Beyond Best Practices Policy Brief

Closing the passenger transport gap in Lithuania

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Transport emissions in Lithuania have risen since 2000, driven primarily by high rates of motorisation and an older, more polluting passenger car fleet. Policies remain contradictory, and investments are not yet at the level required to decarbonise and electrify the transport system. At the national level, investments should be made much more strategically to support electrification of transport. Decision-making for projects and policies should seek to eliminate inefficiencies and contradictory goals. National developments should be supported by decisive action at the municipal level to develop cities of short distances, enabling active modes of transport and electromobility while working to shift personal attitudes and behaviours towards sustainable mobility.

[1] Ed. Climate Analytics, authors are solely responsible for content.

Introduction

Despite the decline in overall greenhouse gases (GHG) emissions in Lithuania since 1993 (**Figure 1, left**), emissions from transport sector continue to increase, growing around 50% over the last 15 years (**Figure 1, right**). GHG emissions from road transport has the highest share (**Figure 2**) and passenger cars account for a significant share of all passenger transport emissions (**Figure 3**). The number of passenger cars continues to increase, despite a declining population. Additionally, the share of cars that do not comply with quality standards is still significant, and the average age of a car is 15 years.[2]

Figure 1 Lithuania total GHG emissions 1993-2019[1] (left) and transport emissions 1990-2019[3] (right)

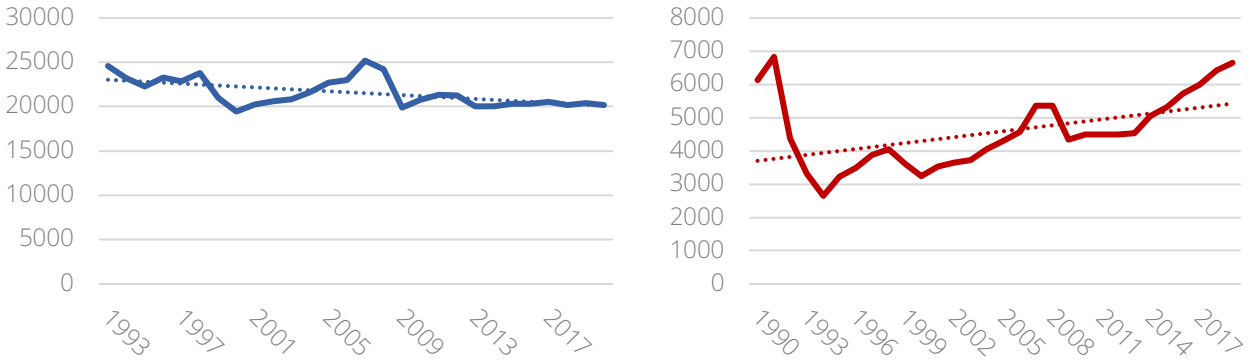

Figure 1 GHG emissions in Lithuania (ktCO₂e; excl. LULUCF).

Under the Effort Sharing legislation,[4] Lithuania is obligated to reduce GHG emissions by 9% compared to 2005 by 2030 in sectors not covered in the European Union Emissions Trading System (EU ETS; agriculture, transport, waste management, industry, households and others). The increasing emissions trends in the transports makes it challenging to reach this goal.

[2] REGITRA, "Open Data | REGITRA," 2023, https://www.regitra.lt/en/opendata/.
[3] Republic of Lithuania, "Lithuania's National Inventory Report 2022: Greenhouse Gas Emissions 1990-2020" (Vilnius, 2022), https://am.lrv.lt/uploads/am/documents/files/Klimato_kaita/NIR_2022%2003%2015%20FINAL.pdf
[4] European Parliament and Council of the European Union, "Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on Binding Annual Greenhouse Gas Emission Reductions by Member States from 2021 to 2030 Contributing to Climate Action to Meet Commitments under the Paris Agreement and Amending Regulation (EU) No 525/2013," 156 OJ L § (2018), http://data.europa.eu/eli/reg/2018/842/oj/eng.

