BUILDING SMART CITIES TOGETHER

CIVITAS FORUM 2017

Torres Vedras, 28/09/2017

Pedro Machado, Lisboa E-Nova

LONDON

WARSAW

BORDEAUX

MILAN

LISBON

BURGAS

INEA
Secure, clean and efficient energy

20 topics
20% of budget to SCC
3 proj/year – 75M€
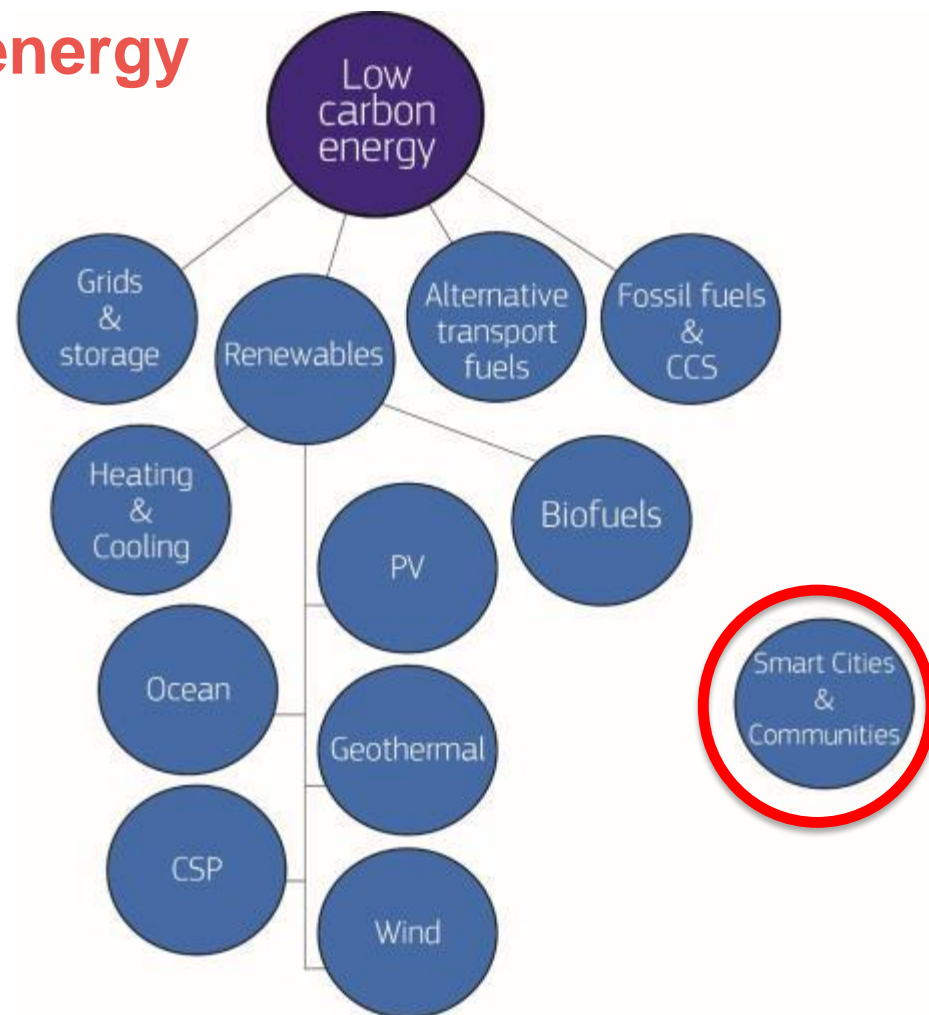
LEGEND: ★ Leader ● Follower * EUROCITIES member

- 2014 -
GROWSMARTER
*Barcelona, ES
*Koln, DE
*Stockholm, SE
Cork, IE
*Graz, AT
*Porto, PT
Suceava, RO
Valetta, MT

REMOURBAN
Nottingham, UK
Tebebasi, TR
Valladolid, ES
Miskolc, HU
Seraing, BE

TRIANGULUM
*Eindhoven, NL
*Manchester, UK
*Stavanger, NO
*Leipzig, DE
*Prague, CZ
*Sabadell, ES

- 2015 -
REPLICATE
*Bristol, UK
*Donostia/San Sebastian, ES
*Florence, IT
*Essen, DE
*Lausanne, CH
*Nilufer, TR

