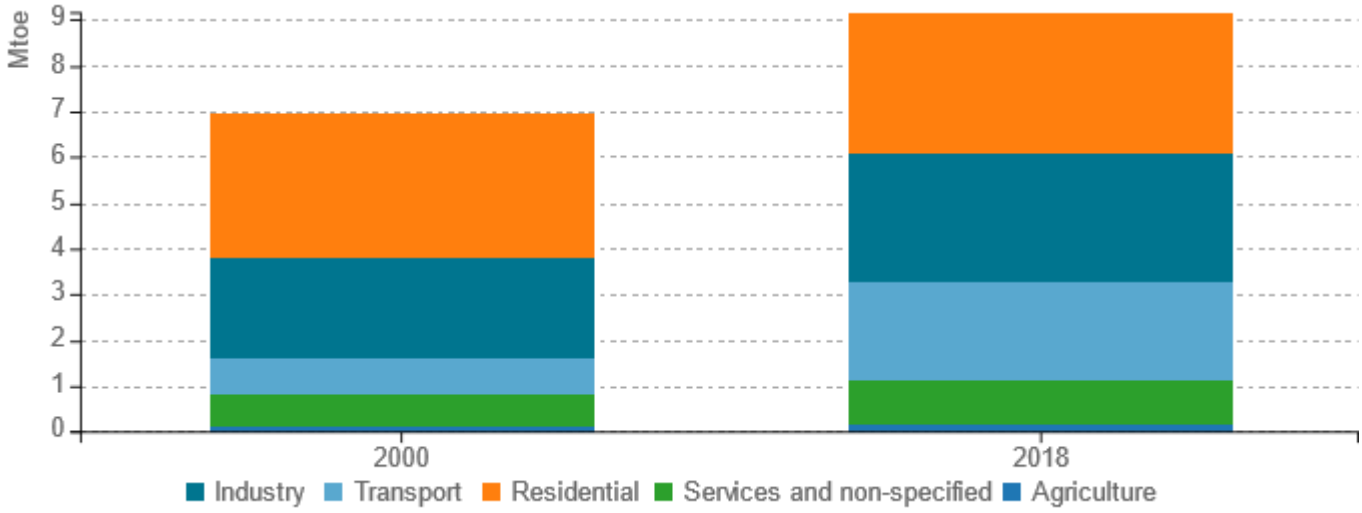
Energy efficiency trends and policies

Overview

In 2018, the final energy consumption in the Republic of Serbia amounted to 9.2 Mtoe, which is 30% more than in 2000. The largest share in the final energy consumption in 2018 was achieved, almost equally, by the household sector (34%) and the industrial sector (31%), which are followed by the transport sector (23%), services (10%) and agriculture (1.9%). Compared to 2000, there was an increase in final consumption in almost all sectors; in some sectors this increase is significant. The share of the transport sector has more than doubled, with an increase in agriculture (32.3%), industry (30.6%) as well as services and other sectors (35%), while the household sector decreased by 3%.

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



Source: ODYSSEE

In the period from 2000 to 2018, energy efficiency for end consumers measured by ODEX decreased by about 14%. A decrease was recorded in all sectors, except in the transport sector, where the value of the ODEX index was practically constant throughout the period. The largest decrease was recorded in the services sector, which is slightly more than 18%.

