BARCELONA STRATEGY TO PROMOTE ELECTROMOBILITY

Ajuntament de Barcelona

October 2018

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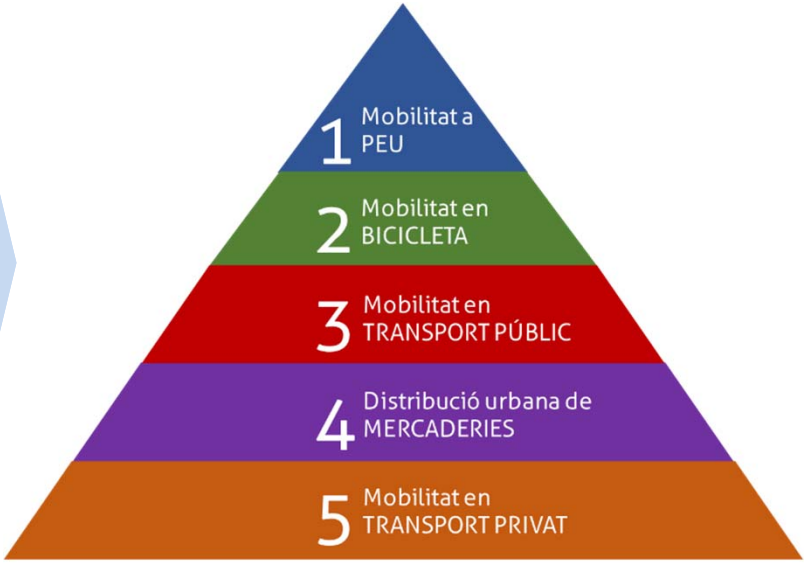
Introduction

The current **Urban Mobility Plan 2013-2018** (safe, sustainable, equitable and efficient mobility) has as a priority to facilitate the modal shift towards more sustainable modes, such as non-motorized ones

Secondly, betting on the most efficient modes and collective transport

Finally, within private vehicles, prioritize those that are more efficient, such as **electric vehicles**



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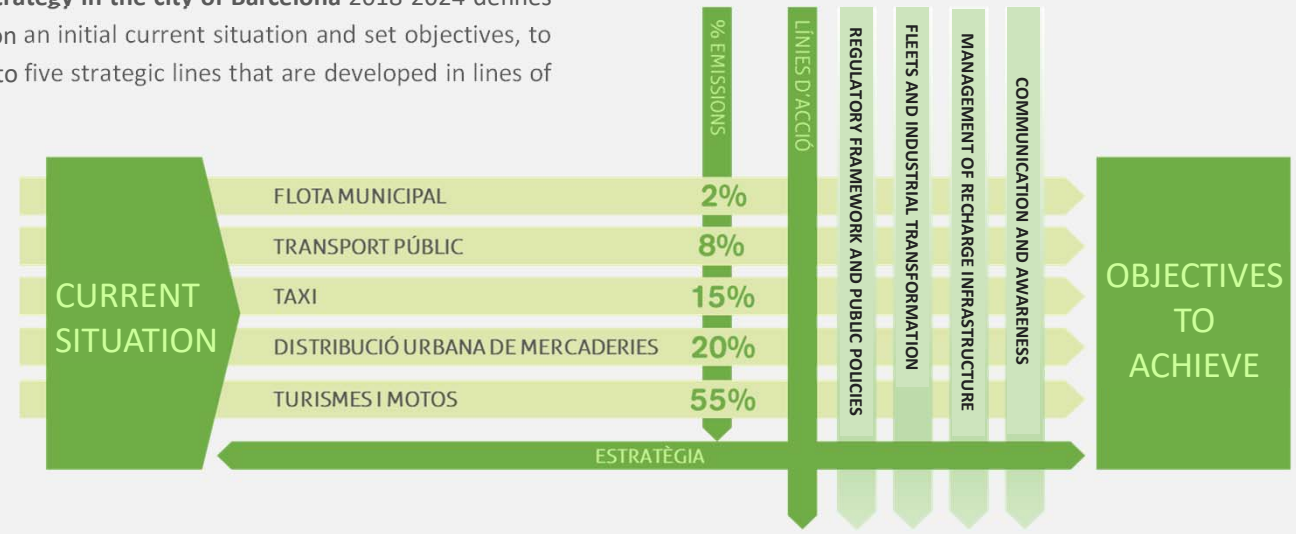
General Vision

