BUILDING SMART CITIES TOGETHER

SHARINGCITIES

Câmara Municipal
lisboa

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement N° 691895

1. Approach, Vision and Governance
2. Most relevant developments
3. Challenges

eMob eV Share | eMob eBikes | eMob Smart Park | eMob eLogistics | eMob eV Charge

1. Approach, Vision and Governance

Lisbon: Challenges and Opportunities

2014 → 2030

- Ageing Society
- Urban Rehabilitation
- Employment and Employability
- Reshaping Economic Profile
- Promoting Knowledge and Innovation
- Business Friendly
- Smart City

A Smart City might be described as one that…

…dramatically increases the pace at which it improves its sustainability and resilience,

…by fundamentally improving how it engages society, how it applies collaborative leadership methods, how it works across disciplines and city systems, and how it uses data and integrated technologies,

…in order to transform services and quality of life for those in and involved with the city (residents, businesses, visitors) *ISO 'Working Definition'*

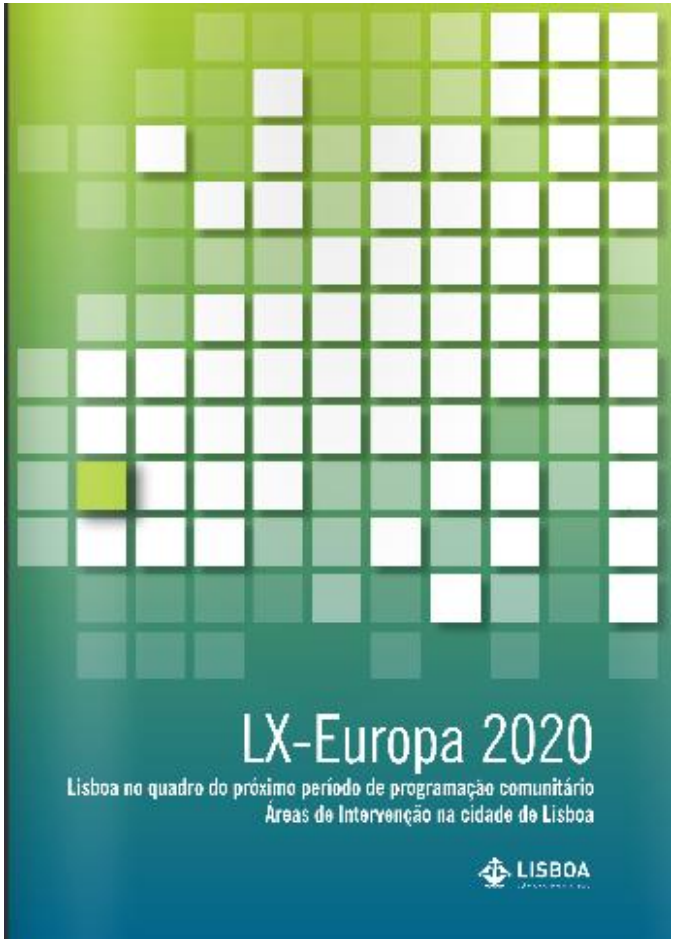
VISION

LISBON. One of the most smart, competitive, innovative and creative cities of Europe

Strategy

A strategy built with all of the stakeholders of the city, through a participative and open approach - materialized and assumed in public strategy documents.

Lx-Europe 2020 Strategy



- ✓ Built collaboratively with all city stakeholders;
- ✓ Identifies the main challenges to promote the sustainable development of the city;
- ✓ Defines the intervention areas and opportunities for the financing of the projects;

http://www.cm-lisboa.pt/municipio/camara-municipal/transparencia/lisboa-2020

Lisbon Strategic Framework

More People

More Jobs

Better City

City of Proximity

Enterpreneurial City

Inclusive City

Sustainable City

Global City

3 Strategic Goals

5 Axis

entrepre-
neurship
knowledge
and research
network of
equipment
MORE JOBS
Capital of
the Atlantic
MORE PEOPLE
inclusive
and
sustainable
mobility
tourism
BIP/ZIP
regeneration
culture and
creativity
BETTER CITY
rehabilitation
of buildings