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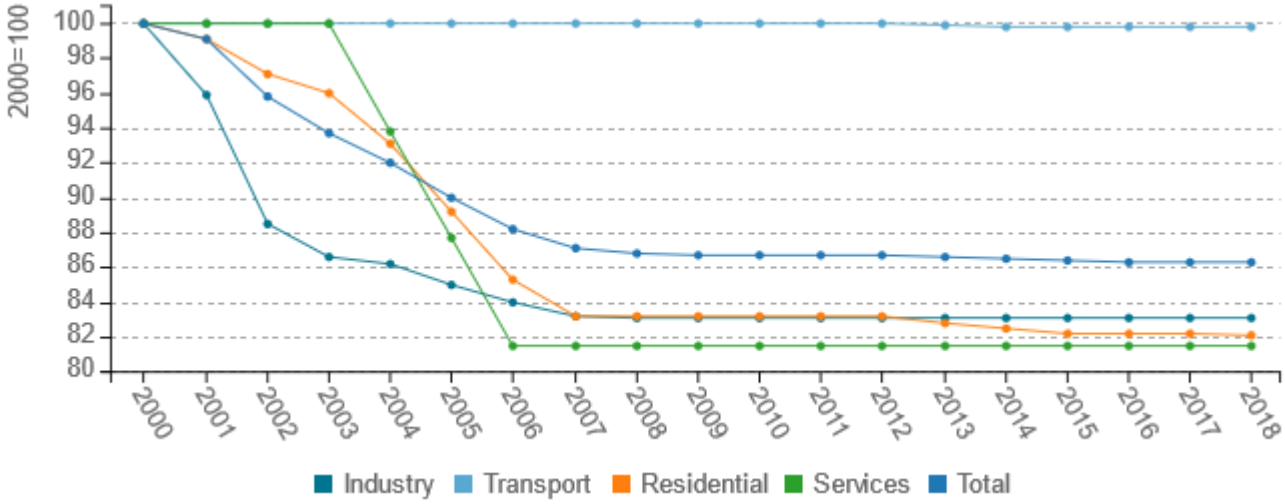
Figure 2: Technical Energy Efficiency Index



Source: ODYSSEE

In the Republic of Serbia energy efficiency in area of final energy consumption and energy sources is regulated by two laws: Energy Law and the Efficient Use of Energy Law. Through these two laws the requirements of Directive 2006/32/EC about energy efficiency of final consumption and energy services have been transposed. According to EU obligations Republic of Serbia has set a national indicative target of 9% for reducing final energy consumption by 2018 (0.7524 Mtoe). The Third National Energy Efficiency Action Plan for 2016-2018 (NEEAP) was approved by Government in late 2016. 3rd NEEAP was prepared in accordance with the requirements of Directive 2006/32/EC, but also included a number of elements concerning the future implementation of Directive 2012/27/EU. On the basis of collected and processed data, it is estimated that, up to including 2015, realized savings amounted to 0.37 Mtoe, which is 93% of savings projected for the period 2010-2015, i.e. approximately 50% of the target to be reached by 2018. Estimated effects of measures (in 3rd NEEAP) indicated that it is possible to reach the comprehensive goal by 2018, but that it is necessary to additionally strengthen capacities for implementation of NEEAP, ensure investments into most cost-effective measures and implement by-laws. Currently, the 4th NEEAP is under development and it will analyse the effects of the implementation of measures in the 3rd APEE. The 4th NEEAP will be the 1st National Action Plan for Energy Efficiency in accordance with the requirements of Directive 2012/27/EU.

Table 1: Sample of cross-cutting measures

Measures	NEEAP	Description	More information
Billing based on actual (measured) DHS consumption	yes	The Law on Efficient Use of Energy (EUE) prescribes that technical prerequisite for the introduction of payment of actual consumption is the installation of heat consumption meters at substations for the entire building and wherever technically feasible, installation of individual consumption meters or heat cost allocators for individual parts of the building, as well as devices for controlled regulation on each radiator – partially implemented.	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf

