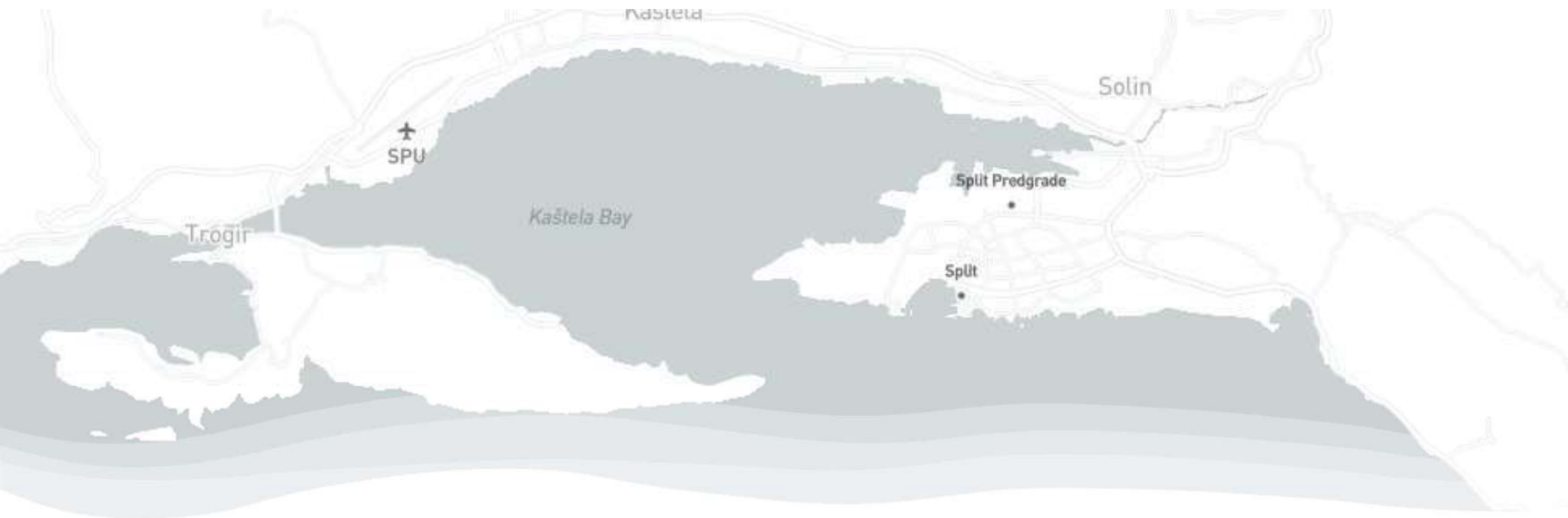




Cities' Challenges Pitch Session 15th November 2022



Smart City Practices

Case of the City of Split, Croatia

GENERAL INFO

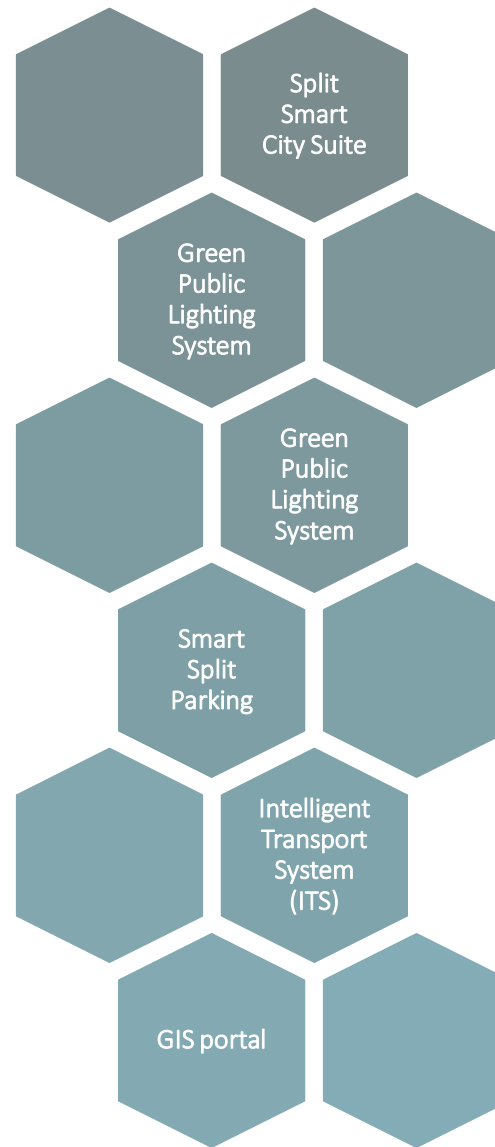
- Second largest city in Croatia (**>160k inhabitants**)
- Center of administrative, economic and transportation activities
- Center of cultural, sports, and academic activities with rich historical heritage
- Largest potential to reimagining tourism in Croatia
- City administration involved in implementing **Smart City solutions**



SPLIT MEMBERSHIPS & PROJECTS

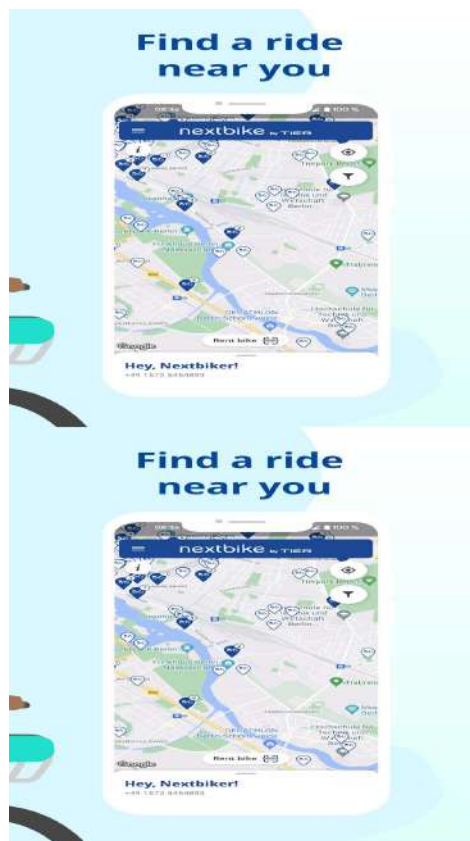
- EU funded Smart City projects
- Member of International Cities Challenge network of 130 cities to achieve intelligent, socially responsible and sustainable growth with advanced technologies
- Developed two solutions within ICC:
 - Digital platform for city services | Solar potential mapping
- Split Smart City Strategy 2030

Split Smart City Solutions





PUBLIC BIKE SHARING SYSTEM

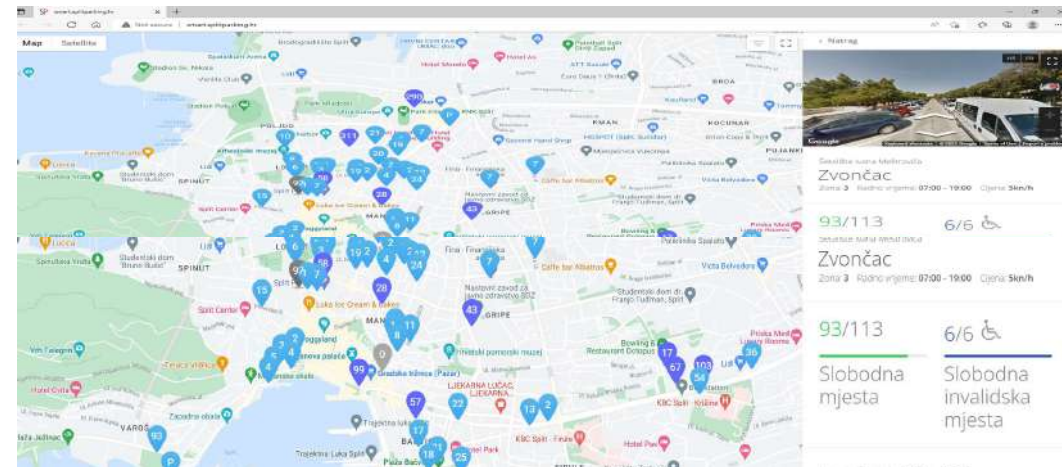
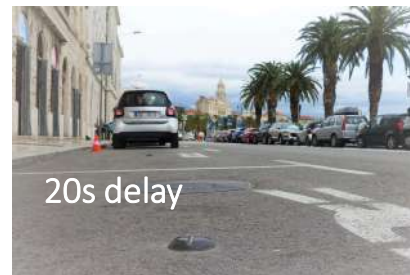
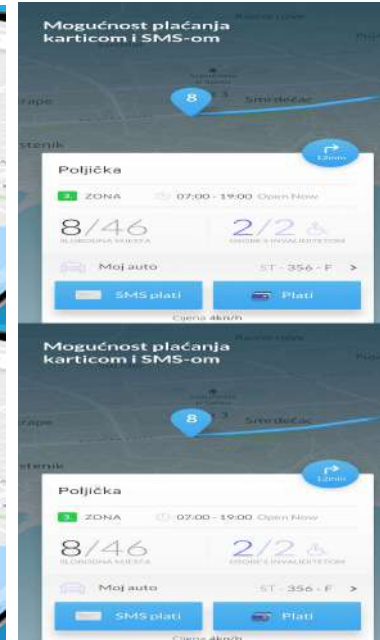


- Implemented through several EU projects
 - REMEDIO (2019 → 8 stations +4)
 - SUTRA (2020 → 4 stations)
 - ITU project – bike system in urban agglomeration (2022 → 41 station)
- 50+ locations
- 530k+ leases in 3y
- 36k+ registered users
- 2.6 million kms in 3y
- 651 tones of CO2 savings in 3y



