Lithuania

Progress in the net zero transition

EMISSIONS		
2018 OECD average: **11.5 tCO₂e/capita**	**2018 Lithuanian average:** **7.2 tCO₂e/capita**	**EU target:** **net zero GHG emissions by 2050**

Large regions (TL2)

Figure 1. Estimated regional greenhouse gas emissions per capita
Tons CO₂ equivalent (tCO₂e), large regions (TL2), 2018

tCO2e per capita
0-10
10-50
50+
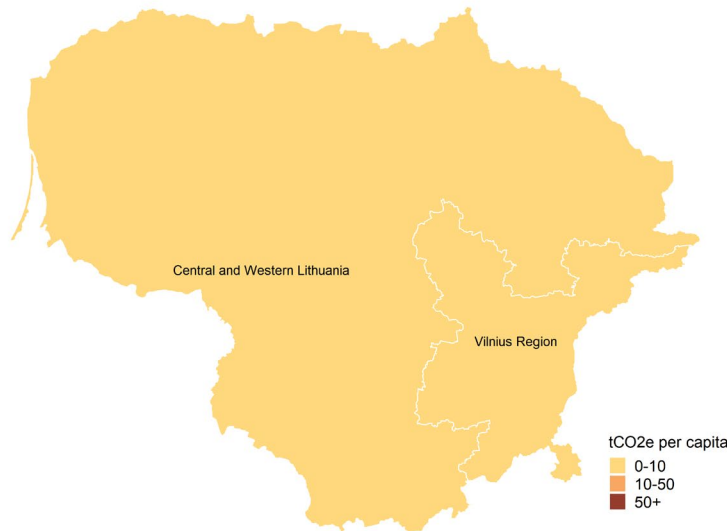
Greenhouse gas (GHG) emissions per capita generated in all Lithuanian large regions are below 10 tCO₂e per capita, and thus below the OECD average.

Estimated emissions per capita in Central and Western Lithuania are more than double those in Vilnius.

Small regions (TL3)

Figure 2. Contribution to estimated GHG emissions
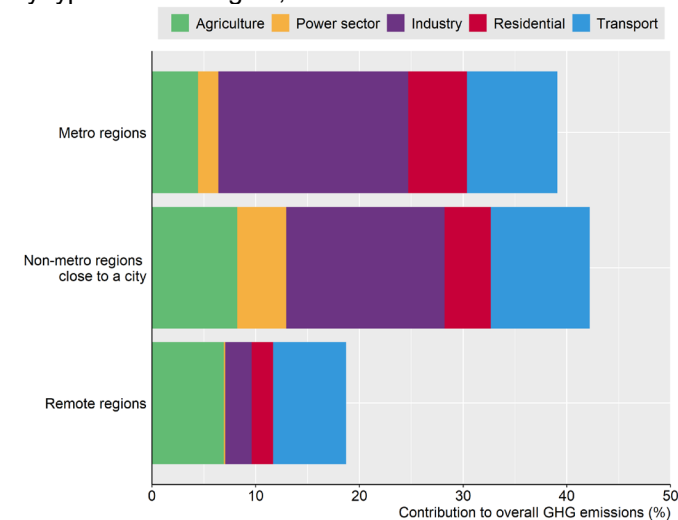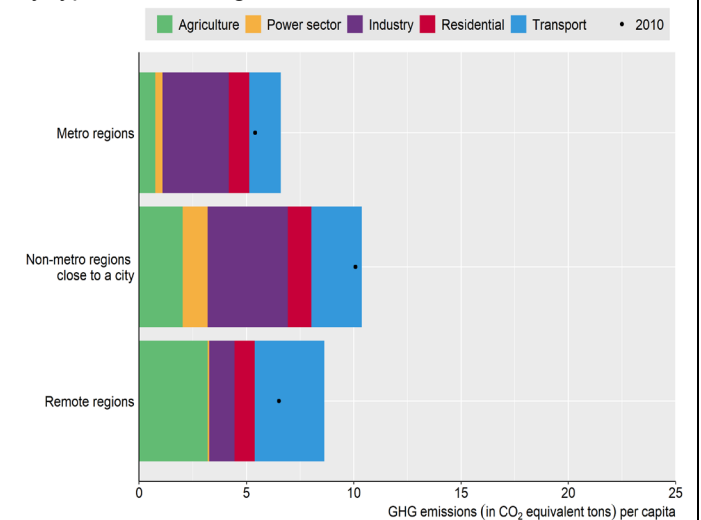By type of small region, 2018

