

NOVA
IMS

Information
Management
School

NOVA
CIDADE
URBAN
ANALYTICS
LAB



LISBOA e-nova

AGÊNCIA DE ENERGIA E AMBIENTE DE LISBOA

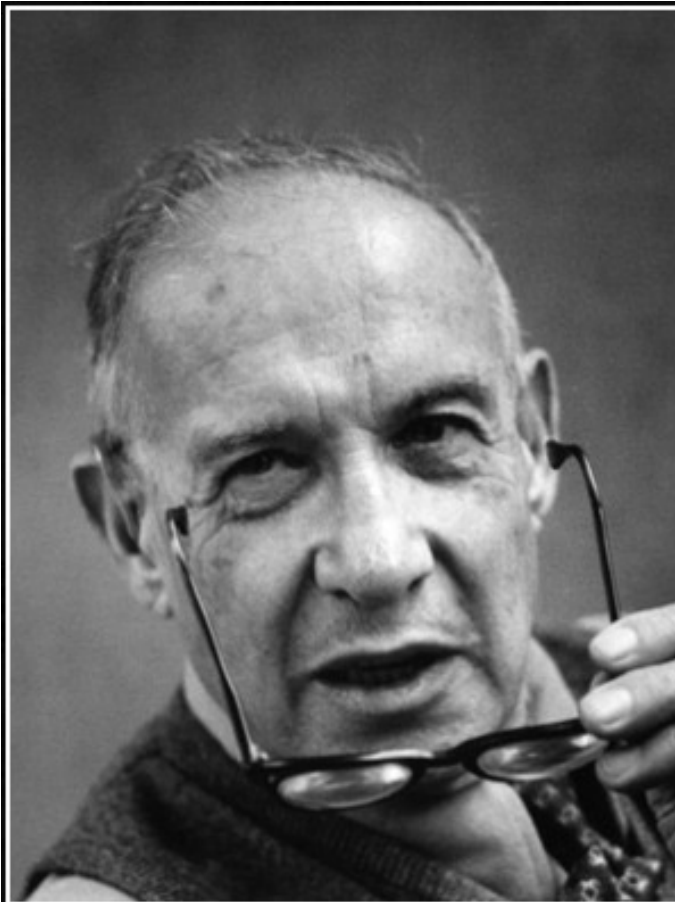
Cidades Inteligentes e Analítica Urbana

MIGUEL DE CASTRO NETO | MIGUELNETO@LISBOAENOVA.ORG



Smart Sustainable Cities

DIGITAL TRANSFORMATION



You can't manage what you don't
measure.

— *Peter Drucker* —

AZ QUOTES



Estrategia nacional de smart cities



Copiar link



CIDADES.PT

FROM SMART CITIES TO A DIGITAL NATION

Cluster 1. Digital Transformation



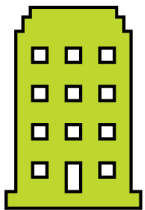


Cluster 2. **“Vertical” approach**

Vertical Organizational Model

IMPACTS

Smart Buildings



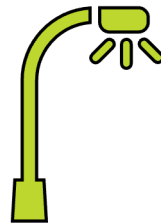
ROI in less
than 6 months

Smart Waste Collection



40 - 80% of
cost reduction

LED + Smart Lighting



50% reduction
(ROI in 6 years)

