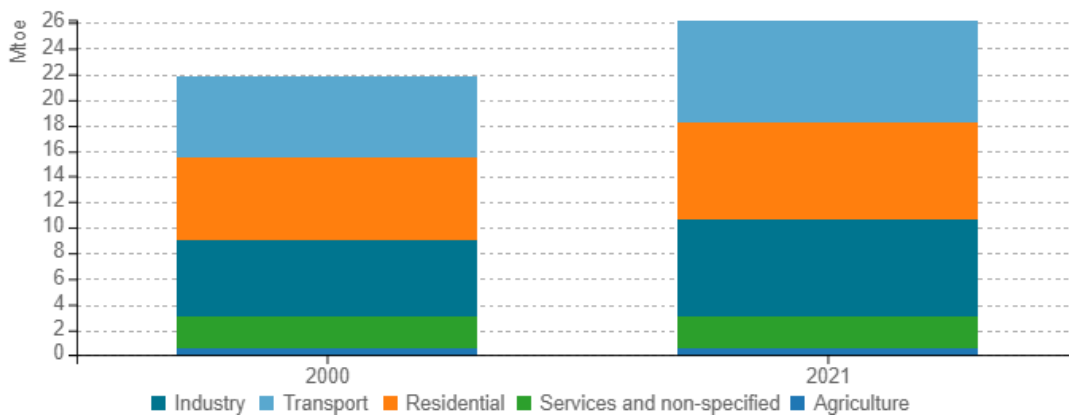


Energy efficiency trends and policies

Overview

Austria's final energy consumption, at normal climate, was 21.8 Mtoe in 2000. It increased by 4.3 Mtoe to reach 26.2 Mtoe in 2021. The industrial sector saw a rise of 1.7 Mtoe, followed by the transport sector with 1.6 Mtoe, the residential sector with 1.1 Mtoe, and the agricultural sector with 0.01 Mtoe. Whereas final energy consumption in the services sector slightly decreased by 0.03 Mtoe. In 2021, the transport sector held the largest share at 30.5%, compared to 29.4% in 2000, when the residential sector had the largest share at 29.5%. In 2021, the residential sector ranked third with a share of 28.7%

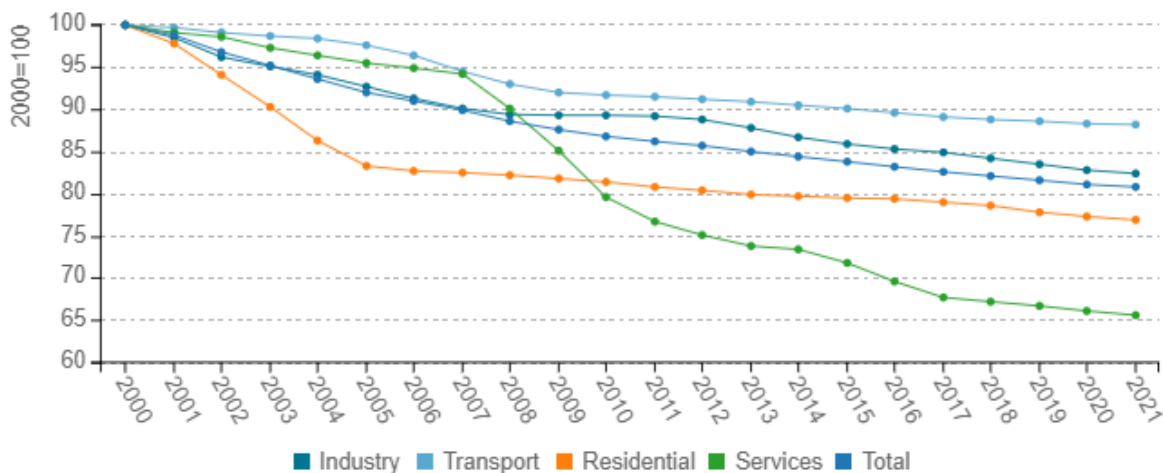
Figure 1: Final energy consumption by sector (normal climate)



Source: ODYSSEE

Final consumer energy efficiency, as shown by ODEX, increased by approximately 1.0% annually from 2000 to 2021, totalling a 19% improvement. The services sector demonstrated the highest improvement at 34%, averaging 2.0% per year, followed by the residential sector with a 23% improvement, averaging 1.2% per year. Conversely, the sectors industry and transport indicated lower rates of improvement, with 18% (0.9% per year) and 12% (0.6% per year) respectively.

Figure 2: Technical Energy Efficiency Index



Source: ODYSSEE



Austria is committed to achieving climate neutrality by 2040, employing measures outlined in the Climate and Energy Strategy with enforceable reduction paths. Central to Austria's energy policy is the emphasis on decreasing energy demand through sound energy use, enhancing energy efficiency and promoting renewable energy sources. At both federal and state levels, Austria has instituted various instruments and measures, spanning regulations, research, technological development and demonstration. These initiatives aim to facilitate market adoption, disseminate information, and offer financial incentives to implement effective energy-saving measures.

