

City Energy and Climate Action  
How to Set Targets and Develop a Plan

# Best Practices from Lisbon

David Cunha

7<sup>th</sup> UCLG ASPAC Congress  
12 September 2018



# PORTUGAL



Area: 92.225,60 km<sup>2</sup>

Population: 10.309.573

Populational density: 111,8 / km<sup>2</sup>

Coastline perimeter: 2.601 km

Maximum altitude: 2.351 m

Mainland Portugal is located in the south-westernmost point of continental Europe

43,2% of the total resident population in Portugal was located in its 159 cities



# LISBOA



Lisboa | Metropolitan Area

Area: 100,05 km<sup>2</sup> | 3.015,24 km<sup>2</sup>

Population: 504.964 | 2.821.349

Workday population: 900.000 ~ 1.100.000

Elevation range: 2 ~ 226m

Climate (Summer | Winter)

Average air temperature: 21° C | 8° C

Average relative humidity: 60% | 85%

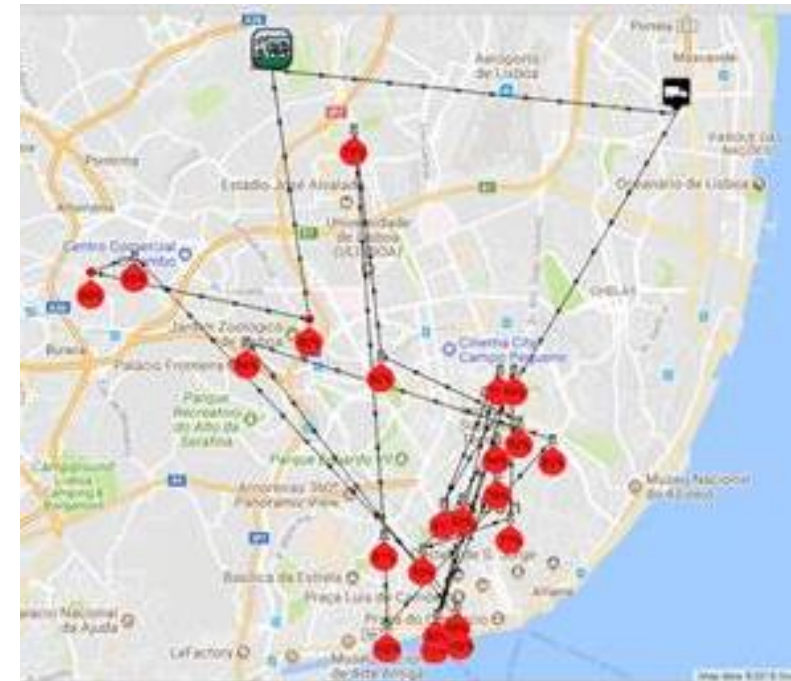
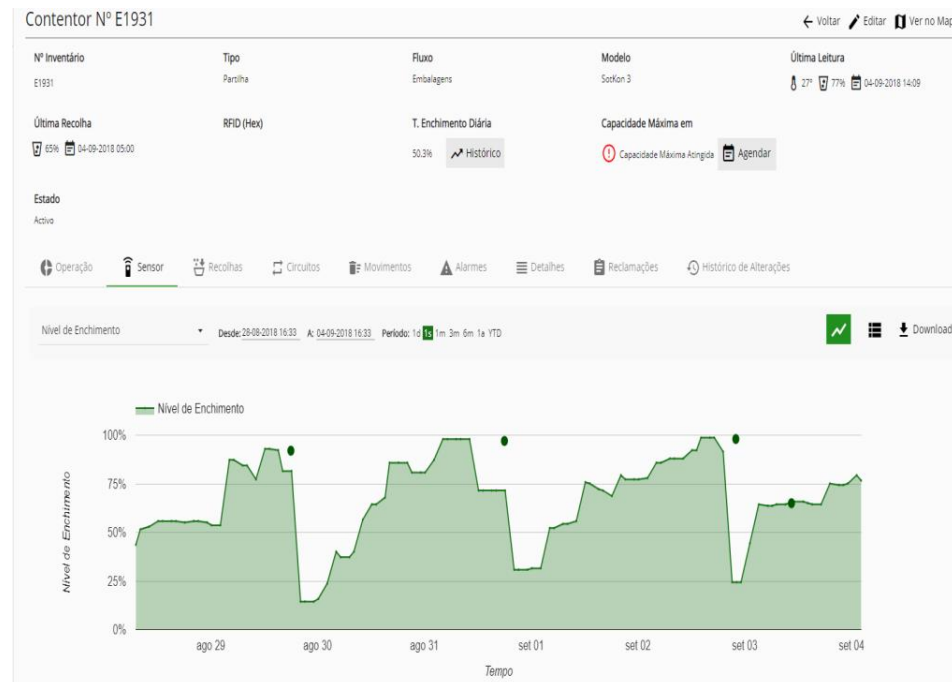
Lisbon is known as the city of seven hills.



