



MONTENEGRO
MINISTRY OF ENERGY



ODYSSEE-MURE

ODYSSEE-MURE fit4-55 (2022-2025)

Energy consumption - Transport

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Transport in Montenegro

Legislative part

Transport in Montenegro is defined by the following documents:

- *LAW ABOUT TRANSPORTATION IN ROAD TRAFFIC* (l.u. 2019) - defines the area of public transportation;
 - This Law is under the jurisdiction of the *Ministry of Transport*;
- *LAW ON ROAD TRAFFIC SAFETY* (l.u. 2019) - defines rules of road traffic, obligations of participants and other subjects in traffic, traffic restrictions, traffic signals, markings, signs and orders that must be followed by traffic participants;
 - This Law is under the jurisdiction of the *Ministry of Internal Affairs*;

By laws act:

- Rulebook on closer conditions that must be met by vehicles in road traffic (l.u. 2024) defines dimension of vehicle, noise level, vehicle categories, ect;
 - Legal basis - Ministry of Internal Affairs;
- *Homologation of vehicles is also the responsibility of the Ministry of Transport, and implementation is the responsibility of the Faculty of Mechanical Engineering;*

INTERNAL PUBLIC TRANSPORT IS DEFINED BY THE ABOVE MENTIONED LAWS and RULEBOOK;

INTERNATIONAL TRANSPORT IS DEFINED BY BILATERAL AND MULTILATERAL AGREEMENTS
– *Those agreements define which type of vehicle can be positioned on certain location*

Main DATA

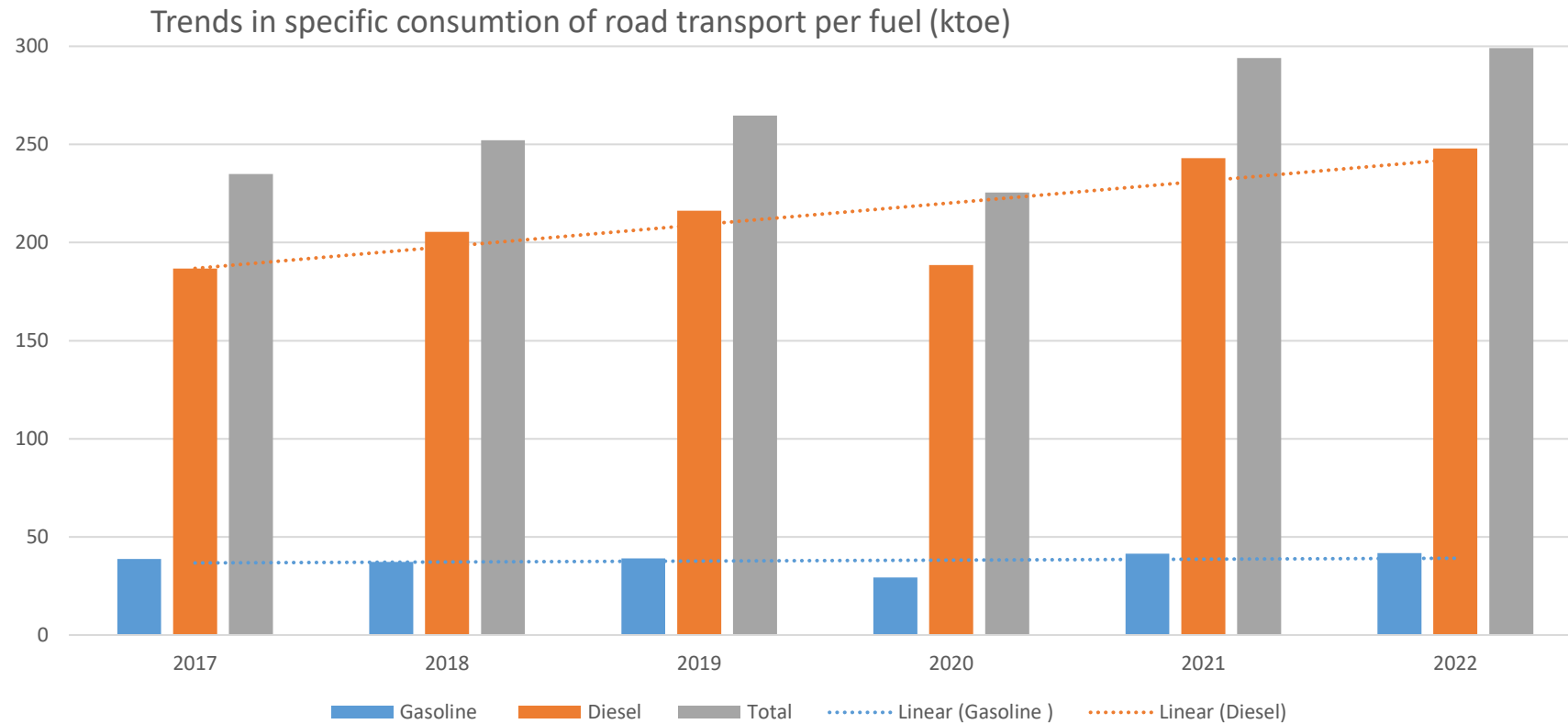
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population in 000 | 620 | 620 | 620 | 620 | 620 | 620 | 620 | 620 | 620 |
| GDP current prices MEUR | 3.458 | 3.655 | 3.954 | 4.299 | 4.663 | 4.951 | 4.186 | 4.955 | 5.924 |
| Final energy consumption (ktoe) | 628,6 | 662,6 | 688,8 | 728,9 | 729,6 | 760,6 | 696,8 | 796,3 | 752,6 |
| fec transport (ktoe) | 164 | 188 | 220 | 237 | 254 | 267 | 226 | 294,1 | 299,4 |
| Stock of cars in 000 | | | | 193,2 | 206,4 | 217,8 | 220,1 | 221,4 | 227,7 |