Table 1: Sample of cross-cutting measures

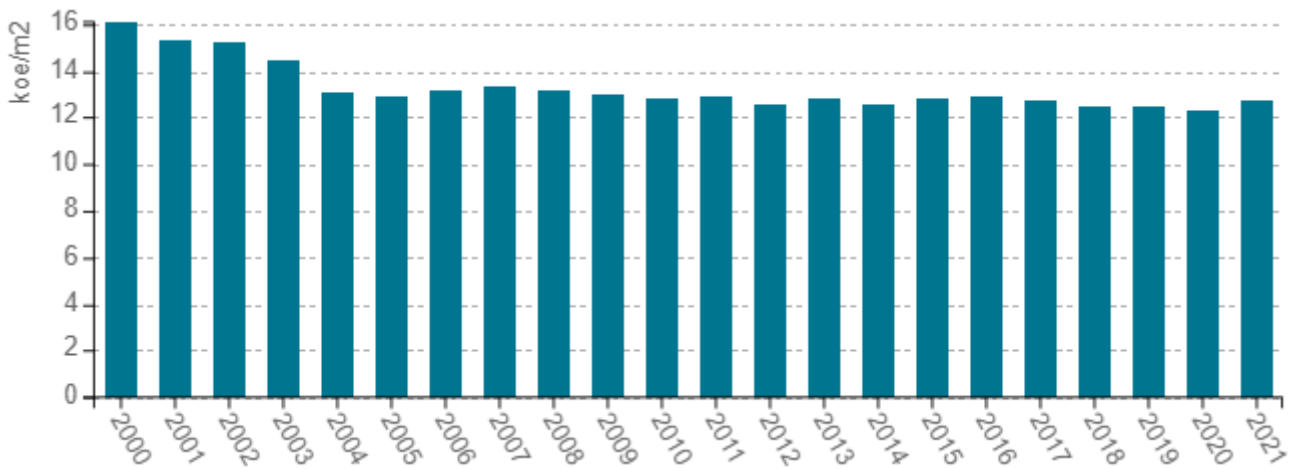
Measures	NECP measures	Description	Expected savings, impact evaluation	More information available
Climate and Energy Strategy	yes	The Austrian Climate and Energy Strategy concerns the long-term transformation of the energy system in order to meet the future challenges in relation to climate protection.	High	https://energy.ec.europa.eu/system/files/2020-03/at_final_necp_main_en_0.pdf
Renewable Energy Action Plan	yes	The Austrian Renewable Energy Action Plan promotes a lot of different measures at national level for the growth of energy from renewable sources.	High	https://www.ris.bka.gv.at/eli/bgbl/l/2021/150/20210727
Federal Energy Efficiency Act	yes	Federal law to accelerate energy efficiency measures. The law further establishes a monitoring, reporting and verification system.	High	https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008914

Source: MURE

Buildings

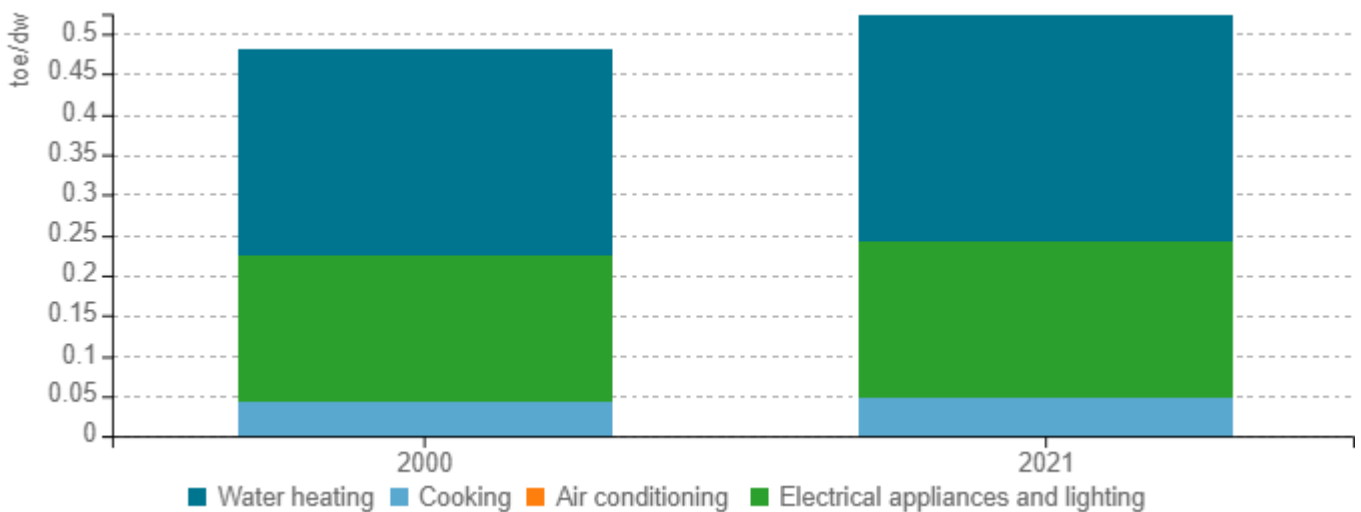
Over the past two decades, the buildings sector has seen a notable decline in space heating energy consumption per square meter. Since 2000, space heating unit consumption (normal climate) has dropped by 22%, decreasing from 16.1 koe/m² to 12.7 koe/m² in 2021 (see Figure 3). Meanwhile, energy consumption per dwelling for water heating increased by 11%, for cooking by 16%, and for electric appliances and lighting by 5% from 2000 to 2021. Notably, the energy consumption per dwelling, excluding space heating, rose from 0.48 toe in 2000 to 0.52 toe in 2021 (see Figure 4).

