

Regional Outlook 2021 - Country notes

United States

Progress in the net zero transition



Disclaimer (for the referring document)

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. Extracts from publications may be subject to additional disclaimers, which are set out in the complete version of the publication, available at the link provided.

EMISSIONS

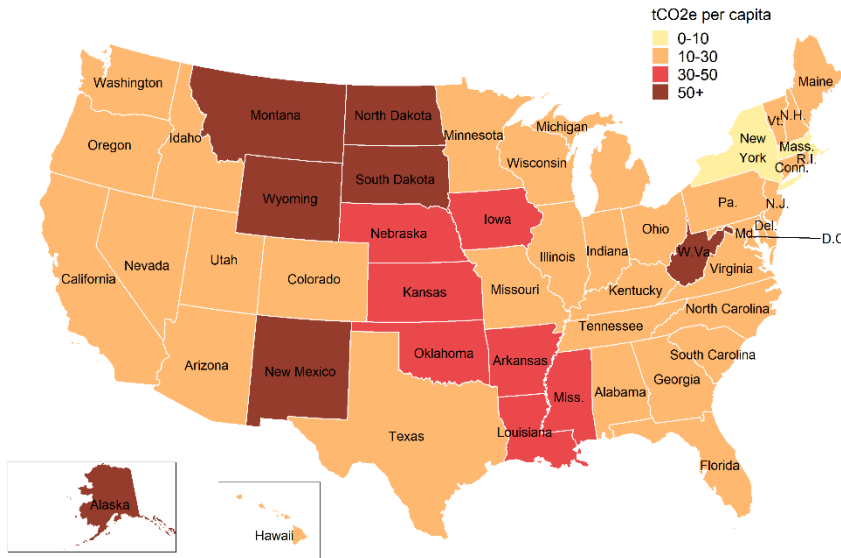
2018 OECD average:
11.5 tCO₂e/capita

2018 US average:
20.3 tCO₂e/capita

US net zero 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



Greenhouse gas (GHG) emissions per capita generated in most US large regions are above 10 tCO₂e per capita. Only New York, Massachusetts, District of Columbia, California, Connecticut, Maryland and New Jersey have lower emissions per capita than the OECD average of 11.5 tCO₂e per capita.

Estimated emissions per capita in North Dakota are almost 22 higher than in New York.

Small regions (TL3)

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

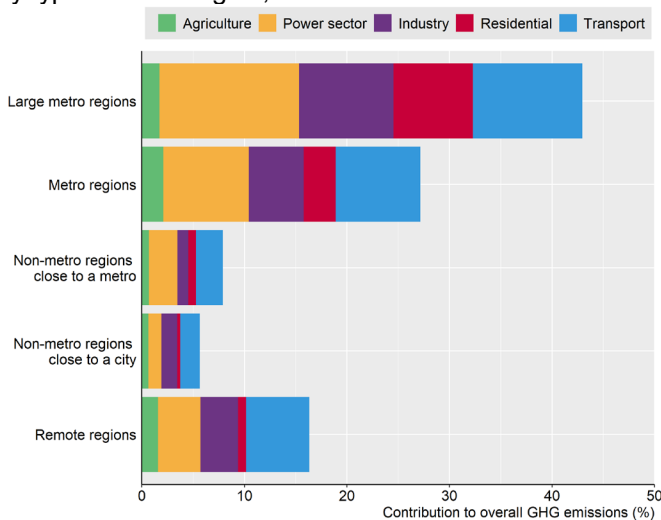
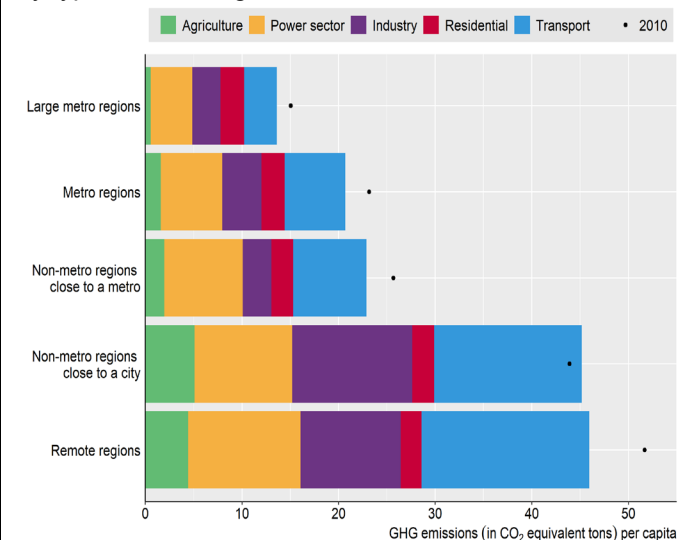


