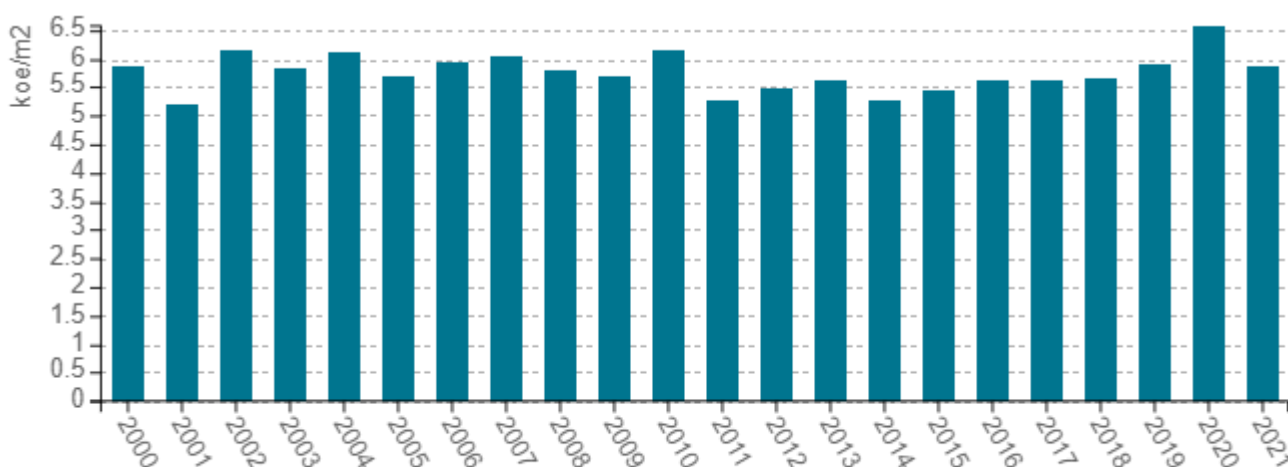
Measures	NECP measures	Description	Expected savings, impact evaluation	More information available
GEN-BG3893: National Energy Efficiency Cumulative Target 2021-2030	yes	Legislative measure - An energy savings obligation scheme and alternative measures, is set up in order to help reach the national energy efficiency target, which should ensure achieving of a total cumulative target of energy savings in final energy consumption for the period from 1 January 2021 to 31 December 2030	Cumulative annual savings: 2030 - 35 PJ	<a href="https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/3893">https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/3893</a>

Source: MURE

### Buildings

From 2000 to 2021, unit consumption for space heating in the household sector remains unchanged in conditions of significant growth (+130%) of household expenditure. Electricity consumption per dwelling for large electrical appliances and lighting increased by 10%, as cooking consumption per dwelling increased by 38% and consumption per dwelling for air conditioning increased by 72%.

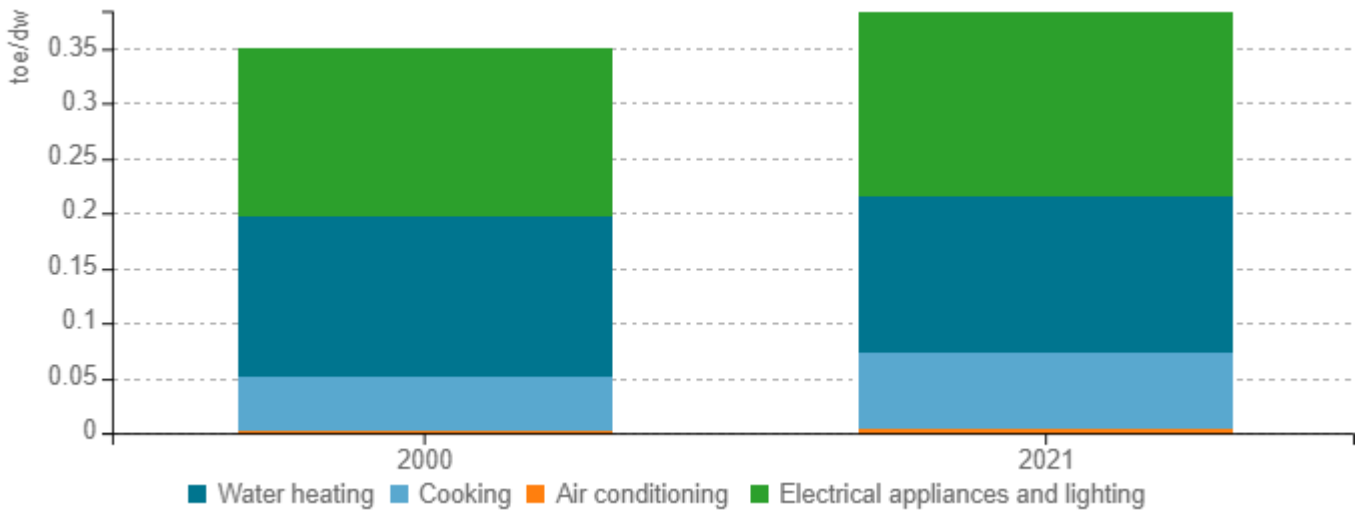
**Figure 3: Energy consumption of space heating per m2 (normal climate)**