To convert "**ELECTRIC MOBILITY" in the preferred motorized mode** to accompany the transition towards a healthy and sustainable mobility model", **the administration must assume the risks that the new technologies initially present**, providing an initial impulse to the process of change and acceptance, **seeking the involvement of the private sector** in the short term to facilitate a sustainable economic model that achieves the commitment of citizens

The Electric Mobility Strategy in the city of Barcelona 2018-2024 defines a work scheme based on an initial current situation and set objectives, to be achieved according to five strategic lines that are developed in lines of action to follow:



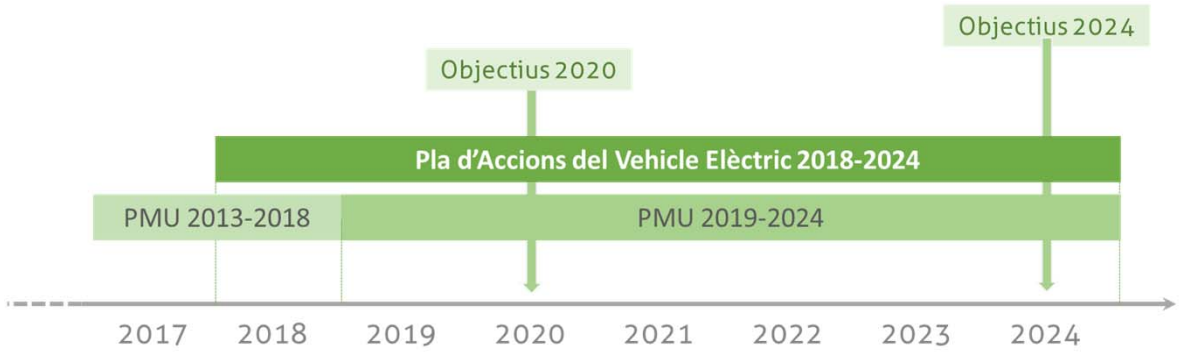
General Vision

The **Plan of Actions for the Electric Vehicle in the City of Barcelona**, proposes a prioritization on the five areas of action described above:

First of all, we must work and focus our efforts on those lines where the City Council of Barcelona has more power of action and involvement, to set a good example. Next, those areas with potential for influence will be worked on although the decision is not entirely in the hands of the consistory

THE HORIZON OF THE ELECTRIC VEHICLE PLAN IN THE CITY OF BARCELONA IS JANUARY 2.024, WITH AN INITIAL PHASE OF 2 YEARS, COINCIDING WITH JANUARY 2020:

The horizon of this plan has been constructed in such a way that the first phase fits with the PMU 2013-2018, and the second phase with the PMU 2019-2024



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Areas of development of the plan

1. MUNICIPAL FLEET

CURRENT SITUATION

- At present, the Barcelona City Council electric fleet represents **30-35% of the total fleet** (~ 1,500 vehicles):

  Departments with the largest electric / hybrid fleet:
  - Cleaning and waste collection
  - Water cycle
  - Lighting
  - Associated company B: SM

FLOTA ELÈCTRICA

TIPUS	UNITATS
Turisme	28
Moto	46
Camioneta	231
Camió	28
Furgoneta	105
Furgó	37
Escombradora	2
Altres	10
Total	**487**

- Since 2013, there is a **Mayoral Decree on responsible public procurement with social and environmental criteria**

  All technical instructions for purchasing and contracting the groups of products and services defined as priority must follow specific environmental criteria, where **electric vehicles in all their variants represent the highest priority**

  Currently, the **person in charge of the contract supervises that the environmental clauses that establish the specifications are fulfilled and executed** + supporting report for all the acquisitions that does not correspond to electric vehicles

