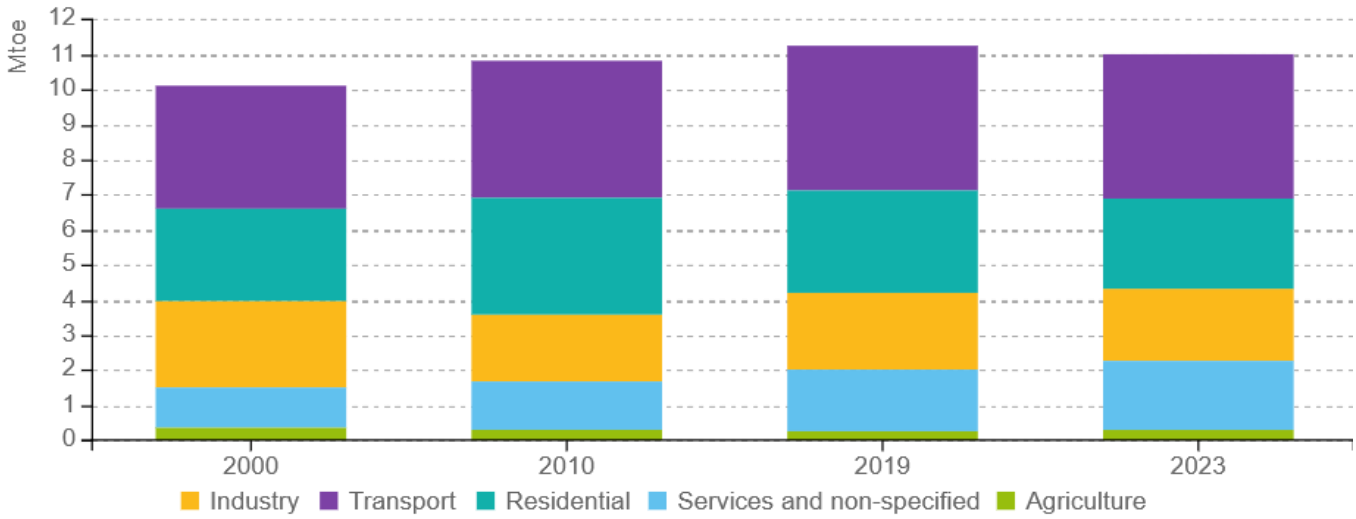
Energy efficiency trends and policies

Overview

Figure 1 shows final energy consumption (FEC) in Ireland (excluding international bunkers and ambient heat, climatic corrections applied). In 2023, this was 11 Mtoe and the compound annual growth rate between 2010-2023 was 0.1%/year. In 2023, the transport sector had the highest energy demand (4.1 Mtoe), followed by residential (2.6 Mtoe); and industry (2.1 Mtoe). Between 2010-2023, the share of transport in FEC (excluding international aviation and ambient heat) increased from 36% to 37%. During the same period, the share of residential in FEC decreased from 31% to 23% and the share of industry in total FEC increased from 18% to 19%.

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



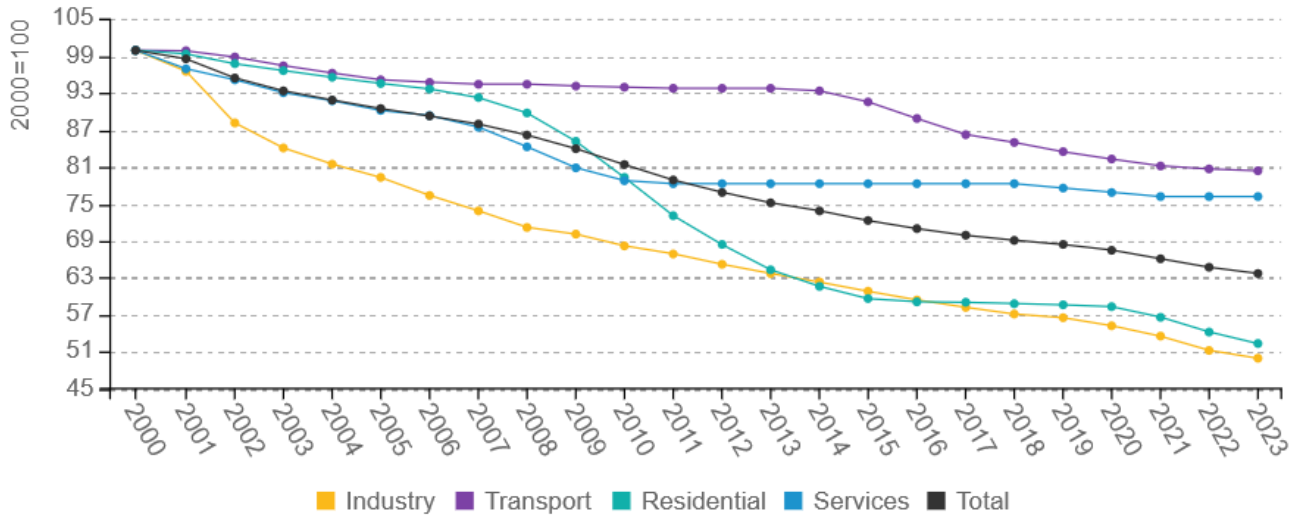
Source: ODYSSEE

Figure 2 shows the overall energy efficiency for final consumers, as represented by the ODYSSEE-MURE technical energy efficiency index 'ODEX'. ODEX was 64 in 2023 (reference year 2000 = 100), down from 68 in 2019 and 81 in 2010. This was an improvement of -1.9%/year between 2010-2023. Over the same period, the households index demonstrated the greatest improvement (-3.2%/year), followed by the industry index (-2.4%/year) and then the transport index (-1.2%). The services index showed the smallest improvement over this time (-0.3%/year).

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

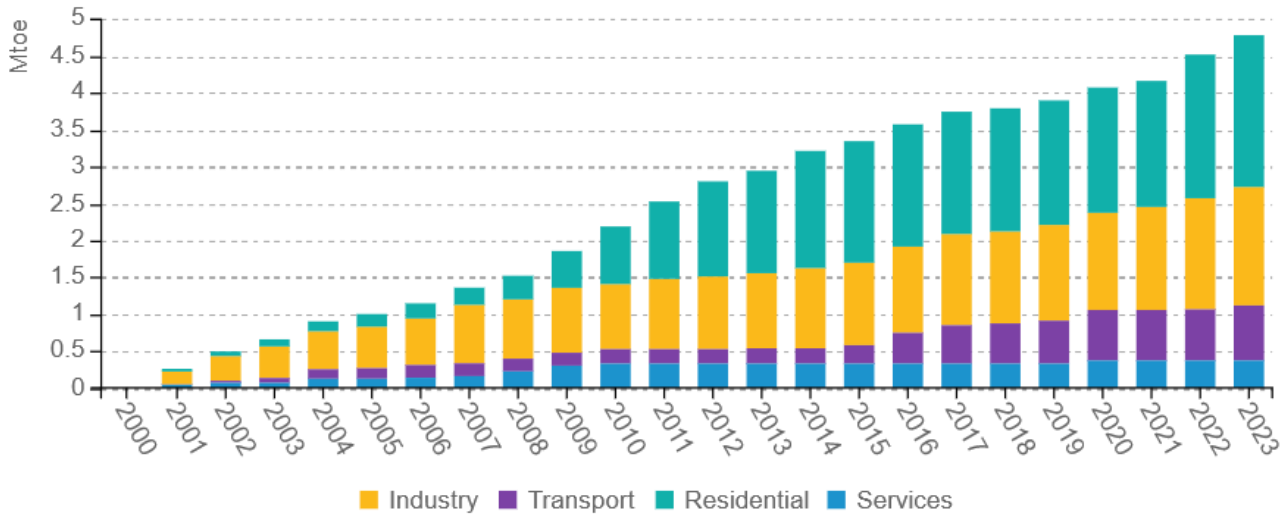
Figure 2: Technical Energy Efficiency Index



Source: ODYSSEE

Figure 3 shows energy savings by sector. These savings are calculated from the ODYSSEE database and are derived from the energy efficiency index 'ODEX'. As shown in Figure 3 below, there reference year 2000 is set at 0 Mtoe. The relevant cumulative annual savings between 2000-2023 have been increasing year-on-year and reached a total of 4.8 Mtoe in 2023, with the residential sector having the greatest share in total savings. For more information visit: 1. https://www.indicators.odyssee-mure.eu/energy-saving.html 2. https://www.odyssee-mure.eu/publications/other/odex-indicators-database-definition.pdf

