

SMARTCITY

EXPO WORLD CONGRESS

15-17 NOV 2022 | BARCELONA & ONLINE

GREEN TRANSITION CHALLENGES

16th November, Agora, Green Plaza



Programme - Green Transition Challenges

2

15:00 Opening

Maite Ardèvol, Circular Economy & Sustainability Lead at ACCIÓ

15:05 Innovation road map for circular and climate neutral cities

Joshua Newton, Europe Cities Activation Manager at Ellen MacArthur Foundation

15:20 Innovative solutions for circular and climate neutral cities

- **Bamboo Energy**, Cristian López- *Energy demand aggregation and flexibility software platform*
- **KBCols**, Vaishali Kulkarni - *Microbial colorants: an alternative to waste generating & water polluting synthetic colors*
- **Coding the Curbs**, Iskandar Tange - *Control of the digital public space*
- **Aigües de Barcelona**, Mario Ruiz - *NIMBUS: sustainable fuel for buses from wastewater treatment sludge*
- **OLIO**, Linda Stefanutti - *The world's only community sharing app*
- **Fregata Space**, Maria Fernanda González - *Satellite pollution monitoring in water bodies, air and land*
- **MangoStone Technologies**, Bas Hoogakker - *Innovative hardware and software solutions to optimize waste collection and waste management*
- **ICN2**, Cristina Saenz - *Lightnet: an artificial photosynthesis for urban surfaces that captures co2*
- **Futureproofed**, Antonio Arce - *Leading carbon management platform to help cities build, manage, and execute their climate plan*

15:55 Closing

Maite Ardèvol, Circular Economy & Sustainability Lead at ACCIÓ



ACCIÓ
Catalonia
Trade & Investment



Generalitat de Catalunya
Government of Catalonia





ELLEN MACARTHUR FOUNDATION

BlackRock



GROUPE RENAULT

GUCCI

H&M Group



INTESA  SANPAOLO



MAYOR OF LONDON



NYC Mayor's Office of Sustainability



PHILIPS



SUN Institute Environment & Sustainability
Initiated by Deutsche Post Foundation



VISA

Our current economic
model is **linear**



Take - Make - Waste

The linear economy leads to...



Waste



**Underutilised
assets and
economic
losses**



**Price risks and
supply chain
volatility**



**Climate change
and
biodiversity
loss**

A CIRCULAR ECONOMY IS BASED ON THREE PRINCIPLES, DRIVEN BY DESIGN



The diagram consists of three black circular nodes arranged in a triangle, connected by white curved arrows in a clockwise cycle. The background is an aerial view of a lush green forest with a winding river. Each node contains a principle of the circular economy, accompanied by a simple white line drawing: a sun for 'Eliminate waste & pollution', a circular arrow for 'Circulate products & materials', and a cloud with rain and lightning for 'Regenerate nature'.