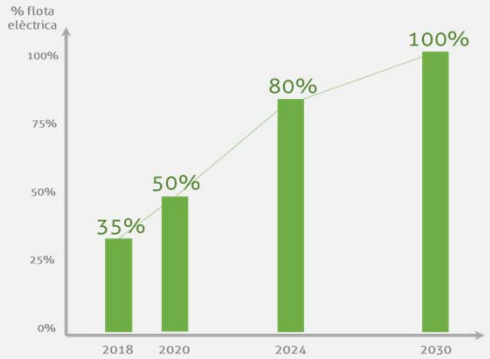
Areas of development of the plan

1. MUNICIPAL FLEET

STRATEGY

- Comprehensive monitoring of the technical instruction for the purchase of vehicles:
  - Ensure compliance with the instruction
  - Articulate a system of indicators to know the total fleet and specifically the electric fleet
  - Offer technical support to the departments to facilitate the implementation of the VE in the contract documents
- Influence strategy on the companies supplying the fleet at the service of the city council itself
- Encourage the use of electric vehicles to the administration workers (e.g., the Offers in the staff portal)
- Cooperation with other administrations to extend the public procurement model promoted by the electric vehicle
- Launching of a powerful communication campaign

OBJECTIVES



With a current 35% of electric fleet, we can assume that in 10 years all current vehicles will have gone through a renewal process, which will take us to 100% of the electric fleet in 2030

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Areas of development of the plan

2. PUBLIC TRANSPORTATION

CURRENT SITUATION

- Bet on electric mobility:
  - ✓ **European project I-CVUE**
  - ✓ **European ZeEUS project**: introduction of the two first 100% electric buses

    + Opportunity load: loading system of the two electric articulated buses (pantograph)
  - ✓ **European ELIPTIC project,** of a new ultra fast charging station for the electrification of urban transport
  - ✓ Proposal for an electric minibus project
  - ✓ **EBSF-2**, bus design of the future
  - ✓ **ASSURED European project**: advanced quick recharge solutions
  - ✓ **C40 Cities network**: zero emission buses from 2025

- 3 differentiated work segments:

DISTRICT BUS

Vehicle technology

Recharge infrastructure

STANDARD 12m

Vehicle technology

Recharge infrastructure

ARTICULATE 18m

Vehicle technology

Recharge infrastructure

Areas of development of the plan

2. PUBLIC TRANSPORTATION

STRATEGY

DISTRICT BUS & ARTICULATE 18m

- Work with pilot tests to consolidate the technology of vehicle and infrastructure, in order to start to implement on a regular basis from 2024

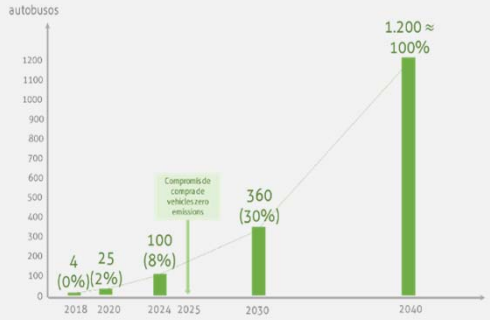
STANDARD 12m

- Work with a business plan to consolidate the market and invest in new vehicles and new garage infrastructure.

+ GENERAL

- Joint work lines between the different public transport systems and the departments of the town hall (use of power and energy)
- Opportunity TMB as cargo manager
- Planning strategy of the electrical network (480MWh / day)
- Collaboration between administrations to enhance the electric model
- Discretionary buses

OBJECTIVES



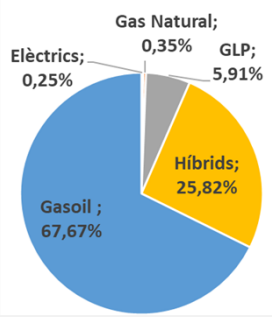
Assuming the commitment to buy vehicles only zero emissions from 2025, and assuming a renewal period of 15 years, the following intermediate objectives are considered for the horizon 2020 and 2024, and with vision to have the entire electric fleet 2040

