TORINO CITYLAB

CITTA' DI TORINO

Mendrisio, 21/11/2023

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Città di Torino

WELCOME TO CITY LAB

Summary

- Living lab approach
- Campidoglio & circular economy living lab
- TCL
- CTE - NEXT
- ProGIreg
- 100 carbon neutral cities

What is a Living Lab

A place for user-centred open innovation, urban spaces dedicated to innovation where citizens, businesses and public administration explore, co-develop and experiment together the functioning of innovative products, technologies and services in a real context.
A tool for integrating research and innovation for the co-creation, exploration, testing and evaluation of innovative ideas and new technological products and services

Living Labs consider the user community not only as an observed subject, but as a source of creation: citizens and users experiment with products and services, collaborating with developers and designers in the innovation process.

- Living Lab Campidoglio (2016)
- Living Lab Mobile Payment (2017)
- Living Lab on Circular economy (2018)

LIVING LAB CAMPIDOGLIO (2016)

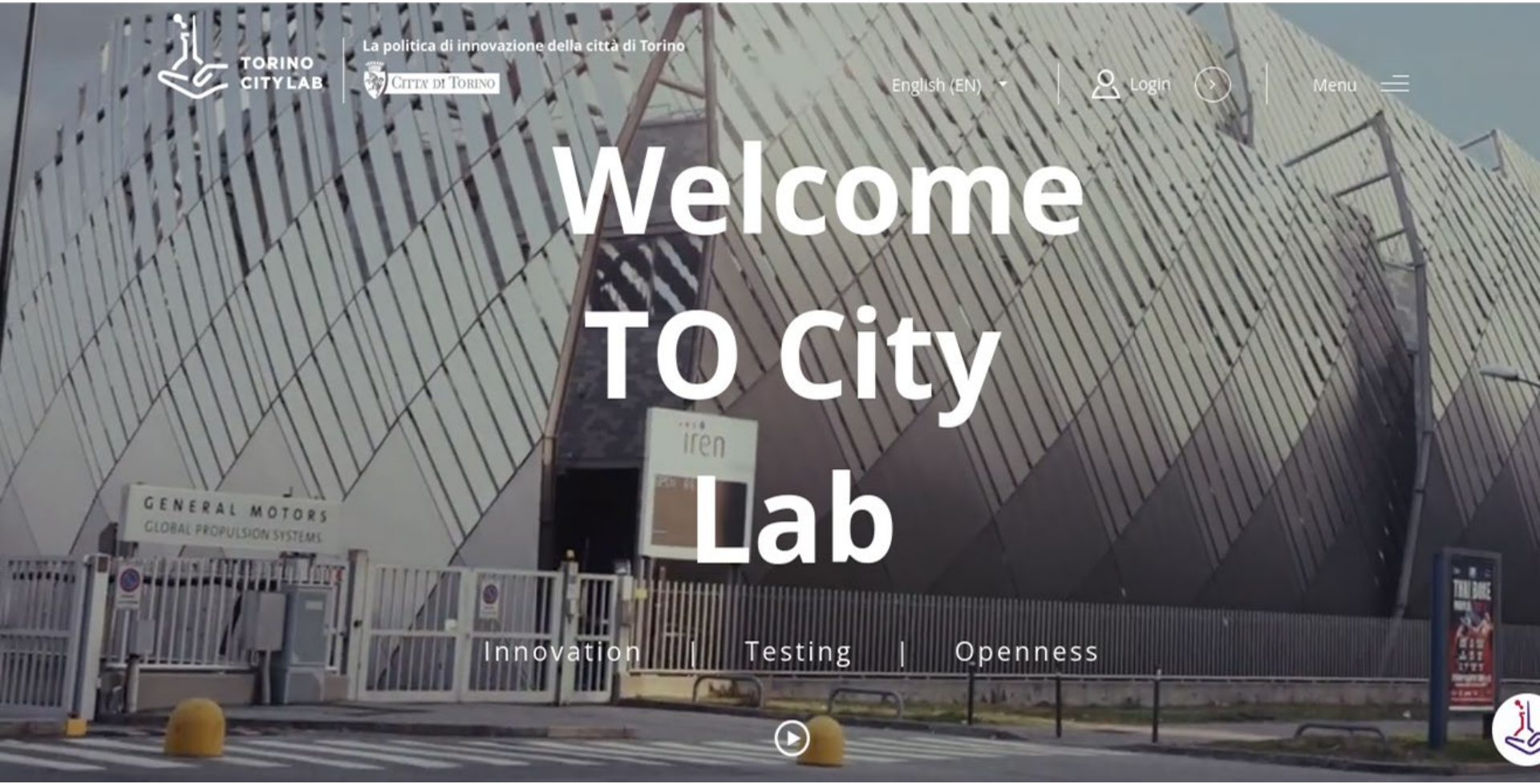
The Campidoglio district hosted 30 experiments that companies, start-ups, universities and research centres proposed to the city in response to the first Torino Living Lab call for proposals.The projects cover all the main areas of development of a smart city: care for the environment, rational management of energy consumption, the economic development of the territory, sustainable mobility, inclusion and dissemination of new lifestyles, urban security, integration and data sharing, the development of innovative forms of art and entertainment, the dissemination of sustainable tourism.