Car structure by fuel

| Stock of cars | Unit | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|----------------------------|------|--------|--------|--------|--------|--------|--------|
| Stock of cars | k | 193,20 | 206,40 | 217,76 | 220,10 | 221,40 | 227,72 |
| Stock of motor spirit cars | k | 50,76 | 49,93 | 49,63 | 44,30 | 43,86 | 43,85 |
| Stock of diesel oil cars | k | 134,60 | 148,64 | 160,60 | 168,40 | 177,96 | 177,99 |
| Stock of LPG cars | k | 7,88 | 7,87 | 7,75 | 6,80 | 0,00 | 5,87 |

- Number of electric cars still on low level. Expected increase as a result of incentives being implemented.
- For the period after 2022 number of electric vehicles has increased significantly.
- Current figure estimated above 5.000.

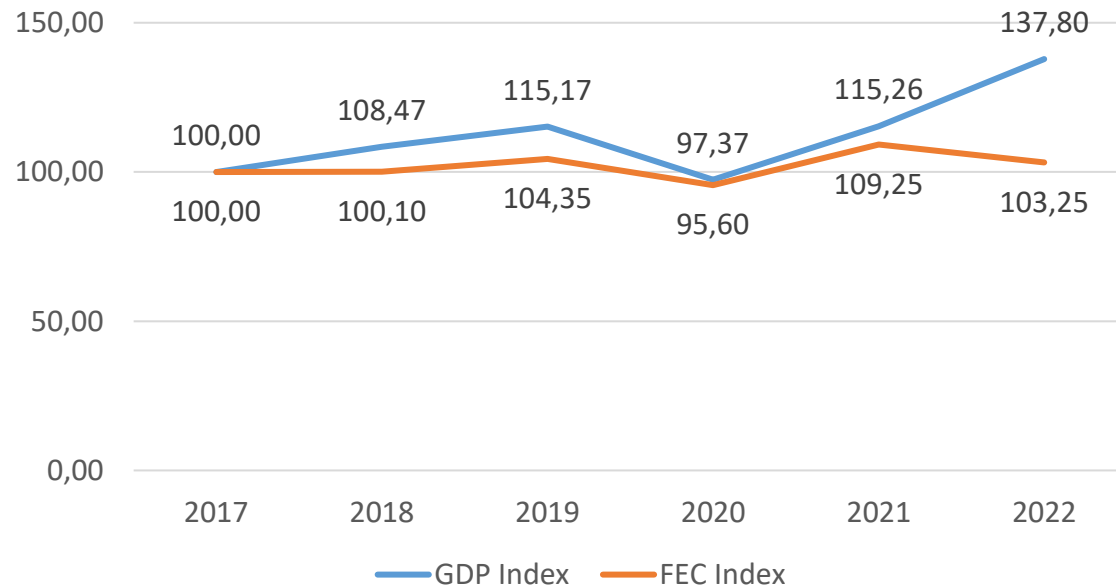
Specific consumption of road transport per fuel (ktoe)