Figure 3: Energy savings by sector



Source: Odyssee

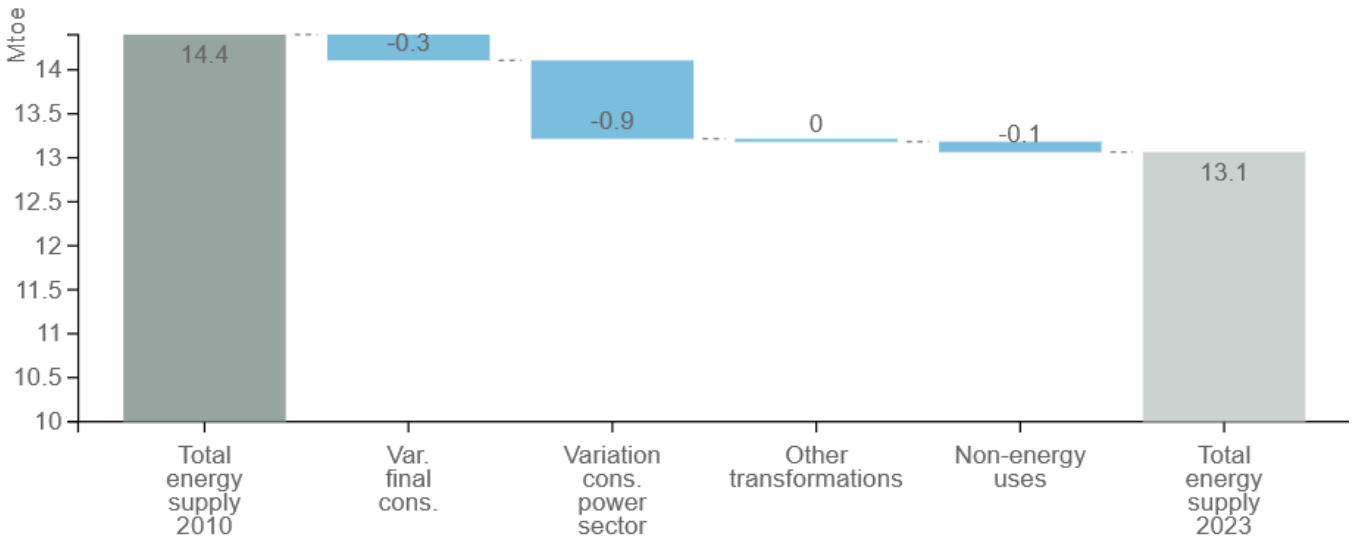
Figure 4 shows the total energy supply and the main drivers of its variation between 2010 and 2023 (Eurostat definition excludes international aviation, ODYSSEE definition also excludes ambient heat). In 2023, total energy

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

supply (excluding ambient heat) was 13.1 Mtoe; 1.3 Mtoe lower than in 2010. The waterfall chart below indicates that all drivers were either steady (other transformations), or contributed to reducing the total energy supply (excluding ambient heat). Energy reductions were largest from power sector consumption (-0.9 Mtoe), followed by reductions in FEC (excluding international aviation and ambient heat) (-0.3 Mtoe), and non-energy uses (-0.1 Mtoe). NB: Power sector consumption = input-output (main activity producers, auto-producers and electricity exchange and transfers).

Figure 4: Main drivers of the total energy supply variation



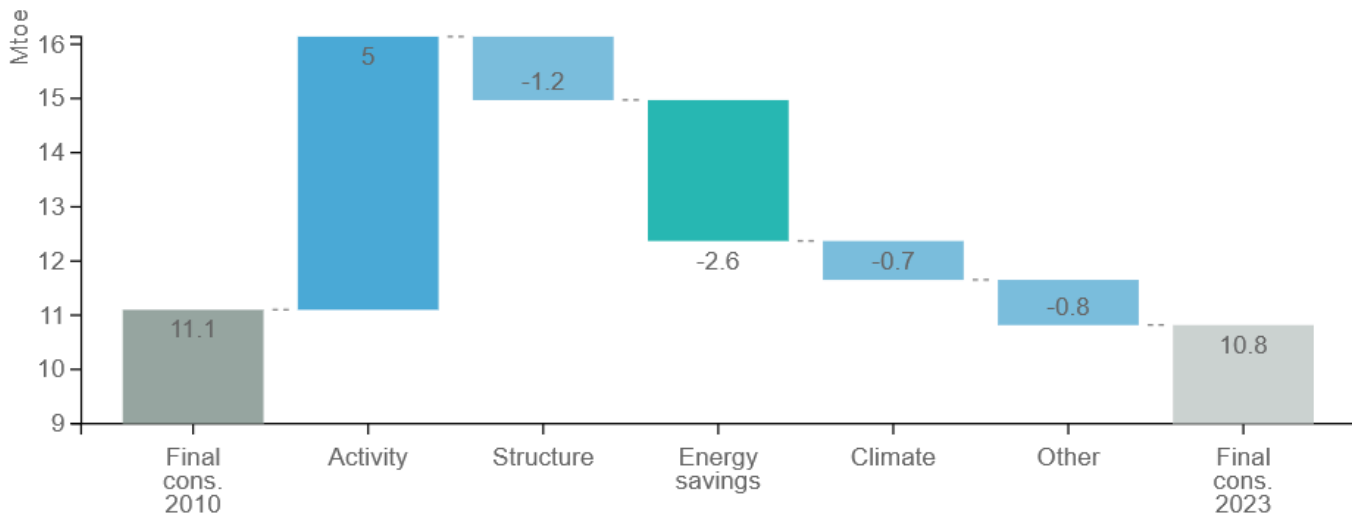
Source: Odyssee

Figure 5 shows final energy consumption and the main drivers of its variation between 2010 and 2023 (excluding international aviation and ambient heat, no climatic corrections applied). In 2023, final energy consumption (excluding international aviation and ambient heat, without climatic corrections) was 10.8 Mtoe; 0.3 Mtoe lower in 2023 than in 2010. The waterfall chart below indicates that this was a because of competing factors. Despite an increase in activity (5 Mtoe), this was countered by energy savings (-2.6 Mtoe, as derived from ODEX) and energy reductions from structure (-1.2 Mtoe), climate (-0.7 Mtoe) and other factors (-0.8 Mtoe).

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

Figure 5: Main drivers of the final energy consumption variation



Source: Odyssee

Ireland's National Energy and Climate Plan (NECP) 2021-2030 was first published in 2020, and a draft update submitted to the European Commission in July 2024. This sets out Ireland's ambition for energy efficiency savings in the period 2021-2030. As well as the NECP, Ireland's Climate Action Plan (2024), the 4th National Energy Efficiency Action Plan (2017), National Mitigation Plan (2017), Long Term Renovation Strategy (2017) and National Development Plan (2018) set out the policies, measures and programmes that Ireland is already undertaking, developing and considering to achieve energy efficiency and climate objectives. Some of the general policies shown in the table below. These include regulatory, incentives, grant schemes and infrastructure improvements.

Table 1: Sample of cross-cutting measures

Measures	NECP measures	Description	Expected savings, impact evaluation
Energy Efficiency Obligation Scheme (EEOS)	Yes	The scheme is designed to promote energy efficiency in homes, businesses and communities in Ireland. Under EEOS, the largest energy suppliers and distributors in Ireland are required to achieve annual energy efficiency targets. Large energy suppliers and distributors include companies that sell more than 400GWh of energy per year to final customers. These companies, known as Obligated Parties (OPs), are given specific annual targets based on their market share within the energy industry.	High
Carbon Tax	Yes	Tax on solid and liquid fossil fuels based on the amount of carbon dioxide produced during combustion of the fuel (€/tonneCO2)	High

