Smarter cities through collaboration

GREATER**LONDON**AUTHORITY

Hello!

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SHARINGCITIES

Horizon 2020
European Union funding
for Research & Innovation

€ 24M
EU
Funding in
2016

€ 264M Triggered
investment

€ 876M Potential
investment
(above € 500M
target)

Our Journey

From idea to impact

2015

Idea created

Partners gathered

Concepts developed

Programme designed

Delivery underway

Challenges and changes

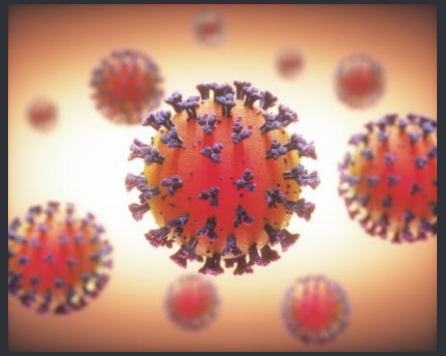
Results begin

Scale up

Impact realised

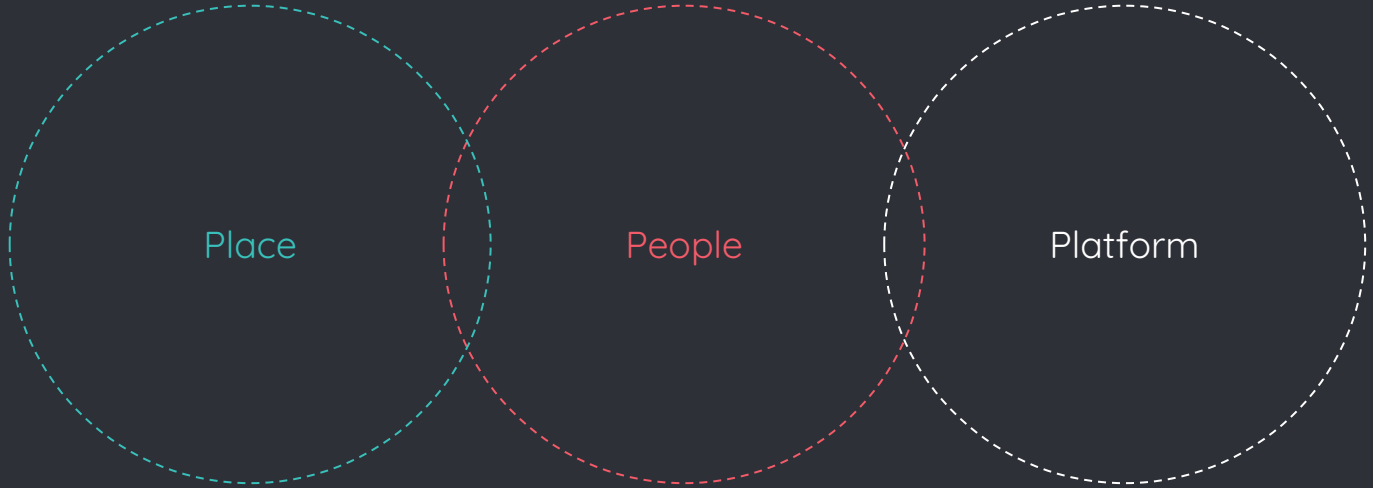
2021

Challenges...of which there were many!



But we overcome them all

BUILDING SMART CITIES TOGETHER



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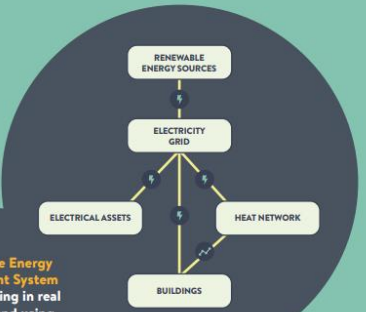
Sharing Cities: Building retrofit solutions

SMART, LOCAL AND FAIR ENERGY SYSTEM IN THE ROYAL BOROUGH OF GREENWICH, LONDON

In London's Greenwich Peninsula ward conservation area two social housing estates underwent a deep energy retrofit.

41% of the borough's emissions come from housing, with 10% of households living in fuel poverty.



Sustainable Energy Management System (SEMS): Taking in real time data and using dynamic energy management to achieve additional cost and carbon savings at a district level

LOCAL INTERVENTIONS

Water source heat pump: Drawing water from the Thames basin to deliver locally generated energy with lower emissions

Energy efficiency fabric improvements

Internet of Things (IoT) technologies: Smart thermostats, temperature, humidity and boiler sensors, and energy monitoring

IMPACT: LONDON

With Greenwich Energy Hero, residents were able to momentarily reduce their energy consumption by 80% and alleviate pressure on the grid during peak demand.

