Israel Challenge Entrepreneurial Mission

Climate change readiness – Mitigating the Urban Heat Island

9-10 May 2022

כפר-סבא
מאז 1903-
הראשונה בשרון

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Attenuating the Urban Heat Island

The Israel Challenge for SME4SMARTCITIES

Dr. Orli Ronen & Avigdor Sharon

Urban Innovation & Sustainability Lab

Porter School of the Environment and Earth Sciences

Tel Aviv University

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SME4SMARTCITIES

Mediterranean SMEs working together to make cities smarter

The SME4SMARTCITIES project has been conducted with the financial assistance of the European Union under the ENI CBC Mediterranean Sea Basin Programme

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Encourage the entry of Mediterranean SMEs in the smart cities market, involving cities in the co-creation of solutions to their urban challenges

| Focus on demand |

Improve Mediterranean cities, making them more efficient, intelligent and sustainable

Support technological developments

Promote internationalization of technology

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A TIME OF CHANGE

our climate is changing but so is our business and urban environment

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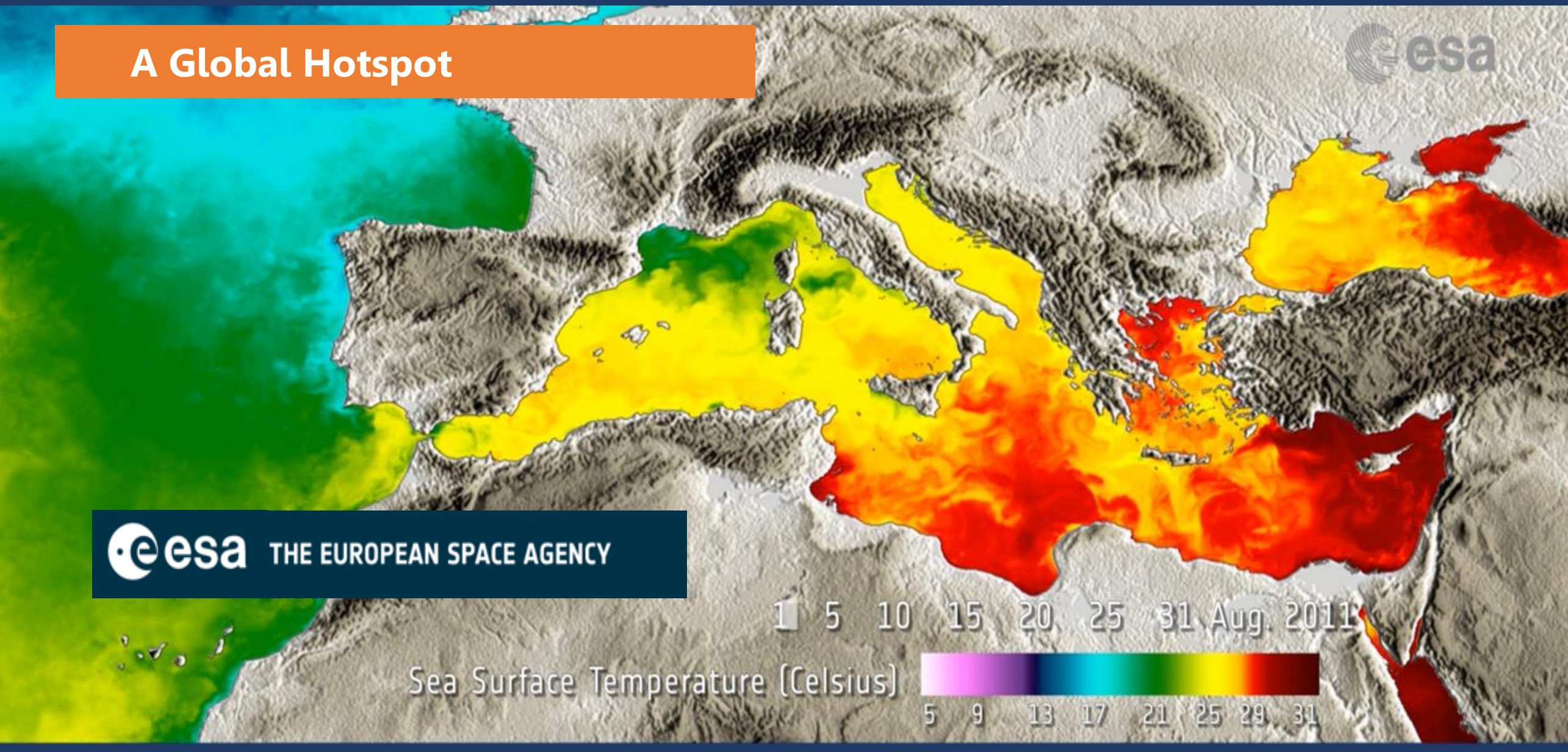
A Global Hotspot



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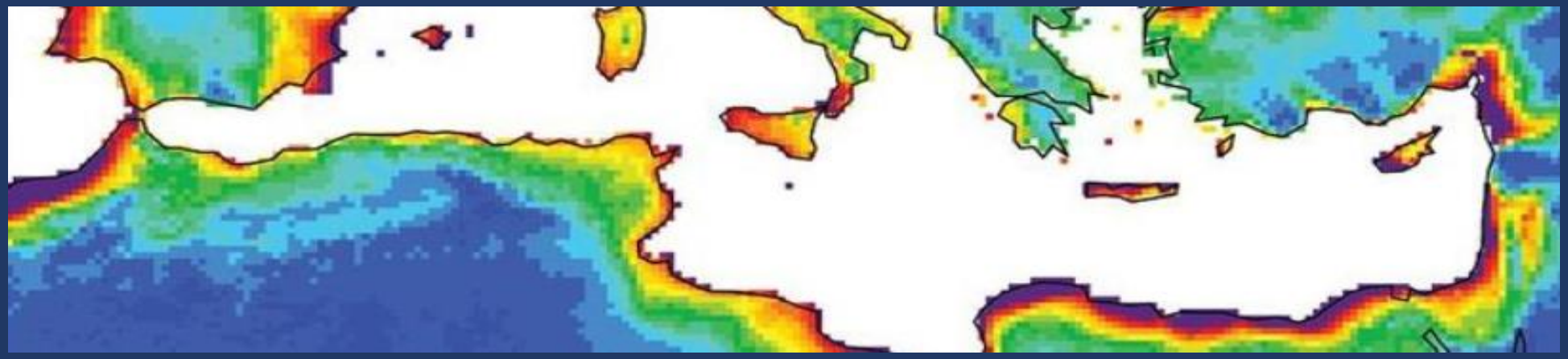
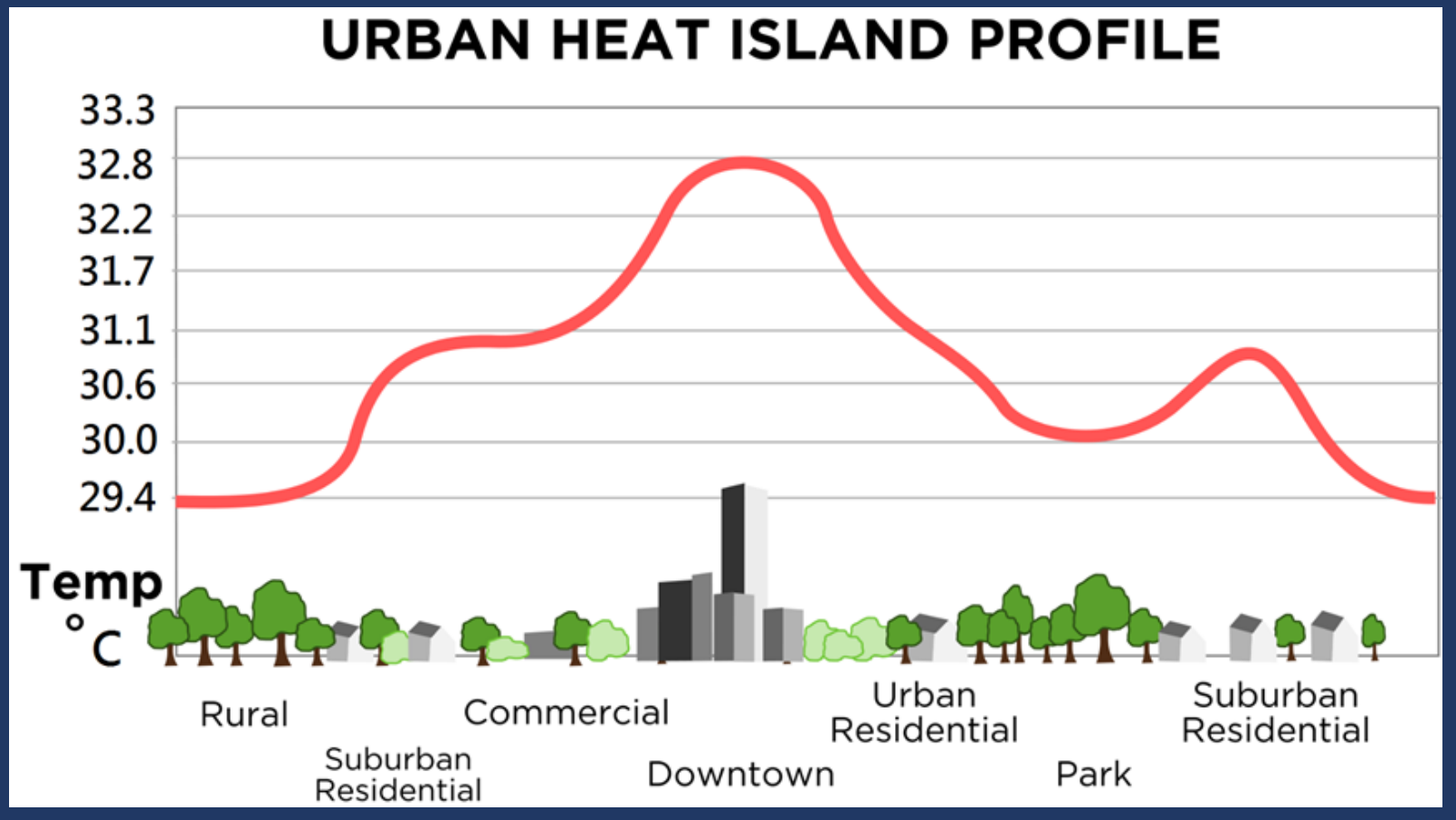


Impact on Mediterranean Cities

- The Eastern Mediterranean and North Africa are defined as one of the world's CLIMATE HOTSPOTS
- Casablanca, Tunis, and Alexandria will experience losses of more than 1 billion USD
- Temperature increase of more than 200% is predicted for the Mediterranean region
- Every dollar invested in adaptation will save 8 dollars in recovery and reparations

World Bank Report' 2011

Excess Heat is Captured within Cities - The “Urban Heat Island"



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Why is Heat Captured within Cities

The urban morphology - Streets and spaces, the urban “canyon”

Buildings - materials, placement, obstruction of natural ventilation

Heat emission - transport vehicles, air-conditioning, Industry plants

Air Pollution - Increasing the greenhouse effect

Loss of Flora and Green Spaces

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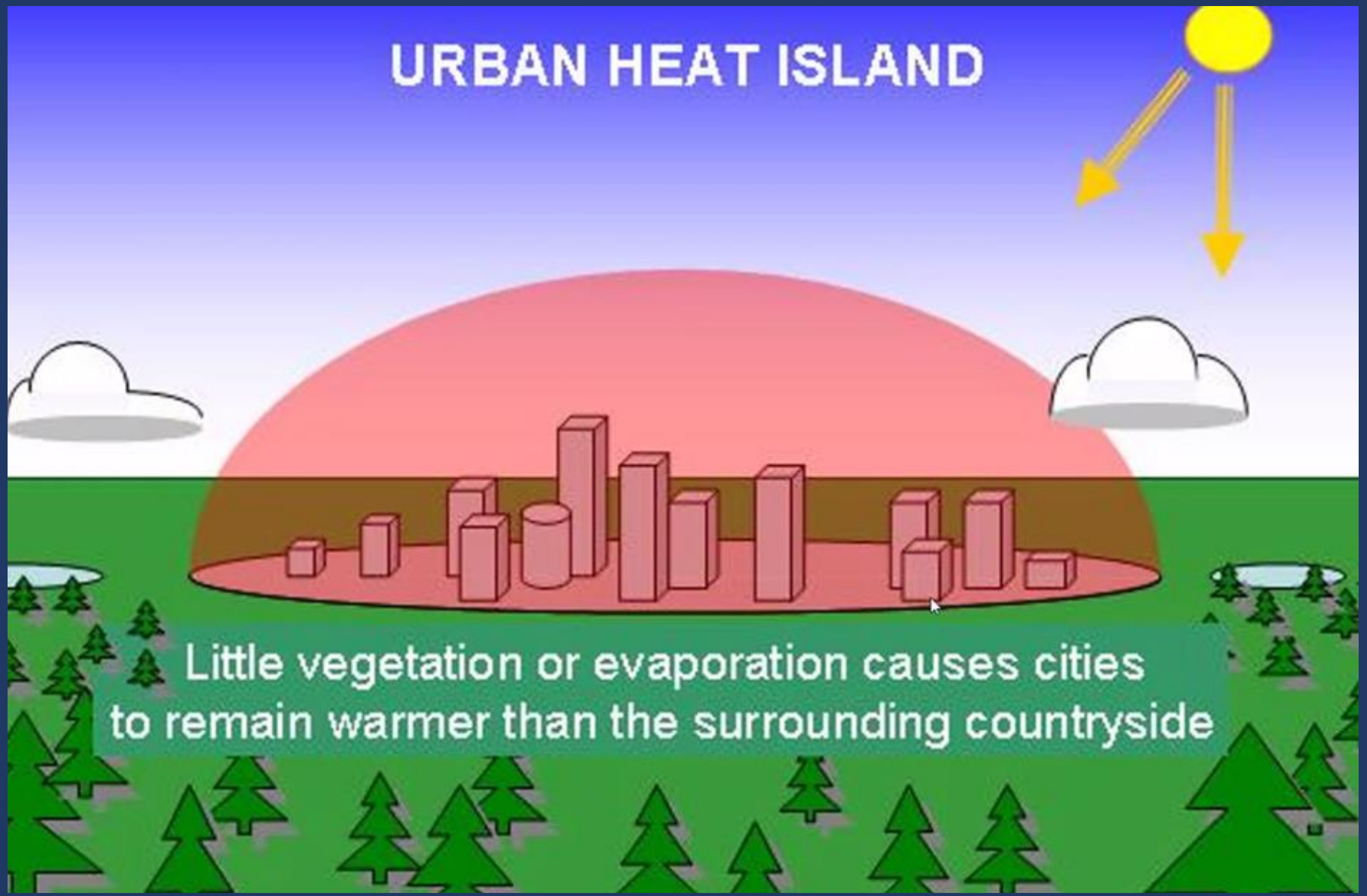

