Regional Outlook 2021 - Country notes

Finland

Progress in the net zero transition

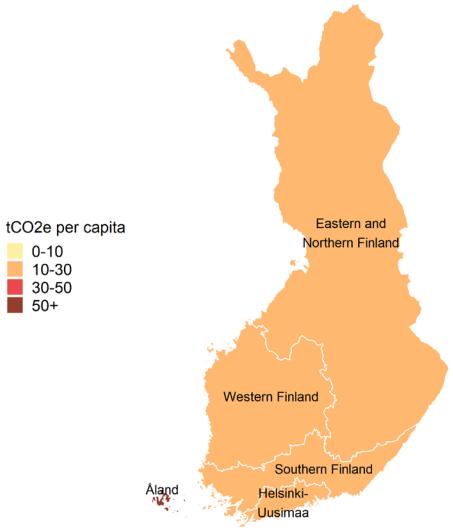
EMISSIONS

2018 OECD average: 11.5 tCO_2e/capita	2018 Finnish average: 10.2 tCO_2e/capita	Finnish target: net zero GHG emissions by 2035

Large regions (TL2)

Figure 1. Estimated regional greenhouse gas emissions per capita

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



Within-country variance across large regions is relatively small in Finland, with the exception of Åland. Emissions per capita in Åland are much higher than in all other Finish large regions.

Small regions (TL3)

Figure 2. Contribution to estimated GHG emissions

By type of small region, 2018

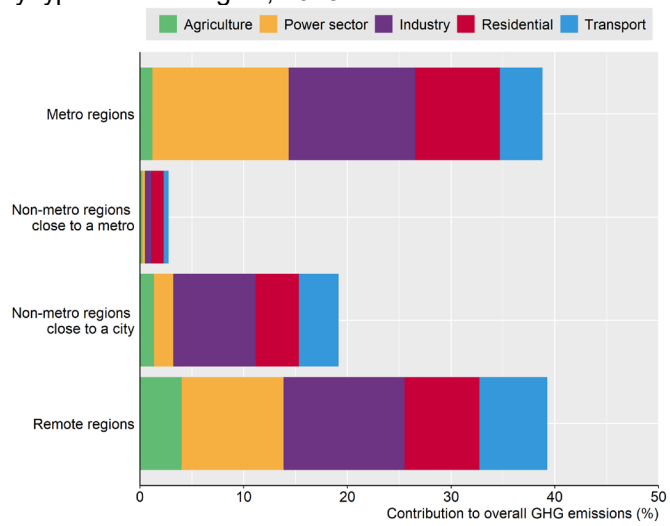
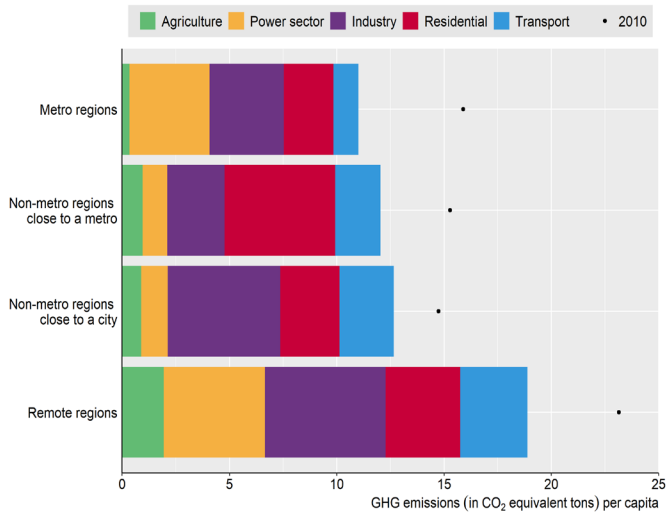


Figure 3. Estimated GHG emissions per capita

By type of small region, 2018



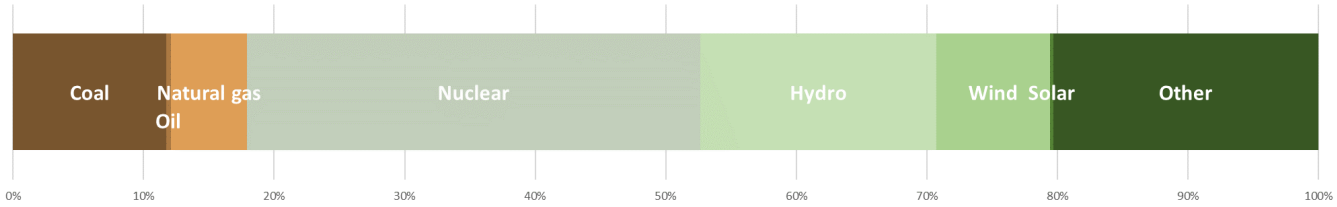
Across the OECD, metropolitan regions emit more greenhouse gases than remote regions. In Finland, such a pattern is not observed. Emissions per capita in Finish remote rural regions are higher than in metropolitan regions. All region types have reduced production-based emissions per capita between 2010 and 2018.

