

Colombia

Partner country

Status of the project: Completed National Urban Mobility Policy or Programme



Basic Information

Population: 50,662,678 (2020) | Growth rate: 0.8%

Percentage of urban population: 77.1%

GDP per capita: USD 5,334

Percentage of the population living below the national poverty line: 27%

Annual average infrastructure expenditures as a percentage of GDP: 1.8%

Nationally Determined Contribution (NDC): Committed reduction of 51% of overall GHG emissions compared to BAU by 2030, unquantified mobility target

National GHG emissions per capita: 3.75 (tCO₂eq)

Proportion of transport-related GHG emissions: 12%

Exposure to climate change: HIGH

Context

Colombia is Latin America's third most populated country after Brazil and Mexico. Bogotá is its capital and most populated city, the country's economic, political and financial centre. 77.1% of Colombian citizens live in cities, and in rural areas, access to education, public health and other essential services is still limited in many regions. Poverty and inequality are significant challenges for Colombia, with a multidimensional poverty index of 20.2% and a GINI index of 0.522, placing it as the second-most unequal country in Latin America, only after Honduras. The Gross Domestic Product (GDP) has been growing for the last two decades, with an average annual growth rate of 3.8%, according to the National Ministry of Finance and Public Credit reports. This economic growth is remarkable, given the country's long-standing internal conflict. Colombia is an upper-middle-income country. Historically, oil and other energetic products have played an important role in Colombia's economy. The country's priority exports and industrial growth areas are oil, electronics, agriculture, information technology, and shipbuilding.

Since road transportation in Colombia was responsible for 12% of the overall country-wide GHG emissions (37.8 MtCO₂e) in 2018, tackling the transport sector is crucial for complying with climate change mitigation goals. Electric mobility can be a powerful tool for achieving such goals. Additionally, public concern about the negative impacts of air pollution on public health has increased over the past years. The transport sector (Diesel freight and public transport, mainly) is responsible for 25% of PM_{2.5} emissions in large cities, the most relevant air pollutant in the Colombian context.

Buses play an important role in Colombia's transport landscape, from small feeder buses to bi-articulated high-frequency buses. They contribute to 23% of Bogotá's local air pollution. However, given the increasing urban population densities and the deteriorating air quality, the bus systems' various configurations present an untapped potential for providing access to clean urban mobility. Electrification of public transport is an intersectoral priority of at least four national policy agendas (Energy Efficiency, Climate Change, Air Pollution and Urban Mobility) and three international policy commitments: the Paris Agreement, the New Urban Agenda and the Sustainable Development Goals.

Since the electrification of transport is vital for complying with climate commitments, promoting green growth, and protecting human health, the National Government has started developing a National E-Mobility Strategy in 2019. As electric buses have considerably higher upfront investment costs than traditional technologies and the technology is relatively new in Colombia, the technical assistance aimed to overcome these barriers with a program that supports the electrification of Colombia's public passenger transportation systems.

The technical assistance had four workstreams aiming at creating a suitable environment for electromobility deployment in cities without significant zero-emission fleets:

- **Technical and regulatory design:** Identify the technical and regulatory needs that should be located at the transport policy level in the country to enable the transition to electric public transport systems.
- **Financial design:** Analyse the context, barriers, costs, and economic conditions of public passenger transportation in Colombia to construct, in conjunction with our counterparts, an instrument to facilitate investments in electric fleets and infrastructure.
- **Design of coordination and governance scheme:** Through a systemic process with the national government counterparts, define the decision-making frameworks and methods to approve and follow up on the policies and plans that enable technological advancement.
- **Design of MRV system:** Build methodologies and capacities to monitor the development of policies and their impacts, especially regarding the mitigation of Greenhouse Gases.

Support from the Partnership

Technical assistance: National Urban Mobility Policy or Programme (NUMP)

Type of NUMP: Programme NUMP

Funded by: German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)

Funded amount: EUR 800.000

Implemented by: GIZ through the TRANSfer III project

Local counterpart: Ministry of Transportation

Main purpose of the NUMP:

The TRANSfer project helped develop a National E-Bus Promotion Programme. This programme comprises a national investment fund to finance the upgrade of public transportation fleets and set the institutional arrangements and capacities for large-scale monitoring, reporting and verification methodology for e-buses deployment.

Supported activities:

- Financial and economic analysis for e-bus deployment at a large scale
- Prefeasibility of a public investment fund
- Support to legally structure a national fund for e-buses
- Supporting implementation of a national framework on e-mobility and its governance
- Diagnosis of technical gaps and barriers for policymakers
- Ex-ante and ex-post MRV system preparation

Finance leverage: USD/EUR 870,000

Status of implementation

Project start date: 2019 Q1

NUMP adoption date: 2022 Q1

Completed outputs:

- Zero emissions vehicles' investment fund for buses and freight legally established
- Fleet replacement and investment scenarios for every transport system in the country
- Prefeasibility, structure proposal and stakeholder awareness for the instrument
- National-scale institutional arrangement for e-mobility
- Operation and maintenance of an e-bus training program in place with an employability and gender perspective
- Course for e-buses system planning and electricity procurement for operators
- Mitigation potential and MRV methodologies for e-buses in line with the National Registry of Emissions Reductions (RENARE)
- Assessment of regulatory and capacity building needs, technical and policy barriers for e-bus deployment
- International course on transport systems based on e-buses (with Moving Chile)
- Employability strategy and technical curriculum with a gender perspective
- Electricity procurement guidelines
- E-bus workshop in Cali, Colombia (24-25 February 2020, 70 participants from cities, Ministry of Transportation, and academia)

Next expected outputs:

- Fund running by 2023 Q3

NUMP key measures and cost estimates

The following table highlights the most significant measures identified in the NUMP.

