

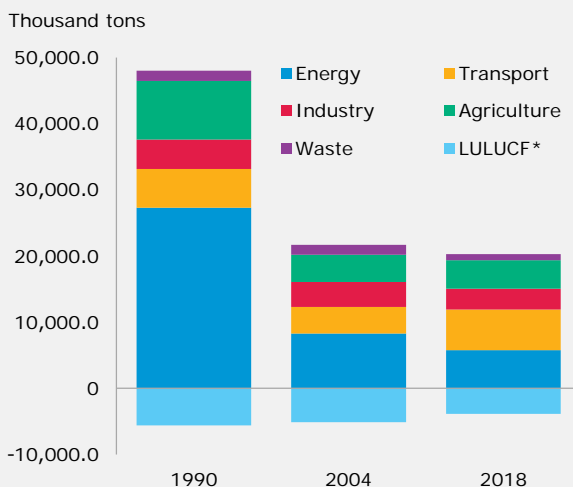
BOX 1

CLIMATE CHANGE PROBLEMS AND POTENTIAL WAYS TO ADDRESS THEM IN LITHUANIA

Rapid global climate change has been increasing the probability of materialisation of physical risks to the economy and the financial system. The average global air temperature has already gone up by approximately 1 degree, compared to the levels observed before the onset of the industrial revolution, as a result of the rising concentration of GHG in the atmosphere.² Although the Paris Agreement of 2015 consolidated the objective of keeping the average global temperature rise well below 2°C compared to the pre-industrial levels, the estimates indicate that current policies may lead to an increase by more than 3°C by the end of the century.³ The rise in the atmosphere's temperature poses a threat of extreme weather conditions, which may cause significant damage to the global economic infrastructure, production capacity and agricultural productivity, disturb global production and supply chains as well as result in losses for insurance undertakings, credit institutions and investors. Governments may be forced to use a large amount of resources to mitigate climate change consequences and support those most affected by them, which could in turn lead to lower financing of public services and heighten the need to increase taxes or borrowing. This could also raise social challenges: for example, with a 5°C rise in global air temperature, the number of asylum applications in the EU could increase on average by 175%.⁴

The greatest progress in reducing GHG emissions was achieved in the first decade of Lithuania's independence.

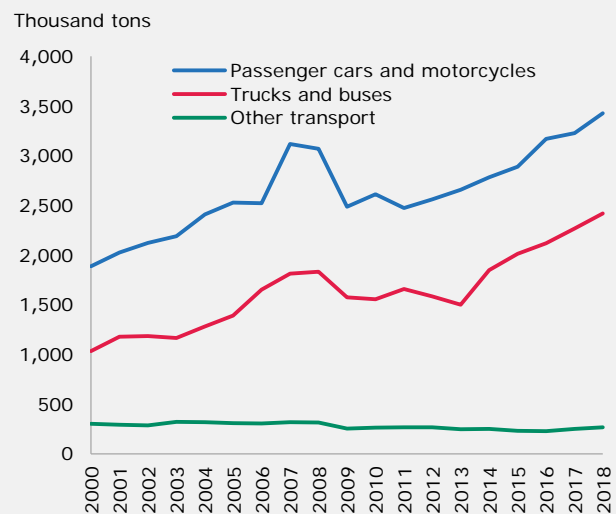
Chart A. Annual GHG emissions in Lithuania by source



Sources: Eurostat and Bank of Lithuania calculations.
*Land use, land-use change and forestry sector – negative values indicate GHG absorption.

In recent years, GHG levels generated by road transport have been growing at a particularly rapid pace.

Chart B. Evolution of annual GHG emissions in the Lithuanian transport sector



Sources: Eurostat and Bank of Lithuania calculations.

The escalating threats determine the need to accelerate the reduction of GHG, and Lithuania will not be an exception as well. Transitioning to a climate-neutral economy is becoming a EU priority. Last year, the EC announced the European Green Deal, which establishes the objective for Europe to become a climate-neutral continent by 2050. The EC will also aim to increase the objective of reducing

² IPCC (2018). Global Warming of 1.5°C, Special Report. The Report can be found [here](#).

³ Climate Action Tracker (2019). More information can be found [here](#).

⁴ Missirian, A. and Schlenker, W. (2017). Asylum applications respond to temperature fluctuations. *Science*, 358(6370), 1610–1614. More information can be found [here](#).

