

**The living lab
of ecological transition**
Leaf Community





Loccioni

From data to value. For the wellbeing of people and the planet

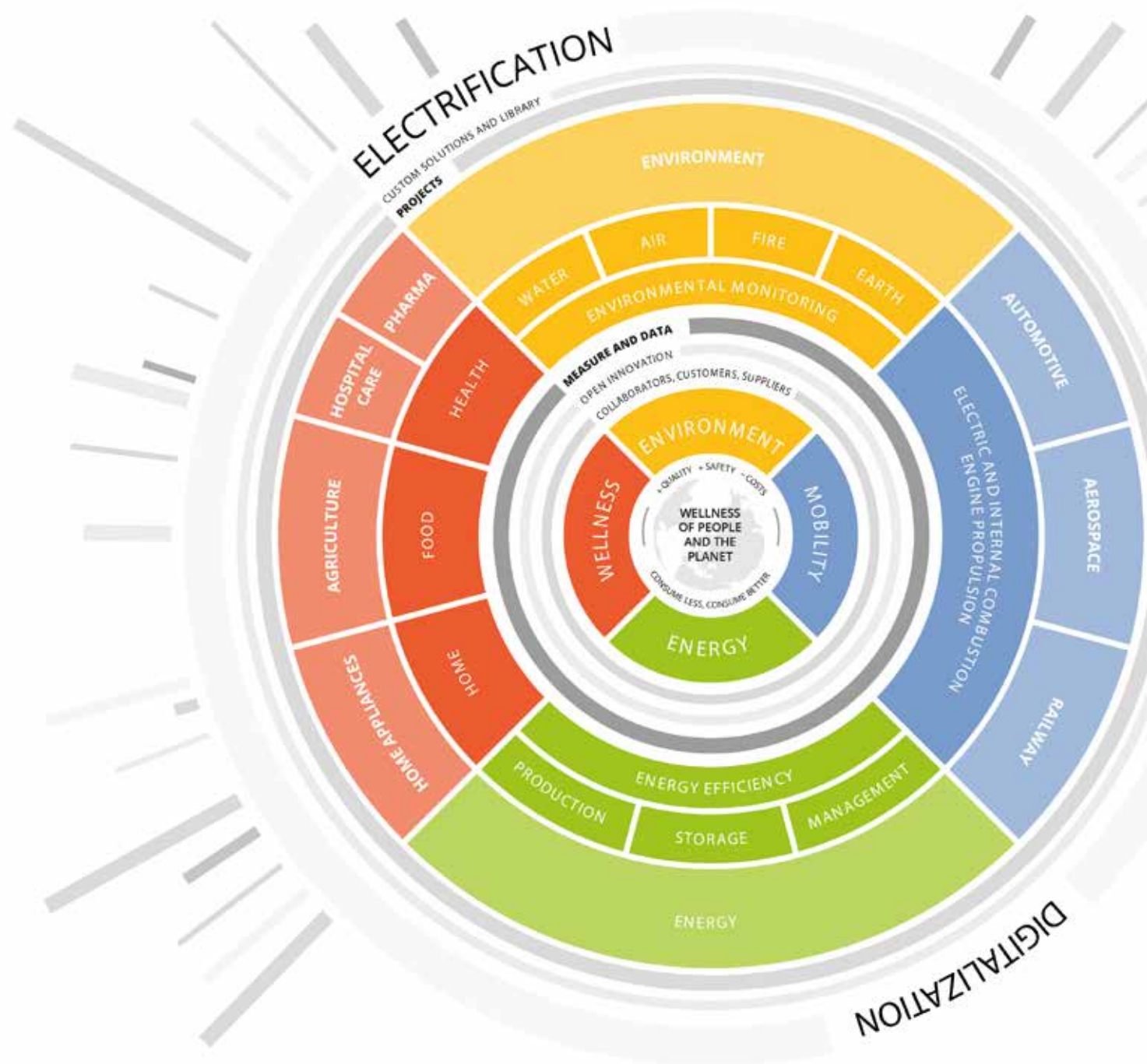
Loccioni is a family-company based in le Marche hinterland, whose cultural roots lie in the Benedictine and farmers tradition, whose values the company preserves and foster.

The Loccioni mission, is to **improve the wellbeing of people and the planet**. It means contributing to consume less and better, to improve the quality, safety and sustainability of industrial products and processes.

From aerospace to medical, from agriculture to mobility, passing through the home, energy and environment, each **technological project**, fueled by the thrust of **electrification** and **digitalization**, is a small step towards the ecological transition.

"In our working community the ecological transition is a path involving any aspect of the company. The goal is to restore harmony between man and nature through technology. After all we are working for this goal: to leave it a little better than we have found."

Enrico Loccioni



The European Green Deal

Today the whole world is talking about the need for ecological transition. Europe is indicating a **roadmap to drive** this important evolution.

Loccioni started to work on these drivers many years ago and can be a witness and open lab, having reached and measured many of these goals.