Source: ODYSSEE



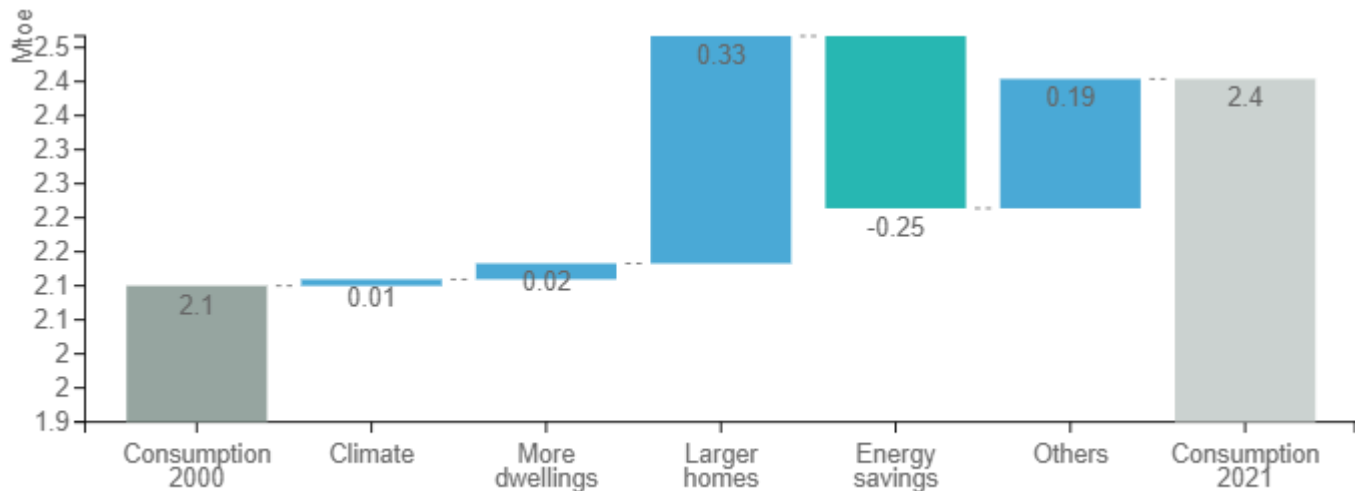
Figure 4: Energy consumption per dwelling by end-use (except space heating)



Source: ODYSSEE

The final consumption of residential sector increased by 0.3 Mtoe over the period 2000-2021. Two main effects tend to increase energy consumption: larger homes (0.33 Mtoe) and other effects (0.19 Mtoe, which includes improved thermal comfort, more appliances and more air conditioning). Energy savings allow a 0.25 Mtoe decrease on the energy consumption.