Dr. Oded Pochter

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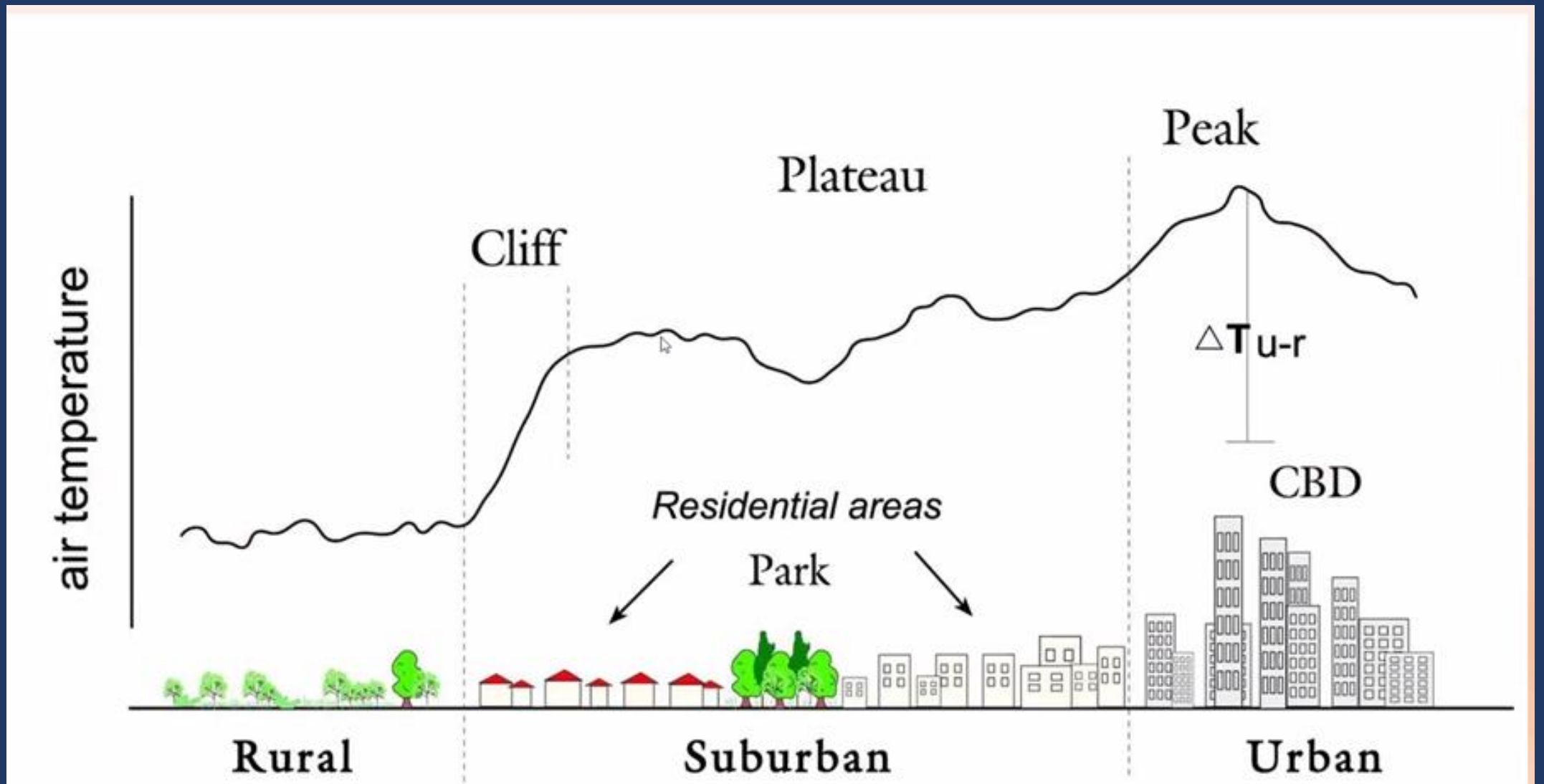
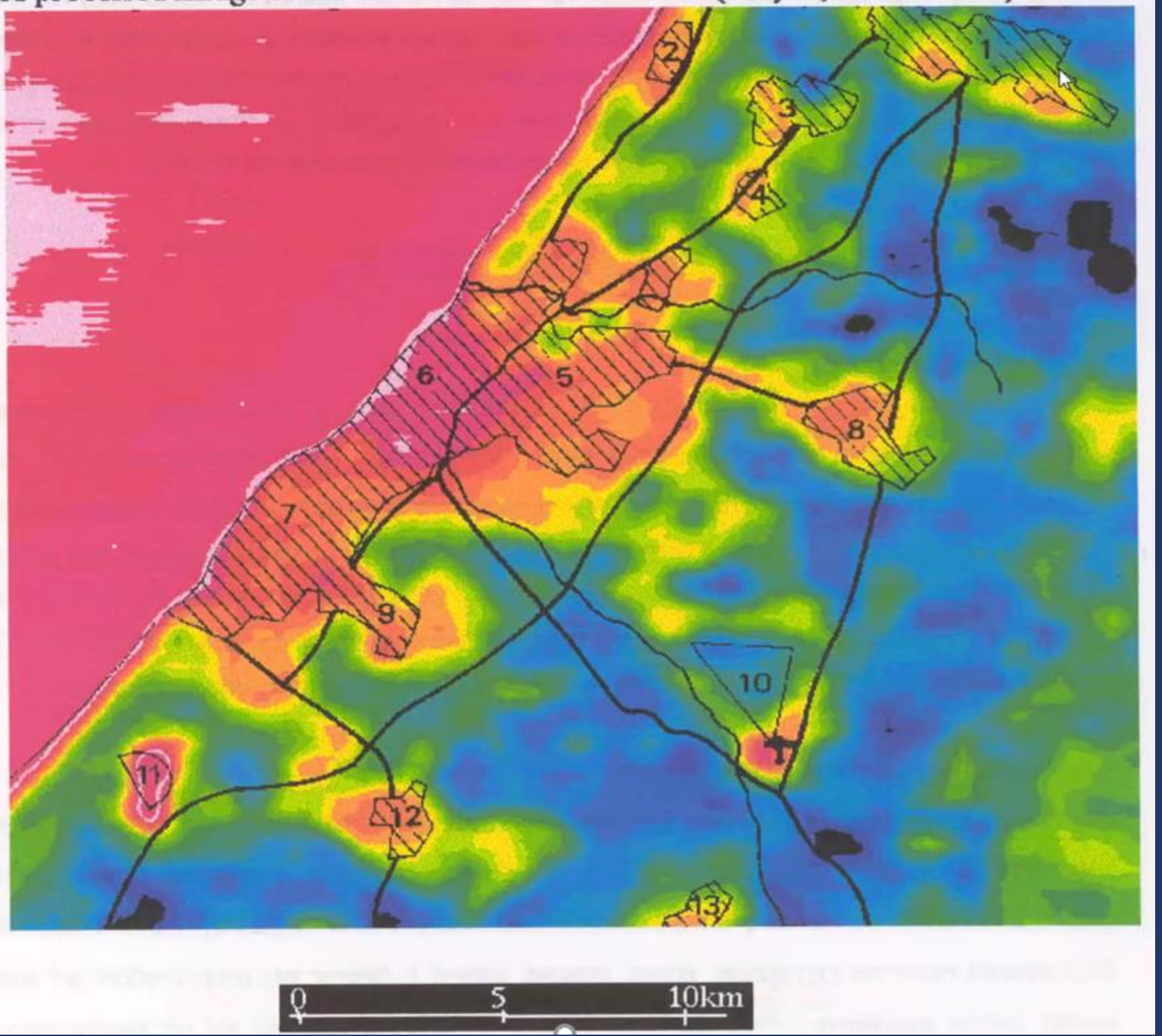

air temperature
Cliff
Plateau
Peak
ΔTu-r
CBD
Residential areas
Park
Rural
Suburban
Urban

The Urban Heat Islands of Tel–Aviv Metropolitan Area

A processed image of the TM Termal Channel (May 5, 1995 22:40)



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Givon Square - Radiating Heat

The square paving is much hotter than the people’s body heat

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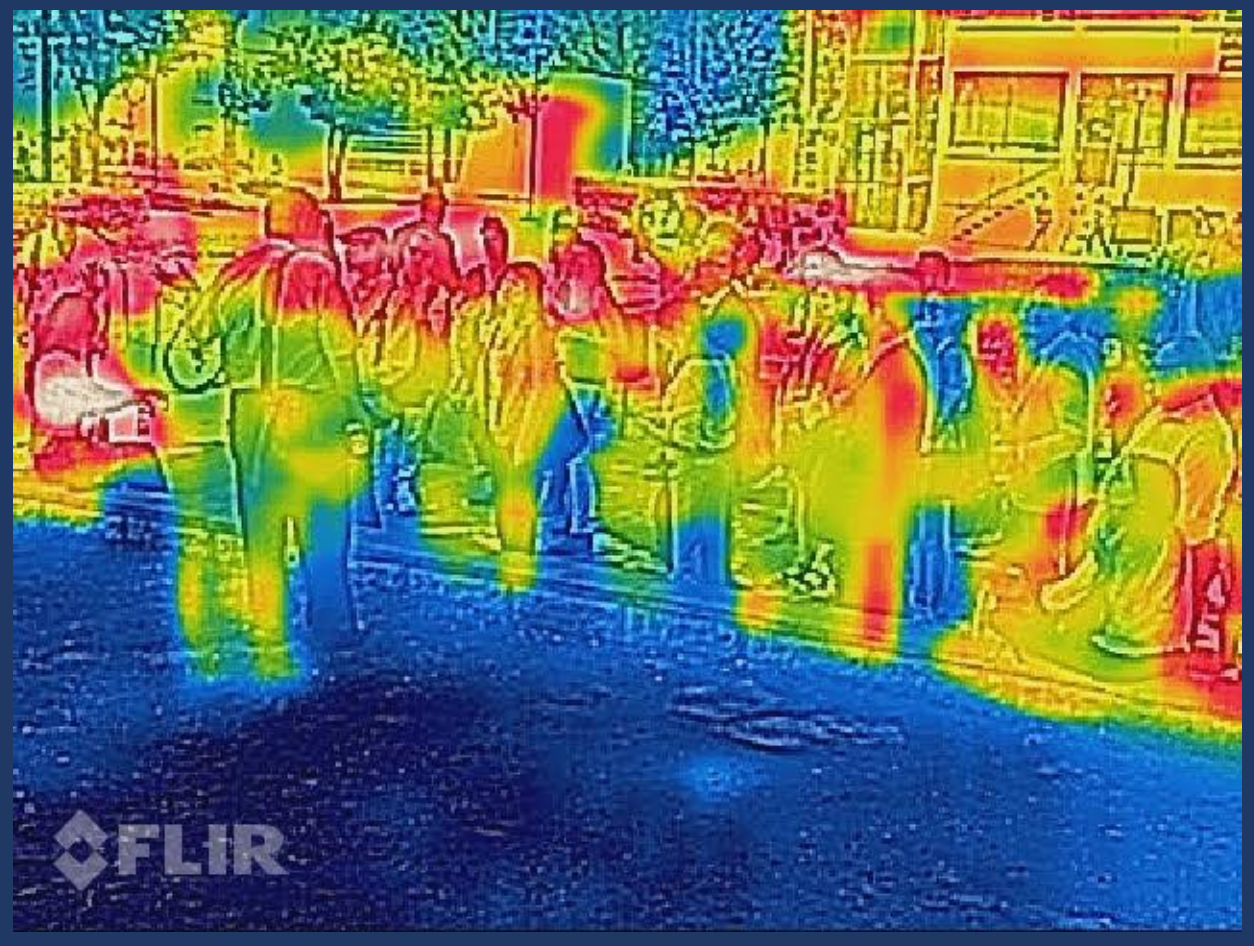
Sarona Square - Cooler Environment



The square garden under the trees is much cooler than the people’s body heat

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Initiatives are showing that change is possible

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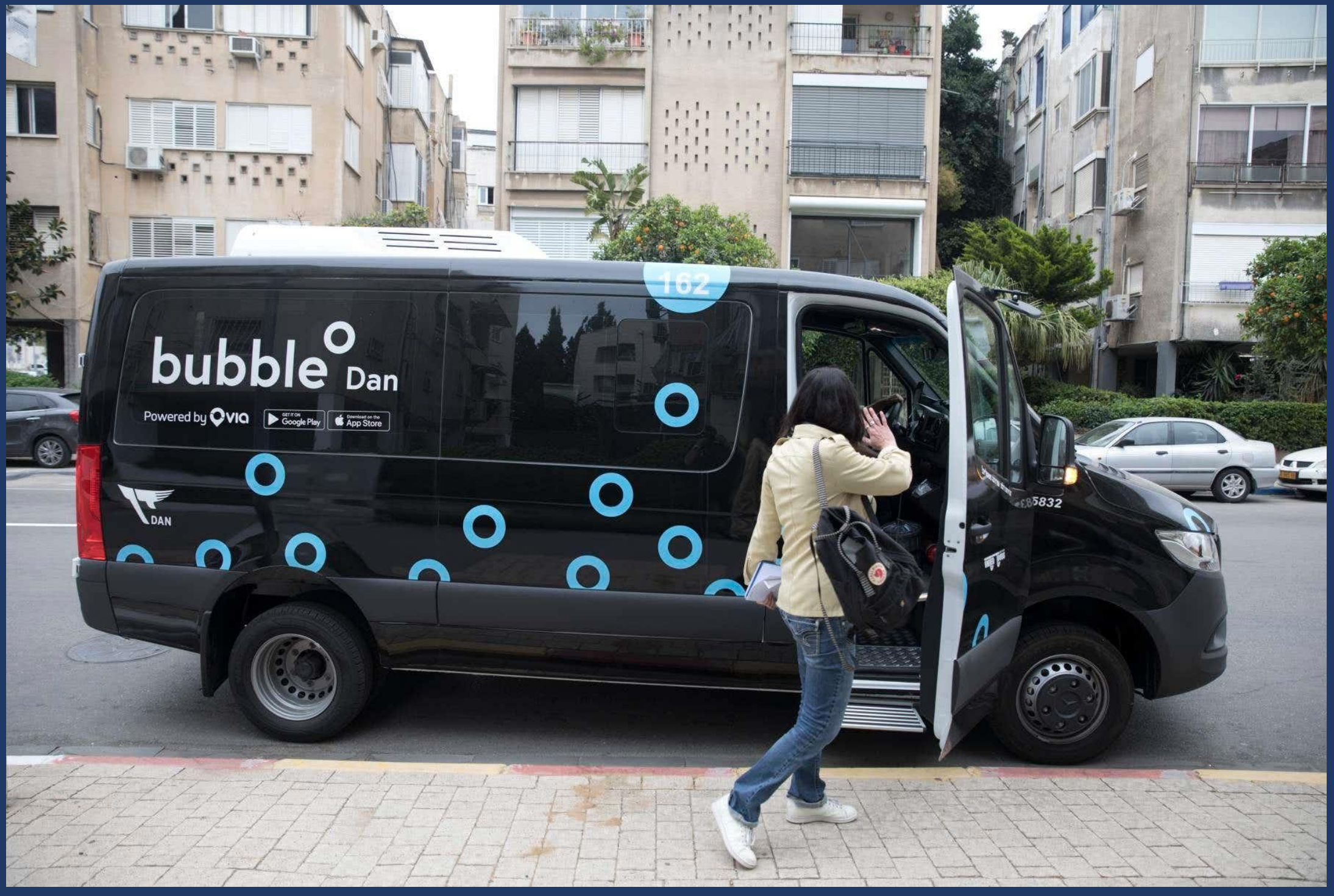

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But the heat is still rising

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SMEs drive Large Scale Sustainable Innovation

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Can you tip the balance and help reduce the heat?

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The challenge - What we Look For

Solutions and interventions that can mitigate the impact of urban elements that increase the heat island

Consequently, reduce the urban heat island effect and alleviate its impact on urban populations

Lead to reduced use of energy for artificial air-conditioning

Methods that can work together in synergy in the urban ecosystem.

