Regional Outlook 2021 - Country notes

Mexico

Progress in the net zero transition

EMISSIONS

2018 OECD average: 11.5 tCO_2e/capita	2018 Mexican average: 6.2 tCO_2e/capita	Mexican net zero target: No commitment yet

Large regions (TL2)

Figure 1. Estimated regional greenhouse gas emissions per capita

Tons CO_2 equivalent (tCO_2e), large regions (TL2), 2018

Greenhouse gas (GHG) emissions per capita generated in most Mexican large regions are below 10 tCO_2e per capita. Only Tamaulipas, Coahuila, Morelos and Durango have higher emissions per capita than the OECD average of 11.5.

Estimated emissions per capita in Durango are almost twelve times higher than in Mexico City.

Small regions (TL3)

Figure 2. Contribution to estimated GHG emissions

By type of small region, 2018

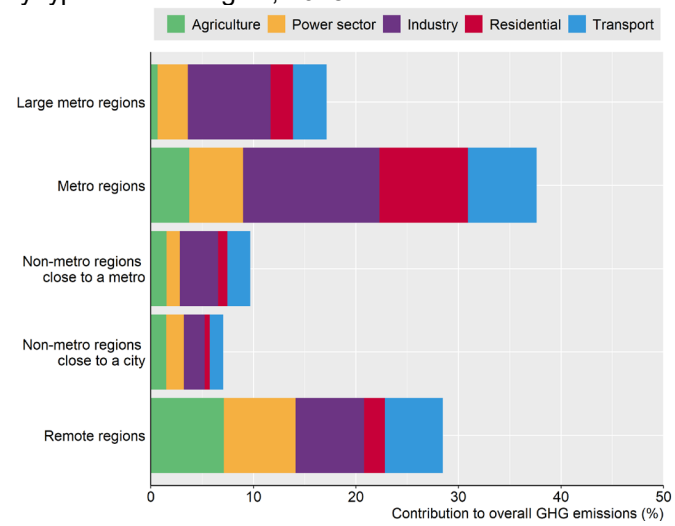
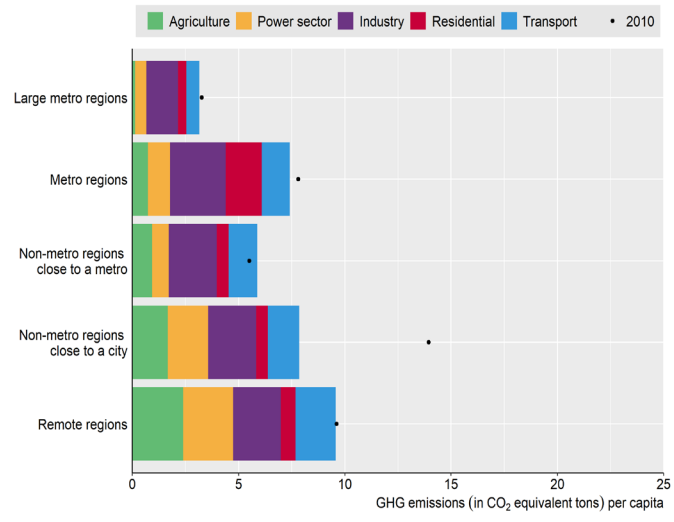


Figure 3. Estimated GHG emissions per capita

By type of small region, 2018



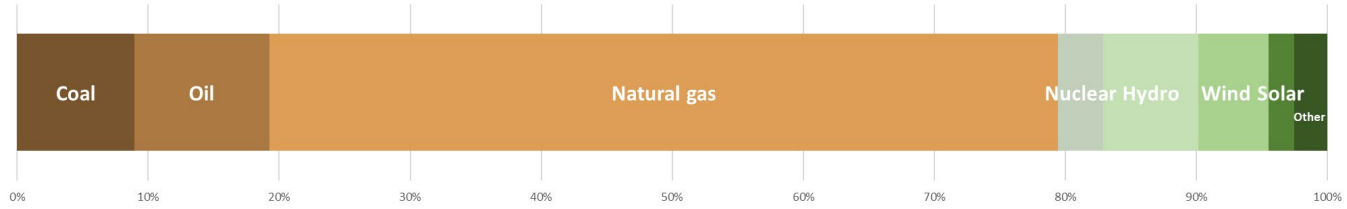
Across the OECD, metropolitan regions emit more greenhouse gases than rural regions, largely on account of high industrial emissions. In Mexico, this is similar.