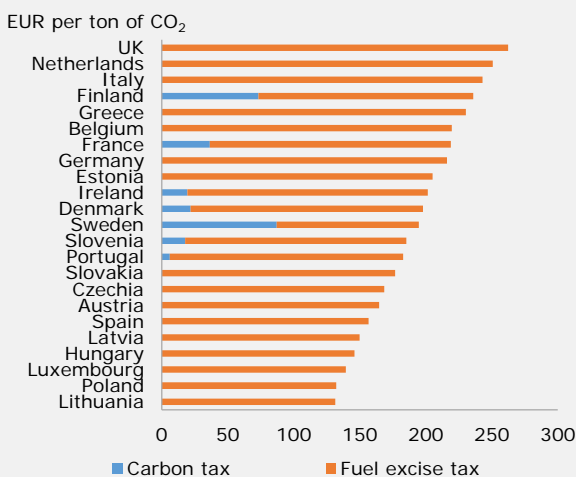
GHG emissions by 2030 from the current 40% to 55% (as compared to 1990). Currently, Lithuania has assumed an obligation to reduce GHG emissions produced by the sectors not participating in the EU ETS by 9% (compared to the levels of 2005). However, GHG emission trends in Lithuania signal that it will not be an easy task. Although since the restoration of Lithuania's independence GHG emissions declined by more than half (mainly reflecting the fall of emissions in the energy and agriculture sectors), no substantial progress has been achieved since 2000.

A rapid increase in transport sector emissions contributed to Lithuania's weak progress in reducing total GHG emissions.

During the period from 2004 to 2018, GHG emissions in the sector rose by 53% (see Chart B) and accounted for one-third of the country's total emissions. Such rapid growth was probably underpinned by the increased number of private cars that are relatively old and produce high pollution (the average age of passenger cars in the country is 15 years⁵), intensive traffic (e.g. in 2017, the number of people using public transport in Lithuania was the lowest in the EU, reaching only around 9%, whereas the EU average stood around 17%) and particularly rapid growth of the cargo transportation sector. GHG emissions, excluding the transport sector, declined by 20% in 2004–2018, which was determined by the fall in GHG emissions in the energy, waste management and industrial sectors, whereas agricultural GHG emissions remained broadly unchanged during the said period. Agriculture generates around one-fifth of the country's total GHG emissions. The fact that there is still much room for the reduction of GHG emissions is reflected by the high GHG intensity indicator – GHG emissions to create one euro of value added in the country are 2.3 times higher than the EU average. Particularly high GHG intensity, compared to the EU average, is observed in the transport, agriculture, water supply and waste management sectors (see Chart D). Moreover, in 2008–2018, the decline of GHG intensity in Lithuania was least pronounced across the EU, amounting for a meagre 9%, whereas the EU average at the same time reached 25%.

In Lithuania, taxation of road emissions is one of the lowest in Europe.

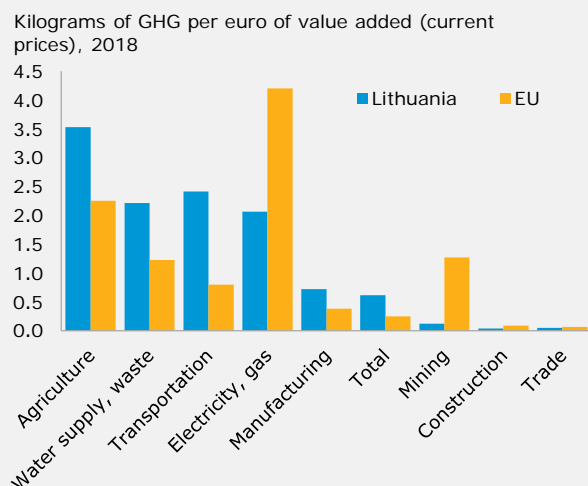
Chart C. Average CO₂ and fuel excise tax rates on road emissions in 2018



Source: OECD Taxing Energy Use 2019: Taxes for Climate Action.

GHG intensity in Lithuania is higher than the EU average in terms of most activities.

Chart D. GHG intensity by economic activity



Source: Eurostat.

Fiscal measures may play a prominent role in meeting the obligations to reduce GHG emissions, especially if the latter are set to be further tightened.

