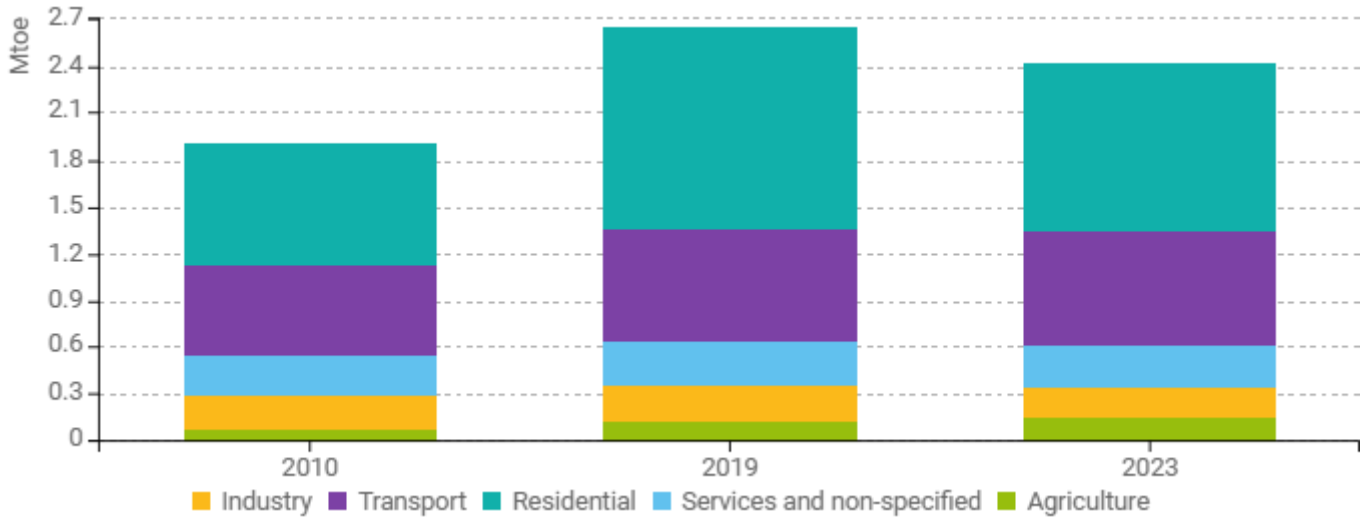
Energy efficiency trends and policies

Overview

Moldova's total final energy consumption reached 2.4 Mtoe in 2023, representing an increase of 27% compared to 2010, while showing a slight decrease compared to 2022 (-0.05 Mtoe). In 2023, the residential sector remained the largest energy consumer, accounting for 45% of total final energy consumption. Since 2010, the share of final energy consumption in industry has declined by 3.7 percentage points, while the services sector recorded a decrease of 1.8 percentage points. In contrast, the agriculture sector increased its share by 2.3 percentage points, from 4% to 6%. The transport sector's share has remained almost unchanged, at around 30%.

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



Source: ODYSSEE

As shown in Figure 2, final energy intensity decreased by 14% since 2015, while primary energy intensity fell by 16%. This trend reflects improvements in energy efficiency, showing that economic growth is being achieved with lower energy consumption. It indicates progress toward sustainable development by highlighting the decoupling of economic output from energy use, while accounting for weather-related factors.