Figure 5: Main drivers of the energy consumption variation of households

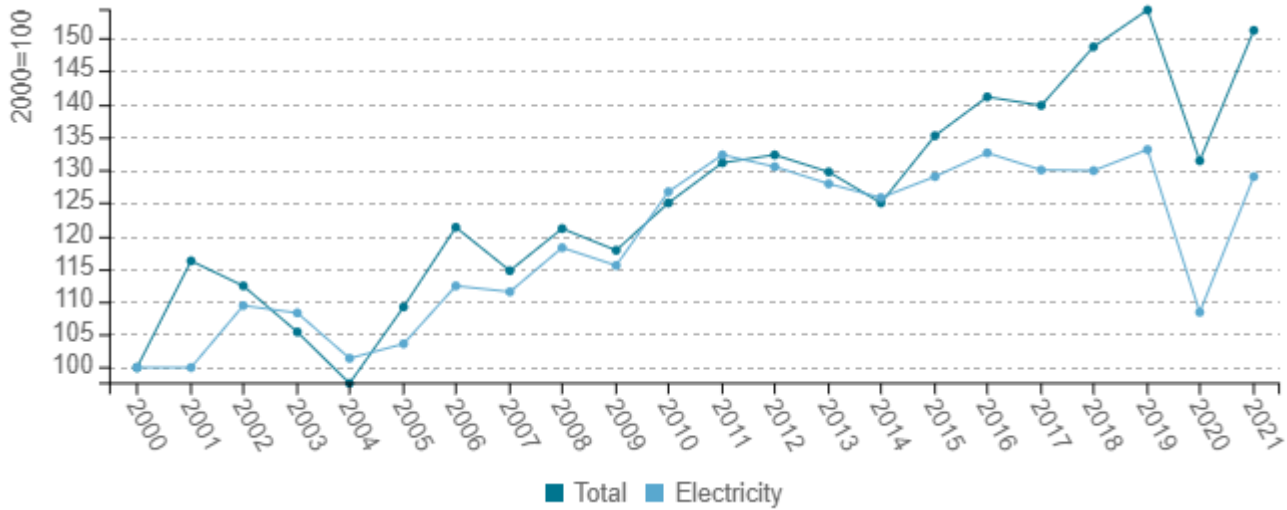


Source: ODYSSEE



Energy and electricity consumption per employee in services sector increased significantly over years. In 2021, energy consumption per employee is 51% higher than the 2000 level, and electricity consumption per employee 29% higher.

Figure 6: Energy and electricity consumption per employee (normal climate)



Source: ODYSSEE

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

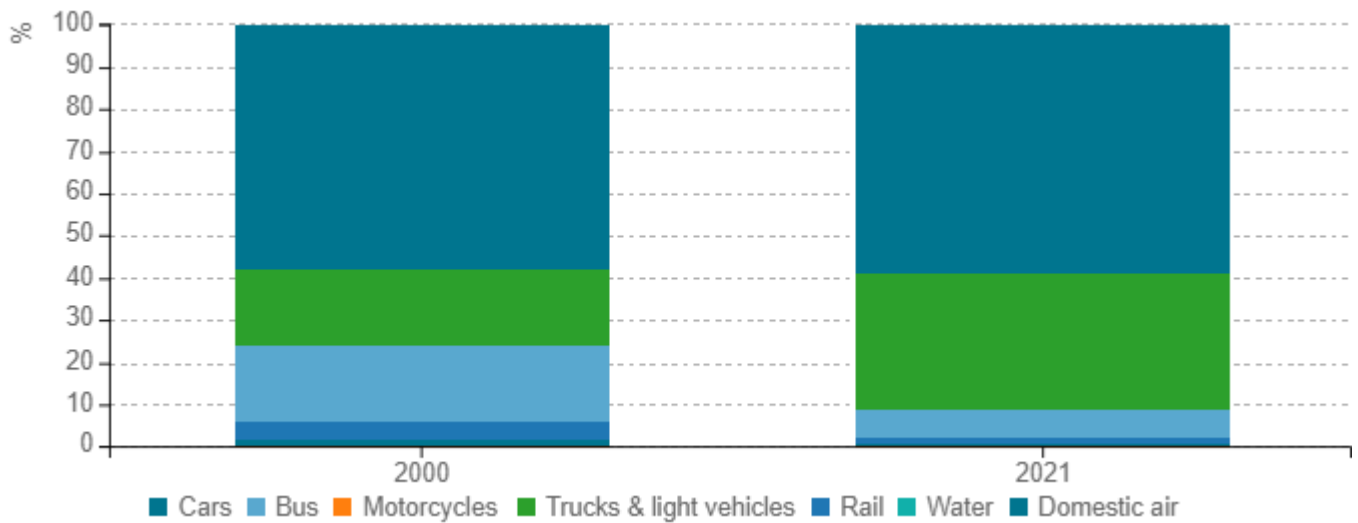
Measures	Description	Expected savings, impact evaluation	More information available
HOU-BG4483: Support for sustainable energy renovation of the residential building stock - NRRP	Grant support for deep energy renovation of residential buildings under the National Recovery and Resilience Plan	Cumulative annual savings: 2030 0.093 PJ	<a href="https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/4483">https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/4483</a>

Source: MURE

**Transport**

Road represents 98.3% of the sector's consumption in 2021 (+4 points compared to 2000). Rail only represents 1.3% of the consumption, in 2018 compared to 4.4% in 2000. The share of domestic air transport share decreased from 1.2% in 2000 to 0.4% of the consumption in 2021.