### Figure 3. Estimated GHG emissions per capita
By type of small region, 2018

In Lithuania, metropolitan regions emit more than remote regions, while remote regions have slightly higher emissions per capita.

ENERGY

Lithuanian electricity mix

Figure 4. National electricity generation by energy source in 2019

| Coal | Oil | Hydro | Wind | Solar | Other |

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
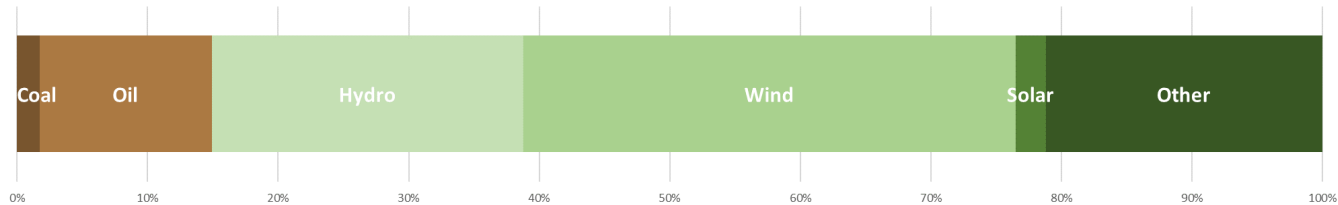
Share of coal-fired electricity generation

2019 OECD average: 23%	**2019 Lithuanian average: 2%**	**2030 well below 2°C benchmark for the EU: <2%**
		2030 1.5°C benchmark for OECD countries: 0%

Figure 5. Regional coal-fired electricity generation estimates
Per cent of total electricity generation, large regions (TL2), 2017

Central and Western Lithuania

Vilnius Region

Share of coal-fired electricity
Zero coal
between 0% and 25%
between 25% and 50%
between 50% and 75%
between 75% and 100%

According to the IEA, Lithuania uses coal for 2% of electricity generation. The regional estimates did not pick up on any coal-fired electricity generation capacity. No new capacity is planned or being build.

Wind power		
2019 OECD average: 8%	**2019 Lithuanian average: 38%**	**2030 well below 2°C benchmark for the EU: >29%**

Figure 6. Wind power potential
Mean wind power density (W/m^2)

Source: Map produced by The Global Wind Atlas

Solar power		
2019 OECD average: 3%	**2019 Lithuanian average: 2%**	**2030 well below 2°C benchmark for the EU: >14%**

Figure 7. Solar power potential
Global horizontal irradiation (kWh/m^2)
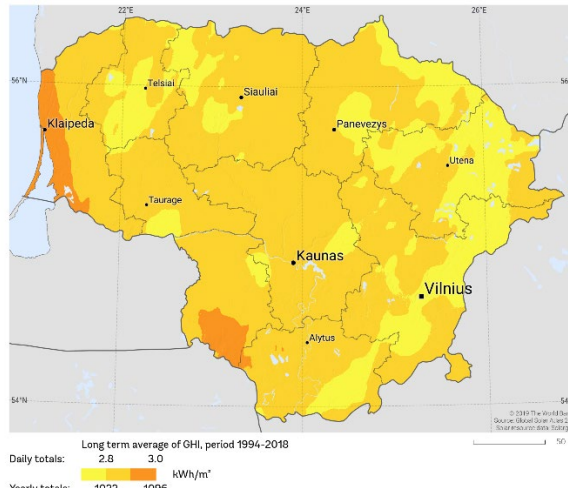
Source: Map produced by The Global Solar Atlas

Lithuania has achieved a high wind power share. Wind power density is highest offshore.

