1.5

Latin America and the Caribbean Regional Overview

Demographics

Population size:	Population growth:	Urban population share:	Urban population growth:	GDP per capita:	GDP growth:
649 million	+11%	82%	+15%	USD 8,653	+6%
(2020)	(2010-2020)	(2020)	(2010-2020)	(2019)	(2010-2019)

Source: See endnote 1 for this section.

Key findings

Demand trends

- The LAC region is experiencing the highest growth in car ownership in the world – up 58% between 2005 and 2015, or more than twice the global average of 27%.
- The majority of passenger travel in the region occurs via public transport (averaging 68% of all trips). LAC has the world's highest per capita bus use and also leads in the implementation of bus rapid transit, with systems present in 54 cities as of 2019.
- Around 70% of freight transport in the LAC region is by truck, and regional freight demand (on land and sea) is expected to more than double between 2015 and 2050.

Emission trends

- Transport carbon dioxide (CO_2) emissions in the LAC region increased 3% from 2010 to 2019, and accounted for 8% of total global emissions in 2019.
- Per capita transport CO_2 emissions in the region (0.85 tonnes) track closely to the global average (0.88 tonnes).
- Transport emissions relative to economic output are higher in LAC than in any other region except Africa, at 0.98 tonnes of CO_2 per USD 10,000 in 2019.
- The LAC region has lower vehicle emission standards than Asia and Europe, but emerging programmes in Argentina, Brazil, Chile and Costa Rica are contributing to more stringent standards.

Policy measures

- Strategic plans, enabling policies and incentives are emerging across the region to help accelerate the uptake and manufacturing of electric vehicles.
- The LAC region boasts the world's highest shares of renewable energy, including in electricity grids, allowing greater potential to decarbonise transport through electrification.
- The region has the world's second highest number of implemented sustainable urban mobility plans (SUMPs) after Europe, and national urban mobility plans (NUMPs) are growing in prominence (although not yet widespread).
- Cities in the region continued to invest in cycling infrastructure, supported by strategies and incentives to increase active mobility; however, investments in pedestrian infrastructure have been insufficient, considering that walking constitutes as much as 54% of all trips.
- Shared mobility has become a prominent mode in the region, but further expansion is hindered by insufficient regulatory frameworks and a lack of integration with existing transport modes.

Impacts of the COVID-19 pandemic

- Mobility reductions accelerated starting in mid-March 2020, and by the end of that month passenger travel demand in the region had dropped nearly 80% and stayed roughly the same through late 2020.
- Public transport systems in the region are financed through a mix of user fees and government subsidies, both of which have been greatly impacted by the pandemic, with decreases in ridership and economic downturns.
- Cities across the LAC region responded by adding temporary bicycle lanes to promote socially distant transport options, including in Bogotá, Buenos Aires, Cuenca (Ecuador), Lima and Mexico City, among others.
- Paratransit (sometimes called "informal transport") has been an essential supplier of transport services in the LAC region, especially during the COVID-19 pandemic, providing access to mobility for millions of people, filling in gaps left by formal transport systems by quickly adapting and responding to changes in demand, and generating significant employment opportunities.

Credit: Institute for Transportation and Development Policy

Overview

Latin America and the Caribbean is the second most urbanised region in the world after Asia, with 81% of the population living in urban areas in 2019.[2] This high urbanisation rate has led to rising demand for transport and, in many cases, to an increase in private vehicle trips, resulting in congestion, bad air quality and growing CO_2 emissions.

The region has a high share of urban bus use as well as broad roll-out of bus rapid transit systems. In many cities, efforts are being made to improve walking and cycling infrastructure. However, the region also has the highest global growth in private vehicles, with projections of a three-fold increase by 2050, to exceed 200 million.[3] Freight represents 40% of global transport CO_2 emissions, and in the LAC region, 70% of surface freight is delivered via road (trucks), contributing greatly to regional transport emissions.[4]

COVID-19 has profoundly impacted transport in the LAC region, with sharp decreases in trips to public transport stations, freight transport and aviation activity. Demand levels stayed roughly the same through late 2020, although they showed slight increases each month. In addition, several major cities had announced plans to expand bicycle lanes before the onset of COVID-19, and the pandemic may have accelerated implementation *(see Box 1)*.[5]

Demand trends

The LAC region is experiencing the highest growth in car ownership in the world – up 58% between 2005 and 2015, or more than twice the global average of 27% *(see Figure 1)*.[6] While public transport use remains high, people in the region rely increasingly on private vehicles, leading to high congestion levels in cities. Regionally, more than 30% of the traffic in large cities is from vehicles looking for parking spots, and major cities such as Bogotá, Mexico City and São Paulo are considered among the most congested in the world.[7] As of 2015 (latest data available), nearly one-third of countries in the LAC region had car ownership rates above the global average of 173 vehicles per 1,000 people *(see Figure 2)*.[8]

Personal use of both private cars and motorcycles has grown in the region due to a mix of factors, including greater affordability of vehicles and rising incomes; convenience and accessibility when compared to public transport or active modes; and the perception of increased safety associated with private vehicles. The out-of-pocket costs of traveling by different modes vary widely in Latin American cities, with the costs of public transport being relatively high in many cities *(see Figure 3)*.[9] In São Paulo, Brazil, for example, the cost to take a bus 7 kilometres in 2014 was higher than the cost of fuel to drive a private vehicle the same distance.[10] In almost every city analysed, it is cheaper to travel by motorcycle than by bus or private vehicle.[11]

New vehicle sales

- **9% increase** in total new vehicle sales (2010-2019)
- **11% growth** in new passenger car sales (2010-2019)
- **Over 4.2 million** new passenger cars sold (2019)
- **2% growth** in new commercial vehicle sales (2010-2019)
- **1.5 million** new commercial vehicles sold (2019)

Sources: See endnote 12 for this section.

In addition to new vehicle sales, a large number of vehicles sold in the LAC region are used vehicles, which are not reflected in the numbers above.

The majority of passenger travel in the region occurs via public transport (averaging 68% of all trips).[13] **LAC has the world's highest per capita bus use and also leads in the implementation of bus rapid transit, with systems present in 54 cities as of 2019.**[14] Metro projects also have increased in recent years. Given the region's high urbanisation rates, there is further potential to expand on existing high levels of public transport and paratransit.

- In **Mexico**, passenger transport activity has grown 40.7% since 2010, to 537,270 million passenger-kilometres in 2019.[15]
- In **Bogotá**, **Lima**, **Medellín** and **Quito**, people use public transport for more than half of daily trips.[16] In **Mexico City** and **Panama City**, public transport accounts for more than 70% of daily trips.[17]

Around 70% of freight transport in the LAC region is by truck, and regional freight demand (on land and sea) is expected to more than double between 2015 and 2050.[18] As the demand for freight deliveries increases, fleet renewal will be needed to replace the region's ageing vehicles. This presents a challenge for freight companies, which operate in a decentralised ecosystem and without centralised smart freight systems to help alleviate negative impacts in the region.

- In **Mexico**, freight transport activity has grown 43.5% since 2010, to 347,733 million tonne-kilometres in 2019.[19]
- **Brazil** launched an extensive effort to increase the use of railways for cargo transport, investing around USD 4.5 billion between 2019 and 2020 to expand its network more than 4,000 kilometres.[20]

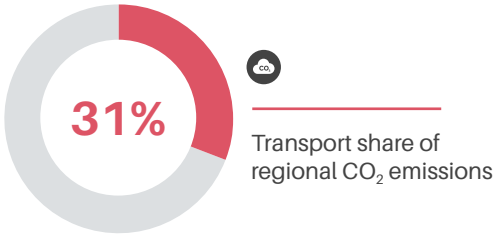
Emission trends

Transport CO_2 emissions in the LAC region increased 3% from 2010 to 2019, and accounted for 8% of total global emissions in 2019.[21] Transport contributed nearly a third of the region's total CO_2 emissions (31%) in 2019, a higher share than in peer regions such as Africa (23%) and Asia (12%).[22]

Per capita transport CO_2 emissions in the region (0.85 tonnes) track closely to the global average (0.88 tonnes) *(see Figure 4)*.[23] This is likely due to the mix of high public transport use and the simultaneous growth in car ownership rates alongside limited vehicle emission standards. In two-thirds of LAC countries, the growth in transport CO_2 emissions exceeded the global average of 16% (with Barbados and Bolivia exceeding this rate by more than five times) *(see Figure 5)*.[24]

Regional CO_2 trends:

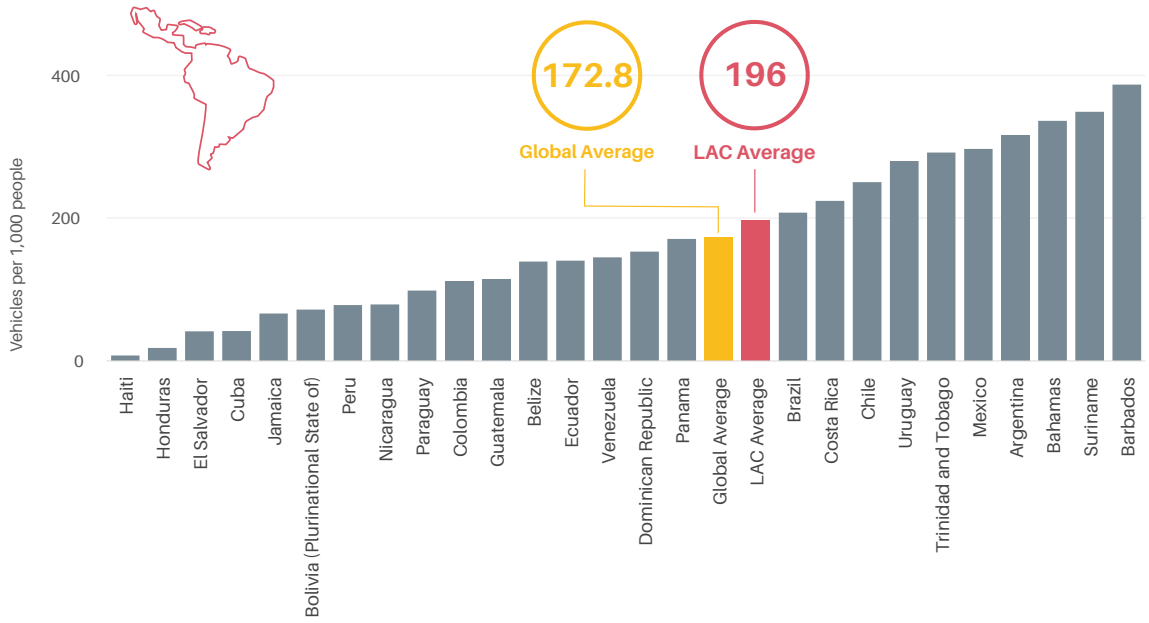
- Total transport CO_2 emissions (2019): **549 million tonnes**
- Share of global transport CO_2 emissions (2019): **8%**
- Per capita transport CO_2 emissions (2019): **0.85 tonnes**
- Transport CO_2 emissions per USD 10,000 GDP (2019): **0.99 tonnes**



Sources: See endnote 25 for this section.

