

Evaluation of deconsolidation alternatives in zero- emission vehicles for last mile distribution of packages in prioritized areas of Bogotá D.C.

Bogotá, DC



BOGOTÁ: CAPITAL OF COLOMBIA

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Transporte de carga bajo en carbono
para ciudades sustentables



BOGOTÁ

7.4 million
inhabitants

25% of the
GDP

47% of
logistics
companies

BOGOTÁ + CUNDINAMARCA

+ 10 million
inhabitants

31% of the
GDP

60% of the
country's
imports



CARGO SECTOR BOGOTÁ



80 thousand daily trips

240 thousand ton of
merchandise/day



19% of jobs
related to logistics
in the country.

PROJECT

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IMPLEMENTATION PERIOD

Preparation

Execution and measurement

Evaluation of results

2 MONTHS

3 MONTHS

1 MONTH

6 MONTHS



PROPOSED ACTIVITIES

Preparation

Execution and measurement

Evaluation of
results



Articulation with logistics operation companies.



Detailed planning of pilot operation.



Pilot and last mile transport baseline.



Enlistment and adaptation of spaces and vehicles.



Socialization with the community and actors of the areas.

PROPOSED ACTIVITIES

Preparation

Execution and measurement

Evaluation of results

Pilot assignment

(Distribution to customers with different
zero emission vehicles)



Information taking.



Social strategy implementation.
(Information and awareness days, socialization and
feedback of the process, linkage to the process of
small owners)



Linking small owners.

PROPOSED ACTIVITIES

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Preparation

Execution and measurement

Evaluation of results

Analysis of pilot results and
consolidation of impact indicators



Socialization of project results with
stakeholders



Development of results toolkit and
replicability in organizations



KEY INDICATORS

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Environmental performance

- CO₂eq emissions/month
- Particulate matter emissions/month
- CO₂eq emissions/kg transported
- Particulate matter emissions/kg transported
- CO₂eq emissions/delivery made
- Particulate matter emissions/delivery made

Logistics Performance

- Kg delivered/day
- Kg transported/km traveled
- Kg traveled/day
- Number of deliveries/day
- Deliveries made/km route
- Delivery time per order

- Use of conventional vehicle/route capacity
- Use of zero emissions vehicle/route capacity
- Service level

Economic indicators

- Operational cost/route
- Operational cost/delivered
- Operational cost/kilometer traveled

IMPACT

Positive impact on the community in the implementation areas:



Mitigation of air pollution and associated diseases.



GHG emissions reductions



Better service levels and efficiency in distribution.



Less traffic jams and road accidents due to the use of smaller vehicles.

According to the preliminary Baseline of emissions presented by ICLEI-Despacio, the last mile distribution on vehicles smaller than 3.5 Ton represents a significant fraction of the freight trips that are made in the city

Of the baseline sample analysed



+150 thousand trips/month of these typologies



12% of the total CO₂ emissions

PILOT IMPACT

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POTENTIAL TO REDUCE EMISSIONS

ASSUMPTIONS		REDUCED EMISSIONS
Each combustion vehicle would stop traveling +900 km/month	34,000 km avoided in the 3 months of the pilot	320 kg of PM₁₀ 21,000 kg of CO₂
12 conventional vehicles would be replaced*		



BENEFICIARIES

+13 thousand people
who will receive packages in designated areas

*Assumed according to conversations with logistic operators

CO-BENEFITS

BENEFITED COMPANIES



+163 companies of the Urban Logistics Network (RLU) that would receive the replicability toolkit with the support of associations such as ANDI and CCB.

VEHICLE SUPPLIERS



Suppliers selected for the pilot will have the opportunity to **exploit their products within the framework of their local innovation processes.**

SMALL CARRIERS



The linking of small transporters to the project is an opportunity to **strengthen relationships through spaces** to learning about **good ecological practices** emerged as a result of the pilot.

SCALING POTENTIAL

Potential to articulate and strengthen other strategies:

National Electric Mobility Strategy

Public Policy of Zero and Low Emission Motorized Mobility

Green districts and zero and low emission zones

Scenario 1:
49% of sectors

35 ton
PM₁₀/year

23,000 ton
CO₂/year

5% PM₁₀

3% CO₂

Scenario 2:
95% of sectors

70 ton
PM₁₀/year

45,000 ton
CO₂/year

10% PM₁₀

7% CO₂

Net reduction potential

% reduction on cargo emissions

STAKEHOLDERS

LOCAL GOVERNMENT

Secretariats for Mobility,
Environment and Economic
Development

Support in the management of resources, spaces, areas, communications and permits necessary for the development of the pilot.

ICLEI

Support consultant selection process and project budget management.

CONSULTANT

Determined from the selection process. It would perform the project activities contemplated in the preparation, performance and measurement phases, and evaluation of results, in coordination with logistics operators and vehicle suppliers.

STAKEHOLDERS

LOGISTICS OPERATORS

Package companies with interest to participate in the pilot.

Interested parties: Logistics Companies

Planning and performance of the last mile logistics operation in the areas of influence. Provision of information and human resources.

SUPPLIERS

Small and large suppliers companies of zero-emission cargo vehicles.

Some interested suppliers: Bicivan, Ecotriciclos, Lola, Pargal, Renault and Renting Colombia.

Rental of zero-emission cargo vehicles to the consultant and articulation with logistics operators to evaluate different typologies.



STAKEHOLDERS

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EXTERNAL PARTNERS

Approach with the Bogotá Chamber of Commerce (CCB) and the National Association of Colombian Entrepreneurs (ANDI)

They provide knowledge, experiences and learning that support the development of the pilot and the measurement of indicators, and with dissemination and articulation with other actors.



SMALL CARRIERS

The project will include small carriers to accompany the pilot and learn about the performance of new technologies, their benefits/costs and distribution alternatives.



ECOLOGISTICS AND LCAP-UF

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This project is related and contributes with the LCAP-UF that we are formulating for the city of Bogotá contributing to all the axes and objectives proposed as follows:

AXIS OF THE PLAN

Technological change

Promoting a cleaner vehicle **fleet through innovation** and **evaluation** of zero-emission vehicles in last mile trips.

Definition of transit and cargo

Support the consolidation of a logistics vision through the **promotion of more efficient and sustainable logistics processes** and the optimization of the use of resources.

Infrastructure

Support the decision for the development of a deconsolidation **centre and a network of distribution nodes based on existing** logistical needs

Communication, pedagogy and co-responsibility

Strengthening and generating knowledge through tools that allow replicability by the private sector in this type of practices.



ALCALDÍA MAYOR
DE BOGOTÁ D.C.



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