Target notes: Emissions targets included in the Net Zero Tracker database from ECIU before January 25, 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

Finnish electricity mix

Figure 4. National electricity generation by energy source in 2019

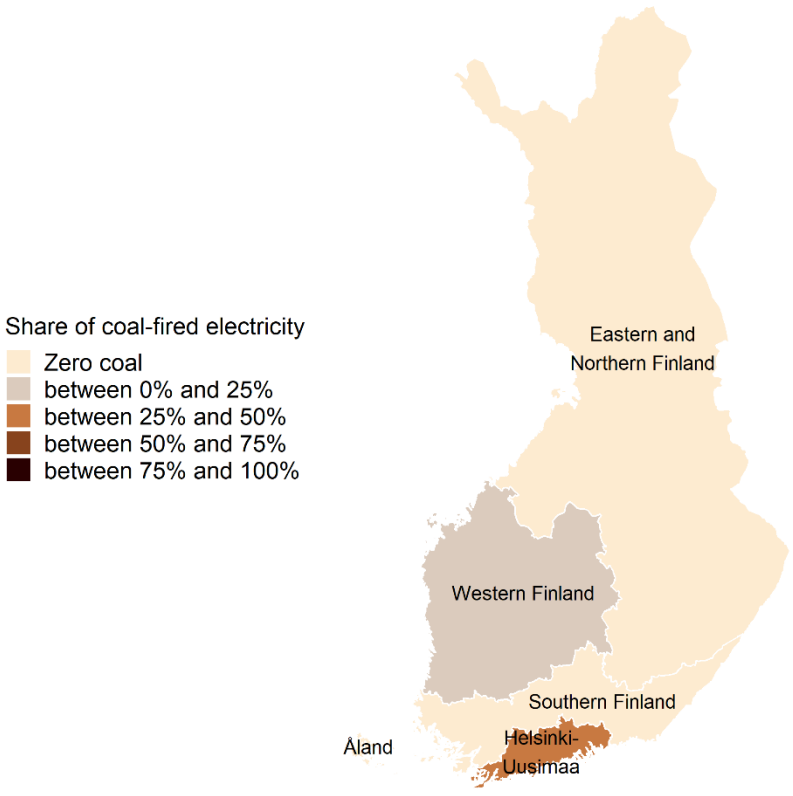


Share of coal-fired electricity generation

2019 OECD average: 23%	**2019 Finnish average: 12%**	**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



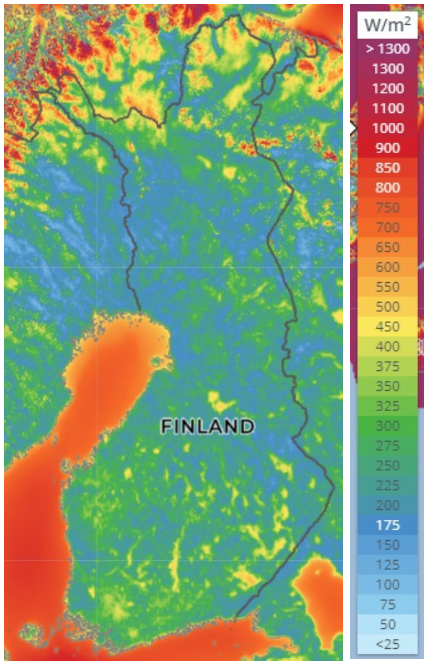
Most regions do not use coal in electricity generation. In 2017, only Western Finland and Helsinki-Uusimaa used coal for slightly over 20% and 25% (respectively) of electricity generation. No new capacity is planned or being built.

Wind power

2019 OECD average: 8%	2019 Finnish average: 9%	2030 well below 2°C benchmark for the EU: >29%

Figure 6. Wind power potential

Mean wind power density (W/m²)