SHARING CITIES
*Lisbon, PT
*London, UK
*Milan, IT
*Bordeaux, FR
*Burgas, BG
*Warsaw, PL

SMARTEN CITY
Sonderborg, DK
Tartu, EE
Victoria-Gasteiz, ES
Asenovgrad, BG
Lecce, IT

SMARTER TOGETHER
*Lyon, FR
*Munich, DE
*Vienna, AT
Kiev, UA
Santiago de Compostela, ES
*Sofia, BG
*Venice, IT
Yokohama, JP

- 2016 -
MY SMART LIFE
*Hamburg, DE
*Helsinki, FI
*Nantes, FR
*Bydgoszcz, PL
Palencia, ES
*Rijeka, HR
*Varna, BG

RUGGEDISED
*Glasgow, UK
*Rotterdam, NL
*Umea, SE
*Brno, CZ
*Gdansk, PL
Parma, IT

- 2017 -
IRIS
*Gothenburg, SE
*Nice, FR
*Utrecht, NL
Alexandroupolis, GR
Focsani, RO
Santa Cruz de Tenerife, ES
Vaasa, FI

MATCH-UP
Antalya, TR
*Dresden, DE
Valencia, ES
Herzliya, IL
Kerava, FI
*Ostend, BE

STARDUST
Pamplona, ES
*Tampere, FI
Trento, IT
*Derry, UK
Kozani, GR
Litomerice, CZ

Sharing Cities

www.sharingcities.eu

SHARINGCITIES

What is Sharing Cities ?   **Key facts**   Who we are ?   Contact   Discover

01 01 2016
Start date

60
Month

€ 28045835
Total cost

€ 24753944
EC funding

€ 500
million
Expected private capital

100
cities
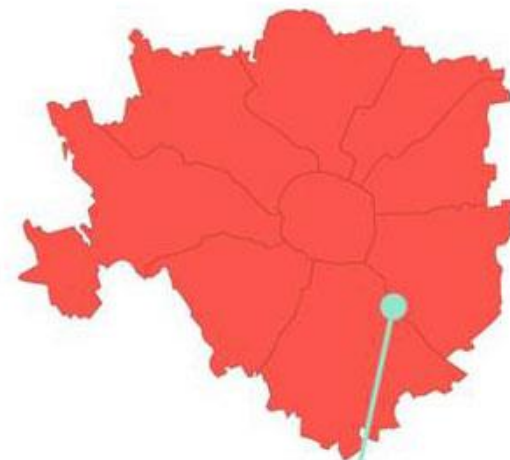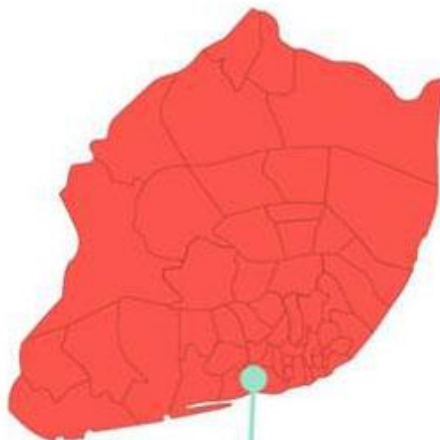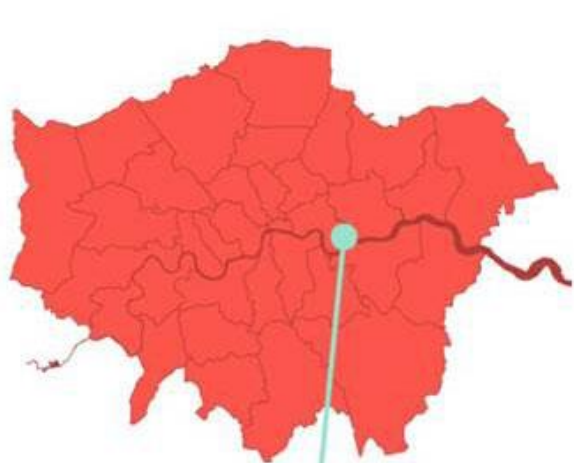Scale-up