- Visibility and market knowledge for local businesses
- Citizen experimentation with new models of urban space experience and use of innovative public and private services, also enabled by technology.
- Suggestions for the authority's technological and social innovation policies and purchases in the "smart city" field.
- Strengthening social ties, the neighbourhood community and the

Living Lab Campidoglio – solutions for the smart city on a neighborhood scale

Living Lab on Circular economy (2018)

Otto sperimentazioni avviate;
Beautiful Precious Plastic utilizza macchine Open Source per sviluppare nuovi prodotti di arredo a partire dal riciclaggio dei rifiuti plastici su scala locale;
Edilizia Circolare ha l'obiettivo di applicare il concetto di riuso e riciclo nell'ambito delle costruzioni;
Urbanaquafarm propone un progetto pilota per realizzare un sistema di produzione e di consumo di prodotti vegetali basato su tecniche di coltura in "idroponica;
RicuciTò applica un modello innovativo di economia circolare e collaborativa che allunga la vita dei materiali tessili post-consumo, non più riutilizzabili come tali.
Il **Marketplace del Balon** prevede la realizzazione sperimentale di un portale di e-commerce per gli operatori del mercato "Balon";
Abbasso impatto punta a ridurre gli impatti ambientali nei consumi degli esercizi di ristorazione e ospitalità e a garantire prezzi sostenibili alle forniture grazie all'acquisto di gruppo;
Suolo Sostitutivo mira allo sviluppo di un protocollo tecnico per la costituzione di un suolo in grado di sostituire quello naturale, bene prezioso soggetto a un consumo preoccupante;
Con il cibo 2, infine, agisce per fornire un pasto caldo agli adulti senza dimora, ospiti di alcune Case di Ospitalità Notturna.


TORINO CITYLAB
La politica di innovazione della città di Torino
Città di Torino
English (EN)
Login
Menu
Welcome
TO City
Lab
Innovation | Testing | Openness
GENERAL MOTORS
GLOBAL PROPULSION SYSTEMS
iren

Turin City lab: coordinated system of actions to transform the city into an "open-air" laboratory of frontier innovation

Mission	Vision	Values
• Facilitate testing operations in real conditions of innovative solutions of public interest. • Offer constant support to facilitate access and then facilitate the conduct of trials, in relations with Internal Services and Utilities.	• Positioning Torino at European and international level as a place where innovation is easier and is a shared challenge for the territory. • Attracting companies from Europe and the world to engage new trajectories of economic development in sectors with high added value and to serve the citizens of tomorrow.	• Agility in the execution of activities. • Transparency of the process. • Openness of the partnership.

An "open laboratory"

Since 2018 Torino offers itself and its assets to test breakthrough solutions in any domain of public interest to shape the City of the future. Frontier technologies at the service of quality of life and environmental and social sustainability on the city scale.

I. **Permanent** companies can submit their ideas at any time

II. **Aimed at supporting:** making possible the experimentations of companies active in policy areas of public interest by planning more specific Living Labs

III. **Focused on sustainable development** the first LL in the platform is the Living Lab on Sharing and Circular Economy

COOPERATIVE, CONNECTED & AUTONOMOUS VEHICLES

DRONE BASED INNOVATIVE SERVICES

5G ENABLED TECHNOLOGIES: IOT, AI, ROBOTICS, BLOCKCHAIN

CLEAN TECH & SMART LIFE SOLUTIONS

Who can partecipate

Open to any Company based in Italy or abroad

Other public or private organizations can join the efforts in testing, but only if in partnership with companies.

All subjects have to show requirements for contracting with the Public Administration.

What to test

Innovative solutions of public interest

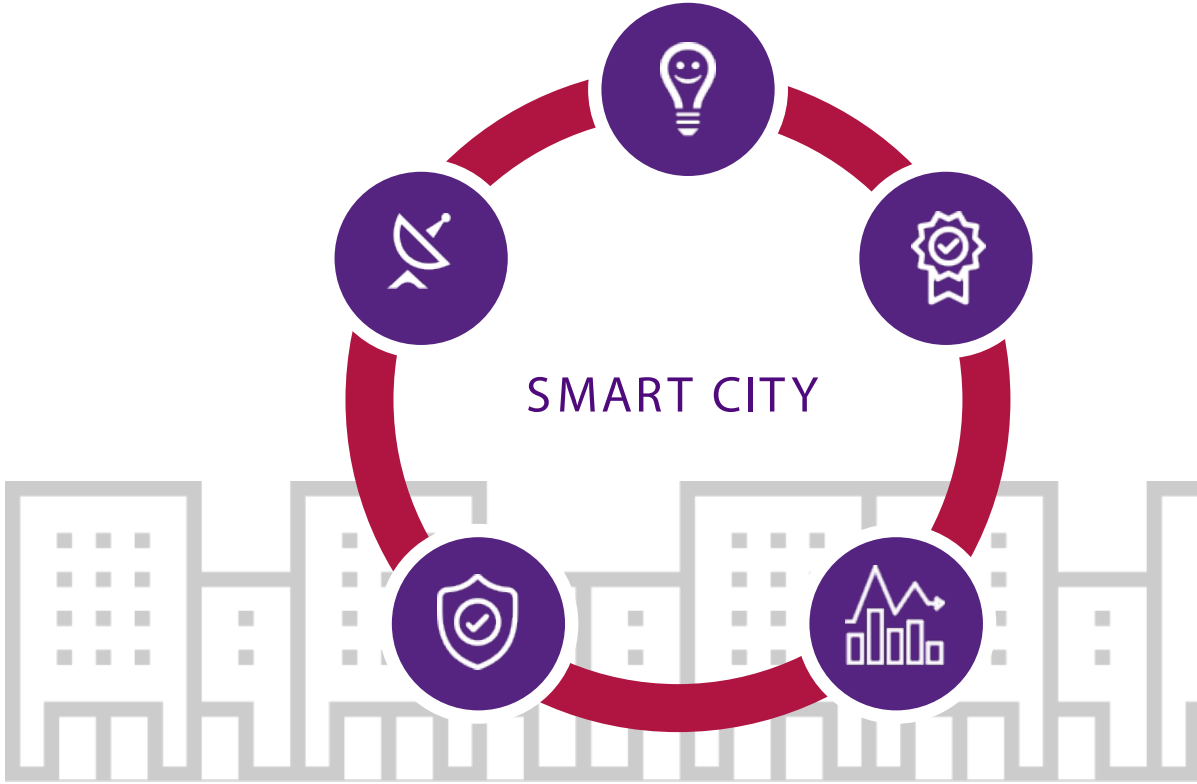
Solutions not available (or not fully respondent) on the market, at the pre-commercial stage.