SMART SPLIT PARKING

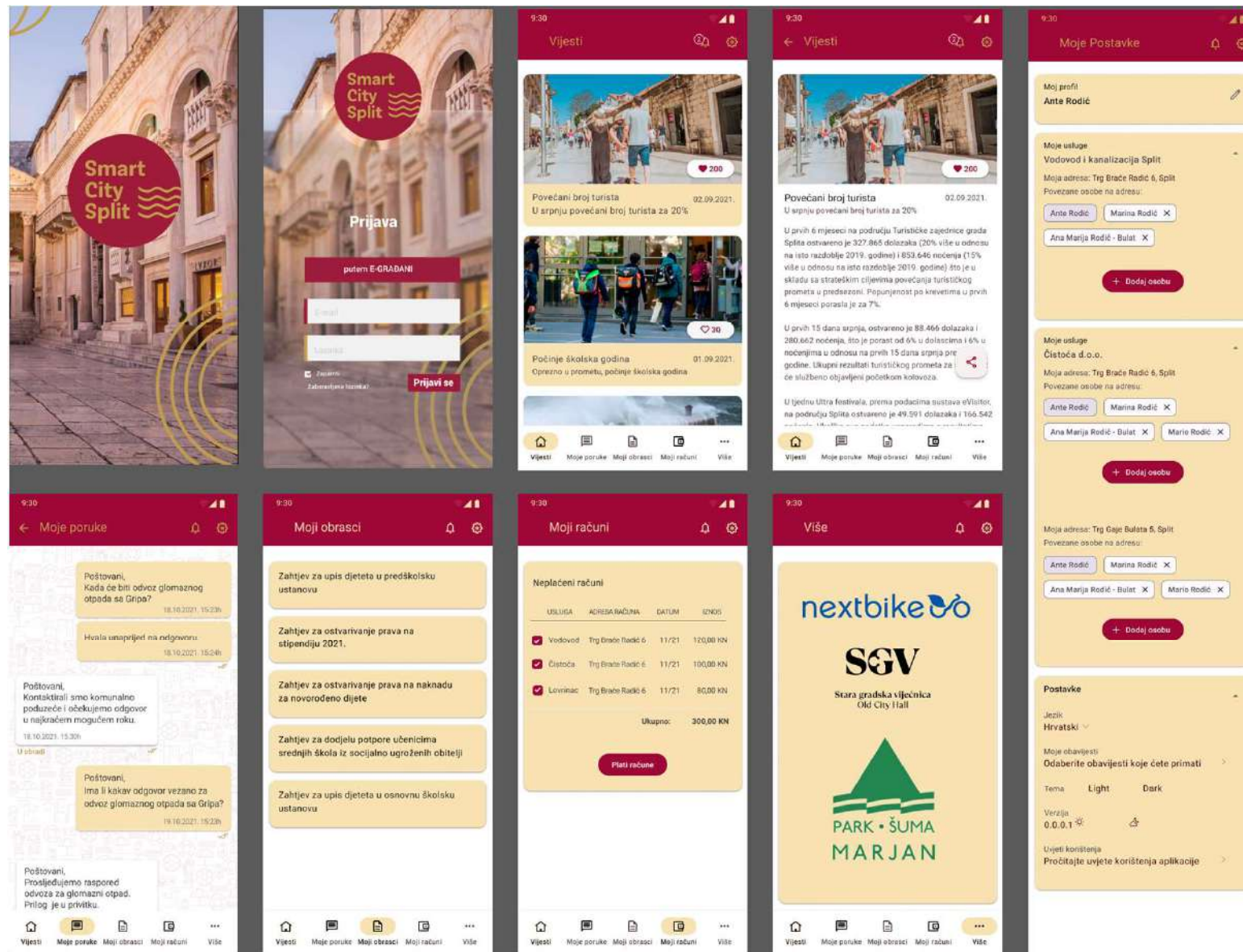
- Provided by City's company Split parking, ltd
- Managing street and off-street parking lots, garages
- First complete Smart solution for parking in Croatia
- System with sensors
- Route planning by free parking lots
- Mobile app for easier payment & navigation to vacant lots
- 1.700 sensors
- Reporting of improperly parked vehicles



<https://www.youtube.com/watch?v=wqKonshpXzQ>

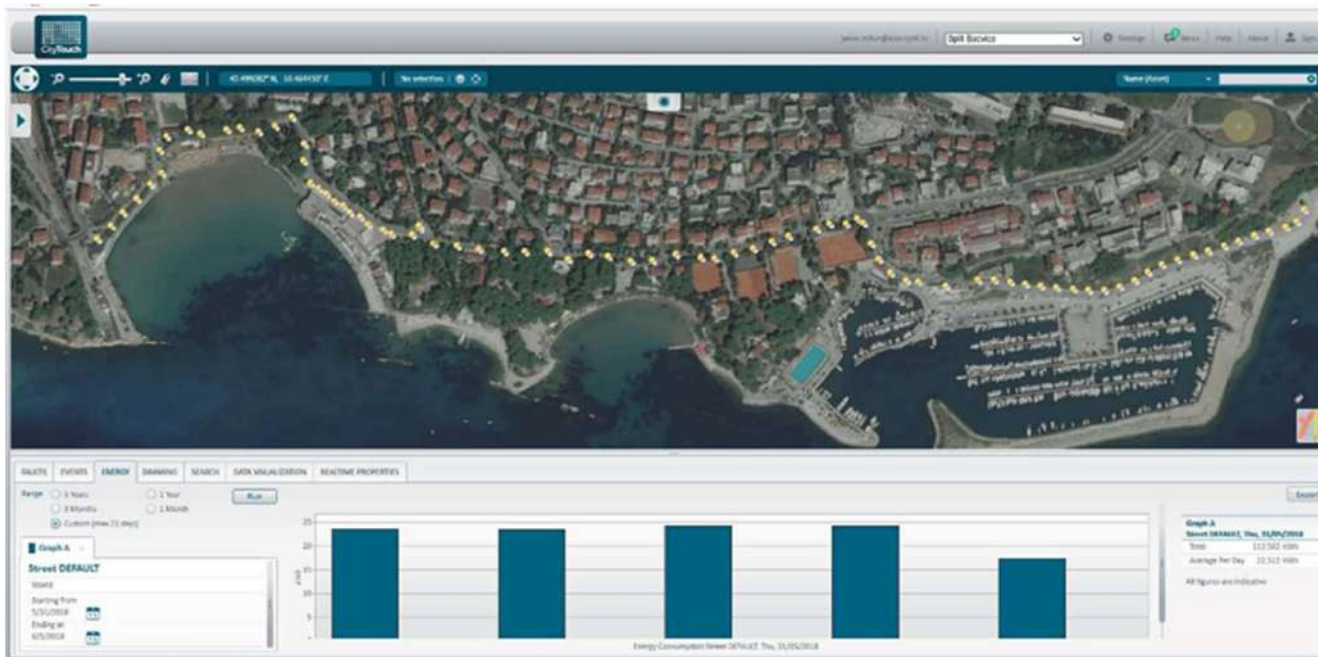
SPLIT SMART CITY SUITE

- Digital transformation of City's services
- Mobile and web apps
- Precondition for unification of all Digital City services
- Efficient communication with citizens and other users



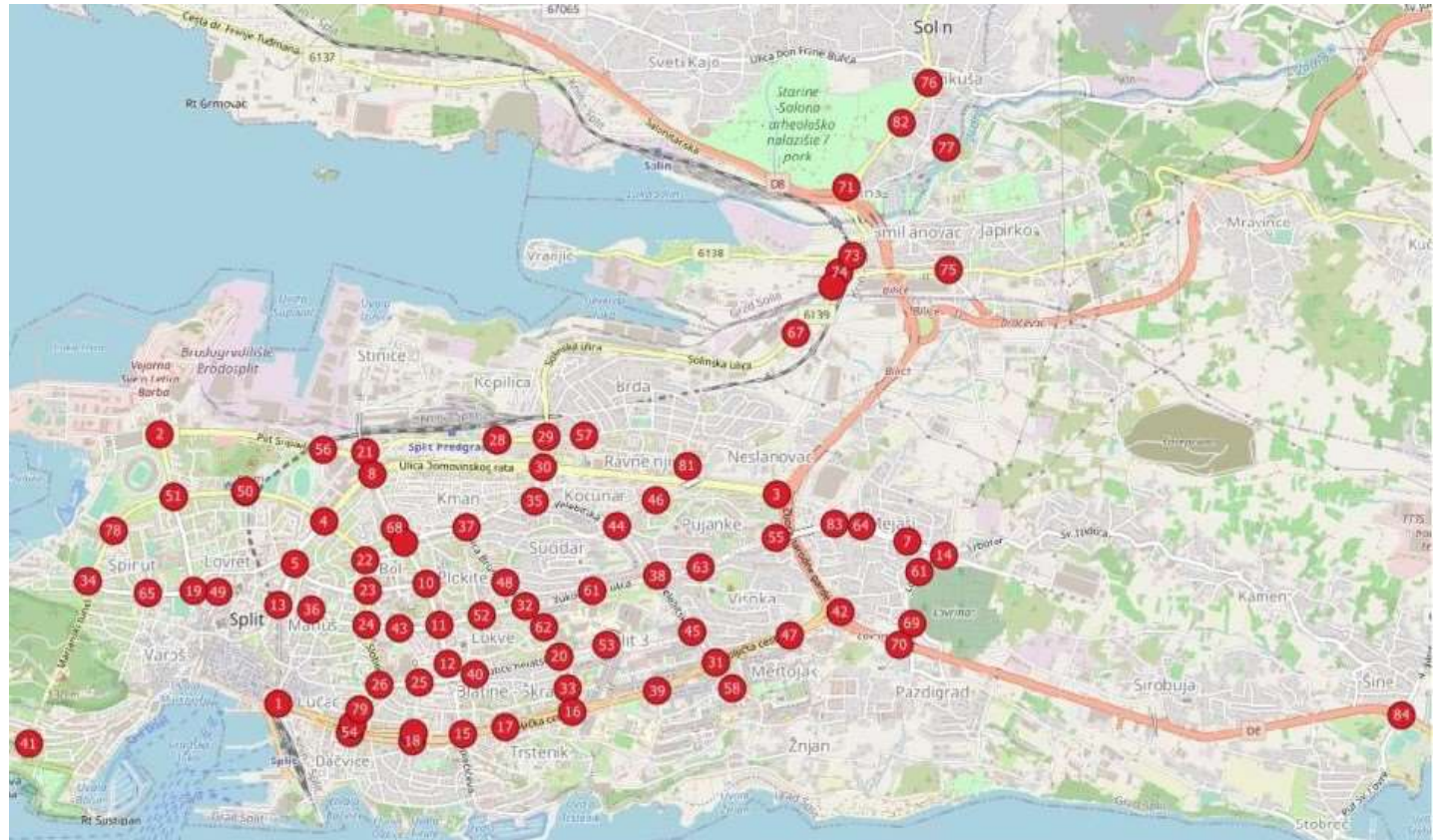
GREEN PUBLIC LIGHTING SYSTEM

- 80 lamp points
- 82 Smart LEDs for road lighting
- 82 addressable controllers for central data collection & management
- 18.000 sqm of covered area
- 11,5 tonnes/year CO2 reduction
- €4.400 /year savings



INTELLIGENT TRANSPORT SYSTEM (ITS)

- Technological upgrade of classic transport system
- Includes several sub-systems that cover
 - Traffic management
 - Video surveillance of traffic
 - Mobile app for passenger info
 - Interchangeable traffic signs
 - Public transport prioritization
 - Weather monitoring
 - Traffic Control Center



GIS PORTAL

- implementation of the public 3D Portal of the City
- establishment of the utility infrastructure register
- the first phase of the public solar potential portal
- management of the greenery cadastre and public lighting of the City of Split



WHAT'S NEXT?