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

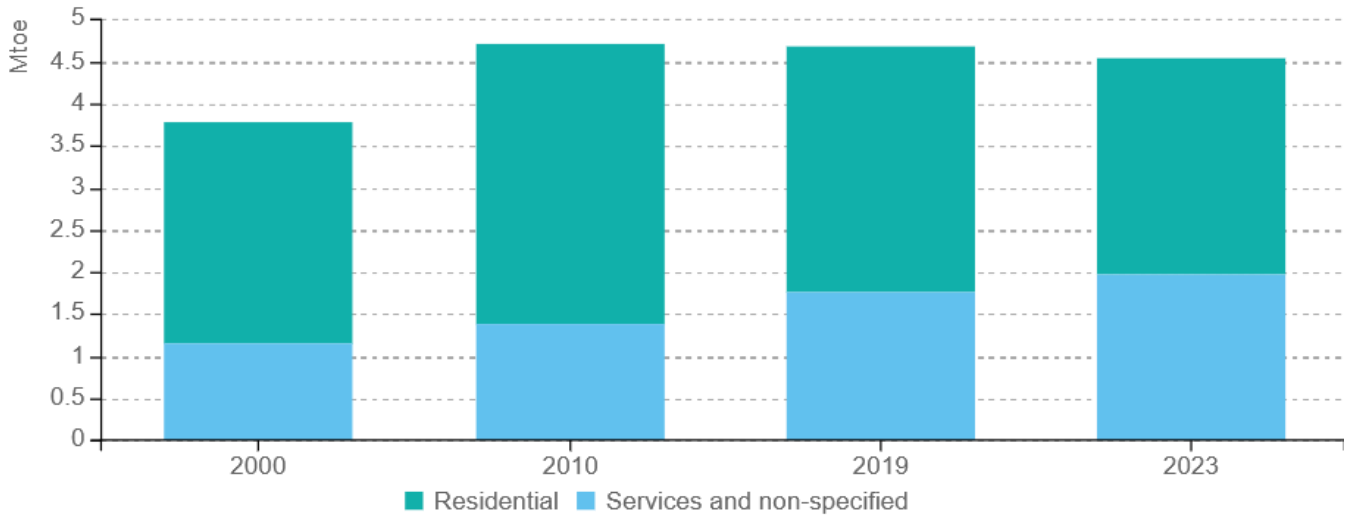
Better Energy Communities Programme (Community Energy Grants)	Yes	The grant scheme supports community-based energy efficiency projects through capital funding, partnerships, and technical support. Projects must have a community focus with a diverse group of beneficiaries.	Low

Source: MURE

Buildings

Figure 6 shows the final energy consumption in buildings (excluding ambient heat, climatic corrections applied). In 2023, the total energy consumption in residential and services and non-specified buildings was 4.5 Mtoe. A 57% share was attributed to residential buildings and a 43% to buildings in services and non-specified. There was a -0.3%/year compound annual reduction between 2010-2023.

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



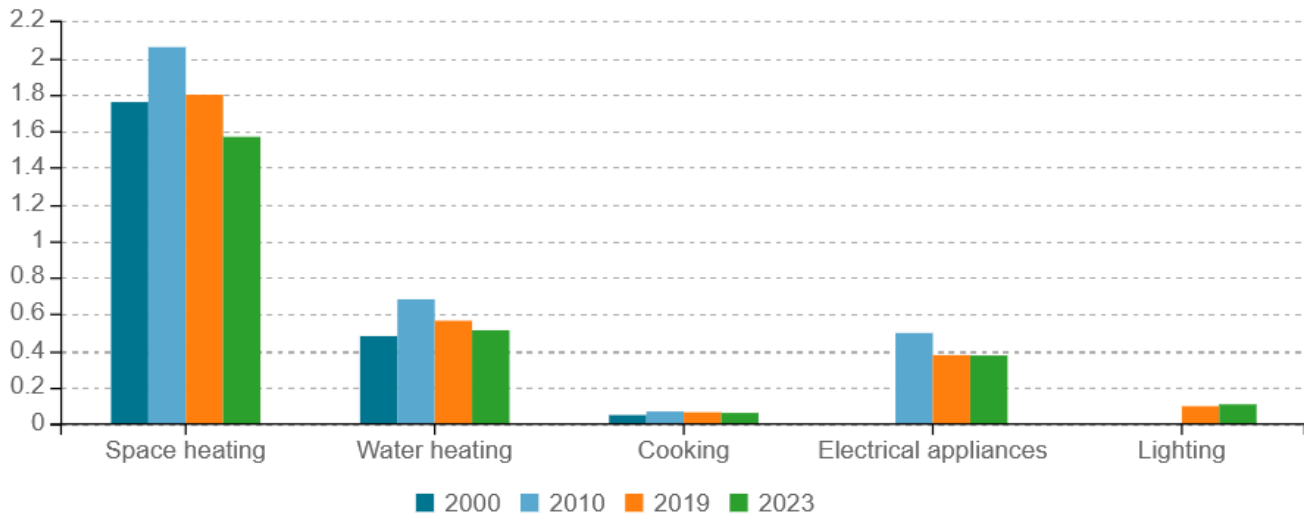
Source: Odyssee

Figure 7 shows energy consumption of households by end-use (climatic corrections applied). Space heating accounts for the largest share of household end-use energy consumption. In 2023, its share of the total was 60%, down from 73% in 2010. The space heating energy consumption also decreased over the same period, with a compound annual reduction of -2.1%/year.

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

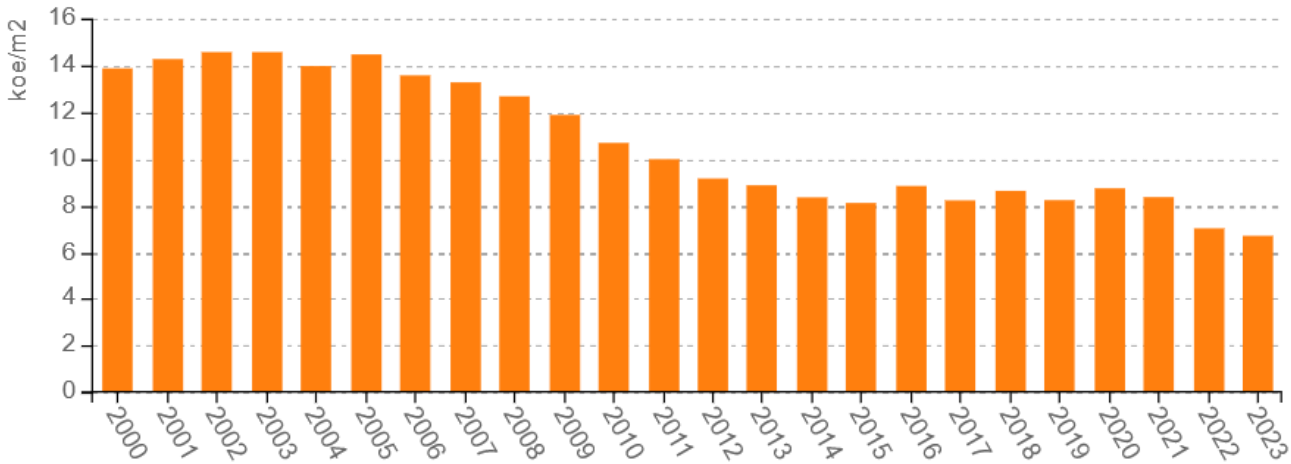
Figure 7: Energy consumption by end-use of households (with climatic corrections)



Source: Odyssee

Figure 8 shows household space heating energy consumption per m² (climatic corrections applied) and the graph shows that overall, there has been a significant downward trend since 2000. Between 2005 and 2015, there was a sustained period of decreasing household energy consumption per m². This remained relatively constant between 2015-2021 and in 2022 and 2023, has since dropped below the previous low in 2015. In 2023, space heating consumption/m² was 6.7 koe/m², down from 10.7 koe/m² in 2010, a -3.5%/year compound annual reduction since 2010.