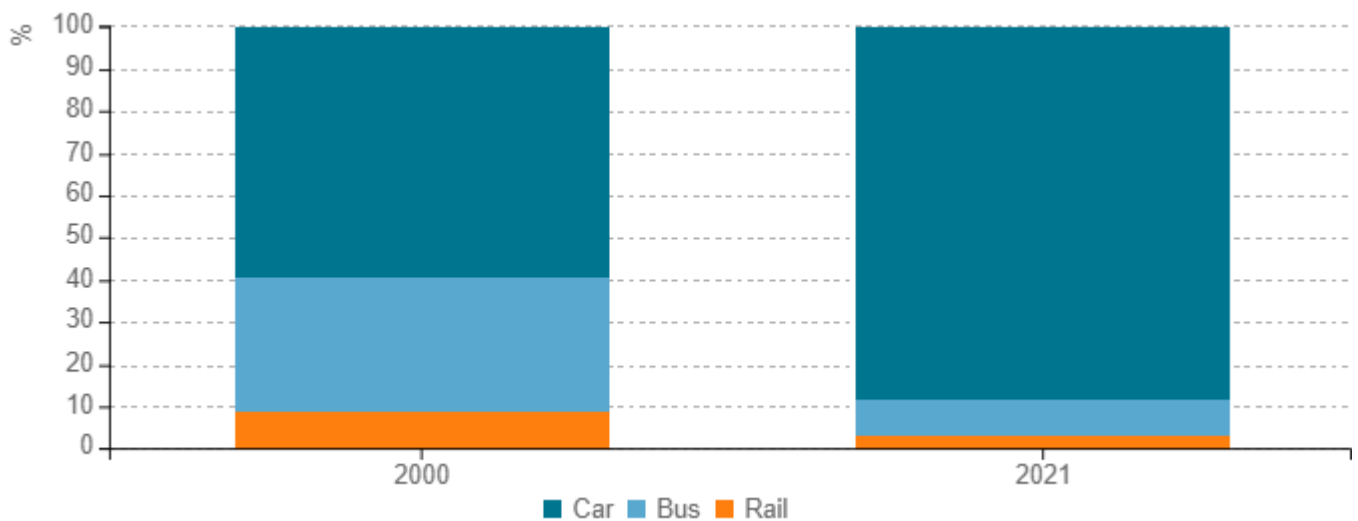
*Figure 7: Transport energy consumption by mode*



Source: ODYSSEE

The share of cars in passenger traffic has increased a lot since 2000 and represents 88.3% in 2021. On the opposite the passenger traffic of buses has decreased a lot to represent 8.4% of traffic (32.1% in 2000) and rail only 3.3% of traffic(8.6% in 2000).

