PORTUGAL

2026 CITY DATA INSIGHTS

LANCET COUNTDOWN: HEALTH AND CLIMATE CHANGE IN EUROPE

The 2026 Europe Cities Report of the Lancet Countdown presents a systematic, policy-relevant set of climate change and health indicators for European cities. This document highlights key Portugal-specific city-level findings.

As the world's fastest-warming continent, Europe faces an escalating public health crisis. Cities sit on the front line of this threat, with dense populations, heat-trapping infrastructure and limited cooling due to inadequate green space. All of this multiplies the dangers from climate-related heatwaves, floods, droughts and wildfires. These environmental hazards directly harm human health and disproportionately affect the most vulnerable, including children, older adults, outdoor workers and low-income communities. Cities also offer substantial opportunities for effective climate action.

In 2023, around 45.4% of Portugal's population - 4.7 million of its 10.3 million people - lived in 16 cities. Of this urban population, 40.3% lived in Lisbon, Portugal's capital city, while a further 21.1% lived in the second-largest city, Porto. This high population density heightens the health risks that climate change poses to urban populations. Within Portugal's urban population, 1.05 million people (22.4%) were aged over 65, and 638.9 thousand (13.6%) were children under 15, meaning that over a third of the urban population face heightened health risks from climate change.

Heat and Health

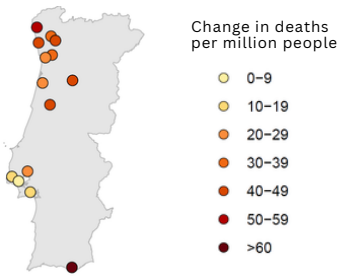
Urban populations are increasingly exposed to extreme heat, contributing to rising heat-related illness and mortality and undermining livelihoods and wellbeing.

Heat-related mortality

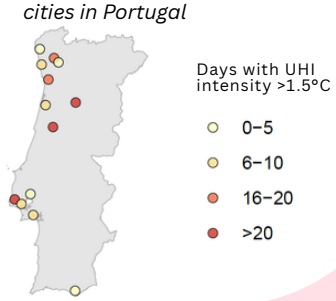
Across the cities in Portugal, there was an average increase of 19.0 deaths per million attributable to heat between 2015-2024 compared to 1991-2000 (indicator 1.1.2).

Faro had the highest increase in deaths per million people linked to heat (97%), from 74.0 in 1991-2000 to 146.2 deaths per million in 2015-2024 (indicator 1.1.2).

Change in heat-related mortality rate between 1991–2000 and 2015–24, expressed as the number of annual deaths per million people.



Average number of days with UHI>1.5°C between 2003-2020 across cities in Portugal



Heat exposure in cities

Most cities trap heat, creating an "urban heat island" (UHI) effect that makes urban areas significantly hotter than nearby rural areas. As climate change raises global temperatures and intensifies heatwaves, the UHI effect worsens health risks, driving increases in a range of heat-related health impacts, including heat exhaustion, cardiovascular strain and mortality, particularly among vulnerable populations.

For example, between 2003 and 2020, Coimbra recorded 770 days when urban area temperatures were hotter than surrounding rural regions by more than 1.5°C, followed by Viseu (733 days). This averaged 42.8 and 40.7 days each summer, respectively, which is more than double the Portuguese cities' average of about 14.5 days each summer (indicator 1.1.1).

Sustainable urban cooling

To safeguard public health and prevent heat-related deaths, cities must adapt to extreme heat. Expanding tree cover offers a practical and effective means of cooling urban environments and building community resilience.

Urban tree cover

To support urban cooling, reduce air pollution and protect public health, the UN Economic Commission for Europe recommends that cities maintain at least 30% tree cover.

Portugal's cities had a total tree cover of 96.1 thousand hectares in 2020, which is 23.6% of the country's land area. Of the 16 cities, 3 had tree cover equal to or greater than 30% in 2020: Coimbra, Viana do Castelo, and Viseu (indicator 2.2.4).

Viseu had the highest tree cover (23.5 thousand hectares; 46.4% of total area), and Vila Franca de Xira had the lowest tree cover (30.0 hectares; 5.9% of total area), despite being the only city with a percentage increase in tree cover (1.76%, from 1704 to 1734 hectares) compared to 2000. (indicator 2.2.4).

Heat-reflecting surfaces

Darker, heat-absorbing materials contribute to rising urban temperatures. Replacing them with lighter, reflective or natural materials can help to lower land surface temperatures, for example, by replacing concrete with soil or vegetation. In Portugal, there has been a modest increase in such heat-reflective surfaces, leaving considerable scope to expand their use for urban cooling (indicator 2.2.2).

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Sustainable and Healthy Transport

Active travel and public transport

Active and healthy transport, such as walking and cycling, and the use of public transport support urban decarbonisation and improve air quality by reducing vehicle emissions. It also builds daily physical activity into everyday journeys, significantly lowering the risk of chronic disease and improving mental health and wellbeing.