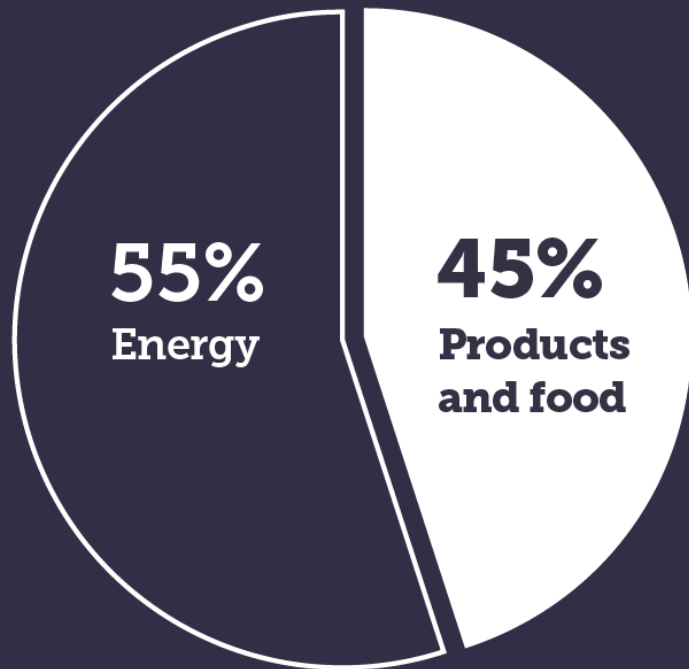
Eliminate
waste &
pollution

Circulate
products
&
materials

Regenerate
nature

A circular economy is a necessity for climate neutrality

TOTAL CURRENT GLOBAL
GREENHOUSE GAS EMISSIONS



HOW THE CIRCULAR ECONOMY
HELPS TACKLE CLIMATE CHANGE



Design out waste and pollution
to reduce GHG emissions
across the value chain

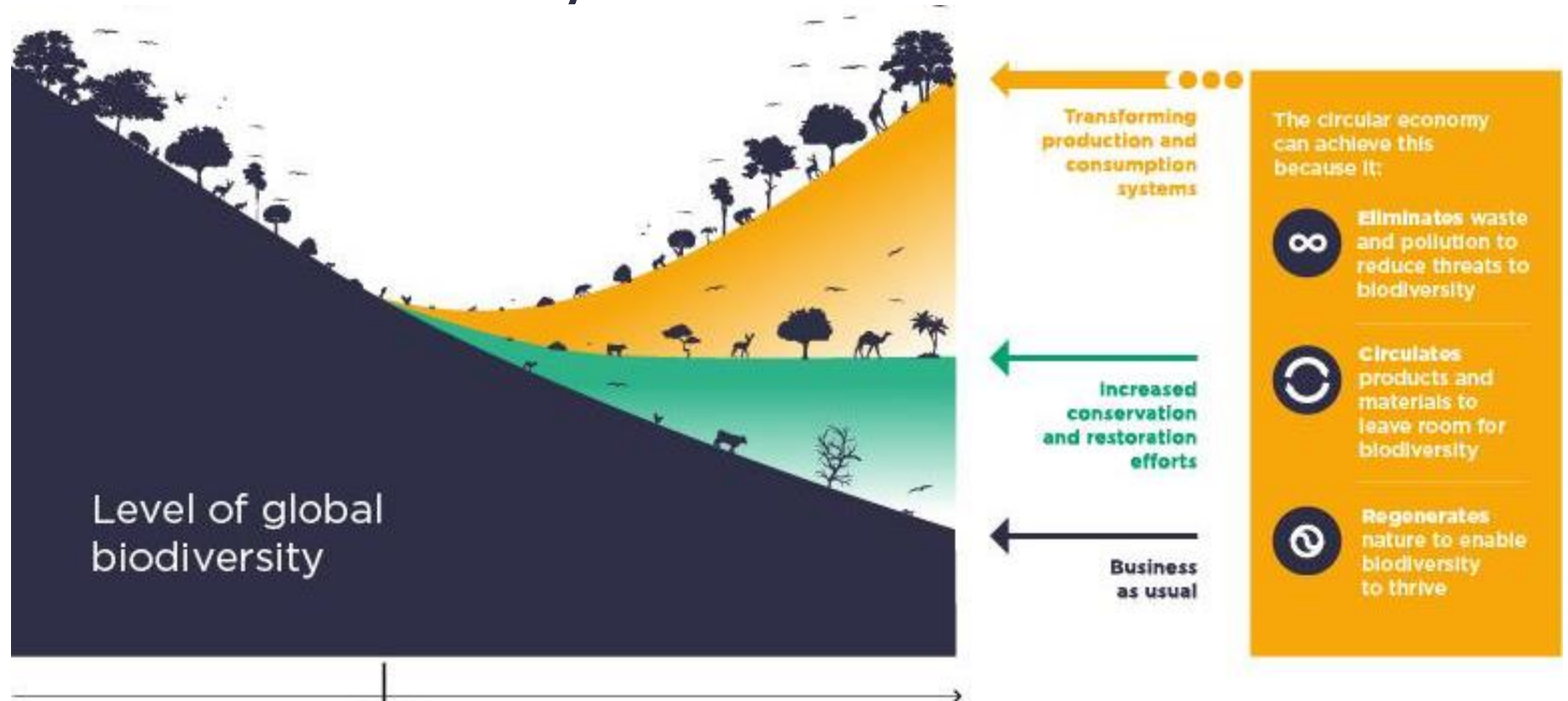


Keep products and materials in use
to retain the energy embodied
within them



Regenerate natural systems
to sequester carbon
in soil and products

A circular economy is also needed to halt and reverse biodiversity loss





54%



66%

85%

of global GDP generation

75%

of global resource
consumption

60-85%

of global GHG
emissions

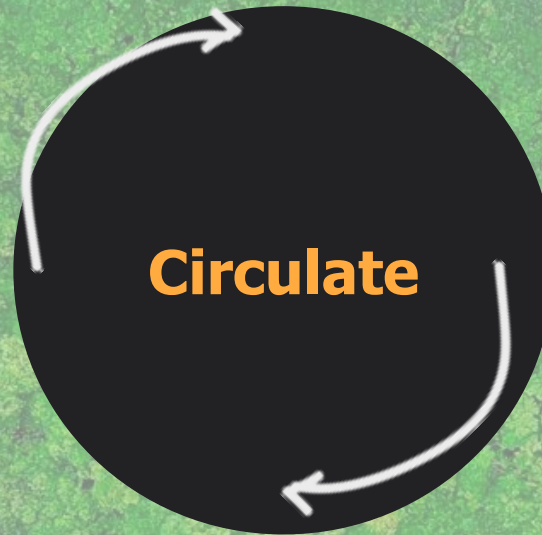
50%

of global solid waste
production

Applying circular principles to cities...



... What if we
**eliminated waste
and pollution** from
cities?



... What if we kept
**products and
materials in use** in
cities?



... What if we
**regenerate natural
systems** in and
around cities?

A circular economy can unlock wide-ranging benefits to help cities be more **thriving**, **liveable** and **resilient** places to live



**ECONOMIC
PRODUCTIVIT
Y**



**JOB, SKILLS
&
INNOVATION**



**HEALTH &
ENVIRONMENT**



**COMMUNITY
& SOCIAL
PROSPERITY**

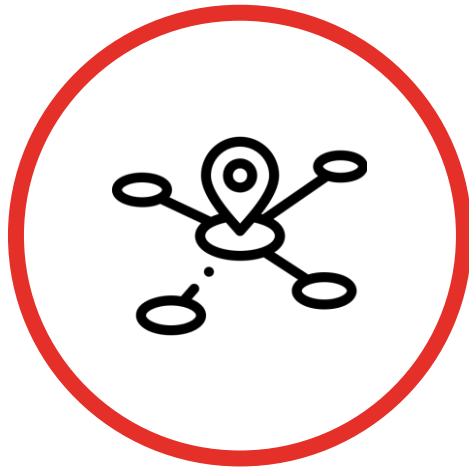


**RESOURCE
USE**

Cities must reimagine how we produce, consume and manage materials and resources across key urban systems