Source: Map produced by The Global Wind Atlas

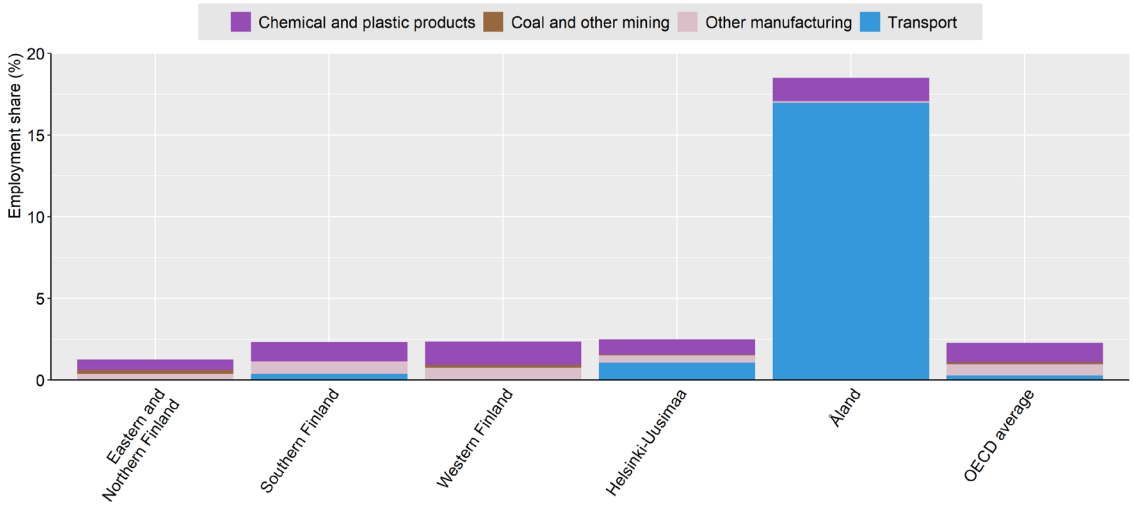
Wind power density is high offshore.

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. Figure 6 shows the power potential of wind. Mean wind power density (WPD) is a measure of wind power available, expressed in Watt per square meter (W/m²).

SECTORAL EMPLOYMENT RISKS

Figure 7. 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

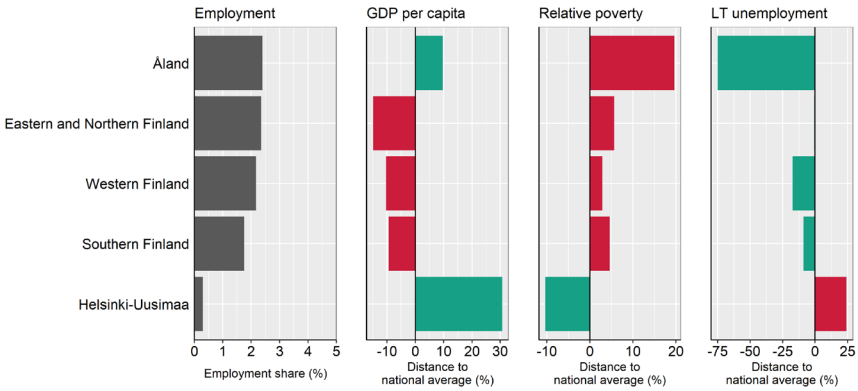


There will be both employment gains and losses due to the transition to net zero greenhouse gas emissions. They may not be distributed in the same way across regions. Employment in sectors that may be subject to some job loss by 2040 as a result of policies to reduce emissions in line with the climate objectives in the Paris Agreement amounts to less than 3% in most Finnish regions. Most Finnish regions have similar employment in these sectors than the OECD average. Åland has a larger share, mainly driven by transport. 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.

Agriculture

Figure 8. Regions with employment in crop and animal production, hunting and related activities, and regional socio-economic indicators

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



While agriculture is not a sector that was broadly identified as being subject to employment risks based on employment effects simulated across OECD countries (Section 2, Box 8 of the 2021 OECD Regional Outlook), it will be subject to important transformations, for example with respect to animal farming, fertiliser use and carbon sequestration. In Finland, employment in this sector is highest in Åland and Eastern and Northern Finland. The transition to net-zero greenhouse gas emissions needs to be just, avoiding social hardship. Regions with higher agricultural employment are not necessarily the worst performers in terms of GDP per capita and long-term unemployment compared to the national average. They do have higher poverty risk.