*Figure 8: Modal split of inland passenger traffic*

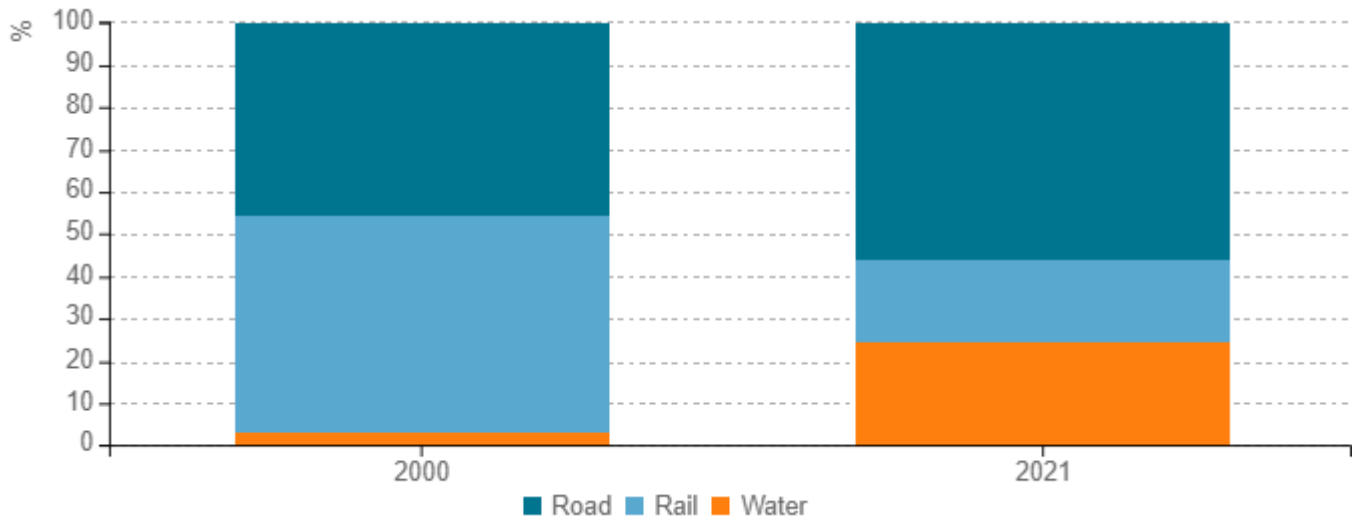


Source: ODYSSEE



The share of goods traffic(measured in tonne-kilometre) by road increased and represents 55.9% of goods traffic in 2021 (45.6% in 2000). The share of rail has been divided by 2.6 and represents 19.6% of freight traffic in 2021, partly to the benefit of river freight.

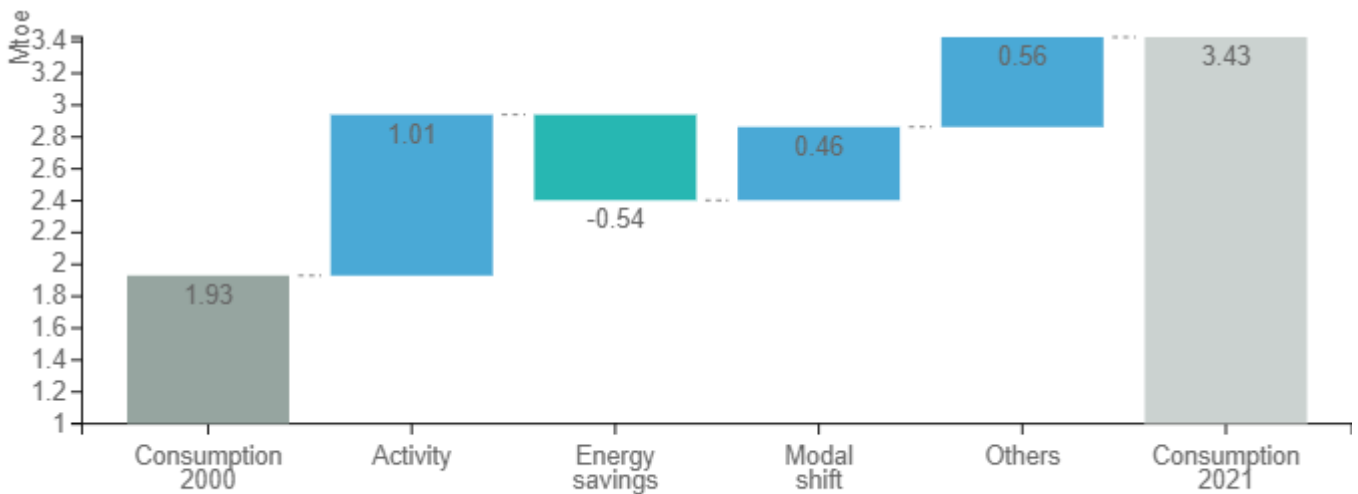
Figure 9: Modal split of inland freight traffic



Source: ODYSSEE

Transport energy consumption has increased by 1.5 Mtoe (78%) from 2000 to 2021. Energy savings, which tend to decrease the energy consumption, represent 0.54 Mtoe. On the opposite, the growth in passengers and goods traffic (activity) and the modal shift effect, more than offset the energy savings effect and explain the observed significant increase of the consumption.