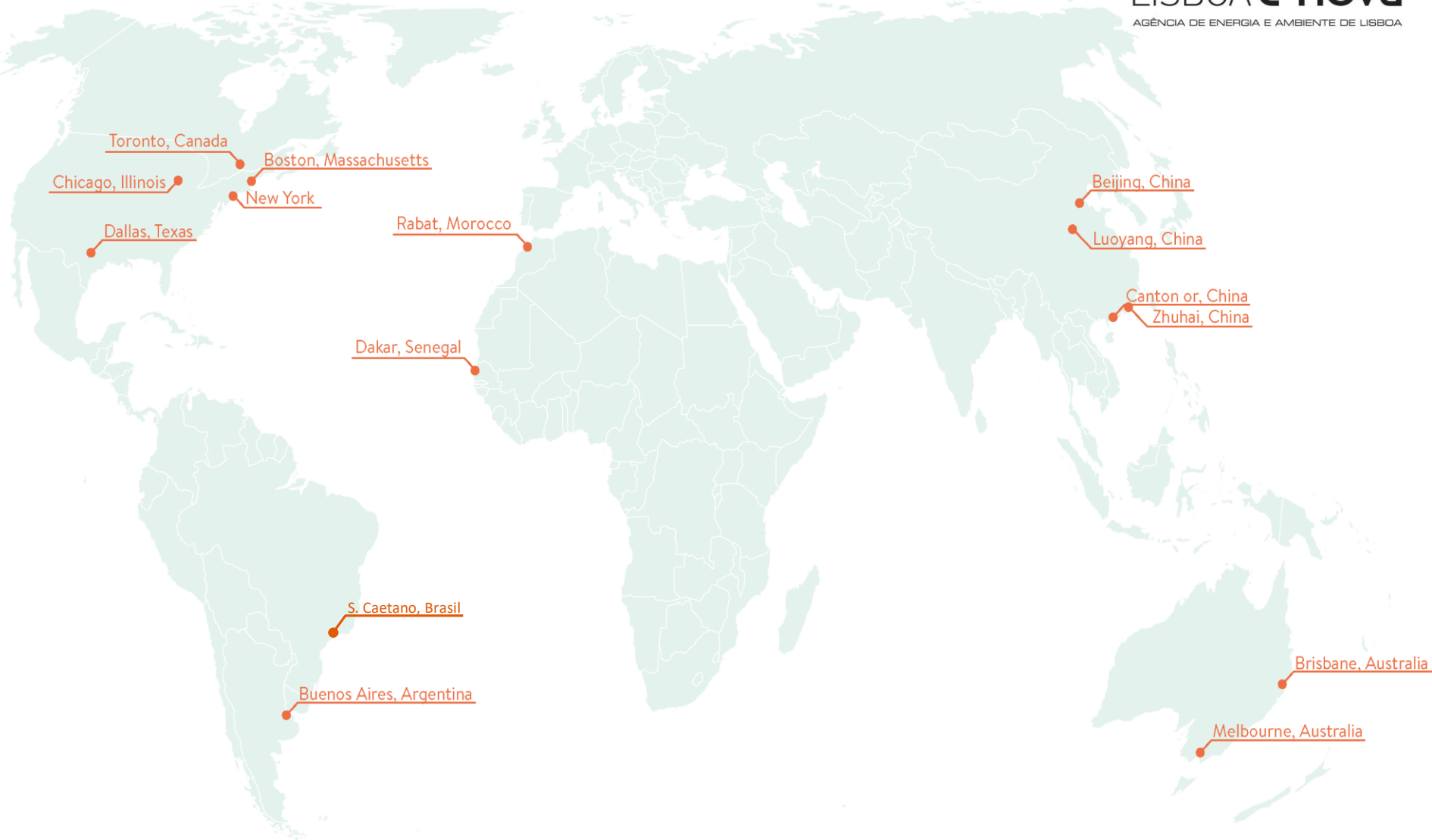The 'Lighthouse' and 'Fellow' Cities

LISBON – LONDON – MILAN
BORDEAUX – BURGAS – VARSAW

EU scale-up cities

BA - Sarajevo
BE - Antwerp
BE - Brussels Region & City
BE - Charleroi
BE - Ghent
BE - Kortrijk
BE - Ostende
BG - Burgas
CH - Geneva
CH - Zurich
CZ - Prague
DE - Berlin
DE - Bonn
DE - Bremen
DE - Chemnitz
DE - Cologne
DE - Dortmund
DE - Dresden
DE - Dusseldorf
DE - Essen
DE - Frankfurt
DE - Hagen
DE - Hamburg
DE - Karlsruhe
DE - Leipzig
DE - Mannheim
DE - Munich
DE - Munster
DE - Nuremberg
EE - Rakvere
EE - Tallinn
ES - Barcelona
ES - Bilbao
ES - Fuenlabrada
ES - Gijon
ES - Madrid
ES - Malaga
ES - Murcia
ES - Santander
ES - Saint Sebastian
ES - Seville
ES - Terrassa Metropolitan Area
ES - Zaragoza
FI - Espoo
FI - Tampere
FR - Amiens Metropole
FR - Angers Loire Metropole
FR - Bordeaux
FR - Brest Metropole Oceane
FR - Grand Nancy
FR - Grenoble Alpes Metropole
FR - Lille Communaute Urbane
FR - Lyon