Smart Water Management



40% reduction
of water losses

Smart Parking

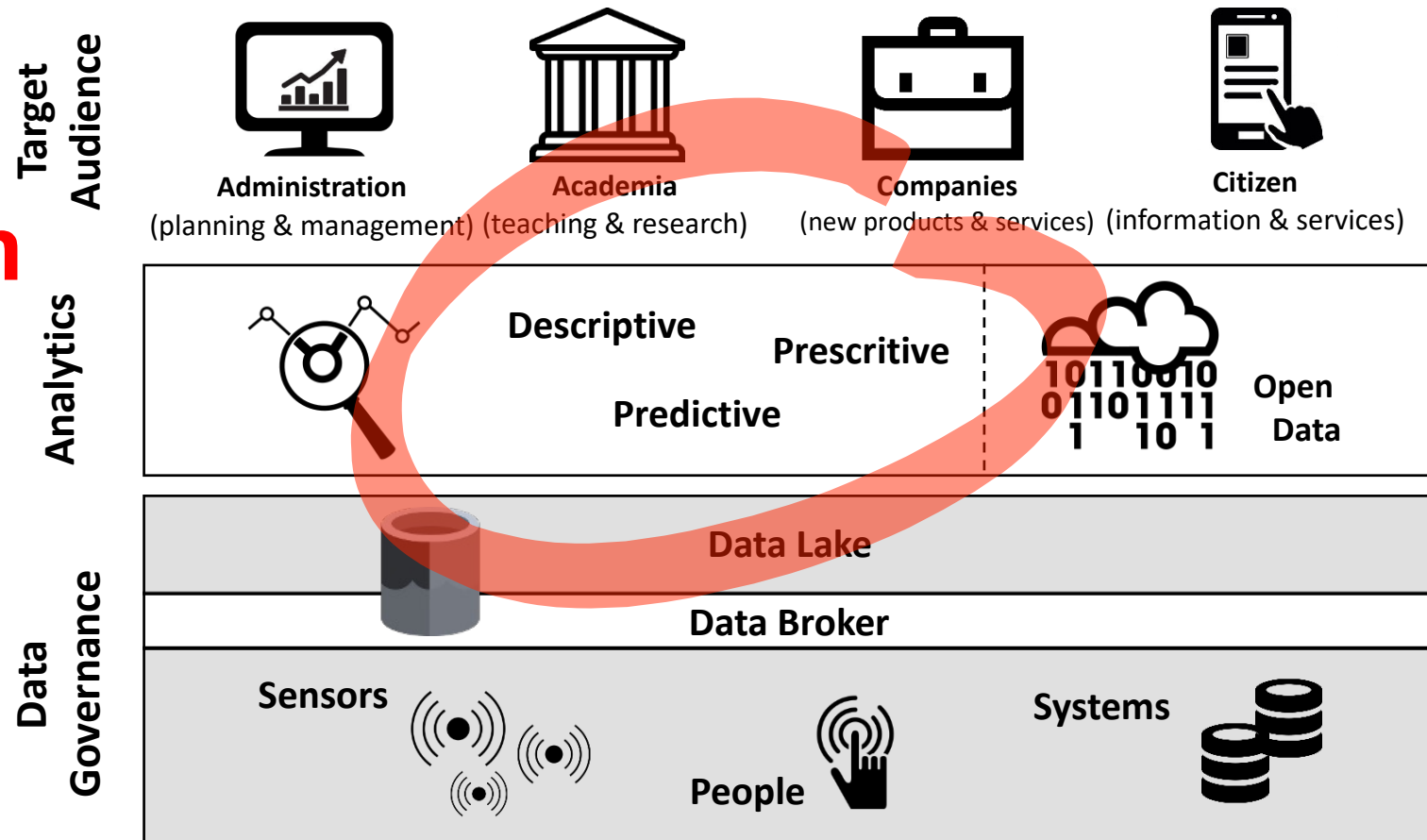


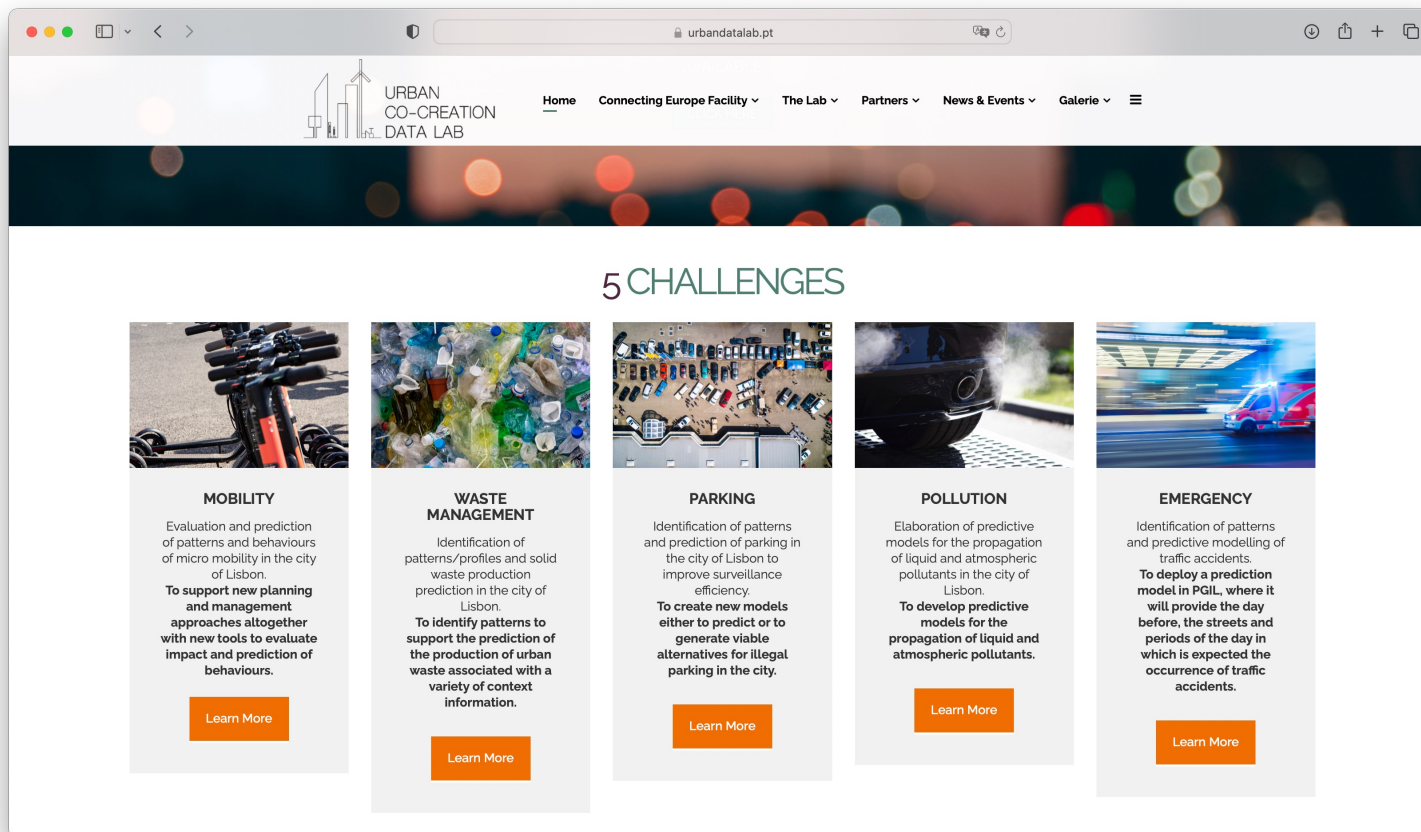
20-30% cost reduction
(ROI in 2 years)

A glowing lightbulb with a shattered glass globe around it, symbolizing disruption. The lightbulb is illuminated from within, casting a warm orange glow. The glass globe is fragmented into many small pieces, some of which are floating in the air around the bulb. The background is a dark blue gradient.