# URBAN CLEANING

## ADVANTAGES

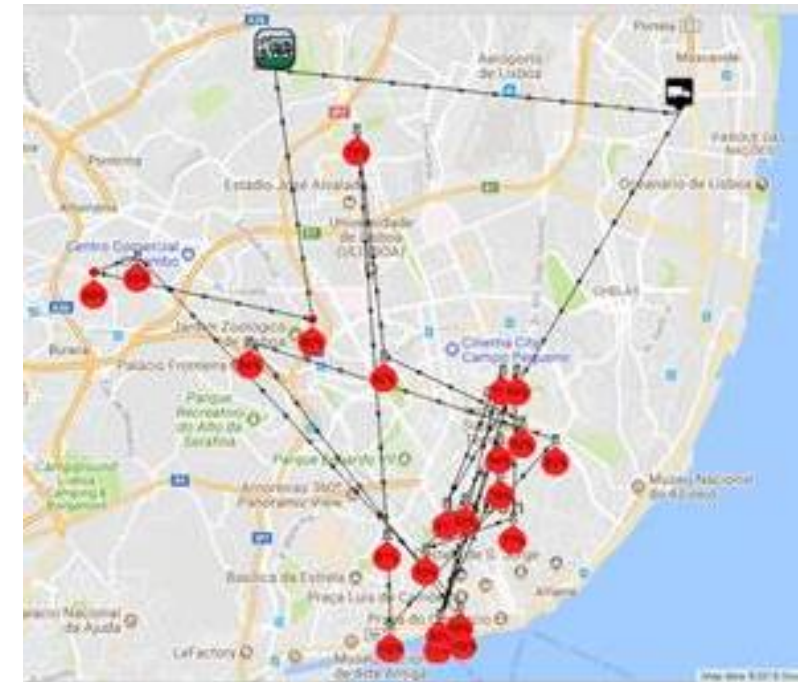
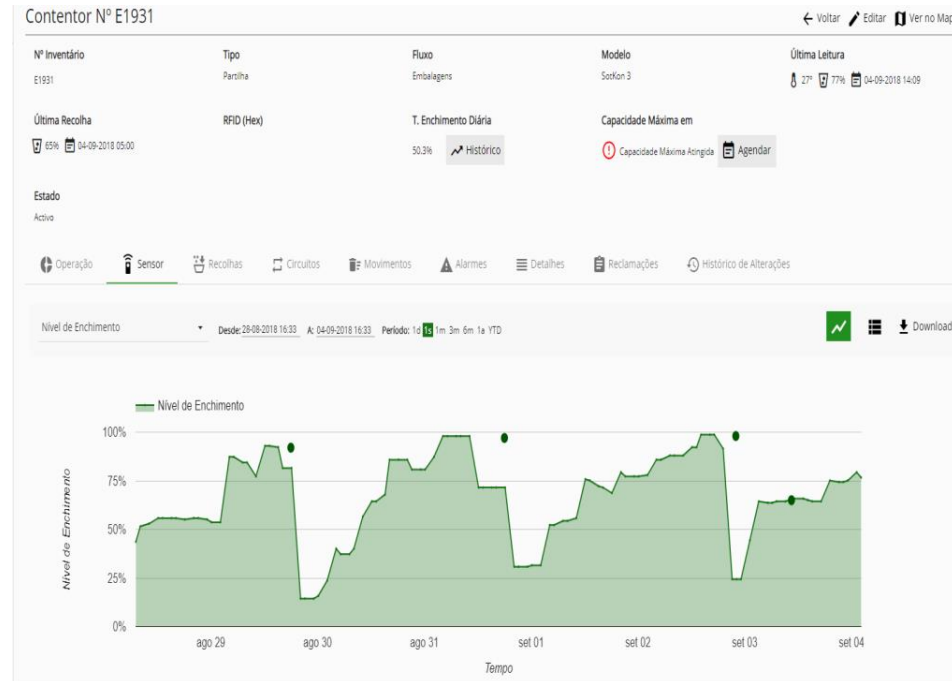
- Efficient route planning, logistic and fuel savings and lower pollution emissions
- Centralized information, focused on waste collection process planning and management
- Possibility of deployment in different container and waste types
- Historic data, prediction analytics and dynamic routes
- Statistics
- Smartphone integration
- Real time information