FR - Marseille

FR - Nantes Metropole
FR - Nice Cote d'Azur
FR - Paris
FR - Reims Metropole
FR - Rennes Metropole
FR - St.Etienne Metropole
FR - St.Nazaire
FR - Strasbourg
FR - Toulouse
FR - Tours
HU - Budapest
IE - Cork
IT - Bergamo
IT - Bologna
IT - Brescia
IT - Cesena
IT - Florence
IT - Genoa
IT - L'Aquila
IT - Lecce
IT - Lombardia Region
IT - Milan
IT - Palermo
IT - Pisa
IT - Rome
IT - Salerno
IT - Trento
IT - Turin
IT - Venice
NL - Almere
NL - Amsterdam
NL - BrabantStad Metro-
politan
NL - Eindhoven
NL - Netwerkstad Twente
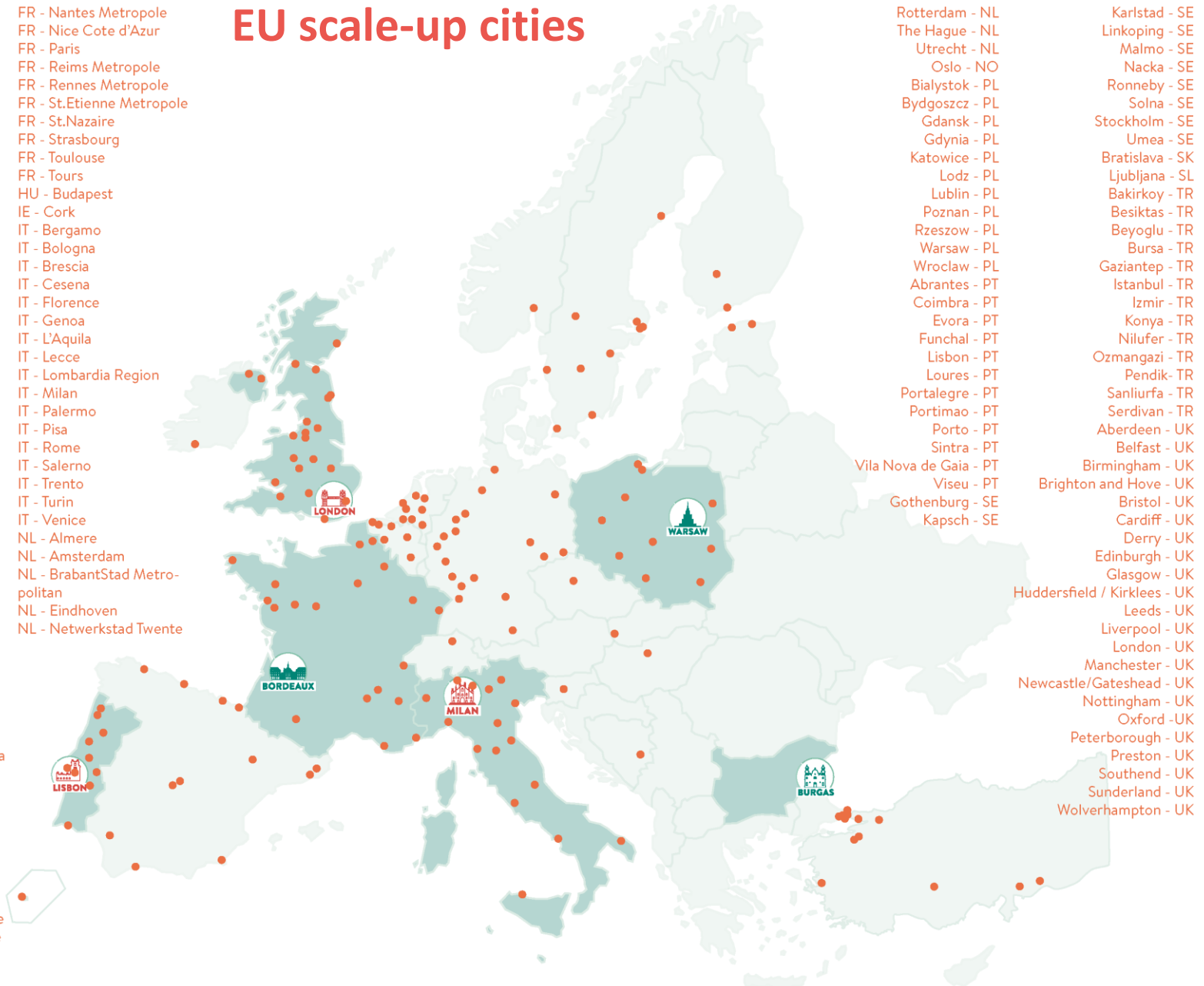
Rotterdam - NL
The Hague - NL
Utrecht - NL
Oslo - NO
Bialystok - PL
Bydgoszcz - PL
Gdansk - PL
Gdynia - PL
Katowice - PL
Lodz - PL
Lublin - PL
Poznan - PL
Rzeszow - PL
Warsaw - PL
Wroclaw - PL
Abrantes - PT
Coimbra - PT
Evora - PT
Funchal - PT
Lisbon - PT
Loures - PT
Portalegre - PT
Portimao - PT
Porto - PT
Sintra - PT
Vila Nova de Gaia - PT
Viseu - PT
Gothenburg - SE
Kapsch - SE

