

Advancing micromobility solutions for urban transportation:

LIFE2M

LONG LIFE TO MICROMOBILITY



Context

GREENHOUSE GAS EMISSIONS (EU 2019)

Around

72%

of EU greenhouse gases
emissions are attributable to

LAND TRANSPORT

**PASSENGER
VEHICLES**

are responsible for

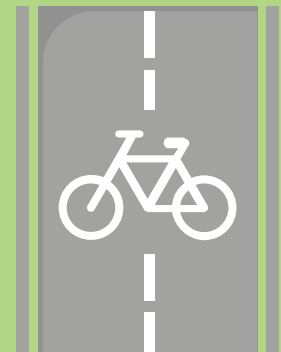
41% CO₂

emissions

BARRIERS TO MICROMOBILITY



Poor battery life



Limited
infrastructure



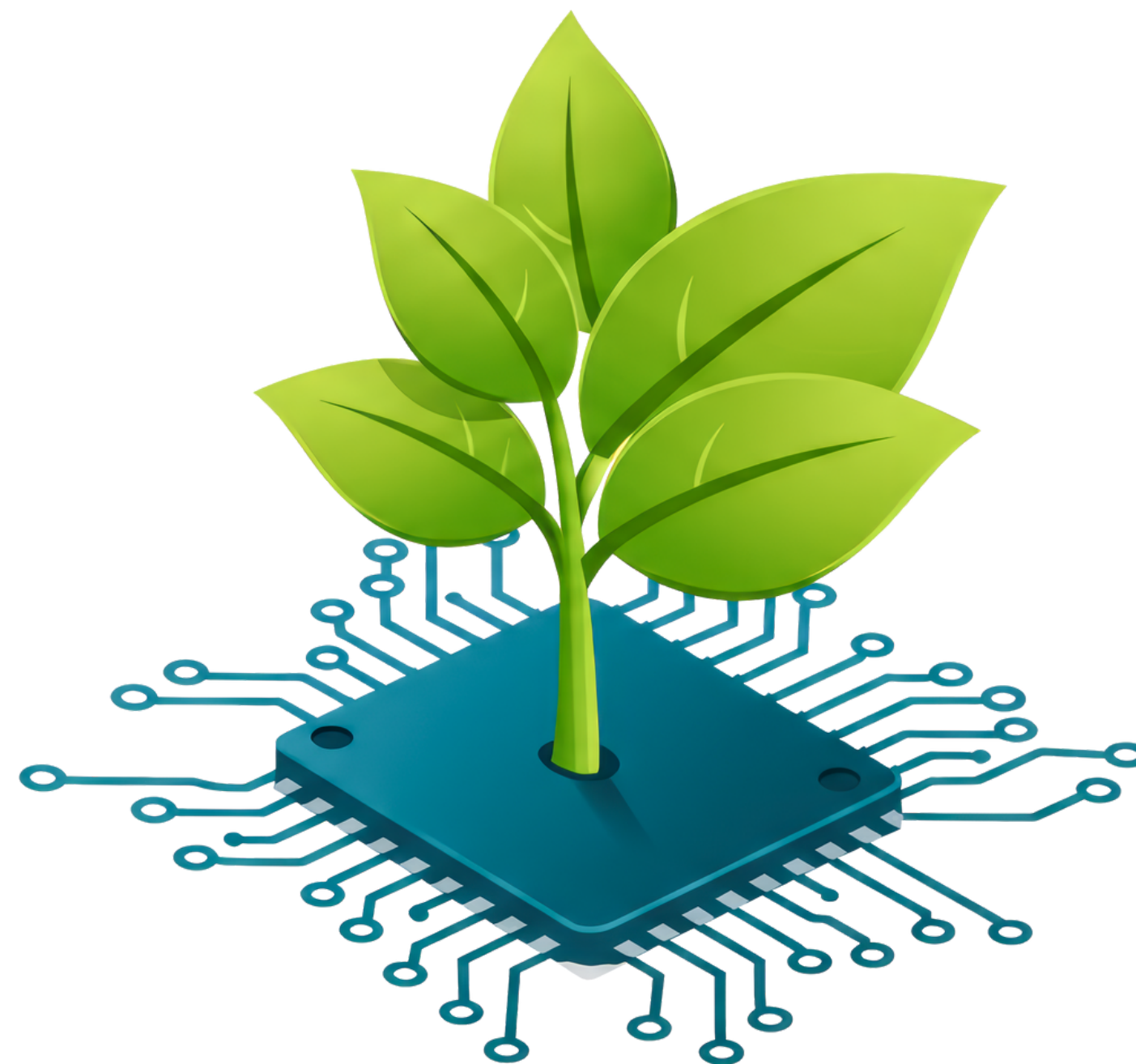
Fragile economic models

Our commitment

LIFE2M is dedicated to implementing cutting-edge technologies and solutions to overcome the challenges that hinder the spread of micromobility as the primary means of transportation in urban and peri-urban settings

Our goal

We promote the adoption of micromobility and minimize its environmental impact through the use of creative solutions throughout the entire lifecycle of microvehicles. We also engage on the development of business models, strategies, and best practices for market sustainability to achieve greener transportation



Project key figures



8 partners



4.364.927,18 €