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Funding by ESCO	yes	The Law on EUE contains provisions related to the companies providing energy services (ESCO). Special legislative acts have been drafted, as well as contract forms and guidelines for ESCO. A by-law (Rulebook) establishing the model of contracts between public and private partners in energy efficiency projects was adopted in May 2015 (ESCO By-Law).	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf
Ecodesign requirements	yes	The Law on EUE envisages that the products affecting energy consumption can be placed on the market only if they comply with the requirements of ecodesign, defined by specific technical regulations. This provision of the Law on EUE transposes the requirements of Directive 2009/125/EC establishing a framework for setting of ecodesign requirements for energy-related products - expected in the following period starting from 2021.	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf
Awareness of and education in energy efficiency	yes	Raising awareness of the energy efficiency is achieved through various information campaigns, trainings at different levels (including the introduction of relevant entities in the system of compulsory education, especially in vocational schools), organisation of seminars, workshops and lectures. It is essential to cover all target groups, in particular holders of responsible positions who are in charge of energy efficiency at all levels, as well as various social groups - partially implemented trough implementation of different projects.	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf
Mandatory consumer information on the monthly consumption of electricity and thermal energy or natural gas	yes	In accordance of the Law on EUE, the companies engaged in distribution and supply of electricity and thermal energy and natural gas are obliged to inform customers once a month on the electricity bill or, along with the bill, on the amount of the energy consumed by the customer during the previous month and the average price of electricity for that particular consumer during that month. In addition, the information about available energy efficiency measures and other information relevant for rational use of energy are to be supplied.	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf

Source: MURE

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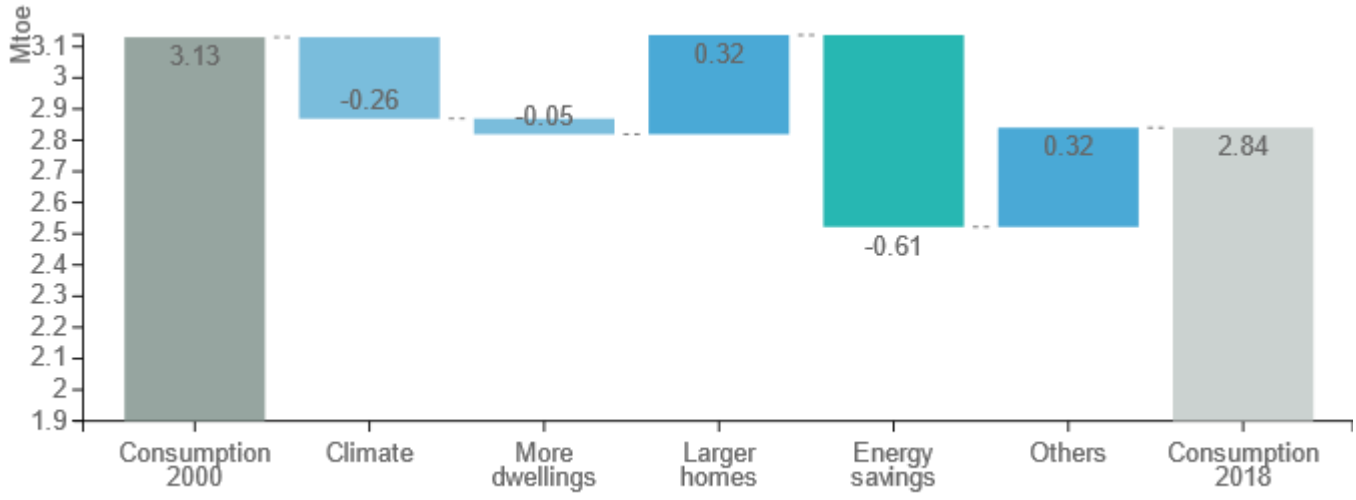
Buildings

In 2018, the final energy consumption in the household sector (2.84 Mtoe) was 9.2% lower than in 2000. Energy savings in the mentioned period amounted to 0.61 Mtoe. Climate effects also contributed to a decrease in final consumption in households by 0.26 Mtoe, while larger dwellings and other effects (0.32 Mtoe each) contributed to an increase in energy consumption.