- Smart Waste Management
- Integration of PV panels with Smart solutions for better management



THANK YOU.



Vedrana Franić
Head of the City Development
Department
City of Split
vedrana.franic@split.hr



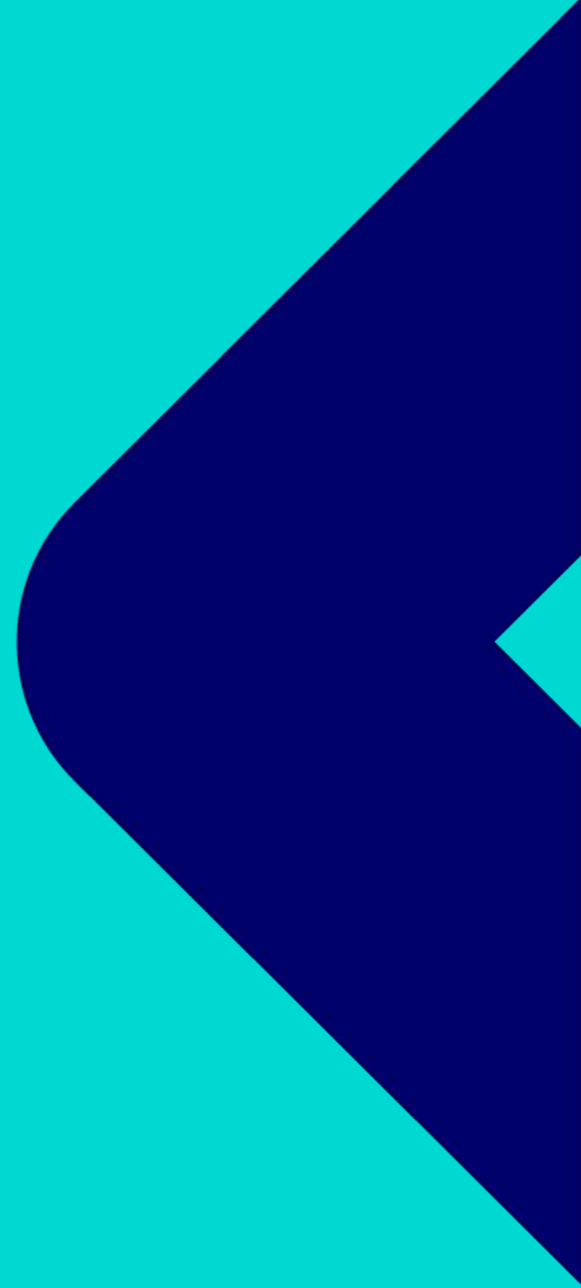
The innovative, socially responsible food recovery programme



**Can you
tell me
who this
man is?**

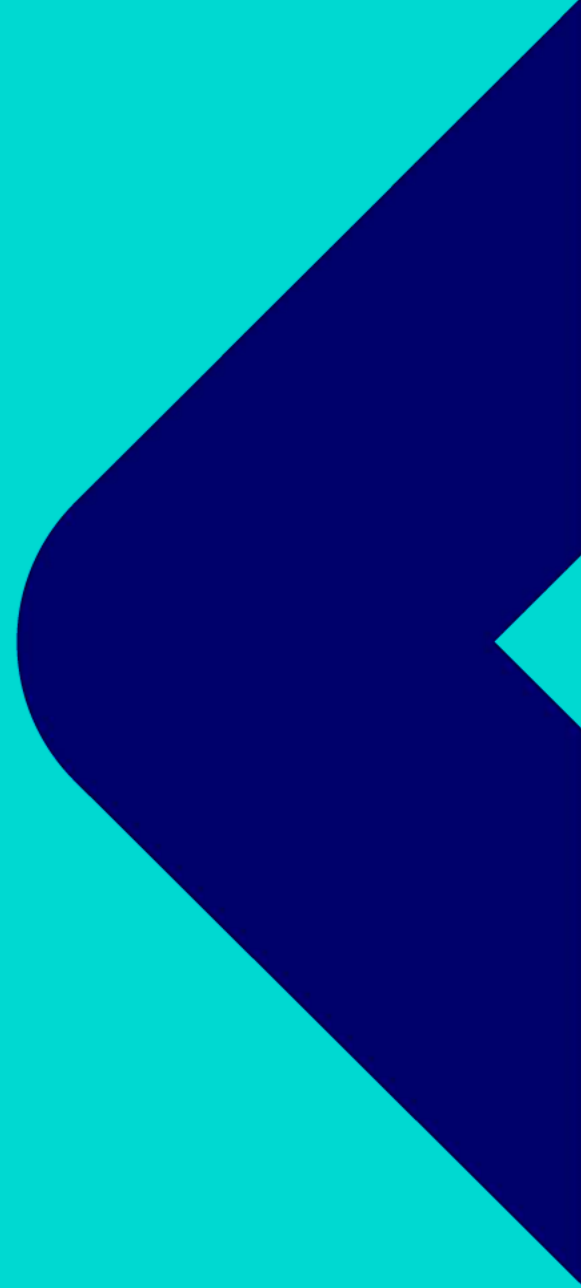


Absolutely!



Mr. Antoni Gaudí

The architect of...





**Where was
Gaudí born?**



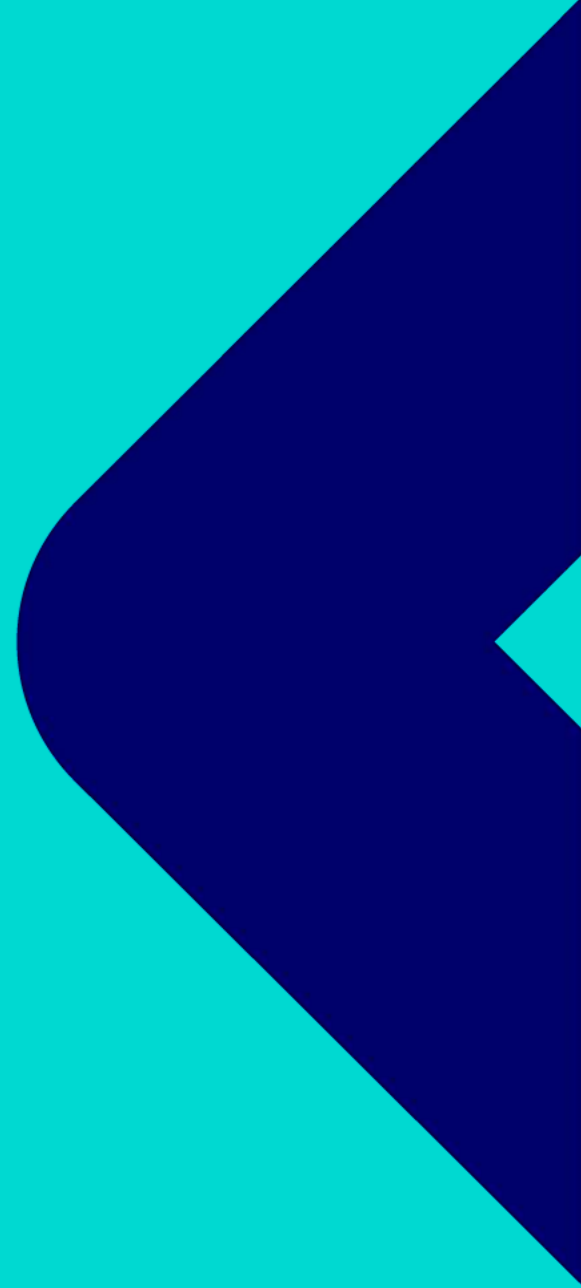




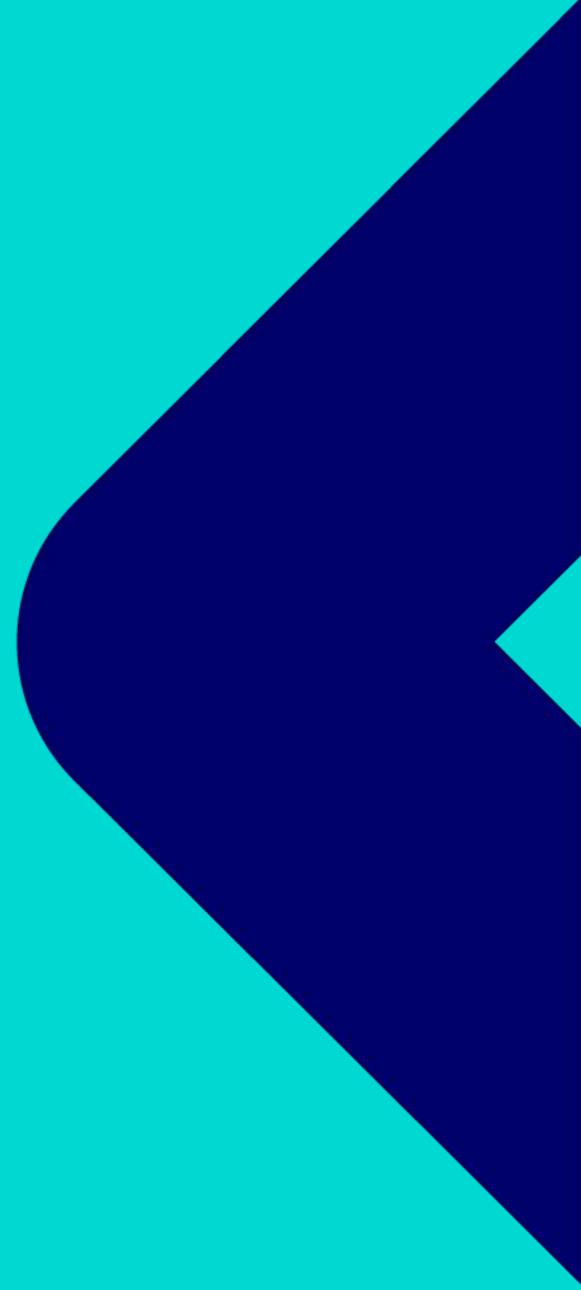




Of course not!