Karlstad - SE
Linkoping - SE
Malmo - SE
Nacka - SE
Ronneby - SE
Solna - SE
Stockholm - SE
Umea - SE
Bratislava - SK
Ljubljana - SL
Bakirkoy - TR
Besiktas - TR
Beyoglu - TR
Bursa - TR
Gaziantep - TR
Istanbul - TR
Izmir - TR
Konya - TR
Nilufer - TR
Ozmangazi - TR
Pendik- TR
Sanliurfa - TR
Serdivan - TR
Aberdeen - UK
Belfast - UK
Birmingham - UK
Brighton and Hove - UK
Bristol - UK
Cardiff - UK
Derry - UK
Edinburgh - UK
Glasgow - UK
Huddersfield / Kirklees - UK
Leeds - UK
Liverpool - UK
London - UK
Manchester - UK
Newcastle/Gateshead - UK
Nottingham - UK
Oxford -UK
Peterborough - UK
Preston - UK
Southend - UK
Sunderland - UK
Wolverhampton - UK

LONDON
BORDEAUX
MILAN
LISBON
WARSAW
BURGAS

Global scale-up cities

- Toronto, Canada
- Boston, Massachusetts
- Chicago, Illinois
- New York
- Dallas, Texas
- Rabat, Morocco
- Beijing, China
- Luoyang, China
- Canton or, China
- Zhuhai, China
- Dakar, Senegal
- S. Caetano, Brasil
- Buenos Aires, Argentina
- Brisbane, Australia
- Melbourne, Australia

10 Measures - 'Building Block' Repeatable Solutions

- Citizen Engagement
- Building Retrofit
- Sustainable energy management systems
- eV Car Sharing
- eBike Sharing
- eV Charging
- Smart Parking
- eLogistics
- Smart Lamp Posts
- Urban Sharing Platform