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MorgenStadt
City of the Future

Benchmarking of Lisbon
Comparison of Indicators with Morgenstadt benchmarks

Lisbon
- Definition of details (costs, timeframe, funding opportunities, stakeholders etc.) for each project.
- Integration of measures, projects and actions into a roadmap.
- Maximization of synergies among project

Lisbon Impact Factors
Identification of challenges, opportunities, barriers and ideas for action based on structured Interviews

57 interviews with local stakeholders and experts on the most important city factors

Profiling of Lisbon with the Morgenstadt Action & Response Model for sustainable urban development

Creation of Lisbon systems models based on most important impact factors

Lisbon Indicators
Assessment of 117 indicators for Prague

- Pressures on the city system
- State of the city system
- Impact of the city System

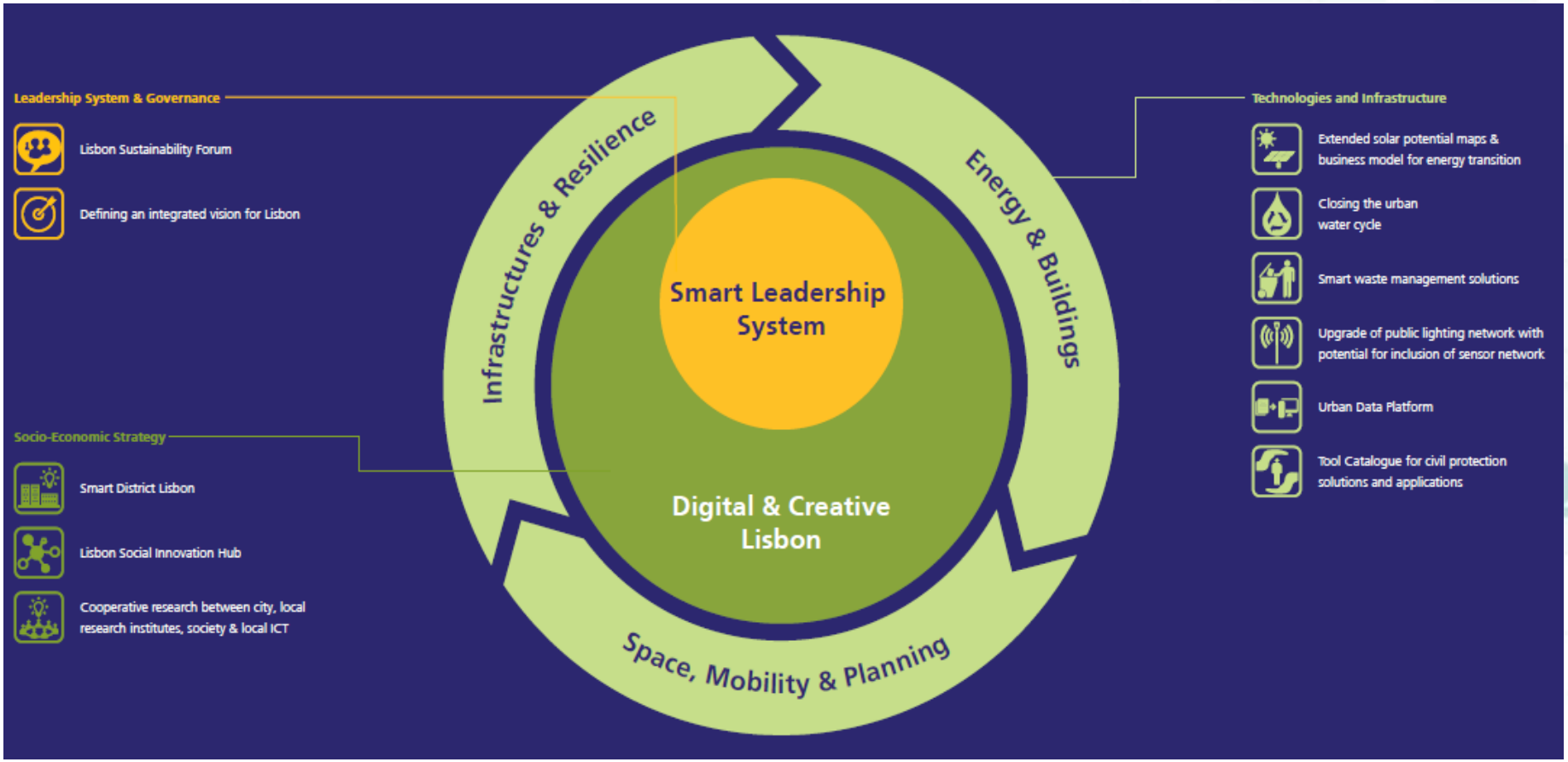
Measures & Ideas for Action
- Development of 8 – 12 Measures and Ideas for action that support and accelerate smart and sustainable development of Lisbon
- Workshops with local Stakeholders for working out the measures and initiating first projects
- Involvement of Morgenstadt Partners as Experts for Technologies, Infrastructures and Smart City Solutions

