The European Commission's 100 Intelligent Cities Challenge

Intelligent Cities Challenge

Cities leading the green and digital transition of the local economy and society

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Outline

- **Cities of the future: challenges and urban trends**
- EU Intelligent Cities Challenge initiative
  - Local Green Deals
  - Up and Reskilling the local economy
- Potential of technology:
  - Tech4Good
  - AI-enabled Local Digital Twins

Why cities matter?

The EU consists of more than **80,000** cities and towns

Cities cover
3%
only of the land on Earth

account for
80%
energy consumption

account for
75%
waste & carbon emissions

Cities produce
80%
of GDP

home to more
70%
of EU population

Cities implement
70%
of EU legislation

Cities handle **1/3 of public spending**

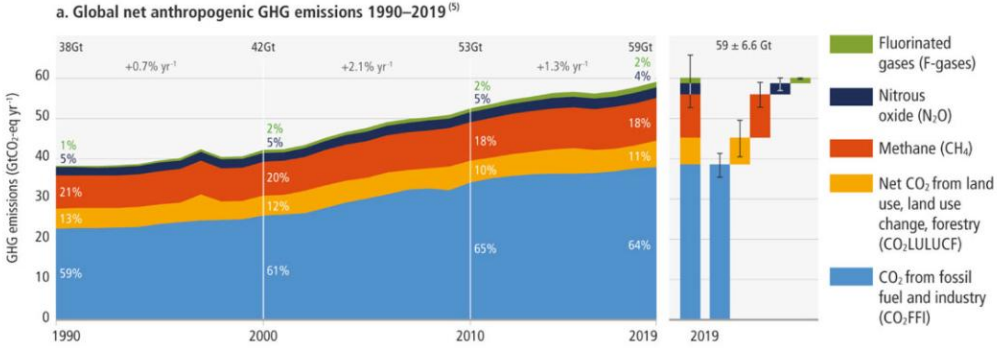
and manage **2/3 of public investment**

European Commission

UN report: Rethink cities to combat climate crisis

- All cities can contribute towards a net zero future
- This requires the **right integrated policies, infrastructure and technology**
- Cooperation between **different levels of government**, **stakeholders partnerships**, as well as **substantial financing**.
- The findings give backing to **human-centric city models,** such as the 15-minute city concept, or the doughnut economy model.

- Tackling climate change will mean rethinking how **cities** are designed, constructed and managed.
- This necessitates: "**lower energy consumption** (such as by creating compact, walkable cities), **electrification of transport in combination with low-emission energy sources**, and enhanced **carbon uptake and storage** using nature"
- "Interventions that support a modal sift away from private motor vehicles and toward **walking, cycling and low-emissions share**, or public transportation..."
- "**Replacing, repurposing or retrofitting building stock**".



IPCC | Global net anthropogenic emissions have continued to rise across all major groups of greenhouse gases.

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Making the most of advanced technologies for Green and Digital Recovery and Social Resilience

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Local Green Deals: A blueprint for action

4 founding principles

Governance:
New integrated governance and management structures

Integrated goals:
An assessment of strategies and policies to ensure alignment

Partnership:
A multi-stakeholder approach

Action:
An approach that leads to collaboration agreements and delivers action.

THE BURNING PLATFORM FOR RESKILLING

Skills are central for mastering the digital and green transitions. However, mismatches and shortages in skills are increasing, while a large number of people are at risk of unemployment. The confluence of crises accelerates the need for further skills investment.

70%

of EU enterprises report that lack of skills hampers investment; ¼ SMEs report major difficulties in finding skilled staff

9 OUT OF 10

jobs will require basic digital skills, though 1/3 of the workforce does not master these

22%

of current work activities (equivalent to 53 million jobs) could be automated by 2030

84%

of employees are more loyal to a company that contributes to social / environmental issues

1.2M

jobs could be created as result of the green transition

AMBITIOUS GOALS FOR RESKILLING

To help individuals and businesses develop more and better skills

80%

of adults should have basic digital skills

90%

of SMEs reach at least a basic level of digital intensity

20% 30% 50%

Increase participation of adults and low-qualified adults and unemployed adults in learning to reach respectively 50% and 30% and 20%

20M

ICT specialists will be employed – with higher gender diversity

JOINT ACTION REQUIRED

Cities play a major role within local and regional economies in mobilising **business, social partners and knowledge institutes,** to work together. Investing in reskilling and implementing a reskilling revolution is a critical investment.