Figure 3. Estimated GHG emissions per capita
By type of small region, 2018



Across the OECD, metropolitan regions emit most greenhouse gases but per capita emissions are highest in remote regions. In the US, the same pattern can be observed. Emissions per capita in American remote rural regions are much higher than in metropolitan regions.

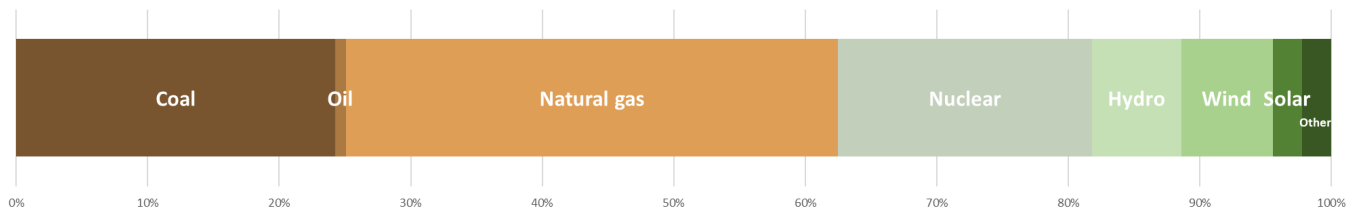
Target notes: Emissions targets included in the Net Zero Tracker database from ECIU before January 28, 2021 are considered.

Figure notes: Figures 1, 2, 3 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