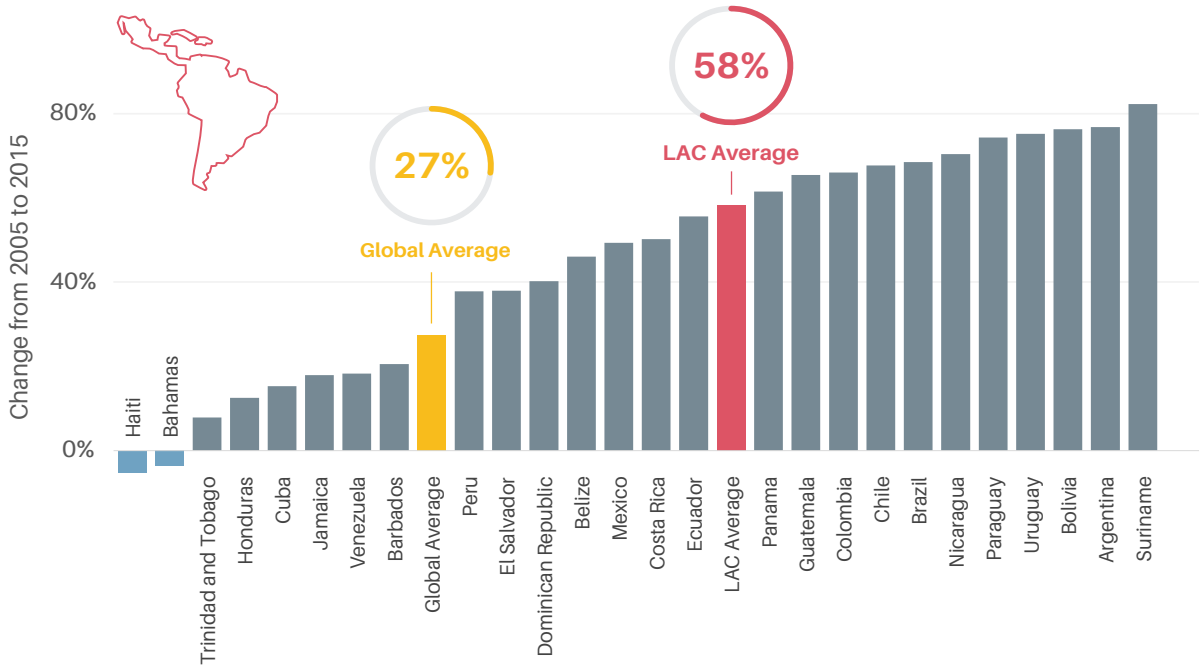
Transport emissions relative to economic output are higher in LAC than in any other region except Africa, at 0.99 tonnes of CO_2 per USD 10,000 in 2019.[26] This may be due to the dominance of road freight transport, as alternative modes such as rail and shipping, which are more cost effective and energy efficient, are relevant only in a few LAC countries.[27] Increased economic activity and export demand from international and domestic markets has also driven

Figure 1. Car ownership rates per 1,000 people in Latin America and the Caribbean, 2015



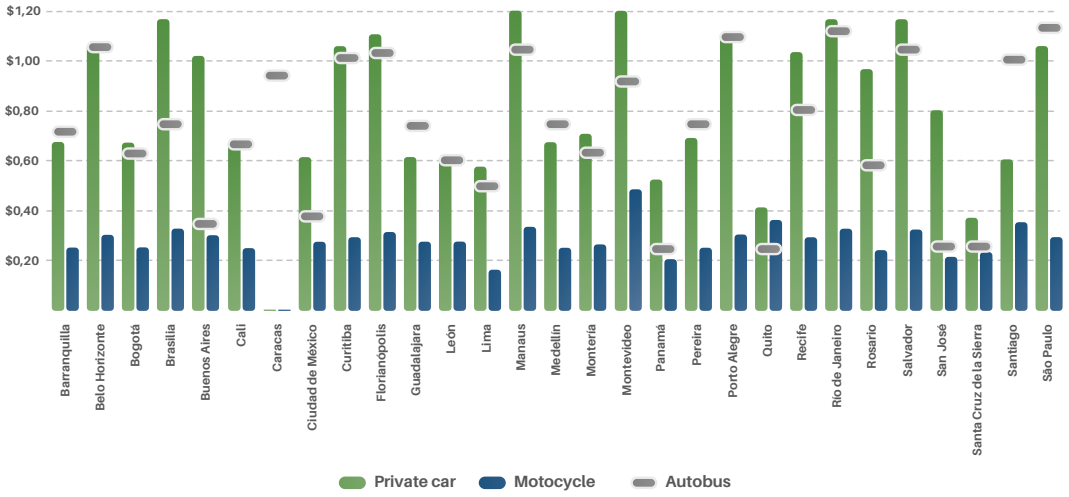
Source: See endnote 6 for this section.

Figure 2. Growth in car ownership in Latin America and the Caribbean, 2005-2015



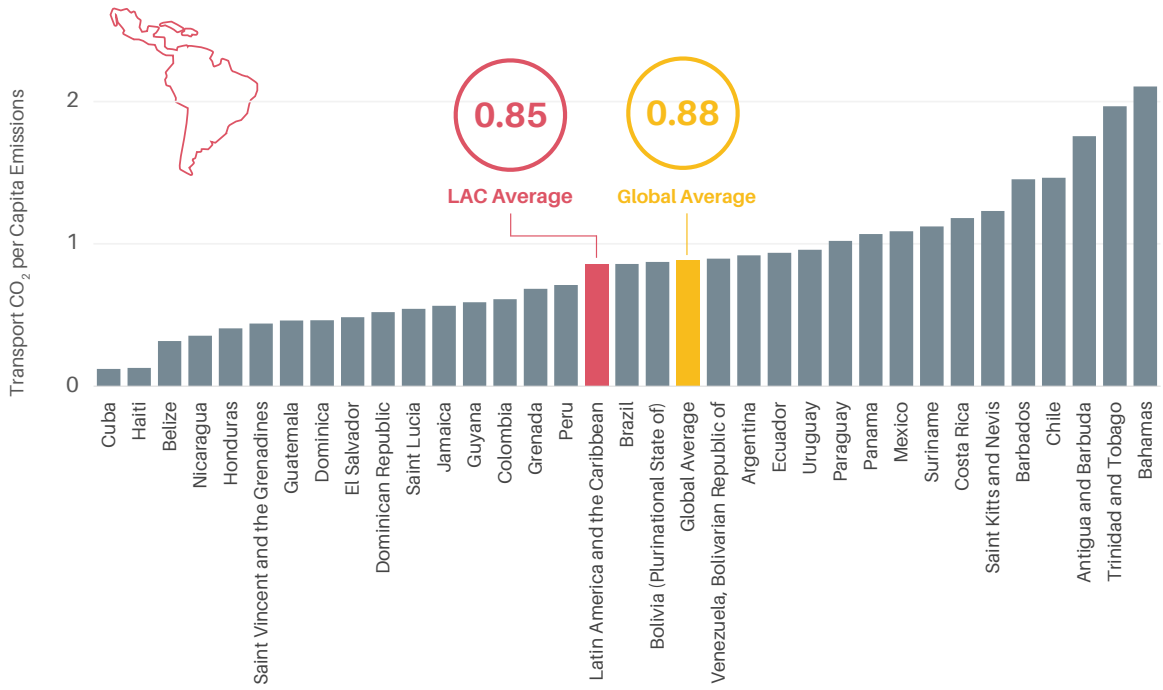
Source: See endnote 8 for this section.