Cities need a strategic and pro-active approach to manage reskilling of the working age population.

Supporting up and re-skilling of the local workforce

- The pandemic crisis accentuated the need for **agile structural and cross-sectoral mobility** of the workforce e.g. towards green, healthcare, or tech jobs. These require new skills locally.
- **Cities and their local economies are key in this major reskilling effort**, that was launched with the Pact for Skills. They know best their local needs and they can put in place a tailored, local reskilling network.
- The key success factor is a **well-functioning local reskilling ecosystem** capable of pooling local resources to achieve reskilling at scale;
- The **Cities Guide for Reskilling** offers inspiration and advice to the cities and local businesses.
- Prepare cities for transformation with examples to design a reskilling strategy & information on funding opportunities

A Cities Guide for reskilling

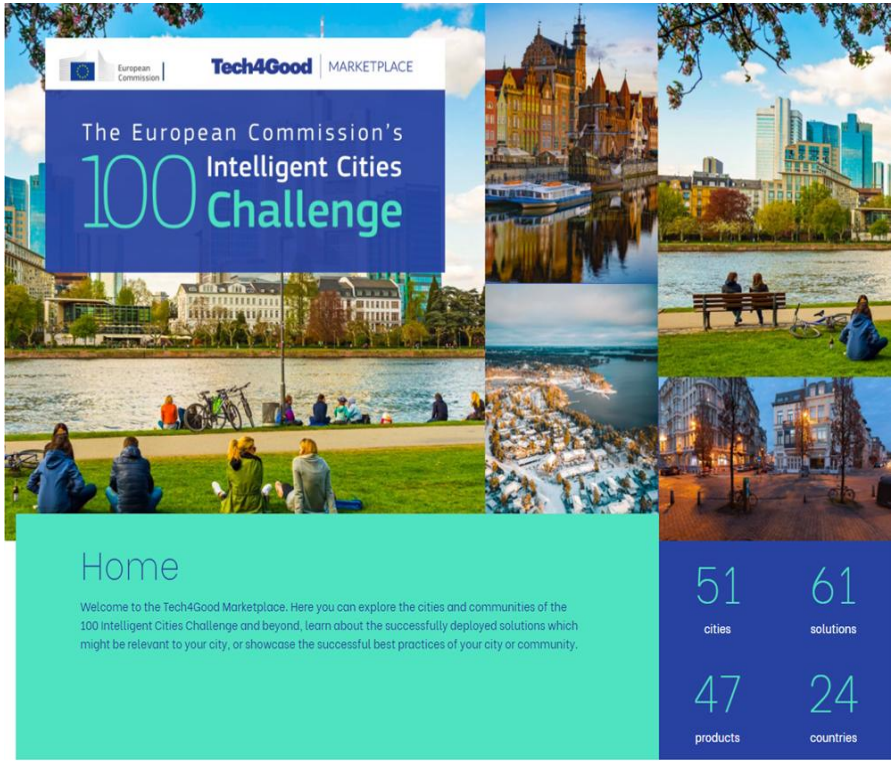
Outline

- Cities of the future: challenges and urban trends
- EU policy context - Intelligent Cities Challenge
  - Local Green Deals
  - Up and Reskilling the local economy
- **Potential of technology:**
  - **Tech4Good**
  - **AI-enabled Local Digital Twins**