Figure 10: Main drivers of the energy consumption variation in transport



Source: ODYSSEE



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

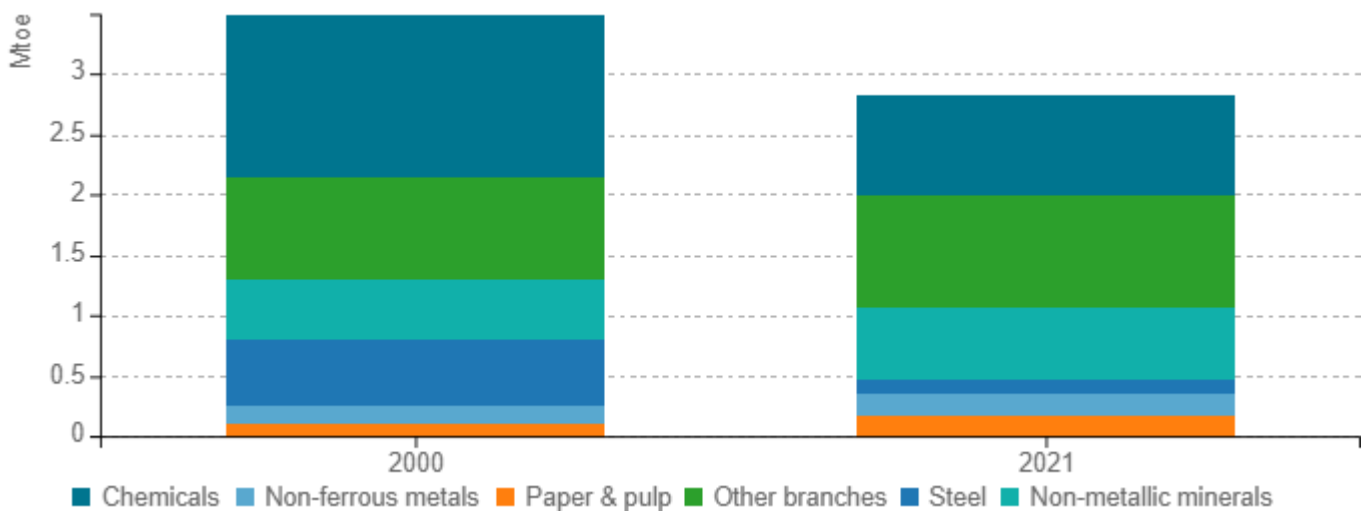
Measures	Description	Expected savings, impact evaluation	More information available
TRA-BG4518: "Green mobility" - support of sustainable urban mobility through measures for energy-efficient transport systems	Project under Bulgarian Recovery and Resilience Plan - grant support for sustainable urban mobility through measures to develop ecological, safe, functional and energy-efficient transport systems	Cumulative annual savings 2026: 4.2 kt CO2	<a href="https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/4518">https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/4518</a>

Source: MURE

### Industry

The largest consumer branch of industry over 2000-2021 is the chemical industry with a share of 29.4% of the industry final consumption in 2021. Non-metallic represents 20.9% of the consumption in 2021.