Benchmark notes: The well-below 2 degrees benchmarks show IEA Sustainable Development Scenario (SDS) numbers. The SDS models how the global energy system can evolve in alignment with the Paris Agreement's objective to keep the global average temperature increase well below 2°C above pre-industrial levels. According to the Powering Past Coal Alliance (PPCA), a phase-out of unabated coal by 2030 for OECD countries is cost-effective to limit global warming to 1.5°C.

Figure notes: Figure 4 shows data from the IEA (2020). Figure 5 shows OECD calculations based on the Power Plants Database from the WRI. The database captures electricity generation from the power plants connected to the national power grid. As a result, small electricity generation facilities disconnected from the national power grid might not be captured. See here for more details. Figures 6 and 7 show the power potential of solar and wind. Mean wind power density (WPD) is a measure of wind power available, expressed in Watt per square meter (W/m²). Global horizontal irradiation (GHI) is the sum of direct and diffuse irradiation received by a horizontal surface, measured in kilowatt hours per square metre (kWh/m²).

SECTORAL EMPLOYMENT RISKS

Figure 8. Employment in selected sectors which may be subject to employment loss by 2040 if emissions are reduced in line with the Paris climate agreement

Per cent of total regional employment, large regions (TL2), 2017
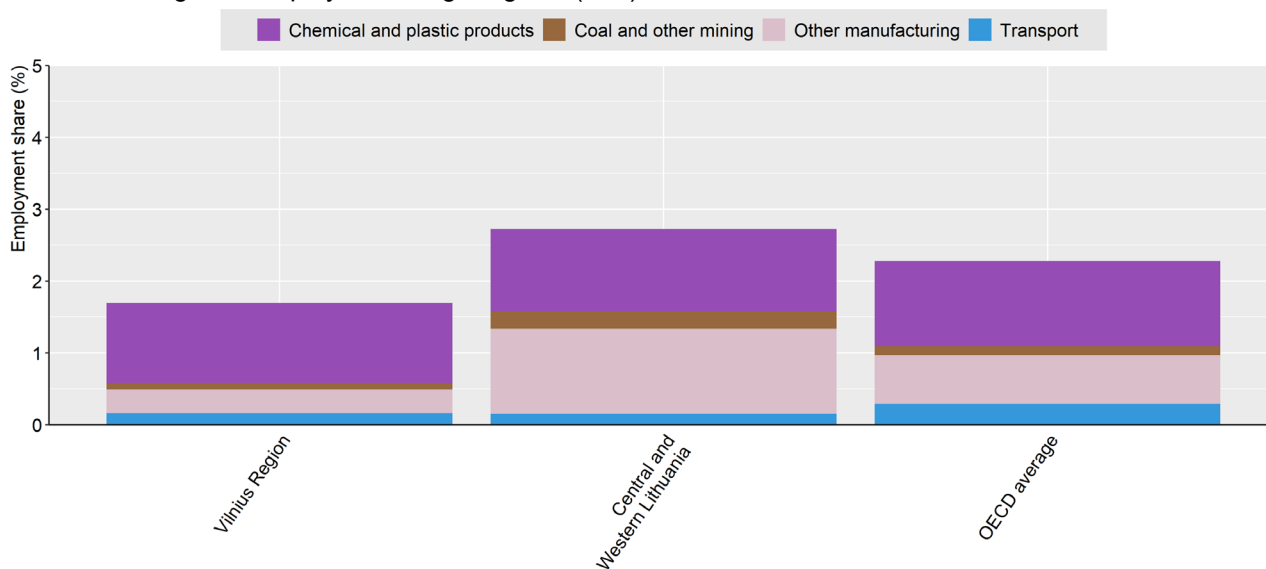
There will be both employment gains and losses due to the transition to net zero greenhouse gas emissions. They may not be distributed in the same way across regions. Employment in sectors that may be subject to some job loss by 2040 as a result of policies to reduce emissions in line with the climate objectives in the Paris Agreement amounts to less than 3% in all Lithuanian regions. Vilnius Region has less employment in these sectors than the OECD average. Central and Western Lithuania has a higher share, largely driven by chemicals and other manufacturing. The selection of sectors is broad and based on employment effects simulated across OECD countries (See Box 3.9 of the 2021 *OECD Regional Outlook*). It does not take specific local characteristics into account.