Product / technology
organizational process / service or mix

A focus on urban living and a general aim to create positive "social & environmental impact" in the medium term.

In any domain of the Smart City

- ICT
- Energy & Environment
- Welfare and quality of life
- Economy
- Safety & Security



What TCL offers

The City

1. The whole city area and its assets for testing
2. Municipal intangibles (people, processes, services and data).
3. A single internal contact point
4. Facilitated relationships within the local innovation ecosystem

Thanks TO

Torino City Lab is supported
by a vast partnership on several levels

TCL KEY FACTS
*since 2018

+100 companies
+90 partners

+60 trial contracts, +35 ongoing projects smart mobility, environment, smart living

3 SECTORAL LABS

- IOT for URBAN QUALITY
- SHARING & CIRCULAR ECONOMY
- EDULAB

1 SPECIAL INITIATIVE
TORINO CITY LOVE CAMPAIGN (2020)

STRATEGIC PARTNERSHIPS
ESA, ASI, ENAC

SUPPORT TO ACCELERATORS
Techstars, Impact Deal, XEDU, Take Off

3 STRESS TEST AREAS

- **Doralab** – Urban Air Mobility Open Air Park
- **Smart Road Circuit**- Connected Cooperative and automated vehicles testing area
- **EDU-LAB Drovetti School-** Learning Tech Laboratory

NEW TRANSFER TECH HUB: TURIN HOUSE OF EMERGING TECHNOLOGIES

Turin «House of Emerging Technologies» (2021 >>>)

+500 startups/SMEs
+25 partners & Stakeholders

CTE NEXT

The Project

CTE NEXT is an **Acceleration and Technology Transfer hub** started in 2021, funded by the Italian Ministry of Economic Development and co-funded by main actors of the local ecosystem

Emerging Technologies

Internet of Things

Artificial Intelligence

Blockchain

enabled by 5G

Strategic Sectors

Smart Road

connected vehicles, V2X infrastructure, autonomous guidance

Urban Air Mobility

monitoring and surveillance, city logistiscs, transportation

Industry 4.0

connected machines, extended supply chain, customer relationship and experience

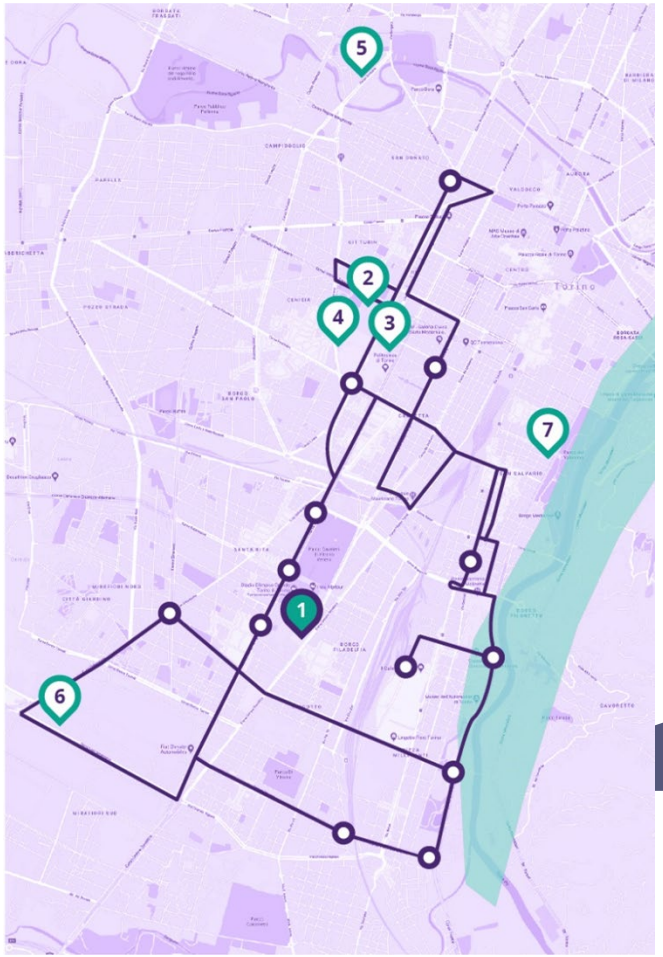
Smart City Services

digital services, asset management, use of public spaces, cultural heritage and tourism

CTE NEXT : What's on now?

#5G infrastructure
#Assets & spaces
#Open Calls & Services
Urban Testing
#Training
#Partners & community

CTE NEXT



CTE NEXT as a **distributed hub**, based on different sites for different activities

1 **CSI NEXT**
Dimostrazione
Diffusione
Coordinamento

2 **OGR TECH**
Techstars
Ecosistema
Innovazione

3 **POLITO**
Laboratorio Click

4 **LINKS**
Laboratori:
Cyber Range
Smart Mobility

5 **UNITO**
Laboratorio HPC4AI-CC

6 **CIM4.0**
Aree di stress test
Fabbrica Intelligente

7 **FONDAZIONE AGNELLI**
Coworking
Community spaces

SMART ROAD
Aree di stress test
Innovation Mile

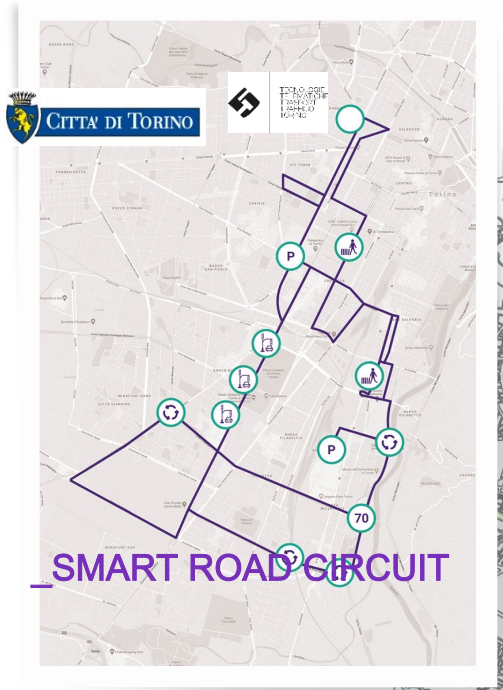
AIR MOBILITY
Aree di stress test
Innovation Mile