- Done in the Leaf Community
- Ongoing in the Leaf Community



An ecological transition started 30 years ago



1990 Flooding of Esino river

How can a menace be transformed into a resource?



Comfort

2005 Marche Region

Energy efficiency and consumption monitoring in the government palace



Safety

Efficiency

2008 LEAF COMMUNITY Sustainability open lab

Living, working, moving, learning at zero impact.



Sustainability

2013 LOV

An agro-technological farming project to experience the ecological transition in agriculture.



Biodiversity

2018 Loccioni goes electric

The entire Loccioni's campus is powered by electricity. Zero gas and fossil energy.

2020 Nomadic Labs

Mobile testing rooms to perform energy absorbing tests on electric components. A new concept of energy island to be transferred to the customer.



Intelligence

1985 Comfort of people

Installation of the first air conditioning system in the open space labs: but it consumes a fortune! How to balance comfort with consumption?

2000 Buildings

Implementation of solutions for energy saving and consumption monitoring, to avoid any waste and increase efficiency.



2007 Water as a resource

The Leaf Waters, micro hydroelectric power plants supply clean energy to the company. Thanks to rain water collection and the use of ground water for irrigation, drinkable water saving reaches up to 75%.

2012 The river as a resource for the future

Taking care of the river's banks and the installation of micro-hydroelectric power plants have transformed the river into a resource of energy and beauty for all.

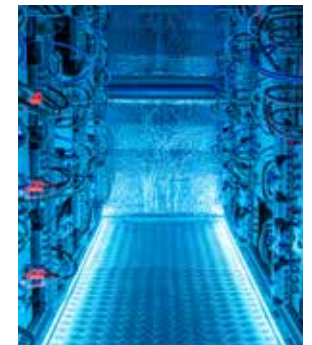


2014 Smart micro-grid

Storage, digitalization and smart management of energy fluxes.

2022 Green hydrogen

The excesses of energy produced from renewable sources are used to generate green hydrogen and use it as seasonal storage.





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Storage

Storage systems to have renewable energy always available



Microgrid

An intelligent micro-grid thanks to EMS My Leaf and Internet of Energy.



Water

With the micro hydro-electric power plants the Esino river provides clean energy to the Loccioni grid.



Wood

The pyrogassifier system gives thermal and electric energy while enhancing the wood chain and forest maintenance.



Sun

In the Valle di San Clemente a sun field gives new energy to the earth and the people.



Agriculture

Regenerative agriculture to improve Co2 seizure, circular economy biodiversity and environmental monitoring.



Mobility

Electric vehicles to grid become part of the microgrid as storage systems.



Hydrogen

Hydrogen is produced with clean energy excess and becomes an additional seasonal storage.



Hospital

The regional hospital saves energy and measures its energy consumption.



Lab

Old and new working spaces are designed to be powered by renewable energy an interconnected in an energy autonomous grid.



Nature

Gardens, animals, cycling and pedestrian paths, the charm of the Esino river and of Valle di San Clemente are common goods to be preserved and powered.



Farm

Rural house for conviviality where tradition meets the pleasure of being together



Education

A school powered by the energy of sun and children, educates to respect and to sustainable behaviour.



Station

An integrated lab for safety, innovation, sustainability for a smart mobility.



House

The first zero impact and zero bills house in Italy. Super comfort with zero emission.

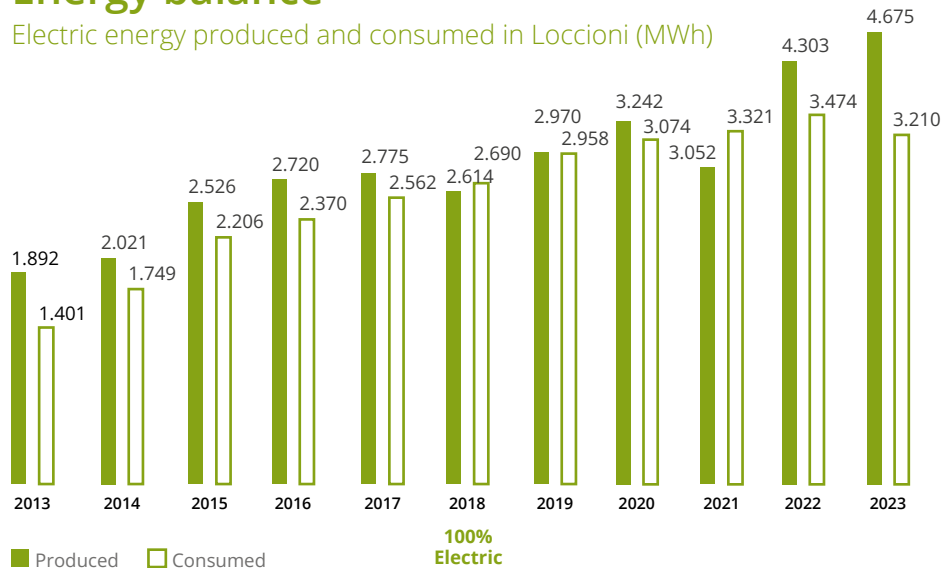
The numbers of Loccioni LEAF Community

- 18 photovoltaic systems installed for a total of 3.030 kW
- 4 Hydroelectric power plants for a total of 174 kW
- 1 cogeneration power plant for 50kW
- 4.675 MWh of renewable energy produced in total
- 3.210 MWh of energy consumed
- 4 electric storage for a total of 1.719 kWh
- 1 thermal storage of 450 m³
- 1 Hydrogen production system 100kW
- 81% self-consumed and produced renewable energy
- 10 electric cars in the fleet and potential storage for the grid
- 18 charging stations connected to the micro-grid
- 1.192 tons of CO₂ avoided.
- 55% self-sufficiency from renewable sources