Areas of development of the plan

3. TAXI

CURRENT SITUATION

- Currently the **most used energy source is diesel** (67.7% of the total fleet)
- **Remarkable the great presence of hybrid vehicles** (25.8%), which highlights the effort of the sector to use more sustainable vehicles
- **26 current electric taxi licenses:**



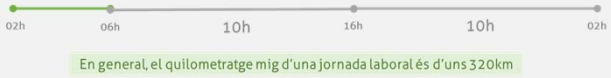
Great support to the subsidies of General Directorate Air Quality, 2015 call (€ 80,000 of subsidies for the first 20 electric taxis)

New call for grants 2017 without success since there is no vehicle model available in the market that suits the current operating model (> 40KWh)

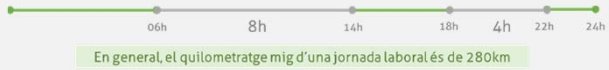
BUSINESS MODELS OF THE SECTOR:

- **Companies with 50 max licenses:** -601 licenses / 5.7% of the sector-

- **Self-employed with more than one license:** -547 licenses / 5.2% of the sector-



- **Self-employed with a single license:** -9,374 licenses / 89.1% of the sector-



Exploitation models very dependent on the recharging infrastructure, you need:

- 7KW charger for self-employed
- 22KW charger for entrepreneurs

+ Vehicle> 60KWh

Areas of development of the plan

3. TAXI

STRATEGY

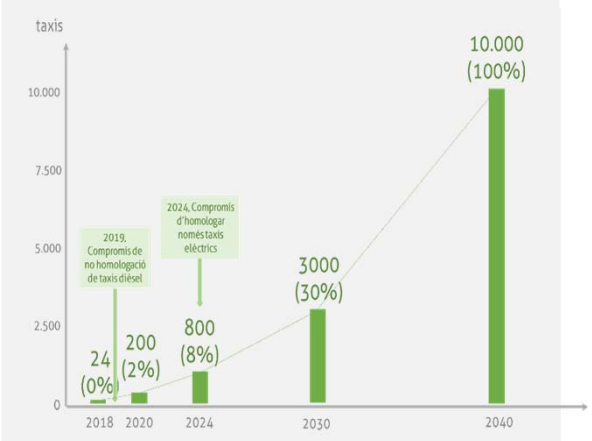
POSSIBILITING THE CHANGE OF ELECTRIC VEHICLES:

- To review the regulation of authorization of homologation of the vehicles, to give entrance to the few electric models of 40KWh - 60 KWh
- Infrastructure:
  - Facilitate inf. public open to all and also for exclusive use (collective of taxi drivers)
  - Facilitate that the self-employed taxi driver have a point linked with a charger

+ GENERAL

- Public message to promote the electric taxi and short-term diesel restriction
- Evaluation of regulatory advantages:
  - Priority with respect to other fuels (at stops, airport parking, etc.)
  - Recharging points in intermodal stations
  - Not having to respect the odd / even license
- Evaluate pilot load test by induction

OBJECTIVES



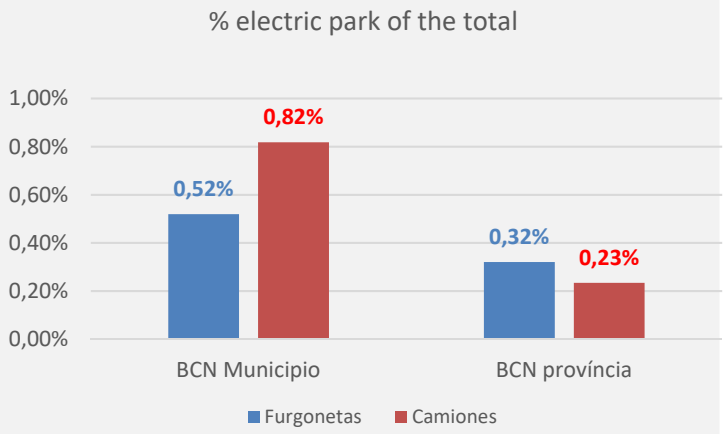
According to forecasts of the AMB, the agency will no longer homologate diesel taxis from 2019. In this context, the strategy adds and considers that <u>from 2024 electric taxis will only be homologated</u>, assuming a renewal period of 6 -8 years will result following objectives