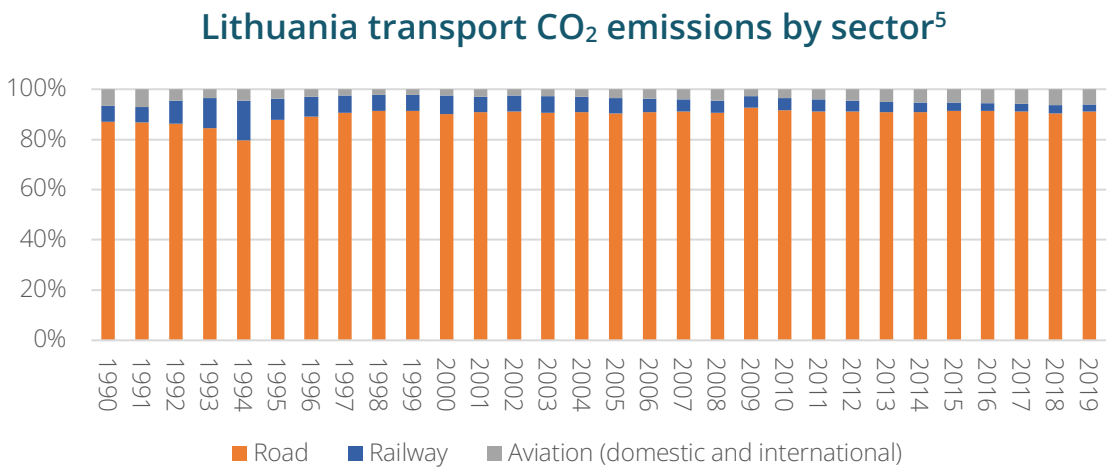

Figure 2 CO_2e emissions distribution between the road, railway and aviation sectors.

The Lithuanian government's efforts to change the situation in terms of GHG reductions have not yielded a tangible result yet. Emissions modelling shows that with the currently implemented measures in sectors not participating in the EU ETS during 2021-2030 period, Lithuania is not on track to meet its obligations. It is estimated that between 2021-2030 Lithuania may lack about 9 million emissions allocations, mainly due to the increasing amount of GHG emissions in transport and agriculture.

In order to achieve recently established 55 percent GHG emission reduction until 2030 and the climate neutrality goal under the "Fit for 55" package, Lithuanian GHG emissions from the sectors covered by the Effort Sharing Regulation will have to decrease by 21% by 2030 compared to 2005.

The GHG emission figures presented above show clearly, that in order to achieve GHG emission reduction targets the focus has to be on the use of passenger cars. Passenger cars play a vital role in commuting. Estimations made by EUROSTAT and the Joint Research Centre show that the annual distance driven by passenger cars in Lithuania is growing.[6] The share in total number of person kilometres (pkm) per capita increased from 74% in 2000 to 78% in 2019 considering all modes of passenger transport.[7] This indicates the need to address personal car usage first and to take urgent measures to change negative trends in order to achieve GHG emission reduction targets in transport sector. Only well-balanced strategies and proper measures could lead to achieving these goals.

[5] Republic of Lithuania, "Lithuania's National Inventory Report 2022: Greenhouse Gas Emissions 1990-2020."
[6] Eurostat, "Passenger Mobility Statistics," Eurostat, 2023, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Passenger_mobility_statistics.
[7] Detailed assessment of passenger transport trends is presented in Chapter 3 of the Lithuanian national technical report (Centre for Sustainable Development (Lithuania) and Climate Analytics, 2023).

Figure 3 share of road emissions by transport type

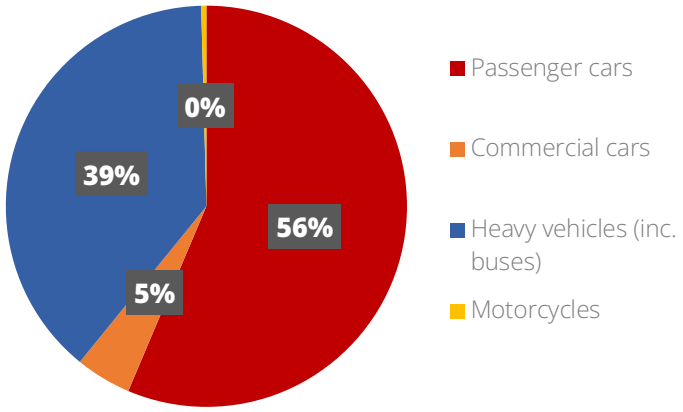

Figure 3 Share of CO_2 emissions from road transport in Lithuania by transport type, 2019. The Ministry of Environment

Contradictions within transport policy goals and insufficient streamlining with other sectorial policies should be evaluated and eliminated where possible.