DISRUPTION

Custer 3. City as a Plataform



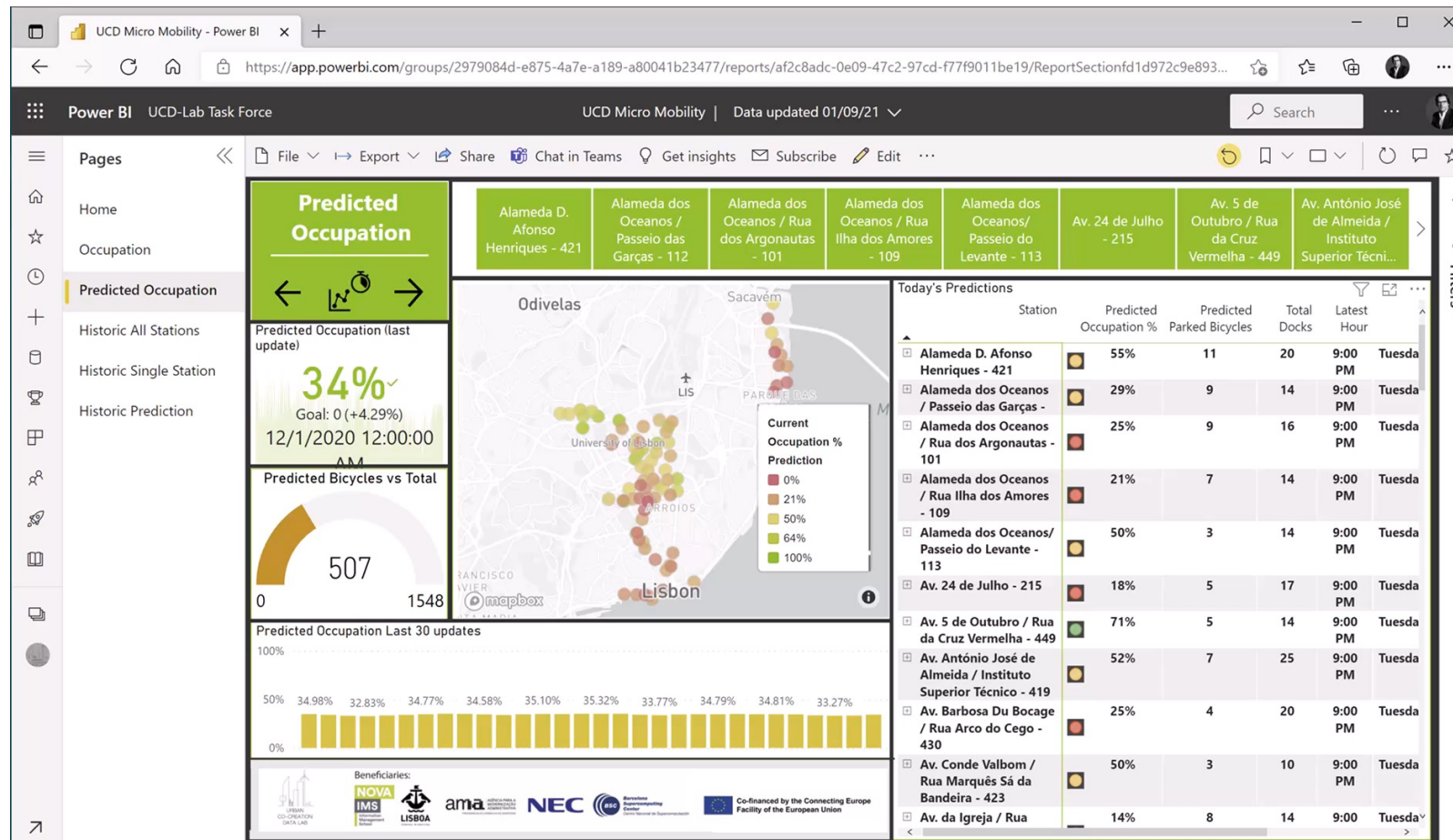


<https://www.urbandatalab.pt>

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