Taxation of emissions is considered to be the most effective way to reduce pollution⁶, however, this possibility is not sufficiently

⁵ National Energy and Climate Action Plan of the Republic of Lithuania for 2021–2030.

⁶ IMF (2019). Fiscal Monitor: How to Mitigate Climate Change ([online source](#)).

used in Lithuania. CO₂ is usually subject to a fossil fuel tax, imposed in proportion of its generated CO₂ emissions, or is taxed through CO₂ cap-and-trade systems. One of the examples of such mechanisms is the EU ETS. However, due to its complexity, not all EU companies are required to become its participants, thus only around 45% of generated CO₂ emissions are taxed through this system in the EU⁷. The EU ETS covered only roughly 30% of Lithuania's GHG emissions in 2017.⁸ For this reason, some EU countries also apply CO₂ taxes. Contrary to public investment or emissions regulation, such corrective taxes generate double dividends, as they not only correct market failures, but also generate tax revenue and, therefore, reduce the need for revenue from taxes that tend to be more harmful to the economy. Despite its possibilities, Lithuania does not have a separate CO₂ tax and, even taking into consideration the applicable fuel excise tax, applies some of the lowest taxation rates on road CO₂ emissions in the EU (see Chart C). Higher acceptance of emission taxes by the public and success in their implementation could be supported by the application of compensatory mechanisms to the most sensitive social groups, reduction of taxes that subdue economic activity (e.g. labour taxes), as well as a gradual and expected increase in emission taxes. To achieve climate objectives, it is important that Lithuania not only increases CO₂ taxes, but also waives currently applied tax exemptions for fossil fuel, e.g. the reduced excise duty on diesel used in the agricultural activity or the preferential VAT rate on heat energy.

Fiscal policy stimulus provides the pandemic-hit countries not only with a possibility to boost their economies, but also to set economic transformation on a climate-friendly path. In addition to its high multiplier effect, investment in clean physical infrastructure, energy efficiency of buildings, education, natural capital as well as environment-conducive scientific R&D⁹ has a positive impact on climate as well.¹⁰ The Plan for the DNA of the Future Economy, proposed by the Lithuanian government, with an overall envelope of €927 million, i.e. almost 15% of the total funds planned, aimed for investment in climate change mitigation and energy instruments in 2020 and 2021. The economic stimulus package agreed by the EU leaders in July may have an even greater impact on the economy and the implementation of climate objectives. The package envisages allocation of at least 30% of the total funds of the multiannual financial framework (€1,074.3 billion) and the Next Generation EU instrument (€750 billion) to implement the EU climate objectives.¹¹

It is of high importance for Lithuania to channel these funds to the activities where the largest reductions of GHG emissions could be achieved. However, transition risks must also be managed. For example, investment in modern clean public transport, green private vehicles and expansion of the necessary infrastructure could reduce the transport sector's dependence on fossil fuels as well as lower the level of GHG emissions. Climate-friendly investment, e.g. in the development and expansion of clean energy technologies and production of related products, the demand for which will grow in the future, could not only help Lithuania address climate change problems, but also facilitate the rise of the domestic economy in the value chain. However, it is also important to manage risks stemming from the transition to a greener economy, for example, an increase in structural unemployment and geographical differences in economic development. Therefore, a plan for the transition to a climate-friendly economy must be prepared and implemented as soon as possible, by identifying employees and regions that could be highly affected by such transformation, envisaging compensatory mechanisms, ensuring effective retraining of labour and job creation in climate-friendly activities. Such preparation is crucial for ensuring public support and the successful implementation of climate policies.

⁷ IMF (2019). Fiscal Monitor: How to Mitigate Climate Change ([online source](#)).

⁸ EC, Country Fact Sheet: Lithuania. More information can be found [here](#).

⁹ In low- and medium-income countries, investment in rural areas, e.g. sustainable agriculture, renewal of ecosystems and the use of clean energy equipment, also plays an important role.

¹⁰ Hepburn, C., O'Callaghan, B., Stern, N. Stiglitz, J. and Zenghelis, D. (2020). Oxford Review of Economic Policy, 36(S1). The Review can be found [here](#).

¹¹ EC, Conclusions of the special meeting of 17–21 July 2020 ([online source](#)).