US electricity mix

Figure 4. National electricity generation by energy source in 2019



Share of coal-fired electricity generation

2019 OECD average: 23%

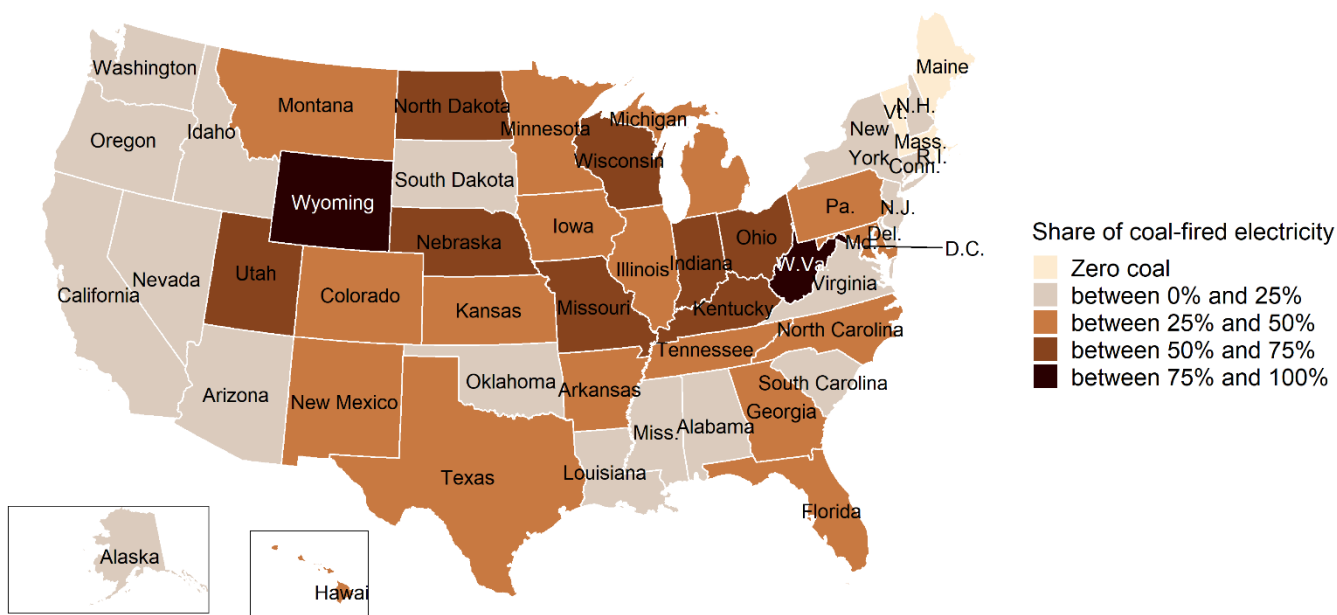
2019 US average: 24%

2030 well below 2°C benchmark for the US: <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

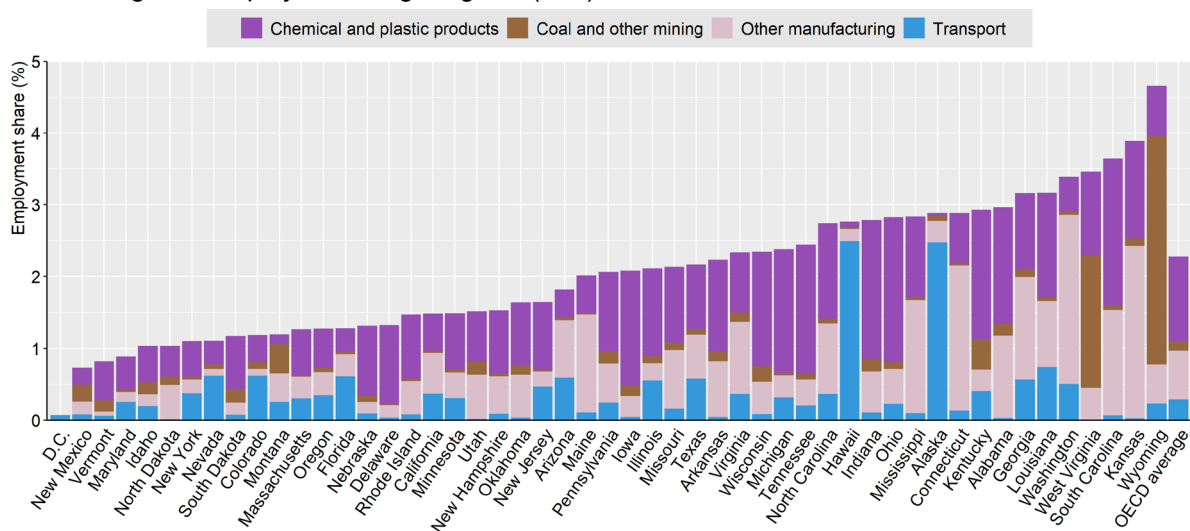


Almost all regions still use coal in electricity generation. Some regions still rely largely on coal. Wyoming and West Virginia, two regions with some of the highest emissions intensities in the US, still rely on coal for more than 75% of electricity generation. No new capacity is planned or being build.