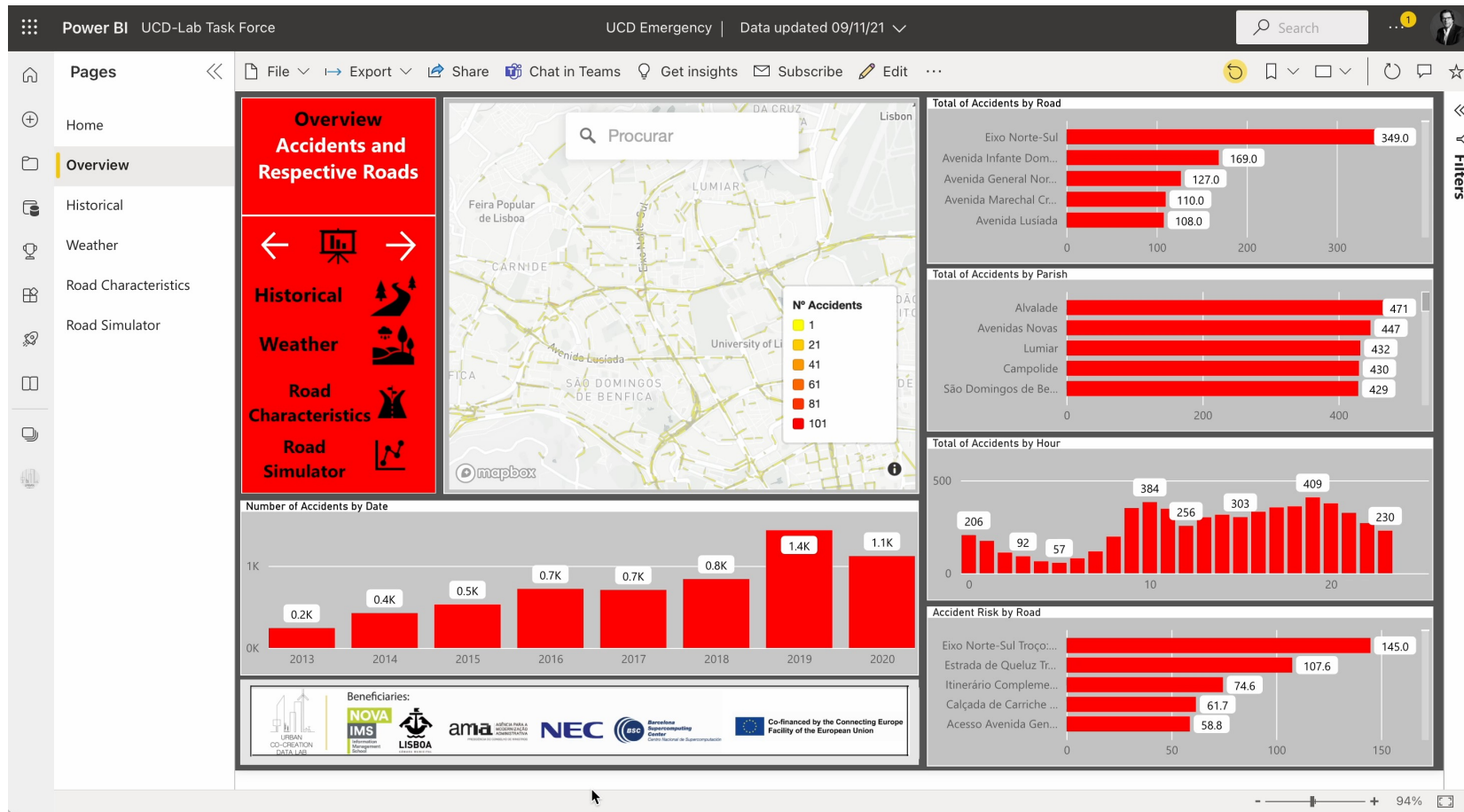


PREDICTIVE ANALYTICS > Cycling



URBAN
CO-CREATION
DATA LAB

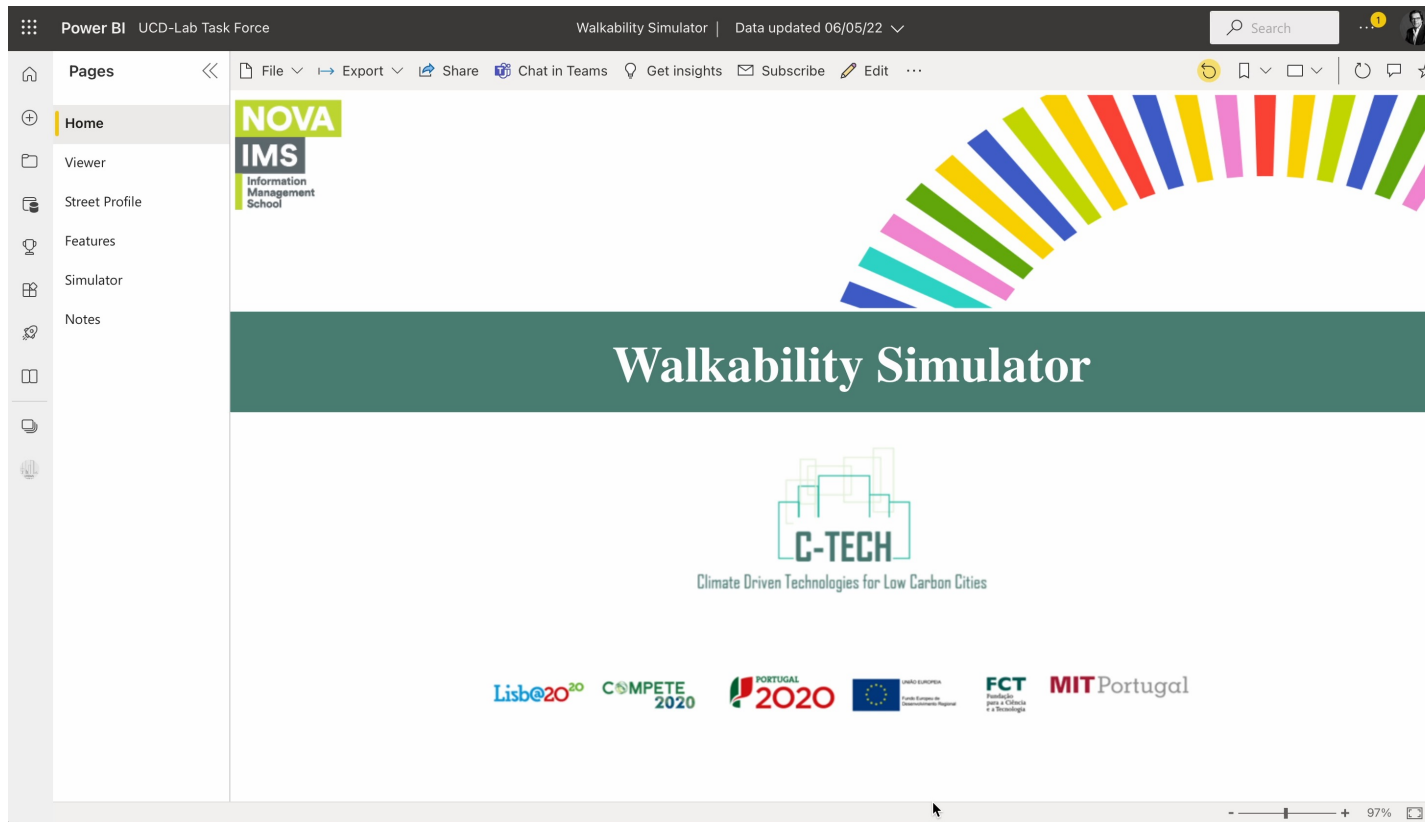
PRESCRIPTIVE ANALYTICS > Traffic Accidents