The Sustainable Transport Score measures how easily residents can walk, cycle, or take public transit in a city (with 7 out of 10 considered a good score). In 2022, Portuguese cities fell short, with an average score of 3.04 out of 10. On average, cities had 33.1% of their total area with at least 1 public transport stop within 250 metres and 29.5% of all pathways supported walking, while dedicated cycling infrastructure covered only 5.6% of all roads (indicator 3.3.1).

In 2022, Lisboa achieved the highest overall score (5.46/10). Across individual indicators, top and bottom performing cities in Portugal included:

- Walking: Porto was the most walkable (42% of all roads were pedestrian-friendly paths), while Paredes was the least (14.4%).
- Cycling: Lisboa offered the best cycling access (11.6% of all roads had bike lanes), whereas Paredes (2.2%) and Valongo (~0%) had the lowest.
- Public Transport: Lisboa led with 71.3% of its area within 250m of a public transport stop, while Viana do Castelo had only 2.7%.

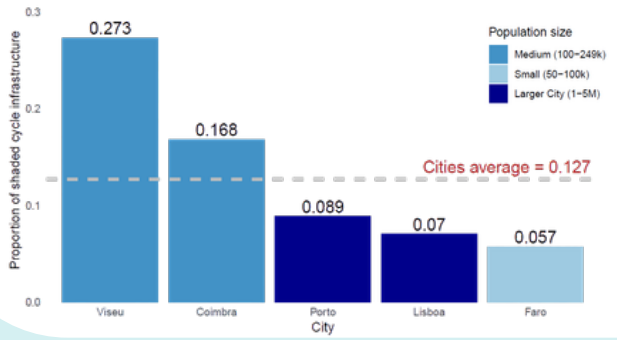
Heat-resilient cycling infrastructure

Climate change is bringing increasingly frequent and prolonged periods of extreme heat to cities, limiting when people can safely walk or cycle outdoors. Building heat-resilient pedestrian and cycling infrastructure, particularly through natural tree shading, is becoming vital to protect urban residents and keep communities moving safely.

In Portugal, 12.7% of cycling and shared cycling-pedestrian paths were shaded with tree cover between 2018 and 2020 (indicator 2.2.5).

Of the Portuguese cities exposed to moderate to high heat stress, Viseu had the highest proportion of shaded infrastructure of 27.3% (indicator 2.2.5).

Proportion of shaded cycling infrastructure in cities in Portugal



Energy, Air Pollution and Health

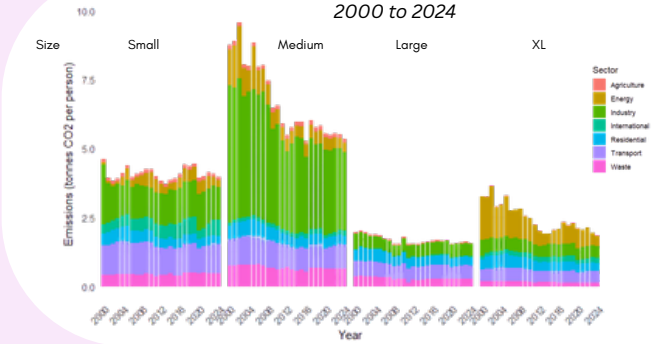
Fossil fuel combustion is a primary driver of rapid global heating and of fine particulate pollution ($PM_{2.5}$), both of which pose severe risks to human health. Decarbonising energy systems by switching to clean, renewable energy removes fossil fuel-related pollutants and greenhouse gas emissions at source, significantly reducing the risk of $PM_{2.5}$-attributable early deaths and chronic illness.

Sectoral sources of greenhouse gas emissions

Between 2000 and 2024, greenhouse gas emissions per person across cities declined by 37.5% in Portugal, the highest reduction was from the energy sector (74.3%).

In the residential sector, Braga had the greatest reduction (44.6%) in average emissions per person between 2000 and 2024 (from 0.47 to 0.26 tonnes of CO2 per person), followed by Aveiro (44.5%; from 0.43 to 0.24) and Coimbra (42.5%; from 0.49 to 0.28).

Greenhouse gas emissions by sector and city size from 2000 to 2024



$PM_{2.5}$ attributable mortality

The premature mortality rate due to $PM_{2.5}$ has decreased by 50% in Portugal in 2023 as compared to 2000, and there was 94.7% reduction from the power plants, which illustrates efforts towards a transition towards cleaner energy sources.

Lisbon had the highest number of $PM_{2.5}$-related premature deaths (1342) in 2023, and the transport sector was linked to 65.8% of these deaths.

Viseu had the highest decrease in premature mortality rate (58.9%) from 2000 to 2023, reflecting decarbonisation efforts across sectors.

Chen-Xu J, Kriit HK, Semenza J, et al. The 2026 Europe Cities report of the *Lancet* Countdown on health and climate change: cities at the forefront of climate change action. Lancet Public Health 2026; published online Sep 9. https://doi.org/10.1016/S2468-2667(26)00100-3

The Lancet Countdown Europe is a regional research collaboration providing an overview of the relationship between public health and climate change, the region's response to climate change, and the health benefits that emerge from this transition. The Lancet Countdown was established in partnership with Wellcome.

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