



SANTIAGO DE CHILE

POPULATION: 7,112,808 (2017)

NO GREENHOUSE GAS (GHG) REDUCTION TARGETS
SCOPE 1, 2

An Air Pollution Approach

Climate policy governance and integration

Striking pollution peaks, affecting the entire city since the 1990s, have pushed authorities (the region was declared saturated with ozone in 1996, and with fine particles in 2012) to shape a climate policy, focusing on the reduction of atmospheric pollution instead of the decrease of CO₂ emissions. The first plan was adopted in 1998, and the most recent 10-year-long [Plan of Prevention and Atmospheric Decontamination \(PPDA\)](#), in 2017.

Plans are defined by the Chilean Environment Ministry and enforced by [the Regional Secretariat of the Environment Ministry](#). The plan can be carved into two main parts: permanently applicable measures, and those that cannot be applied when a pollution peak occurs mainly focusing on transport, industry and housing.

Climate policy tracking

The Metropolitan Region of Santiago is the biggest emitting region of Chile with 20% of overall emissions for 37% of the Chilean population. Regional GHG emissions have increased by 141.6% between 1990 and 2016 reaching 22.3 MtCO₂eq. From 2013 to 2016, emissions grew by 16.4% compared to the overall national increase of just 7.1%. [In 2016, the main emitting sources were the fuel consumption](#) of cars, buses and lorries – in other words, the transport sector, representing 41.2% of emissions ([Chili MMA](#), 2019). It is followed by the residential sector, then industry, services and the institutional sector, representing 9.6%, 8.5% and 6% of the city's emissions. On the other hand, electricity production represents just 3.6% and waste treatment 5.5%.

Although the city's emissions rose, [the frequency of days of emission peaks considerably dropped between 1997 and 2017](#). In 1997, 79 days were counted as critical compared to just 3 in 2017. The presence of airborne particles decreased by 72% between 1989 and 2015 for PM_{2.5} particles.

Energy – Renewable energies in public transport

The rising cost of Santiago's metro triggered the social crisis that spread across the county in

2019. This transition to renewables did not get much media coverage, although, since 2019, the metro operator, Metro de Santiago, has been working to reduce its annually [monitored GHG emissions](#). To reduce consumption, several measures have been implemented: the installation of an intelligent lighting system on lines 4 and 4A (estimated 10% reduction between 2015 and 2018) and a braking energy generation system (reducing the traction energy of the metro by 18% between 2015 and 2018). Also, in 2016, [an agreement](#) combining the [solar plant of El Pelicano](#) with the [San Juan wind farm](#), was reached to power the network with renewable energy. Since 2018, 60% of the Santiago metro's energy mix comes from electricity from renewable sources, a system that should enable a reduction of 130,000 tonnes of CO₂ per year. Despite the implementation of ambitious measures, the metro's electricity consumption increased between 2015 and 2018 due to the opening of two new lines.

In 2019, 183 new electric buses are expected to be put to use, bringing the [total number of electric buses in circulation to 400](#). Santiago will therefore be the second-best equipped city in terms of electric buses outside China. This is part of the [2025 Framework Plan on Transport](#), which plans a 10% change in the fleet to electric and 20% to hybrid by 2020, and [100% of the fleet by 2050](#).

Moreover, for inhabitants' daily commutes, low-impact modes of transport are most popular. The survey on household-journeys, carried out in 2015 by the Chilean Ministry of Transport and Communications, reveals that 38.5% of the 18 million daily trips are made on foot or by bicycle. Public transport accounts for 29.1% of the modal share, and the use of private vehicles for 28%.