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



Source: ODYSSEE

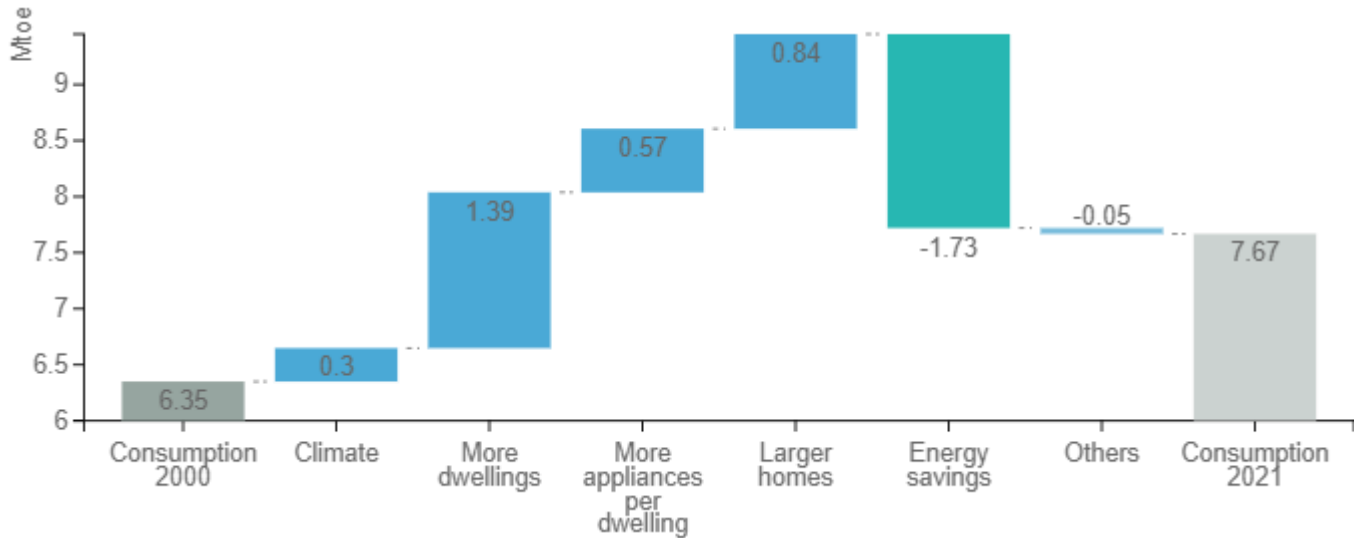
Figure 4: Energy consumption per dwelling by end-use (except space heating)



Source: ODYSSEE

Energy consumption of households rose by 1.3 Mtoe from 2000 to 2021. Main drivers of this increase include the expanding number of dwellings (+1.4 Mtoe), additional appliances per dwelling (+0.6 Mtoe), and larger home sizes (+0.8 Mtoe). However, energy savings of 1.7 Mtoe counterbalance this upward trend. Climate-related aspects (+0.3 Mtoe) and other effects (-0.05 Mtoe) play a minor role in the overall energy consumption dynamics.