Target notes: Country-level emissions targets included in the Net Zero Tracker database from ECIU before January 25, 2021 are considered.
Figure notes: Figures 1, 2, 3, the national and the OECD average show OECD calculations based on estimated greenhouse gas emissions data from the European Commission's Joint Research Centre (ECJRC). The Emissions Database for Global Atmospheric Research of the ECJRC allocates national greenhouse gas emissions to locations according to about 300 proxies. . See Box 3.7 in the 2021 *OECD Regional Outlook* for more details.

ENERGY

Mexican electricity mix

Figure 4. National electricity generation by energy source in 2019



Share of coal-fired electricity generation

2019 OECD average: 23%	2019 Mexican average: 9%	2030 well below 2°C benchmark for North-America: <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

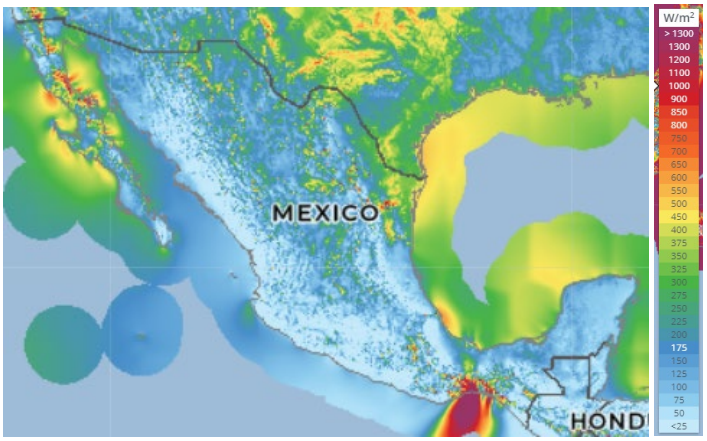
Most regions do not use coal in electricity generation. Only two regions rely heavily on coal. They are Guerrero for just over 90% and Coahuila for slightly over 80% of estimated electricity generation in 2017. New capacity has been announced in Coahuila (Global Coal Plant Tracker, last accessed in April 2021). Since OECD regions should be phasing out coal by 2030 and the average lifespan of a coal power plant is 40 years, adding such capacity would expose regions to stranded asset risks, resulting in financial market risks and economic costs.

Wind power

2019 OECD average: 8%	2019 Mexican average: 5%	2030 well below 2°C benchmark for North-America: >17%

Figure 6. Wind power potential

Mean wind power density (W/m²)



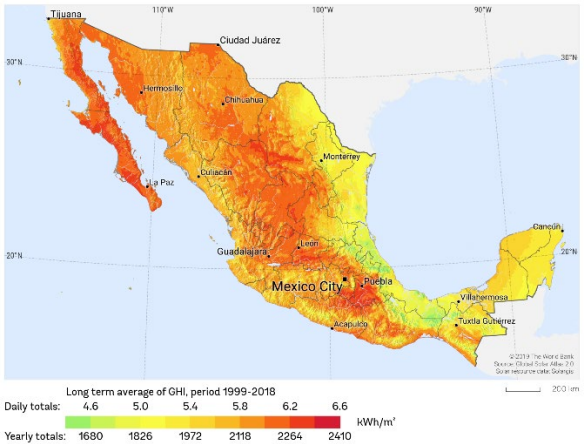
Source: Map produced by The Global Wind Atlas

Solar power

2019 OECD average: 3%	2019 Mexican average: 2%	2030 well below 2°C benchmark for North-America: >13%

Figure 7. Solar power potential

Global horizontal irradiation (kWh/m²)



Source: Map produced by The Global Solar Atlas

The national average shares are still far below the 2030 benchmarks. Solar power potential is very high in large parts of the country, particularly in the west.