Figure 3. Out-of-pocket costs to travel 7 kilometres, by transport mode, in selected cities in Latin America and the Caribbean, 2014



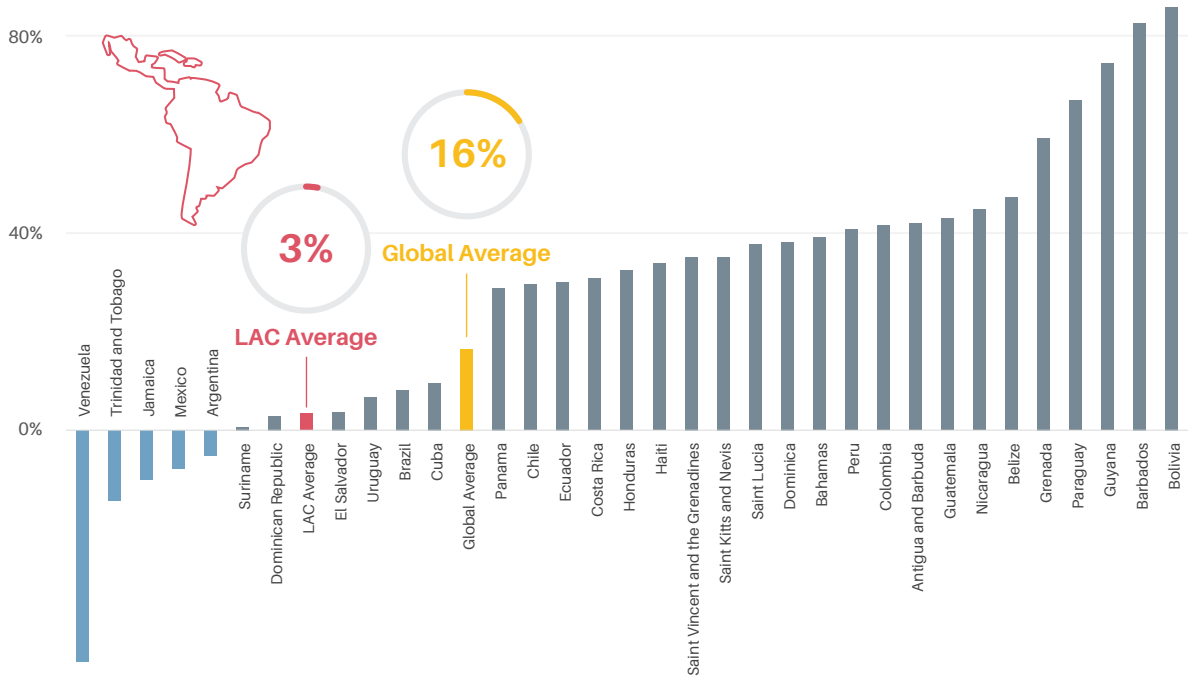
Source: See endnote 9 for this section.

Figure 4. Per capita transport CO_2 emissions in Latin America and the Caribbean, 2019



Source: See endnote 23 for this section.

Figure 5. Change in transport CO_2 emissions in Latin America and the Caribbean, 2010-2019



Source: See endnote 24 for this section.

growth in the region's trucking fleet (and in turn road-kilometres travelled), adding to the challenge of decoupling transport emissions from economic growth.[28]

The LAC region has lower vehicle emission standards than Asia and Europe, but emerging programmes in Argentina, Brazil, Chile and Costa Rica are contributing to more stringent standards.[29] The efficiency of road vehicles in LAC lags behind peer regions, and only a few countries have introduced vehicle emission standards.[30] In Central America and the Caribbean, which have large second-hand vehicle markets, a lack of harmonised standards on imported used vehicles is a significant barrier to decarbonising transport.[31] Greater regional and international co-operation could help promote stricter standards.

- **Argentina's** new intelligent transport programme aims for fuel savings and efficiency improvements in the freight sector by pioneering new technologies and management systems for companies – with the goal of reducing total transport emissions 8.4% by 2030.[32]
- In 2019, **Brazil** adopted P-8 standards (equivalent to the European Union's Euro VI standards[i]) to control emissions from heavy-duty vehicles. The standards are planned to take effect in 2022 and are expected to yield an estimated USD 11 in health benefits for each dollar invested in emission-control technologies.[33]
- **Chile** in 2018 implemented Giro Limpio, a voluntary programme that seeks to certify and recognise the efforts made by transport companies to improve their energy and environmental performance.[34] In 2019, the country issued its 2050 Energy Strategy, which includes long-term transport targets, among them higher energy efficiency standards for road transport, light-duty vehicle fuel economy standards and a target for 100% of new buses to include energy efficiency criteria.[35]
- **Santiago, Chile** has set maximum pollutant emission levels for public buses since 2017. Under this legal framework, the city's public transport system has evolved towards a cleaner fleet, with 996 zero- or low-emission buses circulating by the end of 2019 (comprising 14% of the system's fleet).[36]
- **Costa Rica** adopted Euro 4 vehicle emission standards for light-duty vehicles in 2018 and intends to move to Euro 6 standards[ii] in 2021.[37]

i For a heavy-duty diesel vehicle to be Euro VI-compliant, it cannot emit more than 0.4 grams per kilometre (g/km) of nitrogen oxide (NO_x) gases in steady-state testing. See https://theicct.org/sites/default/files/publications/ICCT_Euro6-VI_briefing_jun2016.pdf.

ii For a light-duty diesel vehicle to be Euro 6-compliant, it cannot emit more than 0.08 g/km of NO_x, while a petrol-fuelled vehicle can emit no more than 0.06 g/km of NO_x. See https://theicct.org/sites/default/files/publications/ICCT_Euro6-VI_briefing_jun2016.pdf.

Policy measures

The LAC region's current transport demand trajectory points towards rising emissions, worsening congestion and greater pollution. However, significant economic, social and environmental opportunities are available to help meet increasing demand through sustainable, low carbon transport measures.[38] Promising developments include policies to support investments in public transport and bus rapid transit systems, as well as increased cycling infrastructure in many cities. The electrification of transport, particularly buses, is growing, with significant opportunities to drive decarbonisation based on the region's high share of renewable energy.

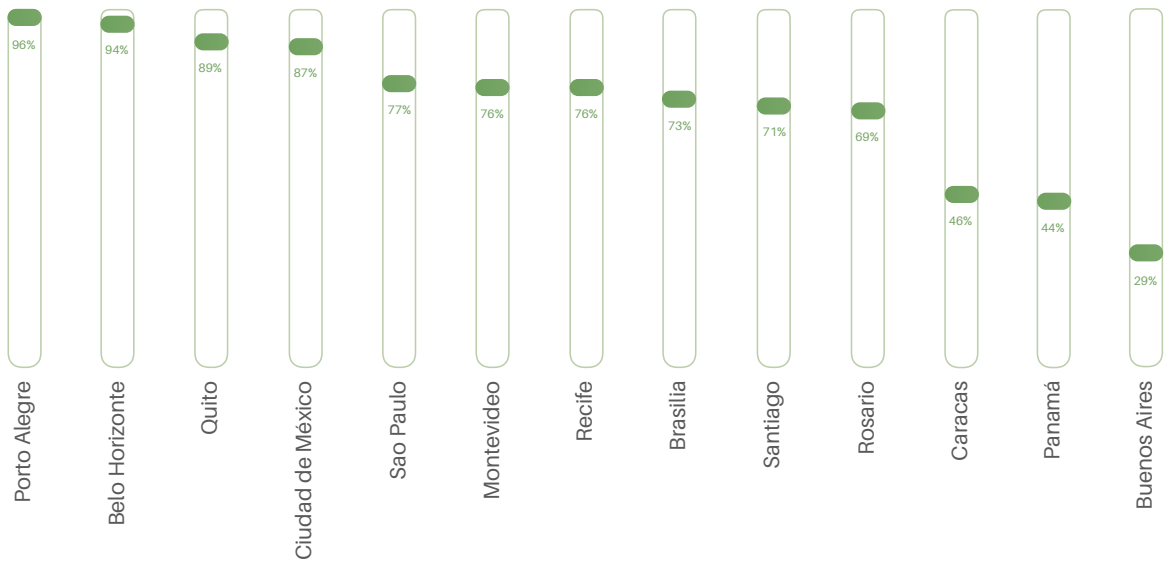
Strategic plans, enabling policies and incentives are emerging across the region to help accelerate the uptake and manufacturing of electric vehicles. Several electric vehicle manufacturing facilities exist in Brazil, and additional facilities are planned to produce electric trucks.[39] The replacement of bus fleets with electric buses also creates opportunities to increase regional manufacturing of these vehicles.

As of March 2021, nearly 3,000 electric buses were operating across the LAC region, most introduced in the past several years.[40] Chile and Colombia are rolling out electric buses at scale, with Bogotá's TransMilenio operating 1,485 of the buses as of early 2021.[41] This can create economies of scale for other regional neighbours to operate electric buses, which can be further supported through regulations on the pricing of electricity for charging electric vehicles.

- **Colombia** passed a new law establishing incentives for electric vehicles, including discounts on insurance premiums, exemptions on vehicle traffic restriction measures and preferential parking.[42]
- **Costa Rica** launched a National Electric Transport Plan with new laws and incentives to promote electric vehicles.[43]
- **Ecuador**, through its Energy Efficiency Law, set a target to electrify all buses by 2025 and eliminated import taxes on electric cars and buses as well as on charging stations and vehicle batteries. This has spurred the development of municipal regulations to support electric vehicle deployment.[44]
- **Mexico's** Alliance for Electromobility, which comprises governments, companies and civil society organisations, launched a 2019-2022 Strategic Plan for Electromobility and aims to promote policies, laws, regulations and an overall cultural shift towards electric vehicles.[45]

New financing streams will be needed to achieve an effective and quick transition towards electric fleets. In many cities in the LAC region, a high percentage of the operation costs for public transport are covered by ticket fares *(see Figure 6)*.[46] As more cities transition to electric buses, it will be important to find new ways to finance these

Figure 6. Percentage of operation costs covered by ticket fares, selected cities in Latin America and the Caribbean, 2014



Source: See endnote 45 for this section.

vehicle acquisitions, so that the costs are not passed down to users, potentially leading to declines in ridership. Electric shared mobility, including e-bicycles and scooters, is also a growing regional trend.

The LAC region boasts the world's highest shares of renewable energy, including in electricity grids, allowing greater potential to decarbonise transport through electrification.[47] Nearly every country in the region also has blending mandates for biofuels, although these are not always enforced.[48]

The region's high renewable energy share provides an opportunity to rapidly scale up the electrification of both passenger and freight transport. For example, the subway system in **Santiago**, Chile is powered largely by wind and solar energy and can serve as a model for peer cities and countries in the region.[49] However, a key barrier to scaling up electric mobility is the lack of regulation in regional electricity markets, impeding differentiated tariff rate designs and infrastructure investments in this area.