CTE NEXT | Sites

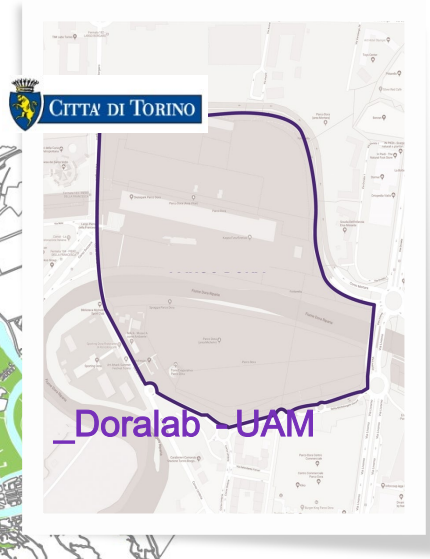
CTE NEXT

Spaces

stress test areas

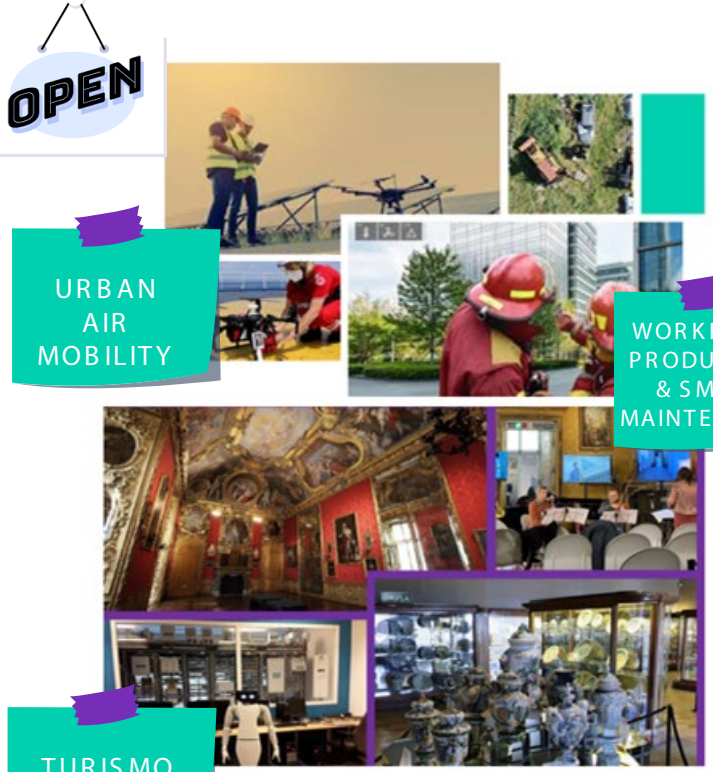


_SMART ROAD CIRCUIT



_Doralab – UAM

Urban Testing Programme



CTE NEXT

Our support

Testing areas:

- 2 outdoor stress test areas
- 4 indoor laboratories

Monitoring & Evaluation with day by day support

Support for

- use case definition
- tech&biz development
- 5G connectivity support
- Assets' usage

Assets

- 5G sim and devices
- Computational resources
- IoT data management platforms & Multi Edge Computing platform
- Unmanned Traffic Management (UTM) box for drones
- Turin's mobility data

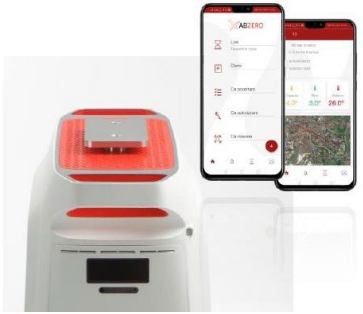
50-70% of contribution

to cover the urban testing expanses

Urban Air Mobility

ABzero has carried out a technological and socially acceptable trial of a drone-based, autonomous transportation system (Smart Capsule), designed to transport medical supplies in an urban environment. The urban testing in Turin is aimed to demonstrate not only the functionality and benefits of the Smart Capsule, but also the efficient performance of the system itself thanks to the use of 5G technology and on-board capsule AI algorithms.

The trial was carried out in close collaboration with the Molinette Hospital of Turin, with a flight over the Po river which could potentially lead to the connection of various hospitals in different parts of the city.



With the LEAFLET (LightdronE Aerial support For pubLic grEen managemenT) project, MAVTech aims to test innovative, interconnected and ultralight drones (< 250 g) via the 5G network to analyze the health status and structural stability of urban green patrimony in order to prevent or reduce damage caused by improper maintenance of extreme weather events.

Smart Road

ALBA Robot is proposing a micro mobility platform of self-driving and assisted wheelchairs. The urban testing in Turin was carried out both indoors and outdoors. As part of the experimentation, the aim was to integrate 5G technology – and consequently benefit from the guaranteed low latency in data communication
and transmission – to allow part of the computational and algorithmic section currently on the boards within the vehicle to be moved to the Cloud.

Waterview intends to experiment with image processing and artificial intelligence technologies deployed on edge computing units to analyze with ultra-low latency images from video surveillance devices installed throughout the city's street circuit (in the maximum number of 5 cameras) and to return real-time information on weather and road surface conditions (visibility, flooding, snow cover) to citizens and moving vehicles, taking advantage of the bandwidth and ultra-low latency offered by 5G.

Hipert plans to install and test two devices (CityBox) equipped with cameras and processing platform for pedestrian and car recognition, tracking and geolocation, to create increased knowledge of the Smart City.

The objective of the experimentation is to employ 5G technology to communicate with self-driving vehicles to verify the performance of the solution.