EU contribution



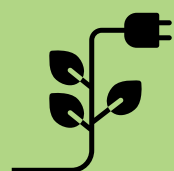
2022-2026



4

pilot cities

Expected impacts



Eco-friendly and
sustainable
transportation



The rise of
micromobility



A multi-
beneficial vehicle

Challenges

The design of new micro-vehicles aims to enhance **recyclability**, prolong component lives, **reduce resource consumption**, energy, and waste, while minimizing raw material use and maximizing component recycling.

Road safety, the **analysis of the needs** of potential users, the increase in the spread of micromobility solutions, and the **development of innovative business models** for private micromobility, sharing, and freight transport.



Highlights

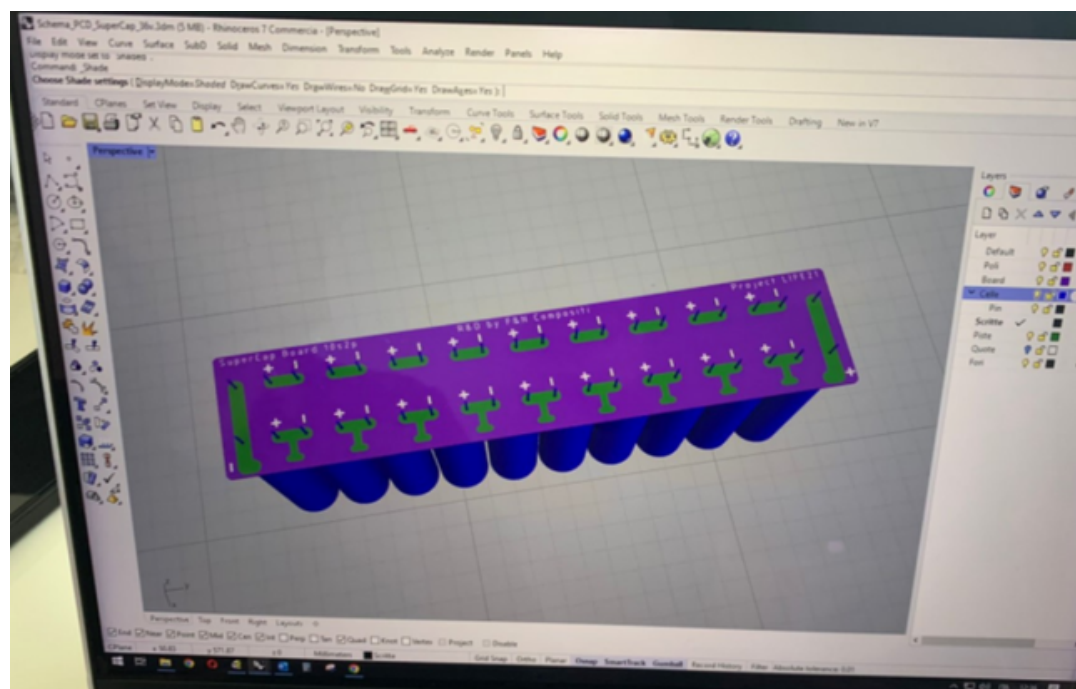
Our efforts have been focused on optimizing battery solutions for micro-mobility vehicles. Through rigorous testing, we have identified supercapacitors as the most suitable option, offering rapid charging capabilities (an average of 20 minutes, compared to 3 hours for lithium batteries), extended lifecycle, and superior temperature tolerance.