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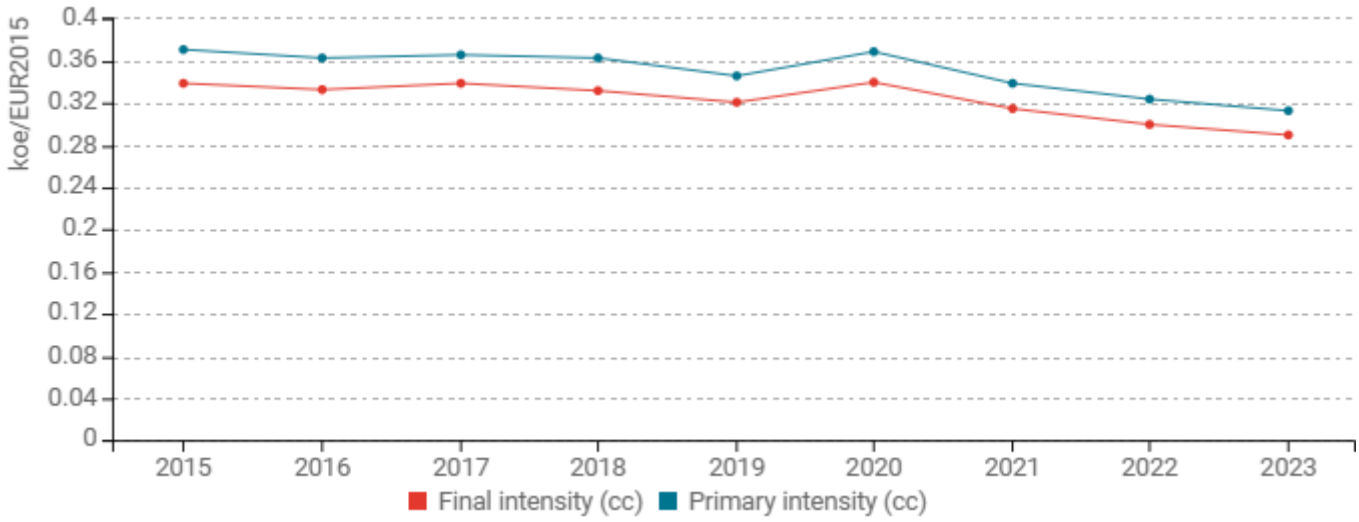
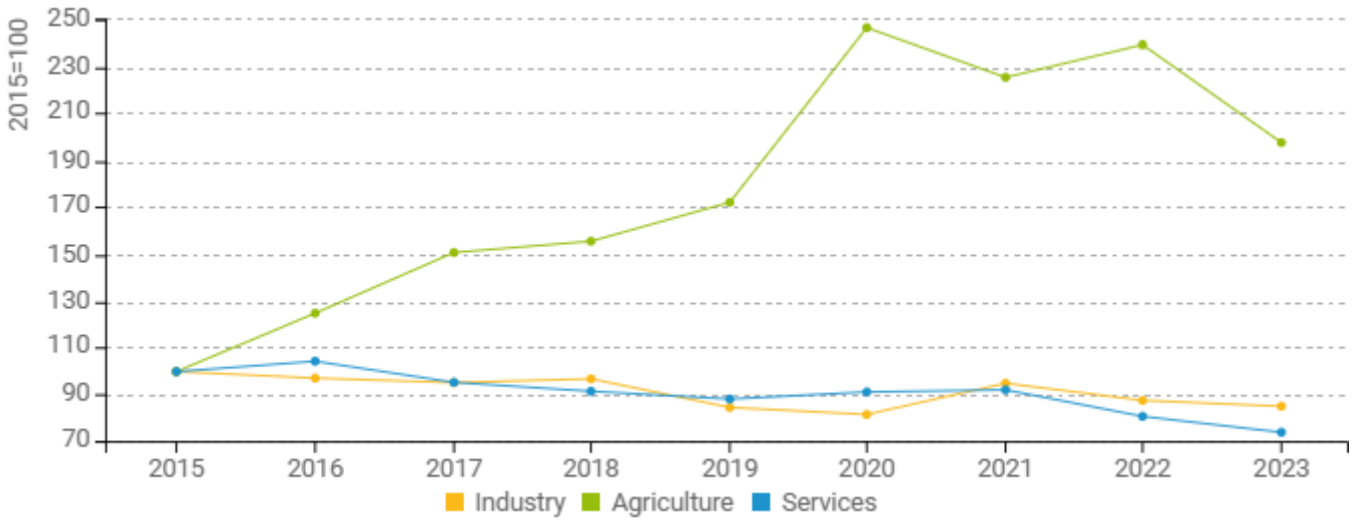
Figure 2: Primary and final intensities (with climatic corrections)



Source: ODYSSEE

Figure 3 shows the final intensity by sector. It indicates that the energy intensity of the industrial sector dropped by 15% between 2015 and 2023. During this period, the energy intensity of the agricultural sector increased significantly by 98%, while the energy intensity of the services sector decreased by 26%.

Figure 3: Final intensity by sector



Source: ODYSSEE

Figure 4 shows the factors influencing changes in total energy supply. Between 2010 and 2023, Moldova's total energy supply increased by approximately 0.3 Mtoe, mainly driven by final consumption variation (0.39 Mtoe) and non-energy uses (0.01 Mtoe). This increase was partially counterbalanced by reductions in power sector consumption (-0.01 Mtoe) and other transformations (-0.08 Mtoe).