URBAN
CO-CREATION
DATA LAB

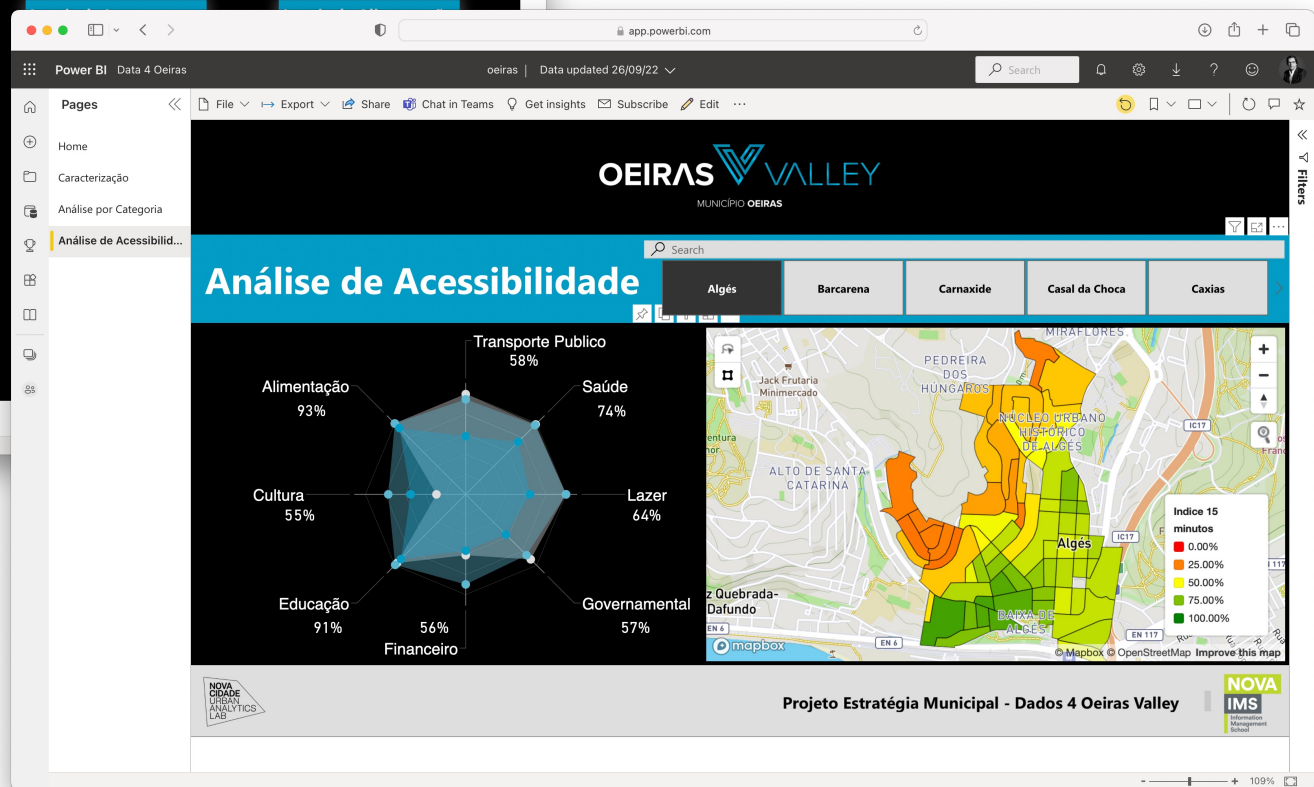
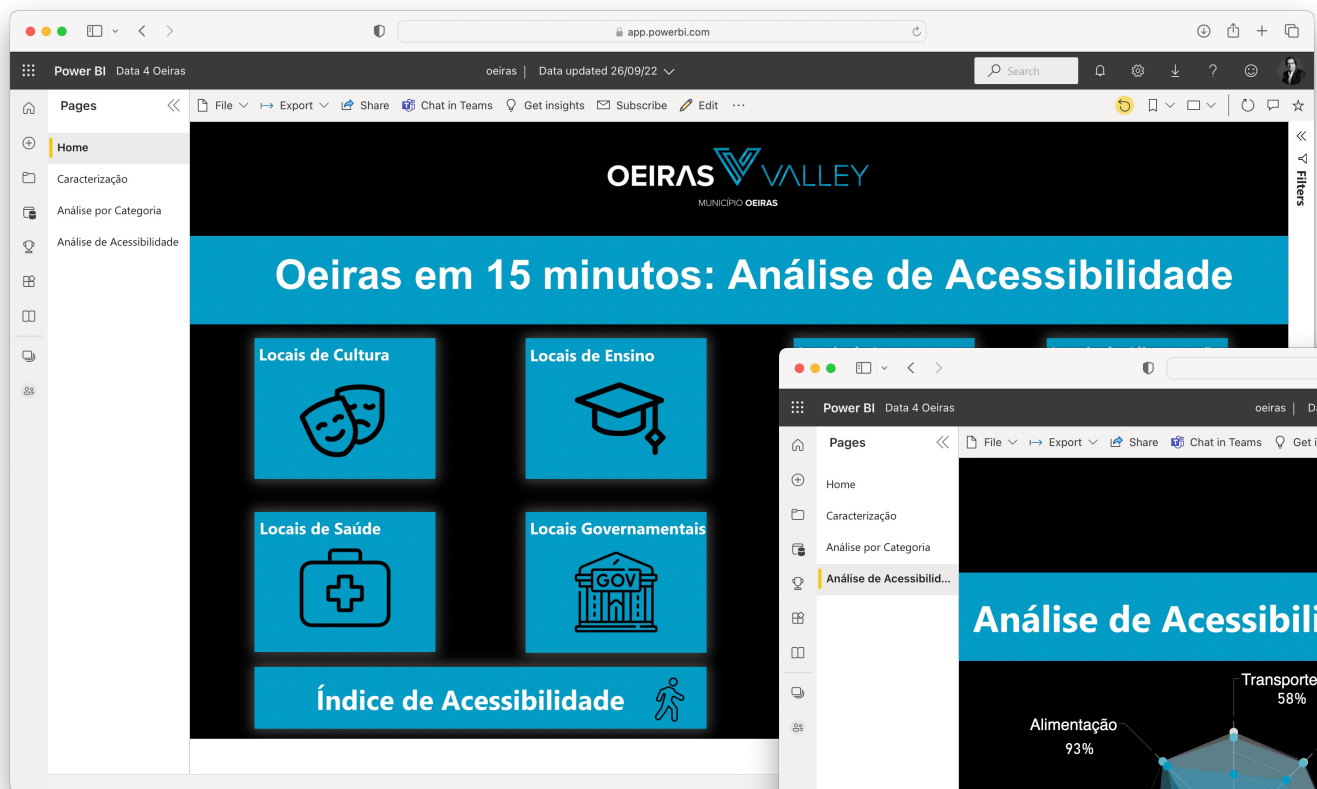
15 Minutes City > Walkability