Recent efforts to reduce fossil fuel subsidies in the LAC region have been largely unsuccessful, adding to the challenge of decarbonising the transport sector. In 2019, an attempt to remove fossil fuel subsidies in Ecuador resulted in country-wide protests.[50] Similar responses occurred in **Argentina**, **Mexico** and **Brazil**, where a reduction in diesel subsidies in 2018 led truck drivers to hold a week-long strike.[51]

The LAC region has the world's second highest number of implemented sustainable urban mobility plans (SUMPs) after Europe, and national urban mobility plans (NUMPs) are growing in prominence (although not yet widespread).[52] In **Brazil**, where such plans are mandatory for cities with more than 200,000 citizens, over 200 Sustainable Urban Mobility Plans had been finalised by 2020, and at least 100 additional plans were being prepared for future years.[53]

- **MobiliseYourCity** and the **EUROCLIMA+ programme** supported the development of SUMPs in eight LAC cities, as well as NUMPs in five countries (Chile, Colombia, Ecuador, Peru and Uruguay), from 2015 to 2020.[54]
- In 2019, **Feira de Santana, Brazil** launched a new SUMP that commits USD 26 million to reclaim public spaces for walking and cycling infrastructure and to improve public transport and traffic safety.[55]
- **Peru**'s national sustainable urban transport programme (Promovilidad), developed in 2019, promotes sustainable urban mobility and co-ordinated public transport systems in 30 cities. It focuses on improving mobility services by providing technical and financial support to municipalities.[56]

Cities in the region continued to invest in cycling infrastructure, supported by strategies and incentives to increase active mobility; however, investments in pedestrian infrastructure have been insufficient, considering that walking constitutes as much as 54% of all trips.[57] Pedestrians, cyclists and motorcyclists still account for more than half of regional road fatalities.[58] If these modes are to be supported, more emphasis needs to be placed on improving the safety of users by reducing road injuries and fatalities.[59]

- Campaigns to implement safe and level pedestrian crossings have succeeded in cities across **Mexico** as well as in Medellín, **Colombia**, replacing pedestrian bridges that were inaccessible to many.[60]

Cycling infrastructure has expanded greatly in urban areas.

- **Bogotá, Colombia** had 580 kilometres of bicycle lanes as of 2019, and in February 2020 it announced plans for an additional 280 kilometres; the city accelerated this plan in the early months of COVID-19 by adding 84 kilometres in March.[61]
- **Costa Rica** announced that it would offer tax incentives to companies promoting bicycle use among employees.[62] The government also passed a law to prioritise cycling, introducing an active mobility unit, a technical design guide for cycling infrastructure, public bike-sharing and financing for cycling.[63]
- **Mexico City, Mexico** introduced a new strategy in 2019 that aims to integrate fares among the various public transport services and to develop more bike infrastructure.[64]
- As part of its COVID-19 response, **Lima, Peru** implemented 50 kilometres of emergency cycling infrastructure measures, including bike lanes and parking spots. This is expected to connect with the existing 227 kilometres of cycling facilities that integrate with health and other services.[65]

Shared mobility has become a prominent travel mode in the region, but further expansion is hindered by insufficient regulatory frameworks and a lack of integration with existing transport modes. The recent rapid deployment of car-sharing and electric scooter rental (both for passenger transport and for last-mile logistics) in some cities shows promise of expanding transport options. However, a lack of strong regulation related to safety, pricing and integration of shared mobility with existing transport modes poses barriers to expansion. Many of the service providers supporting the delivery and maintenance of shared mobility lack formal employment contracts, with no access to occupational health insurance or pensions.

- A new e-scooter service in **Quito, Ecuador** began operating 75 of the scooters at 32 stations in November 2019, avoiding 4 tonnes of transport CO_2 emissions during the first week of operation.[66]
- In 2019, 30% of riders in **Chile** were replacing car trips with scooters, as the number of trips via Lime scooters exceeded 1 million.[67]
- In January 2020, **Lime** announced plans to cease operations in Bogotá, Buenos Aires, Lima, Montevideo and Puerto Vallarta due to low interest in its services.[68]

Box 1. Impacts of the COVID-19 pandemic on transport in Latin America and the Caribbean

Major COVID-19 impacts:

- 72% decrease in trips to public transport stations (at lowest point in 2020 versus January 2020 average)
- 37% to 42% decline in freight transport activity (below 2019 levels)
- 60% decline in international aviation activity (below 2019 levels)
- 54% decline in domestic aviation activity (below 2019 levels)

COVID-19 has profoundly impacted transport in the LAC region. **Mobility reductions accelerated starting in mid-March 2020, and by the end of that month passenger travel demand in the region had dropped nearly 80%.** Demand levels stayed roughly the same through late 2020, although they showed slight increases each month. Traffic volume dropped 88% in **Buenos Aires**, and at their lowest levels (in mid-April 2020) public transport trips fell 97% in **Lima**, 96% in **Cuenca** (Ecuador), 92% in **Bogotá**, 86% in **São Paulo** and 75% in **Quito**.

The use of telework services in the region increased more than 300% in the first half of the year, and new orders through the e-commerce site Mercado Libre increased more than 100% in Chile, Colombia and Mexico compared to 2019, greatly impacting passenger and freight demand.

Public transport systems in the region are financed through a mix of user fees and government subsidies, both of which have been greatly impacted by the pandemic, with decreases in ridership and economic downturns. Alternative financing schemes are key to ensuring that these systems are financially sustainable.

- Between March and April 2020, demand fell 93% for buses, subways, trains, minibuses and combis in **Lima, Peru**. Over the following year, public transport companies were forced to cut services due to economic losses from the pandemic, with calls for government subsidies to support their continued operation.
- In **Costa Rica**, public transport operators reported 80% revenue loss during April 2020, totalling CRC 14,000 million (around USD 23 million). The drop in ridership during 2020 overall averaged more than 60%.

The COVID-19 Observatory, established by the United Nations Economic Commission for Latin America and the Caribbean, tracked responses to the pandemic in the region, with countries such as Belize, Brazil, Chile, Costa Rica and El Salvador introducing stringent lockdown measures. **Cities across the region responded by adding temporary bicycle lanes to promote socially distant transport options, including in Bogotá, Buenos Aires, Cuenca (Ecuador), Lima and Mexico City, among others.** It remains unclear whether these measures will be temporary or permanent. In addition, several major cities had announced plans to expand bicycle lanes before the onset of COVID-19, and the pandemic may have accelerated implementation.

COVID-19 has brought attention to the critical role that paratransit plays in moving people and goods in many low- and middle-income countries. **Paratransit has been an essential supplier of transport services in the LAC region, especially during the COVID-19 pandemic, providing access to mobility for millions of people, filling in gaps left by formal transport systems by quickly adapting and responding to changes in demand, and generating significant employment opportunities.** Groups like the Inter-American Development Bank, the Centro para la Sostenibilidad Urbana and Agile City Partners have published reports providing more insight into these practices. Universities have also conducted research to inform decision makers on how to support and formalise paratransit systems and how to best integrate them into climate change, energy and transport agendas at the city, regional and national levels, including as part of COVID-19 recovery measures. *(For more on paratransit, see Focus Feature 6.)*

Source: See endnote 5 for this section.

In Practice: Additional Policy Responses

Avoid measures

Sustainable mobility planning

- In 2020, **Colombia** developed a new national policy for urban and regional mobility, with guidelines for the comprehensive management of mobility in order to contribute to social welfare, environmental protection and economic growth in cities.[69]
- Integrated mobility plans were established in four districts of San José, **Costa Rica** in 2018.[70]
- Buenos Aires, **Argentina** developed a Clean Mobility Plan in 2017 that includes measures such as shared mobility for private trips, Euro VI standards for trucking and a higher share of biofuel use.[71]

Shift measures

Public transport

- **Brazil's** bus rapid transit system expanded in 2019 with the Transoceânica corridor in Niterói, Rio de Janeiro.[72] The cities of Campinas and Salvador were adding bus rapid transit as of 2020.[73]
- **Brazil** announced plans in 2020 to finance improvements in urban mobility, with a strong focus on urban rail and active mobility.[74] The city of **São Paulo** has extended its subway system nearly 50 kilometres in recent years.[75]
- **San Pedro**, Costa Rica implemented five corridors of additional exclusive bus lanes in 2019 and 2020.[76]
- **Panama** inaugurated Metro Line 2 in 2019, with 14 stations spanning 22 kilometres, and is planning a network of five metro lines by 2040.[77]
- **Cuenca**, Ecuador began the commercial operation of a tram system with a 20.4 kilometre network in September 2020.[78]
- In Quito, **Ecuador** a metro system extending 22 kilometres is under construction.[79]
- In **Mexico City**, a 34-kilometre cable car system, Cablebus, was inaugurated in March 2021 to supplement the public transport network.[80]
- Several cities were undertaking expansions of existing public transport systems, including the TransMilenio in **Bogotá**, the Metrobús in **Buenos Aires** and the Metrobús in **México City**.[81]

Shared mobility services

- Ride-hailing services in Latin America generated USD 518 million in revenue in 2018, an amount projected to reach USD 1,017 million by 2023.[82]
- **Brasília**, Brazil, in co-operation with major development agencies and power companies, launched a pioneering electric vehicle car-sharing project in October 2019 that offers 16 vehicles for use by local civil servants.[83]

Cycling

- In 2019, 1.2 million daily cycling trips were taken in Santiago, **Chile**, and the total length of cycling lanes increased 12% from 2017, to 408 kilometres.[84]
- In **Lima**, Peru, the Ciclovías X 3 initiative, developed by WWF-Peru together with Actibícimo and the Pontifical Catholic University of Peru, tripled the length of cycling paths to more than 450 kilometres.[85]
- In 2019, **Buenos Aires** committed to improving pedestrian conditions in five designated areas, including by implementing stricter speed limits, improving pedestrian and cycling infrastructure, and reconfiguring the spaces to accommodate pedestrian traffic.[86] The city also has an extensive network of more than 260 kilometres of protected cycling lanes.[87]
- **Mexico City** had more than 200 kilometres of cycling lanes as of 2019 and announced plans to expand the network to 600 kilometres by 2024 in an effort to reduce transport-related emissions.[88]
- In April 2020, the first phase of **Quito's** Emergent Cycle Path Plan was launched with the aim of creating 62.7 kilometres of cycling paths around the city. The plan, presented by the local Ministry of Mobility, was created in conjunction with public entities, universities and citizen groups in favour of sustainable mobility.[89]