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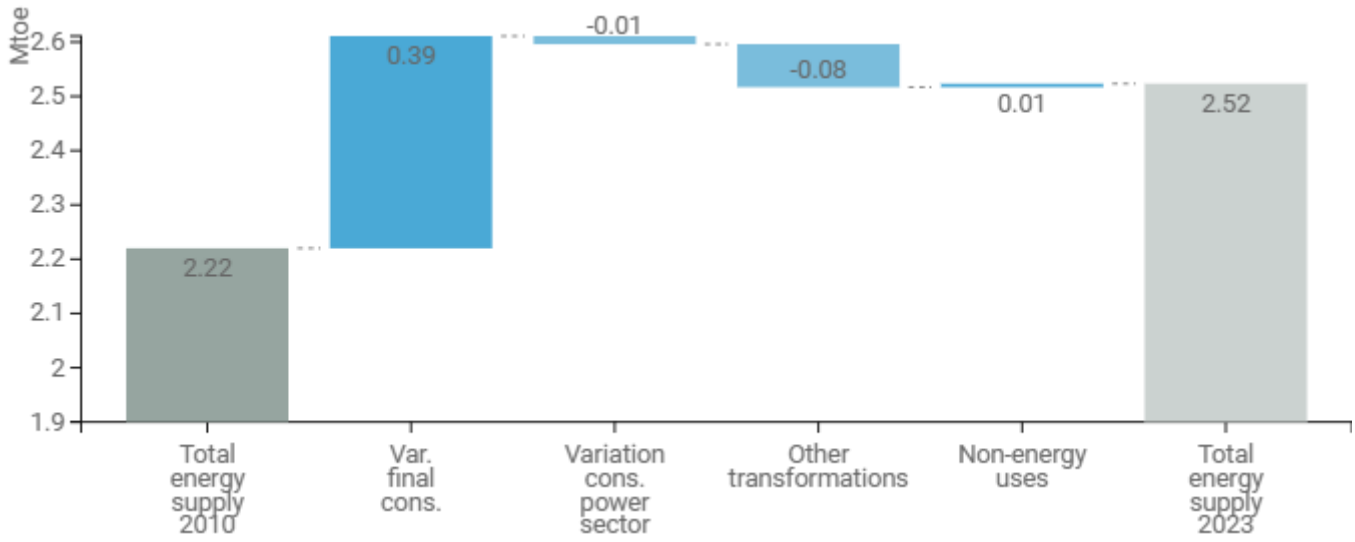
Figure 4: Main drivers of the total energy supply variation



Source: ODYSSEE

Moldova's energy efficiency efforts are steadily progressing, with clear alignment to the Energy Community's goals and the inclusion of 2030 energy efficiency targets in the National Development Strategy. In May 2023, significant amendments to the Law on Energy Efficiency laid the legal groundwork for integrated planning, ensuring the updating of specific targets, improved energy metering, and enhanced user access to information. In terms of buildings, Moldova has successfully transposed the Energy Performance of Buildings Directive, adopting laws related to building energy certification and the renovation of central government buildings. Energy Efficiency Obligation Scheme Program was updated in 2023 to ensure alignment with the revised Energy Efficiency Directive. The National Centre for Sustainable Energy is responsible for managing funding for energy efficiency projects in residential buildings, including overseeing a dedicated residential energy efficiency fund. In the terms of energy-efficient products, Moldova took a significant step by adopting a law in October 2023 to transpose the EU's Framework Labelling Regulation. In March 2024, new energy labelling regulations were introduced for five product groups, further enhancing the country's commitment to energy efficiency. Lastly, Moldova's heating and cooling legislation is largely aligned with EU directives, although its implementation is ongoing. Outdated heating systems in major cities are being replaced with more efficient alternatives to enable consumption-based billing, while secondary legislation is being updated for a smooth transition.

Table 1: Sample of cross-cutting measures

Measures	NECP measures	Description	Expected savings, impact evaluation
The program on implementation of the energy efficiency obligation	No	Approved by Government Decision No. 1064/2023, the Program for the implementation of the energy efficiency obligation scheme (2024–2026) aims to achieve cumulative	This program aims to achieve the following specific objectives (as per the Government decision, last updated on 24 October 2025): a) Achieve at least 2.4 ktoe of new annual energy savings in the residential sector. b)