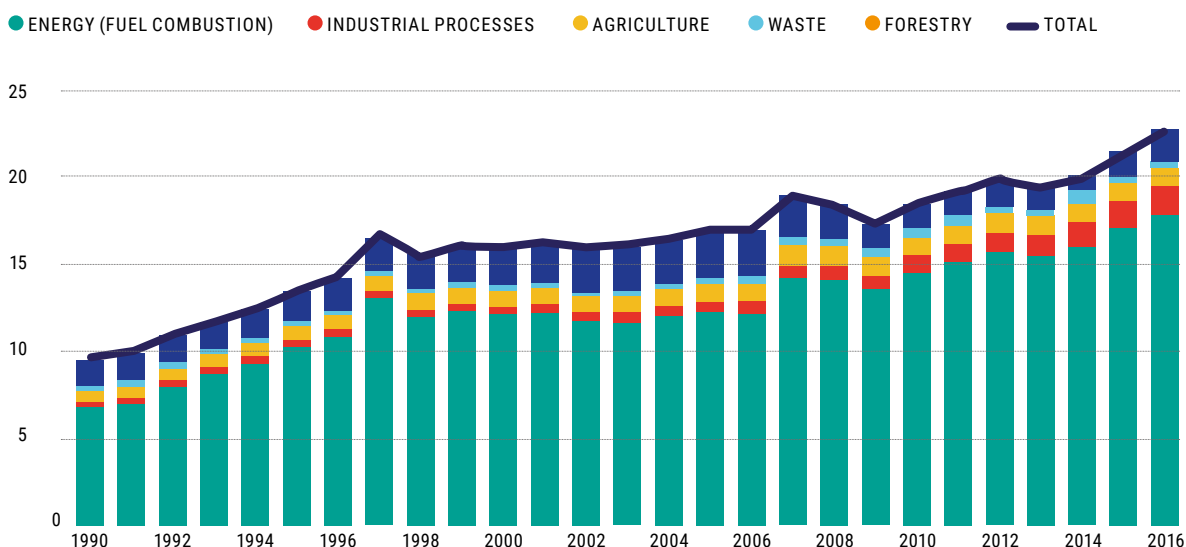
Waste - Municipalities' initiatives

The population of the metropolitan region of Santiago generates close to 1.3 kg of waste per person, daily. In 2016, Santiago funded the [Santiago REcicla programme](#), based on 3 axes: an awareness-raising programme, a study on the implementation of door-to-door collection and the construction of collection points.

However, [some municipalities in the metropolitan](#)

GHG EMISSIONS AND ABSORPTIONS (MTCO₂) BY SECTOR, 1990-1996

Source: MMA Technical Coordinating Team



[region already set up waste collection and treatment programmes](#). The municipality of Ñuñoa was a pioneer in the region as it launched its weekly door-to-door collection system in 2003, followed by an awareness campaign, completed in 2011 with the installation of 800 containers. In 2017, 4,357 tonnes of the 68,000 tonnes of waste produced were recycled, or 6.41% for a population of 195,300. In 2012, the municipality of Lo Barnechea, with a population of 105,833 inhabitants, also fostered a waste management programme, initially with [18 mobile collection points](#) in order to reach more local areas. Each point stays put in a district for 24 hours before changing spots and returning a week later. This system, combined with a partial door-to-door collection system launched in 2017, made it possible in the same year to collect 1,361 tonnes of waste out of 52,000 products, or 2.62% of recovered waste.

Solar energy at the heart of renewable energies' progress

In 2018, 3 substantial photovoltaic plants opened in the metropolitan region: Santiago Solar, [Quilapilùn](#) and [Ovejería](#). The Quilapilùn factory, the vastest of the region, has 350,000 solar panels generating 234 GWh of energy per year. It already produces enough energy to power 110,000 households and should enable a decrease of 125,000 tonnes of CO₂ every year. The Santiago Solar plant, spread over 200 hectares of land, powered 90,000 households.

Santiago also benefits from the governmental programme known as "[Techo Solares](#)". It facilitated the effective and future installations of solar panels on 23 public buildings located in the capital. Fitting

solar panels on the roof of the [San Borka Arriarán hospital](#) granted a reduction of 119 tCO₂eq/year and produces the equivalent of the overall consumption of 166 households. Once [all projects are completed](#), the CO₂ reduction of public buildings in Santiago should be of 1,092 tCO₂eq/year.

ADAPTATION

DEVELOPING A NETWORK OF METROPOLITAN PARKS:

[As a result of municipal and metropolitan initiatives, or thanks to the "Plan Chile Area Verde"](#), Santiago should gain 261 hectares of green space between 2016 and 2022.

In 2014 the Santiago metropolitan government launched the "Cerro Isla" competition to turn one of the city's main hills into an urban park. The winning project was Cerro Chena, that increased the overall size of the park by an extra 20 hectares, reaching a total of 58 hectares and a reforestation plan for 12,800 native species, carried out on 2016, over an area of 15 hectares.

The Chile Area Verde Plan financed the construction of seven new parks in the city, covering an area of over 100 hectares, representing 6% increase in the available green space. They were built in municipalities with the lowest rate of green space per inhabitant. The most significant achievement within the project is the 26 hectare Parque La Hondonada, built on a former landfill site. It is divided between two municipalities with the lowest number of green spaces per inhabitant, Cerro Navia, 2.1m²/inhabitant, and Pudahuel, 2.5m²/inhabitant.