Figure notes: Figure 8 is based on data from OECD Statistics. Sectors are selected based on macroeconomic simulations of a scenario limiting global warming to well below 2 degrees. See Box 3.9 in the 2021 *OECD Regional Outlook* for more details.

TRANSPORT

Modal shift

Vilnius has a relatively poor public transport performance. For comparison, London (UK) has among the highest public transport performance scores. Inhabitants of the metropolitan area of London can on average reach 95% of the population living within 8 km in 30 minutes by public transport.

Figure 9. Public transport performance in 2018
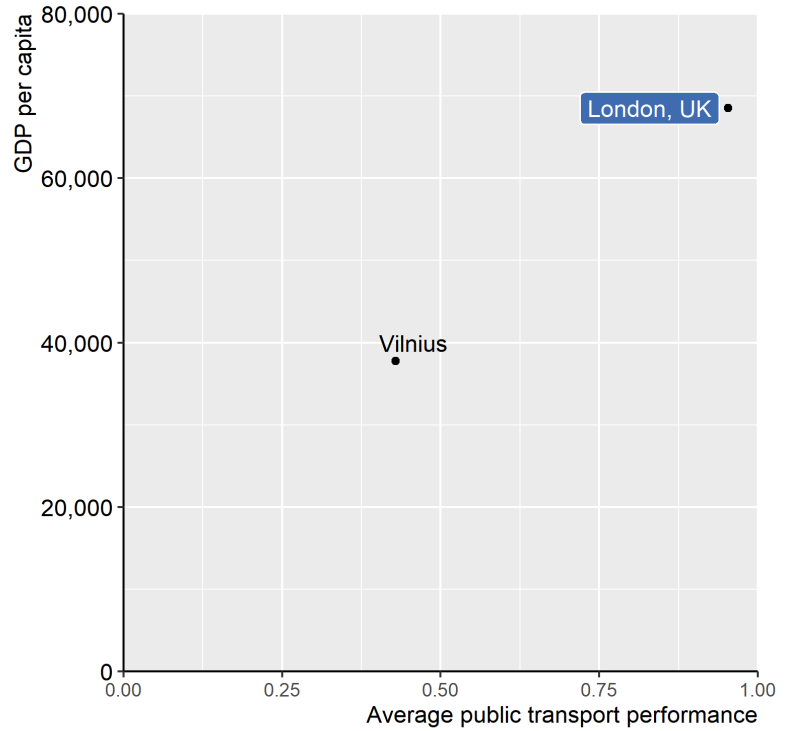
Benchmark notes: In the IEA's Sustainable Development Scenario, OECD countries (such as the European Union, Japan and the United States) as well as China fully phase out conventional car sales by 2040. This scenario is aligned with the Paris Agreement's objective to keep the global average temperature increase well below 2°C above pre-industrial levels. The UK Committee on Climate Change finds that all new cars and vans should be electric (or use a low carbon alternative such as hydrogen) by 2035 at the latest to reach net zero GHG emission targets by 2050. A more cost-effective date from the point of view of users is 2030.
Figure notes: Figure 9 is based on data from ITF and OECD Statistics. See Box 3.10 in the 2021 *OECD Regional Outlook* for more details. GDP per capita is expressed in USD per head, PPP, constant prices from 2015.