Innovative urban services

Dropper's collects data on the flows and concentrations of people in public spaces within the city of Turin using two different technologies – millimeter-wave radar and Wi-Fi sniffer. Having real-time crowding metrics available, the solution potentially enables new approaches for safety and security management in large events, guaranteeing anonymity by design.

dropper

From Smart Data to Smart Energy

SDaSEn

Ares2T's project tests a 5G platform-supported application for the collection of energy consumption data, the real-time dynamic monitoring of energy loads and the profiling of consumptions at different levels of aggregation in a residential system equipped with smart appliances. The test is aimed to enable the end user to consume energy when it is most cost-effective.

Cityfriend designed and tested an inclusive tourism experiences, creating a prototype platform that is equipped with services that can increase the accessibility of the museum offer for people with disabilities of various types – motor, sensory, cognitive. It uses new possible forms of engagement and interactions with the visitor (AR, VR, NFT) thanks to 5G connection.

Cityfriend

TORINO CITYLAB

EUROPEAN UNION

EU MISSIONS

100 CLIMATE-NEUTRAL AND SMART CITIES

CITTA' DI TORINO

WELCOME TO CITY LAB

Torino City Lab #new wave

An "open green laboratory"

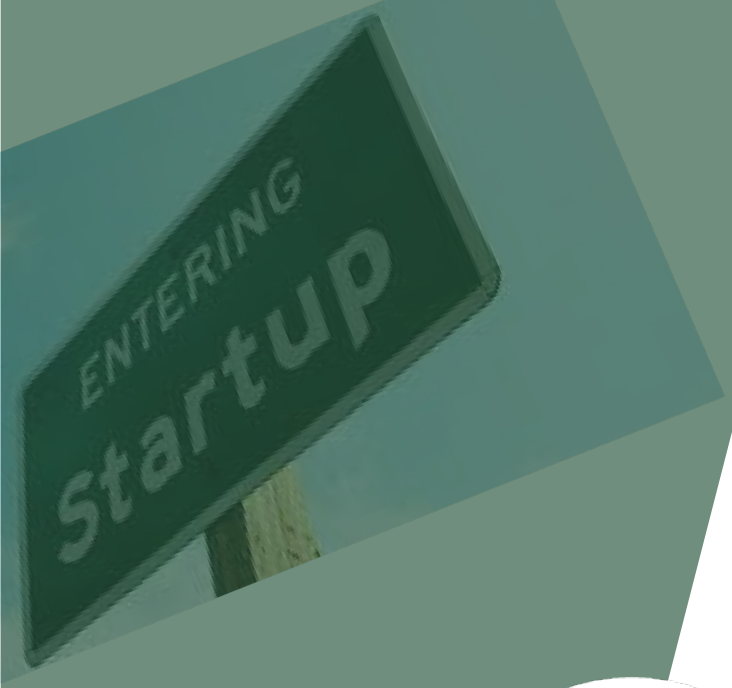
Recently Torino City Lab relaunched itself with the smart life paradigm and with the aim of contributing to the ecological and digital transition of the territory and services to citizens. This reflects the City commitment for keeping climate neutrality by 2030