Improve measures

Electric mobility

- Several states in **Brazil**, including Mato Grosso do Sul, Rio de Janeiro and São Paulo, have implemented a 50% vehicle tax discount on purchases of zero-emission vehicles.[90]
- In **Bogotá**, Colombia, a fleet of 1,485 electric buses was in operation as of 2021.[91]
- In **Santiago**, Chile the fleet of electric buses is envisioned to grow from 973 as of 2021 to 5,300 by 2022, with a goal of 100% electric public transport in the city by 2040.[92]
- At least eight cities in the LAC region received their first electric buses in 2019 and 2020, including **Buenos Aires**, **Guayaquil**, **Lima**, **Mendoza**, **Mexico City**, **Montevideo**, **Panama City** and **São Paulo**.[93]

Renewable energy and alternative fuels

- In 2020, the local legislature in **Santa Fe**, Argentina proposed a shift to biodiesel for public transport, following the 2018 launch of B100 (100% biodiesel) buses in **Buenos Aires**.[94]
- The bus fleet in **Rosario**, Argentina has been fully operating with B100 buses since 2019.[95]
- **Bolivia** began producing biofuels in 2018, making 80 million litres of ethanol from sugar cane with plans to increase this to 350 million litres by 2025.[96]

The Ministry of Hydrocarbon Policies in **Ecuador** committed in 2019 to policies and actions to guarantee the quality of fuels, encourage the use of alternative fuels and promote electric mobility.[97]

Brazil's Biofuels National Policy (RenovaBio) became official in December 2019, establishing annual compulsory goals for reducing greenhouse gas emissions in the commercialisation of fuels and creating a voluntary carbon credit market based on the volume of fossil fuel transactions from each biofuel distributor.[98] The programme aims to boost the biofuel share of the energy mix, and Brazil hopes to reduce the carbon intensity of the fuel mix 10.1% by 2028.[99] Preliminary targets for greenhouse gas reductions in 2021 were released for all fuel distributers.[100]

In November 2020, **Chile**'s Ministry of Energy presented a National Strategy for Green Hydrogen with three main objectives: to develop 5 gigawatts of electrolysis capacity by 2025, to produce the cheapest green hydrogen in the world by 2030 and to be among the top three hydrogen exporters by 2040.[101]

Annex: Methodological Note

Data usage

Time period for data:
The report strives to utilise the most recent publicly available data and information just prior to the time of publication (as of 31 May 2021). The figures in the report were developed between September and December 2020 using the most recent data available.

Secondary data:
SLOCAT relies on secondary data and information collected and provided by SLOCAT partners and other entities and does not make use of any internal modelling tools.

Data on sustainable mobility: A call to action

The report benefits directly from data collected by a wide range of stakeholders working in different areas of transport.

Data are important for providing a comprehensive picture of the status of sustainable, low carbon transport and are essential for both policy and investment decision making. In these times of change, it is critical to upgrade data and policy collection and interpretation capacities to better understand progress and the hurdles that must be addressed.

The data limitations mentioned below are not new. Obtaining regular, reliable and public data across regions and transport modes remains an outstanding issue. When an increasing number of stakeholders are collecting data and policy information, more and better open-access data and capacity building efforts for data interpretation are supported by many multi-stakeholder partnerships in the sustainable, low carbon movement.

If you share our passion for open-access data and knowledge towards greater impact on policy and investment decision making worldwide and/or would like to contribute data or knowledge to our collective efforts on this report, **please reach out to the research team in the SLOCAT Secretariat at tcc-gsr@slocatpartnership.org**.

Specific data used in this report

Data on emissions

The data in this edition of the report point to the direct carbon emissions from transport activity; they do not cover the indirect emissions and land-use impacts associated with certain modes of transport. The report primarily utilises CO_2 emission data compiled in the Emissions Database for Global Atmospheric Research (EDGAR) from the Joint Research Centre of the European Commission, as this represents the most recent, comprehensive dataset on transport CO_2 emissions. However, this global dataset does not convey in full detail the unique situations of individual countries.

EDGAR provides estimates for fossil CO_2 emissions from all anthropogenic activities with the exception of land use, land-use change, forestry and the large-scale burning of biomass. The main activities covered are CO_2 emissions emitted by the power sector (i.e., power and heat genertion plants), by other industrial combustion (i.e., combustion for industrial manufacturing and fuel production) and by buildings and other activities such as industrial process emissions, agricultural soils and waste. Transport activities covered within EDGAR include road transport, non-road transport, domestic aviation, and inland waterways on a country level, as well as international aviation and shipping.[1]

For the world, regions and countries, the CO_2 emission data (provided by EDGAR) span through 2019. In a few places in the report, CO_2 data for 2020 are shown to illustrate the impact of the COVID-19 pandemic; however, these data are based on a different methodology than the EDGAR dataset and should not be compared directly with the data from previous years.

The latest CO_2 emission data for individual transport modes are for 2018 and have been compiled only at the global level. For passenger and freight transport, the data on global CO_2 emissions are for 2017, as this is the latest year with robust data. Data on passenger activity (passenger-kilometres) and freight activity (tonne-kilometres) – provided mainly in the country fact sheets – are based on the latest available year, as indicated in the report analysis.

Information on greenhouse gas emissions – provided in CO_2 equivalent (CO_{2eq}) – include not only CO_2 but also methane, nitrous oxide, and industrial gases such as hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride.[2] These data are less up-to-date. As of 31 May 2021, data on greenhouse gas emissions were not readily available for the period 2019-2020. In some cases, additional data sources were used to provide detailed information about other climate pollutants besides CO_2.

All data on CO_2 and other greenhouse gas emissions, as well as CO_{2eq}, are provided in metric tonnes.

Data on car ownership

Information on car ownership rates is based on a global dataset from the International Organization of Motor Vehicle Manufacturers (OICA), with the latest release (as of 31 May 2021) dating from 2015.[3] Although newer information is available for some individual countries, using these data would hinder accurate global comparisons. Data on passenger and commercial vehicle sales were available only up to 2019.

Policy landscape data

The policy-related information presented in this report is not intended to be comprehensive. The data for the policy landscape indicators provided in Section 3 were gathered through desk research unless otherwise indicated. Barriers to accessing such information include language and limited availability of information through online media (e.g., websites, press releases and news articles).

Data in country fact sheets

Information in the fact sheets is based on desk research and on contributions from the national focal points. The data were collected to the best of the authors' knowledge and based on data availability, and thus may not be complete or show the most recent status. When no information was available for a given indicator, the term "Not available" is used.

Data gaps

Major data gaps exist in areas where there is no globally accepted data collection methodology. For example, the mapping of cycling and walking infrastructure is not currently done in all regions. Also, the modal share can be surveyed through different methods, leading to inconsistencies in available data. In addition, data on paratransit (informal transport), a predominant form of transport in many parts of the world, are largely lacking. This results in an incomplete picture of the impact of transport on climate change and sustainable development.

Methodological approach

Countries and regions

The report follows the M49 Standard of the United Nations Statistics Division.[4] In total, 196 countries have official United Nations membership and are also party to the United Nations Framework Convention on Climate Change. The available data have been put in a common structure for the United Nations member countries, regions and income groups to enable a consistent assessment. Income groups are based on the World Bank's classification of 2019.[5]

Economic calculations

The per capita and gross domestic product (GDP) calculations are based on the United Nations World Population Prospects 2019 and on World Bank GDP data using constant 2010 USD.[6]

Spatial and temporal scales

The geographic scale (global, national, city-level, etc.) as well as time scale (annual, monthly, daily) used in this report depends largely on the available dataset, as noted in the relevant figures and text. The detailed data forming the basis of the calculations and analysis are provided in the SLOCAT Transport Knowledge Base.[7]

Criteria for selection

The report covers policies, targets, emission reductions (achieved or envisioned) and market measures. To merit inclusion in the analysis, the policies, projects and trends must have been announced or completed between 2018 and 2020. Significant developments from January through May 2021 were included when deemed relevant, with the understanding that the next edition of the *Transport and Climate Change Global Status Report* will cover a period starting in 2021.

Pre- and post-COVID-19 pandemic trends

The year 2020 was pivotal for the world, and the COVID-19 pandemic has had substantial impacts on many of the transport trends monitored in this report. This edition attempts to differentiate between long-term trends and impacts due to the pandemic. To the extent possible, the analysis notes "pre-pandemic" (up to the end of 2019 or latest by February 2020) and "during pandemic" trends (starting in March 2020 until the end of 2020), as in some cases the pandemic led to reversals in long-term trends, at least for a specific period of time. In each section, a box describes the impacts that the pandemic has had on specific regions and sub-sectors.

Assembling the report

Global Strategy Team

This edition of the report was guided by a global strategy team consisting of 20 experts in the field who provided inputs over the span of six meetings between September 2019 and October 2020. Additionally, small group consultations were organised in February 2021, following the peer review process.

Authors and contributors

The report was collaboratively drafted by 22 authors and contributors from 16 organisations, led by the SLOCAT Secretariat. This includes additions and high-level inputs from the copy editor and from the special advisor who also co-authored the Executive Summary. Authors researched and compiled relevant facts and figures for the five sections of the report, including the Focus Features, with supporting review and inputs from several other organisations.

Peer review: A peer review process was carried out from 18 December 2020 to 20 January 2021 with 1,700 comments received from 74 reviewers. Each comment was individually reviewed by the SLOCAT Secretariat and considered in finalising the report.

National focal points: The report benefited from the contributions of voluntary national focal points, or experts from various regions and countries who have been essential to overcome language and information barriers. A public call for participation to provide information on policies and data resulted in several hundred initial registrations. Out of these registrations, 78 national focal points provided inputs through a first survey from 24 January to 3 February 2020; and through a second survey (focused on the country fact sheets) from 6 to 30 August 2020. All national focal points that contributed to the surveys are listed in the Acknowledgements.