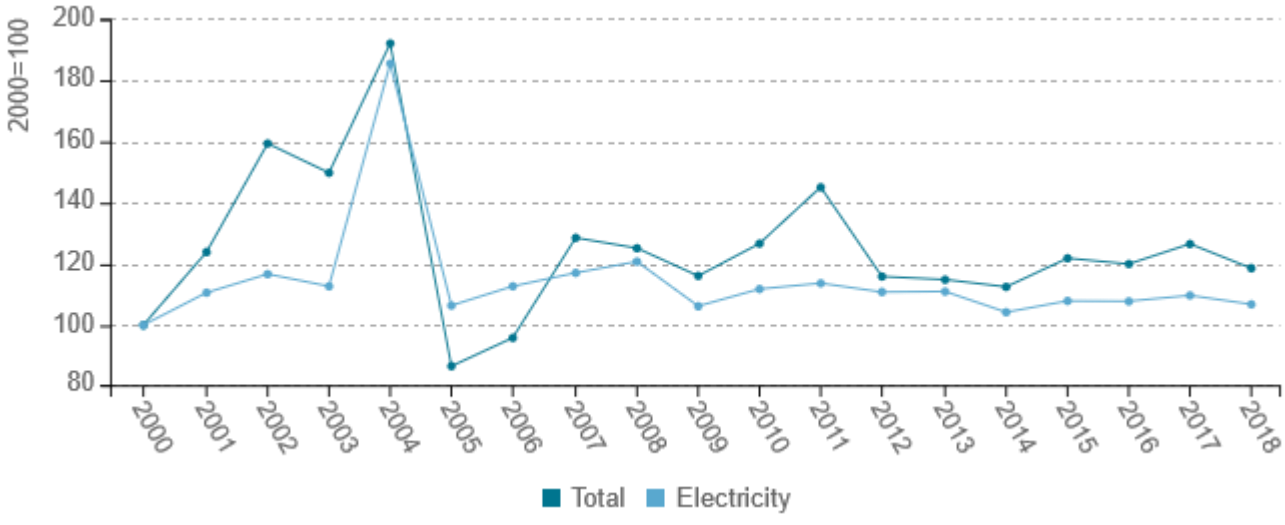
Figure 3: Main drivers of the energy consumption variation of households



Source: ODYSSEE

From 2000 to 2018, energy consumption per employee increased by 20%, or an average of 1% annually. Electricity consumption recorded a slightly smaller increase, 7% for the entire period, or 0.4% annually.

Figure 4: Energy and electricity consumption per employee (normal climate)



Source: ODYSSEE

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

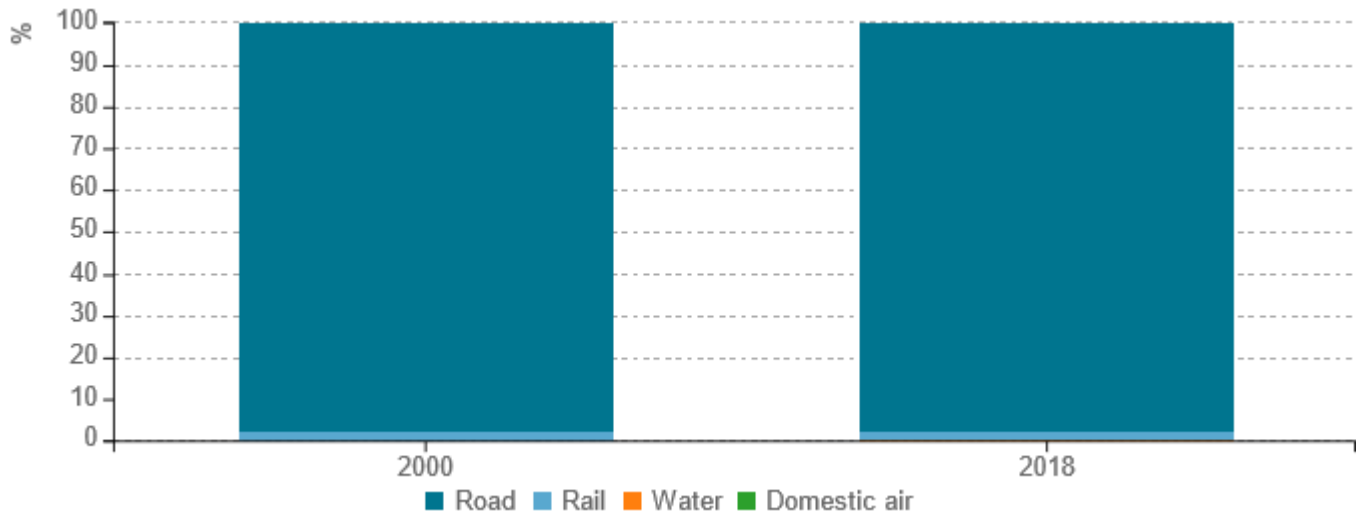
Measures	Description	Expected savings, impact evaluation	More information available
Improvement of energy efficiency in the public, commercial and residential buildings	Reduction of energy needs for heating and cooling by applying measures to the thermal envelope of the building and improving the thermo-technical system of the building.	According to the NEEAP, final energy savings amounted to 106 ktoe in 2018.	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf
New construction regulations and certificates on the energy characteristics of buildings	Achieving energy savings in the construction of new buildings and reconstruction of existing buildings: - By applying new construction regulations defining the mandatory use of relevant standards (defining minimum criteria for the energy efficiency of buildings) - By drafting certificates on the energy properties of buildings.	According to the NEEAP, final energy savings amounted to 184 ktoe in 2018.	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf