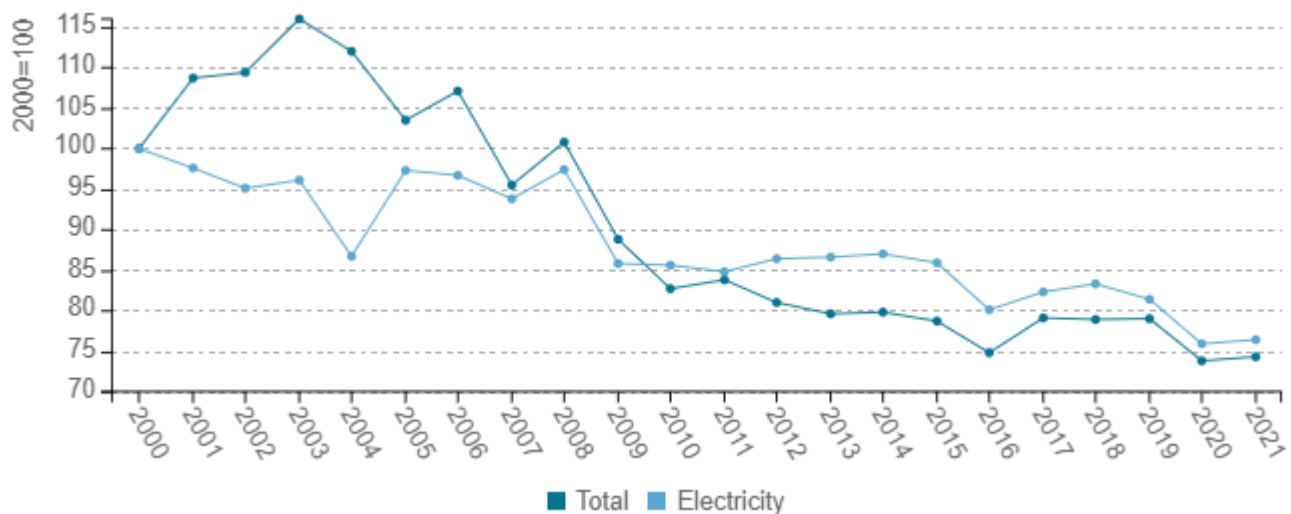
Figure 5: Main drivers of the energy consumption variation of households



Source: ODYSSEE

In the services sector, both total energy consumption and electricity consumption per employee have consistently declined since 2008. Although electricity consumption per square meter showed a slight increase between 2005 and 2008 after a decline in the years 2000 to 2004, the overall trend has been towards reduction. However, the total energy consumption per employee first increased until 2003 before following a downward path. Overall, the total energy consumption per employee in the services sector decreased by 26% from 2000 to 2021 with an annual rate of 1.4%.

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



Source: ODYSSEE

To increase energy efficiency in the buildings sector, Austria aims to increase renovation rates as well as the thermal-energy quality of renovations. Most important measures are the further development of housing subsidies, a consistent switch of heating and cooling systems to renewable energy systems, and a funding program for thermal-energy renovations.

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

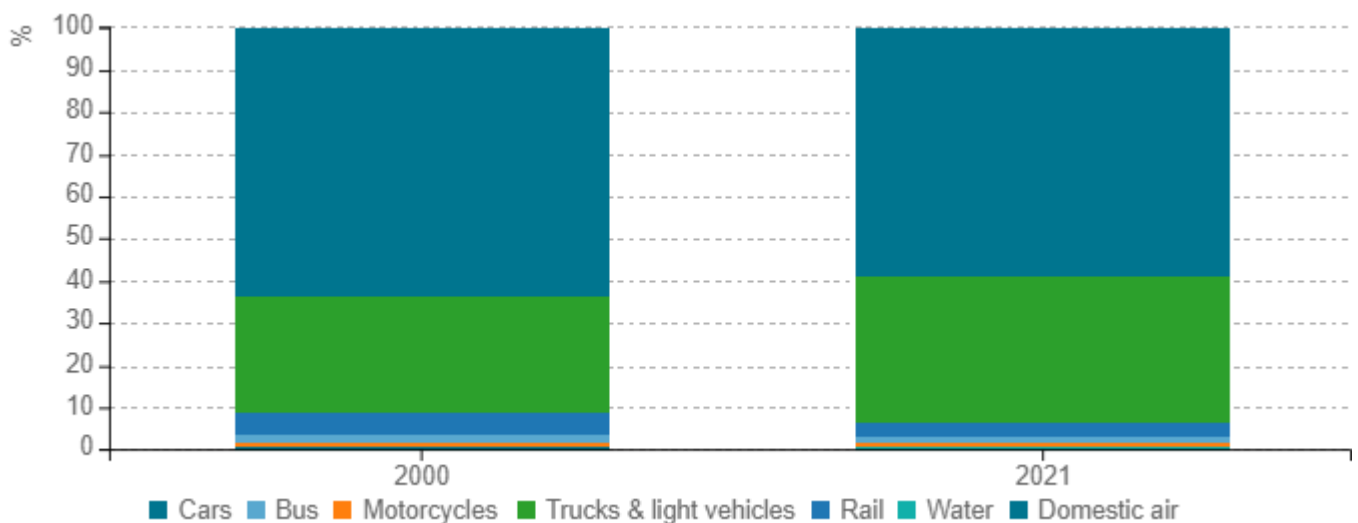
Measures	Description	Expected savings, impact evaluation	More information available
Austrian Federal Government's Renovation Initiative	The enhancement of the thermal quality of residential buildings and the expansion of efficient heating systems are supported. The level of subsidy is dependent on the achieved thermal quality and the efficiency of the heating system.	High	https://www.bmk.gv.at/
Energy audits (advice) for households	The energy advice bodies of the federal states offer energy advice to households by trained and independent auditors.	Medium	