Tech4Good Marketplace

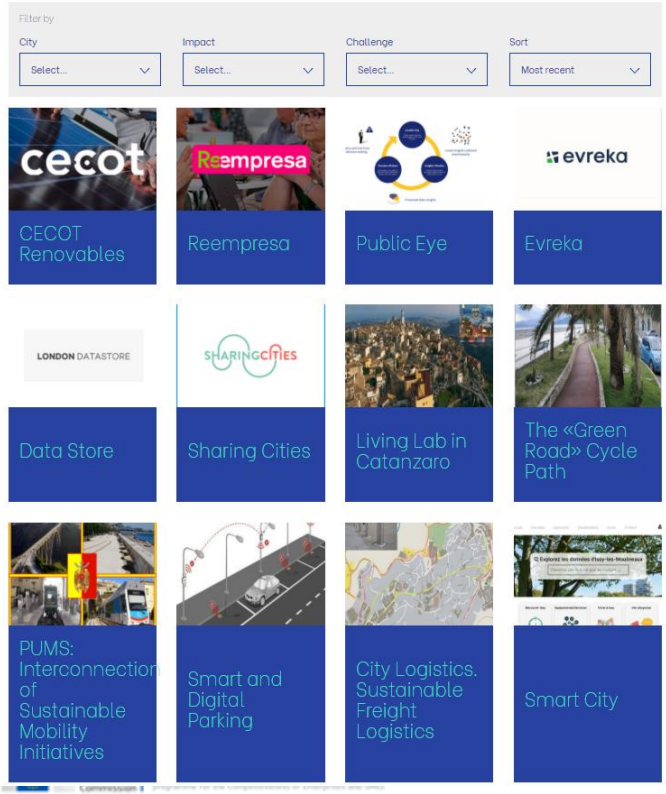
Technology-powered solutions and business models designed to advance economic, social and environmental causes

- ✓ Help European **cities and social economy stakeholders** address the most pressing challenges with technology
- ✓ Solutions developed by **local SMEs, social enterprises** and **start-ups**.
- ✓ Access to **trustful, ethical, labelled, efficient** solutions
- ✓ **Purpose-driven, human-centered** development of technology and processes: e.g. AI for reskilling, circular industrial activities, assistive technology for job inclusion
- ✓ **Sustainable and social public procurement**.
- ✓ Cross-disciplinary **Makers Space, awards and hackathons** (e.g. green manufacturing, smart farming, smart teaching, energy efficiency, etc.)



Tech4Good Marketplace

Find your solution



Challenges

Air Quality Sensing Solutions: 3 Products: 4	COVID-19 Response, Mitigation, or Adaptation Solutions: 3 Products: 4	Efficient management of water and water systems Solutions: 5 Products: 3	eGovernment and Digitising Public Services Solutions: 25 Products: 19
Enhancing citizen participation, connectivity, and community Solutions: 36 Products: 22	Promoting health and wellbeing of citizens Solutions: 8 Products: 15	Smart and green mobility and transport Solutions: 12 Products: 11	Smart & Sustainable Tourism Solutions: 7 Products: 7
Understanding Noise Pollution Solutions: 2 Products: 1	Supporting safety and security Solutions: 1 Products: 7	Climate resilience and disaster management Solutions: 1 Products: 13	Green Deal Solutions: 5 Products: 4

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Solution: Carbon Footprint Platform for Cities

- **Solution provider**: Everimpact
- **Technology deployment(s)**: Denmark (Herning); United Kingdom (London; Manchester); Portugal (Porto) and Spain (Madrid)
- **Technology function(s)**: GHG satellites, sensors and IoT devices
- **Challenge**: Funding cities' climate actions by measuring, reducing and monetizing their GHG emissions.
- **Impact**: Everimpact is the leading software platform to measure, reduce, and offset GHG emissions. We can help cities and companies accurately measure emissions with satellite imagery, big data, sensors, etc. We can provide our clients with their carbon footprint in near real-time, and help reduce emissions. Our technology has been deployed in 10 cities and across 4 EU countries. It is currently being deployed in the maritime, energy, telecommunications, and banking sectors, and has received several innovation prizes from the EU Commissions, Google, Solar Impulse Foundation, British Telecom, EDF etc.