# URBAN CLEANING

## NUMBERS

- Purchased sensors – 1650
- Installed – 1303
  - Underground – 563
  - Cycleas – 413
  - Igloos – 327
- Planned – 347
  - sensors (181 underground + 166)
  - These 166 sensors will be installed in paper and package containers where there are already glass containers with sensors
- Investment: 253.940,00€

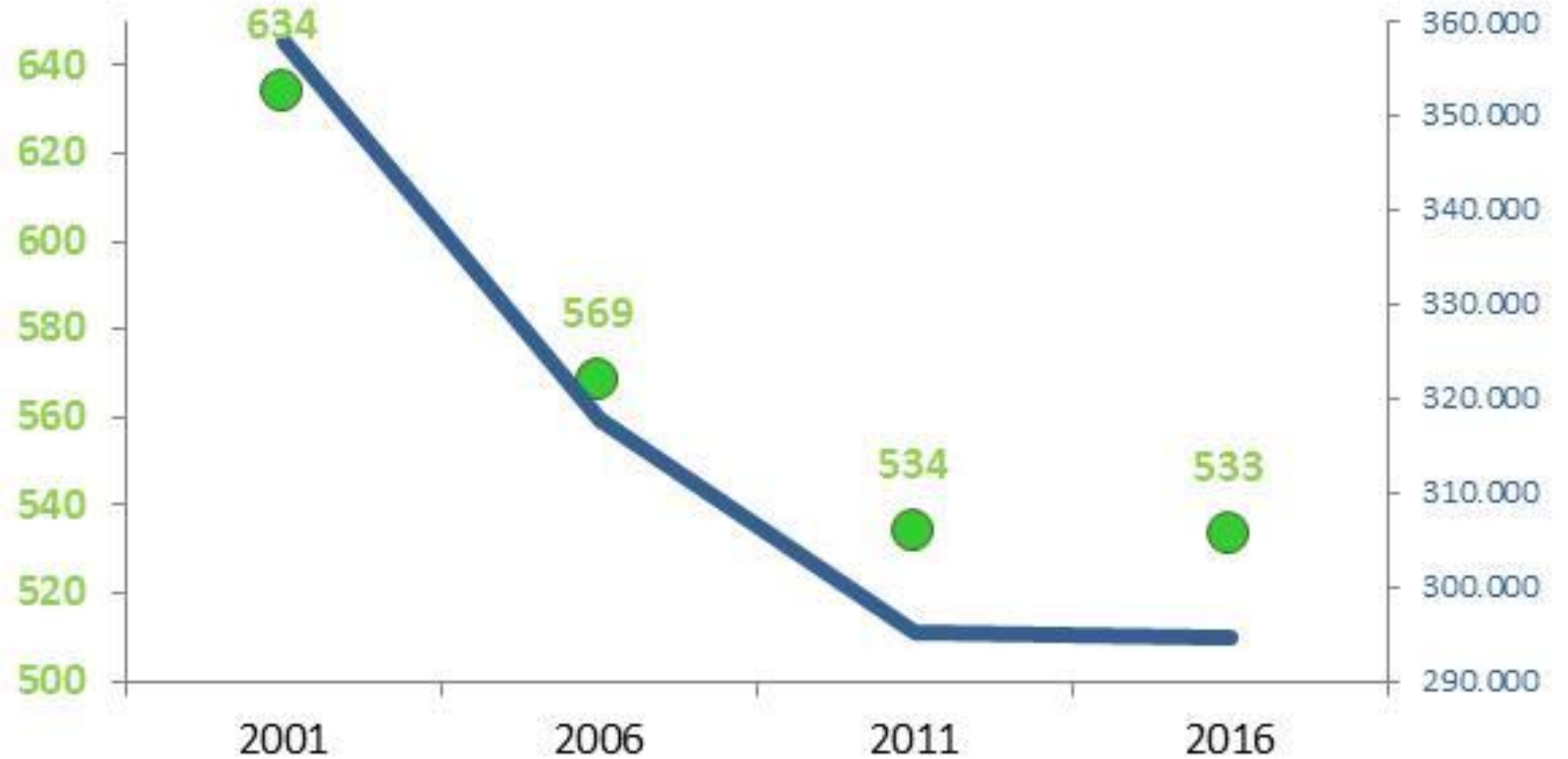


# URBAN CLEANING

## NUMBERS

- Purchased sensors – 1650
- Installed – 1303
  - Underground – 563
  - Cycleas – 413
  - Igloos – 327
- Planned – 347
  - sensors (181 underground + 166)
  - These 166 sensors will be installed in paper and package containers where there are already glass containers with sensors
- Investment: 253.940,00€

kg/cap.year



564.657  
inhabitants  
(population  
census 2001)

558.679  
inhabitants  
(estimative through  
interpolation between  
2001 and 2011 data)

552.700  
inhabitants  
(population  
census 2011)

552.700  
inhabitants  
(considering  
population = 2011)

# EV CAR SHARING

## MUNICIPALITY SHARED FLEET

### Results:

Reducing pollution in the city

Reducing energy consumption

Growing satisfaction and confidence for around 200 users

Promoting eMobility in companies and citizens

Largest municipal eFleet in Portugal

600 charging points across the city

An increase in defensive driving behaviours



2000



2007-2008



2010-2014



2011



2011-2014



2013



2013



2014



2015



2016-2017



2018



2018

# EV CAR SHARING

## MUNICIPALITY SHARED FLEET

Results:

Reducing pollution in the city

Reducing energy consumption

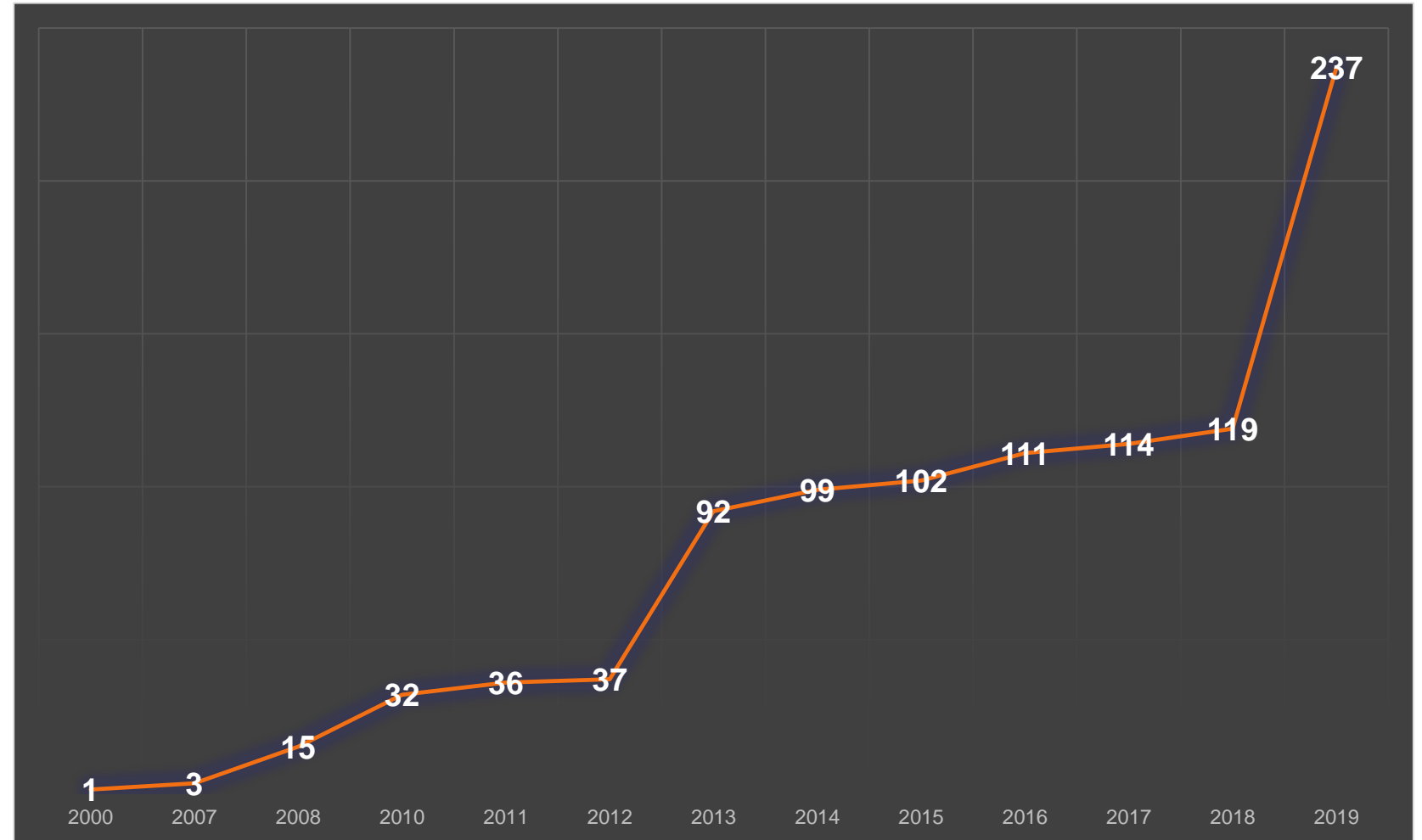
Growing satisfaction and confidence for  
around 200 users

Promoting eMobility in companies and  
citizens

Largest municipal eFleet in Portugal

600 charging points across the city

An increase in defensive driving  
behaviours



Number of electrical vehicles in the municipal fleet



# EV CHARGING

## MUNICIPAL CHARGERS

The municipality is focusing the majority of its chargers in 3 main facilities in the city:

Olivais complex

Campo Grande building

Paços do Concelho / City Hall

Currently the municipality has the following charging points:

Industrial socket (3,45 kW): 86

Wallbox (7 kW): 25

Fast charger (22 kW): 1

Fast charger (50 kW): 4

In Lisbon, there are around 600 public electrical chargers



# EV CAR SHARING

## PRIVATE OPERATORS

There are currently 3 private shared mobility providers, operating in Lisbon.

EMOV – Currently operating over 150 fully electrical vehicles

DriveNow – Operating a fleet of over 200 cars, some of which are fully electrical

eCooltra – Operates a fleet of 300 fully electrical scooters



# EV LOGISTICS

## LISBON URBAN CLEANING

### FUSO E-CANTER

10 Mitsubishi Fuso e-Canter, the first lightweight lorry of mass production, were acquired by the Municipality and distributed by 10 selected parishes

Besides 0 emissions, it ensures 30% less maintenance costs and fuel savings of up to 1000€ / 10.000km, accordingly to local fuel prices.



# EV LOGISTICS

## OTHER FLEETS

Other companies, government and private, are also investing in electrical vehicles for their logistics fleet.

EMEL – Empresa Municipal de Mobilidade e Estacionamento de Lisboa is a municipal company, that manages mobility and parking within Lisbon.