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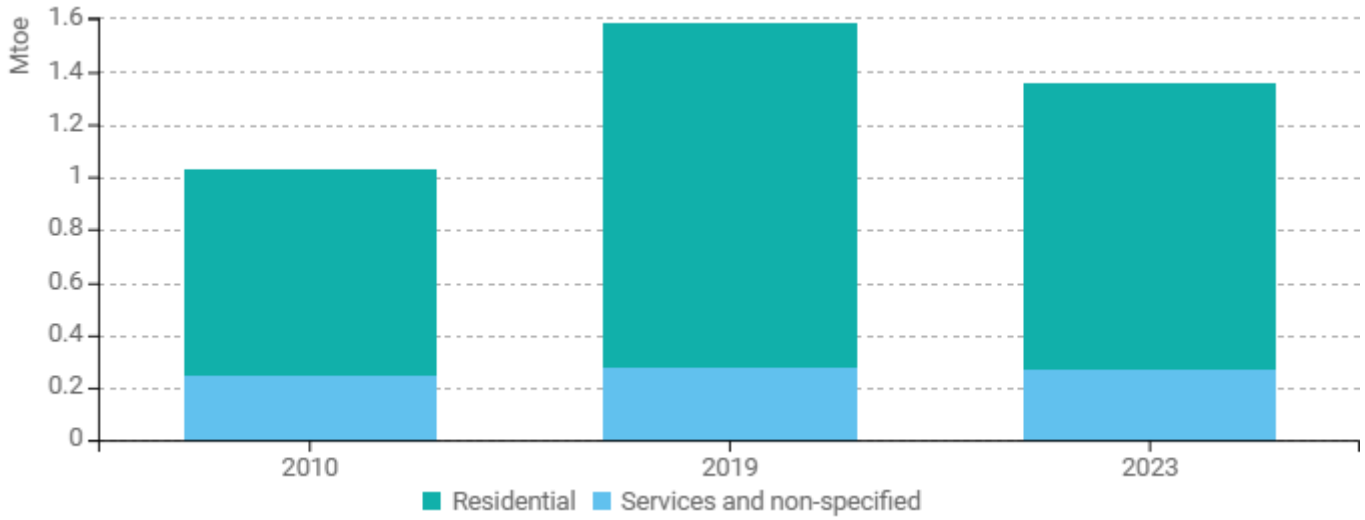
scheme for the period 2024-2026		energy savings of 14,400 toe through achieving new annual energy savings at final consumer level during the period 1 January 2024 – 31 December 2026.	Accumulate approximately 536 million MDL in annual financial resources. c) Mobilize an estimated 268 million MDL annually in grants and donations from development partners and/or international organizations (50% of the total 536 million MDL) to co-finance residential energy efficiency and renewable energy projects. d) Provide non-reimbursable financing of up to 70% of the costs for implementing energy efficiency measures and using renewable energy in the residential sector. e) Renovate annually at least 104,000 m² of heated area in apartment blocks and 56,000 m² in individual houses. f) Reduce energy consumption by at least 30% compared to standard levels in residential buildings benefiting from the financing programmes.

Source: MURE

Buildings

As shown in Figure 5, final consumption in the residential sector has increased by 38% since 2010, reaching 1 Mtoe in 2023 from 0.8 Mtoe. At the same time, final consumption in the services sector has decreased by 10%.

Figure 5: Final energy consumption in buildings (with climatic corrections)



Source: ODYSSEE

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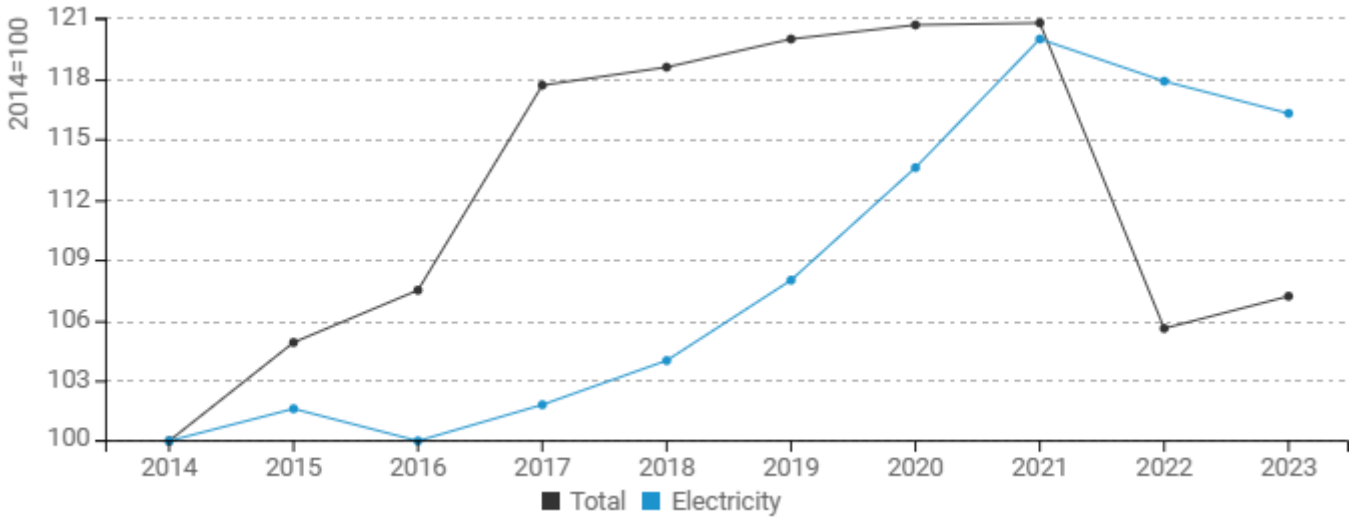
Household energy consumption per capita increased by 7% between 2014 and 2021, showing a steady upward trend. However, it declined significantly in 2022–2023 (the variation between 2021 and 2022 was −12.6%), mainly due to higher energy prices. In 2023, per capita household electricity consumption was 16% higher than in 2014.