For further details:

https://marketplace.intelligentcitieschallenge.eu/en/products/carbon-footprint-platform-for-cities

Solution: Clean Air School Districts

- **Solution provider**: Leapcraft
- **Technology deployment(s)**: Belgium; Finland; Switzerland
- **Technology function(s)**: Air quality sensing; education; environmental data analytics
- **Challenge**: Poor air quality around schools is adversely affecting the health of children in modern cities. The challenge is to use data to drive awareness, behavioural modification and test new strategies for controlling emissions. The solutions being deployed empower citizen engagement models, via students, their families and schools.
- **Impact**: The impact is multi-fold as it will inform and engage parents and local communities in a change- initiative. Thus with adequate knowledge of outdoor and indoor air quality in their own classrooms and with the support of an AI platform they will help regulate the need for lowering ambient emissions outside and influence ventilation and maintaining optimum indoor air quality.

For further details:

https://marketplace.intelligentcitieschallenge.eu/en/solutions/clean-air-school-districts

Solution: Object Detection Kit (Scanning Objects for a Cleaner City)

- **Solution provider**: City of Amsterdam
- **Technology deployment(s)**: Netherlands (Amsterdam)
- **Technology function(s)**: Open source platform
- **Impact**: Object Detection Kit (ODK) is an open source platform for municipalities, initiated by innovation teams within the city of Amsterdam. Currently ODK is actively used to scan the public space for garbage, this helps the departments related to the public space to keep the streets of Amsterdam clean and safe. The software is written generically so it can be used for scanning other types of objects, though the use of this software is limited to GDPR friendly use cases only.

For further details:

https://marketplace.intelligentcitieschallenge.eu/en/solutions/object-detection-kit-scanning-objects-for-a-cleaner-city

Solution: Marine Litter Collection Station

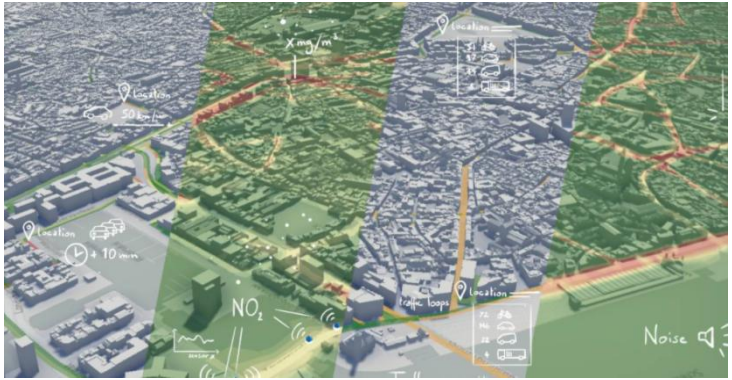
- **Technology deployment(s)**: Greece (Central Corfu; Diapontian Islands)
- **Technology function(s)**: Education
- **Impact**: The result after the signing of a Memorandum of Cooperation between the Municipality of Central Corfu and the Diapontian Islands, the "Corfu Port Authority S.A" and the "Aegean Rebreath (S.C.E.)" was the establishment of the first Marine Litter Collection Station on the island as well as the implementation of holistic-centered actions which included underwater and coastal clean-ups, research sampling and activities, removal of ghost nets but also consultation with the local society. With the help and the guidance of the "Aegean Rebreath (S.C.E.)" the MCCDI wants to introduce a new culture according to which less waste will be produced while encouraging recycling and upcycling of marine litter following the principles of the circular economy and increase the number of Marine Litter Collection Stations on the island.