Endnotes

1.5 Latin America and the Caribbean Regional Overview

1 United Nations (UN) (2019), "2019 Revision of World Population Prospects", https://population.un.org/wpp (accessed 28 September 2020); UN (2018), "World Urbanization Prospects 2018", https://population.un.org/wup (accessed 28 September 2020); GDP growth is in constant 2010 USD, from World Bank (2020), "GDP (constant 2010 US$)", https://data.worldbank.org/indicator/NY.GDP.MKTP.KD (accessed 28 September 2020).

2 World Bank (2018), "Urban population (% of total population) – Latin America & Caribbean", https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=ZJ&name_desc=false (accessed 6 May 2021).

3 P. Yañez-Pagans et al. (2018), *Urban Transport Systems in Latin America and the Caribbean: Challenges and Lessons Learned*, Inter-American Development Bank (IDB), Washington, D.C., https://publications.iadb.org/publications/english/document/Urban-Transport-Systems-in-Latin-America-and-the-Caribbean-Challenges-and-Lessons-Learned.pdf.

4 UN Environment Programme (UNEP) (2019), *Zero Carbon Latin America and the Caribbean*, Nairobi, https://euroclimaplus.org/images/Movilidad/noticias/Zero_Carbon_LAC_Executive_Summary.pdf.

5 Box based on the following sources: 72% decrease, compared to average mobility between 3 January and 6 February 2020, calculated from Google (2021), "COVID-19 Community Mobility Reports", https://www.google.com/covid19/mobility (accessed 27 April 2021); International Transport Forum (2020), *How Badly Will the Coronavirus Crisis Hit Global Freight?* OECD Publishing, Paris, https://www.itf-oecd.org/sites/default/files/global-freight-covid-19.pdf; International Civil Aviation Organization, "Economic impacts of COVID-19 on civil aviation", https://www.icao.int/sustainability/Pages/Economic-Impacts-of-COVID-19.aspx (accessed 27 April 2021); passenger travel demand from Moovit, "Public transit statistics by country and city", https://moovitapp.com/insights/en/Moovit_Insights_Public_Transit_Index-countries (accessed 11 May 2021); traffic volume and public transport trips from IDB, "Coronavirus Impact Dashboard", https://www.iadb.org/en/topics-effectiveness-improving-lives/coronavirus-impact-dashboard (accessed 11 May 2021); Economic Commission for Latin America and the Caribbean (ECLAC) from N. Medimorec et al. (2020), "Impacts of COVID-19 on mobility: Preliminary analysis of regional trends on urban mobility", SLOCAT Partnership on Sustainable Low Carbon Transport, 26 May, https://slocat.net/wp-content/uploads/2020/05/SLOCAT_2020_COVID-19-Mobility-Analysis.pdf; e-commerce from D. Rodríguez (2020), "3 ways COVID-19 will impact Latin American logistics", America Market Intelligence, 11 June, https://americasmi.com/insights/3-ways-covid-19-will-impact-latin-american-logistics; telework and e-commerce from United Nations Conference on Trade and Development (2021), *COVID-19 and E-Commerce: A Global Review*, Geneva, https://unctad.org/system/files/official-document/dtlstict2020d13_en.pdf; Lima from S. G. Gámez et al. (2020), "Adaptar un nuevo modelo de transporte urbano en América Latina para afrontar la pandemia", 6 July, https://blogs.worldbank.org/es/latinamerica/adaptar-un-nuevo-modelo-de-transporte-urbano-en-america-latina-para-afrontar-la, and from Gestión Perú (2021), "Paro de transporte público: Transportistas de Lima y Callao evaluarán hoy si el paro es indefinido o escalonado", 4 July, https://gestion.pe/peru/paro-de-transporte-publico-transportistas-de-lima-y-callao-evaluaran-hoy-si-el-paro-es-indefinido-o-escalonado-nndc-noticia; Costa Rica from S. Rodriguez (2020), "Pandemic generated losses of ₡14,000 million in the bus sector in April", AmeliaRueda.com, 6 March, https://www.ameliarueda.com/nota/pandemia-genero-perdidas-de-14.000-millones-sector-autobusero-en-abril, and from Autoridad Reguladora de los Servicios Publicos (2019), "Pasajeros movilizados e ingresos percibidos autobuses", 7 November, https://aresep.go.cr/transparencia/datos-abiertos/pasajeros-movilizados-autobuses; temporary bike lanes from COVID Mobility Works, "Find Mobility Responses", https://www.covidmobilityworks.org/find-responses?mode-types=changes-to-public-space&locations=argentina%7Cbrazil%7Cchile%7Ccolombia%7Cecuador%7Cmexico%7Curuguay&modes=bicycle-e-bicycle (accessed 10 May 2021); published reports from N. Morales-Miranda et al., eds. (2021), *Enciclopedia del Transporte Informal en América Central*, Centro para la Sostenibilidad Urbana & Agile City Partners, San José, https://drive.google.com/file/d/17MU6OYYAk2kAedAwShwfKa_eiyHj2x-f/view; T. Hein Tun et al. (2020), *Informal and Semiformal Services in Latin America: An Overview of Public Transportation Reforms*, IDB, Washington, D.C., https://publications.iadb.org/publications/english/document/Informal-and-Semiformal-Services-in-Latin-America-An-Overview-of-Public-Transportation-Reforms.pdf.

6 Figure 1 from SLOCAT (2018), "Transport and Climate Change in Latin America & Caribbean", https://slocat.net/wp-content/uploads/legacy/TCC-GSR-Latin-America-infographic-ENG.pdf.

7 M. Boher (2015), "State of the art and opportunities of smart parking in Latin America", Urbiotica, 24 July, https://www.urbiotica.com/en/state-art-oportunities-smart-parking-latin-america.

8 Figure 2 from SLOCAT calculations based on International Organization of Motor Vehicle Manufacturers (OICA) (2020), "Vehicles in use", https://www.oica.net/category/vehicles-in-use (accessed 6 May 2021).

9 Figure 3 from N. Estupiñan et al. (2018), *Transporte y Desarrollo en América Latina*, Development Bank of Latin America (CAF), Caracas, http://scioteca.caf.com/handle/123456789/1186.

10 Ibid.

11 Ibid.

12 OICA (2020), "Global sales statistics 2019-2020", https://www.oica.net/category/sales-statistics (accessed 15 April 2021).

13 Yañez-Pagans et al., op. cit. note 3.

14 Ibid.; UNEP, op. cit. note 4.

15 Organisation for Economic Co-Operation and Development (OECD), "OECD statistics", https://stats.oecd.org/index.aspx?r=616989 (accessed 6 May 2021).

16 A. Maxwell (2019), "Sustainable public transport in Latin America", Natural Resources Defense Council, 20 September, https://www.nrdc.org/experts/amanda-maxwell/sustainable-public-transport-latin-america.

17 Ibid.

18 UNEP, op. cit. note 4.

19 OECD, op. cit. note 15.

20 Ministry of Infrastructure of Brazil, "Mapa de Projectos", https://antigo.infraestrutura.gov.br/concessoes/#mapa (accessed 16 May 2021).

21 SLOCAT calculations based on M. Crippa et al. (2020), *Fossil CO2 Emissions of All World Countries, JRC Science for Policy Report*, Publications Office of the European Union, Luxembourg, https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/fossil-co2-emissions-all-world-countries-2020-report.

22 Ibid.

23 Figure 4 from SLOCAT calculations based on Crippa et al., op. cit. note 21, and on UN (2019), op. cit. note 1.

24 Figure 5 from SLOCAT calculations based on Crippa et al., op. cit. note 21.

25 European Commission (2021), "Emissions Database for Global Atmospheric Research", https://data.jrc.ec.europa.eu/collection/edgar (accessed 6 May 2021).

26 SLOCAT calculations based on Crippa et al., op. cit. note 21.

27 UNEP, op. cit. note 4.

28 Ibid.

29 IEA (2019), *Fuel Economy in Major Car Markets*, Paris, https://www.iea.org/reports/fuel-economy-in-major-car-markets.

30 Ibid.

31 UNEP (2017), *Used Vehicles: A Global Overview*, Nairobi, https://unece.org/DAM/trans/doc/2017/itc/UNEP-ITC_Background_Paper-Used_Vehicle_Global_Overview.pdf.

32 Government of Argentina (2018), "El gobierno lanzó el Programa de Transporte Inteligente", 2 October, https://www.argentina.gob.ar/noticias/el-gobierno-lanzo-el-programa-de-transporte-inteligente-0.

33 J. Miller (2019), "Brazil PROCONVE P-8 emission standards", International Council on Clean Transportation, 27 February, https://theicct.org/publications/brazil-proconve-p-8-emission-standards.

34 Giro Limpio, "La ruta verde para Chile", https://www.girolimpio.cl (accessed 10 May 2021).

35 Ministry of Energy of Chile, *Energía 2050: Política Energética de Chile*, Santiago, https://energia.gob.cl/sites/default/files/energia_2050_-_politica_energetica_de_chile.pdf.

36 H. Schneider (2020), Talking points presented in the CDP Education launch event, held virtually, 23 November.

37 Paris Process on Mobility and Climate, "Introducing low sulfur fuels and vehicle emission standards by 2030", http://www.ppmc-transport.org/global-strategy-for-cleaner-fuels-and-vehicles (accessed 6 May 2021).

38 SLOCAT (2020), *The Environmental, Economic and Social Benefits of Transport Decarbonisation in Latin America and the Caribbean*, report prepared for ECLAC, Santiago.

39 H. Schneider (2020), *Notes About Electric Buses*, Working paper, ECLAC, Santiago.

40 Semana (2021), "Bogotá, la ciudad con mayor número de buses eléctricos en Latinoamérica", 1 November, https://www.semana.com/nacion/articulo/bogota-la-ciudad-con-mayor-numero-de-buses-electricos-en-latinoamerica/202119.