ECOLOGICAL TRANSITION

SMART LIFE

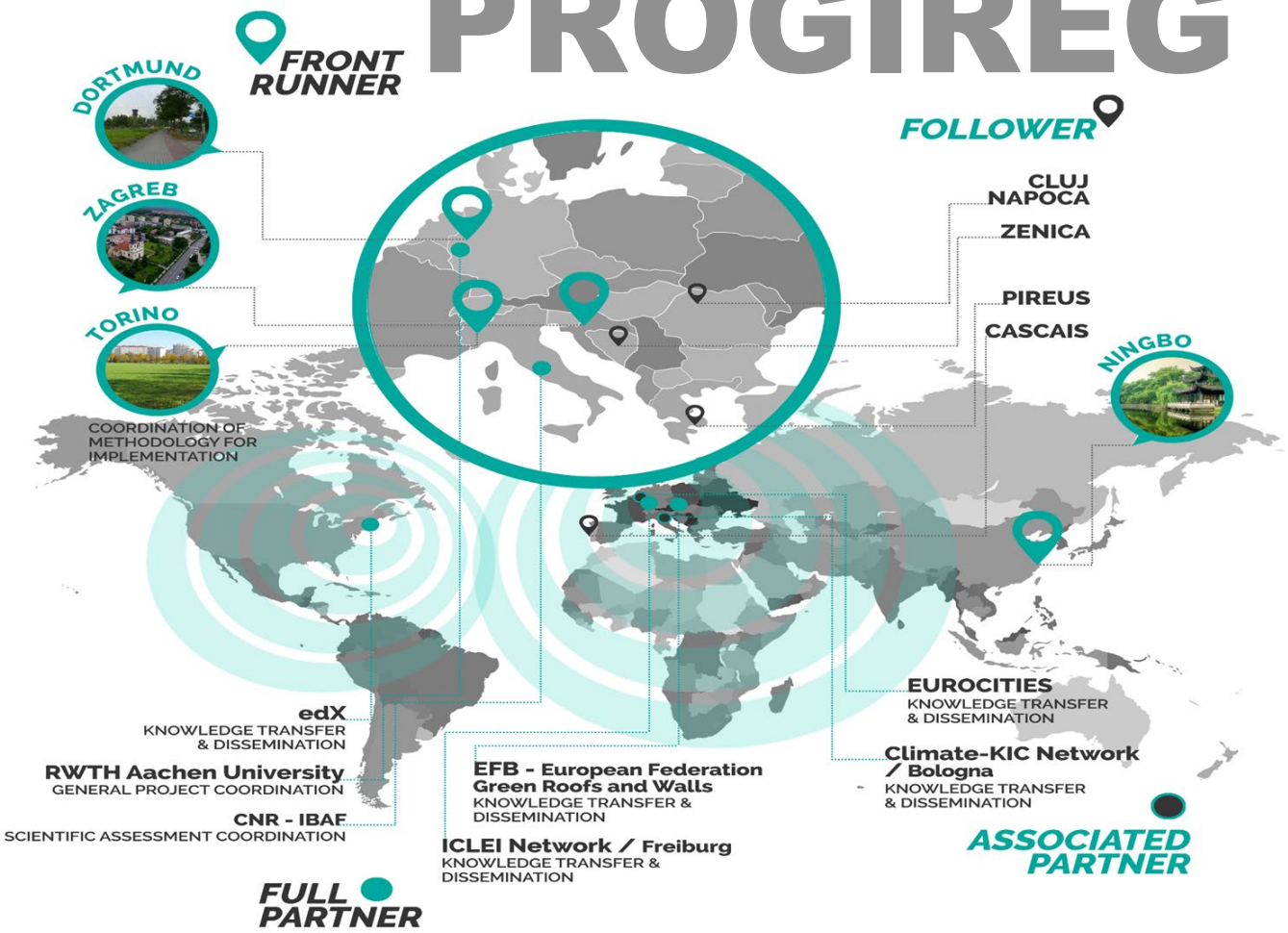
SMART AND GREEN MOBILITY

CULTURE AND EDUCATION



The City act as a partner for urban Innovation, as «first test bed» and «ecosystem networking enabler».

PROGIREG



KEYWORDS

NBS for INTEGRATED URBAN REGENERATION

LIVING LAB – From Co-design to Co-Management

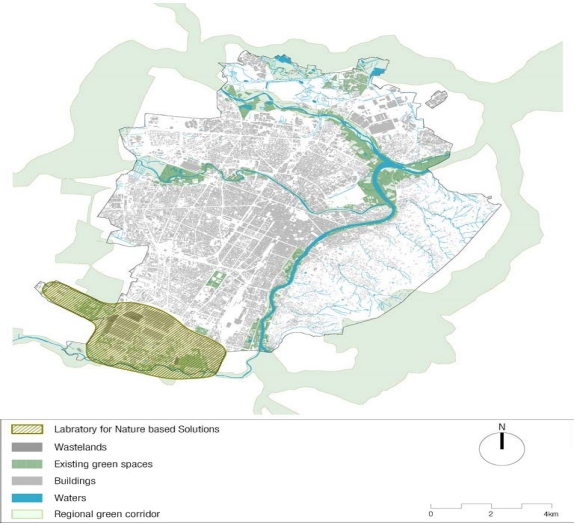
BUSINESS MODELS for Tech & Social Innovation

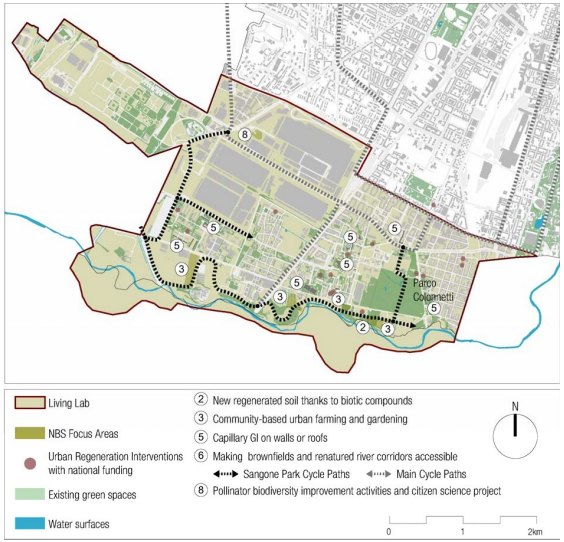
MONITORING (2 Years after implementation) – DATA PLATFORMS