At Ernest Dence estate, the completion of the retrofit works combined with the installation of a heat pump could lead to 68% CO_2 savings.

527,000kg CO_2

2.4M kWh (667 homes annual usage)

Projected annual savings after retrofit works completed

HELPING MILAN REALISE ITS VISION FOR NEAR-ZERO EMISSION DISTRICTS

In Milan, building heating systems are responsible for nearly 50% of local emissions.

In Sharing Cities' pilot area, 70% of real estate assets were attributed G-F energy class.

Before & After: Complex Interventions

- Photovoltaic Panels
- Roof & facade thermal insulation
- High-performance stairwell windows
- LED lighting
- Thermal regulation & thermostats
- Heating system remote management

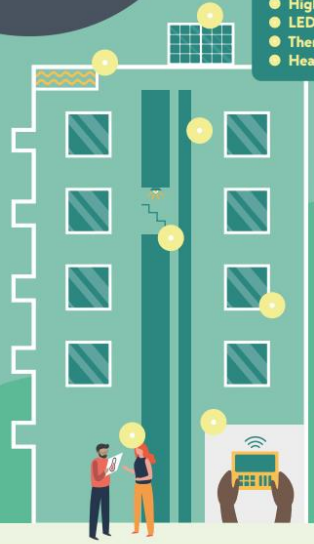
CO-DESIGN PROCESS

Over 900 families & 12 co-design meetings

DESIGN
Scenarios Presentation

KNOWLEDGE
Sharing of energy analysis

TRUST
Introduction & Listening



IMPACT: MILAN

60% energy reduction across entire retrofit programme.

Greater citizen awareness of retrofit impact on energy bills, environment and wellbeing.

470,000kg CO_2

annual savings

Sharing Cities: E-mobility solutions

HOW LISBON'S BIKE SHARING SCHEME BECAME THE CATALYST FOR AN ACTIVE CYCLING CULTURE

Portugal has one of Europe's lowest rates of cycling. Car ownership is traditionally very high.

Lisbon is an old city with many historic districts and narrow streets. It is also very hilly.

Lisbon introduced its first city-led bike sharing scheme in 2017 through Sharing Cities to help realise its new city strategy for mobility.

Upgrading lisbon's cycling infrastructure has unlocked the city's micro-mobility network. Since 2017, 3 million journeys have been made by 16,000 users.

Daily users

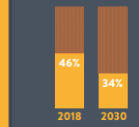
26% of users rent the bikes daily

Mode shifts

FUTURE IMPACT: LISBON

Cycling lanes expected to double to over 200km.

3-fold planned increase in bike fleet with 2,000 bikes in circulation, 80% of which will be electric.



Target reduction in private car use to **34% by 2030**

MILAN: A HUMAN-CENTRIC E-MOBILITY STRATEGY DELIVERS FIRST AND LAST-MILE MOBILITY OPTIONS ACROSS THE CITY

Mainstreaming Mobility-as-a-Service
Expanding accessibility to sustainable transport has been a key priority of the Municipality of Milan.

10 mobility islands have been implemented in Milan to respond to strategic goals set by the city

What is a mobility island?
A mobility island brings together multiple mobility services in one location, making it easier for people to access a range of low carbon mobility options.

MAINSTREAMING MOBILITY-AS-A-SERVICE

- 150 e-bikes equipped with child seats integrated into the city's bike sharing scheme = 3,300kg CO_2 saved in 2019
- 14 new bike-sharing stations in the south-east suburbs & 60 electric vehicle charging points
- 9 e-vans and 2 e-cargo bikes for last-mile logistics = 39,000kg CO_2 saved in 2019
- 175 smart parking sensors for the disabled, loading and unloading, and mobility islands

IMPACT: MILAN

Greater access to low-carbon mobility options for families.

Improved access to e-mobility network for people living outside the city centre.

35km of new cycle paths planned by December 2020 beyond pilot area.

Sharing Cities: Smarter Cities Through Collaboration

Embedding smart city solutions at scale, engaging citizens and improving cities

A NETWORK OF INTEGRATED, LOW CARBON TECHNOLOGIES SHAPED BY DATA AND CITIZENS

- REAL-TIME URBAN DIGITAL INFRASTRUCTURE
- CO-DESIGNED WITH CITIZENS
- DATA-SUPPORTED DECISION MAKING

6 million kWh/yr saved through retrofitting 15 buildings of different types. Pioneering retrofit of Lisbon's City Hall leads to...

36% energy savings

The Sustainable Energy Management System (SEMS) reduces energy bills by 10%

If deployed at UK level, this could reduce emissions 30% by 2050

DIGITAL SOCIAL MARKET

In Milan, over 2,000 people are registered on SharingMi, the peer-to-peer, eco-friendly network which encourages greener choices

TECHNOLOGY: E-BIKES

Our city-led, docked e-bike schemes have transformed the way people move around cities.