Lisbon Action Fields
Assessment of 86 Action Fields for smart & sustainable development of Lisbon

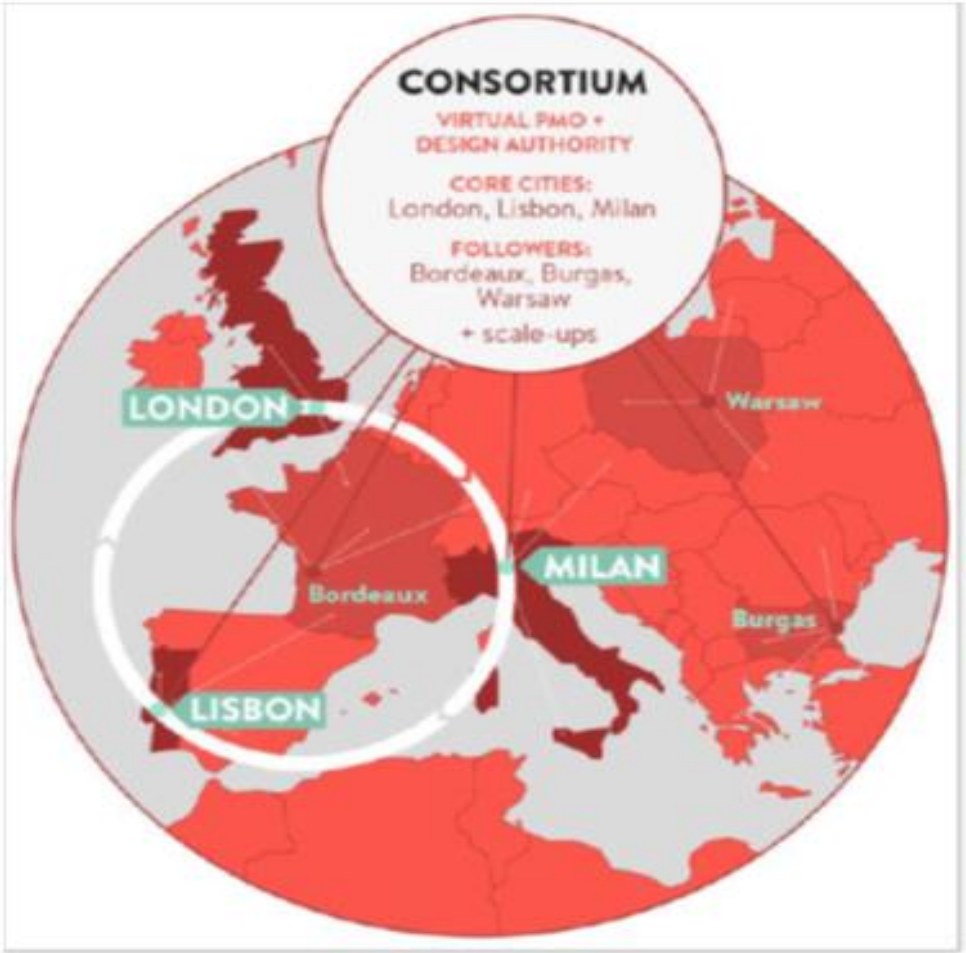
Final
- Presentation & handover of the roadmap
- Kick-off of the first projects