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The challenge - What we Look For

Solution should be able to work in any standard building or urban space

Use standard internet or mobile communications infrastructure

Provide all the components necessary for it to be operational in the urban environment

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الوزارة لحماية البيئة
Israel Ministry of Environmental Protection

Synergy

Innovative Technologies

Leave No One Behind

Citizen Engagement - Sustainable Lifestyle

Nature Based Solutions

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Welcome to take part in the fascinating journey to implement innovative solutions for urban resilience and sustainability

https://en-environment.tau.ac.il/

www.enicbcmed.eu/projects/sme4smartcities

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Participating SMEs

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Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	BIPV Israel
Applicative Domain	Energy

Proposed Initiative Title

Zero-Energy Building

BIPV ISRAEL

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

BIPV Israel locates, plan and executes projects in the field of BIPV.

From the vision stages through the implementation of a system that produces green energy integrated to the building.

BIPV Israel is the exclusive distributor of ‘Solar Innova’ with worldwide experience

‘Solar Innova’ is a global company engaged in the solar field, developing products that produce energy, improve the behavior of the structure and protect the environment

BIPV
ISRAEL

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

BIPV- Building-Integrated PV is a construction product that integrates PV in building elements, Improved functionalities compared to conventional material- Improve water and air tightness, noise protection, shading, insulation, daylight, and comfort.

Increases the areas where solar energy is generated, and reducing distribution losses in the electricity grid.

Improves the building's behavior in energy consumption, and increases the building’s production of electricity.

BIPV can mitigate the urban heat effect and be a part of the solution to reach Israel's renewable energy target: 30% by 2030.

BIPV ISRAEL

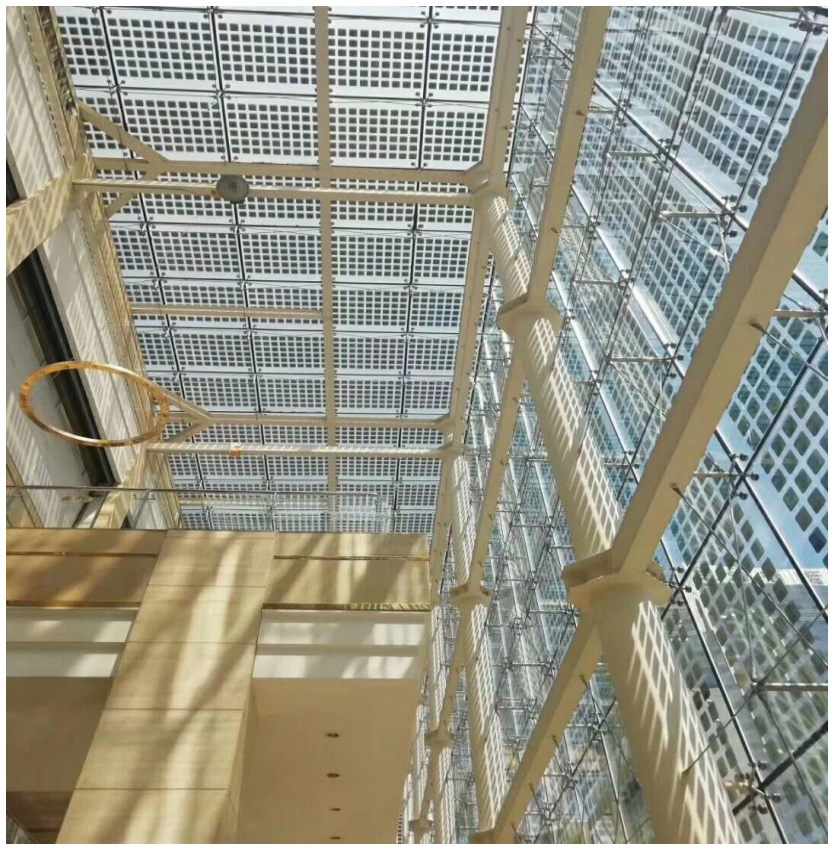
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

Companies engaged in energy production, energy storage and energy saving.

Companies in the construction and infrastructure industry.

Authorities that promote green building and zero-energy construction.



We look to embrace the sun everywhere and in any design for a better future.

BIPV
ISRAEL

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	Bleb Technology srl
Applicative Domain	IoT

Proposed Initiative Title	Co-creation for the Israel challenge

BlebTechnology

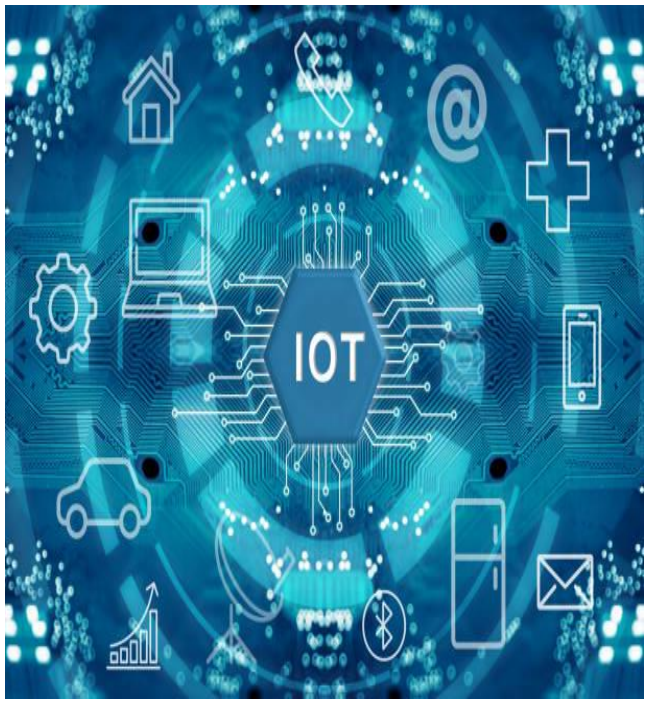
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

The market is demanding Tens of Billions of IoT devices with embedded sensors and actuators: there are many spaces for new ideas

But how to move from the initial idea to the realization of a new device?

Lack of expertise, time to market and development cost often are opportunity killers



Our Vision: “Bricks to build Ideas”

Provide a simple, fast and effective turn-key solution allowing anyone to develop new ideas, IoT Smart sensors and wearable products

Blebricks
Bricks to build your ideas

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Blebricks
Bricks to build your ideas

Instant Prototyping

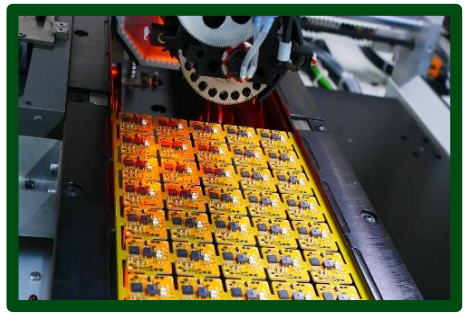
Just add the functionality you need, combine our **Blebricks** like a LEGO® to create new (IoT) devices

Try It

Use our Software Platform for an immediate validation (PoC)

Produce It

Take our «Fast Route to Production» to seamlessly get your own finished products



Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

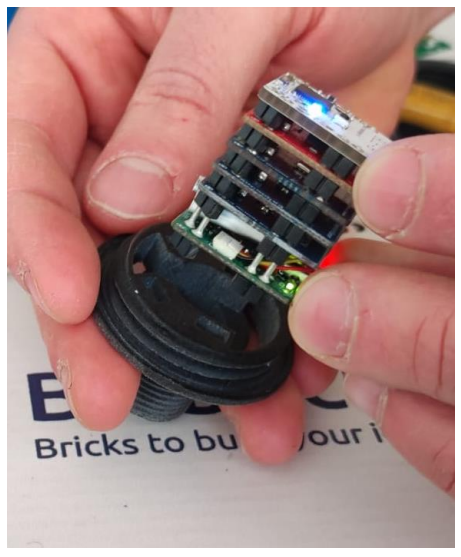
Company Profile

Instant Prototyping to Build custom IoT devices

Battery operating IoT environmental sensor

i.e. set of Blebricks to measure Temperature, pressure, RH%, VOCs, O3, NH2, OAQ (EPA std)

Expert Blebricks



+ bottom housing

+ Top Housing

= IoT Environmental sensor

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

Participate as a co-applicant with technologies that aim to monitor the effect of urban heat islands

Provide specific sensors to monitor and evaluate improvement in environmental parameters that in addition to measuring local temperatures and humidity levels could also include:

- Solar radiation sensors and wind speedometers to monitor buildings
- Energy absorption sensors to monitor equipment
- Pollution sensors to monitor transportation
- CO2 emissions and leaf moisture to monitor green infrastructure)

BlebTechnology

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	**California Innovation Group**
Applicative Domain	**Air Quality Control and Pedestrian Safety**
Proposed Initiative Title	**Adapting and Improving City environments threatened by Climate Change**

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

WE SAVE LIVES

California Innovation Group (C.I.G) is a company formed to use the power of smart innovation and technology to help solve global and national challenges connected to environmental ,health , safety and all aspects of the wellbeing of citizens.

Using collaborative information, multi disciplinary advanced technology, ideas and a passion to make our world a safer and healthier place, we identify a problem and look for a solution.

We have worked with electric mobility, pedestrian safety and clean air.

Our goal is to combine as many important facets of smart innovation to efficiently and quickly render our planet and our communities healthier, safer, more peaceful and overall better places to live for ourselves and future generations.

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Type of Technologies or Services

Knowledge is power

1. **AIR MONITOR EQUIPMENT.**
   A Smart Innovative technology to measure and provide real time updates on Air Quality.
   We can measure up to six different kinds of toxic gases for humans, particles, noise, humidity, wind speed and direction.
With wireless communication using the global mobile network and a choice of power options.
The monitor can be installed where it is required.
This monitor is ideal for smart cities, Schools, Health & Safety, Traffic Management, Transport Hubs.
Understanding and reversing negative effects of Climate Change.

2. **SMART CROSSWALK.**

Based on a model used in California, USA that incorporates technology and sustainability to create a radical difference in safety, congestion and ultimately in environmental concerns.

3. APP.
An application designed to work in conjunction with the first two items to bring in real time information about safety and accidents and air issues as well as traffic ones to citizens and law enforcements and communities.

SOLUTIONS

We create a safe environment that invites and encourages the people to walk, to exercise and enjoy their surroundings in peace.

Using our three tier technologies we specifically improve the air citizens breath, the streets citizens use and inform them on what is happening in their communities to render their lives overall better.

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

To improve our proposal we need

1. More specific knowledge of the community we are working with.

1. Assistance in tailoring and dispersing the application (APP-AI) to maximize its potential.

1. Funding.

1. Luck.

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	CTHal
Applicative Domain	Smart Cities

Proposed Initiative Title

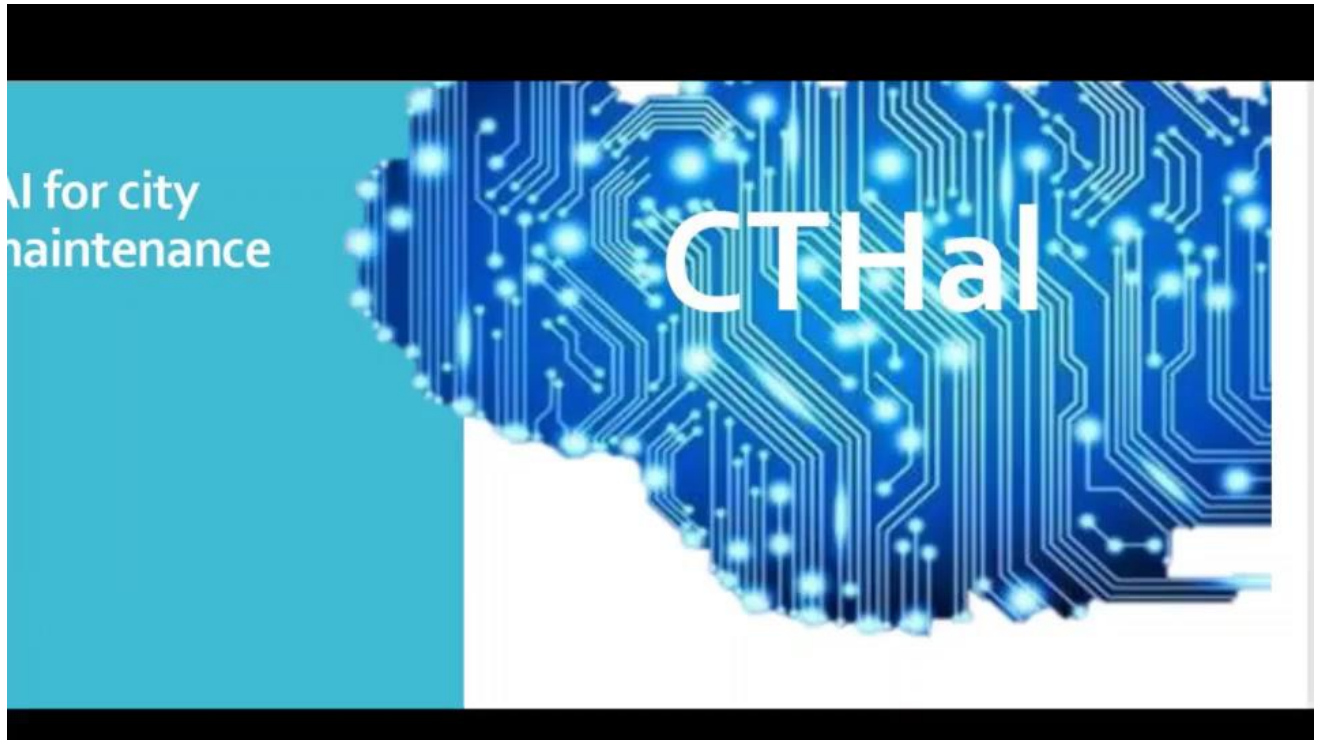
Artificial Intelligence for Intelligent cities

CTHal

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

CTHal provides innovative AI-powered roadside hazards detection systems to municipalities, allowing them to automatically detect and monitor hazards (such as waste piles, green waste, clogged drains, and illegal parking) within the municipal area with minimal human involvement



CTHal

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

- Sophisticate AI system for hazards detection and monitoring.
- Automatic reporting system, designed to work with the municipal existing CRM system.
- Smart camera designed to be mounted on vehicles.

CTHaI

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Climate Change - The Urban Heat Island

What we look for in co-creation

Next Steps

- Expand to new markets
- Production level hardware
- Improve our AI model according to customers needs
- Fund raising

CTHaI

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:

GISETT

Applicative Domain

Spatial Urban Analytics

Proposed Initiative Title

Green, location-specific solutions for Urban Heat Island (UHI)

GISETT

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

GISETT's mission is to enable everyone to make smart decisions on location selection taking into account multiple considerations.

Location is a key factor that impacts the success of important decisions regarding planning and mitigating urban environmental problems as well as property development, marketing efforts, business establishment and expansion, logistics, security and more. However, factors affecting a location quality are numerous, dynamic and might change drastically over time, and between individuals, business and organizations. Currently there is no quick-n'-easy, data-driven analysis to evaluate location quality.

The founders have many years of academic and professional experience in analyzing spatial data in the field of urbanism and planning. They have developed ways to analyze spatial data of various sources, types, and themes via a quick procedure that utilizes an easy, comprehensible interface requiring no previous training.