**BUILDINGS
& HOMES**



MOBILITY



PRODUCTS



FOOD



BUILDINGS & HOMES

- Adaptive and flexible space solutions
- Storing and accessing secondary materials
- Regenerative design

- Product-as-a-service or sharing
- Slowing, narrowing loops, durability
- Design for reuse, repair, remanufacturing

- Optimising reverse logistics
- Integrating multimodal transport
- Enabling access over ownership

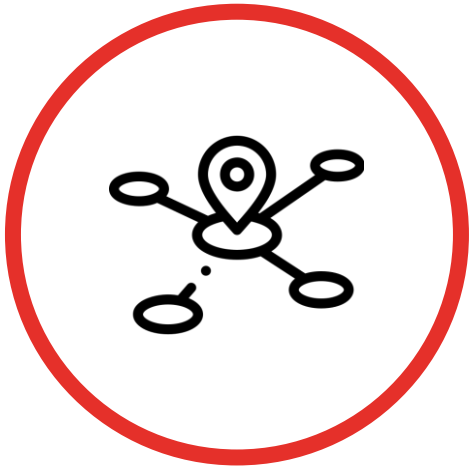
- Regenerative agriculture, local where possible
- Redesigning diets & menus
- Redistribution and recycling food waste



PRODUCTS



FOOD



MOBILITY

Circular Startup Index

A tool to help businesses, cities, investors and accelerators to discover circular solutions on the market today.

To accelerate the transition to a circular economy, circular innovators need greater exposure and support to collaborate, scale and replicate.

Search and filter through 400+ circular startups today.



Circular Startup Index

BRAND NEW!

Plastics and Packaging

Product Design

Built Environment

Food and Agriculture

Plastics and Packaging

Atomler AB

HEADQUARTERS

Sweden

STARTUP DESCRIPTION

B2B marketplace for recyclable plastic materials. Atomler's vision is that there should be no need for landfills in the world.

ACTIVE WORK AREAS

Finance

Plastics and Packaging

B-CAP

HEADQUARTERS

Belgium

STARTUP DESCRIPTION

B-CAP has developed a refillable cap solution which reduces the need for plastic use, cutting waste and emissions. Billions of plastic bottles are used every ...