August | September | October | November | December | Januar | Februar | March | April | May

Fraunhofer


Leadership System & Governance
Lisbon Sustainability Forum
Defining an integrated vision for Lisbon
Socio-Economic Strategy
Smart District Lisbon
Lisbon Social Innovation Hub
Cooperative research between city, local research institutes, society & local ICT
Infrastructures & Resilience
Energy & Buildings
Space, Mobility & Planning
Smart Leadership System
Digital & Creative Lisbon
Technologies and Infrastructure
Extended solar potential maps & business model for energy transition
Closing the urban water cycle
Smart waste management solutions
Upgrade of public lighting network with potential for inclusion of sensor network
Urban Data Platform
Tool Catalogue for civil protection solutions and applications

Co-developping and testing innovative city products and services with citizens, institutional smart city stakeholders and other cities



3 Lighthouse Cities:

CITY OF LONDON

LISBOA

Milano

3 Follower Cities:

BORDEAUX

CITY OF WARSAW

BOURGAS

10 Follower Cities Portugal:

Abrantes Évora Funchal
Loures Matosinhos Portimão
Sines Sintra Vila Nova de Gaia
Viseu

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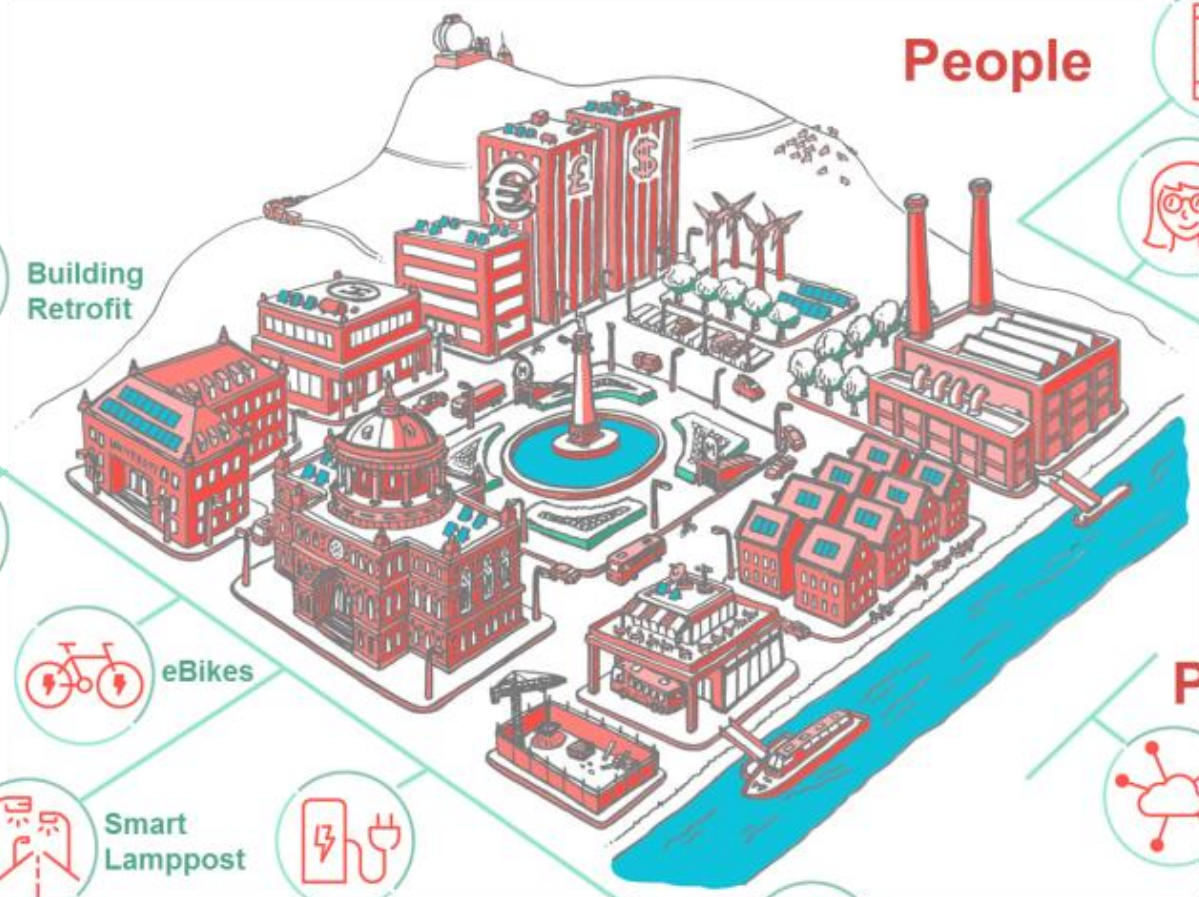