Source: MURE

Transport

In 2021, cars made up 59% of transport energy consumption, reflecting a 5-point decrease since 2000. Road transport, including trucks and light vehicles (35%), buses and motorcycles (2.5%), accounted for 96% of total transport energy consumption. The share of rail transport decreased from 5% in 2000 to 3.2% in 2021.

Figure 7: Transport energy consumption by mode

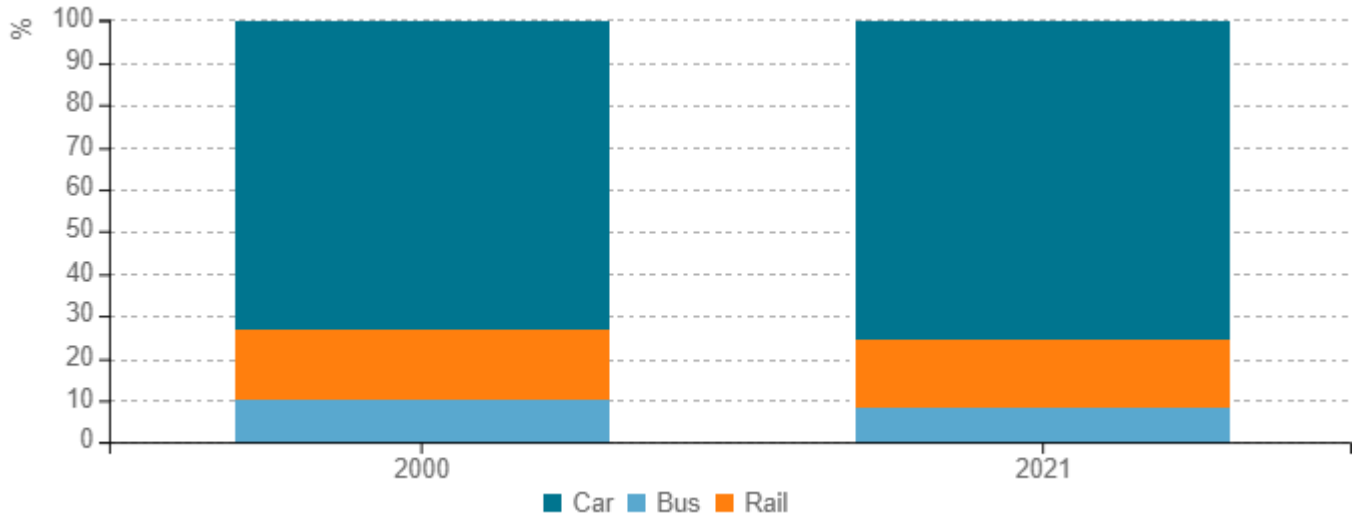


Source: ODYSSEE



In 2021, the inland passenger traffic modal split comprised 76% cars, 16% rail, and 8% buses. Between 2000 and 2021, the sum of the shares of bus and rail transport fell by 2.4 points, in favour of the car.

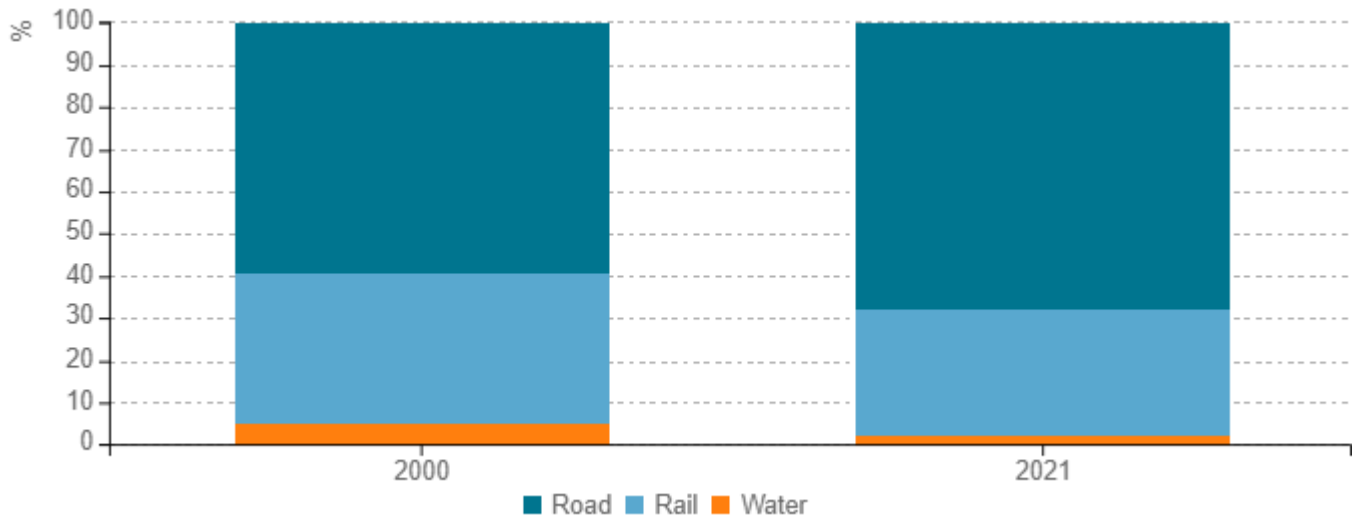
Figure 8: Modal split of inland passenger traffic