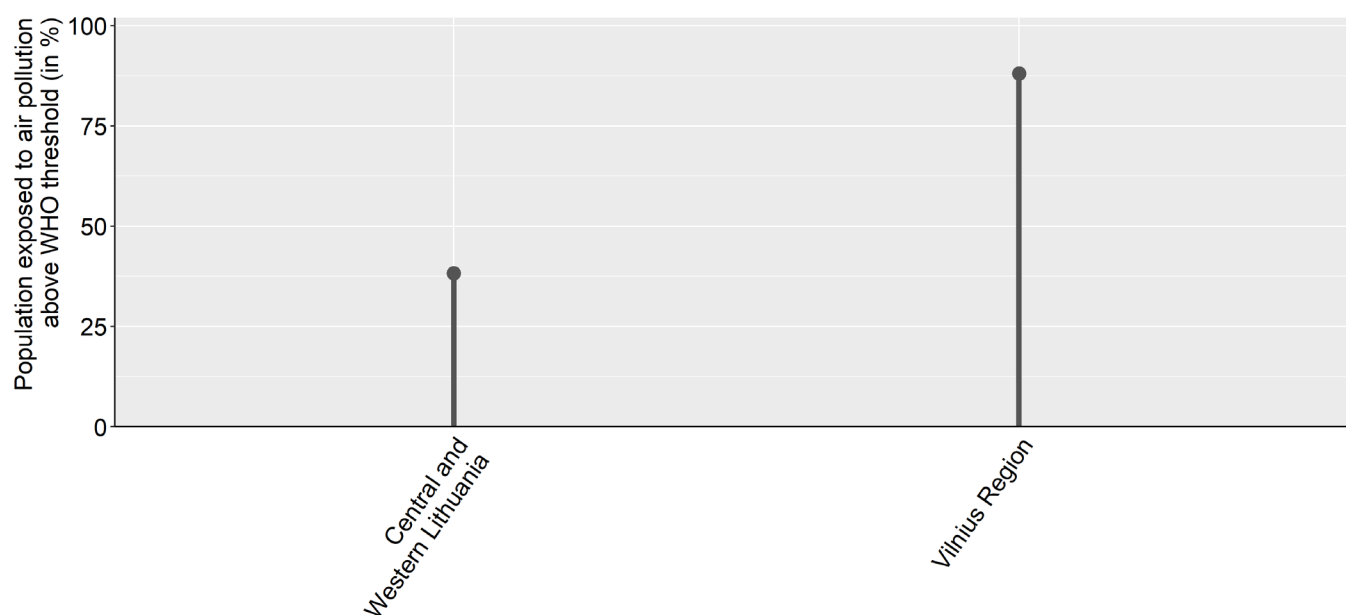
AIR POLLUTION

Large regions (TL2)

2019 OECD share of population exposed above the WHO-recommended threshold: 62%	**2019 Lithuanian share of population exposed above the WHO-recommended threshold: 52%**	**WHO-recommended air quality threshold: PM2.5 annual mean concentration < 10 μg/m³**

Figure 10. Share of population exposed to levels of air pollution above the WHO-recommended threshold

Percentage of population exposed to above 10 μg/m³ PM2.5, large regions (TL2), 2019

Policies towards net-zero greenhouse gas emissions can bring many benefits beyond halting climate change. They include reduced air and noise pollution, reduced traffic congestion, healthier diets, enhanced health due to increased active mobility, health benefits through thermal insulation, and improved water, soil and biodiversity protection. Some are hard to quantify.

Small particulate matter (PM2.5) is the biggest cause of human mortality induced by air pollution. Major disease effects include stroke, cardiovascular and respiratory disease. Air pollution amplifies respiratory infectious disease such as Covid-19. It affects children the most. It reduces their educational outcomes as well as worker productivity.

Figure notes: Figure 10 is based on data from OECD Statistics.