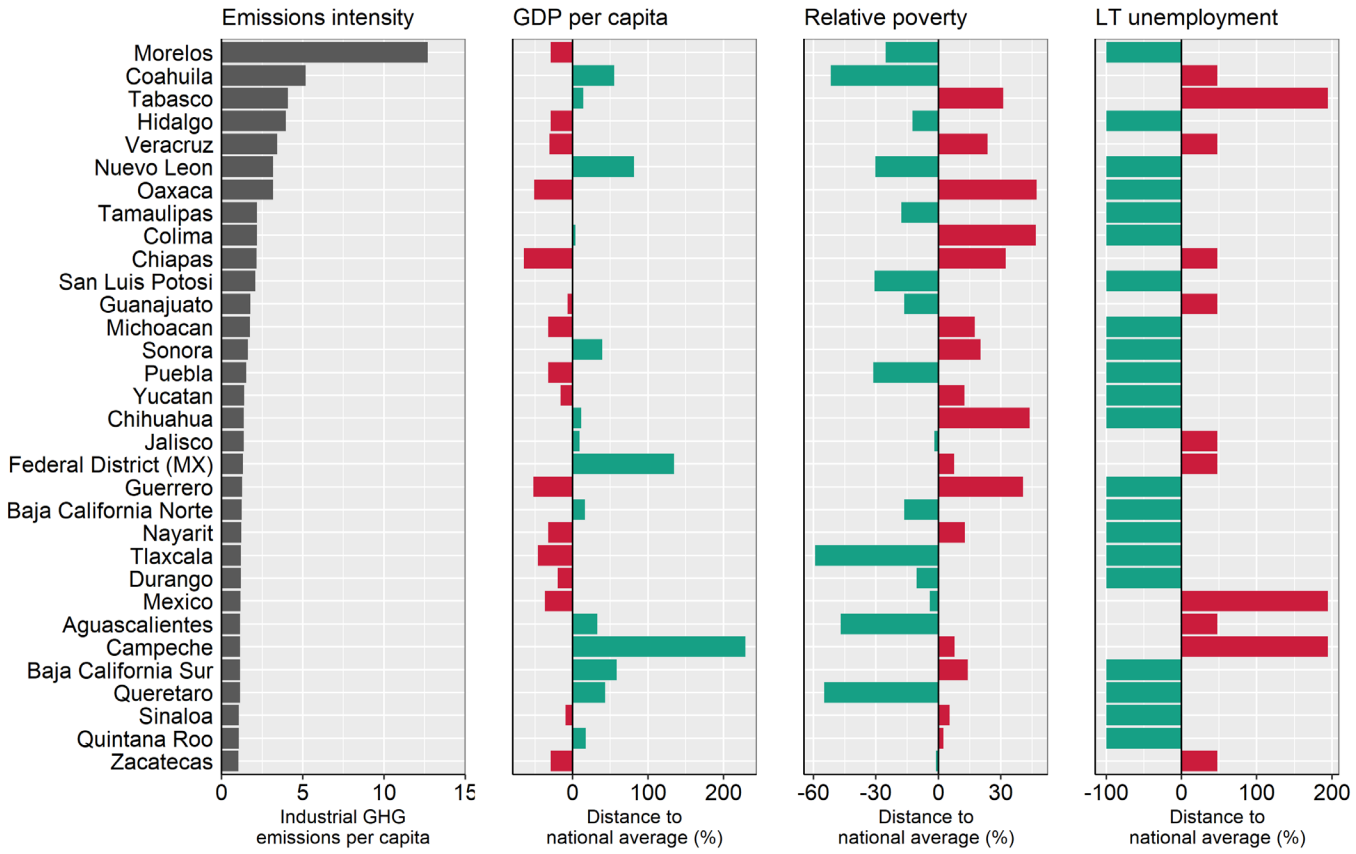
Benchmark notes: The well-below 2 degrees benchmarks show IEA Sustainable Development Scenario (SDS) numbers. The SDS models how the global energy system can evolve in alignment with the Paris Agreement's objective to keep the global average temperature increase well below 2°C above pre-industrial levels. 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).

INDUSTRY

Figure 8. Estimated GHG emissions from industry per capita and relative difference to country means for GDP per capita, relative poverty and long-term unemployment

Large regions (TL2), 2018



Regions with higher estimated industrial emissions per capita, including from the oil industry, may face higher economic transition risk from rising carbon prices. In Mexico, industrial emissions per capita are highest in Morelos. The transition to net-zero greenhouse gas emissions needs to be just, avoiding social hardship. Regions with higher industrial emissions per capita are not necessarily the worst performers in terms of relative poverty and long-term unemployment, and GDP per capita.

Figure notes: Figure 8 is based on data from OECD Statistics and ECJRC. Poverty risk is assessed from individuals' survey respondents indicating there have been times in the past 12 months when they did not have enough money to buy food that they or their family needed. Long-term unemployment is defined as unemployed for 12 months or more.