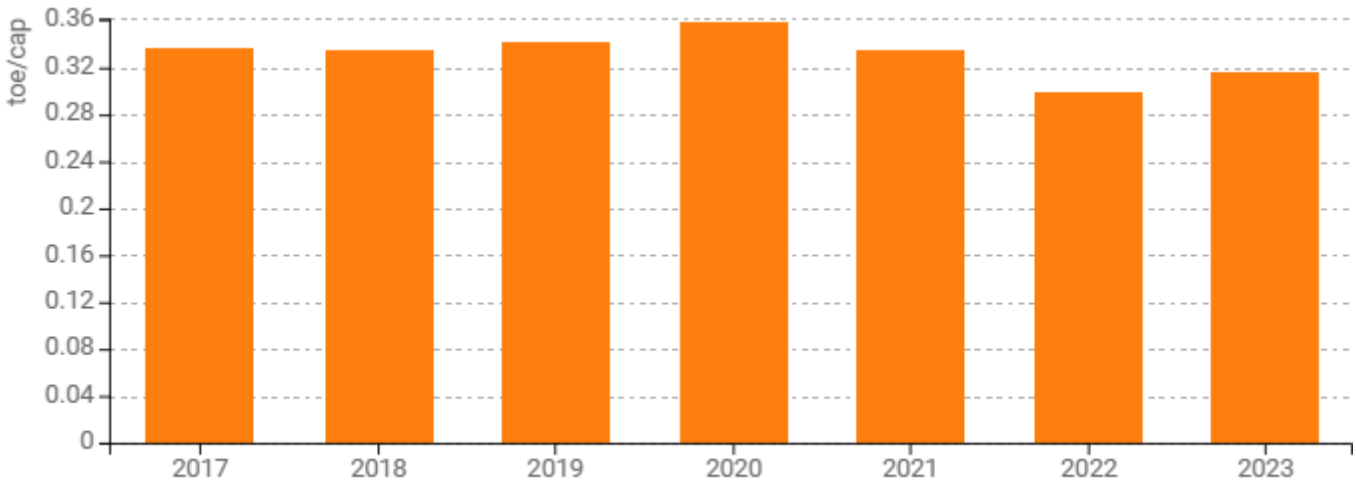
Figure 6: Energy and electricity consumption in households per capita (with climatic corrections)



Source: ODYSSEE

Following a steady increase from 2017 to 2020, per capita energy consumption for space heating remained stable during 2020–2021, with only minor fluctuations. This was followed by a sharp decline in 2022, when consumption fell by 11% below the 2017 level). The decline was driven by households reducing heating in response to the energy crisis and high energy prices. In 2023, per capita unit consumption increased slightly, but it remained below the 2017 level, due to national policies supporting citizens to mitigate energy poverty, as well as the relatively warmer winter temperatures.

Figure 7: Energy consumption per capita for space heating in households (with climatic corrections)