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Type of Technologies or Services

Our Technology: **GISETT developed a groundbreaking technology that process all geo-data types producing sound and highly precise insights on location suitability.**

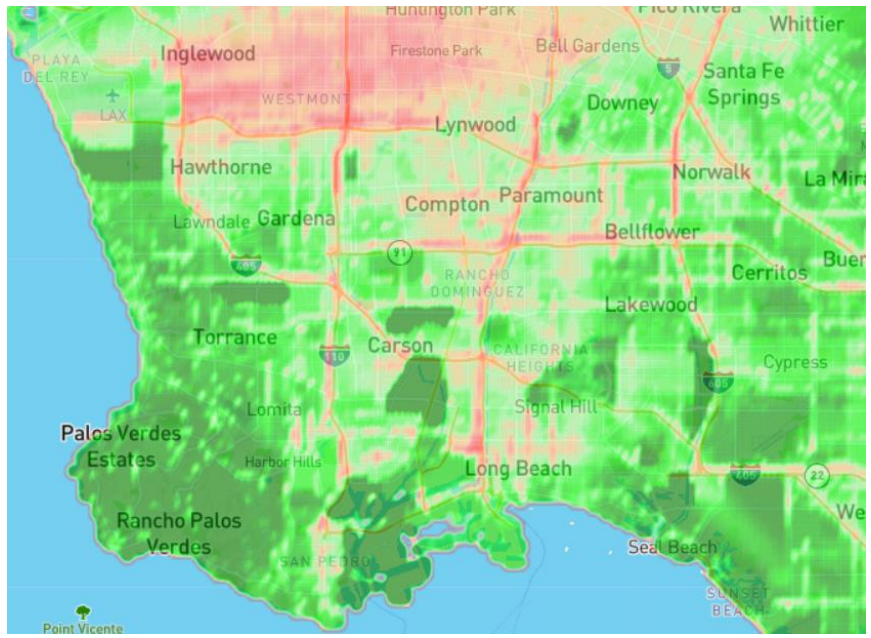
Our Spatial Thematic-Morphologic Analysis (STMA™) technology is sensitive to both geometric intersection between different geospatial datasets ("layers") and to the thematic data (attributes) stored in those datasets.

This unique ability enables our technology to trace target areas that share a combination of attributes from numerous different geospatial datasets in high precision.

Our Solution: **Multi Sectorial Spatial DATA - driven decision - support system!**

Our algorithm has the following virtues:

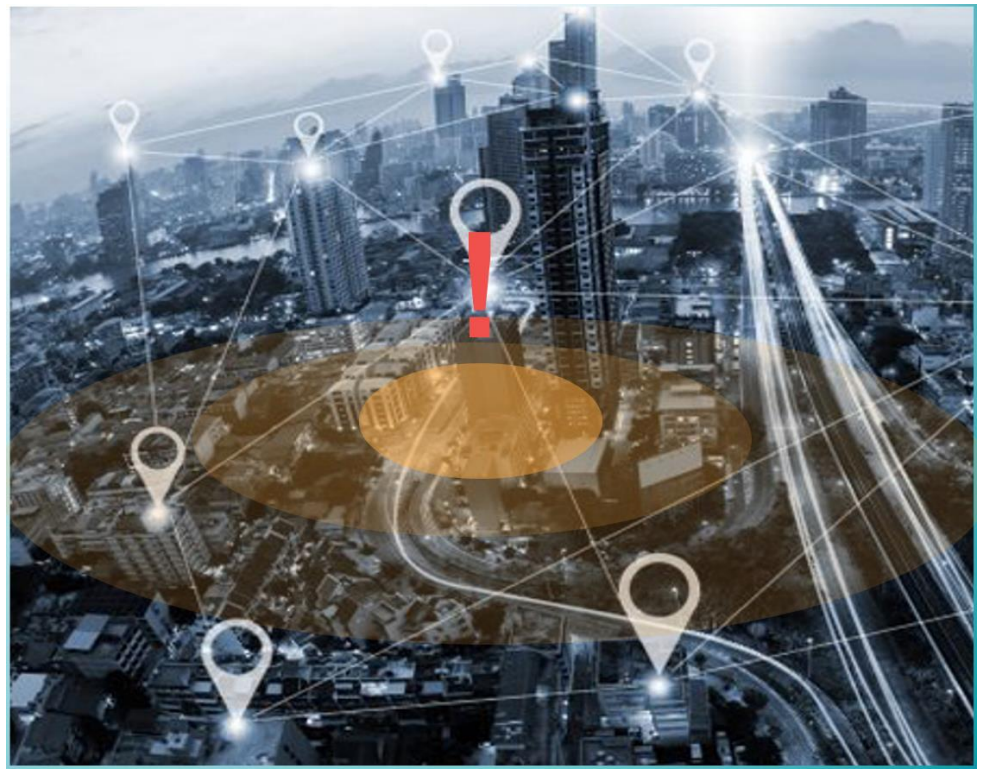
- V **Produces accurate results (can pinpoint on a map selected areas and up to a single structure).**
- V **Use any type of spatial data: qualitative, quantitative, raster, vector etc.**
- V **Quick operation, with low computing demands.**
- V **Easy to use : can be operated by anyone; no previous training is required.**



Heat map of location match: morbidity (health) and noise levels) in LA

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation



GISETT has a unique technology for answering the WHERE question – we can assess spatial distribution of multifaceted problems (analyzing multiple parameters on the same map frame – for locating "target areas") , and offer mitigation means tailored to location characteristic, pinpointing on the right solutions for different parts of the metro/city level PRECISELY up to the single building level.

We are looking for collaborations with companies offering solutions for the heat island, climate change and other severe problems municipalities are facing that will help us to accelerate value. We can point on the right whereabouts of the solutions of our partners.

We are striving to provide a complete solution for municipalities. Hance will be happy to cooperate with companies that offer appropriate solutions to those problems. We can help you to focus your solution to more effective locations therefore improving your offer as well.

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	Haruspex
Applicative Domain	Cybersecurity
Proposed Initiative Title	Smart cities cybersecurity

Haruspex
Predicting & Neutralizing Cyber Attacks

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

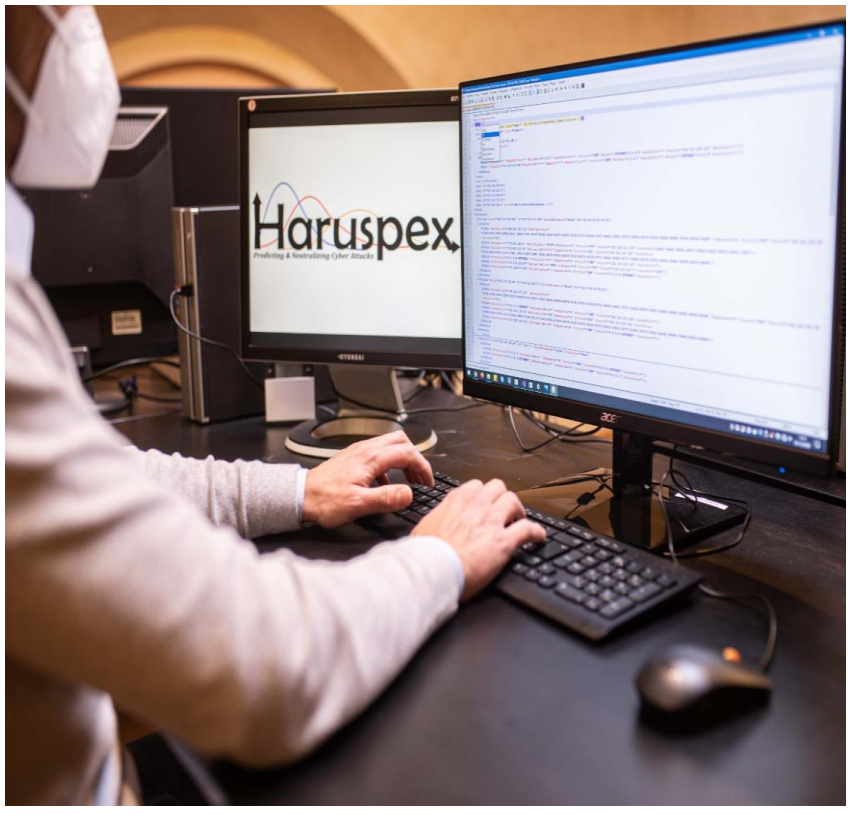
- Established in 2016, after more than 10 years of R&D
- IP-filed own technological solution, able to define the minimum set of countermeasures to neutralize all the attack paths.
- **TECHNOLOGY**: Several technological awards from **Italian Ministry of Defense**, **IBM** (Worldwide award), **NATO** (Cyber War Games)
- **CUSTOMERS**: Among our customers are some of the most important Italian companies, such as the **Italian Presidency of Ministry**, **Fincantieri**, the **Italian Navy**, **Snam**, **Terna**, **Leonardo**.
- Around **1M€ in revenues**, profitable since year-0.
- **12 employees**

Haruspex
Predicting & Neutralizing Cyber Attacks

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

- Haruspex **Digital Twin**:
  - we create a copy of the topology of the target infrastructure and a digital twin of the attackers
  - we then run hundreds of thousands of simulations
  - Therefore we define the minimum set of countermeasure to completely neutralize the cyber risks.
- The solution is **perfect to secure any smart city tool and infrastructure** from potential malevolent intruders.



Haruspex
Predicting & Neutralizing Cyber Attacks

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

- **Partnership** with smart city tools providers
- **Funding** to develop the project

Haruspex
Predicting & Neutralizing Cyber Attacks

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	**HOP UBIQUITOUS S.L. (HOPU)**
Applicative Domain	www.hopu.eu/
Proposed Initiative Title	Urban Heat Islands

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Mission

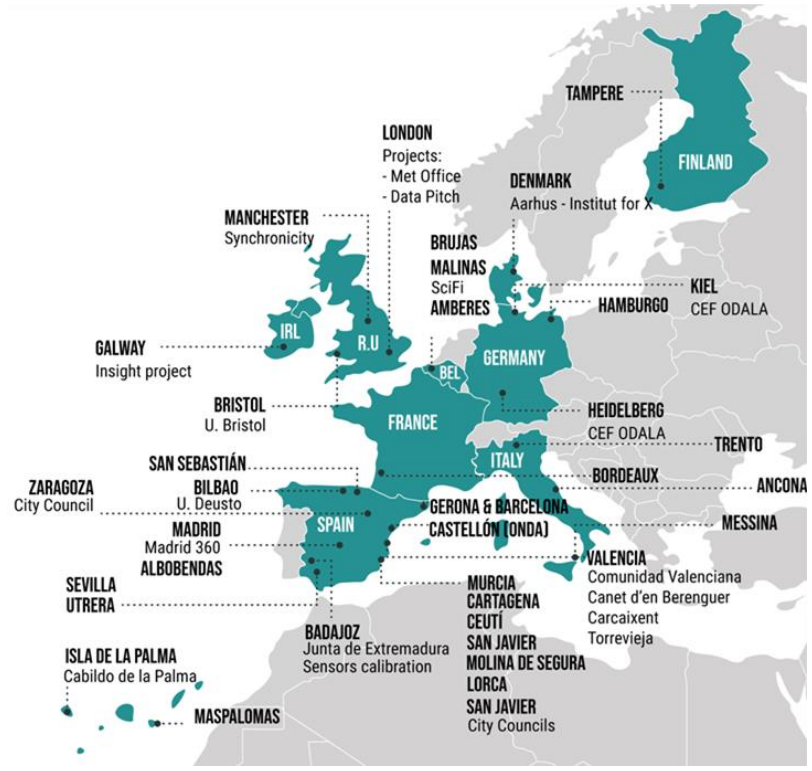
Empowering with contextual intelligence to support smart cities development

Vision

We develop people-oriented products (HOP - Human Oriented Product)

Acknowledgements

- IEEE chair of Data Quality Standard (P2510)
- FIWARE Foundation co-chair Smart Cities chapter
- ETSI NGSI data economy with ethics (data spaces)
- IPSO Alliance Award (Sponsored by Google)
- MIT Best Smart City Demonstration Award
- Urban innovation award by Le Monde 2020
- EIT Urban Mobility Scale-up GoGlobal 2020
- GovTech scale-up 2021 IE Business School
- Catalyst Award 2019 Green Electronic Council
- Solar Impulse Foundation 100 solutions

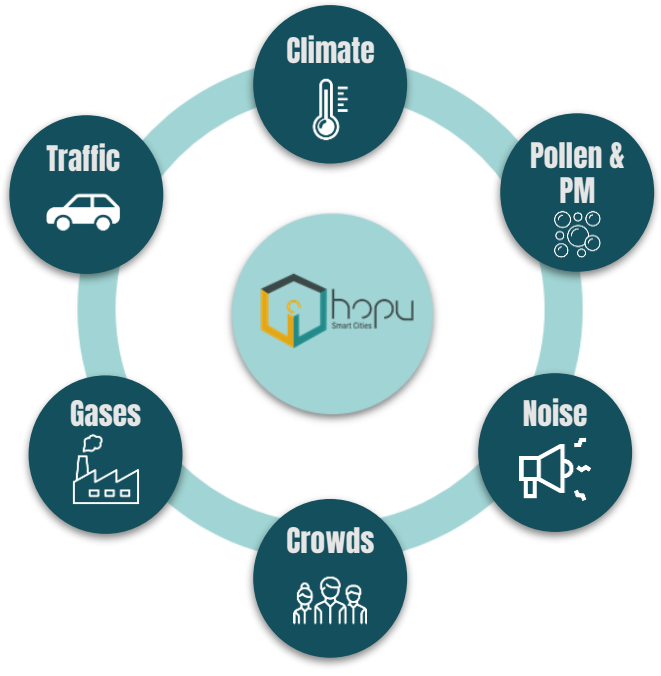


Associated with:

U4SSC · OMA Open Mobile Alliance · OASC Open & Agile Smart Cities · enisa · Data Market Services · ITU International Telecommunication Union · IEEE · FIWARE Foundation · ETSI · AIOTI · LoRa · eit Climate-KIC

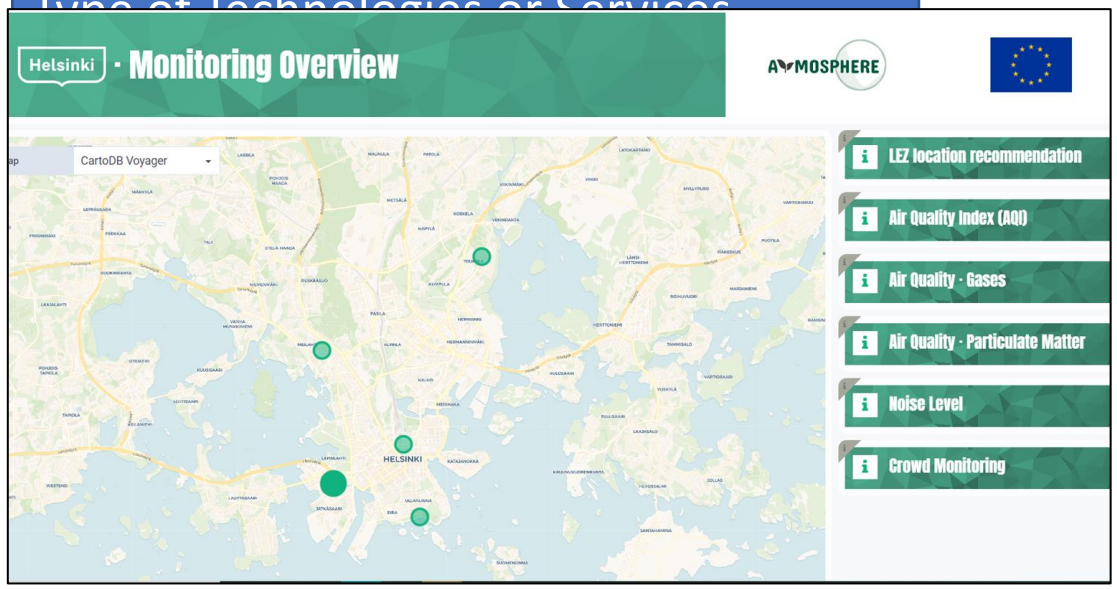
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