**Gaudí chose to be
born in Reus.**





**Let me introduce you
a little bit the
city of Reus**



01

SUPERB LOCATION



AJUNTAMENT DE REUS



GREAT CONNECTIONS: CLOSE TO EVERYWHERE

- 100 KM FROM BARCELONA
- 260 KM FROM FRANCE
- 500 KM FROM MADRID
- 1,100 KM FROM PARIS



02

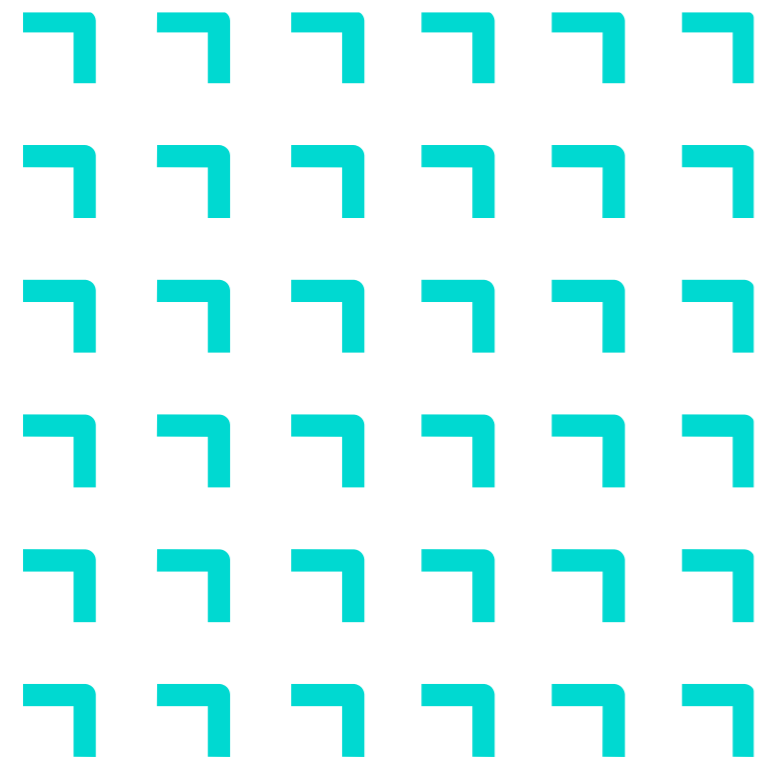
INSPIRING QUALITY OF LIFE



AJUNTAMENT DE REUS



Strategically located
between sea and
mountains



INSPIRING QUALITY OF LIFE

- It is about 10 km from the beaches of the **Costa Daurada**
- Short distance from the **Priorat wine region**
- Next to the city of Tarragona
- 5 mins from **PortAventura Theme park** and its resorts.



03

REUS CITY CHALLENGE



AJUNTAMENT DE REUS



The innovative, socially responsible food recovery programme

PROBLEM TO BE SOLVED

- Unmet basic needs
- Food for human consumption treated as waste
- Administration was buying food to be distributed



Gestióalimentària
ACTITUD RESPONSABLE

THE FOOD MANAGEMENT PROGRAMME

- Recovery of fresh and cooked food for people with few economic resources created in 2012 in a context of economic crisis.



Gestió **alimentària**
ACTITUD RESPONSABLE

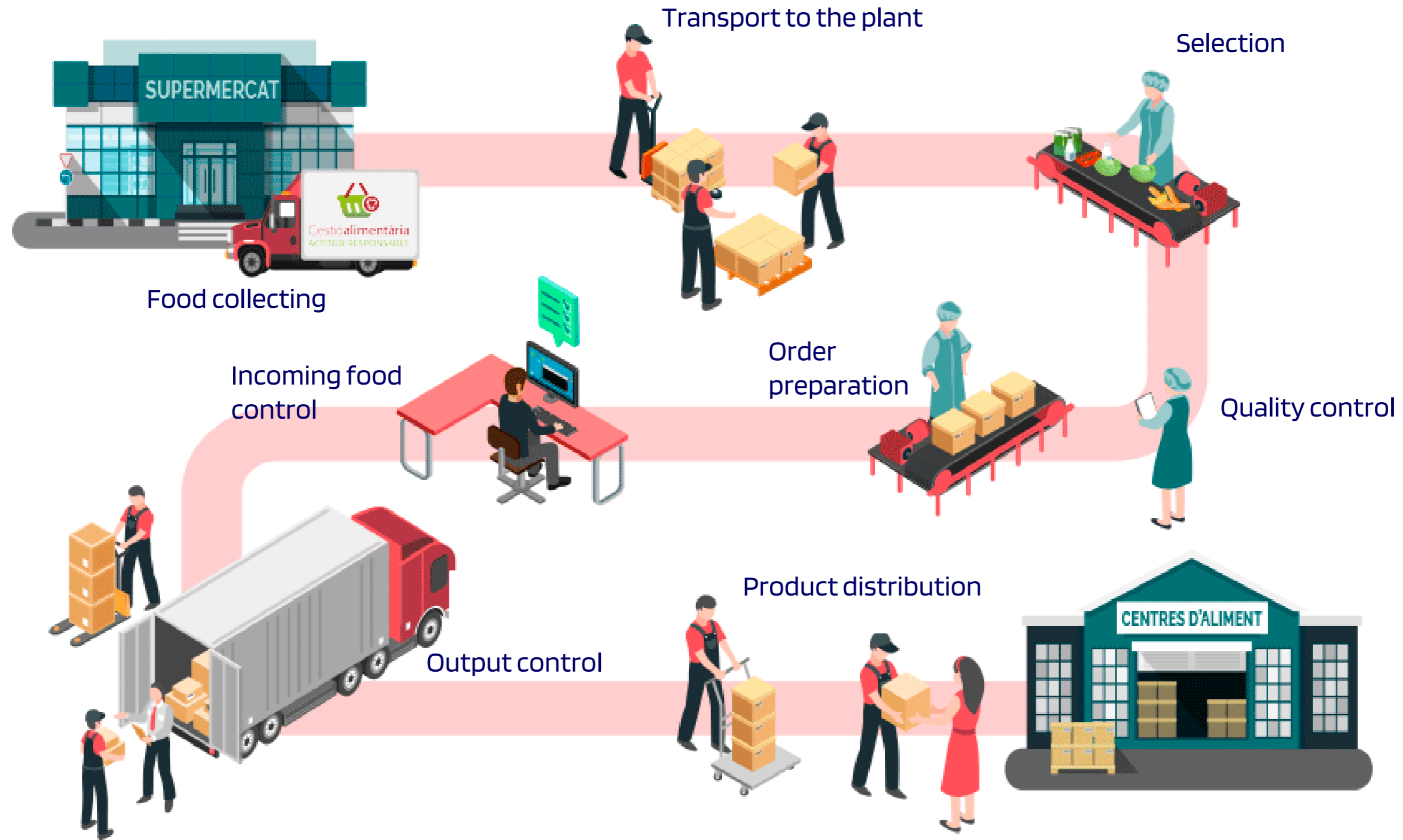
WHY IS IT USEFUL?

- To optimise resources and not waste them.
- To provide fresh food to people without resources
- To generate employment in disadvantaged sectors.



Gestióalimentària
ACTITUD RESPONSABLE

HOW DOES IT WORK?



- Tons of food collected: 2,028
- Tons of food recovered: 1,770



SOME RESULTS

- 180 meals/day at the social canteen
- Delivery of fresh food to more 5,000 people/year
- 1 Kg of recovered food costs €0.37. ➤ Market price is €1.52/kg.
- +2,500 tonnes of CO₂ not emitted Rubbish. Eco footprint
- +325,000 € saved in transport to composting plant.

OUR MAIN PARTNERS



Generalitat de Catalunya
**Agència de Salut Pública
de Catalunya**



Banc dels Aliments
Comarques de Tarragona
"Fundació Benèfica"



Agència de
Residus de
Catalunya



04

THE CHALLENGE



AJUNTAMENT DE REUS



THE FOOD MANAGEMENT PROGRAMME CHALLENGE



How can we make this programme, which has a great social, economic and environmental impact and is recognised at the Catalan, Spanish and European level, **exportable** and **scalable** to other cities, taking into account the **number of stakeholders** that are involved in it?



THANK YOU!



AJUNTAMENT DE REUS

Daniel Duran
dduran@redessa.cat
+34 650 359 804



AJUNTAMENT DE REUS

Laboratorio Smart City di Roma Capitale



SMARTCITY
EXPO WORLD CONGRESS

15-17 NOV 2022 | BARCELONA & ONLINE

Brokerage Event

Start networking!

ACCIÓ
Catalunya
Centre d'Innovació

Generalitat de Catalunya
Government of Catalonia

**enterprise
europe
network**

GOOSE



15 November 2022 - 24 November 2022

Hospitalet de Llobregat , Spain

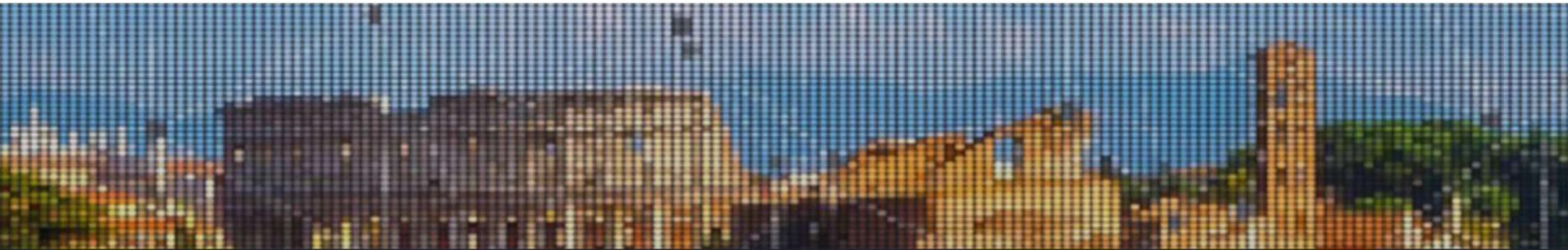
SMART CITY CHALLENGES!



Barcellona, 15 november 22

Solutions for Roma Smart City Challenge Transition to Environmental sustainability

Leandro Aglieri *President Roma Smart City Lab*



What is Roma Smart City Lab ?