Measure	Cost Estimate
Public fund to finance bus fleet renewal (estimated from medium investment scenarios)	USD 460 million

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the NUMP.

Urban transport investment measures	CAPEX Estimate (€M)
Nationwide bus fleet renewal (estimated from medium investment scenarios)	USD 850 million
Street shaping urban roads and traffic management	0
Other measures	0
Total	USD 850 million

Finance leverage

Leveraged financing (resulting or enabled by the NUMP preparation process).

Financing resulting from the NUMP	Source	Amount
E-motion project funding proposal for Latin America to the Green Climate Fund	AFD	EUR 570.000
Public fund investment manuals and implementation	ADB	EUR 300.000

Projected impacts

Indicator	Impact 2030 (NUMP vs BAU)	Baseline - 2019	Projected 2030 BAU	Projected 2030 NUMP scenario
Total annual GHG emissions (Mt CO ₂ eq)	-5.7 Mt CO ₂ eq	34 Mt CO ₂ eq	43.4 Mt CO ₂ eq	37.7 Mt CO ₂ eq
Annual transport-related GHG emissions per capita (kg CO ₂ eq)	- 113 kg CO ₂ eq / capita	675 kg CO ₂ eq / capita	862 kg CO ₂ eq / capita	749 kg CO ₂ eq / capita

Perspectives for implementation

The Colombian congress approved a 2021 law creating the national fund for e-bus renewal

In 2021, a national law for climate action (Ley 2169 – 2021) was enacted, aiming to establish goals and actions to achieve carbon neutrality, climate resilience and low-carbon development in Colombia in the short, medium, and medium long term. The law creates a national fund for the technological upgrading of public transport systems and freight fleets. This fund will promote purchasing low or zero-emission vehicles and the support infrastructure required for the energy supply. The potential financial sources for the fund include local authorities, non-reimbursable technical cooperation, grants, and financial revenues, among others. Together with the government, the implementing partner (GIZ) is committed to keeping the support to find feasible funding alternatives to feed the created fund.

Despite the National government change, GIZ positioned the project in the political agenda for implementation

The technological upgrade fund for public transportation fleets and light freight was a process approved by law 2169 on December 2021. Its implementation has been a dynamic process taking most of 2022, significantly since the country changed national government, and the new administration needed to reprise implementation.

Given that the fund is part of the law, its implementation was practically assured. Nonetheless, the GIZ carried out the following activities for the project to be kept a for decisions makers:

- Ensuring the resources for the investment manuals with other cooperation institutions
- Including the mandate for implementation and potential funding sources as part of the government plan of the new administration
- Consider adding additional transport modes (taxis and heavy freight) to the fund's scope

¹ Calculations made by the MobiliseYourCity Secretariat based on Colombia first NDC (<https://unfccc.int/NDCREG>) and Colombia MRV method (<https://changing-transport.org/wp-content/uploads/Infografia-traCS-EN-1.pdf>)

Insights from practice: lessons learned from the NUMP process

Decision-makers' ownership of the project contributes to keeping it alive

The experience with Colombia's technology upgrade fund showed that the key to achieving the project's adoption and implementation is to generate ownership among decision-makers and their advising teams. Also, it is necessary to shield the process from political conditions by achieving their legal approval as part of more significant initiatives.

The electrification of public transport in Colombia still needs public investment to cover capital costs

Studies indicated that the total cost of ownership difference between an internal combustion engine bus and an electric unit was considerably high. As a result, transport authorities and public transport operators in intermediate and small-sized cities cannot cover electrification's capital costs through soft loans. Instead, a considerable package of subsidies from the national government is required to make the e-bus technology competitive regarding its capital cost investments.

Nationwide emission reductions programmes in the transport sector can be comprehensive but flexible

The technical assistance delivered in Colombia did not follow the traditional NUMP formulation approach but tried to meet the needs of four pre-identified barriers for deploying electric mobility at the national scale and achieving effective mitigation outcomes. Thus, the four workstreams of the project (finance, governance, capacities and MRV) interacted harmonically to deliver concrete results related to political and financial commitment to the renewal of the public transport fleet in the country. However, the project did not follow the guidelines for formulating a NUMP.

Electrification's sustainability goes beyond ensuring funds and includes support infrastructure, capacity development, and systemic change

Building capacities in electric mobility within the transport sector is critical to ensure the sustainability of a solid fleet-renewal policy. Transport authorities must interact with the energy sector to enable fertile conditions for electromobility deployment. Moreover, operators and technicians need to be trained in the maintenance and mechanics of electric vehicle systems so operation management is not at risk. The inclusion of a gender focus in this component intended to close the gap for women to access jobs in the transport sector.

Highlights in the past year

New elected national government (2022-2026) includes the technology upgrade fund as part of their strategic sustainable mobility and decarbonisation tools

The newly elected government validated the implementation of the fund, including the possible funding alternative that could be used for the investment (General Budget, Demand Management Tools, and green taxes) and broadening the scope to taxis and heavy-duty freight.