Source: MURE

Transport

The transport sector is dominated by road transport, covering almost 98% of total consumption in 2018 (which is identical to year 2000). The consumption of rail transport has increased by 150% during this period, but it still accounts for only 2% of consumption. Domestic air traffic does not exist in the Republic of Serbia.

Figure 5: Transport energy consumption by mode



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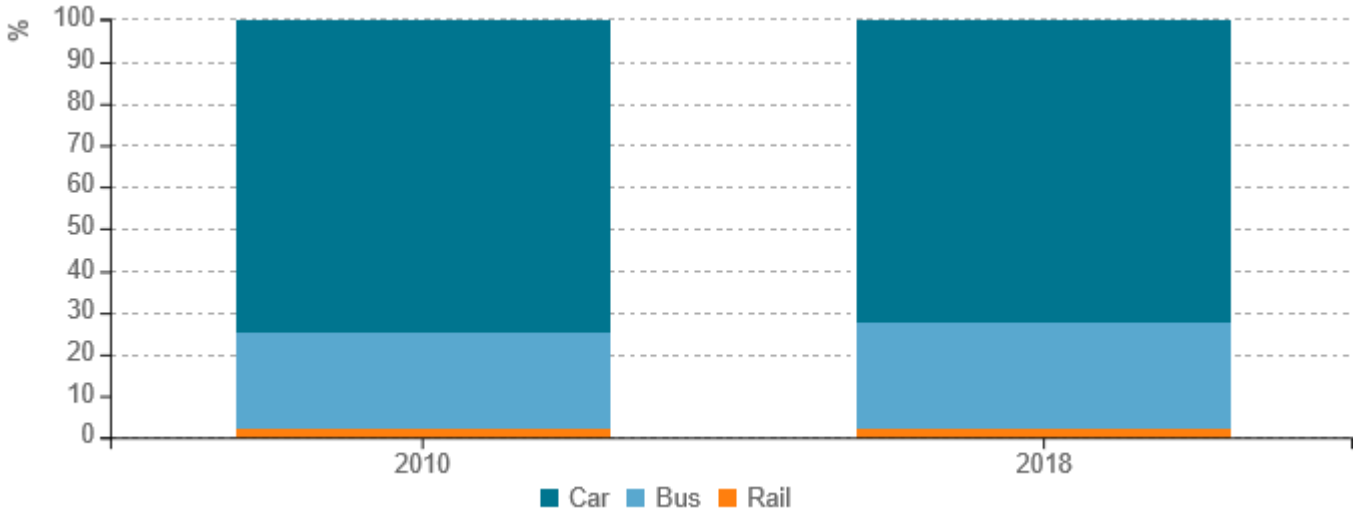
In the Republic of Serbia in 2018, 72.5% of passenger traffic was carried out using cars, and 25.1% using buses. Railway traffic is represented by only 2.4%. In 2010, the situation was almost identical.