Source: ODYSSEE

Road freight traffic covers 68% of the inland freight traffic modal split, showing a 9-point increase from 2000 to 2021. Conversely, rail freight traffic represents around 30%, undergoing a 6-point decrease. The share of freight traffic by water declined from 5.2% to 2.1% over the same period.

Figure 9: Modal split of inland freight traffic

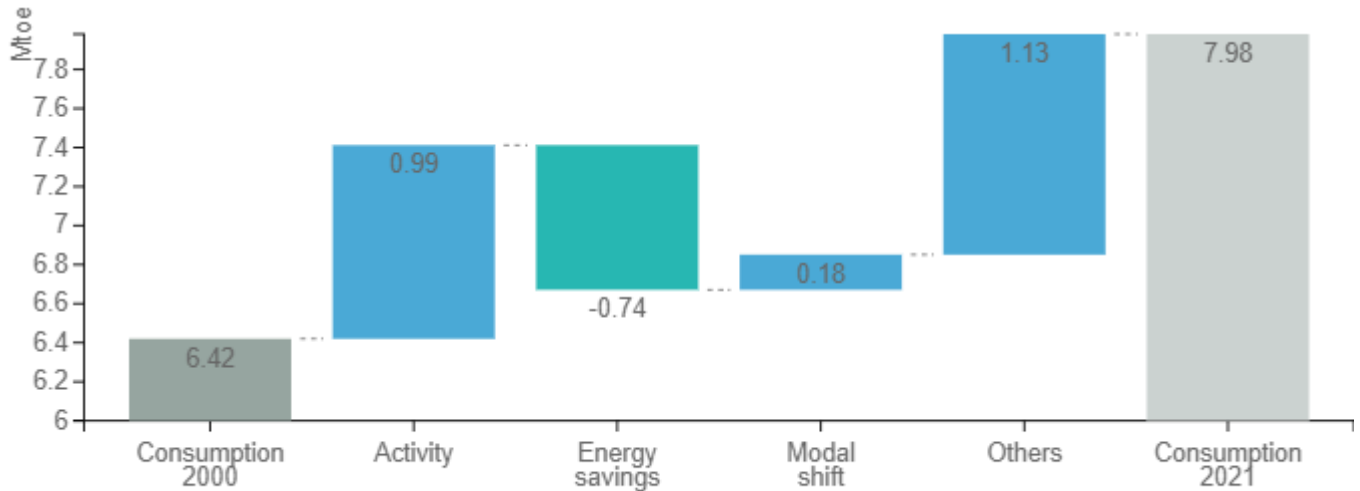


Source: ODYSSEE



Transport sector energy consumption exhibited a significant rise, ascending from 6.4 Mtoe in 2000 to 8.0 Mtoe in 2021. The main drivers of this upward path are increased activity (+1 Mtoe) and other effects (+1.1 Mtoe), partially offset by energy savings (-0.7 Mtoe). The modal shift, although present, has a minor influence (+0.2 Mtoe) on this overall increase of energy consumption within the transport sector.

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



Source: ODYSSEE

Austria is striving for a climate-neutral transport sector by 2040 through strategies such as traffic reduction, mode shift, and enhanced transport efficiency. Emphasizing high-performance public transportation and providing incentives for its usage will boost energy efficiency. The plan also involves a substantial increase in the eco-mobility share in total transport, encompassing walking, cycling, public transportation, and shared mobility.