ACTIVE WORK AREAS

Plastics and Packaging

B.O.B BARS OVER BOTTLES

HEADQUARTERS

Brazil

STARTUP DESCRIPTION

Our goal is to dismantle outdated paradigms deeply ingrained in the beauty industry by providing alternative options that are easily accessible to anyone. Our mission is to to ...

ACTIVE WORK AREAS

Product Design

B.Recycled

HEADQUARTERS

Brazil

STARTUP DESCRIPTION

B.Recycled is a platform that promotes free negotiation between agents who want to revalue waste as a raw material; promote the circular economy; collaborate with the ...

ACTIVE WORK AREAS

Plastics and Packaging

Back of the Yards Algae Sciences

HEADQUARTERS

United States

STARTUP DESCRIPTION

Back of the Yards Algae Sciences (BYAS) is a circular economy, industrial biotechnology company focused on zero-waste applications of algae and mushrooms in ...

ACTIVE WORK AREAS

Food and Agriculture

Bananatex

HEADQUARTERS

Switzerland

STARTUP DESCRIPTION

Made purely from the naturally grown Abacá banana plants, Bananatex® by QWSTION is a durable, technical fabric that is biodegradable and fully circular. Cultivated...

ACTIVE WORK AREAS

Fashion and Textiles

Product Design

Bandi App LTD

HEADQUARTERS

United Kingdom

Beauty Kitchen

HEADQUARTERS

United Kingdom

Beebag Sdn. Bhd.

HEADQUARTERS

Malaysia



Who are we?

We are a technological startup aligned with the SDGs 2030 in the world of energy. Our purpose is to support the transition to cleaner energy sources by providing technological solutions.

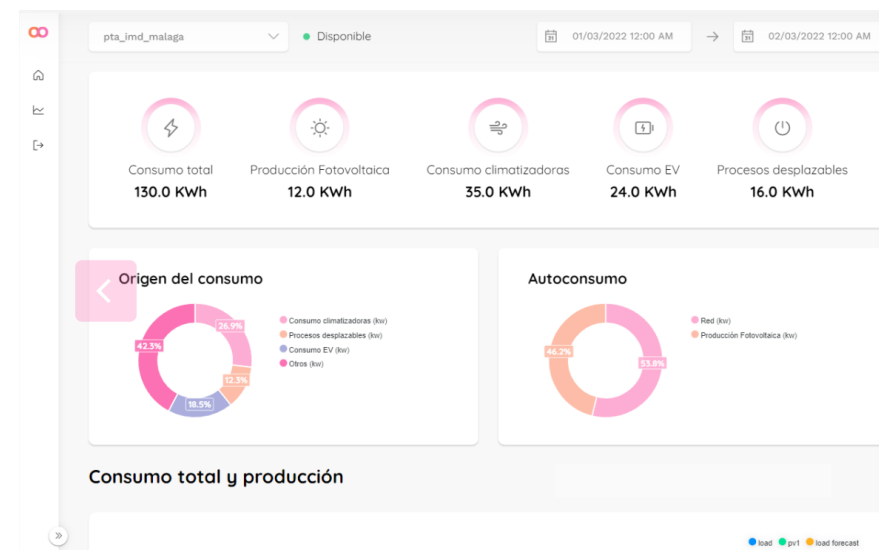
What do we offer?

Bamboo Energy offers a solution to manage the entire value chain of flexibility for retailers and aggregators, including forecasting and optimization of flexibility, day-ahead trading, and flexibility operation in real-time.

We enable consumers to actively participate in the energy system and provide ways to monetize flexibility. The developed technology includes AI that allows personalized and tailored solutions reducing operation costs.

What are we looking for?

Investors and partners for energy IoT solutions



Challenge(s) addressed

- Transition to green energy

Contact

Manel Sanmarti

contact@bambooenergy.tech

[Platform - Bamboo Energy](#)

Who are we?

KBCols Sciences, a biotech studio fueled by innovation, is at the forefront of producing **sustainable natural colors** from **renewable biomass**. The colors find applications across sectors like **textiles, printing, paints, cosmetics, personal care** etc.

What do we offer?