CTT – Correios de Portugal is the national postal service of Portugal.



EMEL – Empresa Municipal de Mobilidade e Estacionamento de Lisboa



CTT – Correios de Portugal

# SMART PARKING

## SMART PARKING SENSORS

Tests are currently taking place, aiming to experiment with multiple smart parking technologies at pilot scale, in an urban context and as close as possible to operational conditions.

The technologies being currently tested are:

Laser cameras

Sensors in the surface of individual parking spots (with gateway)

Sensors in the surface of individual parking spots (with independent communication).

The tests are taking place in Av. Alexandre Herculano and Rua Castilho, involving 13 suppliers and over 150 parking spots.

Next step (2019-2020): From Pilot to Full Scale Deployment in Lisbon main streets.



# SMART PARKING

## WHY

Gas emission limits are sometimes exceeded in city centre

On average, drivers spend up to 20 minutes searching for a parking space

30% of traffic and pollution are caused by “parasitic traffic” of drivers searching for a parking space

Managing parking spaces availabilities and rotation is expensive and not efficient

## SERVICES

Driver:

Availability information about On-Street parking and parking lots

Charging stations information

Real time information about traffic and smart routes

EMEL:

Enhanced management tools and analytics



# EBIKES

## GIRA – BICICLETAS DE LISBOA

GIRA is a shared mobility service, based on a network of bicycle stations, located in strategic points in the city of Lisbon, allowing the users of the service to travel between docks, typically pendular movements (home – work/school).

Operating (planned):

74 (140) stations

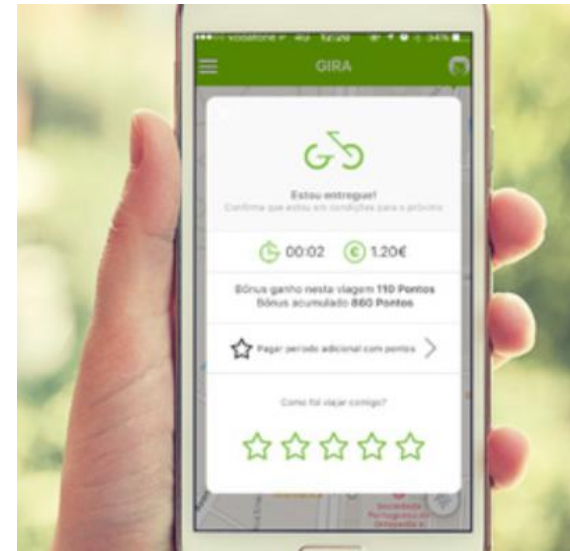
1290 (2.638) docks

706 (1.410) bicycles

Trips (up to 31 August 2018)