Areas of development of the plan

4. URBAN FREIGHT DISTRIBUTION

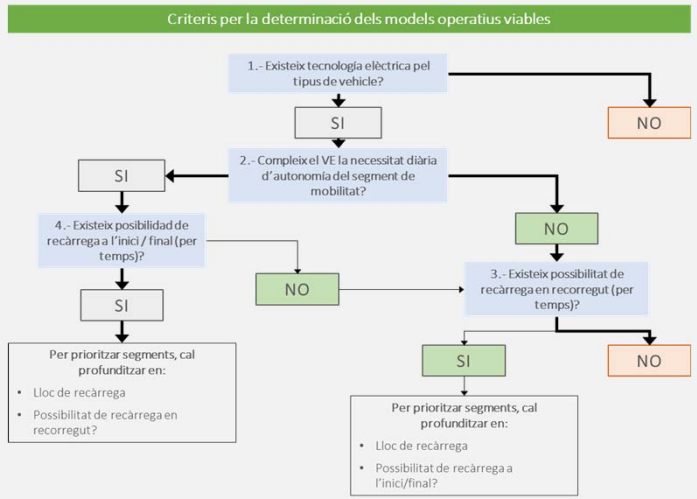
CURRENT SITUATION

- Park of commercial light vehicles and electric trucks, in Barcelona and Barcelona province (August 2018):



Great potential for the implementation of the VE to the commercial mobility of Barcelona

- European pilots have shown that EV services are good for everyday use in urban environments



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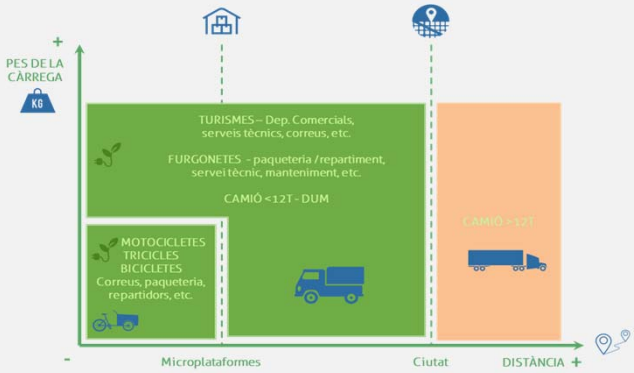
Areas of development of the plan

4. URBAN FREIGHT DISTRIBUTION

STRATEGY

- **Identification of potential commercial mobility segments electrify:**
  - ✓ Is there electrical technology for the type of vehicle?
  - ✓ Do you see the daily need for autonomy?
  - ✓ Is there a possibility of recharging during the tour (by time)?
  - ✓ Is there a possibility to recharge at the start / end (by time)?



- **Promotion of VE through:**
  - ✓ Public policies of support
  - ✓ Restriction policies for conventional vehicles

OBJECTIVES

Signature of Mayor's Agreement by the city of Barcelona: **city of zero emission from 2030;**

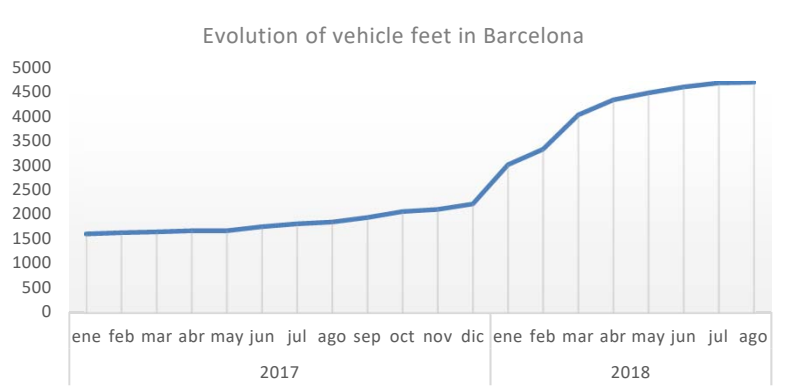
2024, exclusive access restriction VE in the city area