UPSCALING/TRANSFER OF KNOWLEDGE - FRC vs FC

EXTRA EU COOPERATION - CHINA

ProGIreg in Torino: Mirafiori Sud Living Lab



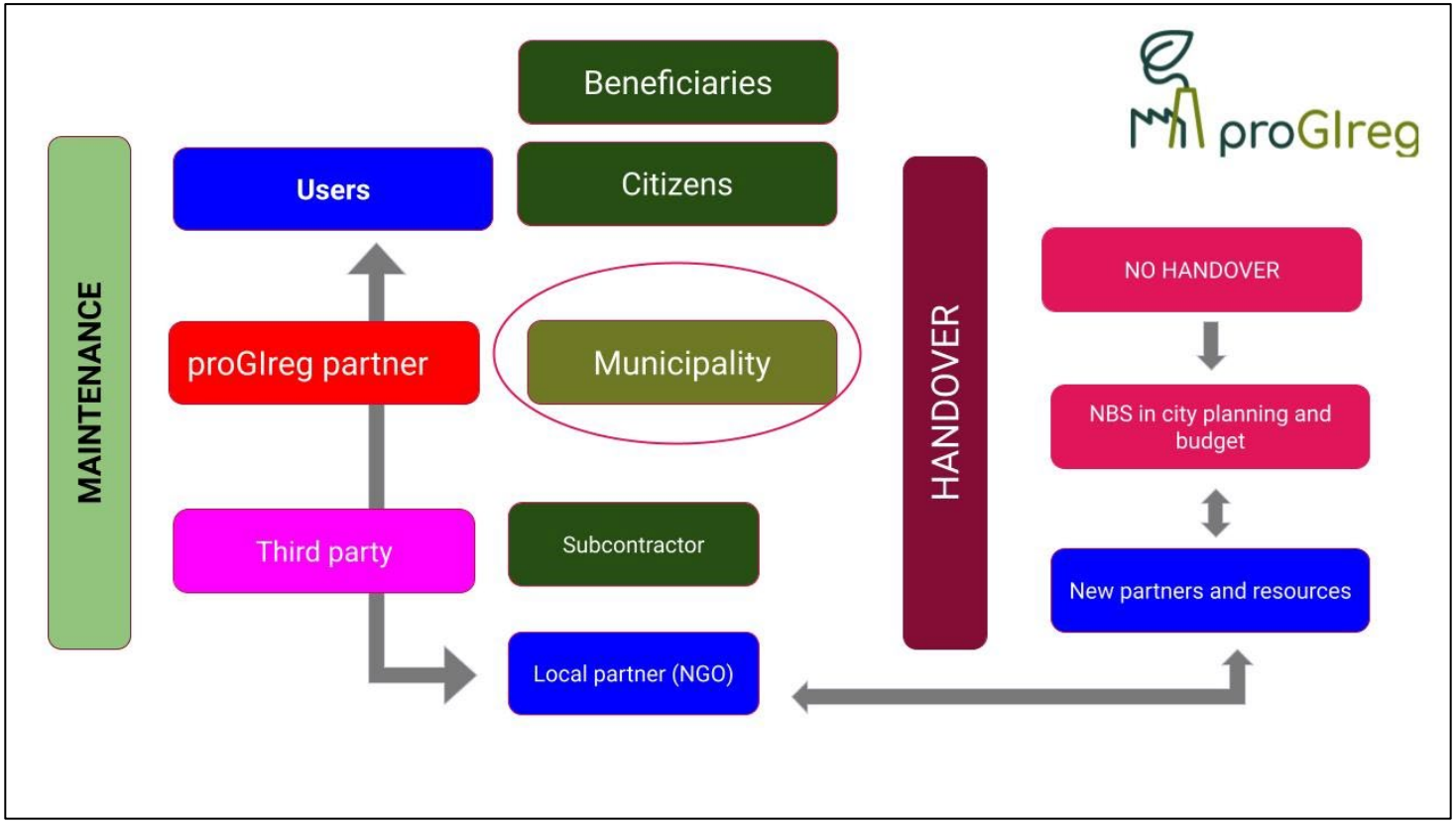


ProGIreg in Torino: Natural Based Solution in Mirafiori sud Living lab

NBS	Location	Quantity to be implemented	Implementing partner
2 - New soil	Sangone park	2 000 m²	Envipark, DUAL, UNITO, COTO, Arpa, Città Metropolitana
3 - Community based urban farming and gardening	TNE Area, Sangone Park Piemonte ParK	8 ha in three locations	TNE, FCA, Clorofilla, ORTIALTI, UNITO,MIRAFIORI
4 - Aquaponics	To be identified from a list of unused areas	4 m²	COTO (subcontracting)
5 - Green roofs and walls	To be identified from a list of public and social housing buildings	150 m² green roof, 100 m² green walls, more to be co-designed in project	COTO, ORTIALTI, UNITO, MIRAFIORI,POLITO
6 - Green corridors	Sangone River banks, Mirafiori district	4.2 km along river 2.1 km in district	COTO, (plus LTP Clorofilla), MIRAFIORI, UNITO, TNE
7 - Environmental compensation	test in Mirafiori Sud; replication at city level		COTO, MIRAFIORI
8- Pollinator Biodiversity	Sangone park, social housing, schools, public buildings	Precise locations and quantities to be identified within the project.	UNITO, MIRAFIORI, COTO

	ANALYTICAL AND PREPARATORY	CROSS	CORE AND TECHNICAL - NBS
24 LOCAL ACTIONS	Spatial and framework analysis	NBS management as Common Goods	New soil (NBS2)
			Training New skills (NBS2)
			Castello di Mirafiori ruins recovery (NBS3)
			Gardens in Cascina Piemonte (NBS3)
			Pollinator frinedly gardens (NBS3)
	Co-design processes	Testing of NBS Social innovative solutions	Acquaponic test (NBS4)
			New green roof on Casa nel Parco (NBS5)
			Schools gardens(NBS5)
			Green Walls(NBS5)
			Gardens in social housing buildings (NBS5)
			New green roof on public building (NBS5)
		Social accompanying activities	Local natural heritage enhancement (NBS6)
			Greenness and biodiversity activities(NBS6)
			River's beaches (NBS6)
			ICT SUPPORT TOOLS (NBS7)
	Baseline for NBS benefit evaluation	Educational activities in schools	REGULATIONS AND PLANS (NBS7)
			CITIZEN SCIENCE AND DISADVANTAGED PEOPLE (NBS 8)

ProGIreg and the role of the City in maintenance issues



NetZeroCities supports Europe and in particular European cities to drastically cut down greenhouse gas emissions through climate action to achieve 'climate neutrality', one of the biggest challenges our societies face today.

Background

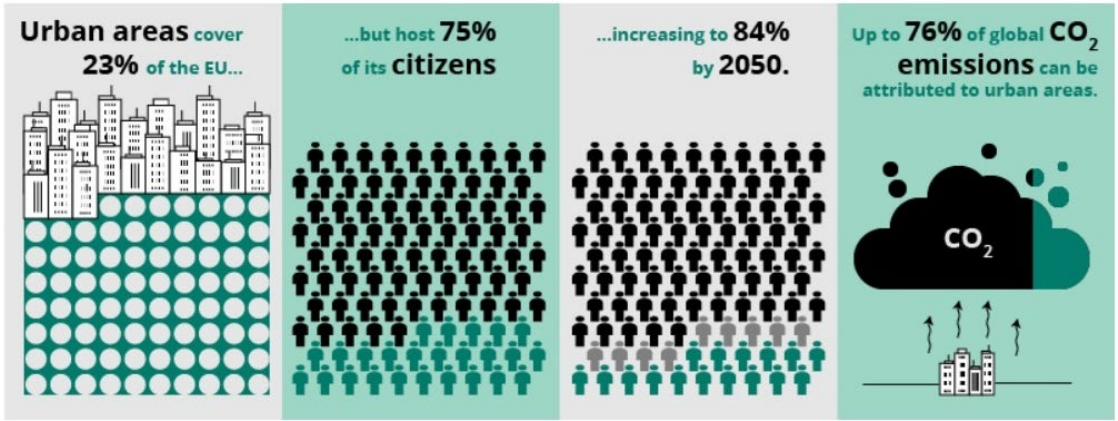
Cities are in a prime position to spearhead climate action and develop innovation for the world. Change can be difficult, and contemplating the climate crisis can be hard.