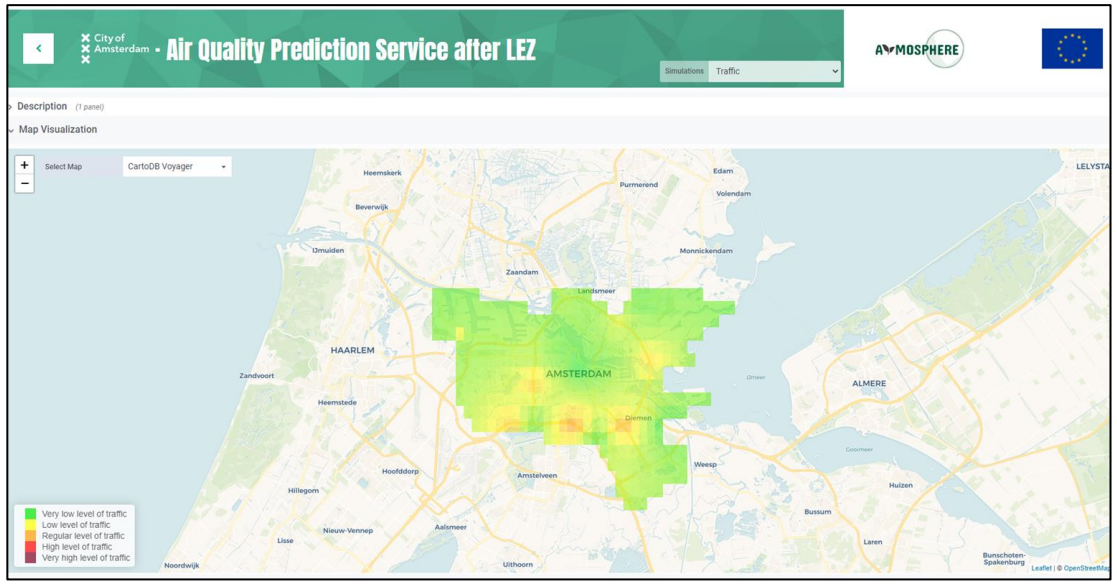
Type of Technologies or Services

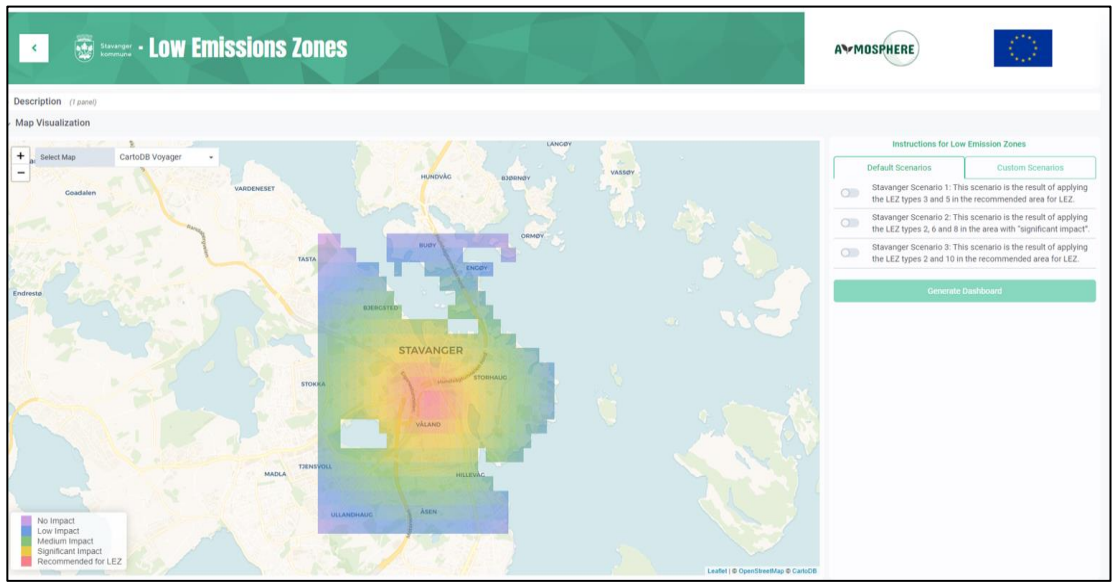


Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Type of Technologies or Services

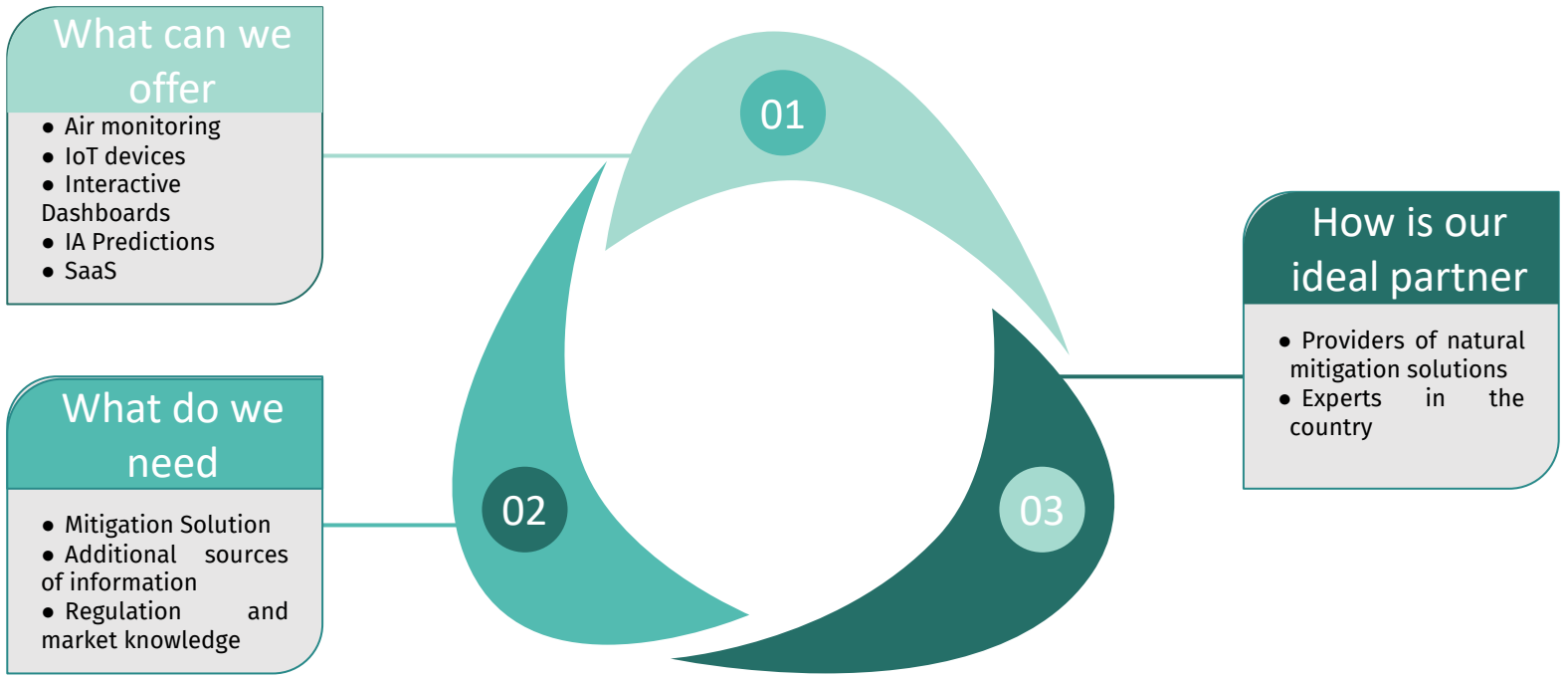






Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation



Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	Ilanot
Applicative Domain	Facebook Page

Proposed Initiative Title	Adam Tree Care Application

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

“Ilanot” was established in 2015 when its main business focus is on the urban forest, with Shaul Levi as the CEO & Founder.

Shaul is an urban forester - tree specialist and an arborist certified by the ministry of agriculture since 2019, working for the past 7 years with a wide range of trees and preforming a professional tree services in an urban environment.

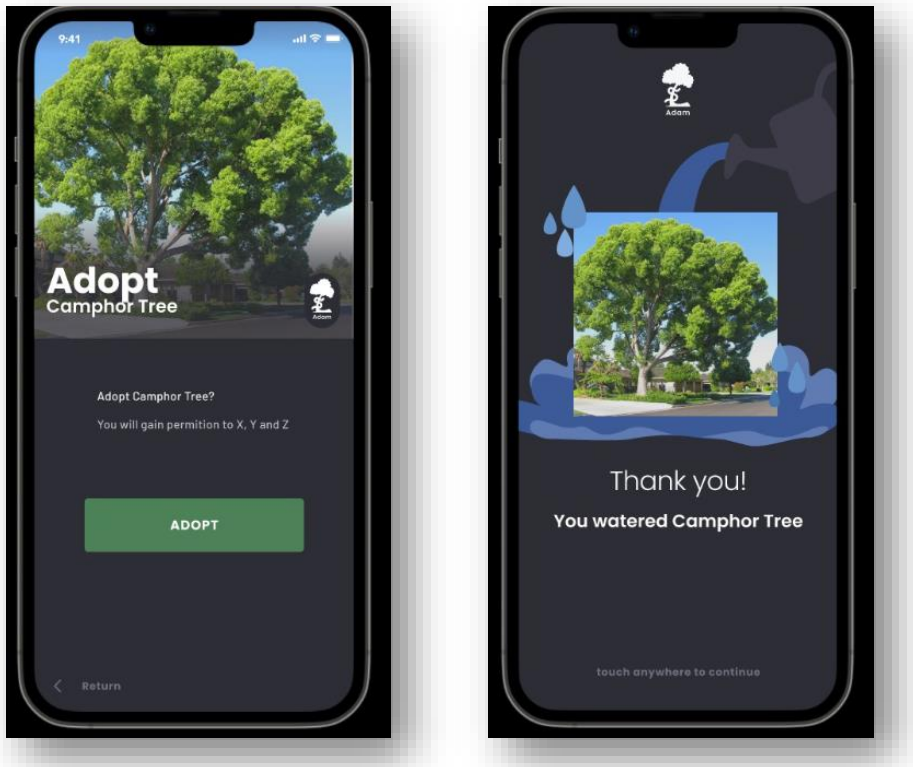
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Adam app aims to solve problems existing today of poor documentation and tree-care follow up. By embedding Adam, cities will have a strong ability to barricade the heat island effect and could reduce the environment temperature by 4-5 degrees.

For the greater good we need to create a partnership between cities and their communities.

Adam will create a new standard for the city forest on how we must take care of our trees and will help creating a better tomorrow.

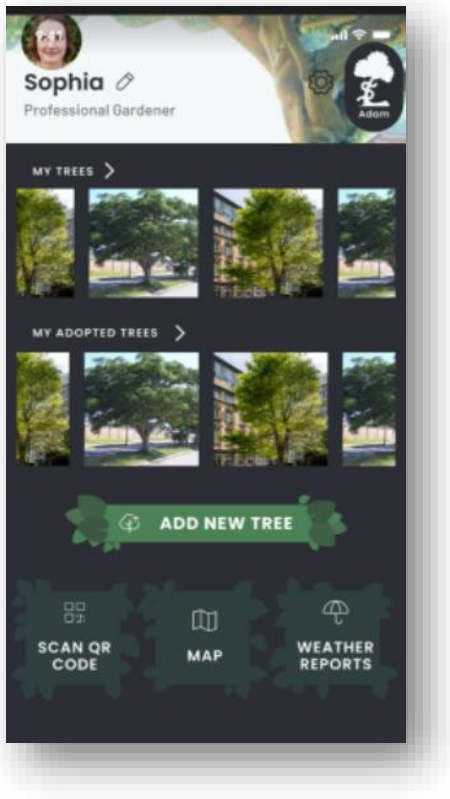


Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

We look for partners that can share experience and knowledge on:

- Connections to city officials to embed the system
- Business Development partners
- Marketing and media partners



Adam

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	Intellicon
Applicative Domain	Traffic intelligence & management
Proposed Initiative Title	TIM

Intellicon
INTELLIGENT TRAFFIC CONTROL

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Intellicon is engaged in smart transportation sector focusing on traffic intelligence and smart traffic signals

Intellicon
INTELLIGENT TRAFFIC CONTROL

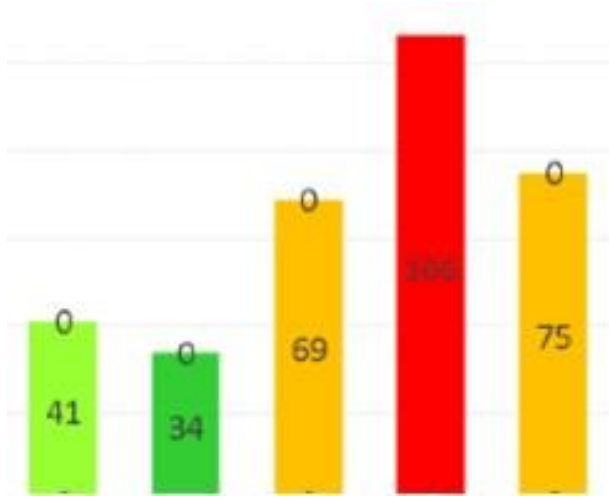
We developed an innovative traffic intelligence system based on crowdsourcing Bluetooth signals from all road users

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Type of Technologies or Services

Our ‘Analytix’ traffic intelligence system crowdsources Bluetooth signals from all road users and generates abundant traffic intelligence on all road users.

X-Sim simulation tool helps to optimize traffic signals and reduce waiting times at signalized intersections.



Intellicon
INTELLIGENT TRAFFIC CONTROL

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

We look for complementary technologies that can benefit from our traffic intelligence system and vice versa.