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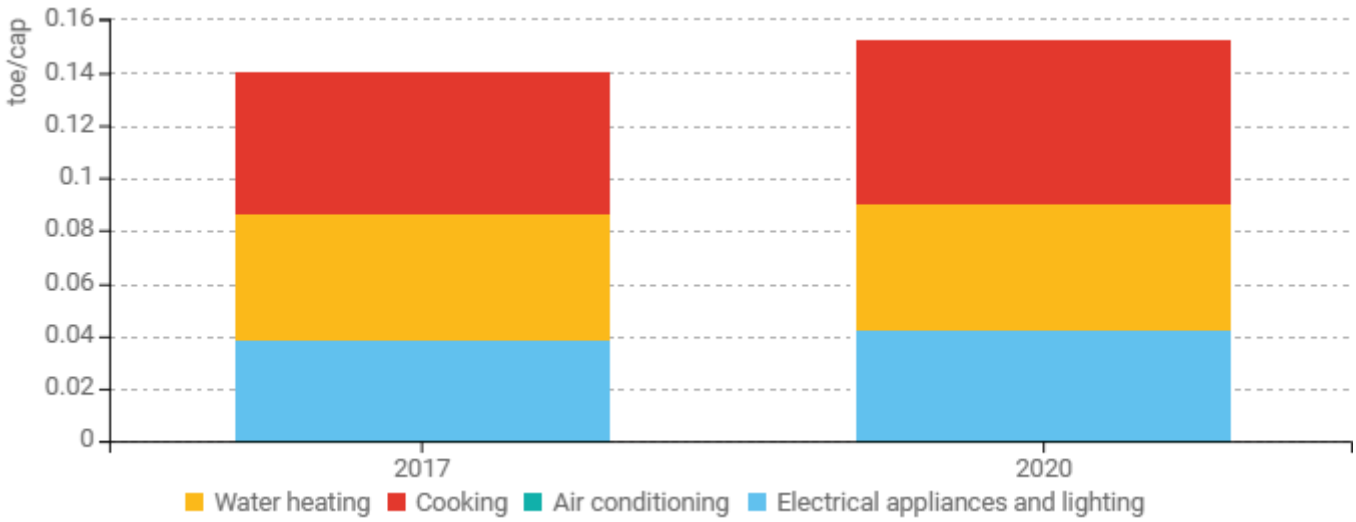
Source: ODYSSEE

Per capita energy consumption for end-uses (water heating, cooking, air cooling, electrical appliances, and lighting) remained relatively stable between 2017 and 2020, followed by a 9% decrease by 2023.

Figure 8: Energy consumption per capita by end-use in households (except space heating)



Source: ODYSSEE

The transposition of the Energy Performance of Buildings Directive has been completed. In October 2023, Parliament adopted a new Law on Energy Performance of Buildings intended to transpose Directive 2018/844. In September 2024, Moldova adopted new regulations on energy performance certification of building and building units, as well as qualifications and registering of experts for certification and inspection of heating systems, ventilation and air conditioning. The program for the implementation of the obligation to renovate central government buildings 2024–2026 was adopted in March 2024, followed by the adoption of Financing Program for Energy Efficiency in Residential Sector in April 2024.In 2025, the Sector Strategy for long-term renovation, the National Plan for nearly zero-emission buildings, and the National Energy and Climate Plan were adopted. These major policy documents provide the basis for advancing energy performance in buildings and for implementing energy efficiency measures to achieve national objectives.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
The Voucher Program for household appliances	No	The Voucher Program for household appliances is a national program that provides financial aid to reduce energy resource consumption in vulnerable households by replacing old, high-energy-consuming appliances with new, energy-efficient ones.	

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(Programul de vouchere pentru electrocasnice)		Beneficiaries are selected through the 'Energy Vulnerability' information system, established under Law No. 241/2022 on the Energy Vulnerability Reduction Fund. The value of the vouchers, selection criteria, and approved budget for each distribution session are determined separately. In 2025, vouchers were issued for refrigerators (including models with built-in freezer) and washing machines. In 2025, the programme was expanded with nine additional voucher sessions, supported by a budget of EUR 7.45 million funded by the Government of Norway through GIZ. The extended coverage allowed more households to replace old appliances with energy-efficient alternatives. During the year, 25,564 vouchers were redeemed, resulting in the replacement of 12,018 refrigerators and 13,546 washing machines. Annual energy savings were estimated based on standardized efficiency benchmarks and appliance consumption profiles.	
Law No. 282/2023 on Energy Performance of Buildings (Legea nr. 282/2023 privind performanța energetică a clădirilor)	No	Improving the energy performance of buildings is a strategic objective of the state, given the building sector's significant share in national energy consumption and its substantial untapped potential to save primary energy, enhance energy supply security, reduce greenhouse gas emissions, and create optimal living conditions for the population. This objective is reflected in key policy documents, including the Sector Strategy for the long-term renovation of the national real estate stock, the National Plan for increasing the number of nearly zero-emission buildings, the National Energy and Climate Plan developed in accordance with Law No. 139/2018 on energy efficiency, as well as other relevant public policy documents.	