People

- Sharing Services Layer (Apps)
- Customer Engagement Tools & Approach
- Digital Bond Scheme

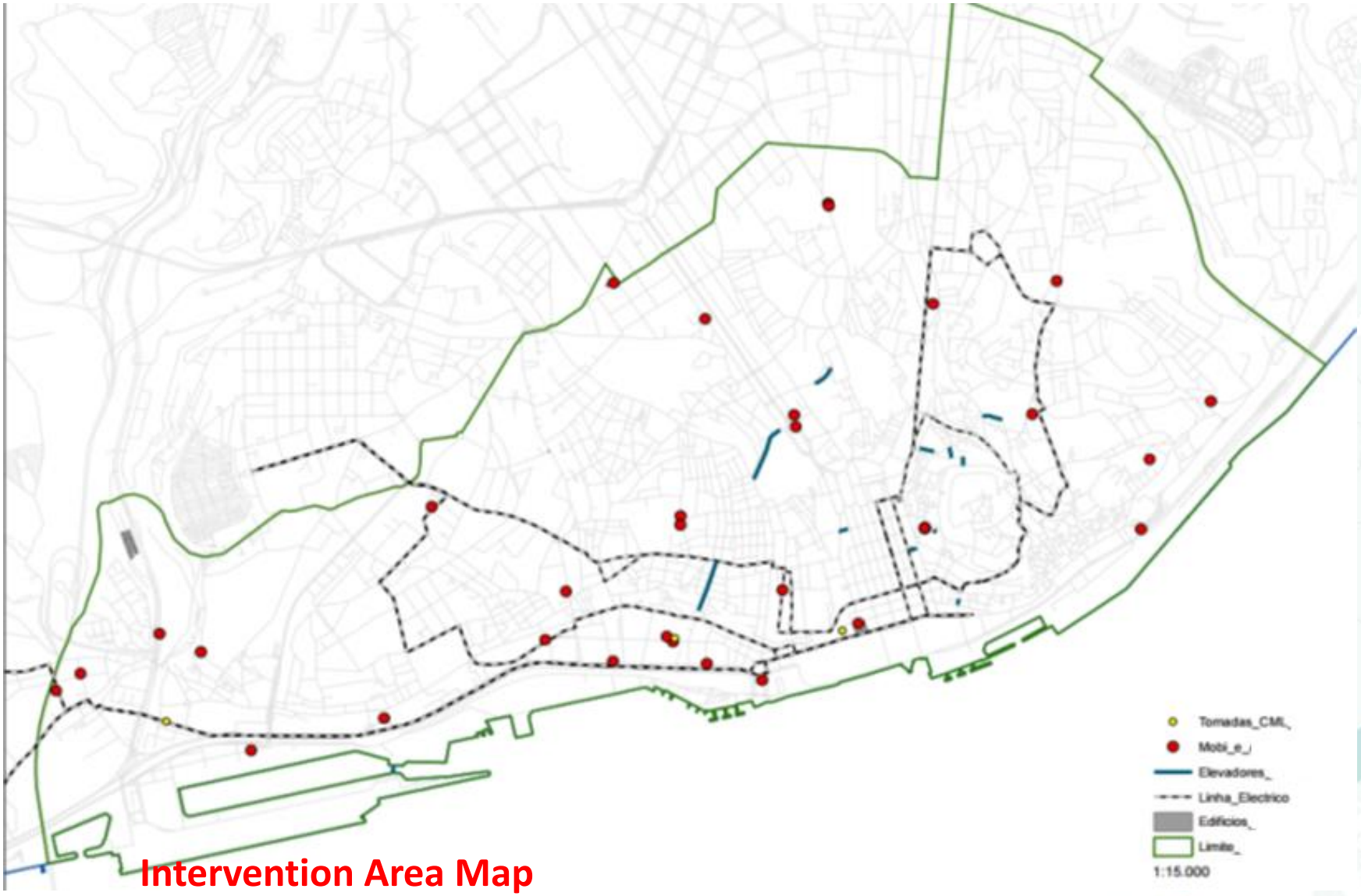
Platform

- Urban Sharing Platform

Place

- Building Retrofit
- eV Car Share
- eBikes
- Smart Lamppost
- eV Charge
- Smart Parking
- eLogistics

LISBOA
CÂMARA MUNICIPAL



Intervention Area Map

Sharing Cities

Sharing Cities in Lisbon

Citizen Engagement	Collaborative activities - Co-creation of sharing services and interfaces – District bond. Active citizen/dweller/driver/user participation for increased use of solutions.
Building Retrofit	Quinta do Cabrinha (15000 units), 2 private residential buildings (3000 units), 1 municipal service building (5300 units) – 23 000 m2
Sustainable Energy Management Serv.	SEMS - Real-time demand response and energy optimisation, PV production, building energy management system, eV smart charging - control and data visualisation.
Shared eMobility	
eV Car Sharing	65 eVs (62 new + 3 existing)
eBike Sharing	At least 30 eBikes + 2 charging stations
EV Charging	36 new charging points (in buildings) + 1 fast charging point + 60 existig charging points
Smart Parking	30 smart parking sensors
eLogistics	80 eLogistics vehicles (52 new + 28 existing) + 2 eBUS (new)
Smart Lamp Posts	250 (light automation / wifi / environmetal sensors + ...)
Urban Sharing Platform	Development of a common open standard reference architecture and urban sharing platform for exploitation beyond the core cities «designed by three, mean for many»