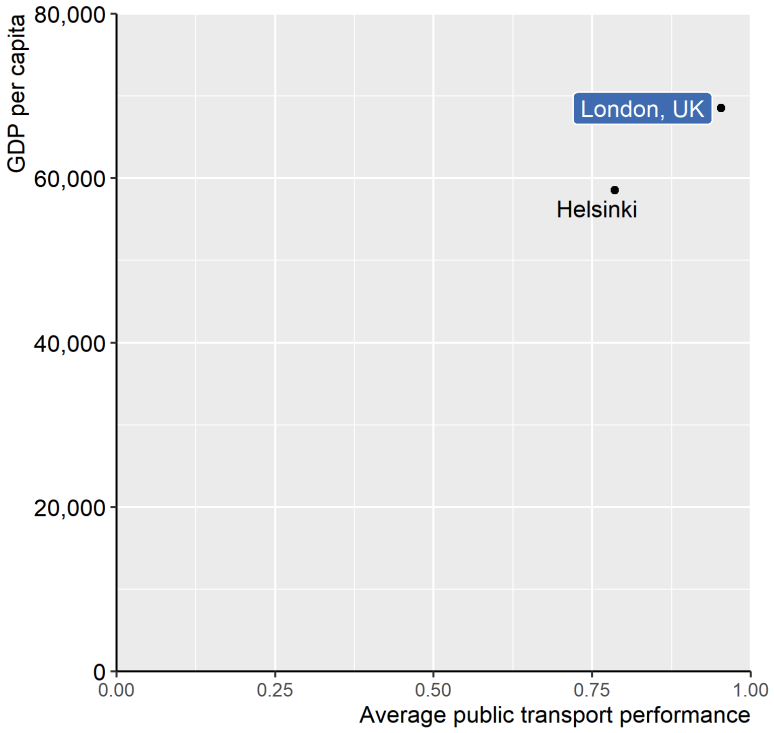
Figure notes: Figures 7 and 8 are based on data from OECD Statistics. In Figure 7 sectors are selected based on macroeconomic simulations of a scenario limiting global warming to well below 2 degrees. See Box 3.9 in the 2021 *OECD Regional Outlook* for more details. In figure 8, poverty risk is assessed 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

Modal shift

Public transport performance data is not yet available for many Finnish metropolitan areas. Helsinki has a relatively good 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.

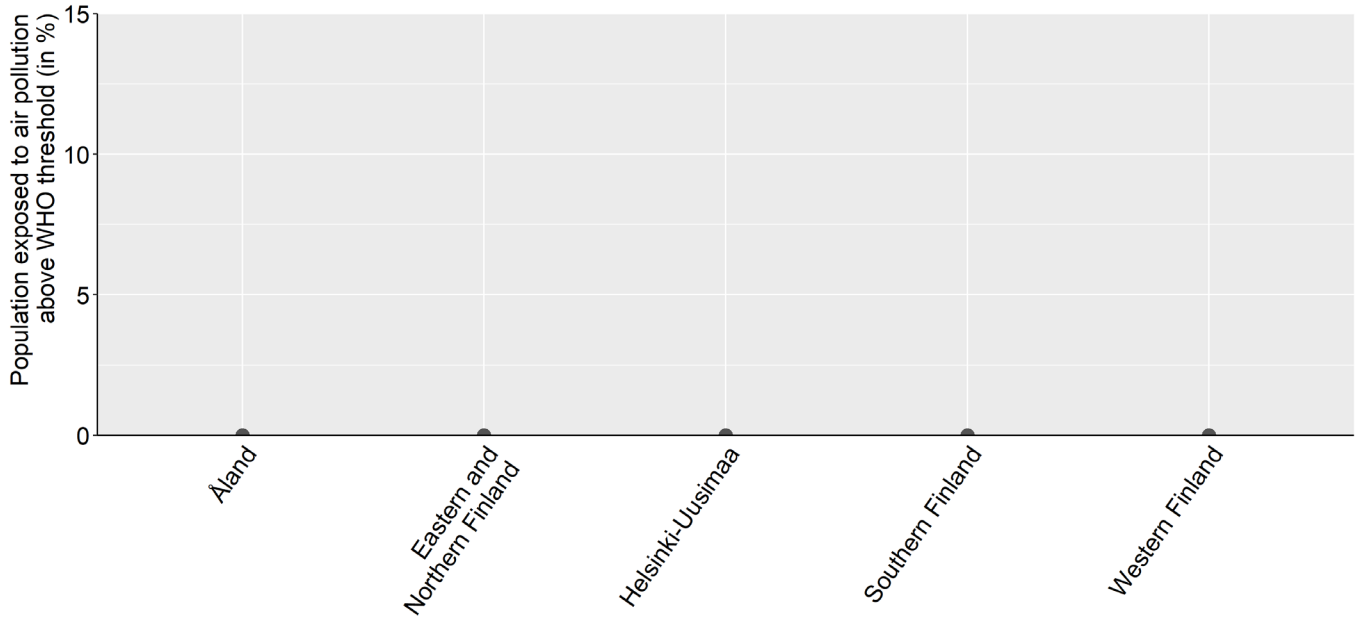
AIR POLLUTION

Large regions (TL2)

2019 OECD share of population exposed above the WHO-recommended threshold: 62%	2019 Finnish share of population exposed above the WHO-recommended threshold: 0%	WHO-recommended air quality threshold: PM2.5 annual mean concentration < 10 µg/m^3

Figure 10. 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. However, PM2.5 air pollution in Finland is low.

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