For further details:

https://marketplace.intelligentcitieschallenge.eu/en/solutions/marine-litter-collection-station

Examples of cities & regions with AI-powered digital twins

Port of Rotterdam



3D copy of Antwerp

Helsinki

SPHERE
BIM DIGITAL TWIN PLATFORM

Buildings in Finland, Austria, Italy and Netherlands

DUET

Flanders, Athens, Pilsen

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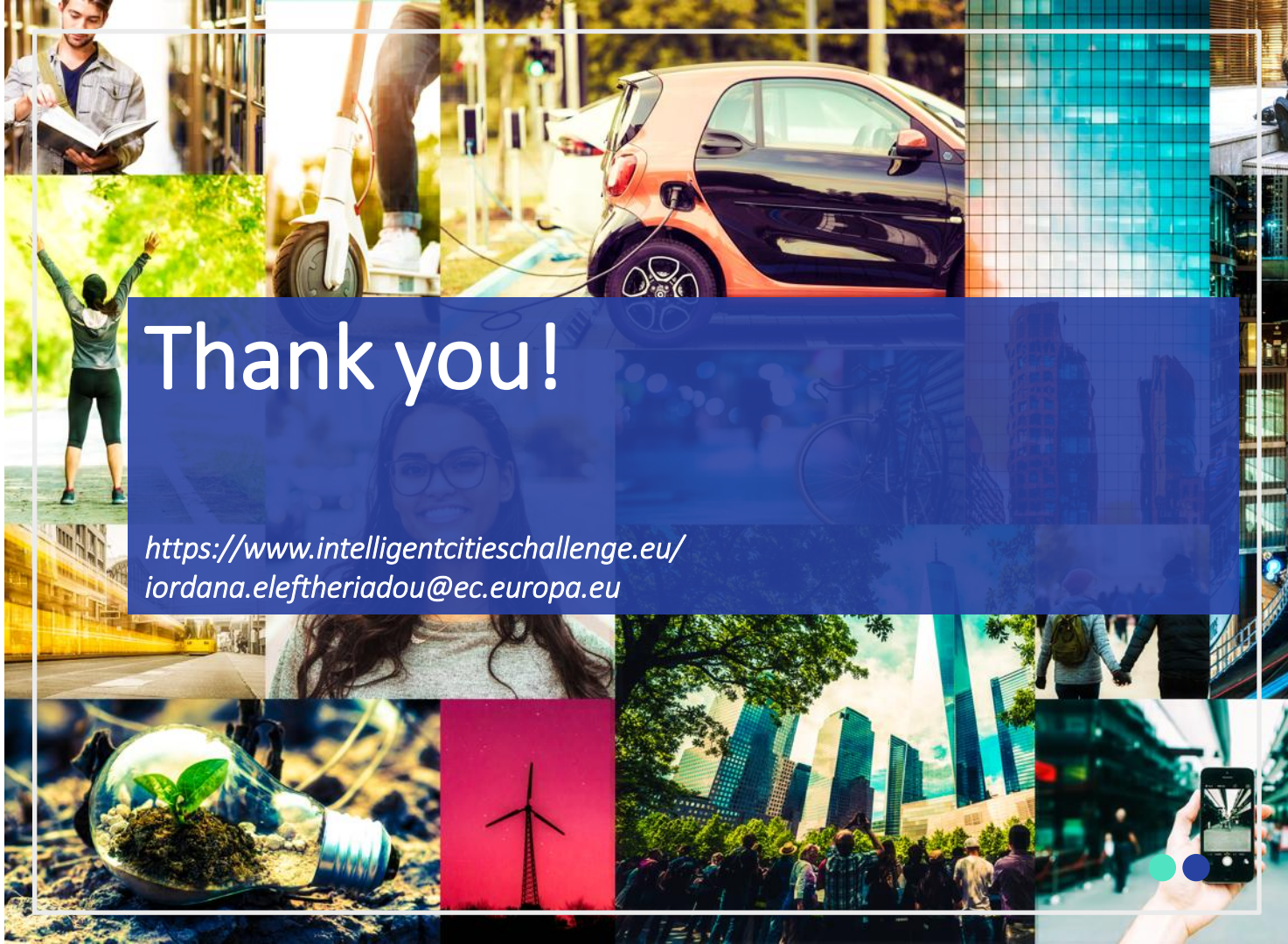

Thank you!

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