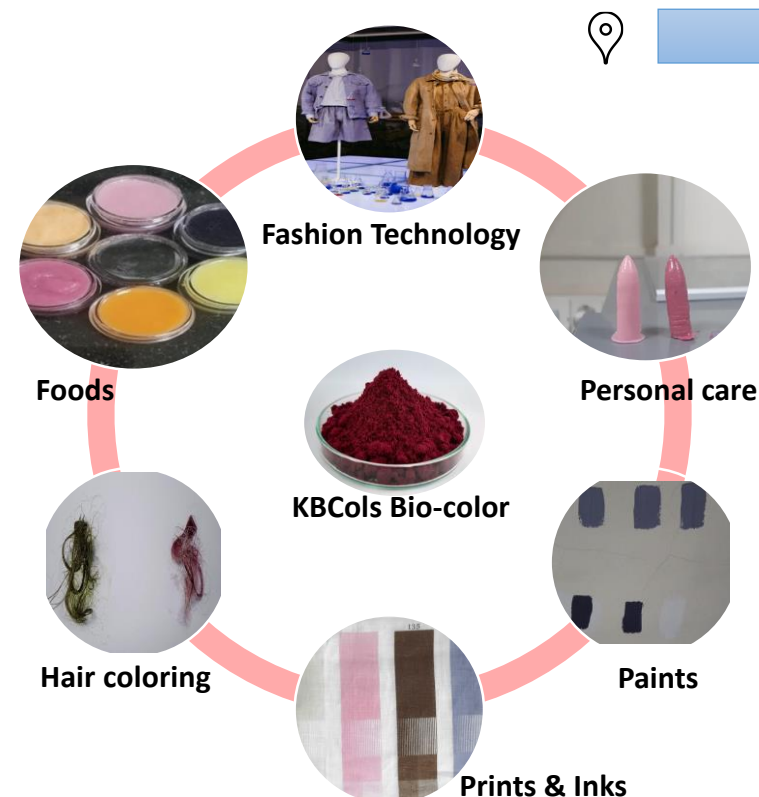
KBCols Sciences, derives all its natural colors through **low carbon footprint fermentation technology**, bringing natural colors to life:

- a) Natural & safe bio-colors
- b) High reproducibility of shade
- c) Better Fastness performance
- d) Low energy and water consumption (1/3rd reduction)
- e) No harsh chemical required

What are we looking for?

KBCols is looking for:

- a) Piloting partners (Textiles, printing/packaging, Personal care, paints etc.)
- b) Business opportunities
- c) Funding opportunities & Scaling with partners



Challenge(s) addressed:

- Built environment
- Food
- Water
- Waste

Contact

Dr. Vaishali Kulkarni
vaishali.Kulkarni@kbcollsciences.com
+91-9619646473
Web: www.kbcollsciences.com

Who are we?

Coding the Curbs is a start-up that makes spaces in cities adaptive by covering it with a digital layer. We are the first in the world to implement Smart Zones: bookable and multifunctional spaces.

What do we offer? Describe your technology

Our software and hardware platform enables companies, residents and visitors to book and use the space.

The results: more efficient logistics, digital control of the curbside and a more liveable and human centered city.

What are we looking for?

In 2023 we will be rolling out Smart Zones in Bucharest, Groningen and Riga.

We are looking for ambitious cities and innovative partners to implement Smart Zones and to create an adaptive city.



Challenge(s) addressed:

- Mobility
- Built environment
- Logistics
- Safety

Contact

Iskandar Tange

Iskandar@codingthecurbs.com

+31646159920

www.codingthecurbs.com



Who are we?

Aigües de Barcelona manages the integral water cycle in the Barcelona metropolitan area, including water supply, sewerage and wastewater treatment and reclamation. Through the public-private management model the company provides healthy drinking water to almost 3 million people and wastewater service to almost 3,4 million people.

What do we offer? Describe your technology

Nimbus project, co-funded by the EC LIFE Programme, promotes circular economy by **generating biomethane from sewage sludge and using it as a sustainable fuel for public transport**. The project fosters the concept of power-to-gas by turning renewable energy surplus into gas, which is also used in the production of biomethane.

Aigües de Barcelona biomethane production potential will be soon increased through biogas upgrading plant (500 Nm³/h). The plant is expected to be in operation in 2025, **feeding 45-55 buses of the Barcelona metropolitan area public fleet**. This will **avoid 7185 tn CO₂/yr, by reducing by 93% buses carbon emissions** as compared to conventional fuel.

What are we looking for?

Inspiring other regions with a clear example of public-private collaboration to fight climate change. Technology providers to improve the efficiency of biomethane production processes and their potential to reduce emissions.