Incorporating a sustainable ethos, our vehicle chassis will feature a hybrid construction of plywood (on the e-bikes) and uncured recycled carbon (on the e-scooters). This innovative blend ensures a lightweight yet sturdy frame, capable of absorbing vibrations for enhanced rider comfort, while also aligning with principles of sustainability and circular economy by minimizing waste and reusing resources.

The curb charging stations for the batteries are sustainably designed with solar panels, encased in glass, and supported by recycled plastic pellets and resin. This material allows for easy molding and ensures readily available components.



Battery studies

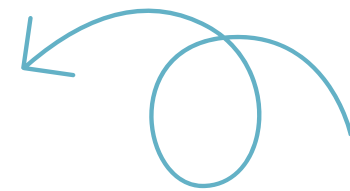


After some research, we came across 2 suppliers: a Chinese one and a German one.
Further tests will take place to better understand how they react.

We also had to **design** and produce the **sleeves** for the batteries, for them to fit in the vehicles.



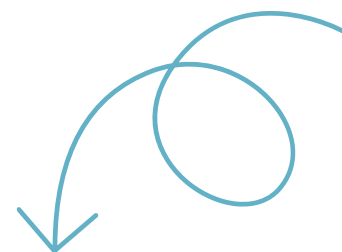
Prototypes



Bike prototype made of **plywood**
and **recycled carbon!**



LEONARDO e-scooter prototype.



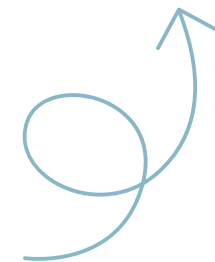
Bike Prototype of a
muscle-powered bicycle
with the **retrofit kit!**



Charging stations



A prototype of our curb charging station made of bio-resin and recycled plastic. It will be positioned along the curbs for bike paths and will ensure fast charging (a few minutes)



A prototype of a charging station

App

Welcome Back!