Intellicon
INTELLIGENT TRAFFIC CONTROL

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:

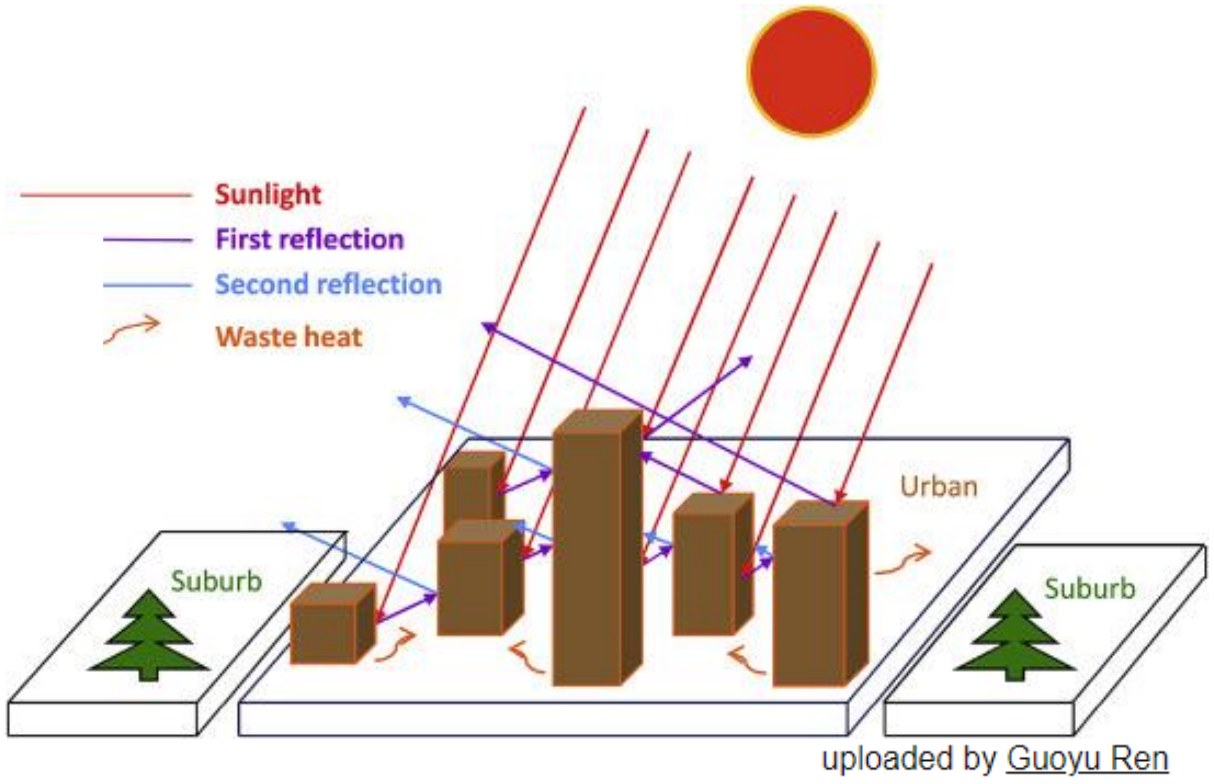
Keren Energy

Applicative Domain

Capacity Building & Awareness Raising

Proposed Initiative Title

Heat the City



Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Keren Energy privet SME –working on the energy savings and climate adaptation topic for 30 years

we are working a holistic approach for SEACAP Sustainable Energy Access and Climate Adaptation Plan.

The real game changer is the public awareness and participation. With our tools and knowhow, the citizen's will find the right way for better, sustainable, and economic life.

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Cities are hot — much **hotter** than their surroundings due to a phenomenon known as the Urban Heat Island effect. Roads, buildings, and sidewalks tend to be much hotter. With demonstration, games and gamification tools we are planning to **"Heat the street".** For a month - we will open a CITY LAB - check any option to **cool** the city for Capacity Building & citizen's Awareness.

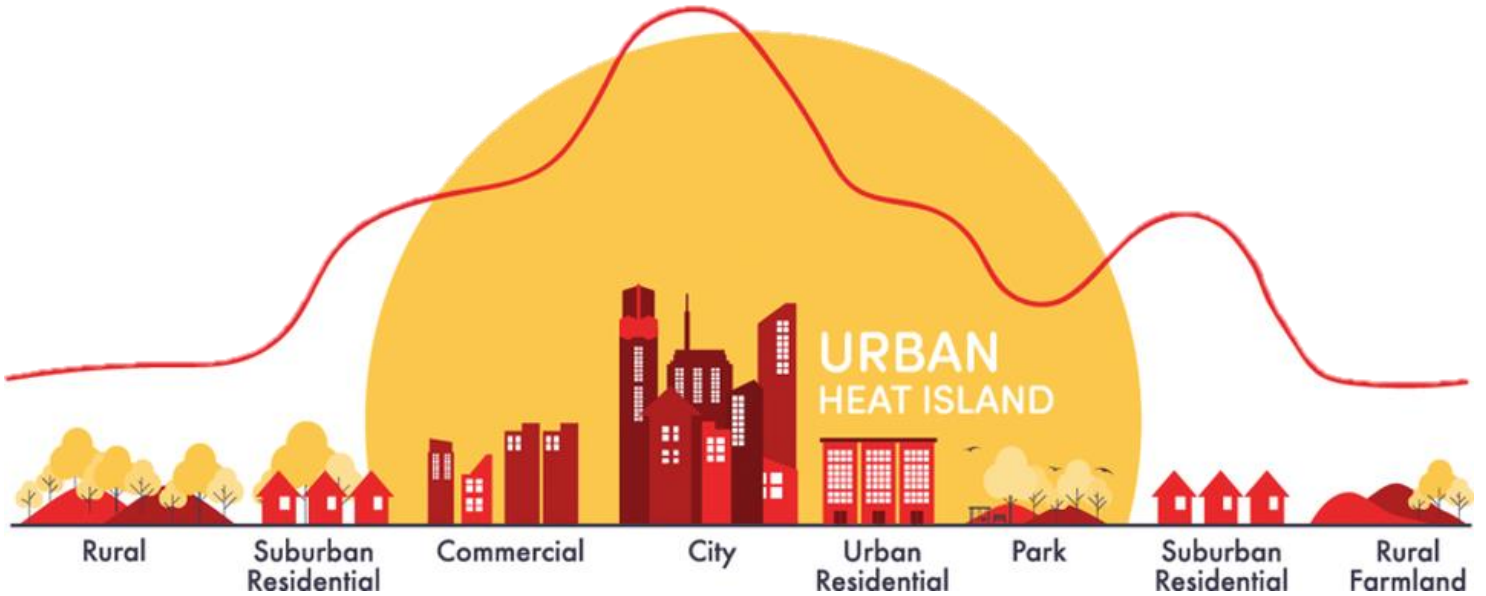
KEREN energy

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

Tools for the gamification like https://datadrivenlab.org/big-data-2/cozie/

For our open lab – we hope to get the real measurements from the citizen's activity – adding value to the project



Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

Just call us = for more information

Ofer Keren
Business Development

+972-54-7703717
ofer@kerenrg.com
www.kerenrg.com

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	LUMIWEAVE
Applicative Domain	LUMIWEAVE.COM
Proposed Initiative Title	SHADE, ZERO EMISSONS & LIGHT POLLUTION

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

SMART CANOPY

LUMIWEAVE

- Flexible LUMIWEAVE smart sheet
- Embedded lightweight PV film
- Embedded extra - thin LED panels
- Embedded conducting material for wiring
- Control system - motion & light
- Li-Ion battery
- Mobile charging

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

For Restaurants & Hotels

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

INSTALL ANYWHERE
No infrastructure

SUSTAINABILITY
0% carbon emissions.
Reducing light pollution.

SAFETY
Low voltage electricity -12V.

FLEXIBILITY
Functionality & form-factor adaptability

COST SAVING
Infrastructure & operation

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

LUMIWEAVE

NEXT STEPS

Improve battery sustainability
Integrate saltwater battery

Adding supplement renewable energy technology
E.G wind based

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Contact Information

LUMIWEAVE

Lumiweave.com

CDO & CO - FOUNDER: Anai Green

M. +972.52347245
Anai@lumiweave.com

LUMIWEAVE

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	**Magna BSP ltd**
Applicative Domain	**Smart city solutions – Video analytic**

Proposed Initiative Title	**Define and analyze the Climate change from real time video**

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Innovative startup in the 3D image processing based on A.I. and Deep Learning

Developed sophisticated detection software for cameras:

- Smart city Environment - air pollution, fire and smoke detection
- Surveillance - Borders and HLS
- Transportation - Traffic control, road Safety, Low enforcement
- Bridges maintenance - Deflection measurement, Collision prevention

MAGNA
SECURITY SOLUTIONS

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

- A.I. & Deep learning algorithms adaptable to customer's requests and predefined scenarios
- Stereoscopic detection systems enabling :
  - very high Pd together with an ultra-low FA rate
  - automatic passive systems
  - active 24/7 and in severe weather conditions
  - 3D imaging for space differentiation
- Enables connection to other sensors and/or VMS

MAGNA
SECURITY SOLUTIONS

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

Video analytic in real time based on A.I. and Deep learning for any type of camera:

- Traffic monitoring (car counting, lights crossing, bike lanes)
- Air pollution (seaports activities and environment control
- Safety (bridges safety and collision prevention)

MAGNA
SECURITY SOLUTIONS

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	Mobile Physics
Applicative Domain	Climate
Proposed Initiative Title	Mobile environmental stations

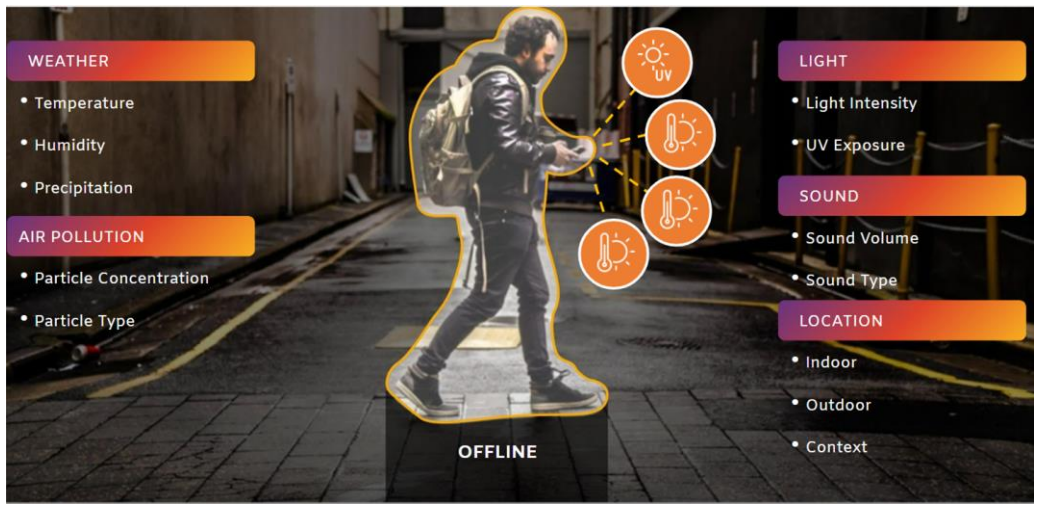
mobile physics

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

ENVIRONMENTAL DATA WAREHOUSE

Real time environment monitoring; enables users to understand their exposure to various conditions and influences their health decisions.



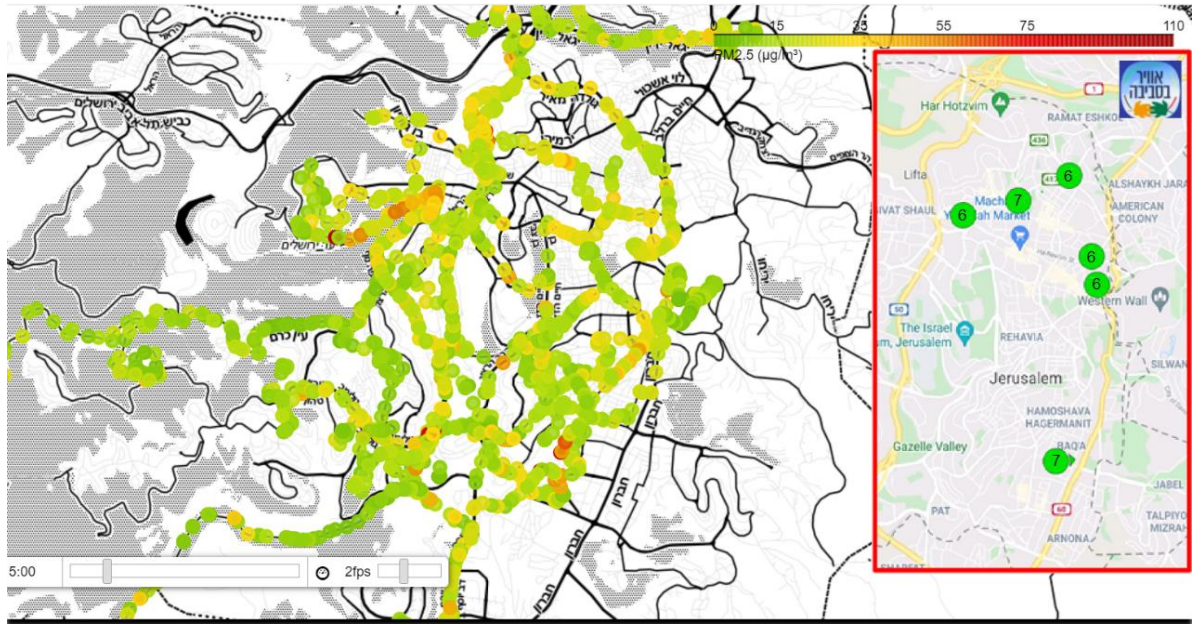
Weather forecasting companies, utilities, smart cities ,municipalities and other interested partners can access a first of its kind warehouse and insights platform of high-resolution environmental data.

mobile physics

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Type of Technologies or Services

- TRACKING ALL ENVIRONMENTAL VARIABLES
- HYPER-LOCAL ACCURACY
- ISO17025 CERTIFIED
- ACTIONABLE INSIGHTS AND ANALYTICS
- High resolution environmental database serving decision makers worldwide.



mobile physics

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

Complementary solution that will use our detection systems to reduces the heat in the given spots

mobile physics

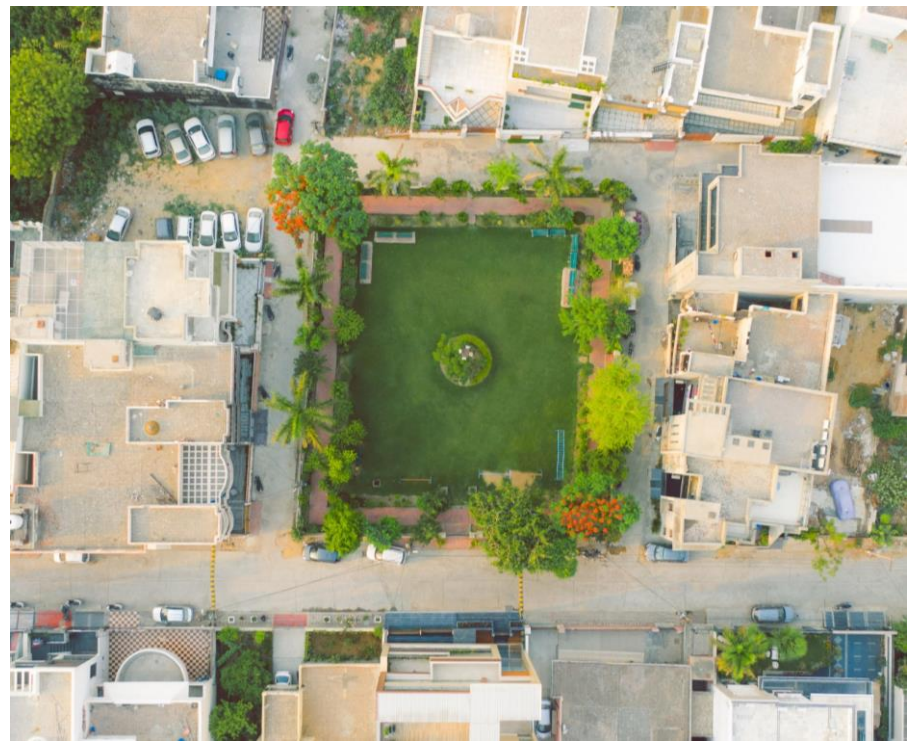
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	QUAD
Applicative Domain	Urban Sustainability
Proposed Initiative Title	Marketplace for Urban Open Spaces

QUAD

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile



Quad promotes a new future for urban living.

We believe that after accepting the idea of sharing a couch, a room and a whole apartment with other users - now has come the time to share unused open spaces in the city as well.

We find that one's connection to nature and to the community are key elements for achieving a happy, sustainable and healthy lifestyle in urban settings.