MIT Portugal



C-Tech - Climate Driven Technologies for Low Carbon Cities
<https://ctech.novaims.unl.pt>

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Digital Twins



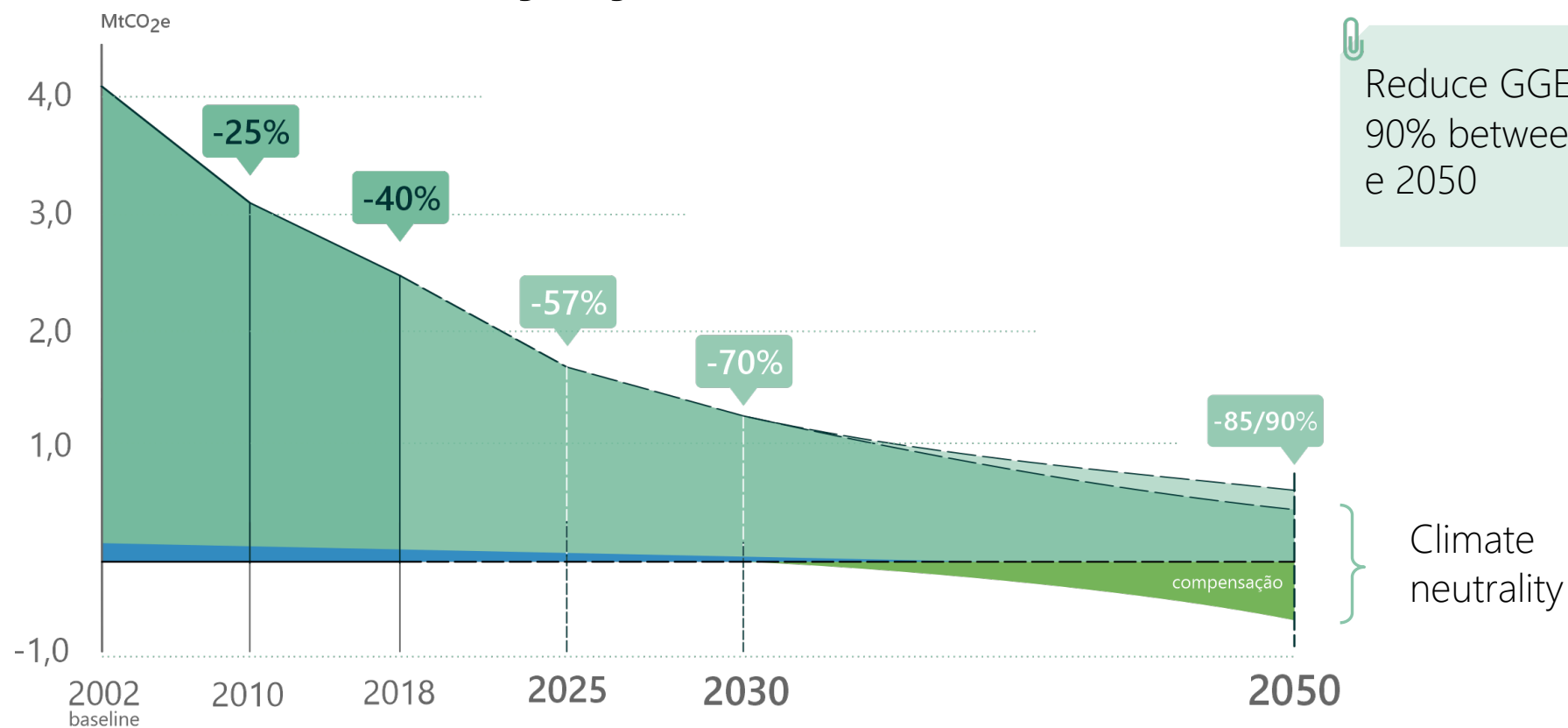
<https://buildmedia.com/work/wellington-digital-twin>