Smart Lampposts

EV Charging Posts

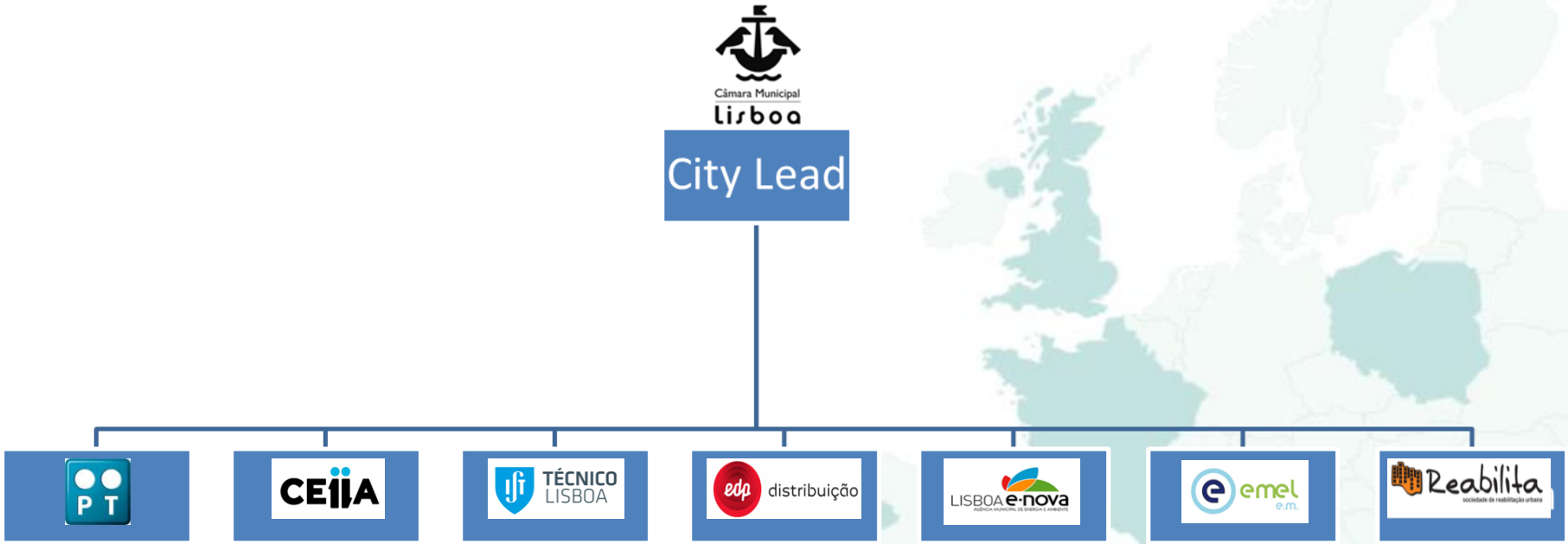
Building Retrofit

Shared EV´s in fleets

E-bike charging

E-bike sharing

Local Consortium



Expected results

- **Energy consumption reduction;**
- **CO2 emission reduction +** NOx, PM, O3, noise monitoring & reduction;
- **Cost reduction** in energy and mobility;
- **Increase of eV fleets and eV charging infra-structure.**

- **Citizen engagement** & innovation in citizen engagement – co-design, co-creation, district bond;
- **Awareness raising** for sustainability and behaviour change;
- **Open data** for information and public use (application development).

- **Urban Sharing Platform,** aligned with the Lisbon Smart Cities Strategy, integrated with COIL, Smart Open Lisboa, MOBI-E and all the other innovation and smart cities Lisbon projects;
- Increase of Lisbon capacity of providing **real-time information** and system **remote and integrated control;**
- Increase Lisbon **economy dynamics;**
- Monitoring through management **indicators and KPI;**
- Contribute for the creation of a Lisbon **urban innovation eco-system.**

2. Most relevant developments

eMob eV Share

eMob eBikes

eMob Smart Park

eMob eLogistics

eMob eV Charge

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PORTUGUESE ELECTRIC MOBILITY PROGRAM
MOBI.E MODEL PRINCIPLES

MOBI.E®
ELECTRIC MOBILITY

- **FOCUS ON THE USER** / CITIZEN
- FAIR, ADVANTAGEOUS AND **COMPETITIVE PRICING** WHEN COMPARED TO ICE VEHICLE
- **UNIVERSAL ACCESS** OPEN TO EVERY MANUFACTURER, UTILITY, PRIVATE OPERATOR