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

Measures	Description	Expected savings, impact evaluation	More information available
Fuel tax (MOEST) with reduced tax rate for biofuels	Conventional fuel is subject to a tax. The tax is reduced for the proportion of biofuel of which a certain proportion has to be added.	High	
Car-parking management	The effective management of car parking aims to avoid unnecessary car traffic (e.g. by providing Park & Ride facilities).	High	



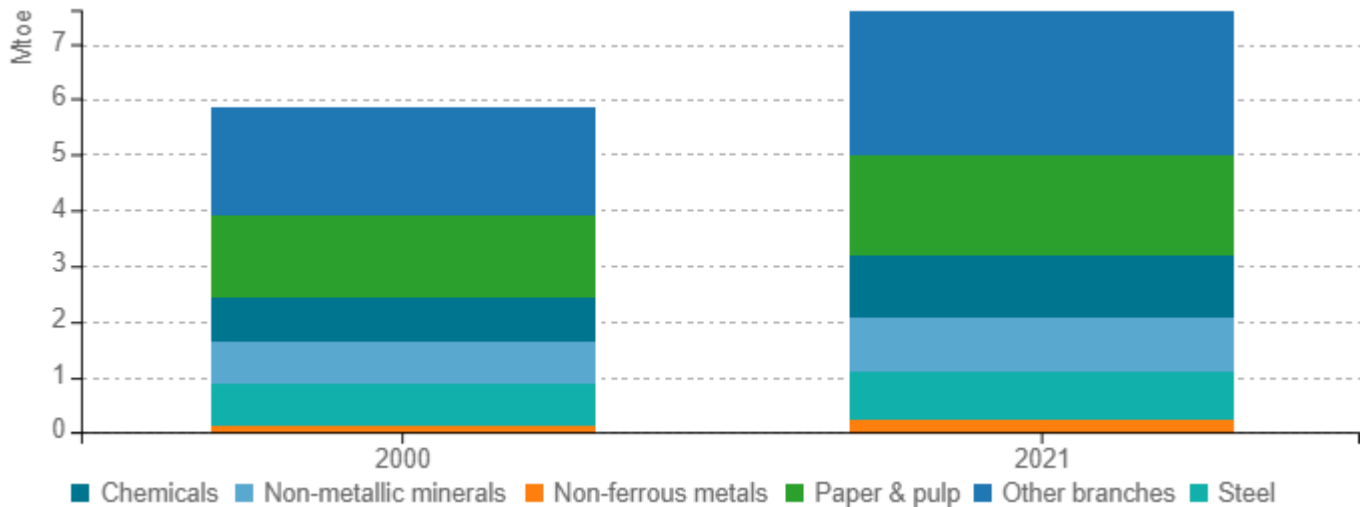
Obligatory transport audits for large companies	The Energy Efficiency Act commits large companies to conduct energy audits every fourth year.	High	
klimaaktiv mobil - Mobility management consulting and funding programmes	klimaaktiv mobil is a Federal programme. Its five main approaches are consulting & advice, awareness raising & information campaigns, financial support, partnerships & awards as well as advanced education & certification.	Medium	https://www.klimaaktiv.at/english/mobility.html

Source: MURE

Industry

The industry sector's total final energy consumption rose from 5.9 Mtoe in 2000 to 7.6 Mtoe in 2021, marking a 29% increase at an annual rate of 1.2%. All industrial branches experienced heightened consumption, notably in the chemical, paper and pulp, and other sectors.

