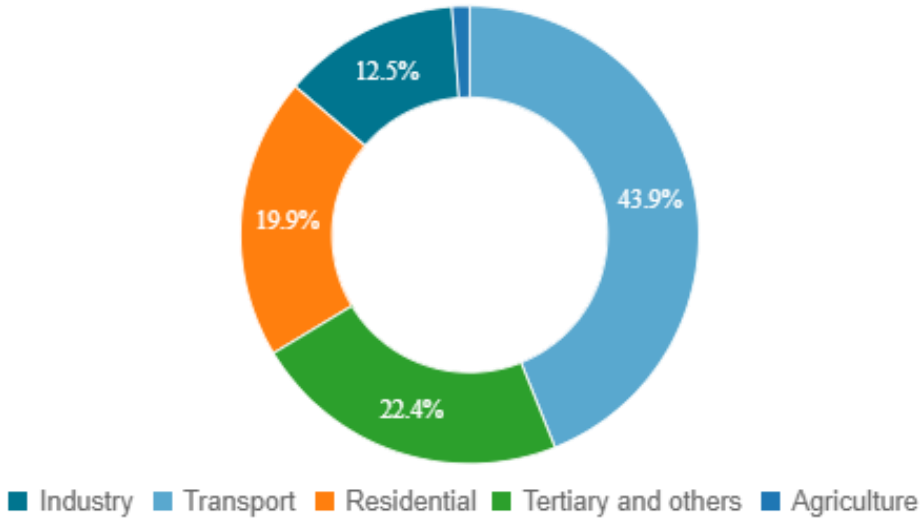
Energy efficiency trends and policies

Overview

In recent years Malta has experienced remarkable growth in terms of both economy and population. GDP rebounded rapidly from the impact of the COVID-19 pandemic and registered a growth of 12.6% in 2021, exceeding 2019 level. The COVID-19 induced economic slowdown in 2020 and led to a reduction of 4% in primary energy consumption (PEC) and of 7% in final energy consumption (FEC). Growth resumed in 2021, registering increases of 2% and 6% for PEC and FEC respectively. The sectoral breakdown of the FEC has remained similar over the years, with transport being the main energy consumer, followed by the tertiary and the residential sector. Such high share of energy consumption in transport is attributed to high dependency on private car use as the principal mean of transportation coupled with limited alternative options such as train or tram. This increase in dependency on private car use and increase in residential energy consumption is attributed to both population growth as well as increased standard of living conditions.

Figure 1: Final energy consumption by sector in 2021



Source: ODYSSEE

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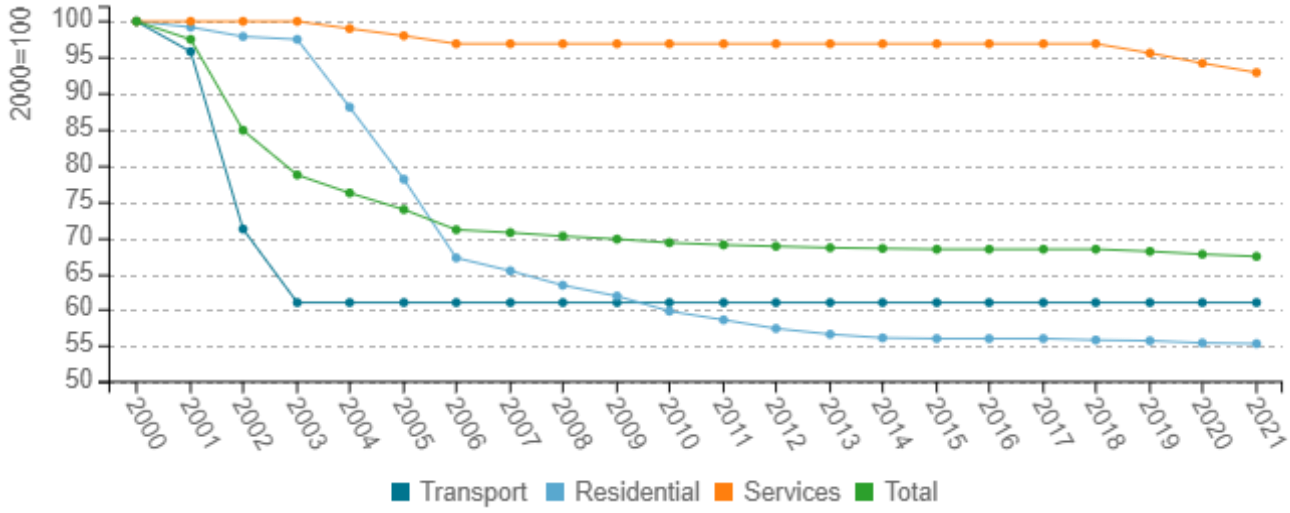
While there is a reported annual increase in energy consumption, technical energy efficiency index trends (Figure 2) show a decrease in energy consumption from 2000 levels. This increase in energy efficiency can be attributed to increased uptake of more efficient technologies.