Challenge(s) addressed:

- Mobility
- Water
- Waste

Contact

Mario Ruiz Mateo

mruizm@aiguesdebarcelona.cat

+34 689 599 450

[LIFE NIMBUS – Non-IMPact BUS:
Circular economy for sustainable
transport \(life-nimbus.eu\)](#)



Who are we?

OLIO is a sharing app for local communities, on a mission to fight waste.

What do we offer?

OLIO offers people and businesses a hassle-free way to stop wasting food and other household items.

What are we looking for?

We're looking for new partnerships to help us bring OLIO to cities around the world - empowering citizens and businesses to waste less.



Challenge(s) addressed:

- Food
- Water
- Waste

Contact

Linda Stefanutti

E: linda.stefanutti@olioex.com

T: +447843746946

We bring to light the pollution on earth nobody wants to see

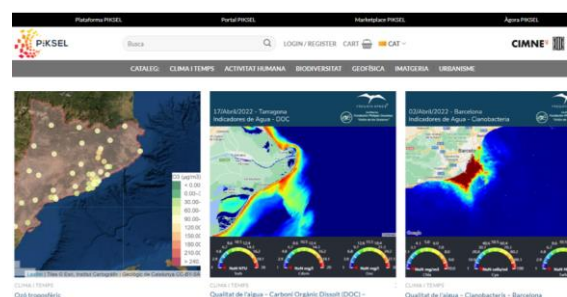
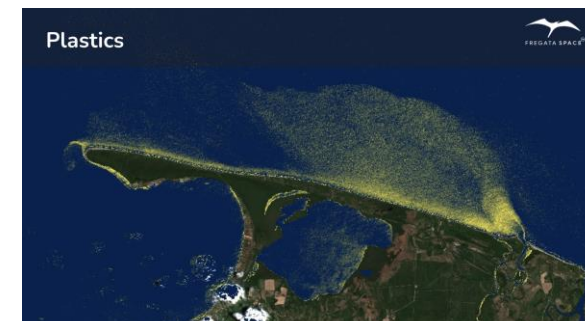
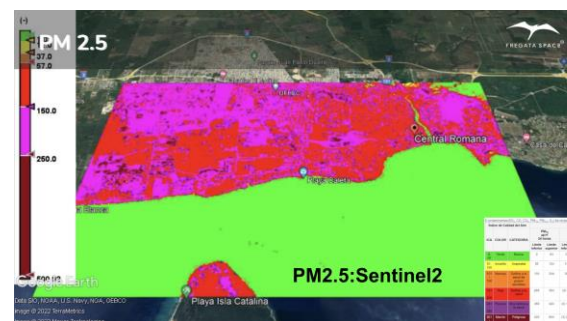
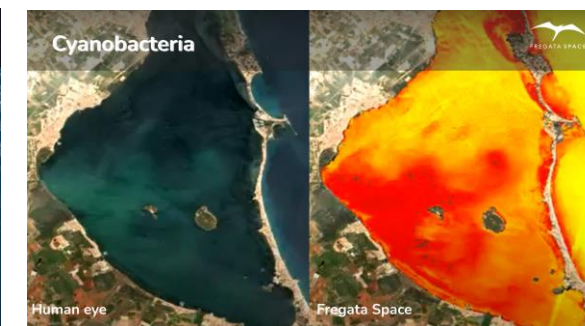
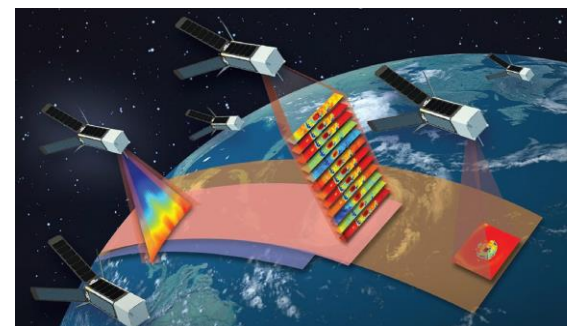
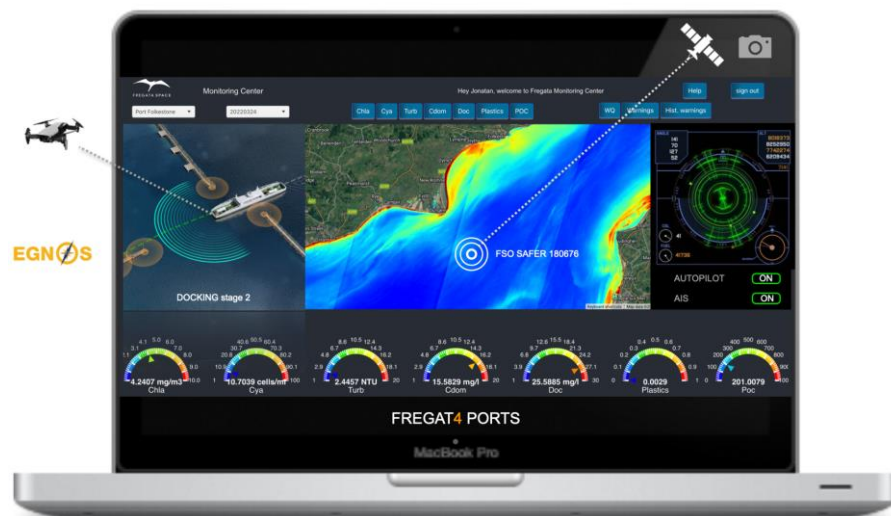