The transport sector as any regulated economic sector is not exceptional with regard to raising conflicts between different policy goals. In order to avoid conflicts between different policies it is important always to set up priorities, to secure continuity of political orientation and to apply cost-benefit principles and evaluate any ecological footprint when designing programmes and plans of measures.

For example, increased road mobility usually conflicts with environmental protection goals. Investments in improvement of road infrastructure often results in increased number of vehicles on the road and their speed. If this improvement also leads to transition from public transport to passenger car, then it may initiate a vicious cycle of higher dependency on private cars and higher transport emissions.

Rational transport policy should consider these aspects and try to balance both increased emissions and the attractiveness of car use through reciprocal measures: limiting parking spaces, adding pollution taxes, supporting alternative transportation means or the purchase of less-polluting cars. Efficient car parking management and introduction of Low Emission Zones (LEZs) on the one hand, and improvement of public transportation and walkability on the other, together with an applied “polluter pays principle” on the road in a form of road charge could be an effective set of measures to combat transport pollution and GHG emissions.

In many cases, funding of transport projects results in contrary results. Simultaneous investments are put into developing infrastructure to achieve higher speeds on parallel railway and motorway sections which connect the same points; or into development of

the Vilnius airport and RailBaltic despite studies[8] clearly showing existing competition between these transport modes and a shortage of railway ridership. Big supermarkets are developed in the vicinity of city centres with heavy transport corridors that eliminate pedestrians and reduce motivation to use public transport to reach the site, and urban densification is being continued by reducing car parking lots and creating areas for sustainable mobility at the same time.

Sustainable Urban Mobility Plans (SUMPs), being strategic documents dedicated to improve mobility for a better quality of life in cities, are not fully integrated into spatial planning documents. Furthermore, they are based on existing planning standards and societal preferences which are not compatible with sustainable mobility policies in some cases. Therefore, new transport junctions and corridors are often developed in contradiction to sustainable mobility principles, for example cars still have priority in many intersections in walking zones. Additionally, many development projects still organize their transport systems exclusively based on cars. Unfavourable and poorly managed urban development in city outskirts, driven by lower land prices and the pursuit of a better quality of life, further increases the need to use cars and worsens living conditions in the city. The lack of social infrastructure in the residential areas of biggest cities also significantly contributes to car dependency.

SUMPs do not however address climate change issues head-on. Some measures that form the SUMPs even have an opposite effect as priority is given for less sustainable modes of transportation, deepening the conflict with climate policy goals. Being an important policy tool, SUMPs must be revised to make them more sustainable and letting them contribute to GHG emissions reductions targets. The new European Urban Mobility Framework will help to make SUMPs more targeted and climate change policy oriented.

Lithuania has different national and local level medium- and long-term plans or policy documents addressing different economic sectors and policy goals and objectives. Compatibility between these goals is often challenging to ensure. Proposed economic stimulus instruments and even economic development directions sometimes contradict efforts to reduce GHG emissions. Other interests representing institutions on national as well as local level often hamper incentives and measures to encourage sustainable mobility. Continuous evaluation of sectorial policies in terms of sustainability and climate change would allow for further monitoring of the situation and identifying conflict areas and possible trade-offs.

[8] European Court of Auditors, “EU Transport Infrastructures: More Speed Needed in Megaproject Implementation to Deliver Network Effects on Time” (Luxembourg: European Court of Auditors, 2020), https://www.eca.europa.eu/Lists/ECADocuments/SR20_10/SR_Transport_Flagship_Infrastructures_EN.pdf.

Passenger transport electrification is an important step towards decarbonization goals, but it requires huge investments into infrastructure and renewables in the short-term.