- Greater percent of diesel engine cars (80%, 81%, 82% 84% 83% 83%)

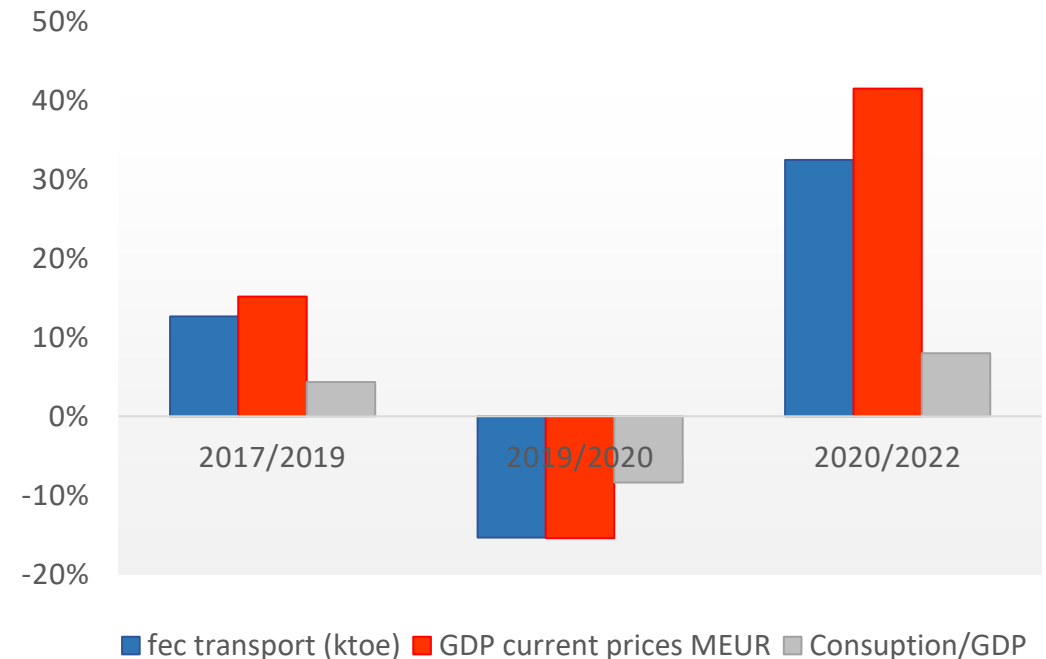
Final energy consumption and GDP (index)

Final energy consumption and GDP (index 2017=100)