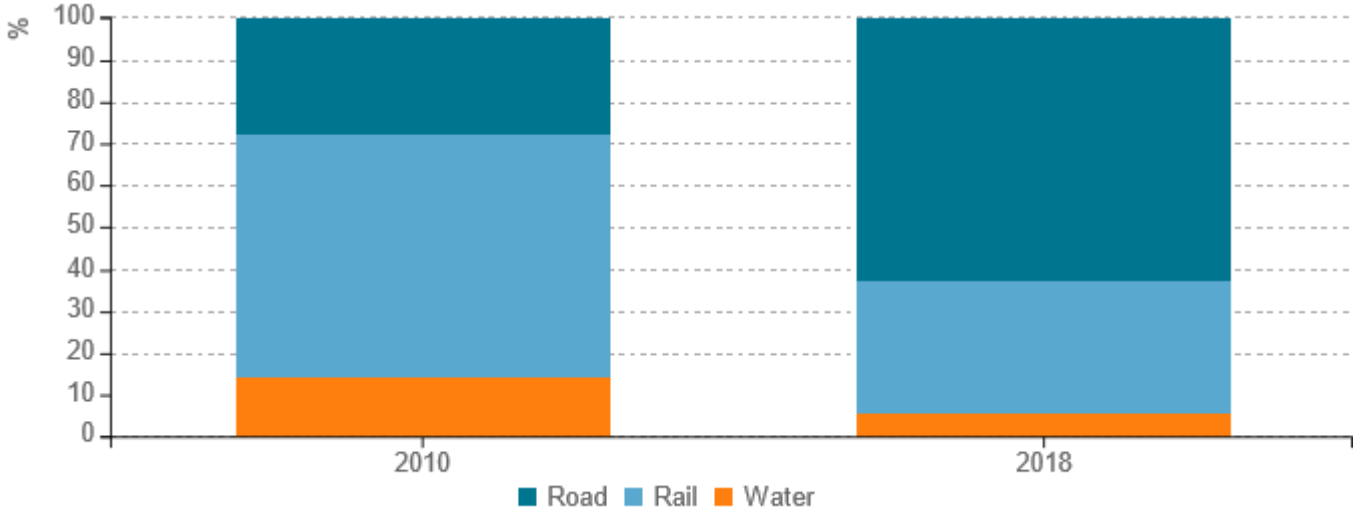
Figure 6: Modal split of inland passenger traffic



Source: ODYSSEE

In 2018, road freight transport participated with 63.0% in the total freight traffic in the Republic of Serbia, while in 2010 this share was 27.7%. In the same period, water transport share decreased - from 14.4% to 5.7%. Rail freight transport in 2018 amounted to 31.3% of the total freight traffic, which is a large decrease compared to 57.9% in 2010.

Figure 7: Modal split of inland freight traffic



Source: ODYSSEE

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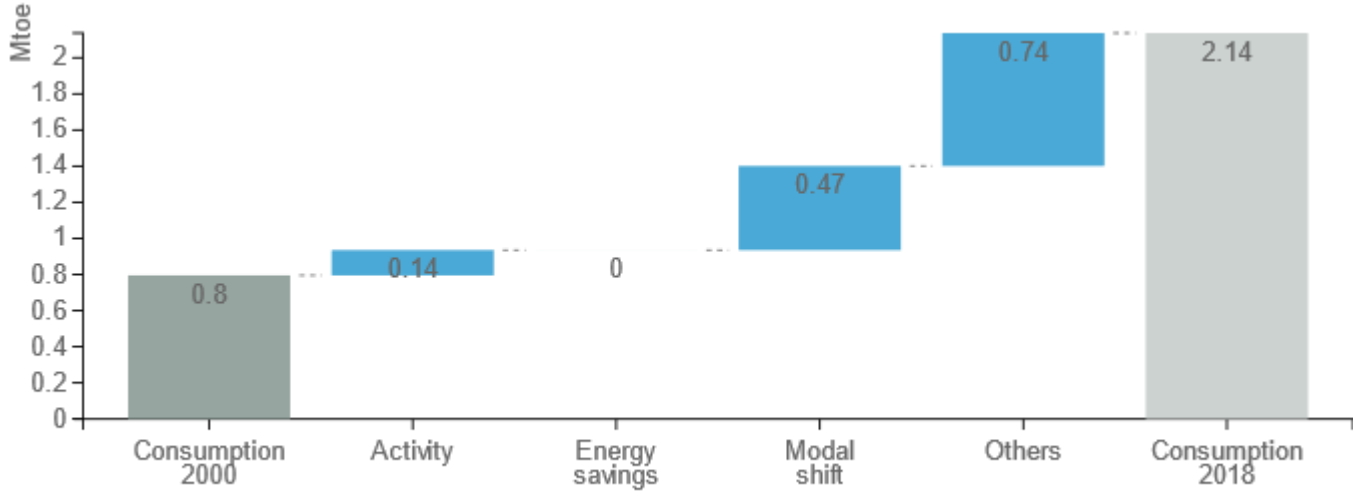
Energy consumption in transport increased by 167% in the period from 2000 to 2018. Both passenger and freight traffic have increased, and total consumption has increased even more due to the influence of other factors.