Passenger transport electrification is essential for meeting decarbonization goals. However, high upfront costs prohibit rapid transition from fossil fuels to electricity. Moreover, Russian invasion of Ukraine and the ensuring energy crisis led to a drastic increase of electricity prices. Slightly improved 'NordPool' electricity exchange rules and further development of wind and solar energy production is changing the situation and makes transport electrification a promising option to decarbonise the sector.

Municipalities can play a crucial role in support of electric mobility by enabling infrastructure development. Considering further public transport development municipalities should focus on maintenance and expansion of already existing infrastructures. Vilnius and Kaunas, the two largest cities in Lithuania, have always had trolleybuses account for around half of their fleets. Due to longer lifespan and cheaper exploitation, trolleybus prime costs calculated per passenger are consistently lower than that for diesel busses. Orientation towards a rapid bus system, which has been put in competition with outdated, slow-moving trolleybuses and the current sharp increase of electricity prices, changed this ratio to the disadvantage of trolleybuses. However, maintenance of a well-developed network of trolleybuses is likely the economically better option in the long run, particularly when accounting for the externalities of diesel buses such as air pollution and public health impacts.

Also, it is important to note that reduction of passenger car mileage just by 3-4% (by applying non-fiscal measures like stronger parking policy, introducing LEZs and others) would give a better effect in terms of GHG emissions reduction than making all public transport vehicles electric. Therefore, the above measures should be considered when revising SUMPs.[9]

On the national level, governmental subsidies are available for the purchase of electric cars, including a EUR 5000 payment for the purchase of a new one electric car (EV) and a payment of EUR 2500 when purchasing a used electric car not older than five years. Purchases should continue to be subsidised, until 10 percent of all cars will become electric. Additionally, subsidies for purchasing solar panels and car charging installations at home have been made available.

Lithuania has a poorly developed charging infrastructure for intercity trips using EVs. There are some incentives to improve the situation, as absence of available EV charging points reduces acceptability of electric vehicles. Also, existing spatial planning requirements significantly complicate installation of private charging points in the blocks of apartment buildings. There is a need for simplification of spatial planning procedures and reduced decision-making procedures. Support for EVs and the

[9] Suggested measures are described in further detail in the Lithuanian national technical report (Centre for Sustainable Development (Lithuania) and Climate Analytics, 2023).

maintenance of charging points creates the significant financial burden for the state and should be passed to the private sector at some point, while maintaining the possibility of regulation until sufficient service market will form.

Public procurement also could be a very effective tool for catalysing the ramp-up of markets for electrified transport solutions, particularly for EVs. But current Lithuanian green procurement requirements are too flexible. It is forecasted that green procurement requirements might help to achieve 60 percent share of so called "clean vehicles" (commercial and passenger car categories) and 8 percent of "clean" buses until the end of 2025.[10] "Clean vehicles" in general are understood as vehicles that use alternative fuels. The Law on Alternative Fuels describes compressed or liquefied natural gas (CNG, LNG) as an 'alternative fuel', and CNG or LNG fuelled vehicles would be accounted as "clean vehicles", therefore the significance of current green procurement in fostering transport electrification is questionable. Additionally, the legal definition of 'alternative fuels' should be reconsidered.

Prioritisation of measures is important to reach set goals on time. Priority should be given for most cost-efficient measures. Planned electrification of railway is important measure but considering the railway GHG emissions share (only about 3% from the total transport emissions)[11] its importance is highly overestimated in the short run. In addition, financial investments needed per reduced CO_2e unit far exceeds other measures. It is planned to electrify no less than 35% of the Lithuanian railway network.[12]

More effort is needed to change personal attitudes and behaviour towards sustainable mobility habits.

Personal transportation is an area where behaviour change is an extremely difficult task. A privately-owned car has many advantages compared to public transport and even to car sharing alternatives. It allows personal control over the situation, and for individuals to be more independent. Rising incomes made cars more affordable, and allowed people to move to suburbs, becoming critical for daily needs. Also, a car is perceived as a better option to travel in most cases. Even if public transport might offer a better choice in some specific cases (e.g. night train travel for a long distance), a car is mostly considered as the primary option due to formed habits and the pleasure of driving.