	London	Lisbon	Milan	Bordeaux	Burgas	Warsaw
Citizen Engagement	Implement	Implement	Implement	Co-design	Validate	
Building Retrofit	Implement	Implement	Implement	Validate	Validate	Implement
Energy Management	Implement	Implement	Implement	Implement	Co-design	Validate
eMobility	Implement	Implement	Implement	Co-design	Implement	Validate
EV Car Sharing	Implement	Implement	Implement		Co-design	Validate
eBikes	Implement	Implement	Implement		Implement	Validate
EV Charging	Implement	Implement	Implement		Implement	Implement
Smart Parking	Implement	Implement	Implement		Implement	Implement
EV Logistics	Implement	Implement	Implement		Co-design	
Smart Lamp Posts	Implement	Implement	Implement	Implement	Implement	Validate
Urban Platform	Implement	Implement	Implement	Validate	Validate	

Key: Implement   Co-design   Validate

The Demonstration

Citizen Engagement — Co-creation & co-design of digital services and interfaces by and for citizens and companies
Design of incentives schemes - "District Bond"

Building Retrofit — +600 social houses; 30 private housing blocks; 5 mixed owner blocks; 3 public buildings;

Energy Management — Implementation and maintenance of a online interoperable Sustainable Energy Management System (SEMS) and a Building Energy Management System (BEMS)

eMobility — +400 eVehicles; 200 new charging stations;
+1100 tons of CO_2/year saved for e-mobility implementation in the pilot areas

EV Car Sharing — +150 new eVehicles for public and community shared use;
7 Autonomous vehicles for public services

eBikes — + 200 e-bikes (+1500 expected)

EV Charging — +180 Charging Points to be installed

Smart Parking — +1000 parking spaces

EV Logistics — +160 Logistics eVehicles

Smart Lamp Posts — +3500 Smart Lamp Posts
(light automation sensors; wi-fi sensors; environmental sensors; geofencing; traffic)

Urban Platform — Open Standard reference architecture - "designed by three cities, built for many"
Integration facilitator