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



Source: ODYSSEE

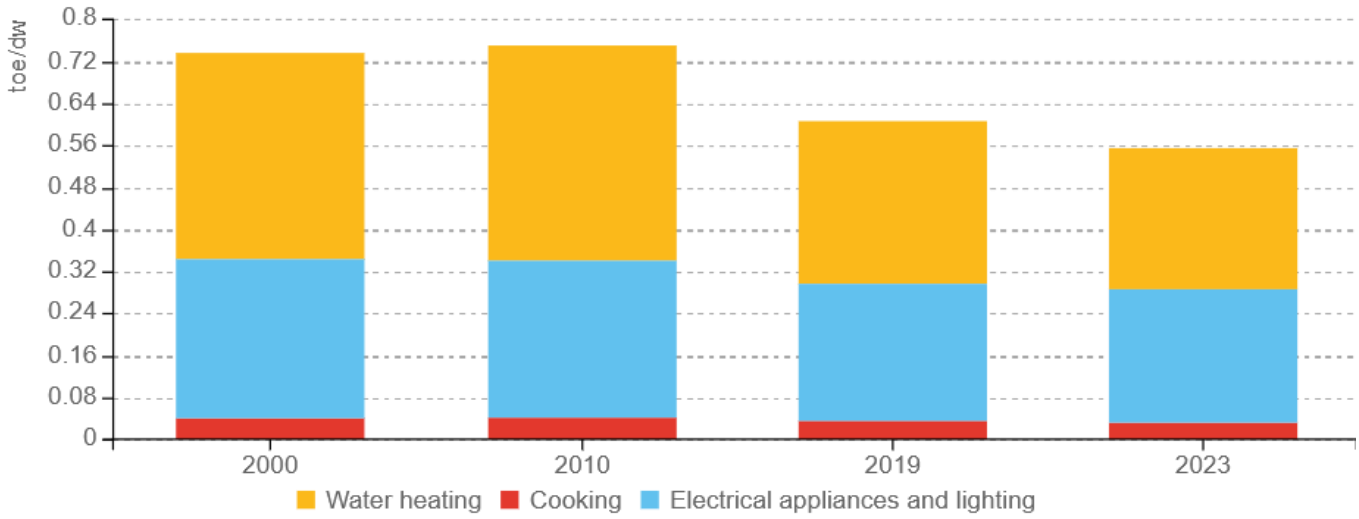
Figure 9 below shows energy consumption per dwelling for end-uses other than space heating (water heating, electrical appliances and lighting, cooking). The graph shows that in 2023, energy consumption from these other

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

end-uses was 0.6 toe/dw, down from 0.8 toe/dw in 2010. Water heating had the largest share of the energy consumption in these other end uses (49% in 2023, -3.2%/year since 2010), followed by electrical appliances and lighting (46% in 2023, -1.3%/year since 2010) and then cooking (6% in 2023, -2.0%/year since 2010).

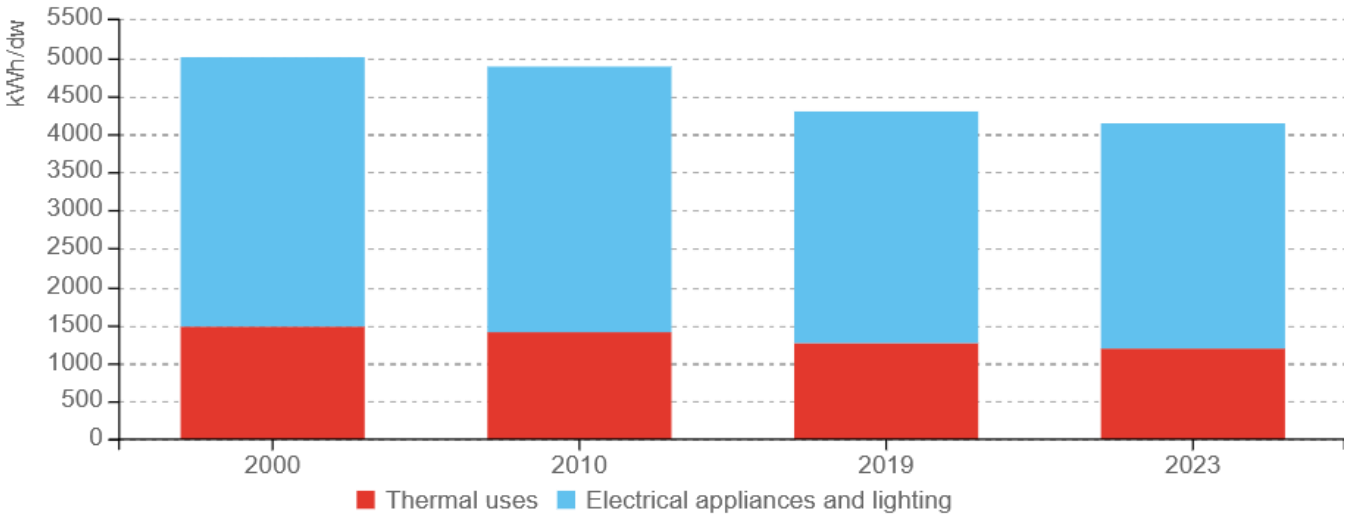
Figure 9: Energy consumption per dwelling by end-use (except space heating)



Source: ODYSSEE

Figure 10 below shows electricity consumption by end-use (thermal, electrical appliances and lighting), with climatic corrections applied. In 2023, electrical appliances and lighting held a 71% share of the total, while thermal uses held a 29% share. These shares were equivalent to those held in 2010, but the compound annual reductions were -1.3%/year for each end-use over the 2010-2023 period.

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



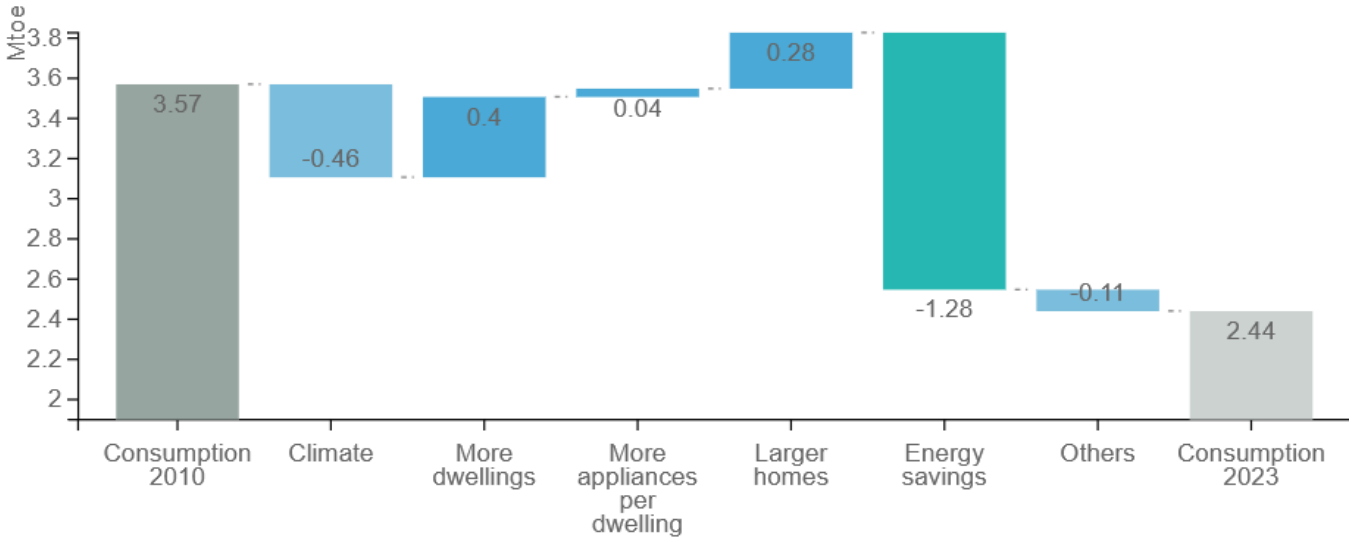
Source: Odyssee

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

Figure 11 shows the final energy consumption in the residential sector (excluding ambient heat) and the main drivers of energy consumption variation between 2010-2023. In 2023, households FEC (excl. ambient heat) was 2.4 Mtoe, -1.1 Mtoe lower than in 2010. ODYSSEE indicates that this was a result of a number of competing factors. Energy savings as derived from 'ODEX' was the main driver for most savings (-1.3 Mtoe), along with reduced consumption because of climate and other factors. This was countered most significantly by increased consumption from more dwellings (+0.4 Mtoe) and larger homes (+0.3 Mtoe) when compared to 2010.

