

# EcoLogistics Transporte de carga bajo en carbono para ciudades sustentables

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**





-BOGOTÁ-

-BOGOTÁ + CUNDINAMARCA

7.4 million inhabitants

25% of the GDP

47% of logistics companies

+ 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.

Sources: (DANE, 2020) - (SDA, 2018) - (Steer Daves Gleave, 2015)

# **PROJECT**





#### **IMPLEMENTATION PERIOD**

Preparation

Execution and measurement

Evaluation of results

2 MONTHS

3 MONTHS

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**





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**





# Environmental performance

- CO₂eq emissions/month
- Particulate matter emissions/month
- CO<sub>2</sub>eq emissions/kg transported
- Particulate matter emissions/kg transported
- CO<sub>2</sub>eq 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 CO<sub>2</sub> emissions

## **PILOT IMPACT**





#### POTENTIAL TO REDUCE EMISSIONS

ASSUMPTIONS

**REDUCED EMISSIONS** 

Each combustion vehicle would stop traveling +900 km/month

12 conventional vehicles would be replaced\*

**34,000 km** avoided in the 3 months of the pilot

 $320 \text{ kg of PM}_{10}$ 

21,000 kg of CO<sub>2</sub>



### +13 thousand people

who will receive packages in designated areas

<sup>\*</sup>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**



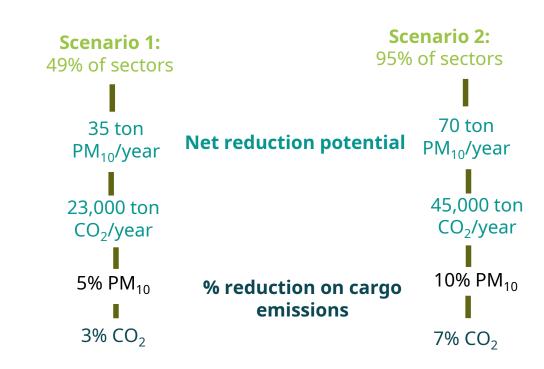


Potential to articulate and strengthen other strategies:

National Electric Mobility Strategy

Public Policy of Zero and Low Emission Motorized Mobility

Green districts and zero and low emission zones



# **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
<b>OPERATORS</b>

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 zeroemission 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**





#### **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**







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.







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