Laboratorio Smart City di Roma Capitale



V

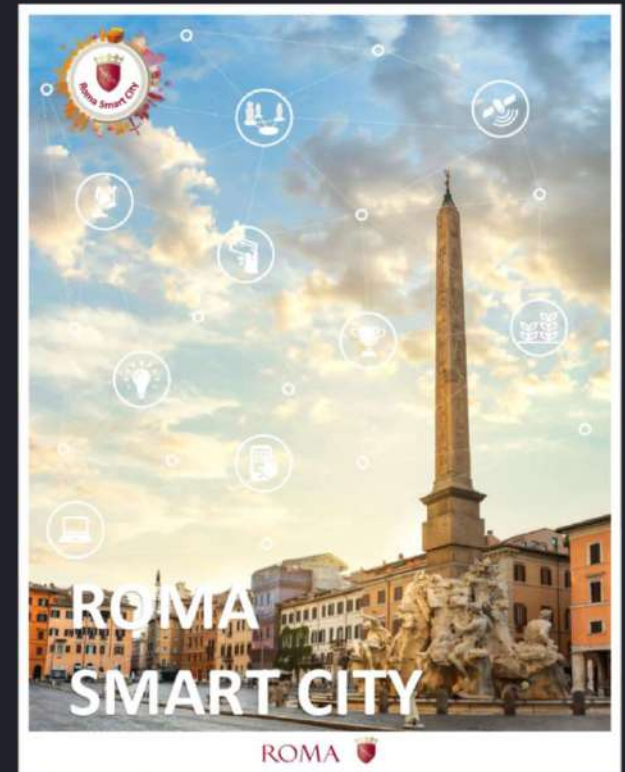
A

V

V

Scope

2. CO-CREATE NEW PROJECTS



Roma Smart City Lab: the challenge

The Smart Energy challenge

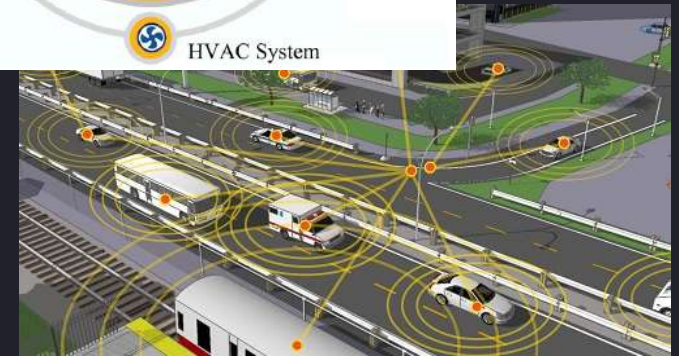
- In a widespread city like Rome we have already planned to create a network of (connected) Renewable Energy Communities in order to get a sustainable City by 2030.



Roma Smart City Lab: the challenge

The Smart Energy challenge

- In order to achieve better results we are including in this challenge the Smart Building and Smart Mobility assets



Roma Smart City Lab: the challenge

What do we expect ?

- We are looking for best practices around the world to foster this plan
- Ideas and Best Practices of solutions already working in other Smart cities
- Collaboration with both private and public institutions





CÁMARA COMERCIO
C A R T A G E N A

#Vamos
PA'LANTE

CARTAGENA ENERGY TECH HUB APPLIED TO GREEN MOBILITY

<https://www.linkedin.com/company/camcartagena/>
<https://www.linkedin.com/in/juan-pablo-velez-mba-mpep-0a808526>

     CAMCARTAGENA
Centro, Calle Santa Teresa No. 32 - 41 A.A. 16

www.cccartagena.org.co



CARTAGENA DE INDIAS



Name	CARTAGENA DE INDIAS
Extension	653,7 km2
Population (2020)	1.028.736
Average temperature	28°C – 34°C

 CÁMARA COMERCIO
CARTAGENA

 Vamos
PA'LANTE

CARTAGENA'S POTENTIAL



Availability of water

Flow rate Canal del
Dique: 540 m3/s



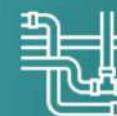
High solar radiation in the city

Average of 5 KWh/h per
m2 per day



Low air density

3.9 m/s annual average



Pipeline interconnection

For transportation of
hydrogen and its
derivatives



The largest network of
ports in Colombia.
Optimal multimodal
conditions.



Proximity to the Panamá Canal

Worldwide maritime
interconnection

CARTAGENA'S ENERGY CLUSTER

STRATEGIC FOCUS OF THE CLUSTER



Generate low-emission energy solutions.



Strengthening of specialized services for low emission.



Strengthening of supply ecosystem for low emission.

STRATEGIC CHALLENGES



Decarbonizing



Efficient Energy



Industry 4.0

CLUSTER WORK AREAS



Knowledge platform and competitiveness ecosystem.



New business development and Investment attraction.

www.cccartagena.org.co



CÁMARA COMERCIO
CARTAGENA

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PA'LANTE

2.585 Companies identified in the value chain of the Cluster.

20.432 direct jobs provided by the cluster.

\$ 42,5 billions in company assets.

CARTAGENA'S ENERGY CLUSTER

Green Hydrogen Pilots in Cartagena



ECOPETROL

- Ecopetrol's electrolyzer has a power of 53.2 kW.
- Ecopetrol installed 270 solar panels with the start-up of the pilot project.
- The pilot uses industrial water from the refinery to produce 20 kg of high purity (99.999%) green hydrogen daily.



PROMIGAS

- Promigas pilot enables green hydrogen production by electrolysis.
- It uses renewable electrical energy in an electrolyzer to separate hydrogen and oxygen atoms from the water molecule.
- In the first phase, the company will produce about 1,574 kilograms per year of green hydrogen.



www.cccartagena.org.co

INNOVATION AND TECHNOLOGY CENTER

Our objective is generate safe environments to innovate through immersive experiences that facilitate the appropriation of new technologies in the search for solutions to industry challenges.

MODEL:

DYNAMIC
ARTICULATED
MODEL



CHAMBERS OF COMMERCE

Guarantee the sustainability and synergy of the center. **Governance Model:** A management committee of the agreement between CCC and ECP, as well as a committee of allies.

PHYSICAL
COMMON SPACE



UNIVERSITIES
CLUSTER COMPANIES
GOVERNMENT
ENTREPRENEURS

ENVIRONMENT FOR
EXPERIMENTATION



DIGITAL
METAVERSE



CLUSTERED
TECHNOLOGICAL
PARKS
CTI ALLIES



CÁMARA COMERCIO
CARTAGENA

#Vamos
PA'LANTE

CENTER SERVICE OFFERINGS


Coworking


Incubation and
acceleration
programs


Articulation of
international
ecosystems


Structuring of
CT+I projects

INNOVATION AND TECHNOLOGY CENTER

WHERE ARE WE LOCATED?

Edificios Hub Caribe Km7 Vía Mamonal- Cartagena



Total lot area **20,000 m²**
Total building area **2,184 m²**
Parking capacity of **15 vehicles**

www.cccartagena.org.co



CÁMARA COMERCIO
CARTAGENA

#Vamos
PA'LANTE

CENTER PROGRAMS TO ACCELERATE THE ENERGY TRANSITION



Regional
Renewable
Energy



Training Center



Mobility Park



Prototyping labs

INNOVATION AND TECHNOLOGY CENTER

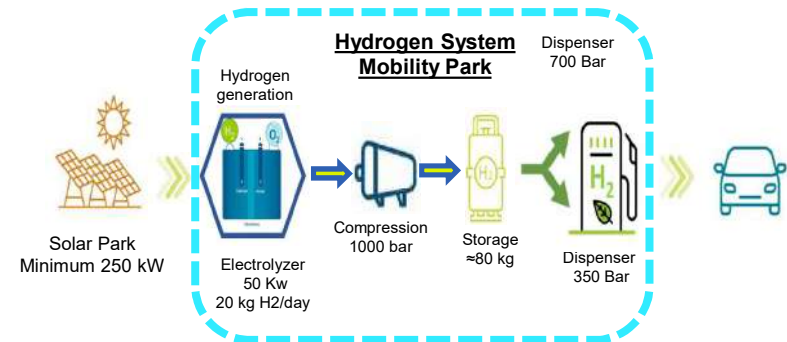
MOBILITY PARK

We have a 50 KW electrolyzer: 20 Kg H₂/day; storage of approximately 80 Kg and a solar park of at least 250 Kw.

We also have a pilot vehicle that runs on green hydrogen; for this we have a 700 Bar dispenser.



MOBILITY PARK



CHALLENGES AND PROCUREMENT PLANS

Sector : Smart and green mobility

The challenge is to accelerate and scale up the adoption of green hydrogen and derivatives, such as methanol and ammonia, as a fuel for the decarbonization of public, commercial, and private mobility in the city, including land and maritime transportation.

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PA'LANTE

PROCUREMENT PLANS

- ✓ Expertise to scale up the use of hydrogen and derivatives in mobility systems.
- ✓ Hydrogen production plants: hydrolysis or electrolysis, as well as derivative conversion technologies
- ✓ Design and infrastructure of distribution and storage system for hydrogen and derivatives.
- ✓ Infrastructure for hydrogen and derivatives refuelling stations.
- ✓ Fleet of hydrogen-powered vehicles (land, maritime) and derivatives.

WHAT DO I EXPECT TO ACHIEVE IN THE CITIES CHALLENGES?

- ✓ Meetings with strategic actors to generate agreements that facilitate the integration of green hydrogen and derivatives, as a fuel for the transportation system of Cartagena.
- ✓ To learn about successful business cases that have scaled up the use of hydrogen and derivatives, in transportation and mobility systems.
- ✓ Meetings with suppliers for the production, distribution, and storage technologies for green hydrogen and derivatives.
- ✓ To learn and have meetings with financing funds that support and promote the large-scale application of hydrogen and derivatives as a clean fuel.
- ✓ To set up alliances with technology providers, knowledge partners, clusters, entrepreneurship accelerators and venture funds.





CÁMARA COMERCIO
CARTAGENA

#Vamos
PA'LANTE

     CAMCARTAGENA
Centro, Calle Santa Teresa No. 32 - 41 A.A. 16

Thank you.
Thank you.

www.cccartagena.org.co



MALAYSIA'S LOW CARBON CITY INITIATIVE BY RENEWABLE ENERGY & SMART GRID

BROKERAGE 2022! CITIES' CHALLENGES
15TH NOVEMBER 2022

WHO ARE WE: TECHNOLOGICAL PARTNERSHIP THINK-TANK

WHO WE ARE

A public-private partnership that drives high technology industry through strategic consultation, advisory and implementation.