That’s why we developed a place were everyone can share and rent privately owned open spaces.

QUAD

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Our innovative platform connects landowners with city users, allowing the utilization of these spaces to their maximum potential.

While meeting the users need for suitable and accessible open spaces, land owners benefit from an opportunity to make their property profitable.

AI and machine learning will help reduce the platform's inherent friction – by improving search, helping hosts optimize pricing and preventing fraud.

QUAD

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

AI Technologies

Urban Data Worldwide - Open Source

Community Management

Gamification

QUAD

Brief presentation of the selected SMES

Company name	**ReLOG3P SRL**
Sector	**Sustainability in the Logistic & Supply Chain**
Project name	**Genova – Italy: ReACT Processes** **Tel Aviv – Israel: ReACT Academy**

Reshaping LOGistics aiming for 3P
People, Planet, Prosperity

Company profile

Innovative Startup, **est.d 2021,** currenty @ **PreSeed → Seed**

- **Team**: 2 Founders, 1 Employee, 1 Trainee, 3 Advisors, 3 Partners

- **Strengths**: 80+ years of cumulated experience in Logistics, International cross functional network, credibility, reliability, integrity

- **Mission**: support end-to-end **Global Logistics** to provide its contribution to the UN **Sustainable Development Goals** (2030/2050), mainly through the "Responsible and Ethic" use of the **4th Industrial Revolution technologies**

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

SME4SMARTCITIES

ReLOG 3P

Reshaping LOGistics aiming for 3P
People, Planet, Prosperity

Genova Challenge: smart technologies to measure and provide real-time updates on air quality, pollen and allergenic distributions, pollution by fine dust, humidity, temperature in urban spaces across Genoa

ENI CBCMED
Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

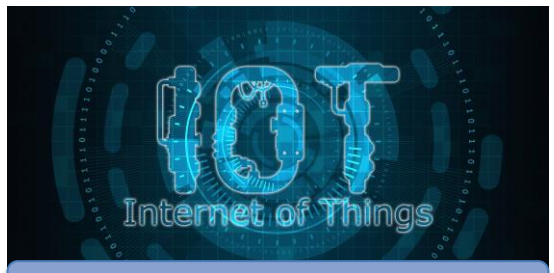
SME4SMARTCITIES

CLOUD

Transfer

ReACT
ReAccompanying Chain Transformation
Collaborative Platform

Transfer



Real Time
Noise, Emissions, Traffic Conditions

Elaborate

ReACT Processes

Read

Improve

Physical Assets
Port, City, Vehicles, Infrastructures

ReLOG 3P
Reshaping LOGistics aiming for 3P
People, Planet, Prosperity

Genova Challenge: smart technologies to measure and provide real-time updates on air quality, pollen and allergenic distributions, pollution by fine dust, humidity, temperature in urban spaces across Genoa

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Cooperating across borders in the Mediterranean

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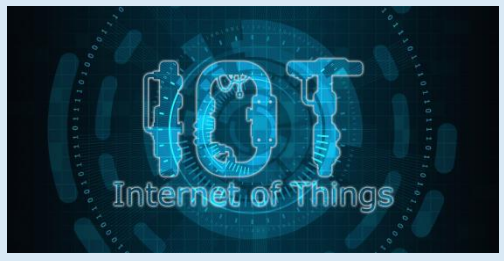
REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

SME4SMARTCITIES

CLOUD



Real Time
Noise, Emissions, Traffic Conditions

ReACT
ReAccompanying Chain Transformation

Collaborative Platform

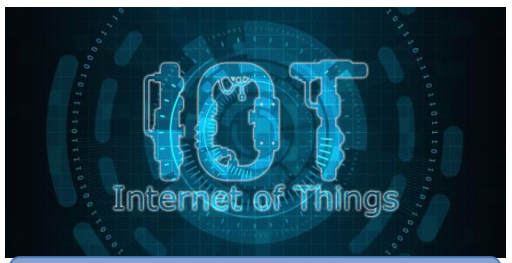
ReACT Processes

Partner's scope

ReLOG3P's scope

Brief Pitch of participating SMEs for the Israel Challenge: Climate Change - The Urban Heat Island

Type of Technologies or Services



Real Time
Temperature, Happiness

Collect

ReACT
ReAccompanying Chain Transformation
Collaborative Platform

Elaborate

ReACT Academy

Transfer

Data publish

Awareness
&
Understanding

City's ACT!

Action

City's Open Lab Game

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

What we look for in co-creation

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	DHVMED & Siraj Technologies
Applicative Domain	The Urban Heat Island in Israel: Kfar Saba, Tel Aviv and Eilat
Proposed Initiative Title	Heat island preventive actions and evidence based monitoring.

DHVMED
ENVIRONMENT.CONSULTING.ENGINEERING

siraj
technologies

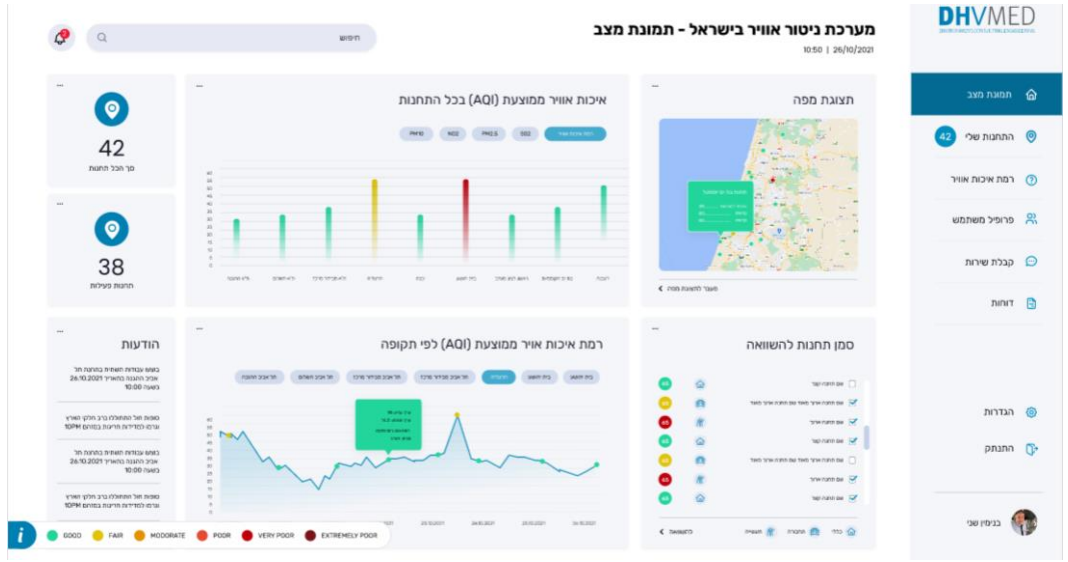
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Siraj and DHVMED collaboration has provided software and consulting solutions for environmental government and municipal authorities.

DHVMED is the largest environmental engineering consulting company in Israel.

Siraj Technologies is a Startup that specializes in IOT and edge device connectivity solutions.



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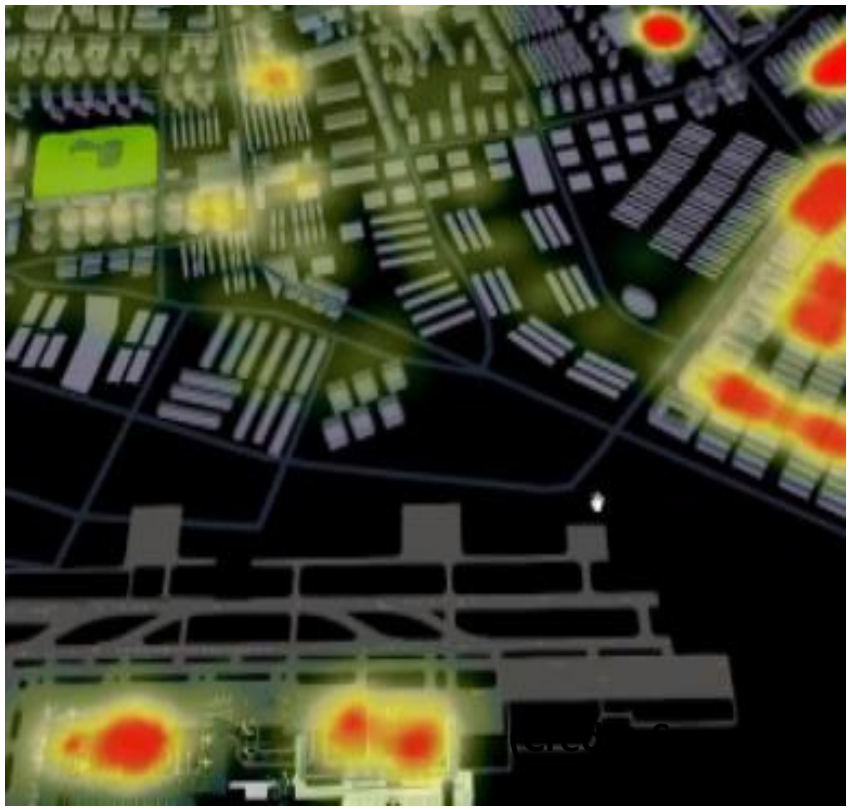
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

We provide together an all around city technological and engineering services.

The services shall provide real time dashboards representing intercity analyzed heat islands map.

Mapping, 3D digitization, Analyzing, Implementing heat and wind monitors, planning the preventive activities and analyzing the short and long term resulted heat reduction.



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Climate Change - The Urban Heat Island

What we look for in co-creation

We are looking for municipality cooperation and ongoing evaluation and study of the proposed solution.

We are looking to add innovative heat reduction solutions to meet our customers' needs.

We are looking for technological and cost effective improved digitization, measurements and sensor technologies.

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Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

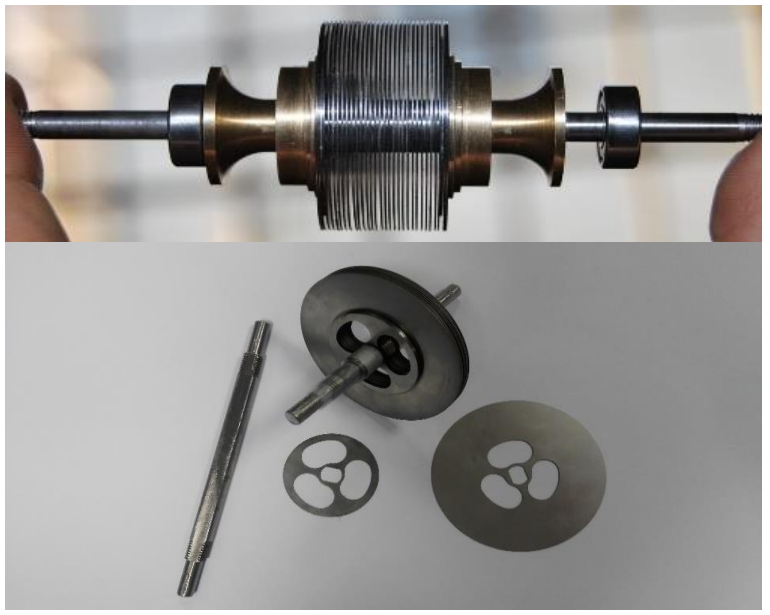
Company Name:	SIT TECHNOLOGIES S.r.l.
Applicative Domain	Energy
Proposed Initiative Title	EASTERN

SIT TECHNOLOGIES

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

SIT Technologies S.r.l. is an innovative start-up that was founded in 2018 as a spin-off of the University of Genoa with the aim of developing systems for energy harvesting from pressure jumps whose energy is currently dissipated, such as valves, restrictions, and diaphragms in the energy and refrigeration sector.



SIT TECHNOLOGIES

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

Technological development and production of energy harvesting systems for exploitation of any pressure drop and any fluid (Throttling valves in refrigeration cycles, wastegate in turbochargers).

Engineering activity for large power plants for enhancing flexibility and efficiency (Combined cycles, Heat pumps, …)

SIT TECHNOLOGIES

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

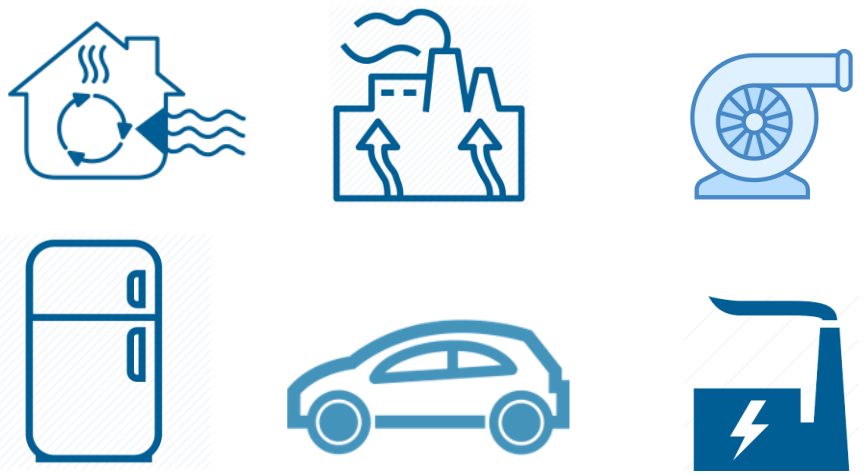
What we look for in co-creation

SIT is looking for companies with the need of energy harvesting.

Prototypes application.

Original Equipment Manufacturers of the Energy sector and Refrigeration sector

Process industry aiming at increasing the efficiency and sustainability of existing installations



SIT TECHNOLOGIES

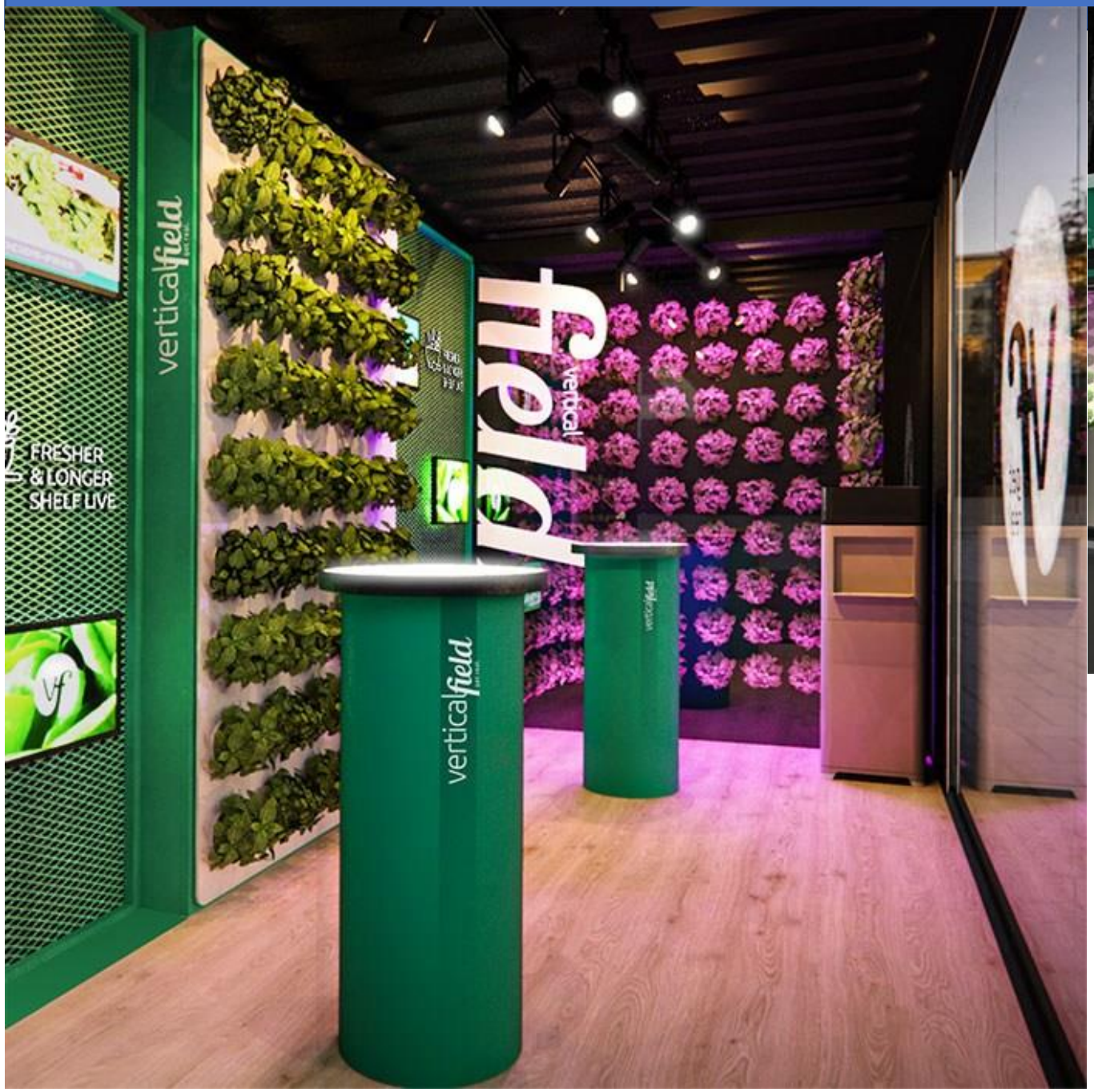
Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Name:	Vertical Field
Applicative Domain	https://www.verticalfield.com/

Proposed Initiative Title	Reduce emissions and increase food security

Brief Pitch of participating SMEs for the Israel Challenge:

Climate Change - The Urban Heat Island



vf verticalfield get real.