Figure 8: 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
Implementation of EC 443/2009 on the reduction of CO2 emissions of new passenger cars	Implementation of stricter CO2 emission limits for new passenger cars improves their fuel consumption compared with the previous emission limit values. EURO 5 level has become a requirement for new passenger cars and light vans from 1 April 2011.	2018: 2.51 PJ	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf

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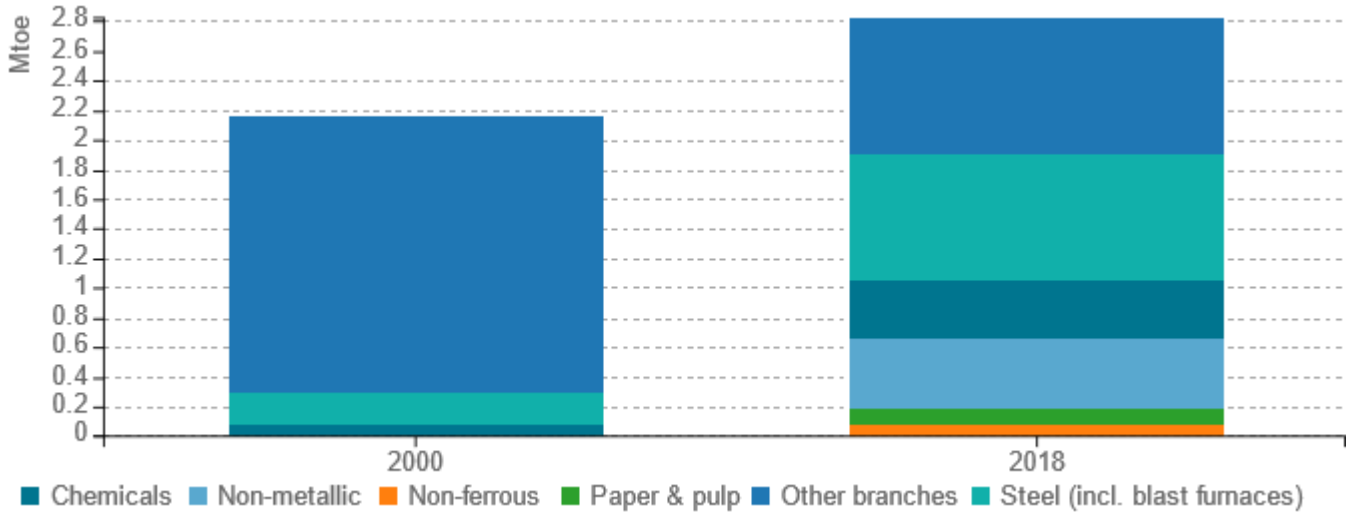
Industry

Final energy consumption in the industrial sector in 2018 amounted to 2.8 Mtoe (30.6% more than in 2000). Most of the final energy consumption in 2018 was concentrated in four branches of industry: steel industry (30% of total energy consumption in industry), production of other non-metallic mineral products (17%), chemical industry (14%) and food, beverages and tobacco manufacturing (14%).