Green transition Challenges - Smart City Expo

Fregata Space is an Earth Observation Platform to discover and monitor air, water and land pollution around the world, in real time. We make use of +25 satellite observations constellations and with our Machine Learning proprietary algorithms we can calculate pollutants anywhere in the world. Fregata Space predicts events that exceed the permissible pollutants limits. We help to comply with sustainability regulations.

We are looking for clients and investors in different industrial sectors.

Contact: info@fregataspace.com





Who are we?

MangoStone developer of software and hardware solutions for the waste collection industry based in The Hague (The Netherlands).

What do we offer? Describe your technology

Our web-based software package and fill rate sensors optimise the logistics of collecting waste to save up to 50% of the kilometers driven and greenhouse gasses emitted. This process gathers important data that allows governments to build circular economies of resources.

What are we looking for?

We are looking for cities, waste collectors, and national governments that want to build circular economies by using data insights and efficient waste supply chains.



Challenge(s) addressed:

- Waste

Contact

Bas Hoogakker
bas@mangostone.nl
+31 6 40 14 76 73
www.mangostone.nl



Who are we?

LightNET is a spin-off project from the ICN2 with The Collider collaboration. Lightnet has a robust solution to sequestrate CO₂ from the atmosphere or capture it from industrial processes

What do we offer? Describe your technology

Improving natural processes, we capture CO₂ using earth abundant nanostructured materials in a quick, energy passive and cost-effective way.

- A 3m² urban surface covered by our material captures the same amount of CO₂ in 3 months, than 1 tree in one year
- Our robust material can also be used in industrial fumes

What are we looking for?

Industrial partners to:

- Set up pilot tests in urban environments or industrial facilities
- Upcycling the final material for construction or CO₂ recovery
- Validate their interest in CO₂ compensation credits

Smart Cities & Industrial applications



Absorb, certificate, and revalorize the CO₂

Challenge(s) addressed:

- Built environment

Contact

Cristina Saenz de Pipaon
co2lightnet@gmail.com



Generalitat de Catalunya
Government of Catalonia



Who are we?

Futureproofed is the leading climate tech platform for city teams. We help cities to plan and execute climate actions via a unique combination of a SaaS with a human approach.