WHAT WE DO

We conduct market intelligence, technology foresight & road-mapping and policy intervention across a wide range of industries and technologies

WHY OUR VISION

"To serve the nation in advancing competency in high technology through partnership towards sustainable development"

OUR FORTE



Foresight & Futures Thinking



Developing Technology Priorities & Advancement



Optimising Global Strategies & Outreach



Enhancing Future Talents



Driving the sustainable development platform for smart cities, Renewable energy & Industry 4.0



Promoting Technopreneurship Excellence

MIGHT's STRATEGIC ROLES



Strategic Advisory to Government and Industry



Nurture and Invest in Technology Companies

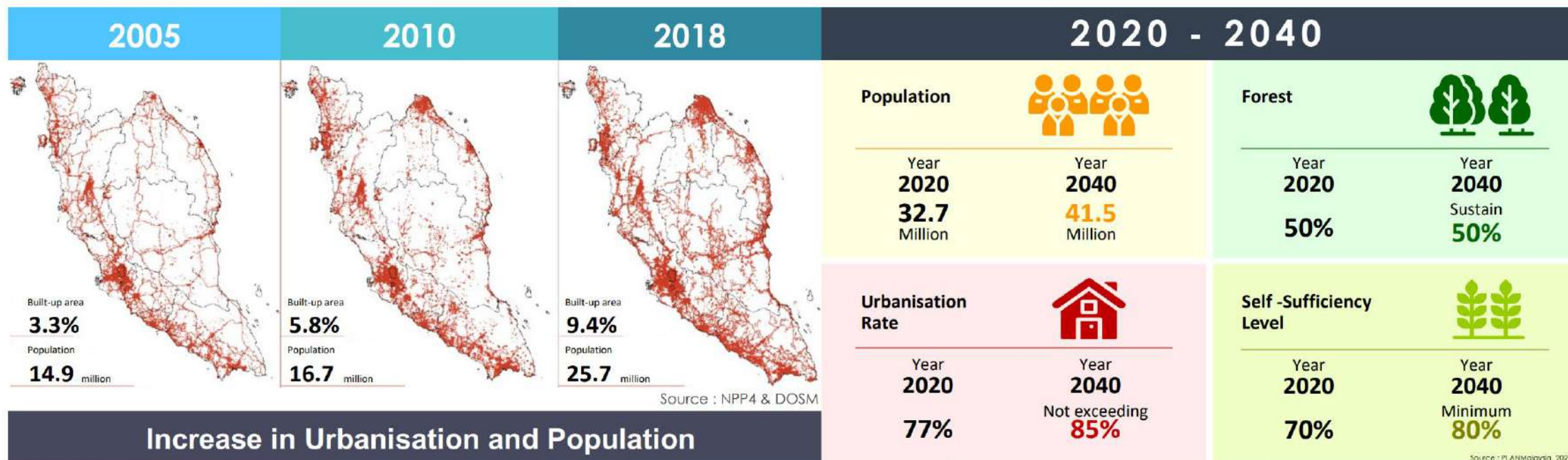


Platform of Technology & Innovation Clusters

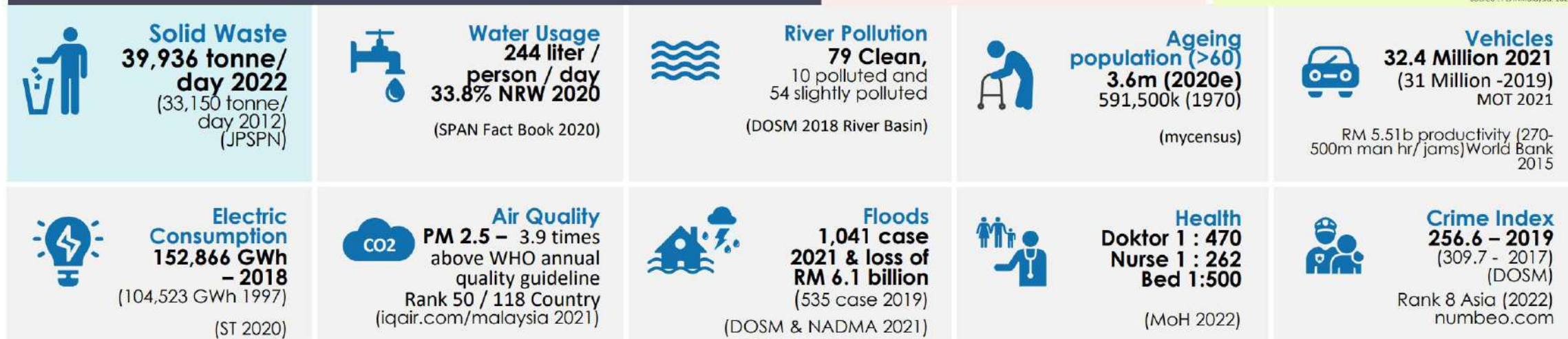
FOCUS AREAS



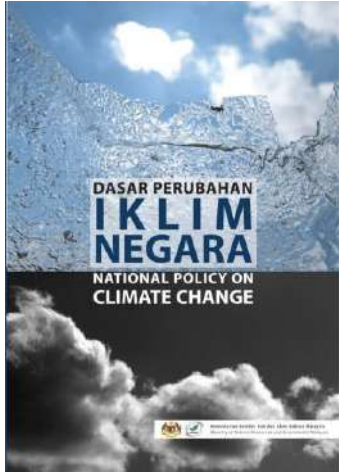
Key Urban Challenges In Malaysia



Increase in Urbanisation and Population



Source : PLANMalaysia, 2022



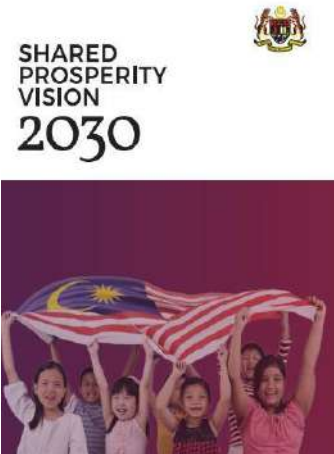
Climate Change Policy (2009)



National Green Technology Policy (2009)



Green Technology Master Plan (2017)

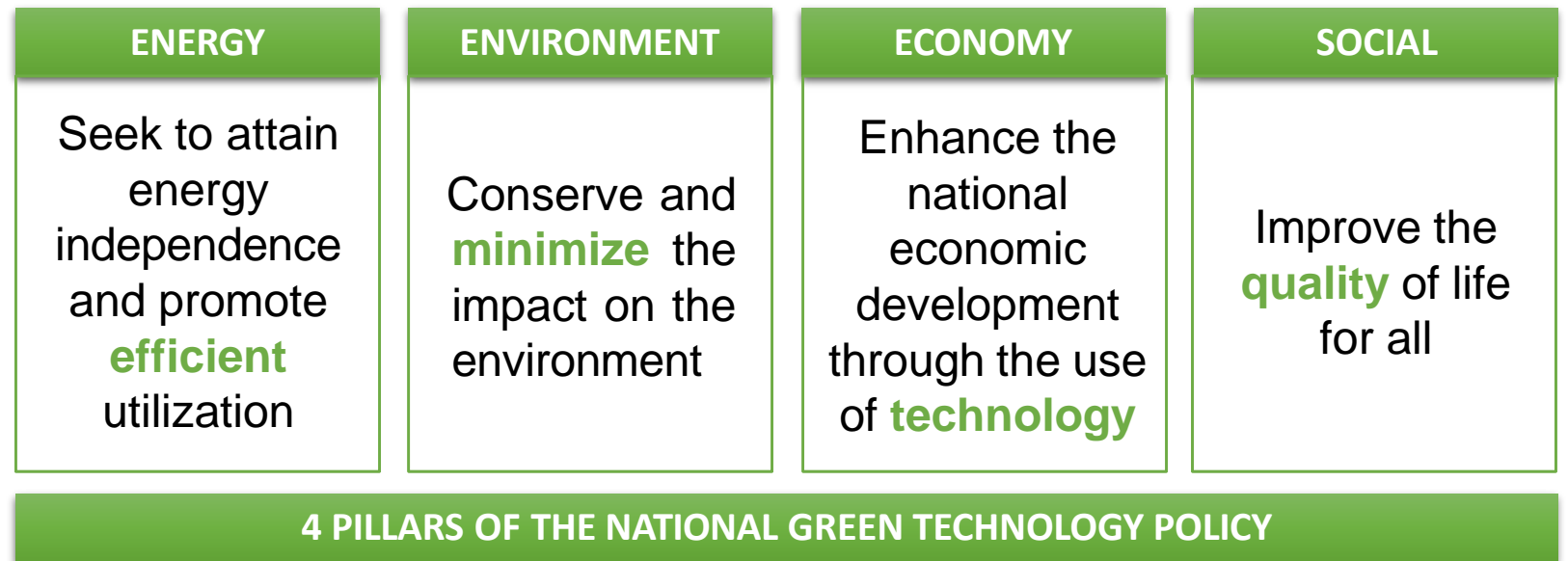


Shared Prosperity Vision 2030 (2019)

MALAYSIA: TOWARDS SUSTAINABLE DEVELOPMENT

Green Technology as a **driver** to accelerate the National Economy and Promote Sustainable Development

– National Green Technology Policy (2009)



Low Carbon Cities is an important step towards creating a greener and more sustainable Malaysia, improving the quality of life for its residents as well as future generations – Green Technology Master Plan



National Low Carbon Cities Masterplan

Measure - Manage - Mitigate



A low carbon city is defined as a city that implements low carbon strategies to meet its environmental, social and economic needs of the city. The city measures, manages and mitigates greenhouse gas emissions to reduce its contribution to climate change.

The definition emphasizes on **three (3)** main elements :

1. **Pursue a systematic approach** – i.e. establish documented strategies and action plans;
2. **Employ area wide strategies** – i.e. cover all potential emission sectors within city boundary; and
3. **Set ambitious GHG reduction target** – i.e. establish baseline/peak as well as short and long term reduction targets. Note: 'ambitious' refers to GHG reduction target that surpass the national GHG target and towards carbon neutrality.

Essentially, low carbon cities are defined as cities with specific strategies, plans and targets on how to reduce GHG emissions that covers all potential emitting sectors within the city boundary.

MEASUREMENT



of the GHG emissions by establishing a baseline and providing periodic monitoring

MANAGEMENT



of the low carbon development in terms of policy, targets and planning

MITIGATION



of the GHG emissions through design and implementation of programmes and projects

KEY DIRECTION 09

Develop Citywide/Sectoral Development Strategies on Low Carbon

Targeted Outcome

- A systematic and user-friendly urban development approach/guideline to help cities, townships and urban areas to reduce GHG emission.

KD9 : Develop Citywide/Sectoral Development Strategies on Low Carbon

Action 9.1 Spatial Planning and Development

Action 9.2 Energy

Action 9.3 Transportation

Action 9.4 Waste

3 Renewable Energy



- Encourage the use of renewable energy such as solar energy, waste to energy, biomass, wind and geothermal heat through any policies and development plans.
- Develop long-term plan for electricity tariff rate for higher renewable mix.
- Enhance cross sectoral collaboration in research and development and commercialisation to develop localised technology.

WHY cities need to go LOW CARBON?