Driving a car is important for people in general also because it denotes higher perceived social status. Psychological attitudes play important role in choosing mobility

[10] Republic of Lithuania, "National Energy and Climate Action Plan of the Republic of Lithuania for 2021-2030" (Republic of Lithuania, European Commission, 2019), https://energy.ec.europa.eu/system/files/2022-08/lt_final_necp_main_en.pdf.
[11] Climate Analytics, "Transport Emission Disaggregation Tool (TEDiT)," TEDiT, 2023, https://tools.climateanalytics.org/tedit/.
[12] Republic of Lithuania, "Decision on the National Climate Change Agenda of Lithuania," 2021, https://unfccc.int/sites/default/files/resource/National%20Climate%20Change%20Management%20Agenda%20of%20Lithuania%20%28Lithuanian%29.pdf.

preferences and this aspect should not be ignored. Integrated approaches to providing transport alternatives and should be supported by targeted policies to achieve some changes in this area. They should be based on personal, subjective factors, such as attitudes, social norms or knowledge.

Considering uneven population distribution, in terms of behavioural change the focus should be given to cities and towns, where citizens directly experience all the negative consequences of traffic, noise or air pollution but cities could have better alternatives to private cars due to higher population densities. Measures need to be targeted and differentiate between different population groups in order to fully address the individuals' needs in a satisfactory manner. Public transport, cars, two-wheelers and bicycle sharing and even car rental options usually can be an appropriate alternative given certain conditions, and purposeful consultation with the citizens could allow policymakers to identify what has to be improved and what limitations are for a broader utilisation of clean transport alternatives. Therefore, municipalities should have resources allocated for this continuous work with citizens.

Urban sprawl usually creates conditions where alternatives for private car usage are rather limited. Even in this case some specific measures like combined bike-bus trips could be introduced. Currently, safe parking spots for bicycles near train and long-distance bus stations are lacking. Of course, it should be supported with relevant infrastructure (bicycle parking spots, safe bike lanes) and permanent allocations for maintenance. Such bikes could even be rented and maintained as a part of city transport infrastructure.

Even those who are commuting between the cities might have convenient alternatives. Buses and trains are already adapted to carry bikes, but ticketing policy sometimes is not supportive of multimodal mobility. Often, trains are not incorporated in the city's public transport scheme and residents cannot yet to use several modes of transport with one ticket.

The Vilnius municipality efforts to humanise residential areas in central and adjacent parts of the city caused a huge negative reaction from citizens. While the reduced number of parking places and narrowed carriageway freed up more space for pedestrians, cyclists and greenery, these changes were mostly met with great displeasure from residents' side. The concept of the "walkable city" is still not welcomed by citizens and perceived more as a measure to restrict car usage than to support pedestrians and cyclists. The situation clearly shows the lack of publicised success stories and the prevailing negative information environment supporting negative public opinion.

Shifting people towards sustainable modes of transport, such as walking or cycling or public transport, needs time. It must be accepted as a gradual process for individuals and communities. The individual needs time to understand whether an alternative is personally beneficial in terms of costs and convenience. If they are used to driving a car, then it is difficult to expect positive reaction. The greater share of private cars users, the

larger resistance to the change. There are however a lot of people who benefit from sustainable mobility changes, especially seniors and youths. It is crucial to make their positive experiences heard. If only negative experiences prevail in the discourse, then it is difficult to expect desired behavioural changes or acceptance at least.

The walkable city is not about restricting mobility. Here priority is to provide and offer local infrastructure opportunities to inhabitants in such a way that the number of unnecessary daily car trips is minimised. This city model supports less dependence on individual car transport, lower GHG and particle emissions, and correspondingly, a healthier environment. A walkable city leads to reduced expenses for transportation and therefore leaves more savings for other needs. All the above positive factors contribute to the regeneration of urban vitality, an overall higher quality of life and the creation of favourable conditions for increased economic and commercial activity. In other words, conditions are created for sustainable development, based on combined economic, social and environmental elements.

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