Lisbon plans to expand its bike fleet to over 2,000 - 80% will be electric.

TECH: SHARED E-MOBILITY

We have led the way in testing mobility as a service:

855 e-bikes operational
167 e-logistics vehicles
113 e-vehicles
311 ev charging points
343 smart parking spaces

ENVIRONMENTAL BENEFITS
Accelerate efforts to decarbonise cities

SOCIETAL BENEFITS
Create better places to live, work & play

ECONOMIC BENEFITS
Stimulate the smart city marketplace

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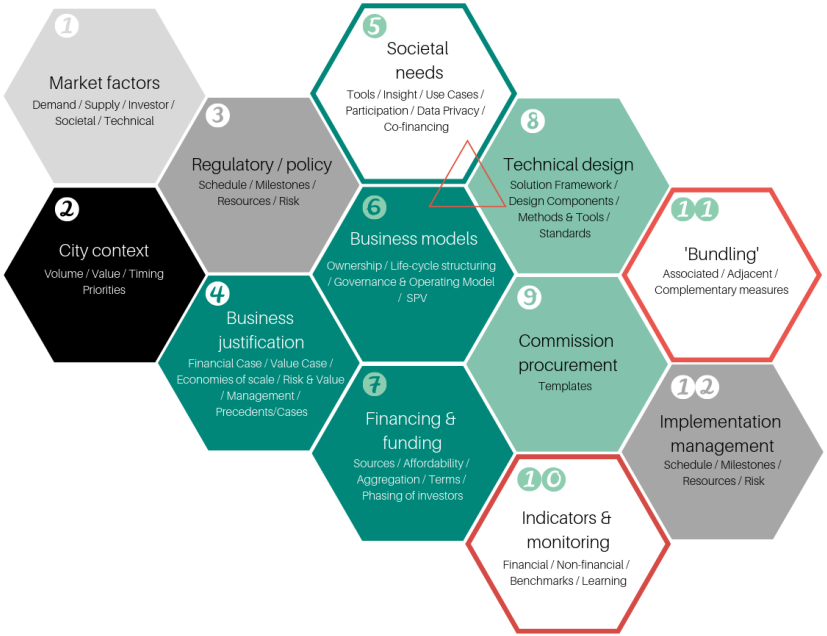
ENGAGING THE MARKET: PLAYBOOKS & PACKAGING



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Strategic aims

An agile and collaborative smart cities ecosystem that delivers liveable, attractive, and resource-efficient cities

1. Collaboration and citizen engagement
2. Adopt a digital first approach
3. Accelerate the market
4. Leverage investment for scale

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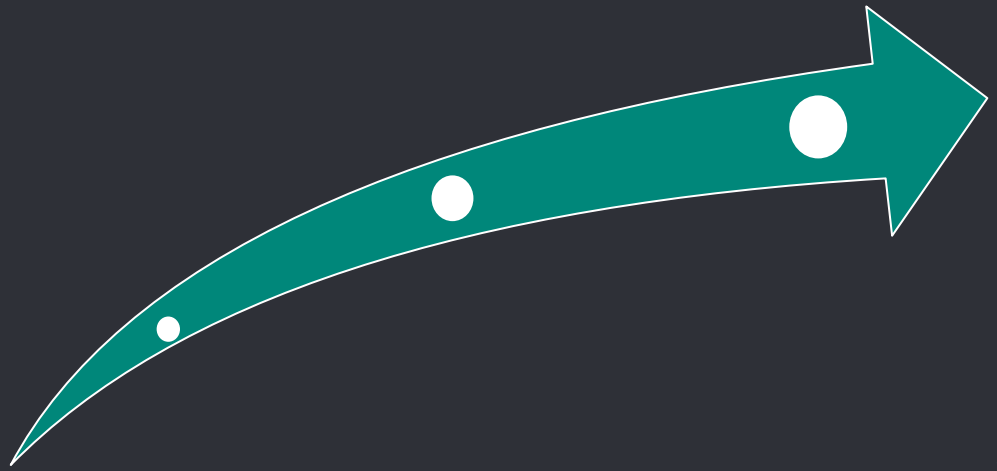
Horizon 2020
European Union funding
for Research & Innovation

Scale up highlights

- Large scale retrofit in Burgas – 205 buildings
- Lisbon mobility
- London Urban Data Exchange
- Milan retrofit
- Warsaw park and ride
- Mobility Islands
- Digital London



Our partnership

Collaborating, delivering and building friendships

Thanks!

ANY QUESTIONS?

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