SECTORAL EMPLOYMENT RISKS

Figure 10. 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

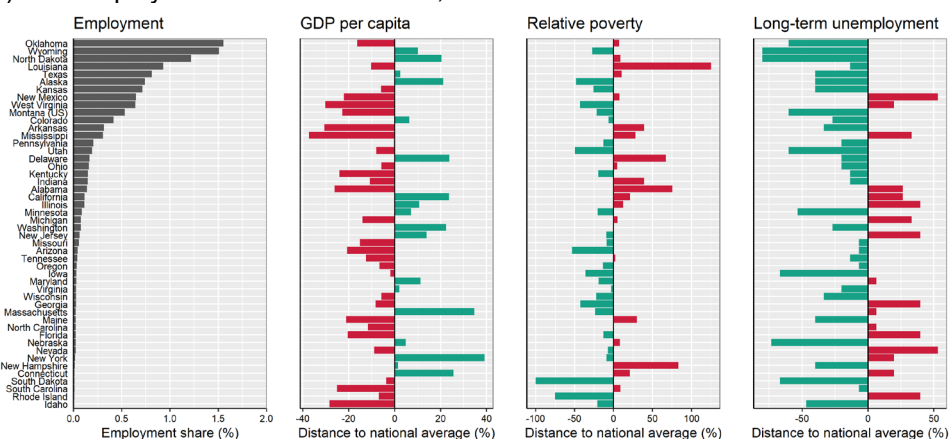


There will be both employment gains and losses due to the transition to net zero greenhouse gas emissions. They may not be distributed in the same way across regions. Employment in sectors that may be subject to some job loss by 2040 as a result of policies to reduce emissions in line with the climate objectives in the Paris Agreement amounts to less than 5% in all American regions. Many US regions have more employment in these sectors than the OECD average. 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.

Oil & Gas

Figure 11. Regions with employment in the extraction of crude petroleum, natural gas and manufacture of coke and refined petroleum products, and regional socio-economic indicators

Large regions (TL2) with employment in selected sector, 2017



While activities related to oil and gas extraction may not be at risk of employment loss across all OECD countries by 2040, they may be more likely to be at risk in the US. In US regions oil is extracted at higher cost than in other oil-supplying regions. Policies to drive greenhouse gas emissions to net zero will lower oil prices and drive highest-cost producers out of the market first. Investment in oil-extraction therefore risks becoming stranded resulting in substantial economic loss.¹ Employment in the sector is particularly strong in Oklahoma and Wyoming. However, regions with a higher share of employment in the oil and gas sector are not necessarily poorer regions.

¹ Reference: Mercure, J. F., et al. (2018). Macroeconomic impact of stranded fossil fuel assets. *Nature Climate Change*, 8(7), 588-593.

Figure notes: Figures 10 and 11 are based on data from OECD Statistics. In Figure 10 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. In figure 11, 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.

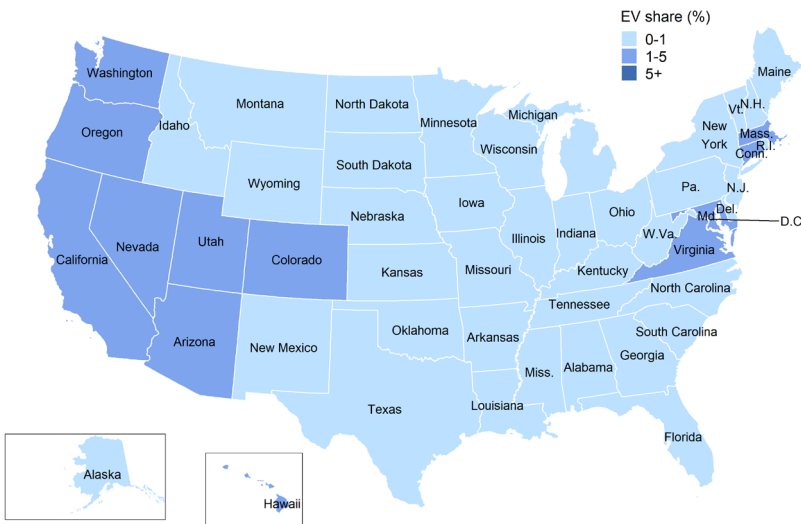
TRANSPORT

Electrification of passenger cars

<p>2019 US average share of full-electric new passenger car sales: 1%</p>	<p>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.</p>	<p>US target sales of zero emission new passenger cars: No national phase out date of internal combustion cars yet</p>
---	---	--

Figure 12. New full electric vehicle sales

Percentage of total regional vehicle sales, large regions (TL2), 2018



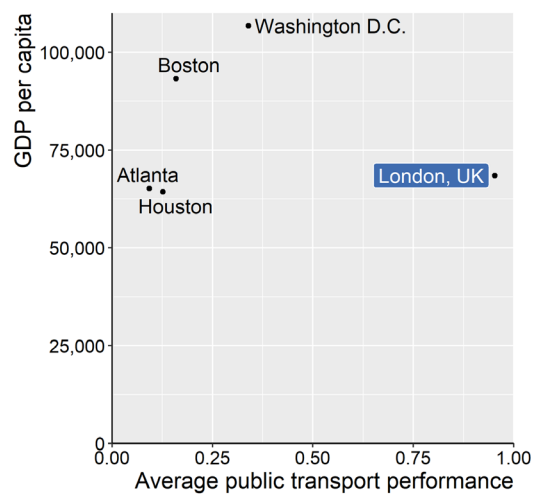
In 2018, most large regions had less than 1% electric vehicle sales shares. Western states had higher shares of electric vehicles. Electric vehicle shares were highest in California, followed by Washington and Oregon.