TRANSPORT

Electrification of passenger cars

2019 Mexican average rate of full-electric road motor vehicles stock: <1 per 1000 vehicles	Benchmarks for new zero-emission passenger car sales: IEA well-below 2°C benchmark: 100% by 2040. Aligned with net zero emissions by 2050: 100% by 2035 at the latest. 2030 cost-effective.	Mexican target sales of zero emission new passenger cars: No full phase out date of internal combustion cars yet

Figure 9. Full-electric road motor vehicles stock

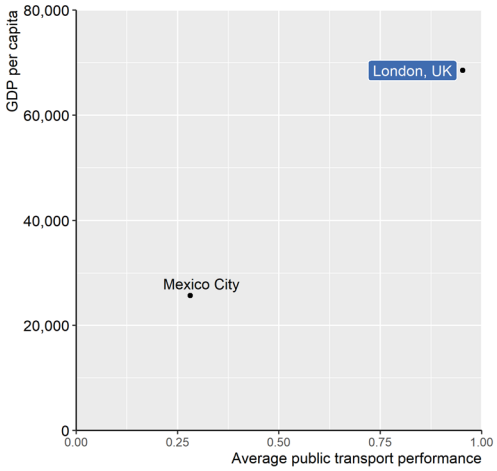
For 1000 vehicles, large regions (TL2), 2018

In 2018, no Mexican large region had over 1 full-electric vehicle per 1000 vehicles.

Modal shift

Public transport performance data is not yet available for many Mexican metropolitan areas. Mexico City has a relatively low 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 10. 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 OECD Statistics. Figure 10 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.

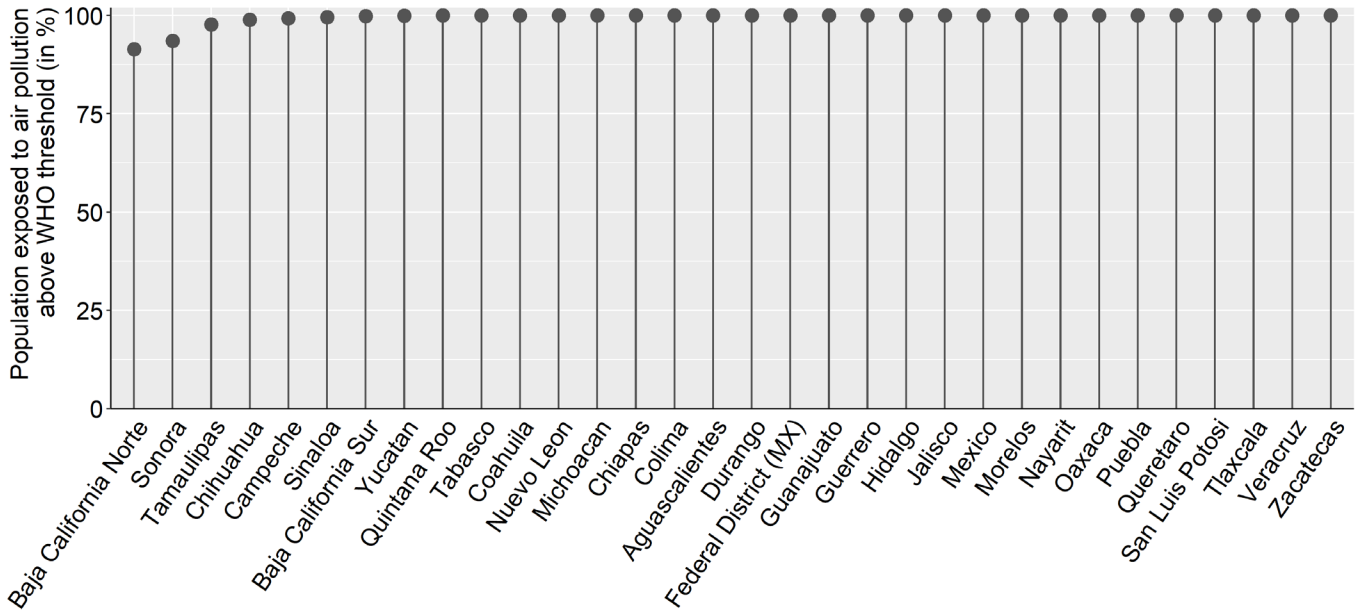
AIR POLLUTION

Large regions (TL2)

2019 OECD share of population exposed above the WHO-recommended threshold: 62%	2019 Mexican share of population exposed above the WHO-recommended threshold: 99%	WHO-recommended air quality threshold: PM2.5 annual mean concentration < 10 µg/m^3

Figure 11. Share of population exposed to levels of air pollution above the WHO-recommended threshold

Percentage of population exposed to above 10 µg/m^3 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.

In all Mexican regions almost all the population is exposed to pollution above the maximum recommended by the WHO.

Figure notes: Figure 11 is based on data from OECD Statistics.