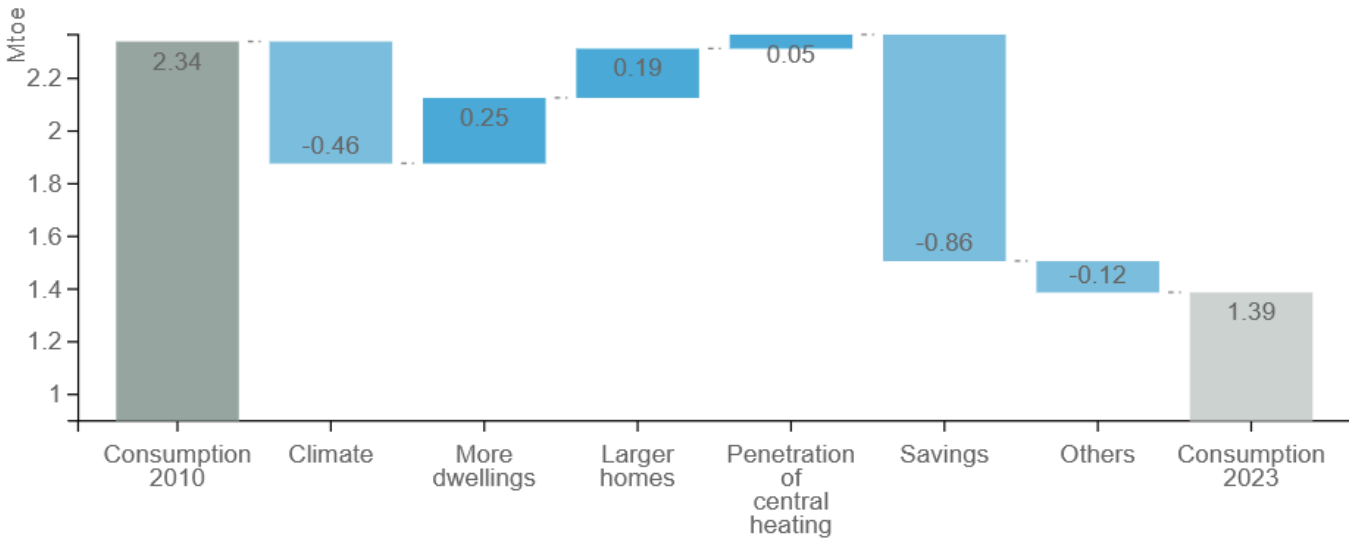
Figure 11: Main drivers of the energy consumption variation in households



Source: ODYSSEE

Figure 12 shows space heating consumption in households (including ambient heat) and the main drivers of variation between 2010-2023. In 2023, this was 1.4 Mtoe, -0.95 Mtoe lower than in 2010. ODYSSEE indicates that competing factors were at play. Energy savings (derived from 'ODEX') were the main driver for most savings (-0.9 Mtoe), partially countered by more dwellings (+0.3 Mtoe).

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



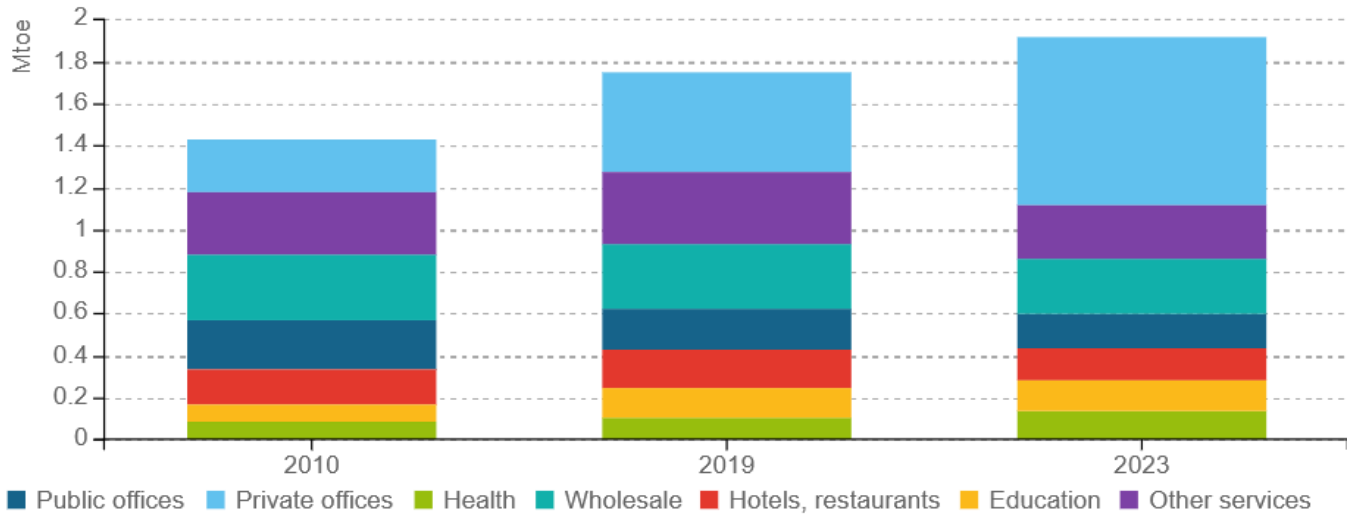
The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

Source: Odyssee

Figure 13 shows final energy consumption of services by branch (excluding ambient heat). In 2023, this was 1.9 Mtoe, up from 1.4 Mtoe in 2010. The cumulative annual growth rate over this period was 2.3%/year. 'Private offices' held the largest share in 2023 (42%).NB: data centers are included within the private offices branch in ODYSSEE. For more information see: https://www.odyssee-mure.eu/publications/efficiency-by-sector/services/offices-specific-energy-and-electricity-consumption.html

Figure 13: Final energy consumption of services by branch



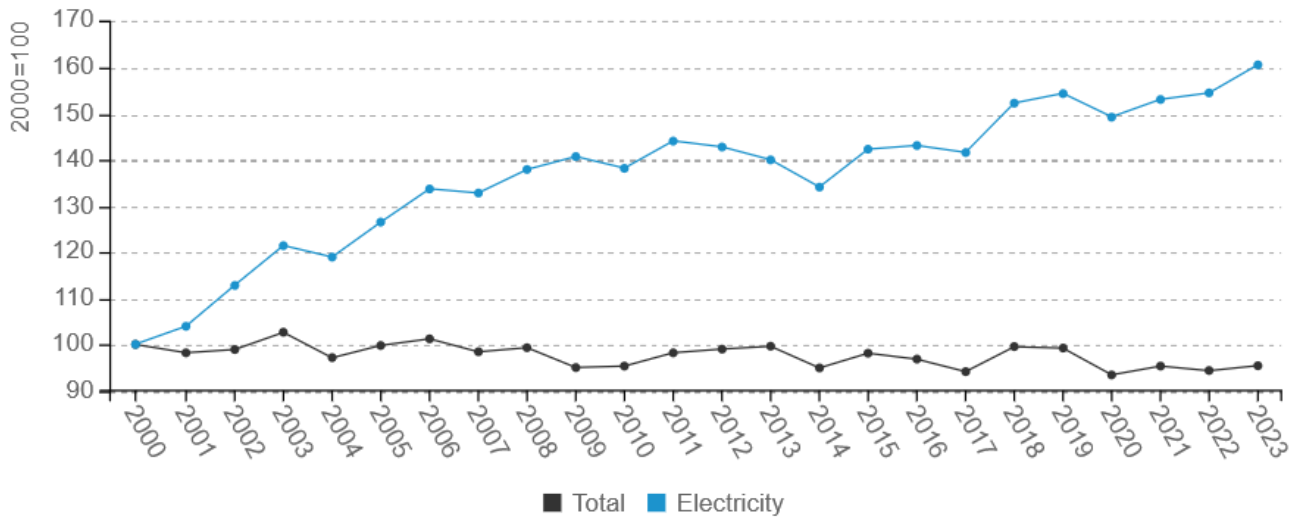
Source: Odyssee

Figure 14 shows services energy and electricity consumption per employee (climatic corrections applied). Electricity use in services in Ireland is influenced by the sector's changing structure and the general increase in use of ICT and electric heating. The CSO reported that 21% of metered electricity was consumed by data centers in Ireland in 2023. While not yet reflected in the graph below, ODYSSEE estimates that if data center electricity consumption is removed, electricity consumption per employee in services has decreased by 6.5%/year since 2019.