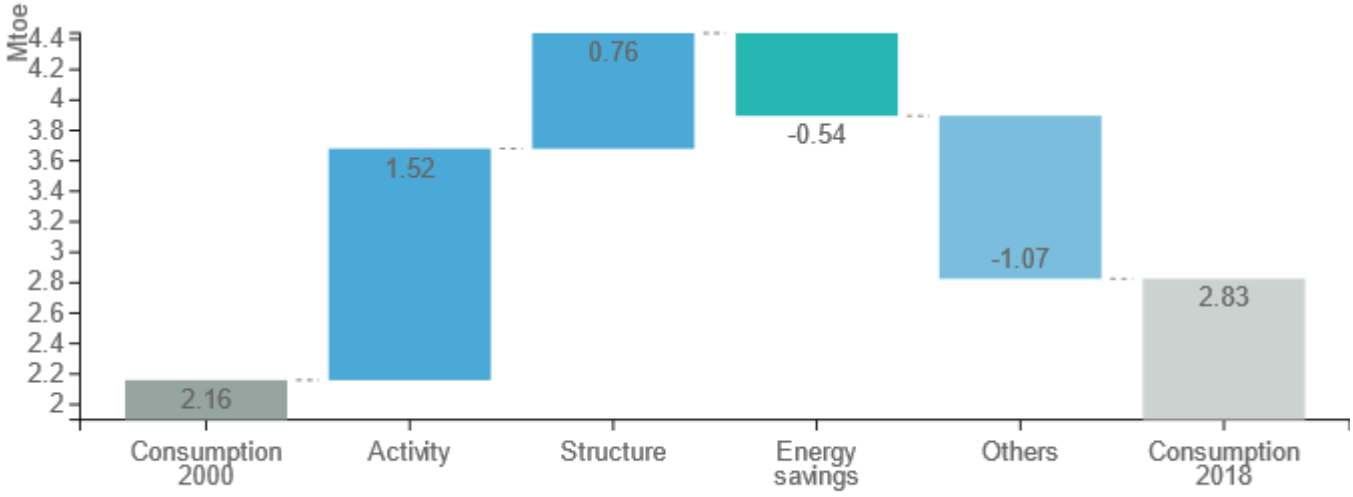
Figure 9: Final energy consumption of industry by branch



Source: ODYSSEE

Consumption in the industrial sector increased from 2.16 Mtoe in 2000 to 2.83 Mtoe in 2018. At the same time, the changes in industrial activity and structure were even greater (1.52 Mtoe and 0.76 Mtoe, respectively), but energy savings and some other factors that contributed to the reduction of consumption of a total of 1.61 Mtoe partially reduced the overall increase.

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



Source: ODYSSEE

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

Measures	Description	Expected savings, impact evaluation	More information available
Introduction of energy management systems in the industrial sector	Measure is implemented in accordance with the Law on Efficient Use of Energy, in accordance with the saving targets set by the state bodies, through: 1) Collecting and analysing data on energy consumption, proposing measures and activities aimed at increasing EE, 2) Developing and delivering programmes and plans for efficient energy use to MME, 3) Implementing proposed measures and activities, 4) Preparing and submitting periodic reports to MME (on the energy consumption and the achieved savings), 5) Implementing mandatory periodic energy audits. The activity is carried out by energy manager who possesses the appropriate license in accordance with the Law on EUE.	2018: 1.54 PJ	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf
Improvement of energy efficiency in the industrial sector	Energy saving is achieved by applying EE measures in accordance with the recommendations of energy audit: 1) Collecting and analysing data on energy consumption, 2) Through implemented energy audits 3) Proposing measures and activities aimed at increasing EE 4) Implementing proposed measures and activities. Achieved primarily on the basis of financial measures.	2018: 3.04 PJ	https://www.mre.gov.rs/doc/efikasnost-izvori/efikasnost/Treci_akcioni_plan_za_energetsku_efikasnost_Republike_Srbije_za_period_do_2018_godine.pdf

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