Areas of development of the plan

5. PASSENGER CARS AND MOTORCYCLES

CURRENT SITUATION

- The park of electric cars in BCN represents 0.12% of the total
- The park of motorcycles and electric mopeds in BCN represents 1.18% of the total



Source: Plataforma Live

- Main factors that dissuade consumers when buying an electric vehicle:

1. The autonomy

Most EV models have autonomies between 100 to 200 km recharge, while only a few models exceed the threshold of 300 km.
It has been demonstrated that an autonomy of 120 kilometers is sufficient for 90% of the journeys by car of the families of Barcelona

2. The price:

Currently the price of an electric tourism is 17% higher on average.
*Great **emphasis to reduce the cost of batteries**, which represents about a third of the total cost*

3. The recharging infrastructure:

450 public promotion recharge points, of which:
- *174 for car and 139 for motorcycle municipal car parks*
- *118 to stop motorbikes on public roads*
- *18 fast loading on public roads*

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Areas of development of the plan

5. PASSENGER CARS AND MOTORCYCLES

STRATEGY

Measures to face the current barriers of autonomy, cost and recharging infrastructure

Raise awareness of the citizenship of the energy charge model change

"Lose the fear of running out of electricity due to reduced autonomy and lack of cargo infrastructure"

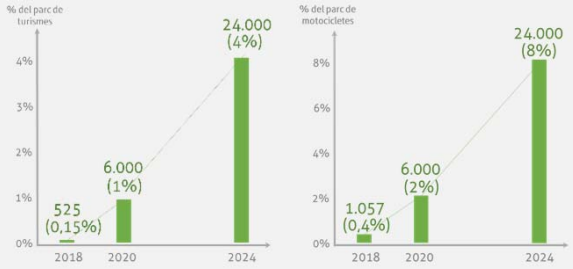
Promote car sharing systems in the case of long-distance travel, in order to help promote and publicize the VE to citizens

Promote incentives for the purchase, use and infrastructure of recharge: IDAE subsidies and tax rebates, increase the emergency load and the opportunity burden, work for centralized cargo systems, etc.

Pilot tests, such as supporting the industrial development of the electric motorcycle

OBJECTIVES

Passenger cars & motorcycles park:



Based on the current starting situation, and considering a <u>double enrollment rate year after year</u>, the following objectives of electric park percentage are marked on the total

LIVE Platform

The **LIVE Platform** is a public-private platform open to all entities related to sustainable mobility, mainly electric and natural gas vehicles, with the shared objective of developing projects, strategic policies, new business models, and creating a knowledge network.

MANAGING MEMBERS

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etra
RENAULT
Barcelona Activa
TMB Transports Metropolitans de Barcelona
gasNatural fenosa
SEAT
B:SM Barcelona de Serveis Municipals
Generalitat de Catalunya
ACCIÓ
Departament de Territori i Sostenibilitat
NISSAN
VOLKSWAGEN GROUP ESPAÑA DISTRIBUCIÓN

COOPERATING MEMBERS

Aigües de Barcelona
CIRCUTOR
endesa
factorenergia
RACC
urbaser
avancar
creafutur
etecnic
holaluz
simon
VUserveis
Pascual
DAT IBÉRICA
EVARM
hoy voy
Supla
CAR-BUS
coolta
eCoolta
EVECTRA
pluggo
TORROT

ASSOCIATED MEMBERS

AEDIVE
COL·LEGI OFICIAL DE GESTORS ADMINISTRATIUS DE CATALUNYA
Cambra de Comerç de Barcelona

OBJECTIVES:

- **Increase the strategic positioning of Barcelona**, as a center of international excellence in the sustainable mobility sector.
- **Nexus between the different public initiatives** (Barcelona, Metropolitan Area, Catalonia), as well as **sharing experiences and needs between the public and private sectors**.
- **Support the private sector** to favor the implementation of local and international strategic projects, provide promotional tools and respond to the needs and interests of the sector.