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

Figure 14: Energy and electricity consumption per employee in services (with climatic corrections)



Source: ODYSSEE

Energy efficiency measures in households have largely focused on improving the thermal efficiency of dwellings, through improved regulations on new buildings and a programme of retrofitting for the existing housing stock.The National Retrofit Plan (2021) sets out Irelands approach to achieving Climate Action Plan targets of upgrading homes to improve energy efficiency. The plan outlines measures including; One Stop Shop for deep retrofit support, Better Energy Homes for shallow retrofit support, and Warmer Homes for lower income households. Since 2020, all new dwellings are required to meet the Nearly Zero Energy Building Standard which aligns with Directive 2010/31/EU. The standard also applies to existing dwellings undergoing major renovations. In 2025, Ireland will transpose the Energy Performance of Buildings Directive (EU 2024/1275)

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Nearly Zero Energy Homes (Directive 2010/31/EU)	No	This measure tightens the regulations and minimum standards for several building aspects regarding e.g. insulation levels, heating systems or pipes. The NZEB standard will apply to all new buildings occupied after the 31st December 2020. For all new builds, NZEB is equivalent to a 25% improvement in energy performance on the 2011 Building Regulations.	High
Better Energy Homes (Residential	Yes	This programme, implemented by the Sustainable Energy Authority of Ireland, provides capital grants to householders for the implementation of energy efficiency measures including attic and	High

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

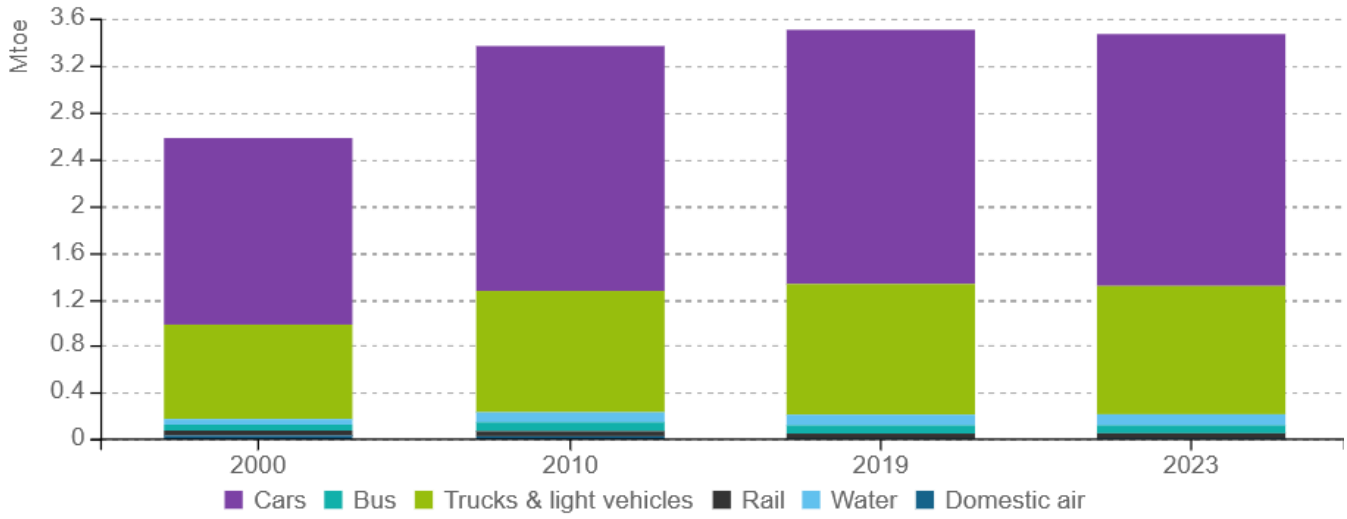
Retrofit)		wall insulation and heating controls with efficient boilers	
Warmer Homes Scheme (Low Income Housing Retrofit Strategy)	Yes	The scheme provides free home renovations for lower income households. The lowest performing homes are prioritised. The scheme also aims to reduce energy poverty.	Medium
One Stop Shop (Residential Retrofit)	Yes	One stop shops centralise grant offerings and applications and retrofit services for households to simplify the process of undertaking a home retrofit. This programme commenced in 2022 with the aim of incentivising deep retrofits in the household sector.	Low

Source: MURE

Transport

Figure 15 shows transport energy consumption by mode (excluding international aviation). Irish transport energy from fuel tourism and unspecified (other road and pipeline) is not included in this figure. In 2023, cars (including taxis) accounted for 2.2 Mtoe, up from 2.1 Mtoe in 2010; a 0.2%/year compound annual growth rate.

Figure 15: Transport energy consumption by mode



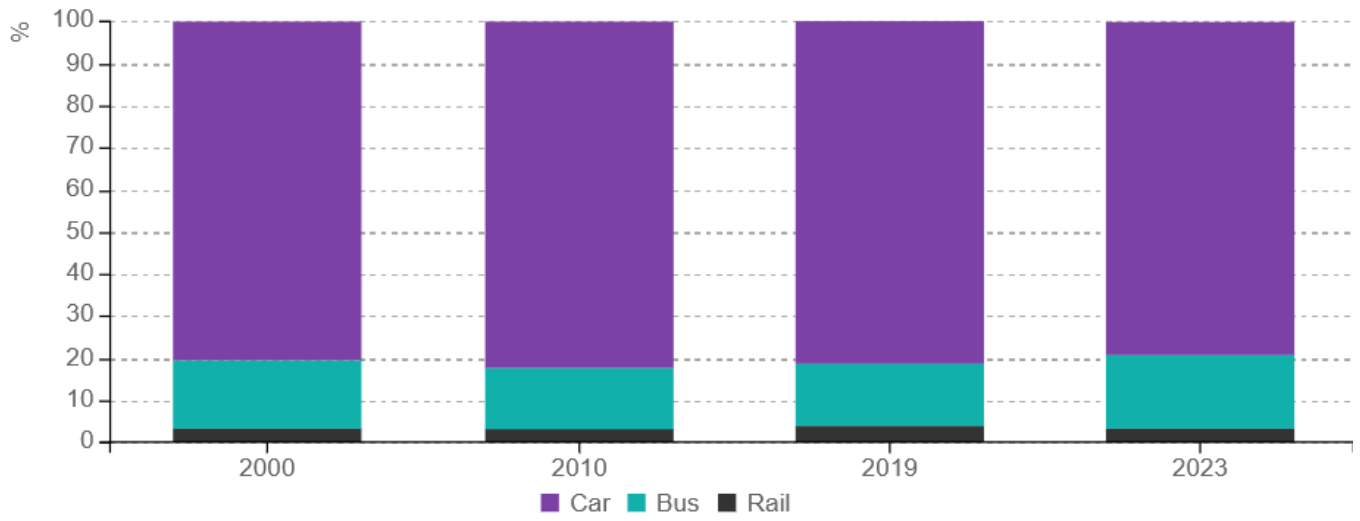
Source: ODYSSEE

Figure 16 shows the modal split of inland passenger traffic in Ireland. Total passenger traffic has increased by 2.0%/year since 2010, with increases in all modes. In 2023 the share of inland passenger traffic was dominated by car (79%), followed by passenger traffic by bus (18%) and then train (3%).

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

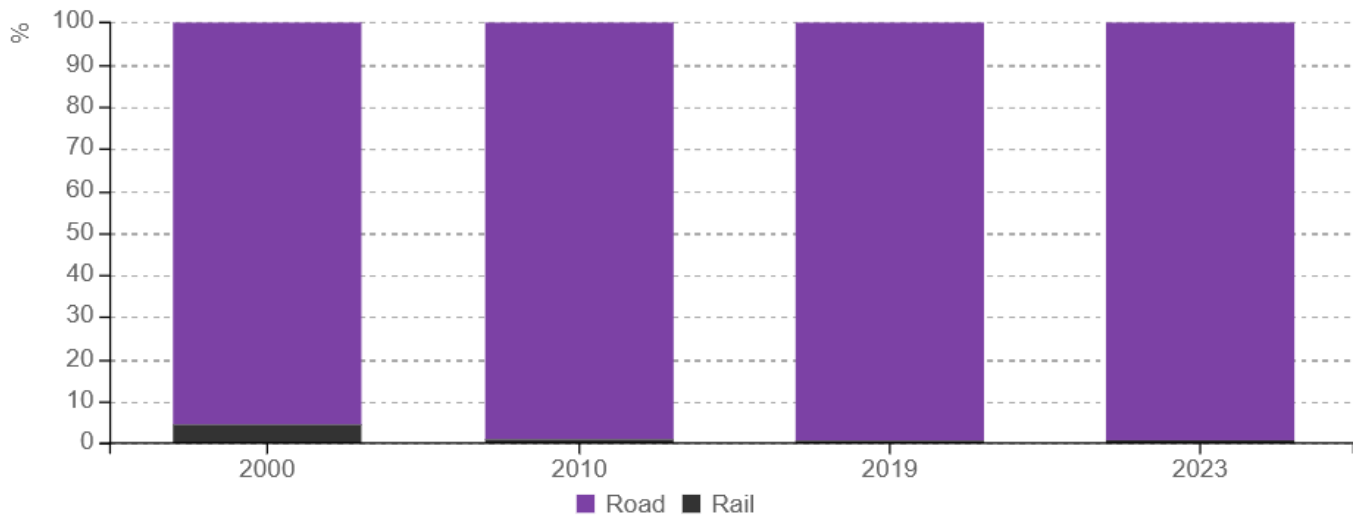
Figure 16: Modal split of inland passenger traffic



Source: ODYSSEE

Figure 17 shows the modal split of inland freight traffic (tkm) in Ireland. Freight traffic also increased between 2010-2023, with a 1.0%/year cumulative annual growth rate. In 2023, freight traffic remained dominated by road, holding a 99% share of total freight traffic.