41 Ibid.

42 M. M. Lorduy (2019), "Ley 1964 de 2019: Movilidad sostenible", Asuntos Legales, 7 September, https://www.asuntoslegales.com.co/consultorio/ley-1964-de-2019-movilidad-sostenible-2905412.

43 For example, Law 9518 provides several incentives such as lower import tariffs, reductions in yearly permit payments, parking exemptions (still not in use) and dedicated parking spaces, and no restriction on entry to the defined area inside the ring road around San José. Some discounts and benefits will depend on the value of the vehicle (overall it has to be under USD 60 000).

44 Primicias (2019), "Los autos eléctricos tendrán cero arancel tras disposición del Comité de Comercio Exterior", 6 June, https://www.primicias.ec/noticias/economia/autos-electricos-cero-arancel-comex; Pérez Bustamante & Ponce, "La Ley Orgánica de Eficiencia Energética entró en vigencia", https://www.pbplaw.com/es/la-ley-organica-de-eficiencia-energetica-entro-en-vigencia (accessed 6 May 2021).

45 International Copper Association Mexico (2019), *Alianza por la Electromovilidad en México: Plan Estratégico 2019-2022*, Procobre Centro Mexicano de Promoción del Cobre A.C., Naucalpan de Juárez, https://www.conuee.gob.mx/transparencia/boletines/transporte/automovilistaeficiente/otrosdocumentos/Plan_estrategico_version_final-comprimido_Procobre.pdf.

46 Figure 6 from Estupiñan et al., op. cit. note 9.

47 World Bank (2019), "América Latina carga las baterías para el transporte limpio", 24 April, https://www.bancomundial.org/es/news/feature/2019/04/24/america-latina-carga-las-baterias-para-el-transporte-limpio.

48 Renewable Energy Policy Network for the 21st Century (REN21) (2020), *Renewables 2020 Global Status Report*, Paris, https://www.ren21.net/wp-content/uploads/2019/05/gsr_2020_full_report_en.pdf.

49 E. Londono (2017), "Chile's energy transformation is powered by wind, sun and volcanoes", *New York Times*, 12 August, https://www.nytimes.com/2017/08/12/world/americas/chile-green-energy-geothermal.html.

50 K. Monahan (2019), "Ecuador's fuel protests show the risks of removing fossil fuel subsidies too fast", The Conversation, 31 October, https://theconversation.com/ecuadors-fuel-protests-show-the-risks-of-removing-fossil-fuel-subsidies-too-fast-125690.

51 Bloomberg (2019), "Latin America is blowing its chance to end fuel subsidies", 1 November, https://www.bloomberg.com/opinion/articles/2019-11-01/latin-america-is-blowing-its-chance-to-end-fuel-subsidies; M. Reverdosa, F. Charner and S. Cullinane (2018), "Brazil struggles after weeklong truckers' strike", CNN, 29 May, https://www.cnn.com/2018/05/28/americas/brazil-truck-strike-fuel.

52 SLOCAT (2021), "Transport Knowledge Base", https://slocat.net/our-work/knowledge-and-research/trakb (accessed 13 May 2021).

53 S. A. Aguerrebere and M. S. Arioli (2016), *Urban Mobility Needs, Policy Barriers and the Uptake of Sustainable Solutions in Latin American Partner Countries*, SOLUTIONS, Brussels, http://www.uemi.net/uploads/4/8/9/5/48950199/solutions-latin-america-report-www.pdf; Bicicleta Nos Planos, "Bicycle in urban mobility plans", http://bicicletanosplanos.org (accessed 10 May 2021).

54 S. Vemuri et al. (2020), *Global Monitor 2020*, MobiliseYourCity, Brussels, https://mobiliseyourcity.net/sites/default/files/2020-08/MobiliseYourCity_Global%20Monitor%20Report_3.pdf.

55 World Business Council for Sustainable Development (2019), *SiMPlify – Feira de Santana, Brazil*, Geneva, https://www.wbcsd.org/contentwbc/download/7734/122496/1.

56 Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), "Making urban mobility in Peruvian cities sustainable and climate-friendly", https://www.giz.de/en/worldwide/63200.html (accessed 10 May 2021).

57 M. E. Rivas, T. Serebrisky and A. Suárez-Alemán (2018), *How Affordable Is Transportation in Latin America and the Caribbean?* IDB, Washington, D.C., https://doi.org/10.18235/0001530.

58 Pan American Health Organization (2015), "In Latin America and the Caribbean, more than half of road traffic deaths are among pedestrians, motorcyclists and bicyclists", 7 May, https://www.paho.org/en/news/7-5-2015-latin-america-and-caribbean-more-half-road-traffic-deaths-are-among-pedestrians.

59 Ibid.

60 Mapasin (2019), "Ciudades que han derribaron sus puentes peatonales", 19 November, https://mapasin.org/ciudades-que-han-derribaron-sus-puentes-peatonales.

61 UNEP (2019), "Pedalling for clean air in Latin America", 3 June, https://www.unep.org/news-and-stories/story/pedalling-clean-air-latin-america; A. Jaramillo (2020), "To tame traffic, Bogotá bets big on bike lanes", 10 August, Bloomberg, https://www.bloomberg.com/news/articles/2020-08-10/to-tame-traffic-bogot-bets-big-on-bike-lanes.

62 UNEP (2019), op. cit. note 61.

63 Sistema Costarricense de Información Jurídica (2019), "Ley de Movilidad y Seguridad Ciclística No. 9660", 24 February, http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=88528&nValor3=115809&strTipM=TC.

64 Government of Mexico City (2019), *Plan Estratégico de Movilidad de la Cuidad de México 2019*, Mexico City, https://semovi.cdmx.gob.mx/storage/app/media/uploaded-files/plan-estrategico-de-movilidad-2019.pdf.

65 World Health Organization (2020), "Lima responds to the COVID-19 pandemic on wheels", 23 October, https://www.who.int/es/news-room/feature-stories/detail/lima-responds-to-the-covid-19-pandemic-on-wheels; Gestión Perú (2020), "María Jara: 'Vamos a tener una red de 301 kilómetros de ciclovías", 5 February, https://gestion.pe/peru/coronavirus-peru-maria-jara-vamos-a-tener-una-red-de-301-kilometros-de-ciclovias-covid-19-estado-de-emergencia-cuarentena-nndc-noticia; J. P. León, "Pedalear contra la pandemia", El Comercio, https://especiales.elcomercio.pe/?q=especiales/pedalear-contra-la-pandemia-ecpm/index.html (accessed 10 May 2021).

66 N. Davalos (2019), "Quito es la primera ciudad de Ecuador con 'scooters' de uso público", Primicias, 28 December, https://www.primicias.ec/noticias/tecnologia/quito-primera-ciudad-ecuador-scooters.

67 Lime (2019), "Scooters in Chile: 30% of riders replacing cars as Lime passes 1 million trips", 4 October, https://www.li.me/second-street/scooters-chile-riders-replacing-cars-lime-passes-1-million-trips.

68 M. López (2020), "E-scooter startup Lime retreats in Latam, a warning sign for grow?" Contxto, 10 January, https://contxto.com/en/brazil/electric-scooter-startup-lime-retreats-latam-warning-sign-grow.

69 Consejo Nacional De Política Económica Y Social and Conpes (2020), *Política Nacional De Movilidad Urbana y Regional*, Bogotà, https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3991.pdf.

70 IDB and Global Environment Facility (2017), *Plan Integral de Movilidad Urbana Sostenible Para El Area Metropolitan de San José, Costa Rica*, Washington, D.C., https://cambioclimatico.go.cr/wp-content/uploads/2018/09/PIMUS_INFORME-EJECUTIVO.pdf.

71 City of Buenos Aires, "Plan de movilidad limpia", https://www.buenosaires.gob.ar/carbononeutral/plan-de-movilidad-limpia (accessed 10 May 2021).

72 A. Pelegi (2019), "Niterói starts operation of the TransOceânica corridor", Diário do Transporte, 20 April, https://diariodotransporte.com.br/2019/04/27/niteroi-inicia-operacao-do-corredor-transoceanica.

73 Empresa Municipal de Desenvolvimento de Campinas, "Obras em andamento", http://www.emdec.com.br/eficiente/sites/portalemdec/pt-br/site.php?secao=brt-campinas (accessed 16 May 2021); Salvador Prefeitura, "Entendo O BRT", http://brt.salvador.ba.gov.br/?page_id=10 (accessed 16 May 2021).

74 Government of Brazil (2021), "Obter financiamento para melhoria da mobilidade urbana – setor público", 19 April, https://www.gov.br/pt-br/servicos/obter-financiamento-para-melhoria-da-mobilidade-urbana-setor-publico.

75 R. Passos (2019), "São Paulo pushes ahead with metro expansion", International Railway Journal, 6 June, https://www.railjournal.com/regions/central-south-america/sao-paulo-pushes-ahead-with-metro-expansion; Portal da Transparência, "Relatório de expansão, obras e modernização", https://transparencia.metrosp.com.br/dataset/relatório-de-expansão-obras-e-modernização (accessed 10 May 2021).

76 American Expatriate Costa Rica (2018), "San Pedro will have exclusive bus lanes in January", 12 December, https://www.usexpatcostarica.com/san-pedro-will-have-exclusive-bus-lanes-in-january.

77 Redaktion, "Panama: Inauguration of Metro Line 2", Urban Transport Magazine, 6 May, https://www.urban-transport-magazine.com/en/panama-inauguration-of-metro-line-2.

78 Alstom (2020), "Cuenca tramway came into operation", 29 October, https://www.alstom.com/press-releases-news/2020/10/cuenca-tramway-came-operation.

79 J. C. Casma and C. Medina (2019), "The Quito Metro in 360 degrees", World Bank, 11 March, https://blogs.worldbank.org/latinamerica/quito-metro-360-degrees.