Cities cover only 2% of the Earth's Surface

yet it consumes 2/3 of the world's energy

and produces 70% of global GHG emissions

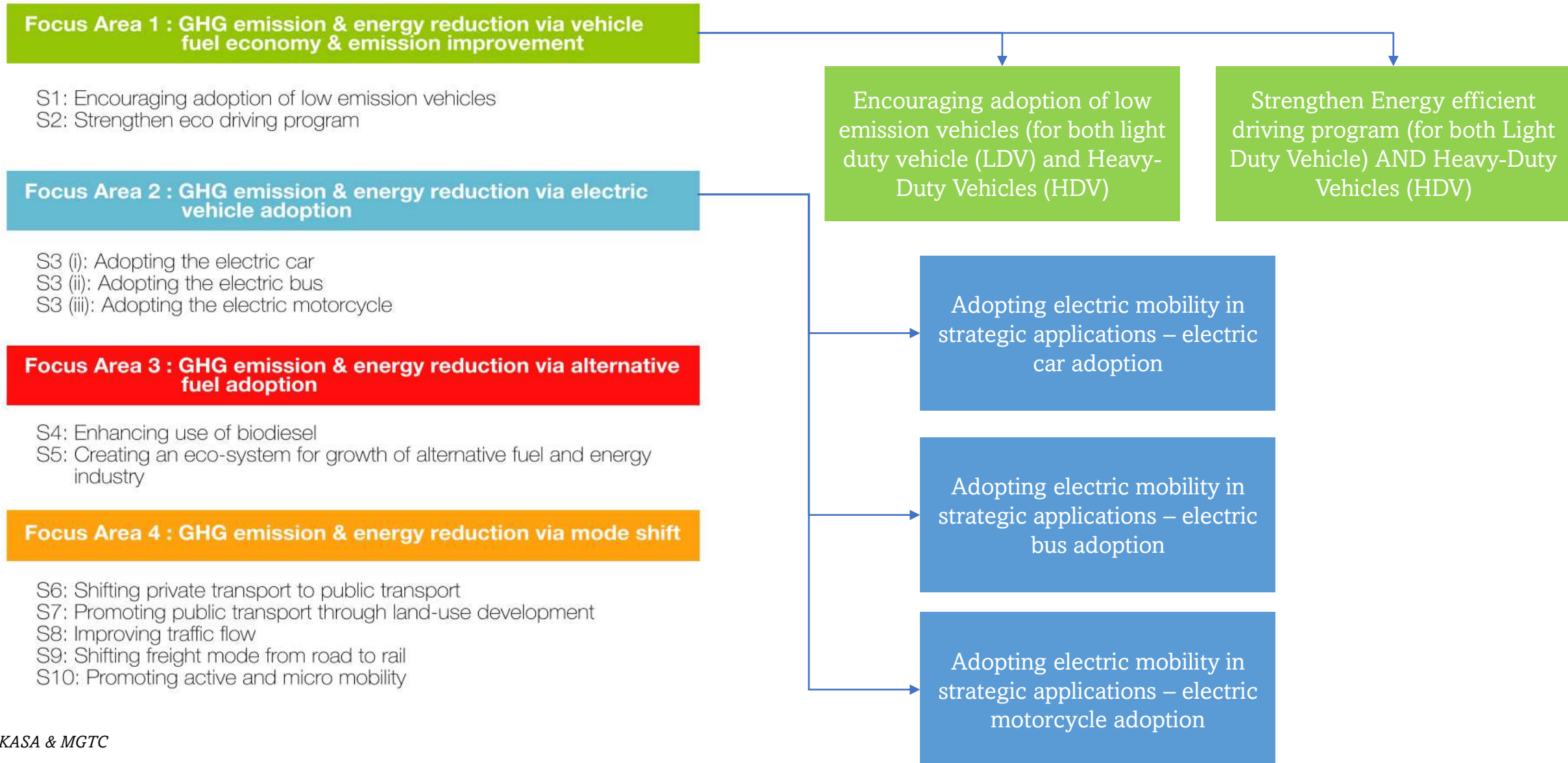


For more information
SCAN HERE :



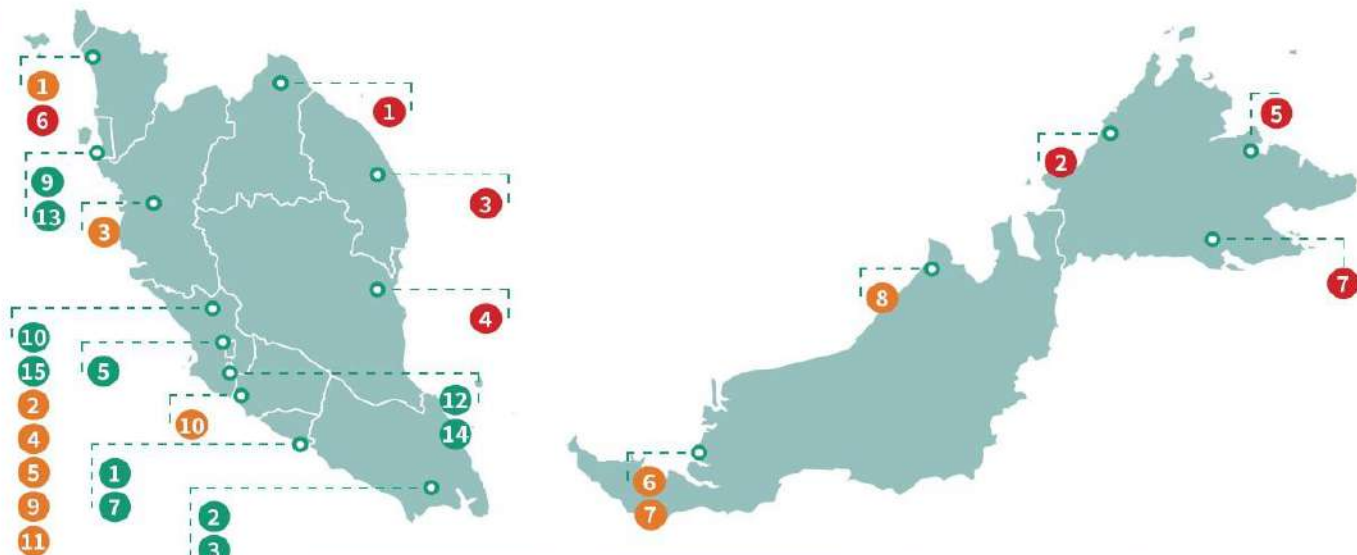
Source : C40 cities

Low Carbon Mobility Blueprint 2021–2030



Source: KASA & MGTC

Target Cities



- Group 1
1. Hang Tuah Jaya Municipal Council
 2. Iskandar Malaysia
 3. Iskandar Puteri City Council
 4. Johor Bahru City Council
 5. Kuala Lumpur City Hall
 6. Kulai Municipal Council
 7. Melaka Historic City Council
 8. Pasir Gudang City Council
 9. Penang Island City Council
 10. Petaling Jaya City Council
 11. Pontian District Council
 12. Putrajaya Corporation
 13. Seberang Perai City Council
 14. Sepang Municipal Council
 15. Shah Alam City Council

- Group 2
1. Alor Setar City Council
 2. Ampang Jaya Municipal Council
 3. Ipoh City Council
 4. Kajang Municipal Council
 5. Klang Municipal Council
 6. Kuching North City Hall
 7. Kuching South City Council
 8. Miri City Council
 9. Selayang Municipal Council
 10. Seremban City Council
 11. Subang Jaya City Council

- Group 3
1. Kota Bharu Municipal Council
 2. Kota Kinabalu City Hall
 3. Kuala Terengganu City Council
 4. Kuantan City Council
 5. Sandakan Municipal Council
 6. Sungai Petani Municipal Council
 7. Tawau Municipal Council

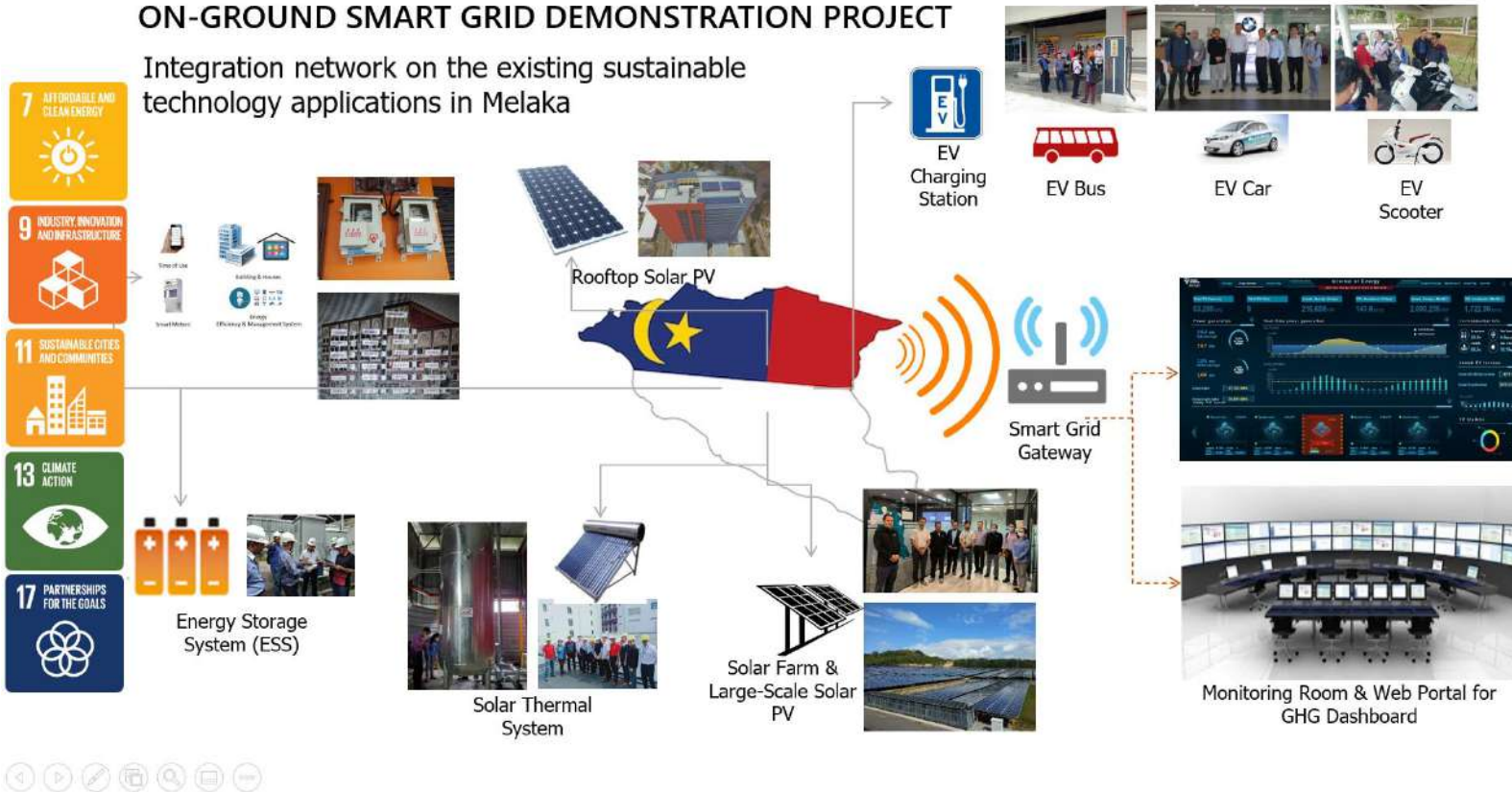


National Low Carbon Cities Masterplan

SMART GRID PROJECT

ON-GROUND SMART GRID DEMONSTRATION PROJECT

Integration network on the existing sustainable technology applications in Melaka



Adoption of Smart Grid Demonstration Project via integration of sustainable technology applications at Melaka.