Measures progress
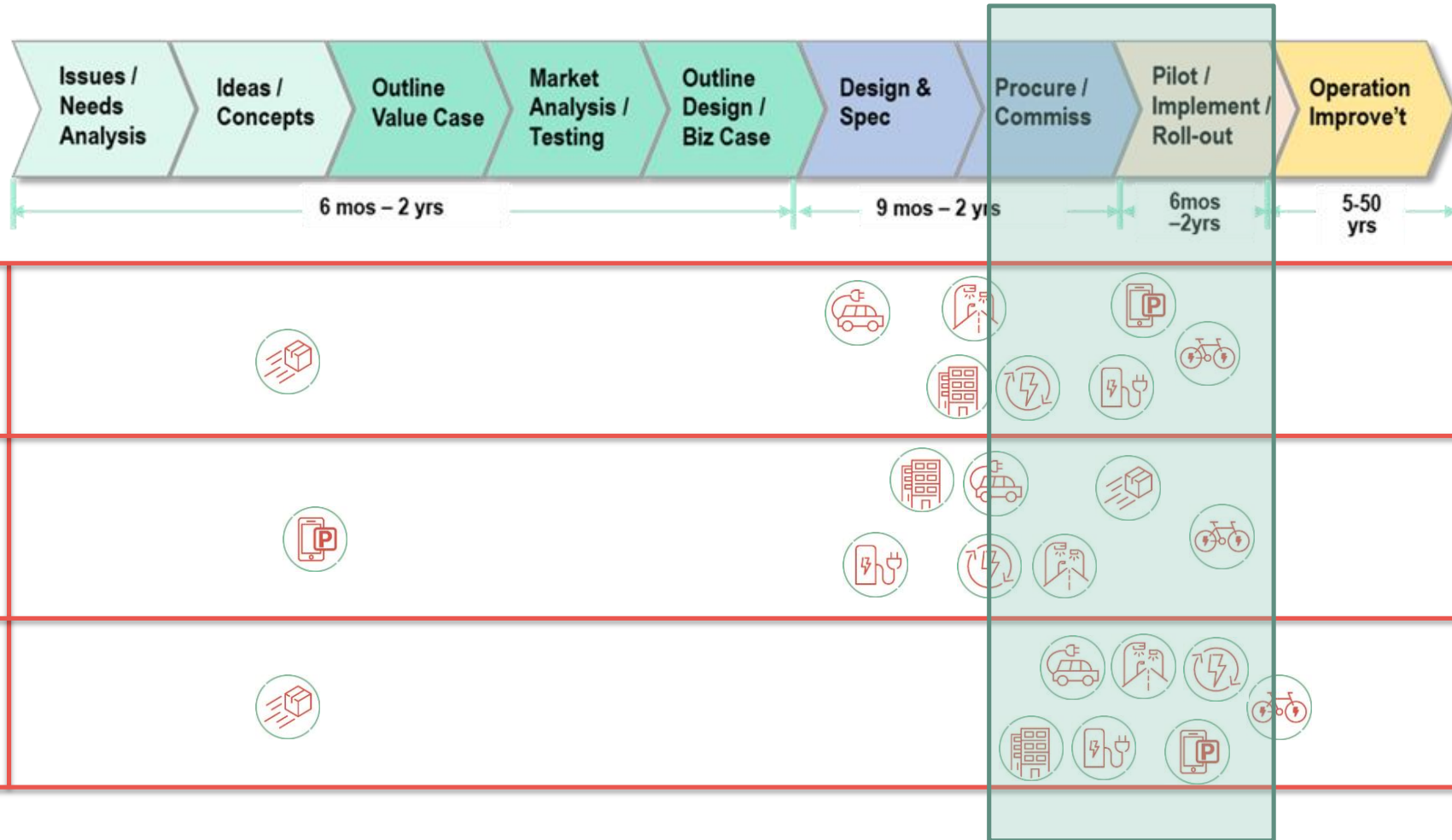
eV Car Sharing

- Develop shared mobility scheme of electric cars to provide access to low emission vehicles, reduce personal vehicle ownership and tackle air pollution.

Main results achieved:

- Measures specifications concluded

To be done:

- Corporate eCar Sharing implementation
- Launch Car club scheme
- Deploy 60 electric cars sharing operators

eV Car Sharing

eV Car Sharing	2016	2017	2018	2019	2020
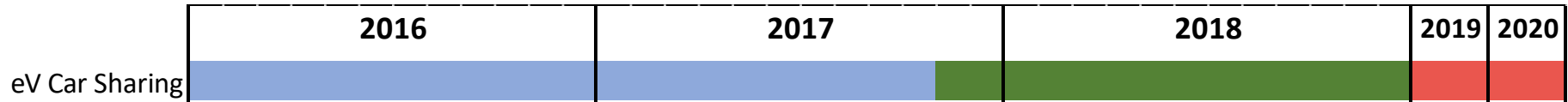
Sharing Cities Commitment:

- Deployment of 62 eVehicles
- Implement a Smart fleet management system

Sharing Cities Delivering:

- 7 municipal eVehicles being monitored

eV Car Sharing

	2016	2017	2018	2019	2020
eV Car Sharing					

Sharing Cities Commitment:

- 8 autonomous vehicles
- 20 eVs

Sharing Cities Delivering:

- Demand analysis for car club - locations and vehicle numbers
- Procurement for car club operator (September 2017)
- Trials on autonomous vehicles

eV Car Sharing

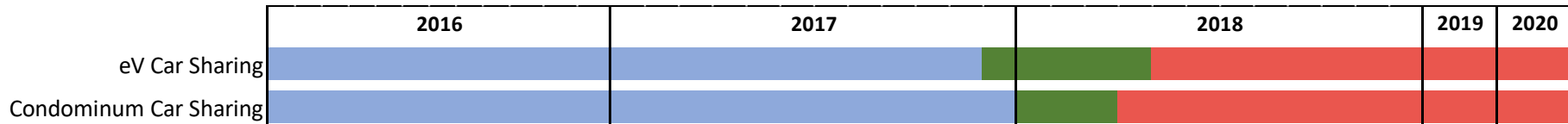|	2016	2017	2018	2019	2020
eV Car Sharing					
Condominum Car Sharing					

Sharing Cities Commitment:

- 60 electric vehicles into car-sharing schemes
- 10 e-car sharing stations
- 2 electric
- vehicles dedicated to the trial for "condominium car sharing" test

Sharing Cities Delivering:

- Location of 10 Mobility Areas have been identified
- Mobility Areas Final design production
- Condominium for the trial identified
- Call for service providers identification launched

eV Car Sharing

- London – launch Car club scheme (early 2018, 6-10 vehicles)

- Milan – deploy 60 electric cars e-car by e-car sharing operators (end of 2017)

- Lisbon – Corporate eCar Sharing implementation in Municipal fleet (end of 2017)

eBike Sharing

- build on existing bike sharing schemes with introduction of electrical bikes, to support shift from cars and other individual transport modes.