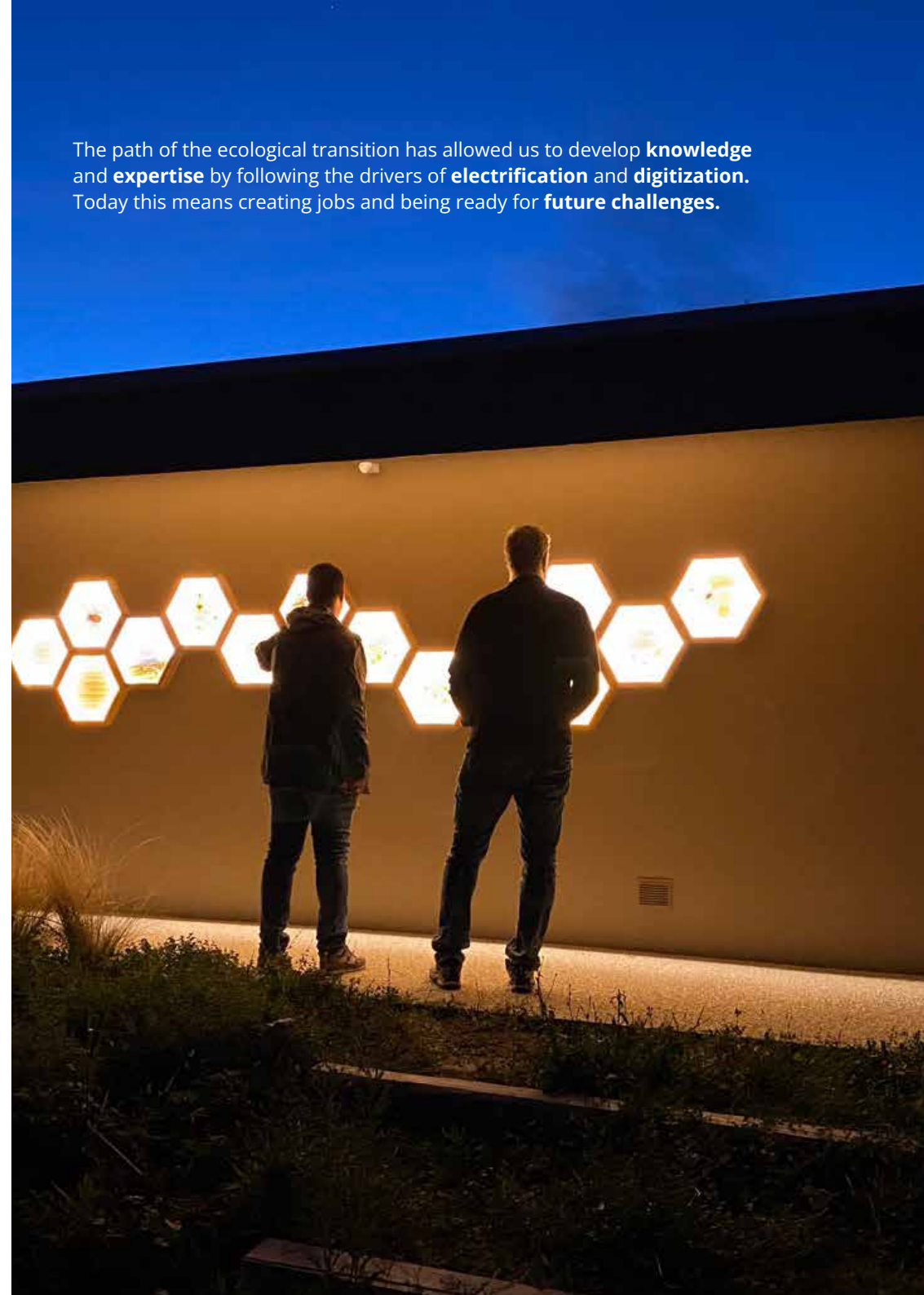
Despite the considerable increase in collaborators, new laboratories and energy-intensive tests, the energy balance remains positive. **Each Loccioni employee is a "negative emitter" who absorbs more than half a ton of CO₂ per year.**

Energy balance

Electric energy produced and consumed in Loccioni (MWh)



The path of the ecological transition has allowed us to develop **knowledge** and **expertise** by following the drivers of **electrification** and **digitization**. Today this means creating jobs and being ready for **future challenges**.



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