Development regulatory framework, build institutional capacity and awareness in promoting climate risks mitigation technologies.

45,809

CO₂eq reduction per year

847,675

A total 20-year reduction of CO₂eq as direct GHG reductions

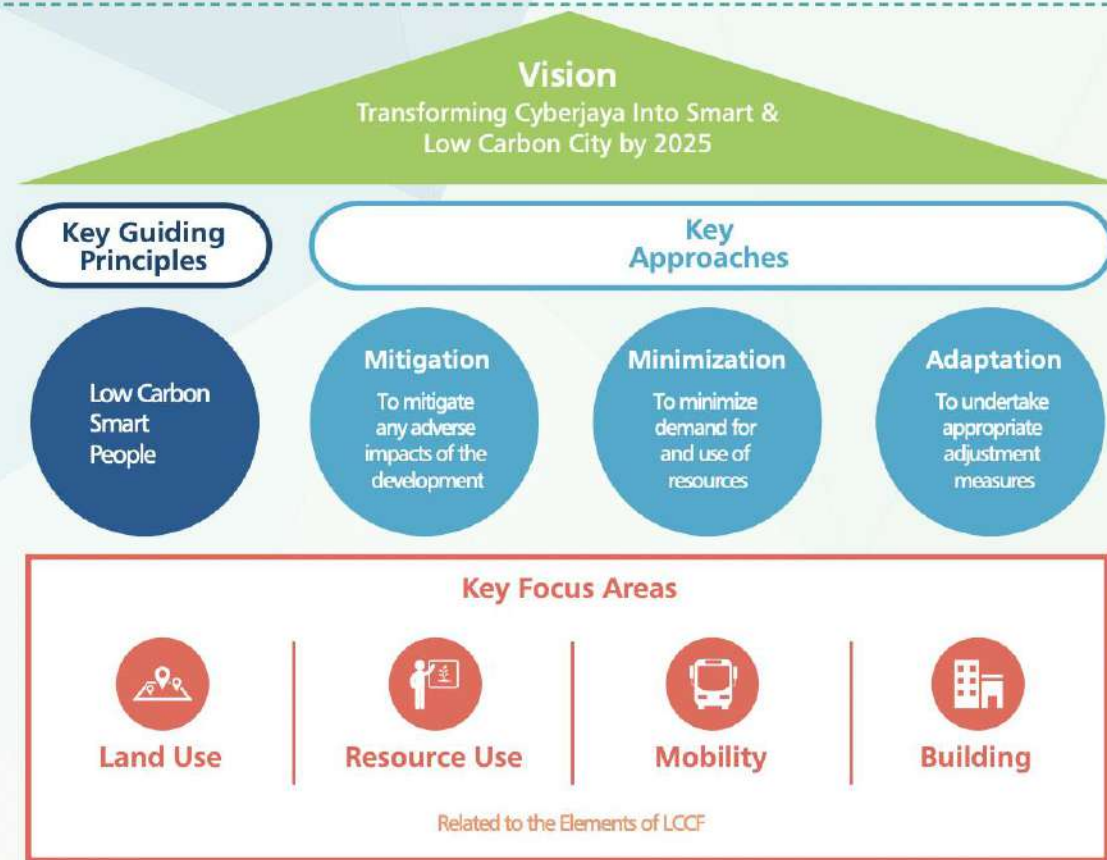


Cyberjaya Smart & Low Carbon City 2025



Cyberjaya
& Smart Low
Carbon City 2025

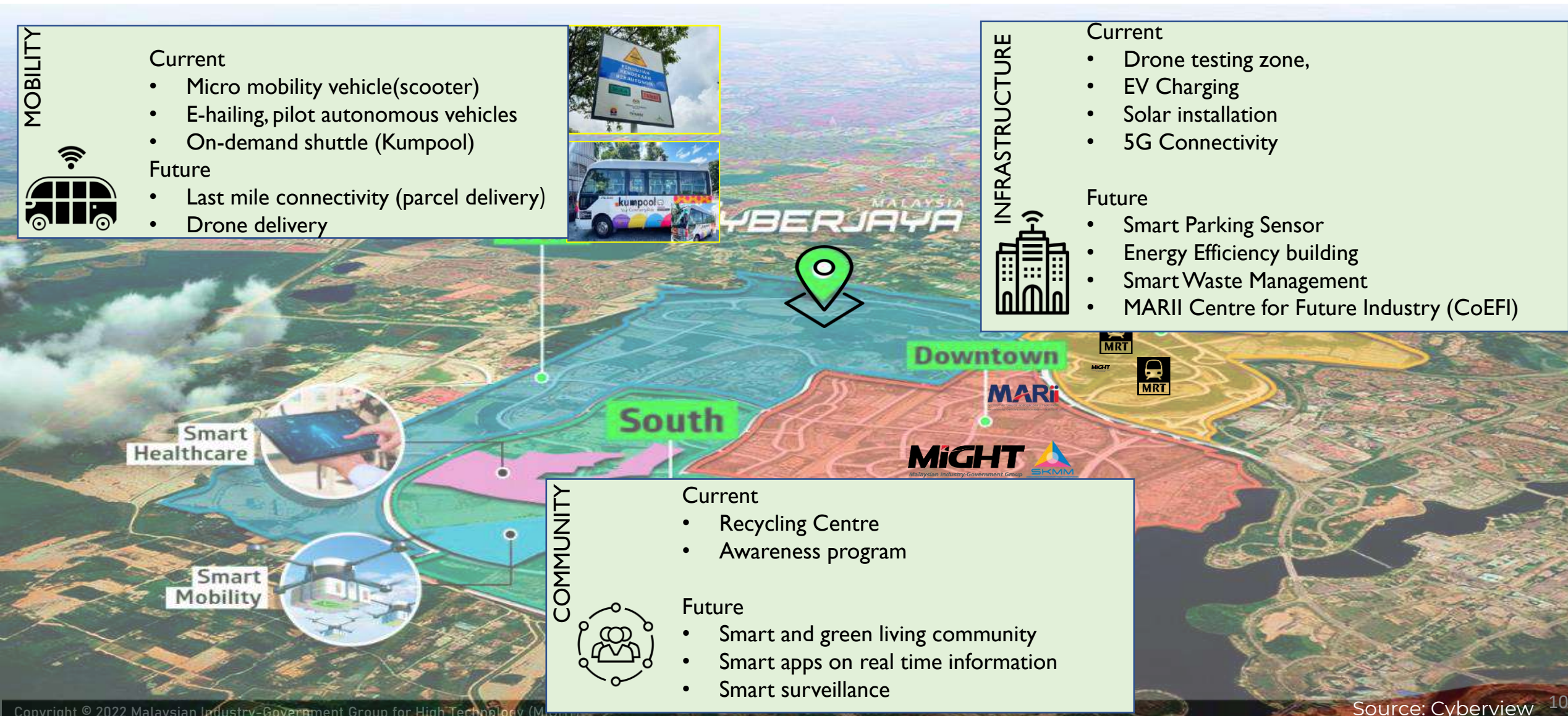
Reducing 40%
Carbon emission
reduction by
2030



- S1. Smart Mobility Target: 80% coverage of integrated green mobility network by 2025
- S2. Promote Walkability: Target : Walking to account for 60% of total trips by 2025
- S3. Embrace Compact & Mixed Use Development: Target : Reduce door to door journey time within cyberjaya by 20 minutes
- S4. Integrate Nature Into Urban: Target : 35% increase in carbon sequestration from baseline and 30% increase in ecological biodiversity (Eco-D) by 2025
- S5. Adopt Efficient and Effective Resource Management Practices Target : Wide application of smart/green technology in managing resources
- S6. Implement Smart & Low Carbon Buildings Target : 40% energy reduction from buildings by 2025
- S7. Intensify Community Participation Target : Increase awareness and develop low carbon community

Cyberjaya Current and Future Initiatives

To build a model city towards decarbonisation demonstrating smart, sustainable and technology oriented.



AN INTEGRATED APPROACH NEEDED FOR NET ZERO CITIES

1

Energy: Clean electrification

- Electricity generated by zero carbon energy sources (e.g. wind and solar)
- Use of renewable energy for heating and cooling, lighting;
- Smart grid system with wind and solar generating systems inputting to a sustainable and very cost local grid

E.g. Copenhagen-20% of the country's electricity is generated by wind turbines

2

Real Estate: Ultra-efficient, connected buildings

- High performance & low-carbon buildings materials with electric systems
- Intelligent management systems to maximize efficiency
- Smart energy infrastructure: Cost effective, secure electricity distribution grid, Smart meters

3

Citizens: Nudging Resident Behaviour

- Creating awareness program to alter carbon intensive behaviours

E.g. Milan reached a recycling rate of 50%, through change in consumer behavior

6

Waste Management

- Use of circular economy between consumption and production by reducing, re-using, recycling, and recovering materials where possible

E.g. Austin 'Giving second life to materials' initiative helped divert 400 tonnes of material from landfill

4

Climate Budget & Financing

- Use of green bonds, carbon pricing concepts to reduce emission and finance deployment of energy efficient technologies

E.g. Adelaide -Solar Savers Programme: Funding for purchase & installation of SPV energy systems to low-income & rental residential properties

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Transport: Clean Mobility, Compact urban form

Electrification of personal vehicles, fleets and public transit

- E-mobility charging stations; Transition to EV; shift to cycling & Public transport

E.g. Shenzhen Electric fleet: 99% of the city's taxis and buses are all electric

Source: [WEF_Net_Zero_Carbon_Cities_An_Integrated_Approach_2021.pdf](#)



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LET'S HAVE A CONVERSATION

#lets collaborate for a #betterfuture

Opportunities to test smart solutions in Tallinn, Green Capital 2023

Kalle Killar
Business Director
City of Tallinn



Estonia as an
e-country, Tallinn
as the capital of
that Baltic country

City, where
future joins
present



GREENTECH WEEK



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