Brief Pitch of participating SMEs for the Israel Challenge:
Climate Change - The Urban Heat Island

Company Profile

- Vertical Field is an ag-tech company that develops geoponic vertical farming solutions.
- Originally established in 2006 focusing on smart vertical landscaping.
- Projects installed for a diverse array of clients worldwide.
- Providing full turn-key solutions from planning to operation and maintenance.

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Climate Change - The Urban Heat Island

Company Profile

Technological features that grow produce in CEA.

Our on-site vertical farms increase access to fresh produce by using advanced controlled-environment agriculture (CEA) technology

verticalfield
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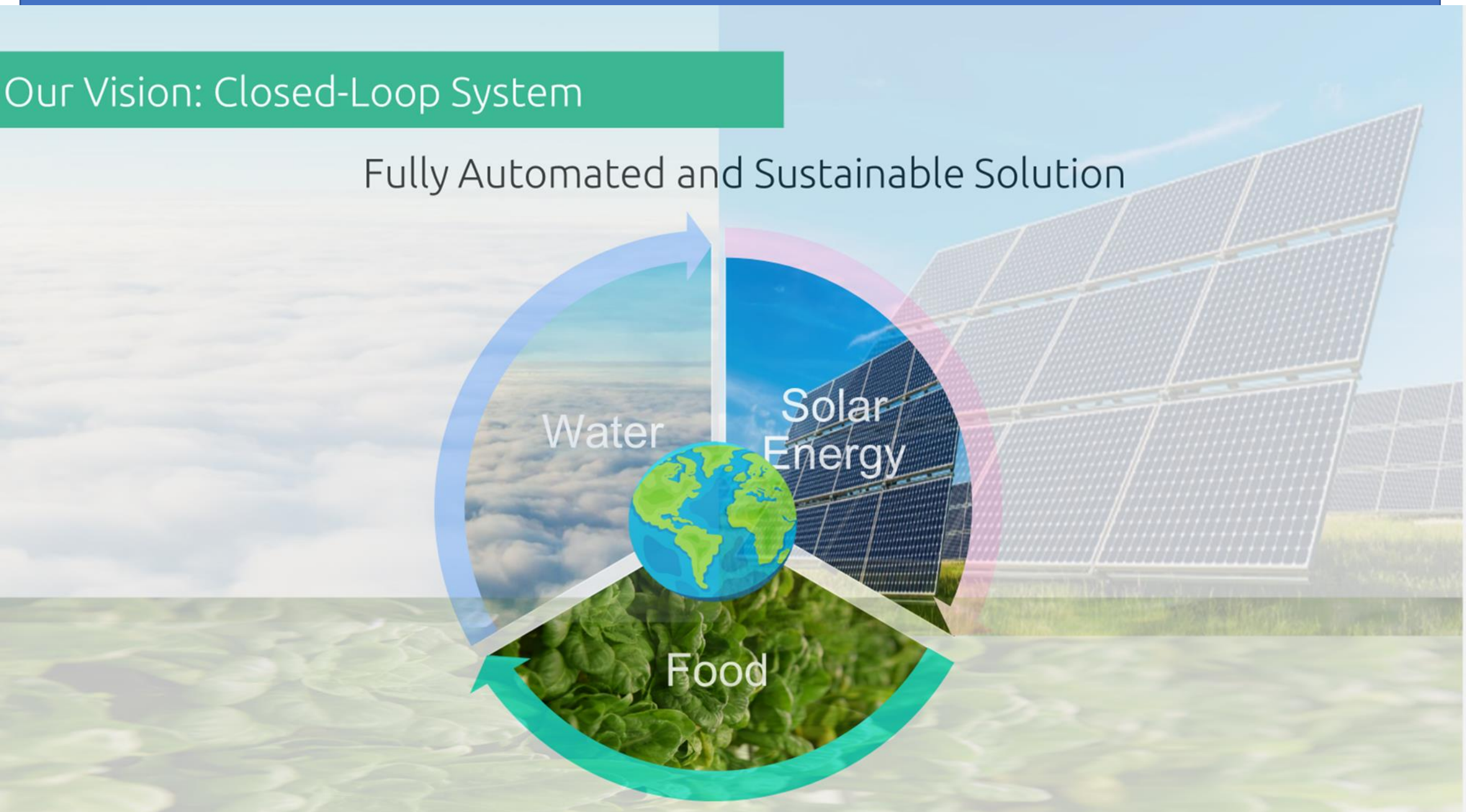
Brief Pitch of participating SMEs for the Israel Challenge:



אוניברסיטת בן-גוריון בנגב
Ben-Gurion University of the Negev

GROWING LIGHT ENERGY OPTIMIZATION

HUMIDITY CONTROL IN CEA FOCUSED ON EED

(Energy Efficiency Decision)

ALTERNATIVE ENERGY: Optimal CEA using guided sunlight

הפקולטה לחקלאות מזון וסביבה

האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

Prof. Menachem Moshelion

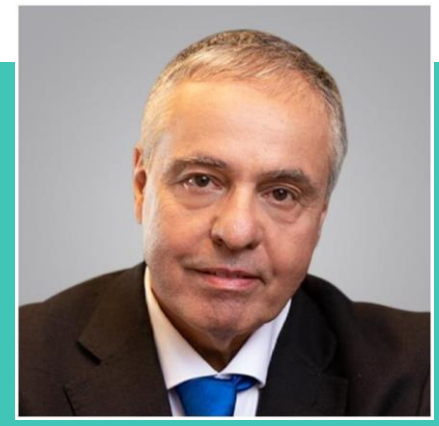
Molecular Physiologist

HUJI

Prof. Alon Wolf

Biorobotics and Biomechanics: Vice President

Technion Institute of Technology



Prof. Oded Shoseyov

Plant Sciences and Genetics in Agriculture

HUJI

SAB

SCIENTIFIC ADVISORY BOARD

Brief Pitch of participating SMEs for the Israel Challenge:
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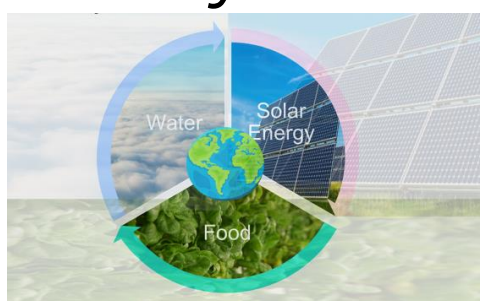
What we look for in co-creation

The project key goal: Sustainable CEA

with great produce that tastes amazing and simple to operate.

The future of this project will be quite remarkable. When farming is going high-tech, the future of farms is a sustainable CEA. It took us from the energy market, from renewable energy to urban farming. We believe that this project with high level monitoring, will be the perfect testing round to see what CEA can do for the reduce emissions and increase food security project, related to climate change adaptation and improvement of the city environments.

verticalfield
get real.



Strategic Opportunities For The Food Ecosystem

Vertical Farms offer synergistic partnership opportunities for most participants in the food ecosystem

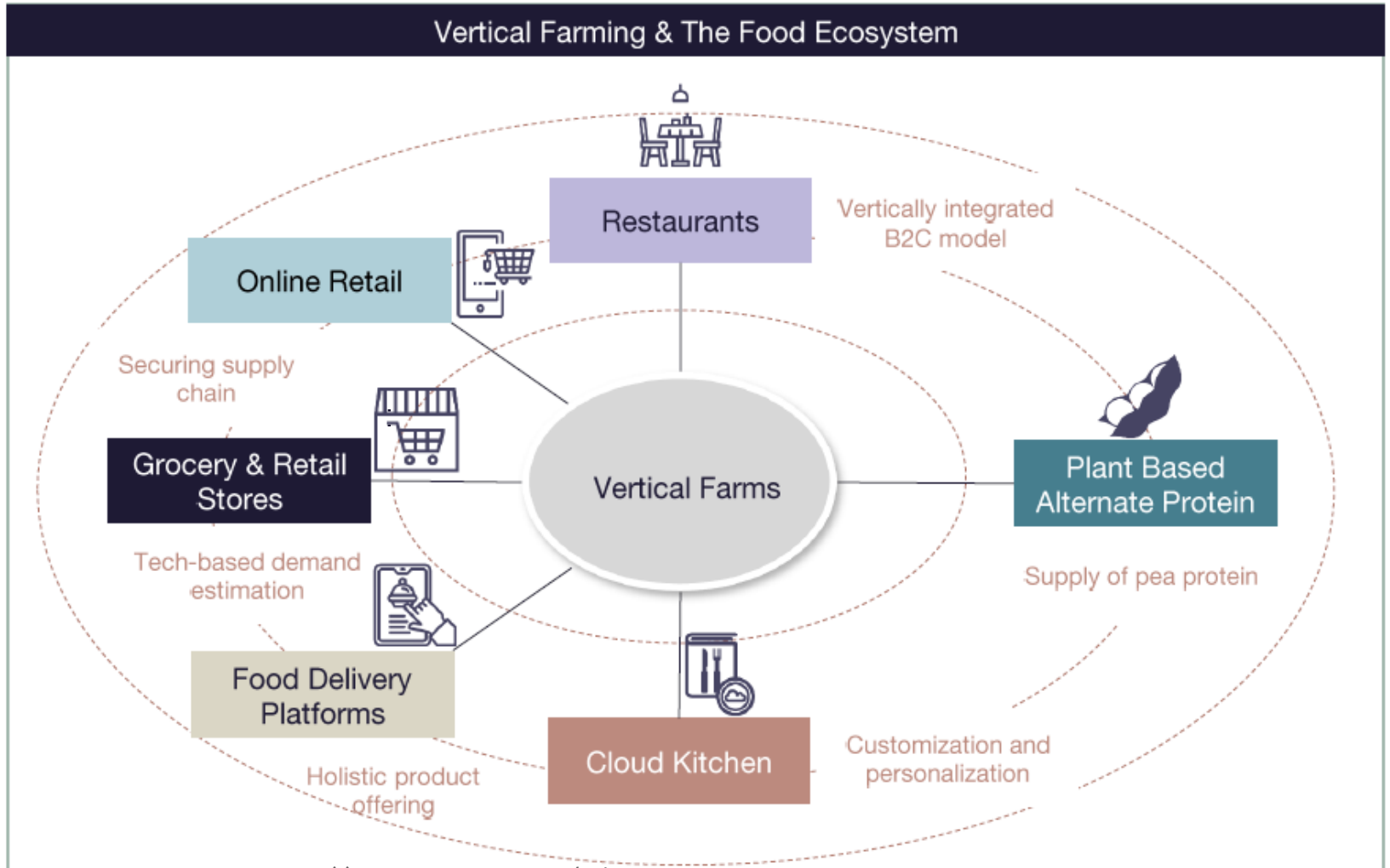
Food Producers

Securing supply of pea and other protein as a key input for plant based alternate protein companies

Food Retail

Vertically integrated B2C model, pivoted around AI, ML, IoT and Robotics, will help meet real time demand

Achieve mass customization and personalization of food based on consumer taste and health preferences



Source(s) : Aquaa Partners Analysis

Both upstream and downstream components in the food value chain will gain strategic advantage by partnering with vertical farms

Current crops

HERBS

Basil

Sage

Parsley

Rosemary

Coriander

Chives

Dill

Peppermint

LEAFY GREENS

Kale

Mizuna red/green

Rucola

Spinach

Sorel

Beetroot

Bok Choy Red

Arugula

LETTUCE

Salanova Green/Red

Curly Green/Red

Summer Crisp

Butter Lettuce

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Crops under development

Shiitake
(Lentinus edodes)

Champignon
(Agaricus bisporus)

Pioppino
(Agrocybe agearita)

King oyster mushroom
(Pleurotus eryngii)

Golden oyster mushroom
(Pleurotus citrinopileatus)

Grey oyster mushroom
(Pleurotus ostreatus)

Nameko
(Pholiota nameco)

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Crops under development

Strawberry Research
Led by Dr. Nir Dai

Strawberry

Blackberry

Blueberry

Raspberry

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Some of our projects

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Brief Pitch of participating SMEs for the Israel Challenge:
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Company Name:	Vinea Green
Applicative Domain	Plant growth under controlled conditions

Proposed Initiative Title	**Mobile Plant Growth Container**

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Company Profile

Vinea green specializes in the development, production of modular vertical gardens, living surfaces and hydroponic systems that can be used in small and large scale projects, according to the customer requirements.

vinea
green

Brief Pitch of participating SMEs for the Israel Challenge:
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Company Profile

Vinea green uses the following:

- Advanced plastic technology – The founder has a long experience in the design and production of plastic injection molds.
- All projects are supervised by a team of biologists that test and improve all our products.
- Broad knowledge of plant growth under controlled conditions.

vinea green

Brief Pitch of participating SMEs for the Israel Challenge:
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What we look for in co-creation

1) Automatic control of hydroponic systems:

Water quality (pH, nutrients, oxygen, ORP, etc.)

Temperature

2) Automatic control of air conditions:

Temperature

Humidity

CO2 concentration

3) Looking for a strategic partner in the field of traditional hydroponics farms

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green

ENI CBCMED
Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

SME4SMARTCITIES

Mediterranean SMEs working together to make cities smarter

The SME4SMARTCITIES project has been conducted with the financial assistance of the European Union under the ENI CBC Mediterranean Sea Basin Programme

ENI CBCMED
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REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA
SME4SMARTCITIES

TEL AVIV UNIVERSITY
Pursuing the Unknown

Environmental Studies Department
Porter School of the Environment and Earth Sciences
Raymond & Beverly Sackler Faculty of Exact Sciences