Figure 2: Technical Energy Efficiency Index



Source: ODYSSEE

While there is a reported annual increase in energy consumption, technical energy efficiency index trends (Figure 2) show a decrease in energy consumption from 2000 levels. This increase in energy efficiency can be attributed to increased uptake of more efficient technologies. Malta's first National Energy and Climate Plan (2021-2030) includes the extension of a number of successful policy measures as well as additional energy efficiency measures to promote sustainable growth, while keeping as far as possible, energy demand driven by population and economic growth in check. Malta is doing its share to increase energy efficiency in the various end-use sectors and will continue to implement energy efficiency policies and measures.

Table 1: Sample of cross-cutting measures

Measures	NECP measures	Description	Expected savings, impact evaluation
Energy Efficient Street Lighting	yes	Continuation of previous schemes with the intention replacing 33,000 lamps from present lighting luminaries with LEDs.	Expected 117 GWh of cumulative energy savings to be achieved by end of 2030

Source: MURE

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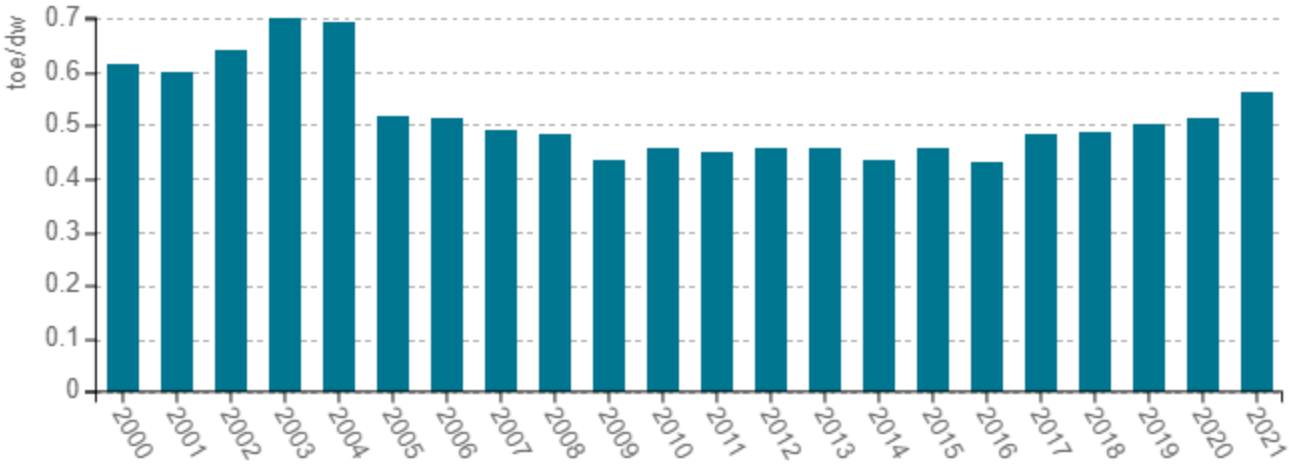
Buildings