From here you can monitor your device status and request a charge



- Not Connected
- Charge Aborted

Device

Charge

Device

Monitor from here the status of your device

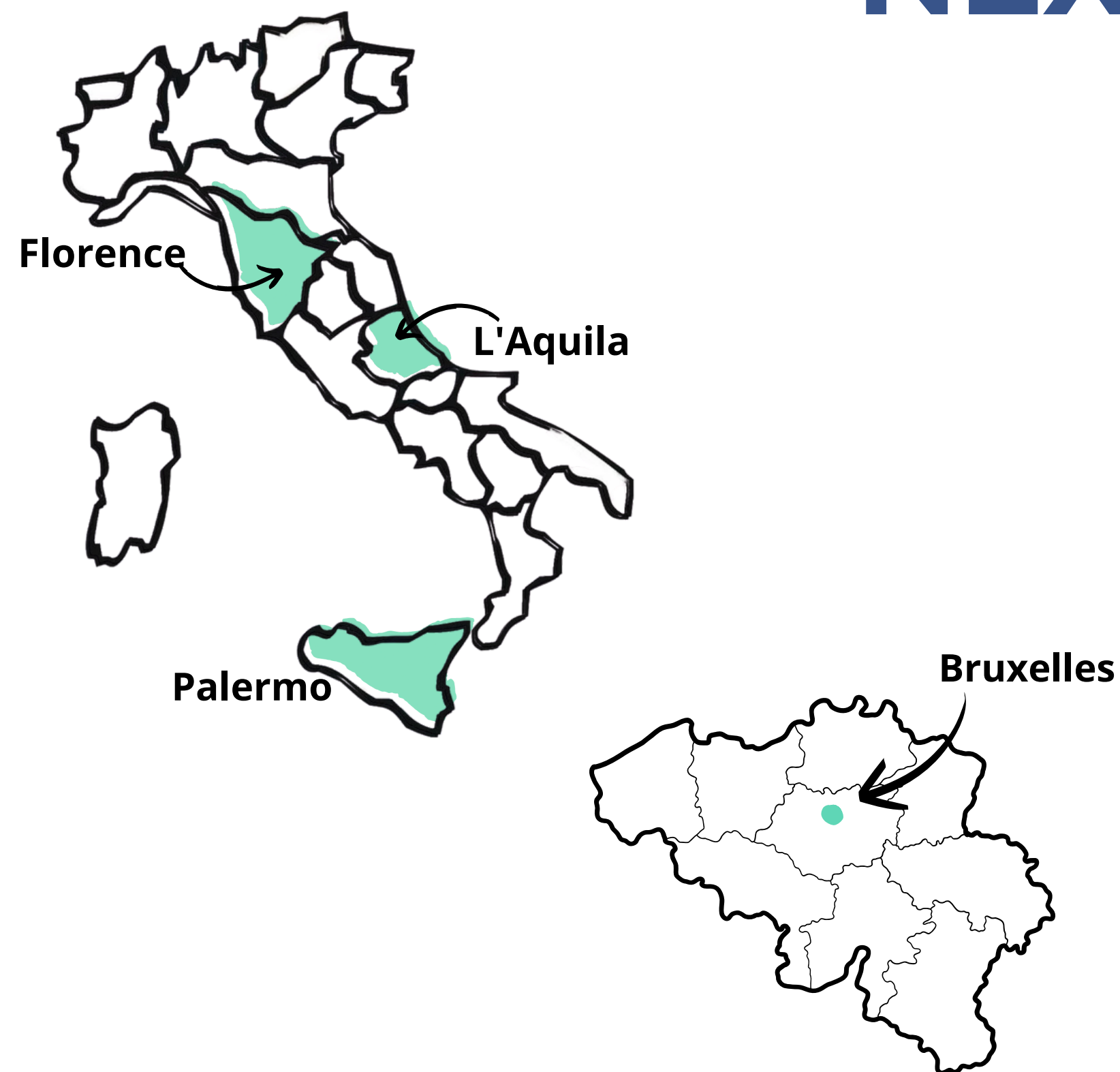
The device is not connected

Connect



The LIFE2M app will collect data on usage, routes, recharging, and vehicle status in real time, supporting the monitoring and optimization of pilot projects.

NEXT STEPS



Pilots of the technologies developed by the project will take place in the four cities (Florence, L'Aquila, Palermo, Brussels).

Test with **university users** (L'Aquila, Florence) **AMAT employees** (Palermo) and **young workers** (Bruxelles): evaluation of vehicles by direct experience and final form. The pilots will provide data on **vehicles use habits** and **performance**.

Partners



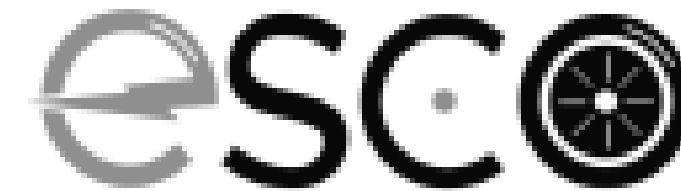
Università degli studi di Firenze

Coordinator of the project and leader of the WP1 (project management) and WP3 (Demo-design and development)



Comune dell'Aquila

Municipality of L'Aquila city.
It will be involved in the project by promoting the use of micro-mobility vehicles in urban areas at a local level (WP5 - Pilot)



ESCO Mobility

An innovative start-up based in Palermo offers products and solutions for urban micro-mobility.
It will be responsible of the Demo implementation (WP5)



EUAbout

Think tank based in Brussels, conducting quantitative and technical scientific research on European policies.
It is leader of Communication & Dissemination activities (WP4)

Partners



F&N Compositi

Specialized in the design and industrialization of composite material components for the aerospace, marine, and industrial sectors, it contributes to the design and production of the vehicles (WP3).



SILIDEA S.r.l.
Battery Management System
Electronics - BMS - Motors

Silidea

Specialized in the design, industrialization, and production of electronic and electromechanical devices.
It is involved in the design and implementation of the electronics to manage the charge and discharge of the accumulator.



UNEEDIT

Consultancy firm dedicated to sustainable transport solutions design and development.
It is leader of the Exploitation activities (WP6)



**Università degli Studi
Guglielmo Marconi**

Università degli Studi Guglielmo Marconi

The Department of Engineering Sciences is specialised in research in energy saving in industry, transport, and environmental impact assessment.
It is leader of the Monitoring and evaluation activities (WP2). It will monitor and evaluate LIFE2M microvehicles

Join us for a **GREENER FUTURE**

Discover more: <https://www.life2m.eu>