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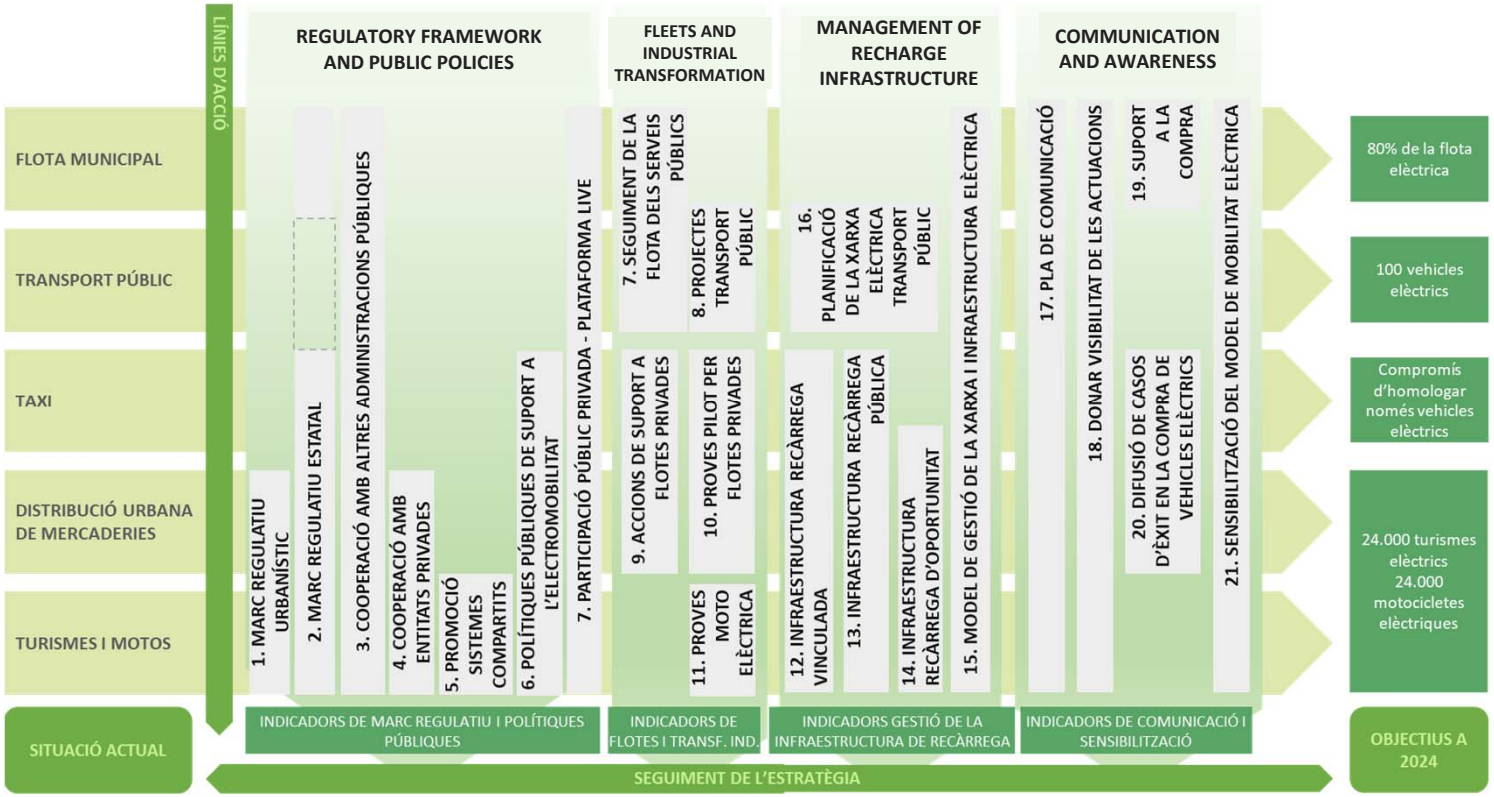
Lines of action

The Strategy proposes 4 lines of action when carrying out the objectives that are proposed. Each one of them classified in packages of actions.



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