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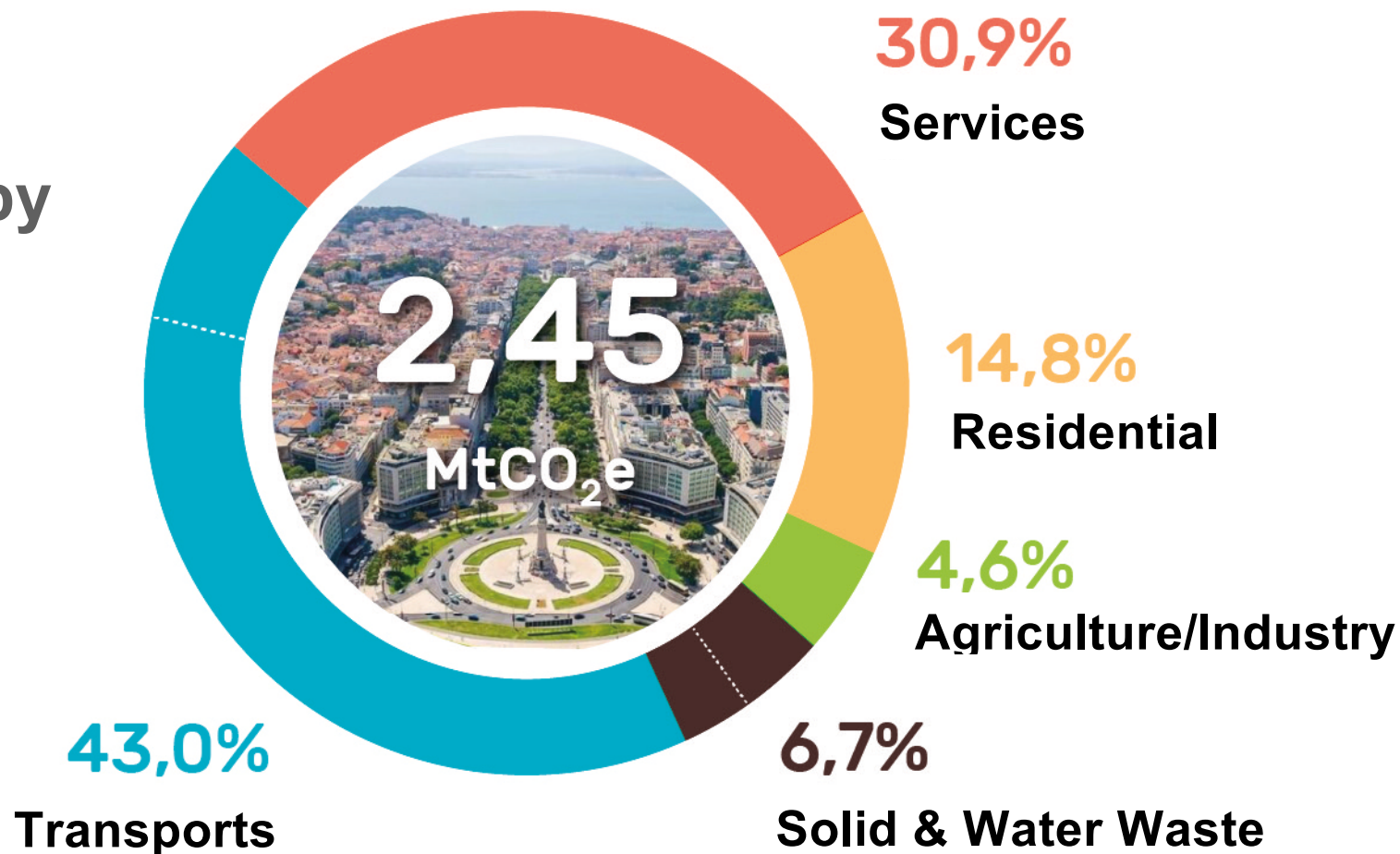


Carbon Neutrality by 2050



Climate Action in Lisbon

CO₂e
emissions by
sector





EUROPEAN UNION



EU MISSIONS

100 CLIMATE-NEUTRAL AND SMART CITIES



28 April 2022

Lisboa

OBJECTIVES OF THE EU CITIES MISSION

- 100 **climate-neutral** and **smart cities** by 2030
- Ensure that these cities act as **experimentation and innovation hubs** to put all European cities in a position to become climate-neutral by 2050

OBSERVATÓRIOS

ENERGIA

ÁGUA

ÁGUAS RESIDUAIS

RESÍDUOS

GEE

LISBOA EM NÚMEROS

sabia
que ?





Carbon neutrality

Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)

An Accounting and Reporting Standard for Cities version 1.1. - GHG Protocol

Measure and disclose a comprehensive GHG inventory using two distinct approaches:

1. Captures emissions from both production and consumption activities taking place within the city boundary, including some emissions released outside the city boundary.
2. Categorizes all emissions into “scopes,” depending on where they physically occur.