This is an opportunity to reconsider what we value, and how we'd like to live, work and interact with each other – all while creating new jobs and business models.

Cities are in a prime position to test new ways of working and living. Not only do they account for more than 70% of global CO2 emissions and are home to **75%** of EU citizens, they are also centres of economic activity, knowledge generation, innovation and new technologies. Throughout history, cities have often been at the forefront of change and innovation, and now is no exception. We believe in cities and will work with them to drastically reduce greenhouse gas emissions, all the while ensuring decarbonisation efforts are equitable and contribute to the well-being of European communities.

IL CONTESTO DI RIFERIMENTO

The European Union has set the goal of achieving climate neutrality by 2050 (Green Deal).
The Mission "**100 climate-neutral and smart cities by 2030**", aims to make 100 European cities climate-neutral and smart by 2030, thus becoming a virtuous example for other European municipalities to achieve the same goals by 2050.



9 italian cities selected: Bergamo, Bologna, Firenze, Milano, Padova, Parma, Prato, Roma e **Torino**.

Vision and strategic actions

- Transition towards climate neutrality is a multi-dimensional and dynamic changeover, involving crosscutting breakthroughs in the environmental, social and economic fields.
- The City of Turin has already reached significant results, reducing CO2 emissions by more than a half in thirty years, but is strongly committed to pursuing a long-term strategy for reaching Net-Zero climate neutrality.

5 Strategic Actions have been identified:

1) Energy efficiency and promotion of RES, achieved with building retrofitting actions and efficiency-oriented public lighting as well se pushing energy communities in urban areas.
2) Decarbonisation of transports (public and private) and enhancement of sustainable mobility
3) Digitization and smart management, through continuous monitoring and data collection towards an “Urban Data Platform” to support sectoral data-driven policies.
4) Adoption of circular economy business models linked to urban value chains.
5) Strong modal shift into urban mobility and addressing all the aforementioned sectoral scenarios at the benefit of livable, greener and sustainable communities

TORINO'S COMMITMENT TO CLIMATE CHANGE

MTIGATION

Gennaio 2009 — Covenant of Mayors

Settembre 2010 — TAPE

Novembre 2015 — 1° Monitoraggio TAPE

Gennaio 2019 — Covenant of Mayors for Climate & Energy EUROPE

Settembre 2019 — 2° Monitoraggio TAPE

Aprile 2022 — 3° Monitoraggio TAPE

Aprile 2022 — NET ZERO CITIES — EU MISSIONS

Febbraio 2023 — PAESC

ADAPTATION

Aprile 2015 — MAYORS ADAPT — THE COVENANT OF MAYORS INITIATIVE ON ADAPTATION TO CLIMATE CHANGE

Gennaio 2018 — GdL interno

Aprile 2018 — IDAP

Maggio 2018 — Analisi di vulnerabilità climatica

Novembre 2020 — Piano di Resilienza Climatica

Febbraio 2023 — PAESC

CITTÀ DI TORINO

ChangeTo
Cambia il clima, cambia la città.

CITTA' DI TORINO

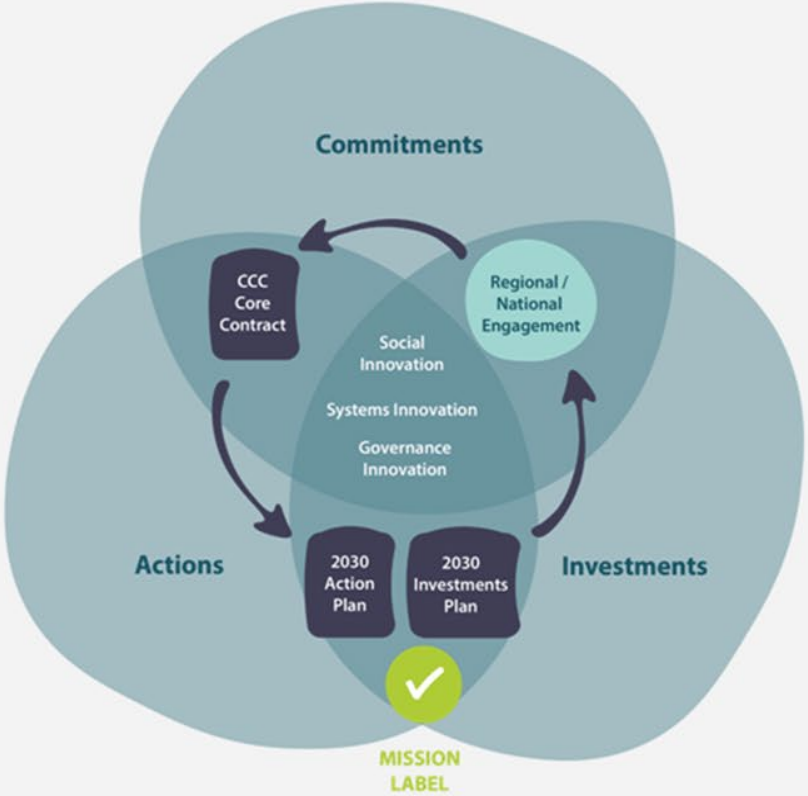
Climate City Contract

3 COMPONENTI:

- Climate Neutrality **Commitments**
- Climate Neutrality **Action Plan**
- Climate Neutrality **Investment Plan**

Campi di azione/temi

- Mobility and Transport
- Waste and the circular economy
- Green infrastructures and nature-based solutions
- Built Environment and Energy Systems (CERs)



TORINO CITY LAB

Want to know more?

CITY OF TURIN, SMART CITY SPECIAL PROJECT, INNOVATION, EUROPEAN FUNDS.

TORINO CITY LAB

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