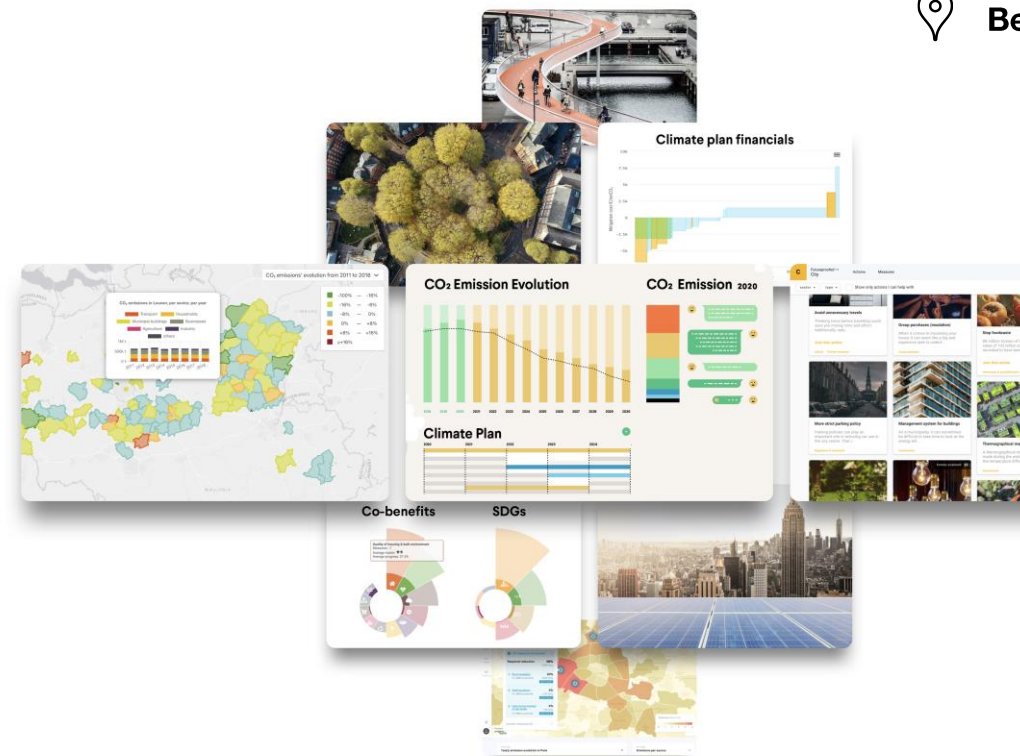
What do we offer?

An online tool coupled with expert guidance helps your city develop, collaborate on, implement and communicate climate action.

- **Measure.** Understand the challenges and opportunities. Build a scalable plan with a clear overview of reduced emissions, ROI and co-benefits.
- **Reduce.** Manage the work with peers and stakeholders. Collaborate efficiently on the implementation of concrete climate actions and follow the progress.
- **Report.** Communicate and engage with citizens. Learn from peers and easily share your progress in leading disclosure frameworks.

What are we looking for?

Potential Customers - Cities, municipalities and regions with the ambition and political will to make their territories more attractive by implementing climate actions.



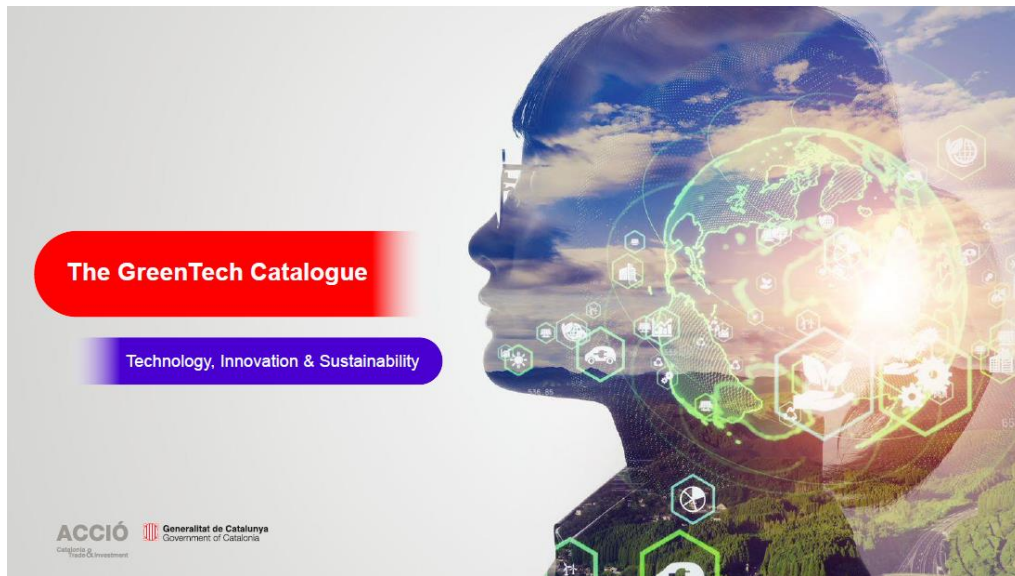
Challenge(s) addressed:)

- Mobility
- Built environment
- Food
- Water
- Waste

Contact

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www.futureproofed.com/cities

Thank you for your attention!



[ProACCIÓ Green, the green transformation for your business. ACCIÓ](#)

[Catalogue of Catalan Green Technologies](#)

Contact: green.accio@gencat.cat