630.000 trips

15.500 annual subscriptions



# OTHER PROJECTS

GREEN CORRIDORS

URBAN ALLOTMENT GARDENS

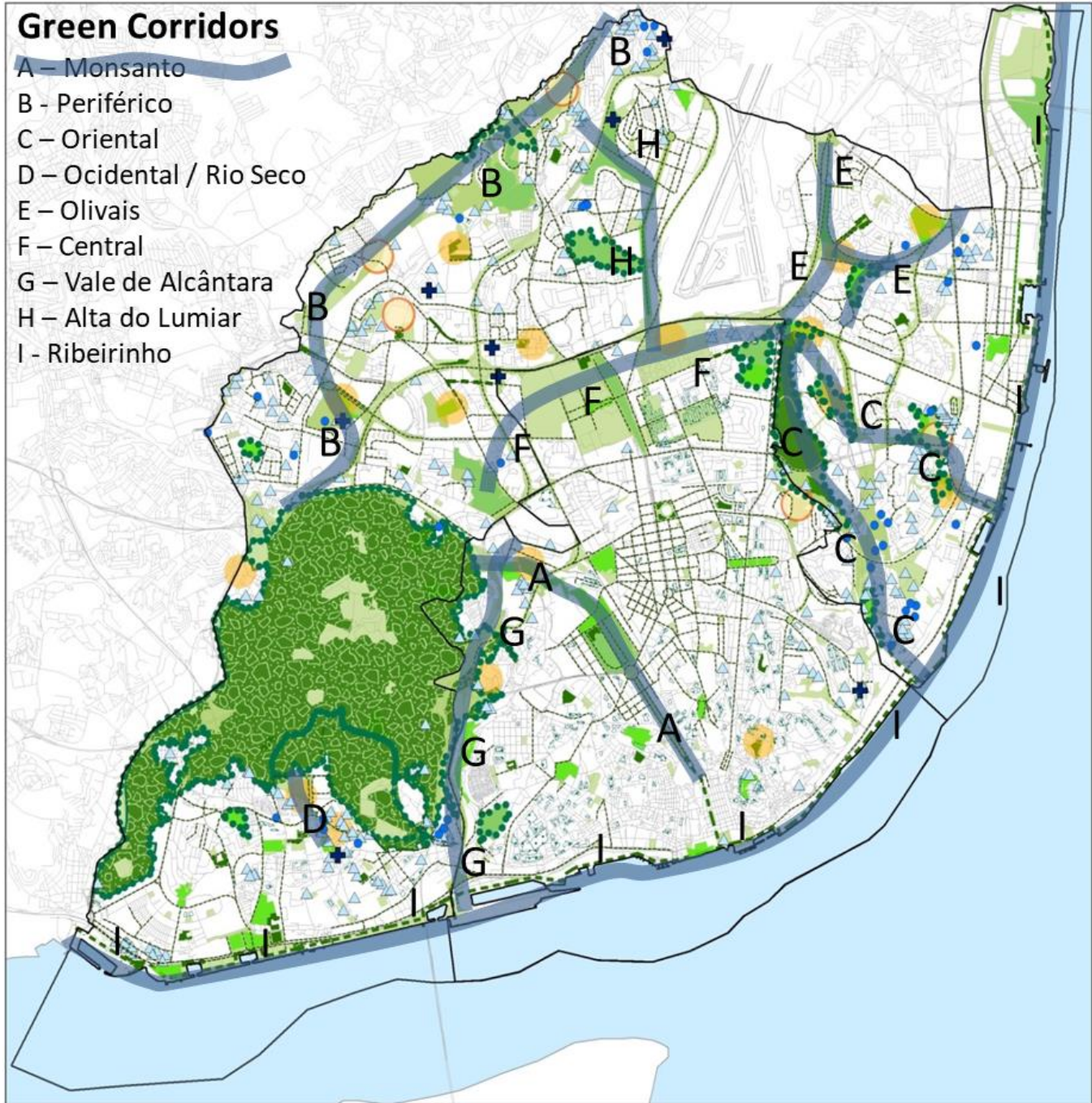
A SQUARE IN EACH NEIGHBOURHOOD

LOW EMISSION ZONES

...

## Green Corridors

- A – Monsanto
- B - Periférico
- C – Oriental
- D – Ocidental / Rio Seco
- E – Olivais
- F – Central
- G – Vale de Alcântara
- H – Alta do Lumiar
- I - Ribeirinho





# OTHER PROJECTS

GREEN CORRIDORS

URBAN ALLOTMENT GARDENS

A SQUARE IN EACH NEIGHBOURHOOD

LOW EMISSION ZONES

...



# OTHER PROJECTS

GREEN CORRIDORS

URBAN ALLOTMENT GARDENS

A SQUARE IN EACH NEIGHBOURHOOD

LOW EMISSION ZONES

...



# OTHER PROJECTS

GREEN CORRIDORS

URBAN ALLOTMENT GARDENS

A SQUARE IN EACH NEIGHBOURHOOD

LOW EMISSION ZONES

...



# OTHER PROJECTS

GREEN CORRIDORS

URBAN ALLOTMENT GARDENS

A SQUARE IN EACH NEIGHBOURHOOD

LOW EMISSION ZONES

...



City Energy and Climate Action  
How to Set Targets and Develop a Plan

## Best Practices from Lisbon

David Cunha

7<sup>th</sup> UCLG ASPAC Congress  
12 September 2018



© Link