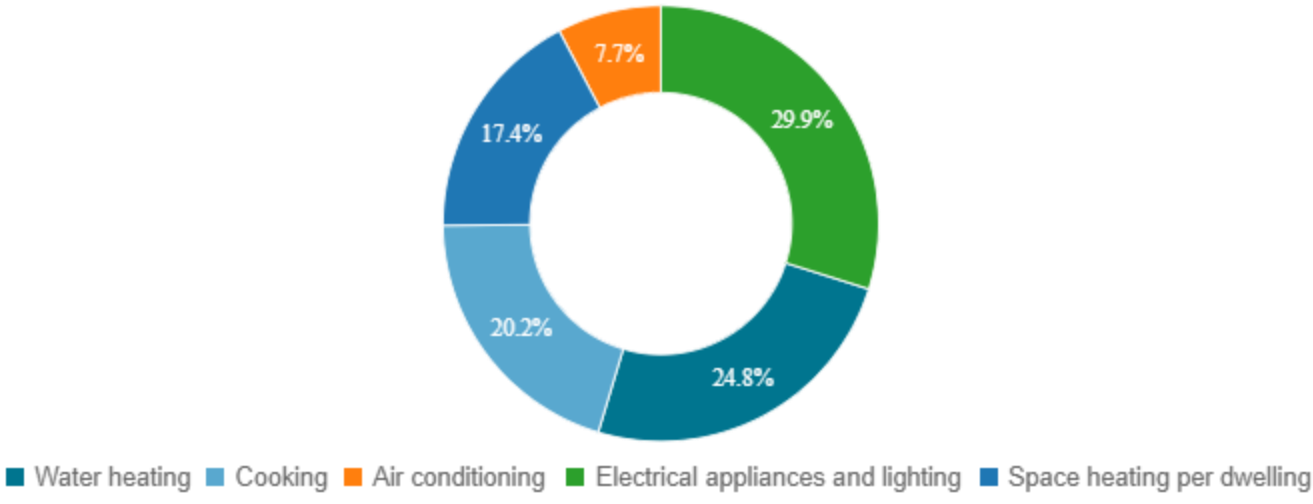
Consumption per dwelling, as shown in Figure 3 below, has progressively increased since 2016, mainly due to an increase in space heating and cooling demand, and also to an increase in consumption by electrical appliances. This increase is attributed to higher standards of living, typically increased thermal comfort. Despite this, Malta has the lowest final energy consumption per dwelling within the EU (i.e., 0.56 toe/dwelling in 2021).

Figure 3: Energy consumption per dwelling



Source: ODYSSEE

Figure 4: Energy consumption per dwelling by end-use in 2021



Source: ODYSSEE

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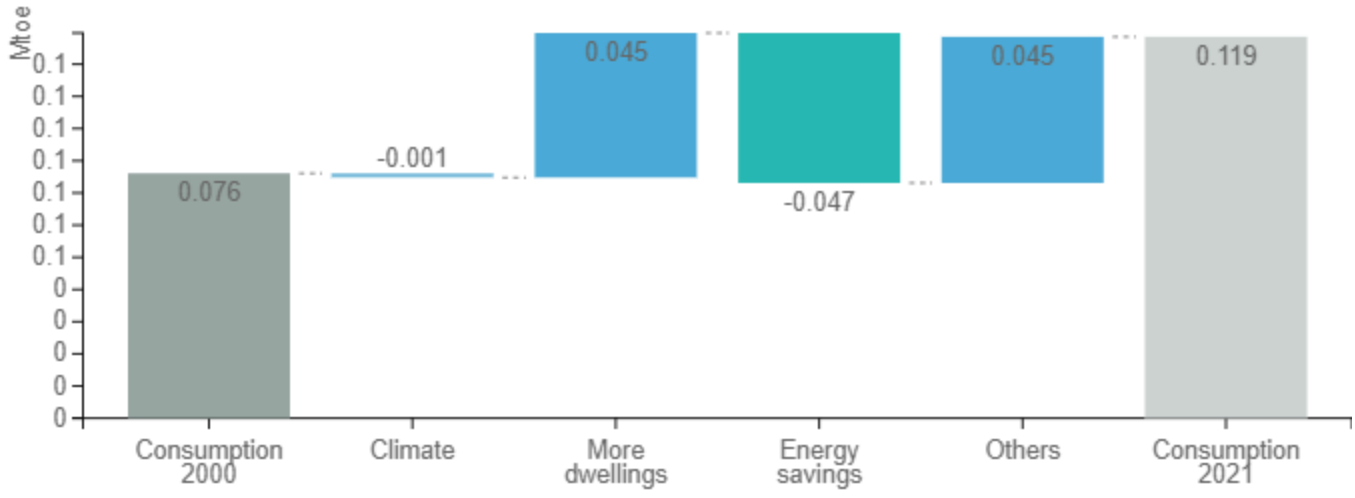
Figure 5 reflects the increase in the number of dwellings and the increase in technology uptake (denoted as 'Others'). Energy savings are offsetting half of the energy consumption increase.