80 The Gondola Project (2019), "Mexico city wants to build 34km (24mi) of urban gondolas", 9 February, http://gondolaproject.com/category/installations/cablebus; A. Medina (2020), "Así quedarán las próximas líneas de Cablebús en CDMX", Dónde Ir, 10 July, https://www.dondeir.com/ciudad/proximas-lineas-de-cablebus-en-cdmx/2020/07; D. Delgado (2021), "Mexico City launches Latin America's latest cable car line", *ABC News*, 4 March, https://abcnews.go.com/International/wireStory/mexico-city-launches-latin-americas-latest-cable-car-76262845.

81 BNamericas (2020), "Mexico City scraps tender, awards Metrobús line to Gami", 27 July, https://www.bnamericas.com/en/news/mexico-city-scraps-tender-awards-metrobus-line-to-gami; Urban Sustainability Exchange, "TransMilenio Bus Rapid Transit System", https://use.metropolis.org/case-studies/transmilenio-bus-rapid-transit-system#casestudydetail (accessed 10 May 2021); Government of Argentina "Metrobus", https://www.argentina.gob.ar/transporte/metrobus (accessed 10 May 2021).

82 Movmi (2018), "Latin America shared mobility: An overview on the region", 11 December, https://movmi.net/latin-america-shared-mobility.

83 Futuretransport (2019), "Brasília recebe projeto VEM DF de carsharing com veículos elétricos", 8 October, https://futuretransport.com.br/brasilia-recebe-projeto-vem-df-de-carsharing.

84 F. Troncoso (2019), "¿Cuánto ha crecido la red de ciclovías del Gran Santiago?" El Mostrador, 6 August, https://www.elmostrador.cl/agenda-pais/2019/08/06/cuanto-ha-crecido-la-red-de-ciclovias-del-gran-santiago.

85 WWF (2018), "Iniciativa Ciclovías X 3 promoverá que Lima triplique su red de ciclovías en más de 450 kilómetros", 23 February, https://www.wwf.org.pe/?uNewsID=324059.

86 City of Buenos Aires (2019), "5 nuevas áreas con prioridad peatonal", https://www.buenosaires.gob.ar/compromisos/5-nuevas-areas-con-prioridad-peatonal (accessed 11 May 2021).

87 City of Buenos Aires, "Pedaleá la Ciudad", https://www.buenosaires.gob.ar/ecobici/pedalea-la-ciudad (accessed 10 May 2021).

88 El Financiero (2019), "CDMX planea tener una red de ciclovías de 600 kilómetros", 3 June, https://www.elfinanciero.com.mx/nacional/cdmx-planea-tener-una-red-de-ciclovias-de-600-kilometros.

89 COVID Mobility Works (2020), "Quito is installing 62.7 km of bicycle lanes", 26 April, https://www.covidmobilityworks.org/responses/quito-is-installing-62-7-km-of-bicycle-lanes-ccdeba8c65.

90 CPFL Energia, "São Paulo aprova redução de IPVA para carros elétricos e híbridos", https://www.cpfl.com.br/sites/mobilidade-eletrica/mobilidade-e/legislacao/Paginas/Sao-Paulo-aprova-reducao-de-IPVA-para-carros-eletricos-e-hibridos.aspx (accessed 10 May 2021); CPFL Energia, "Governo zera imposto de importação para carro elétrico e a hidrogênio", https://www.cpfl.com.br/sites/mobilidade-eletrica/mobilidade-e/legislacao/Paginas/Governo-zera-imposto-de-importa%C3%A7%C3%A3o-para-carro-el%C3%A9trico-e-a-hidrog%C3%AAnio.aspx (accessed 17 May 2021).

91 Semana, op. cit. note 40.

92 https://www.reuters.com/article/us-climate-change-chile-transport-featur/as-un-climate-talks-near-host-chile-charges-up-electric-transport-idUSKBN1WO1LAIbid.; K. Field (2019), "Santiago (Chile) adding 200 electric buses in 2019", CleanTechnica, 7 June, https://cleantechnica.com/2019/06/07/santiago-chile-adding-200-electric-buses-in-2019; Government of Chile (2019), "Presidente Piñera presenta 100 nuevos buses eléctricos para la Región Metropolitana: 'Hay un cambio profundo

en el sistema de transporte público", 28 March, https://www.gob.cl/noticias/presidente-pinera-presenta-100-nuevos-buses-electricos-para-la-region-metropolitana-hay-un-cambio-profundo-en-el-sistema-de-transporte-publico.

93 Mexico News Daily (2020), "Mexico City takes delivery of first of 10 fully electric buses", 13 May, https://mexiconewsdaily.com/news/mexico-city-takes-delivery-of-first-of-10-fully-electric-buses; BYD (2019), "BYD delivers first pure electric bus fleet in Ecuador", 14 March, https://www.byd.com/en/news/2019-03-14/BYD-Delivers-First-Pure-Electric-Bus-Fleet-in-Ecuador; S. Hanley (2020), "Panama cancels order for diesel buses, will purchase 195 electric buses instead", CleanTechnica, 29 September, https://cleantechnica.com/2020/08/29/panama-cancels-order-for-diesel-buses-will-purchase-195-electric-buses-instead; New Mobility (2020), "First electric bus deployed on the streets of Lima, Peru's capital", 10 January, https://newmobility.global/e-mobility/first-electric-bus-deployed-streets-lima-perus-capital; CAF (2019), "CAF supports testing of first electric buses in Buenos Aires", 16 May, https://www.caf.com/en/currently/news/2019/05/caf-supports-testing-of-first-electric-buses-in-buenos-aires; Sustainable Bus (2019), "The first electric bus fleet in Argentina. 18 ebuses supplied in Mendoza", 19 July, https://www.sustainable-bus.com/news/the-first-electric-bus-fleet-in-argentina-18-ebuses-supplied-in-mendoza; Sustainable Bus (2020), "20 BYD e-buses make it to Montevideo, in Uruguay, with CUTCSA's livery", 28 May, https://www.sustainable-bus.com/electric-bus/byd-electric-buses-montevideo-uruguay-cutcsa; BYD (2018), "BYD delivers the first pure electric buses to the Brazil's largest city", BYD Company Ltd, 13 December, https://www.byd.com/en/news/2018-12-13/BYD-delivers-the-first-pure-electric-buses-to-the-Brazil's-largest-city.

94 A. Arellano (2020), "Proponen abandonar el gasoil en el transporte público y abastecerlo sólo con biocombustible", Diario El Ciudadano y la Región, 31 May, https://www.elciudadanoweb.com/proponen-abandonar-el-gasoil-en-el-transporte-publico-y-abastecerlo-solo-con-biocombustible; M. Sapp (2020), "Argentina's Santa Fe to switch public transportation to B100", Biofuels Digest, 1 June, https://www.biofuelsdigest.com/bdigest/2020/06/01/argentinas-santa-fe-to-switch-public-transportation-to-b100; M. Sapp (2018), "Buenos Aires launches B100 bus trial", Biofuels Digest, 26 December, https://www.biofuelsdigest.com/bdigest/2018/12/26/buenos-aires-launches-b100-bus-trial.

95 J. P. Tomas (2018), "Argentina's capital city launches bus trial of B100 biodiesel", Energy Census, 28 December, https://www.energycensus.com/Article/Argentina-s-capital-city-launches-bus-trial-of-B100-biodiesel-4592.html.

96 YPFB Corporación (2018), "Bolivia ingresa a la era del biocombustible y YPFB dejará de importar 80 millones de litros de gasolina", 8 March, https://www.ypfb.gob.bo/es/informacion-institucional/noticias/841-bolivia-ingresa-a-la-era-del-biocombustible-y-ypfb-dejara-de-importar-80-millones-de-litros-de-gasolina-2.html.

97 Pérez Bustamante & Ponce, op. cit. note 44.

98 G. Miranda (2020), "RenovaBio takes off", *Ethanol Producer Magazine*, 14 January, http://ethanolproducer.com/articles/16841/renovabio-takes-off.

99 Ministério de Minas e Energia Brasil (2020), "RenovaBio", http://antigo.mme.gov.br/web/guest/secretarias/petroleo-gas-natural-e-biocombustiveis/acoes-e-programas/programas/renovabio (accessed 6 May 2021); Miranda, op. cit. note 98.

100 Government of Brazil (2020), "Metas preliminares para 2021 de redução de emissão de gases causadores do efeito estufa", 28 December, https://www.gov.br/anp/pt-br/assuntos/producao-e-fornecimento-de-biocombustiveis/renovabio/metas-preliminares-para-2021-de-reducao-de-emissao-de-gases-causadores-do-efeito-estufa.

101 C. Selman (2021), "Chile's green hydrogen strategy", IHS Markit, 22 January, https://ihsmarkit.com/research-analysis/chiles-green-hydrogen-strategy.html.

Annex: Methodological Note

1 M. Crippa et al. (2020), *Fossil CO2 Emissions of All World Countries, JRC Science for Policy Report*, Publications Office of the European Union, Luxembourg, https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/fossil-co2-emissions-all-world-countries-2020-report.

2 US Energy Information Administration (2020), "Energy and the environment explained: Greenhouse gases," https://www.eia.gov/energyexplained/energy-and-the-environment/greenhouse-gases.php (accessed 14 April 2021).

3 International Organization of Motor Vehicle Manufacturers (OICA), "Definitions", https://www.oica.net/wp-content/uploads/DEFINITIONS-VEHICLE-IN-USE1.pdf (accessed 20 May 2021).

4 United Nations Statistics Division, "Standard country or area codes for statistical use (M49)", https://unstats.un.org/unsd/methodology/m49 (accessed 20 May 2021).

5 World Bank (2021), "World Bank Country and Lending Groups", https://datahelpdesk.worldbank.org/knowledgebase/articles/906519 (accessed 20 May 2021).

6 United Nations (2019), "World Population Prospects 2019", https://population.un.org/wpp (accessed 20 May 2021); World Bank, "GDP (constant 2010 US$)", http://data.worldbank.org/indicator/NY.GDP.MKTP.KD (accessed 20 May 2021).

7 SLOCAT (2021), "Transport Knowledge Base", https://slocat.net/our-work/knowledge-and-research/trakb (accessed 20 May 2021).

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