- **INTEGRATION** OF INFORMATION, ENERGY AND FINANCIAL FLUXES
- ATTRACTION OF **PRIVATE INVESTORS**
- TRULY **NATIONAL SCALE**, ANTICIPATING MASSIFICATION OF ELECTRIC VEHICLES.

eMob eV Charge

eMob eV Charge
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MOBIE
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eMob eBikes

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Ciclovias em Lisboa

eMob eBikes

SHARINGCITIES

eMob Smart Park

SHARINGCITIES

eMob eV Share

eMob eLogistics

3. Challenges

eMob eV Share

eMob eBikes

eMob Smart Park

eMob eLogistics

eMob eV Charge

- Decrease of resident population in the city area from 800 000 inhabitants in the 80´s to 550 000 today;
- Increase in population in the metropolitan area to 2 800 000 inhabitants in 2011;
- Mass use of individual automobile;
- In 1981 public transport was the main means of transport in home to work or school trips with a 67% share (the automobile had a 14% share). Nowadays the automobile has 48% and public transport 34%;
- Since 2009 the public transport system of the city lowered it´s offer in 19%;

- Load caused by EV charging on the electric distribution grid;
- Illegal occupation of EV parking/charging spots by internal combustion cars;
- Lack of a “sharing” vehicle culture by the population;
- Data integration and single management platform for the city infrastructure;
- Regulations;
- Migrating the portuguese pilot E-Mobility program to a more flexible model;
- Making the TCO of a EV more competitive;

www.cm-lisboa.pt

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Câmara Municipal
Lisboa

Thank you!