Figure 17: Modal split of inland freight traffic



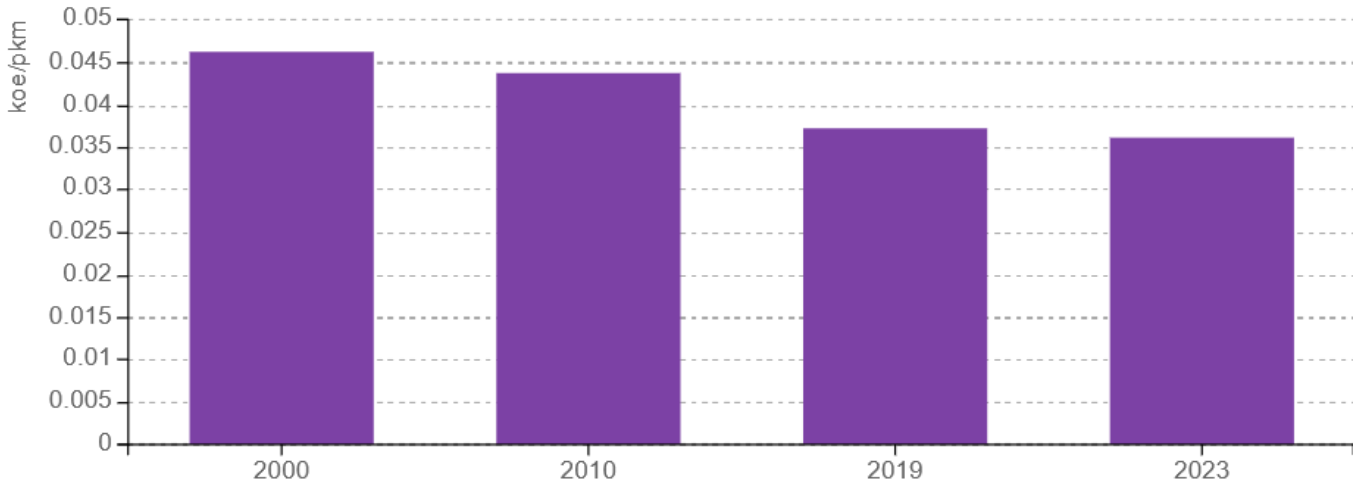
Source: ODYSSEE

Figure 18 shows the energy consumption of cars per passenger kilometer. ODYSSEE calculates this from the total consumption of cars (including taxis) and DG MOVE's estimate of passenger kilometers by car. In 2023, this was 0.036 koe/pkm, down from 0.044 koe/pkm, a cumulative annual reduction of -1.5%/year.

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

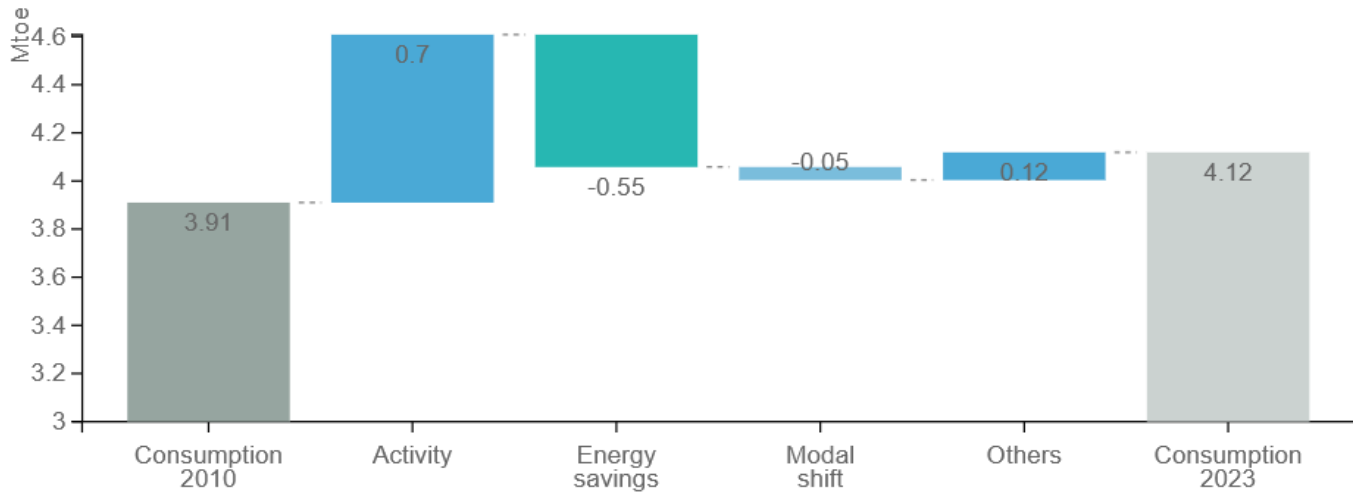
Figure 18: Energy consumption of cars per passenger-km



Source: ODYSSEE

Figure 19 shows energy consumption in transport (excluding international aviation) and the main drivers for its variation between 2010-2023. This was 4.1 Mtoe in 2023, up from 3.9 Mtoe in 2010. ODYSSEE indicates that a number of competing factors were at play. Energy savings as derived from 'ODEX' was the main driver for most savings (-0.6 Mtoe), along with reduced consumption from modal shift. This was countered and outstripped by an increase in activity (0.7 Mtoe) and other factors.

Figure 19: Main drivers of the energy consumption variation in transport



Source: ODYSSEE

In Ireland, a number of fiscal and regulatory initiatives have been taken to promote the uptake of electric vehicles. Fiscal measures include tax incentives for BEVs & PHEVs including reduced Vehicle Registration Tax and reduced Annual Motor Tax. There are three distinct grant schemes for electric vehicles in 2025. The schemes

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

provide electric vehicle finance for households, commercial vehicles and taxi drivers. To further support the roll out of electric vehicles €100mn was invested in charging infrastructure schemes in 2025. As part of the regulatory framework, Ireland mandates emission performance standards for new passenger cars and new light commercial vehicles in line with CO2 Standards for Passenger Cars and Light Duty Vehicles (EU) 2023/851.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Emissions Based Vehicle Registration Tax & Other Tax Incentives for EVs	No	Tax incentives for BEVs & PHEVS were introduced. The measure was a fundamental shift in Vehicle Registration Tax and Annual Motor Tax.	High
Electric Vehicle Grants	No	There are 3 distinct grant schemes electric vehicles. The schemes provide support for households, commercial vehicles and taxi drivers.	High
EU-related: CO2 Standards for Passenger Cars and Light Duty Vehicles (EU) 2023/851	No	CO2 emission performance standards for new passenger cars and new light commercial vehicles in line with the European Union's increased climate ambition	High
Major Public Transport Infrastructure Investment to 2030	Yes	The Irish Government has committed substantial funding to investment in bus and rail infrastructure as part of the National Development Plan. Projects also include significant investment in cycling infrastructure.	Medium