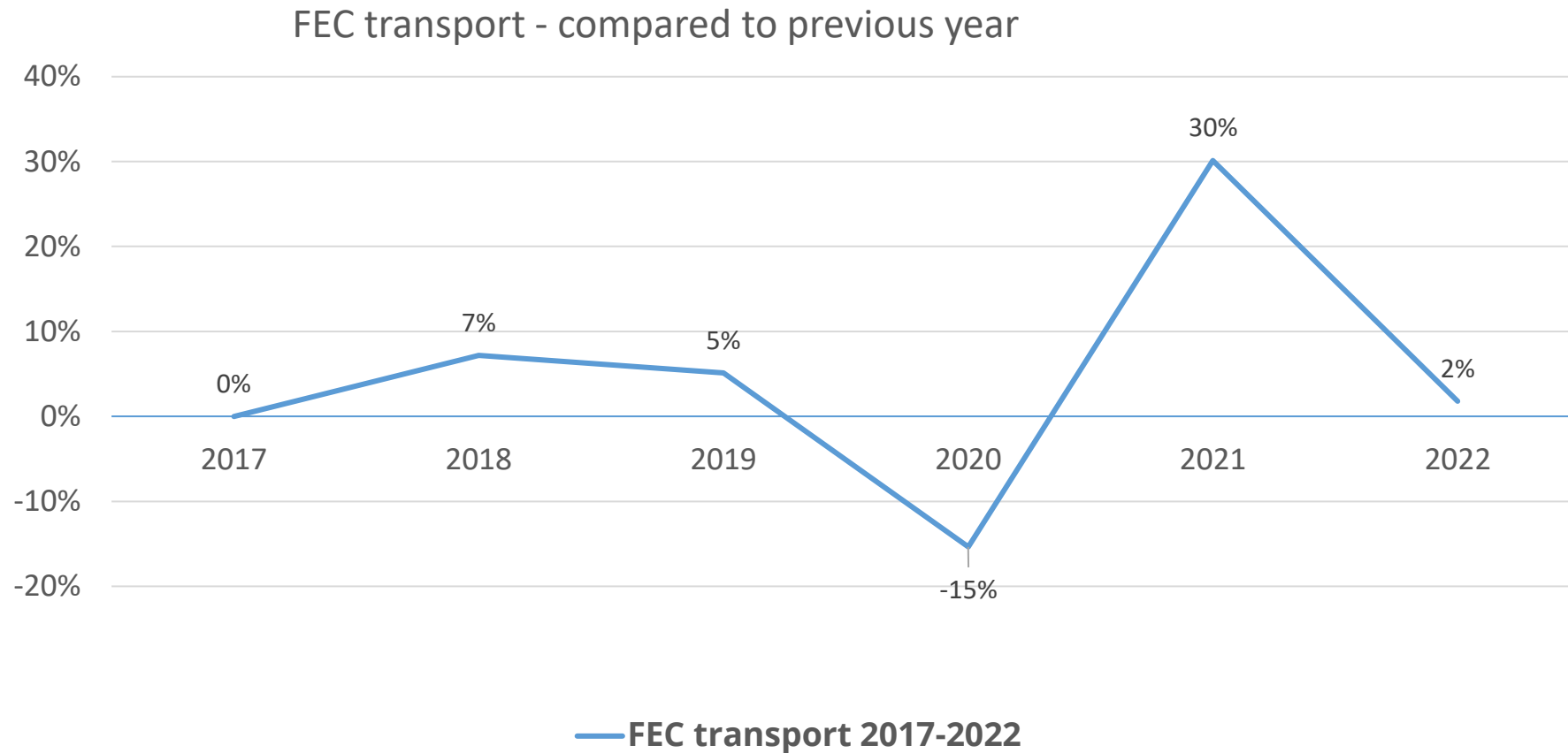
Regular increase in consumption over 2017-2019 (+6%/year), slightly slower than GDP.

FEC transport and GDP per period)



Sharp decrease in 2020 due to covid restrictions. Recovery in 2021

Final energy consumption transport 2017-2022



ODEX and Decomposition

ODEX is the index used in the ODYSSEE-MURE project to measure the energy efficiency progress by main sectors and for the whole economy, also for Transport Sector;