Source: MURE

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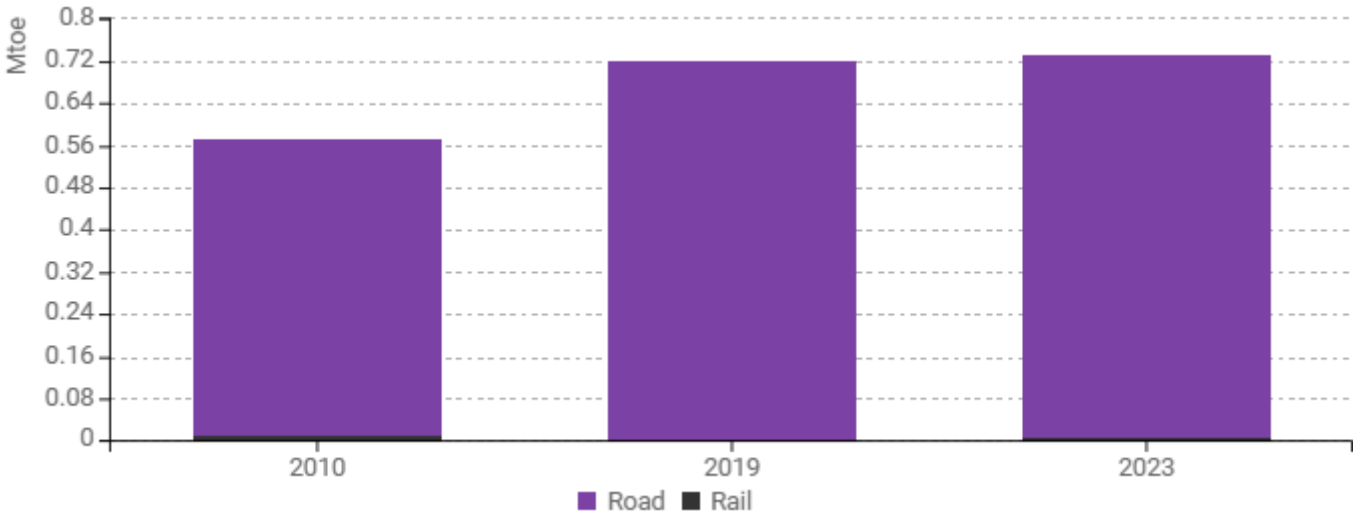
Transport

Final energy consumption in transport is dominated by road transport, accounting for 99% of total consumption in 2023. Compared to 2010, the share of road transport increased by 1.2 percentage points. At the same time, final energy consumption in road transport slightly decreased in 2023 (−2.5%) compared to 2022. After remaining almost constant, final energy consumption in rail transport increased sharply by nearly 251% in 2023 compared to 2022.

Figure 9: Transport energy consumption by mode



Source: ODYSSEE

The transport sector in Moldova has significant potential for energy savings. The following measures and policies are planned for implementation up to 2050: (1) deployment of electromobility, (2) improvements to public transport infrastructure, (3) development of sustainable regional and municipal mobility plans, (4) enhancing rail transport efficiency, (5) promoting rail over road freight transport, (6) enhancing energy efficiency in freight transport, (7) transitioning public and freight transport to hybrid or electric vehicles, (8) encouraging fuel-efficient driving.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Promoting sustainable mobility	Yes	Measures aimed at promoting sustainable and low-emission mobility in Moldova, focusing on reducing dependence on petroleum fuels, lowering greenhouse gas emissions, and supporting the adoption of electric and energy-efficient vehicles. The actions include fiscal incentives for electric vehicle acquisition, regulatory updates for vehicle inspections, and support for energy-	The quantified objective is to achieve a cumulative effect of 2.0