Source: MURE

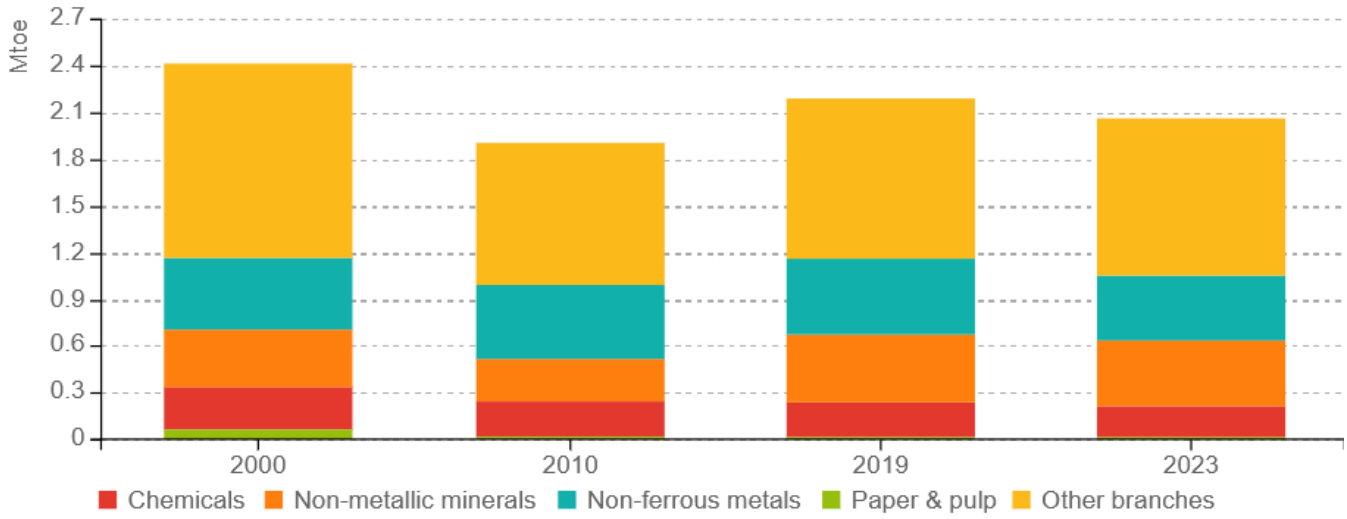
Industry

Figure 20 shows industry final energy consumption (excluding ambient heat) by branch. In 2023, industry final energy consumption was 2.1 Mtoe, up from 1.9 Mtoe in 2010; a 0.6%/year compound annual growth rate over the period. In 2023, 'other branches' held the greatest share of the industry total (49%).

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

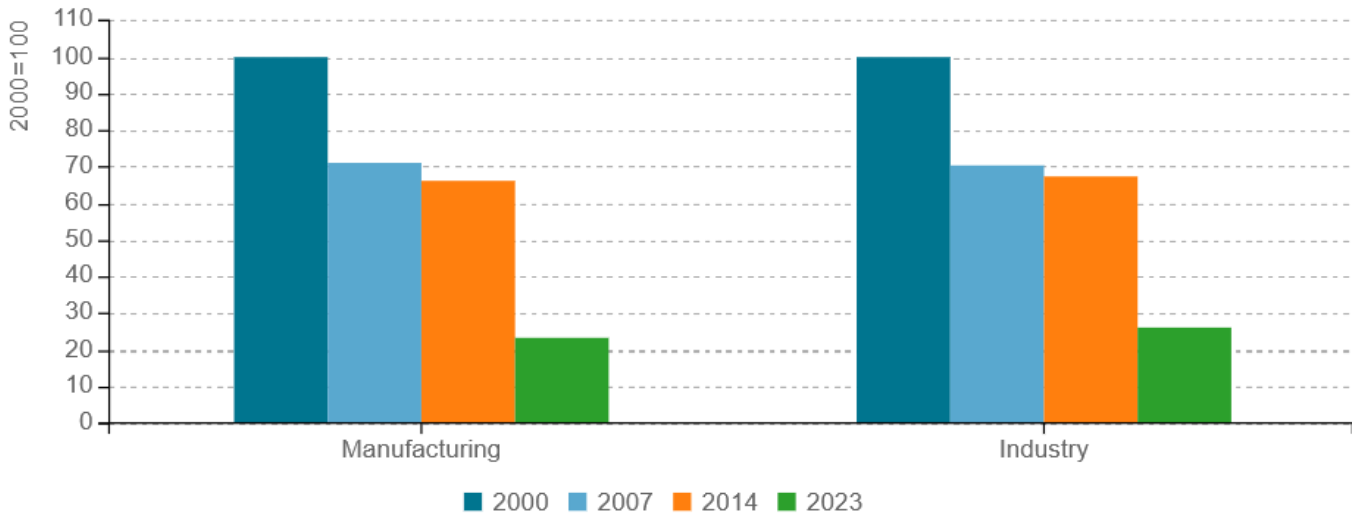
Figure 20: Final energy consumption of industry by branch



Source: ODYSSEE

Figure 21 shows the energy intensity of manufacturing and total industry (at ppp), indexed to the year 2000. ODYSSEE calculates that, in 2023, manufacturing and total industry energy intensities were 0.015 koe/EUR2015p (index=23) and 0.014 koe/EUR2015p (index=26), respectively. Care must be taken when examining Ireland's industry energy intensity trends (e.g. value added grew significantly in 2015, with the transfer of intellectual property into Ireland).

Figure 21: Energy intensity of industry (at purchasing power parities)



Source: ODYSSEE

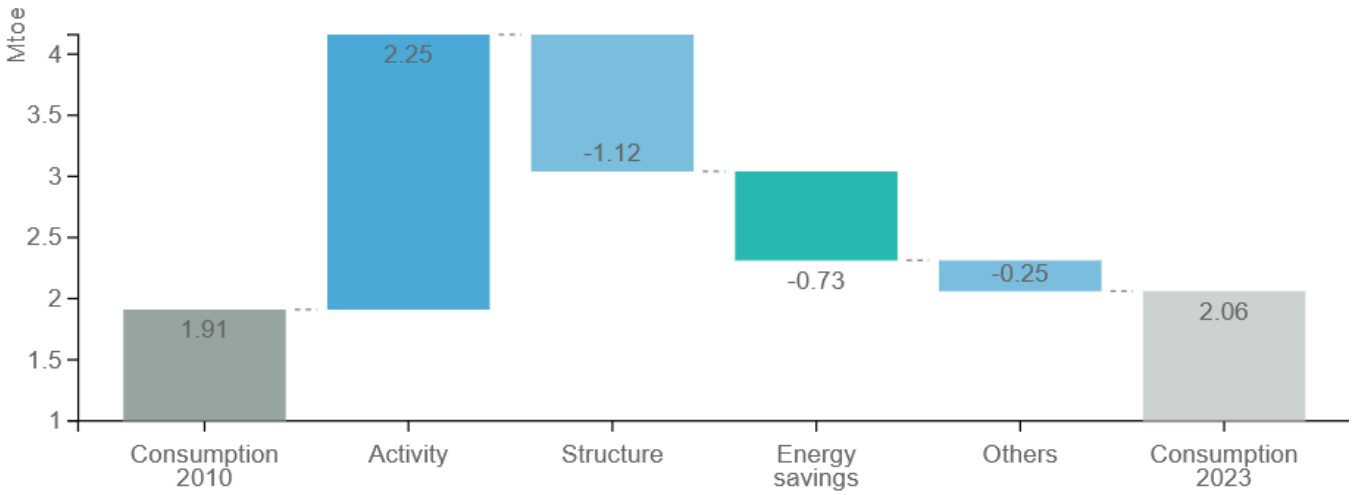
Figure 22 shows energy consumption in industry (excluding ambient heat) and the main drivers for its variation between 2010-2023. This was 2.1 Mtoe in 2023, up from 1.9 Mtoe in 2010. ODYSSEE indicates that a number of

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

competing factors were at play. Energy savings as derived from 'ODEX' was the main driver for most savings (-0.7 Mtoe), along with changes to the sectors structure (-1.1 Mtoe) and others. This was countered and outstripped by an increase in activity (2.3 Mtoe).

Figure 22: Main drivers of the energy consumption variation in industry



Source: ODYSSEE

The Large Industry Energy Network is a voluntary grouping of companies that work together to develop and maintain robust energy management. Regular networking events, workshops, seminars and site visits provide opportunities for members to learn from energy experts and peers. The Accelerated Capital Allowance is a tax incentive which encourages companies to invest in energy saving technologies. The ACA allows companies to write off the purchase value of qualifying energy efficient equipment against their profit in the year of purchase.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Large Industry Energy Network (LIEN)	No	A network of large organisations who work together to improve their energy performance and share experiences amongst members. The members of the network are comprised of organisations that account for approximately 20% of Ireland's energy requirement.	High
Tax Relief for Energy Saving Equipment - Accelerated	No	The Accelerated Capital Allowance (ACA) is a tax incentive which encourages businesses to upgrade to the most energy efficiency equipment.	Medium

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union

Capital Allowance			
Support Scheme for Renewable Heat - Industry & Services	Yes	The Support Scheme for Renewable Heat provides either: - operational expenditure support for replacing a fossil fuel boiler with a biomass boiler, or - grant support for investments costs of replacing a fossil fuel boiler with a heat pump. The grant scheme commenced in 2019 and has a budget of €340mn.	Medium

Source: MURE

The ODYSSEE-MURE project is co-funded by the European Union.
Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for the information contained therein or for any use that may be made thereof.

Co-funded by the European Union