1. Inventory boundary and emission sources

- ✓ The boundary can align with the administrative boundary of a local government, a ward or borough within a city, a combination of administrative divisions, a metropolitan area, or another geographically identifiable entity.
- ✓ GHG emission sources are classified in 6 main sectors
 - ✓ Stationary energy
 - ✓ Transportation
 - ✓ Waste
 - ✓ Industrial processes and product use
 - ✓ Agriculture, forestry, and other land use
 - ✓ Any other emissions occurring outside the geographic boundary as a result of city activities

Sectors and sub-sectors
STATIONARY ENERGY
Residential buildings
Commercial and institutional buildings and facilities
Manufacturing industries and construction
Energy industries
Agriculture, forestry, and fishing activities
Non-specified sources
Fugitive emissions from mining, processing, storage, and transportation of coal
Fugitive emissions from oil and natural gas systems
TRANSPORTATION
On-road
Railways
Waterborne navigation
Aviation
Off-road
WASTE
Solid waste disposal
Biological treatment of waste
Incineration and open burning
Wastewater treatment and discharge
INDUSTRIAL PROCESSES AND PRODUCT USE (IPPU)
Industrial processes
Product use
AGRICULTURE, FORESTRY AND OTHER LAND USE (AFOLU)
Livestock
Land
Aggregate sources and non-CO ₂ emission sources on land
OTHER SCOPE 3

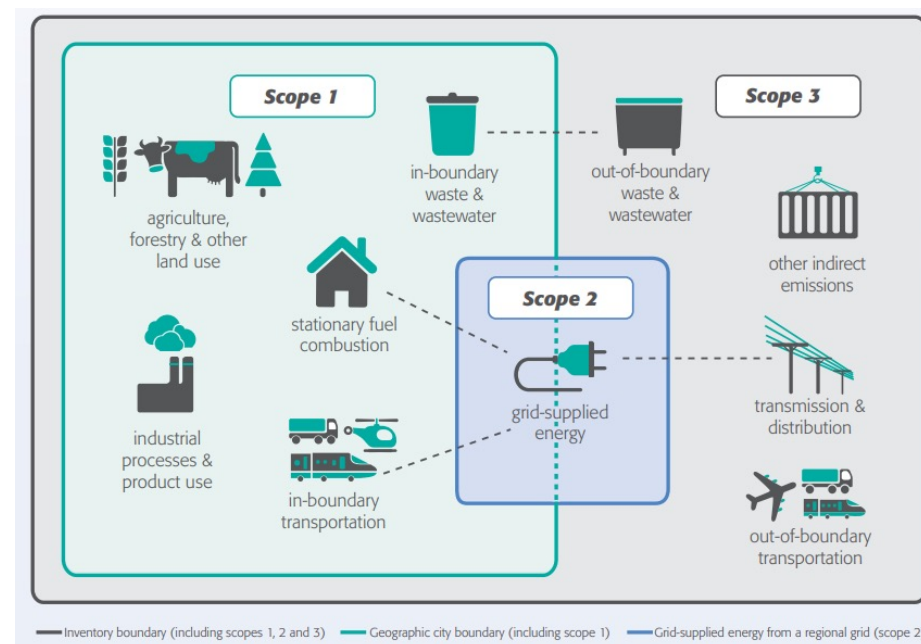
2. Categorizing emissions

- ✓ GHG emission can occur inside the city boundary as well as outside the city area
- ✓ Emissions are grouped into three categories
 - ✓ Scope 1
 - ✓ Scope 2
 - ✓ Scope 3

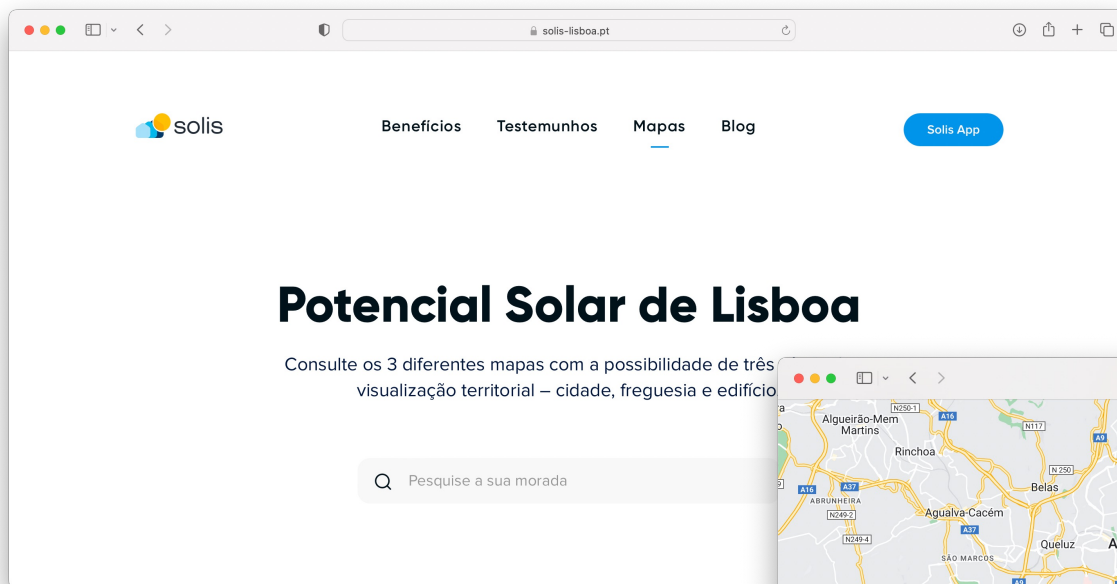
Scope	Definition
Scope 1	GHG emissions from sources located within the city boundary
Scope 2	GHG emissions occurring as a consequence of the use of grid-supplied electricity, heat, steam and/or cooling within the city boundary
Scope 3	All other GHG emissions that occur outside the city boundary as a result of activities taking place within the city boundary

3. Aggregating cities inventories

- ✓ City inventories can be aggregated at subnational and national levels
- ✓ To improve data quality
- ✓ Measure the contribution of city mitigation actions
- ✓ Identify innovative transboundary and cross-sectorial strategies for GHG mitigation.







TAKE AWAYS

- ✓ Support governments in adopting data-driven public policies
- ✓ Engage citizens by linking actions to results towards 2030/2050
- ✓ Address urban diversity (digital maturity !!!)
- ✓ Guarantee horizontal and multilevel data/information interoperability

OBRIGADO !!!