Figure 11: Final energy consumption of industry by branch

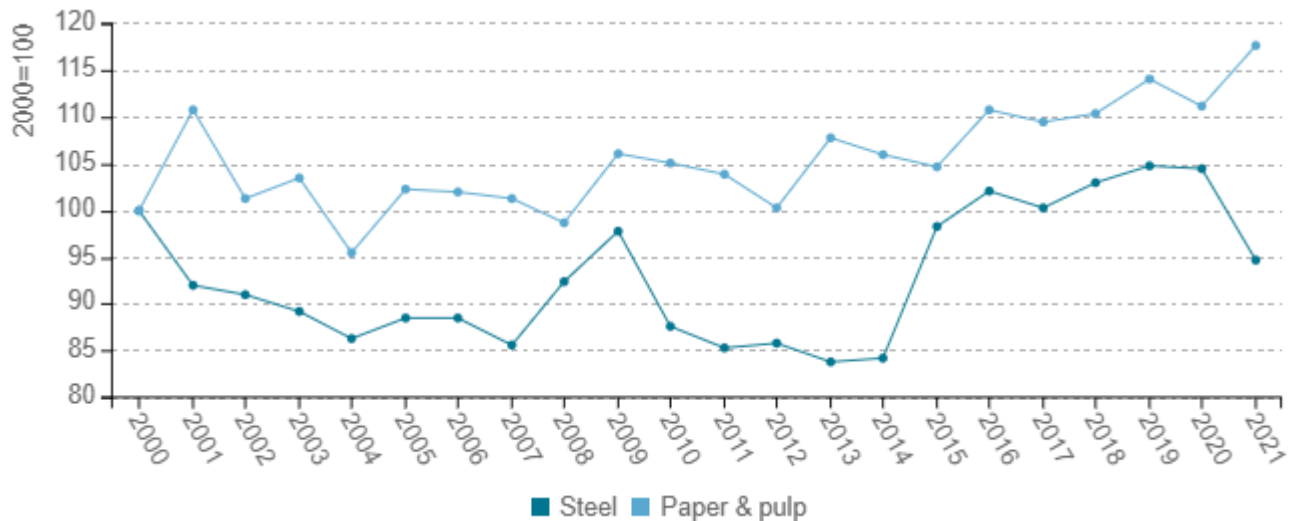


Source: ODYSSEE



Between 2000 and 2021, unit consumption in crude steel production decreased by 5%, while paper and pulp unit consumption saw an 18% increase. Paper and pulp unit consumption showed a generally upward trend with minor fluctuations over the past two decades. In contrast, steel production unit consumption followed a downward path until 2014, experiencing a subsequent resurgence.

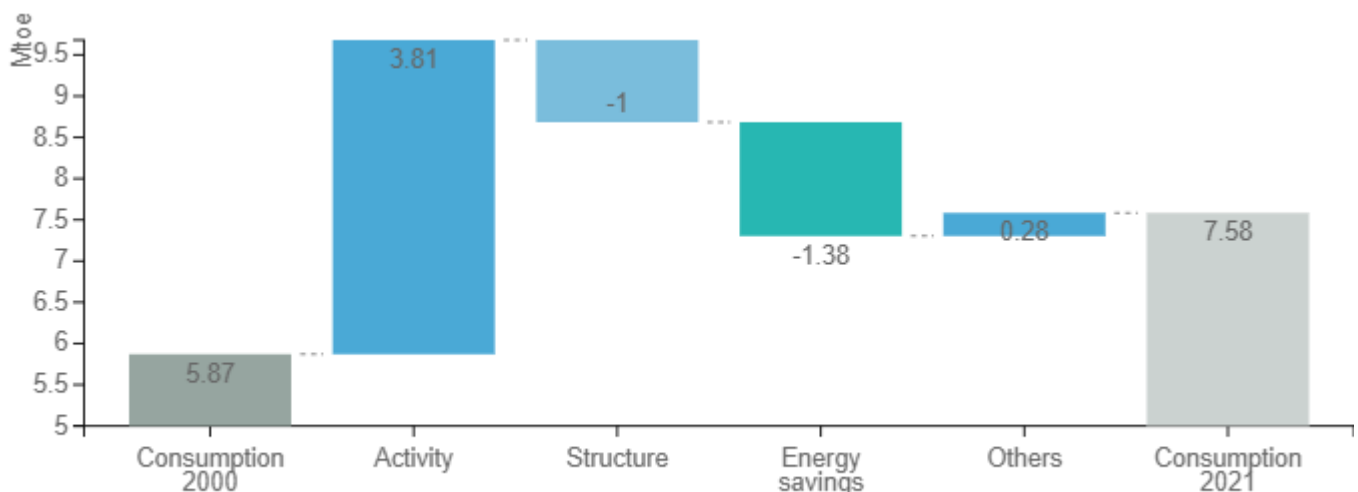
Figure 12: Unit consumption of energy-intensive products (toe/t)



Source: ODYSSEE

The industry's energy consumption rose by 1.7 Mtoe from 2000 to 2021, primarily driven by intensified industrial activity (3.8 Mtoe). This increase was partially mitigated by energy savings (-1.4 Mtoe) and structural changes (-1 Mtoe). Meanwhile, other factors have a minor influence (+0.3 Mtoe) on this overall increase of energy consumption within the industrial sector.

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



Source: ODYSSEE



Central objectives for decarbonizing the industry sector include optimizing resource utilization and aligning energy demand from industrial facilities with renewable energy sources. Complementary measures encompass company advisory programs, thermal upgrades for existing structures, mandatory energy audits for large enterprises, and the establishment of energy and environmental management systems. Additionally, research and industry initiatives receive funding to explore and trial innovative concepts and "breakthrough technologies" aimed at achieving low-CO2 production.

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

Measures	Description	Expected savings, impact evaluation	More information available
Energy Taxation	Austria levies taxes on fuel and electricity, coal, lignite, coke and similar products.	High	
Obligatory energy audits for large companies	The Energy Efficiency Act commits large companies to conduct energy audits every fourth year and encourages them to implement energy management systems.	High	https://www.energieeffizienzmonitoring.at/
Domestic Environmental Support, UFI	The Environmental Support Programme is one of the most important subsidies for companies with the emphasis on climate protection, energy saving, renewable energies and prevention of air pollution.	High	https://www.umweltfoerderung.at/betriebe

Source: MURE