Figure 11: Final energy consumption of industry by branch

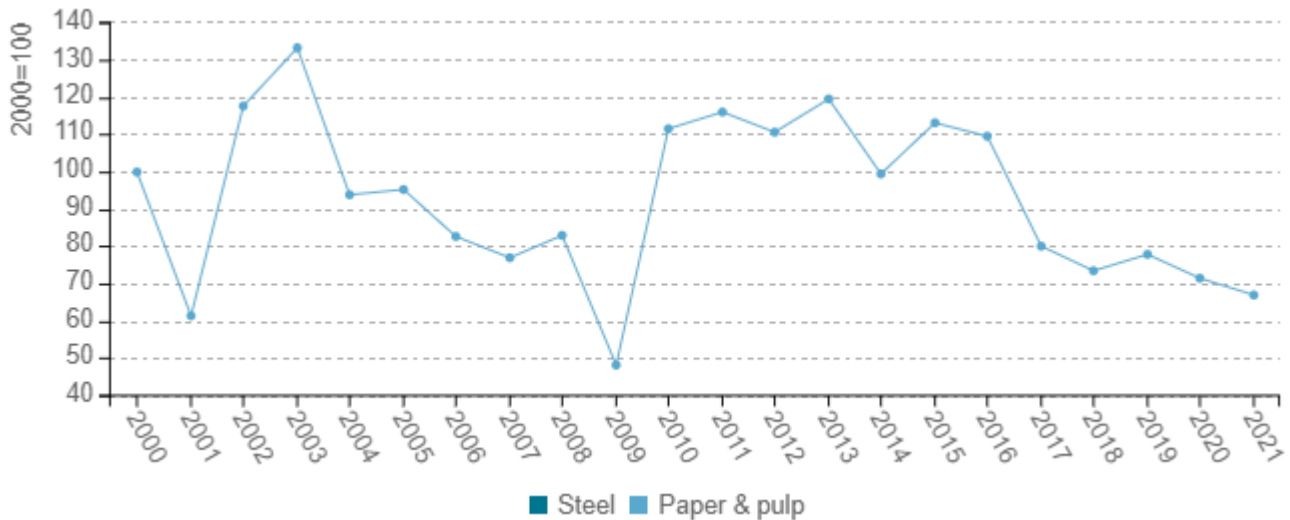


Source: ODYSSEE



Unit consumption of paper has decreased in 2021 by 33% since 2000 and about half of the consumption in 2003. Unit consumption decreased by 8.2% in 2020, and by 6.3% in 2021.

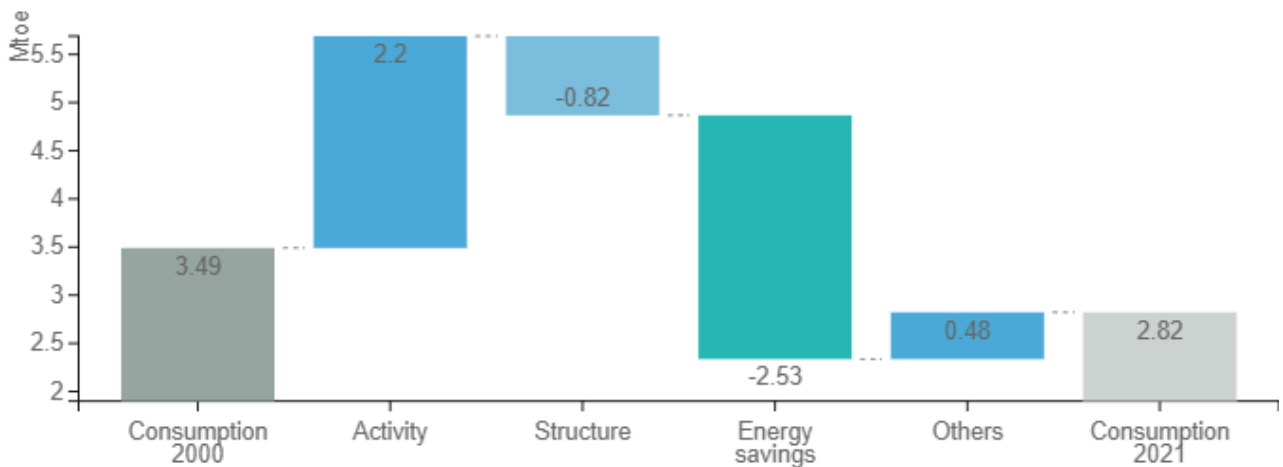
Figure 12: Unit consumption of energy-intensive products (toe/t)



Source: ODYSSEE

Energy savings (2.53 Mtoe) and structural effects (0.82 Mtoe) towards less energy intensive branches contribute to decrease the energy consumption of industry. On the opposite the growth in activity (expressed with production indexes) partially offsets these effects. As a result, the energy consumption has decreased by 1%/year (for a total of 0.67 Mtoe) over the period 2000-2021.

Figure 13: Main drivers of the energy consumption variation in industry



Source: ODYSSEE





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

Measures	Description	Expected savings, impact evaluation	More information available
IND-BG1040: Energy Efficiency Act (EEA) – Mandatory Industrial Audits for Energy Efficiency	Mandatory energy audits of all enterprises which are not SME, all industrial systems with an annual consumption over 3,000 MWh (excl. ETS) and all public lighting systems in towns with more than 20000 inhabitants and implementation of the prescribed measures.	Potential savings 2023 – 0,2 PJ/year identified in the audits performed in 2023	<a href="https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/1040">https://www.measures.odyssee-mure.eu/energy-efficiency-policies-database.html#/measures/1040</a>

Source: MURE