Countries with a net zero target by 2050 will need to phase out sales of new conventional cars by 2035 at the latest (considering cars have an average useful life of 15 years). A phase-out by 2030 is more cost-effective.

Modal shift

Public transport performance data is available for few North American metropolitan areas. Boston and Washington have higher GDP per capita and higher public transport performance than Atlanta and Houston. 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 13. 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 12 is based on data from Auto Alliance. Figure 13 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.

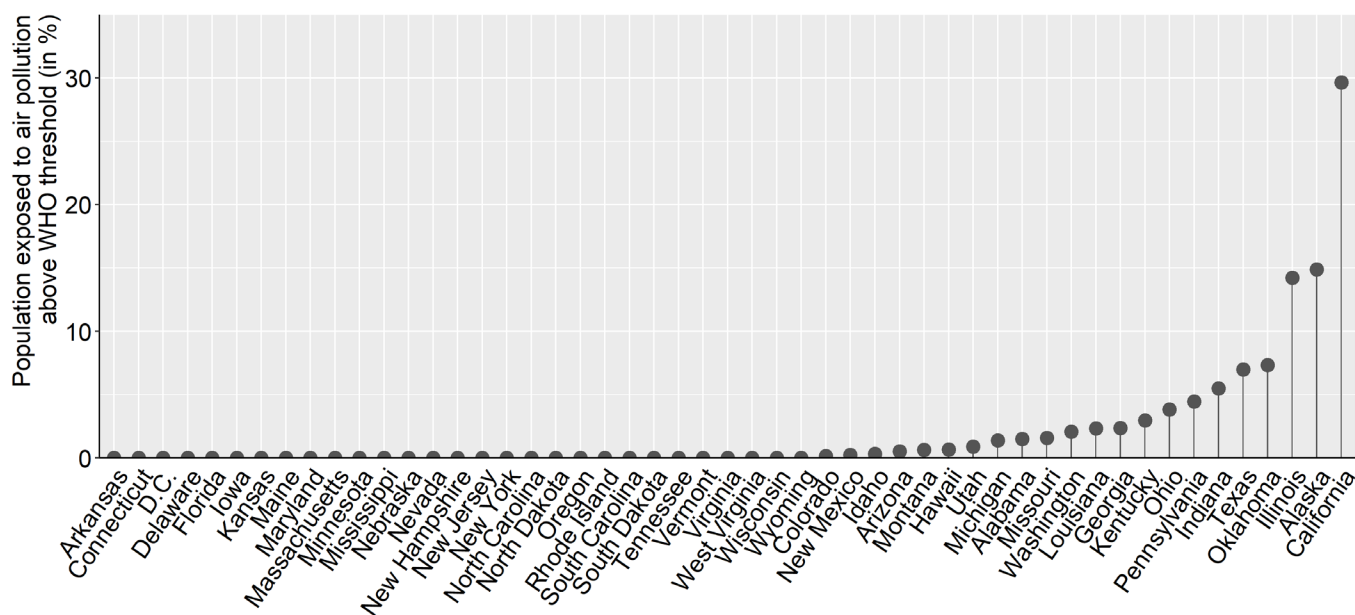
AIR POLLUTION

Large regions (TL2)

2019 OECD share of population exposed above the WHO-recommended threshold: 62%	2019 US share of population exposed above the WHO-recommended threshold: 6%	WHO-recommended air quality threshold: PM2.5 annual mean concentration < 10 µg/m³
---	--	--

Figure 14. 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 14 is based on data from OECD Statistics.