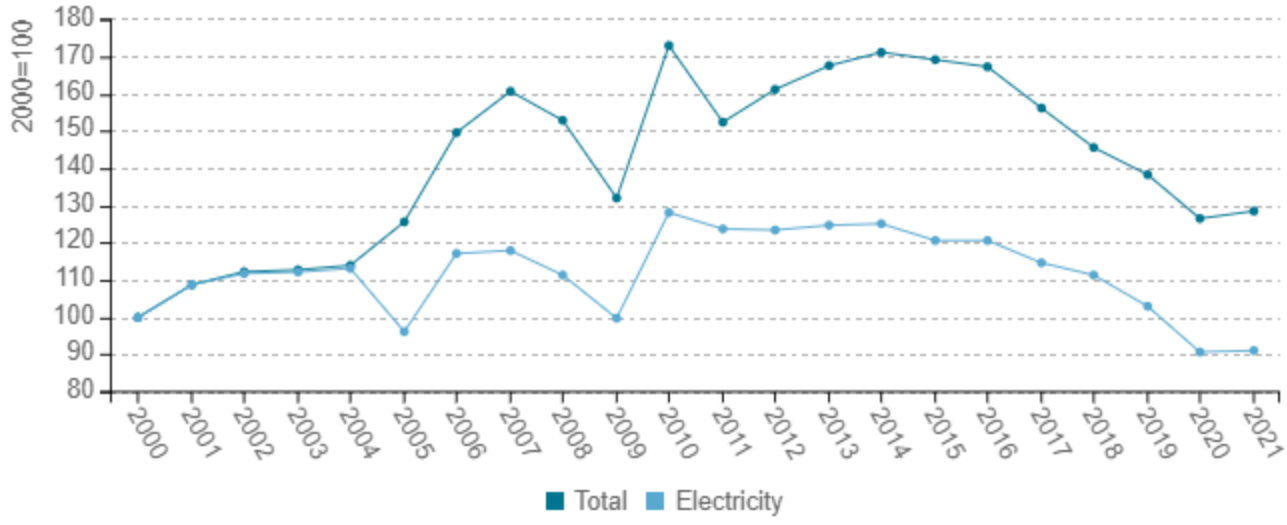
Figure 5: Main drivers of the energy consumption variation of households



Source: ODYSSEE

Figure 6 shows a progressive decrease in both electricity unit consumption and total energy consumption per employee for the Services sector in 2019 when compared to values in 2010. Years 2020 and 2021 show the impact of the COVID-19 pandemic.

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



Source: ODYSSEE

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As mentioned in the Overview section, Malta's first National Energy and Climate Plan (2021-2030) includes both existing as well as new energy efficiency measures to achieve energy savings in the end-use sectors. For the Residential, Industry and Services sectors in particular, the Government has proposed numerous measures to promote the shift towards renewable technologies and other energy efficient technologies. One such example is the Electricity Tariff Structure & Eco-Reduction measure which aims to incentivize end-users to reduce consumption below an established threshold and deter high consumption by increasing unit cost as consumption increases through a rising block tariff structure.