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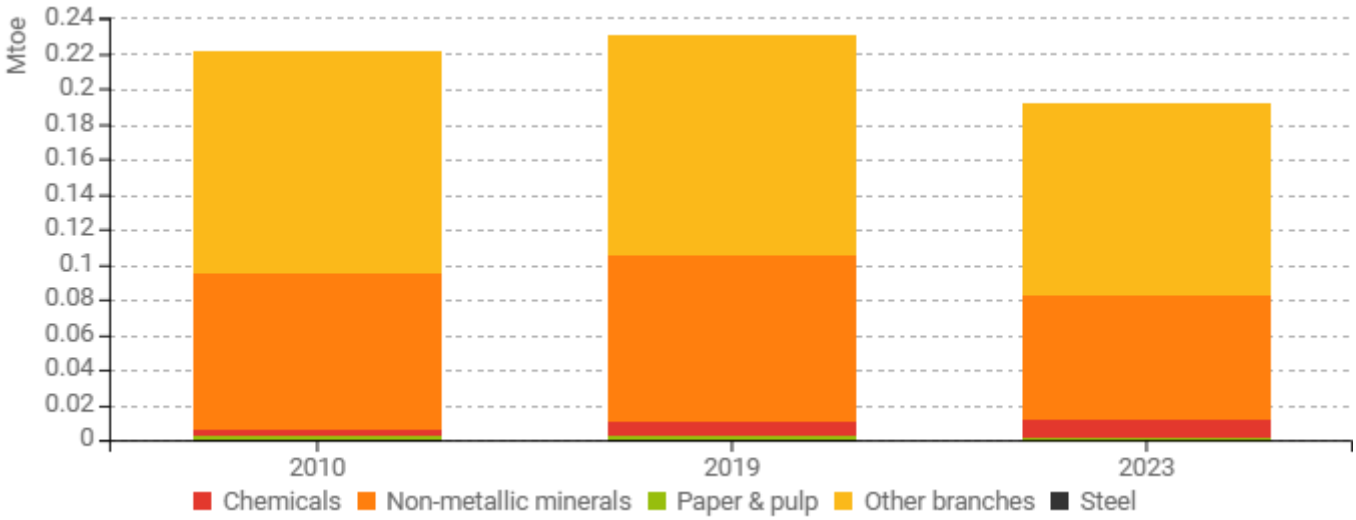
		efficient public transport and rail systems, fostering the transition toward carbon-neutral transport. The implementation cost of this policy measure is estimated at 5 million EUR, with funding provided by the state budget, local public administration budgets, external donor sources, and private sector contributions.	ktep, with an average annual effect of 0.33 ktep.

Source: MURE

Industry

Final energy consumption in the industrial sector decreased from 0.22 Mtoe in 2010 to 0.19 Mtoe in 2023 (-14%). Non-metallic minerals, one of the largest industrial branches, had a 37% share of total industrial consumption in 2023, while other industrial branches together had a share of more than 57%. Over the period 2010–2023, final energy consumption in the industrial sector showed a downward trend, with decreases of 21% in non-metallic minerals and 14% in other industrial branches. In contrast, final energy consumption in the chemical industry increased by 197% (+3.7 percentage points) compared to 2010.

Figure 10: Final energy consumption of industry by branch



Source: ODYSSEE

In 2023, Moldova submitted its Fifth National Communication to the UNFCCC, detailing decarbonization efforts across all sectors, and actively advancing its sustainable energy and decarbonization agenda. The country's updated Nationally Determined Contribution (NDC), submitted in March 2020, includes a commitment to reduce GHG emissions by 70% below 1990 levels by 2030, with emissions already 68.7% lower than in 1990. Financing programs are supporting small and medium-sized enterprises (SMEs) to enhance energy efficiency and install renewable energy plants, helping to reduce energy and fuel consumption. Expanding renewable energy exports is a key strategy for diversifying energy sources, improving energy security, reducing reliance on uncertain supplies, and promoting sustainable economic development. These efforts reflect Moldova's integrated approach to boosting renewable energy capacity, improving energy efficiency, and achieving long-term emission reductions.

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

Measures	NECP measures	Description	Expected savings, impact evaluation
Promotion of energy efficiency in Small and Medium-sized Enterprises (SMEs)	Yes	The measure was initiated in 2018, and by 2023 SMEs had received financing totaling EUR 25 million. In 2023, the EBRD extended financial support with an additional EUR 10 million. The programme will be extended for the next four years (2024–2027), with a further EUR 40.0 million to be invested. Moldovan businesses are poised to benefit from increased access to finance as the European Bank for Reconstruction and Development (EBRD), in partnership with the European Union, extends a new financial package under the EU4Business-EBRD Credit Line. The €10 million loan will support investment financing for micro, small, and medium-sized enterprises (MSMEs) in Moldova to upgrade their equipment, products, and services to meet EU standards, enhance competitiveness, and seize international trade opportunities. It is expected that at least 70 percent of the loan will finance investments in green technologies. Since 2018, a total of €25 million in financing has been provided to local MSMEs under this program. Small businesses are the backbone of the Moldovan economy, and supporting them is crucial for sustaining economic growth. Investments in equipment upgrades and energy efficiency are essential for their competitiveness and help mitigate the negative impact of energy crises.	Reduction of GHG emissions by 70% by 2030 compared to 1990 levels. Energy and fuel consumption reductions of 76,260 ktce are expected by 2030 under the unconditional scenario, with an additional 37,127 ktce under the conditional scenario.

Source: MURE

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