Main results achieved:

- Pilots have been conducted in the 3 cities
- Design of predictive algorithm for e-bike sharing reallocation

To be done:

- Introduce a reservation system (Milan)
- Bike's reallocation scheme
- Widespread launch (Lisbon)
- Deploy phase 2 (London)

eBike Sharing

	2016	2017	2018	2019	2020
Lisbon					
London					
Milan					

Sharing Cities Commitment:

Sharing Cities Delivering:

	Commitment	Delivering
Lisbon	• 30 eBikes • 2 docking stations	• Trial test with 4,200 users (out of 10,000) • Full deployment under going
London	• 30 eBike scheme • 4 docking stations	• 16 e-bikes available. 40 people already taken part (averaging 500 miles/month)
Milan	• 150 eBikes • 7 docking stations	• Set up of 4 bike-stations • Design of predictive algorithm for e-bike sharing reallocation

eBike Sharing

- Introduce a reservation system (Milan)

- Widespread launch (Lisbon)

- Deploy phase 2 (London)

- Bike's reallocation scheme

eV Charging

- Provide more extensive network of charging point infrastructure to enable the take up of eVehicles and eVehicle sharing schemes and tackle of air pollution.

Main results achieved:

- Specifications for Mobility Areas
- Procurement

To be done:

- Installation of charging points
- Procure lamp post charging points (London)
- Link infrastructure with SEMS

eV Charging

	2016	2017	2018	2019	2020
Lisbon					
London					
Milan					

Sharing Cities Commitment:

Sharing Cities Delivering:

	Commitment	Delivering
	• 29 Public charge points (1 rapid) • 6 private charge points	• 1 Mobility Area has been identified • Charging points have been aquired
	• 20 public charging point (4 rapid)	• Demand analysis and feasibility of proposed locations • Partner for conventional charging points and TfL to expand rapid charging network
	• 60 EV charging points across the 10 e-car sharing stations (20 rapid) • 10 e-bike batteries charging points	• 10 Mobility Areas have been identified • Mobility Areas Final design production

eV Charging

- Installation of charging points across the 3 cities

- Procure lamp post charging points (London)

- Link eV charging infrastructure with SEMS and WP4

- Discussion of end-user engagement and marketing strategy together with WP2

Smart Parking

- Demonstrate the benefits and different business models of smart parking technologies

Main results achieved:

- Technological evaluation and selection of potential solutions
- Installation of first parking sensors concluded

To be done:

- Integration with LoRaWAN network
- Widespread deployment

Smart Parking

	2016	2017	2018	2019	2020
Lisbon					
London					
Milan					

Sharing Cities Commitment:

Sharing Cities Delivering:

	Commitment	Delivering
	• 30 parking bays	• Location and number of sensors required • Pavement sensors aquired
	• 300 parking bays	• Location and number of sensors required
	• 125 parking bays	• 190 parking sensors to be installed • Integration into the city environment and the mobility services

Smart Parking

- Integration with LoRaWAN network

- Widespread deployment in the 3 cities

eLogistics

- Counter the growth of hydrocarbon-based delivery services through implementing electric logistics to test and prove business case, and package learning for re-deployment

Main results achieved:

- Some eVs and eBikes already integrated
- Logistic services providers contacted and engaged

To be done:

- Widespread launch of the measure

eLogistics

	2016	2017	2018	2019	2020
Lisbon					
London					
Milan					

Sharing Cities Commitment:

- Deploy 80 eLogistics vehicles

- Trial of 4 shared eVehicles

- 9 e-Vans
- 2 eCargo bikes

Sharing Cities Delivering:

- Potential service provider identified

- Supplier has been appointed Recharge Cargo
- Up to 5 cargo bikes (~200kg)

- Service provider identified

eLogistics

- Finish measure specifications (Lisbon and Milan)

- Widespread launch of the measure

Measures progress