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

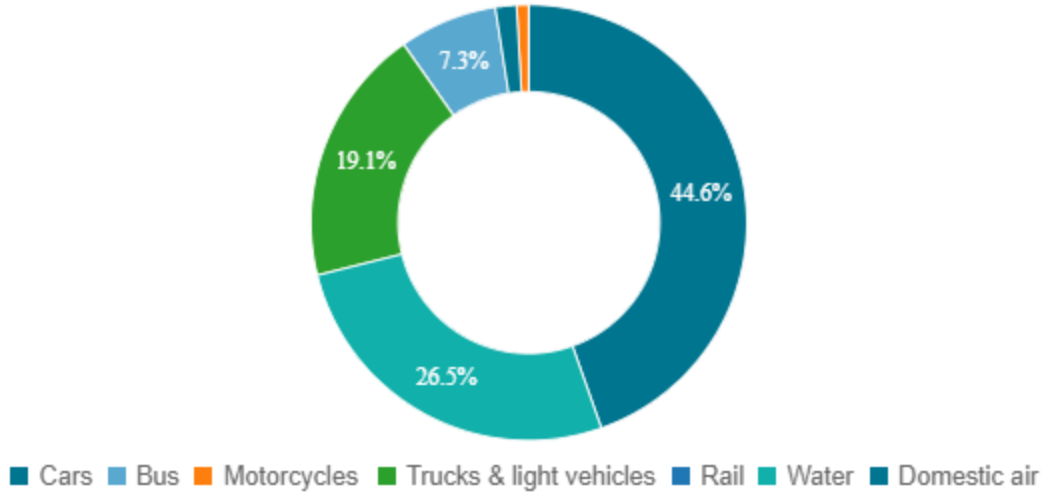
Measures	Description	Expected savings, impact evaluation
Electricity Tariff Structure & Eco-Reduction	This measure aims to incorporate a mechanism which incentivizes end-users to reduce consumption below an established threshold and deter high consumption by increasing electrical unit cost as consumption increases.	40 GWh cumulative savings by 2030

Source: MURE

Transport

The transport sector is the highest energy consuming sector even when excluding international aviation. Similar to previous years, passenger cars remained the highest energy consuming transport mode followed by domestic navigation as well as trucks and light vehicles.

Figure 7: Transport energy consumption by mode in 2021



Source: ODYSSEE

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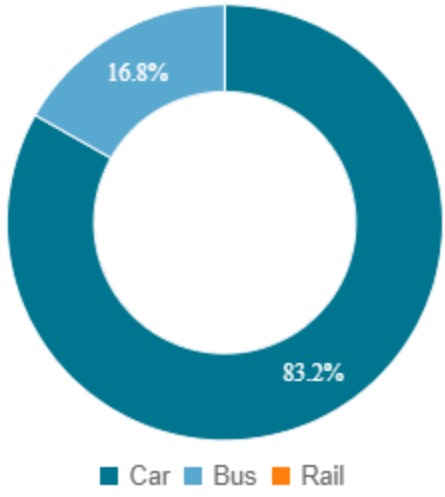
Figure 8: Modal split of inland passenger traffic



Source: ODYSSEE

While Malta's dependency on private cars is high (as seen in Figure 8), strides are being made to promote modal shift within Malta's first National Energy and Climate Plan (2021-2030). Such measures include the promotion of remote working, and the provision of free school transport for primary and secondary school children, among others. Besides promoting modal shift, the Government is committed towards electrifying its vehicle fleet to improve vehicle efficiency and reduce overall GHGs and non-GHG emissions. The promotion of the electrification of transport, is being done through grants for the purchase of private electric vehicles and the deployment of public charging infrastructure.

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

Measures	Description	Expected savings, impact evaluation
Free Transport for Youths, Students and School Children 2	This measure aims to encourage modal shift from private vehicle use to collective transport through the provision of free school transport for primary and secondary school children.	Reported Energy Savings of 0.003672 PJ in 2021

Source: MURE

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