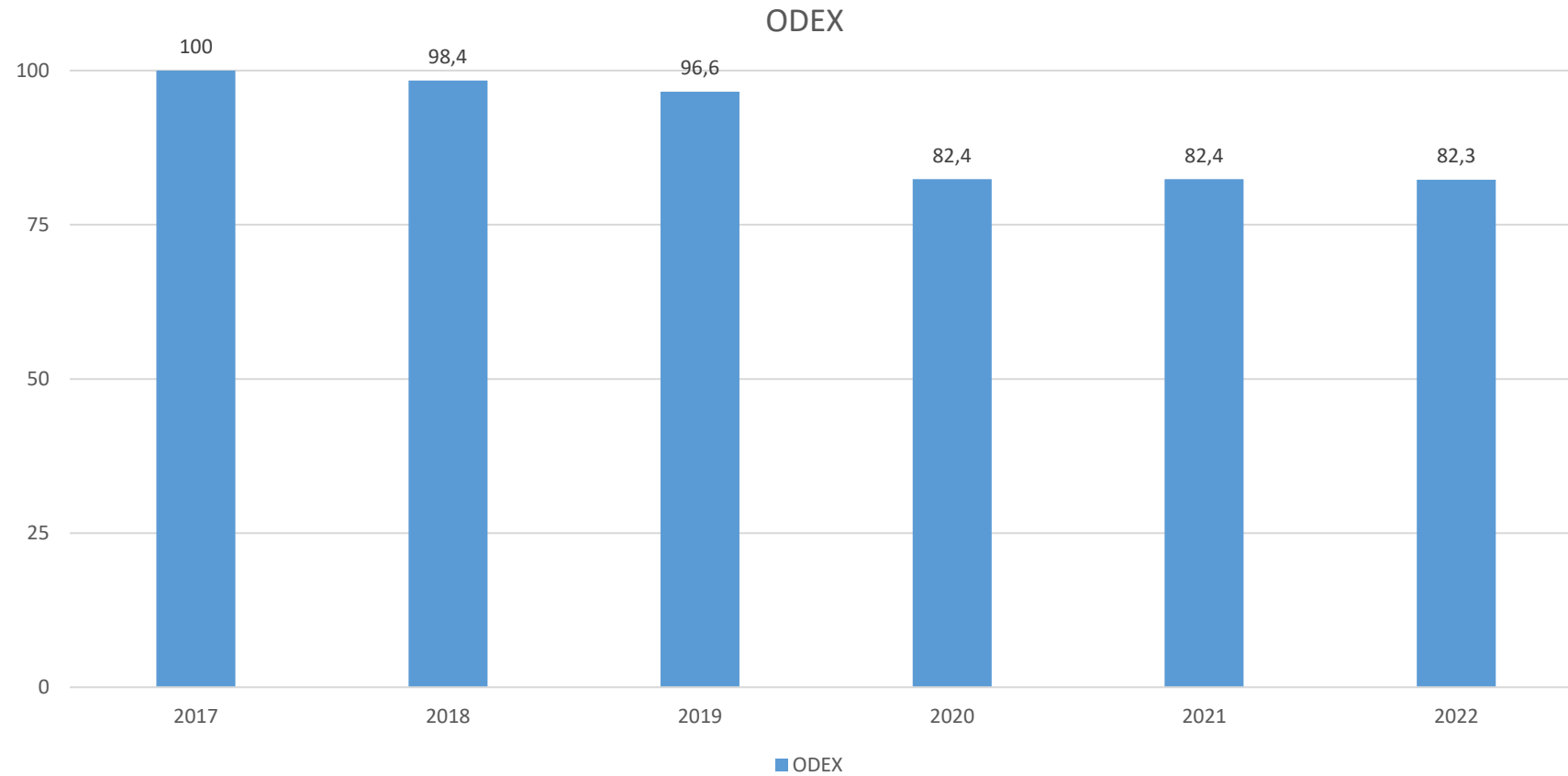
- For the transport sector, the ODEX (Energy Efficiency) is calculated out at the level of 8 modes or vehicle types: cars, trucks, light vehicles, motorcycles, buses, total air transport, rail, and water transport. The overall energy efficiency index aggregates the trends for each transport mode in a single indicator for the whole sector.

ODEX number - calculation

The calculation of ODEX number depends on the transport mode. In the case of Montenegro,

- For road, it is calculated using the consumption per car-equivalent this is an alternative methodology we use in case there is no data per type of vehicle in order to have an indicator that is consistent and not influenced by changes in vehicle stock structure (i.e. % of cars, % of trucks, etc. in total stock)*
- For trains, it is calculated by using consumption per ton-km hauled (which mixes passengers and goods)*
- For international air transport, it is calculated using consumption per passenger.*

ODEX



Energy efficiency has improved by 18.8% between 2017 and 2022

Thank you for your attention!

<https://www.odyssee-mure.eu/>