Green Independence

EMPOWER EVERYBODY

Accelerating **independence from fossil fuels**
through affordable & accessible
green energy and **clean water** at the source

PROBLEMs

Green Independence
EMPOWER EVERYBODY

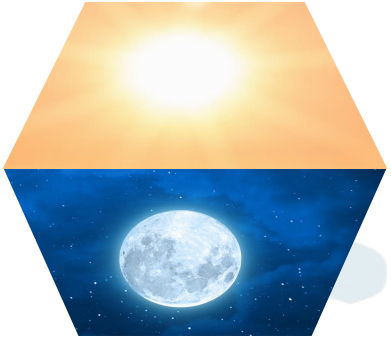
Our Planet is living the worst **climate crisis** ever:

WATER SCARCITY

By 2025, two-thirds of the world's population will face the problem of water scarcity, which will become an **expensive commodity**.

FOSSIL FUELS DEPENDENCY

About **two-thirds** of global greenhouse gas emissions are linked to burning fossil fuels **for energy** used for heating, electricity, transport and industry.



RENEWABLES INTERMITTENCY

Renewables could be the solutions to the other problems but they are intermittent and we need to find an **efficient way to store** them.

PROBLEMs & SOLUTION

Green Independence
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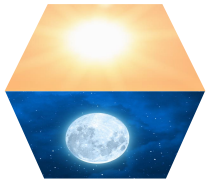
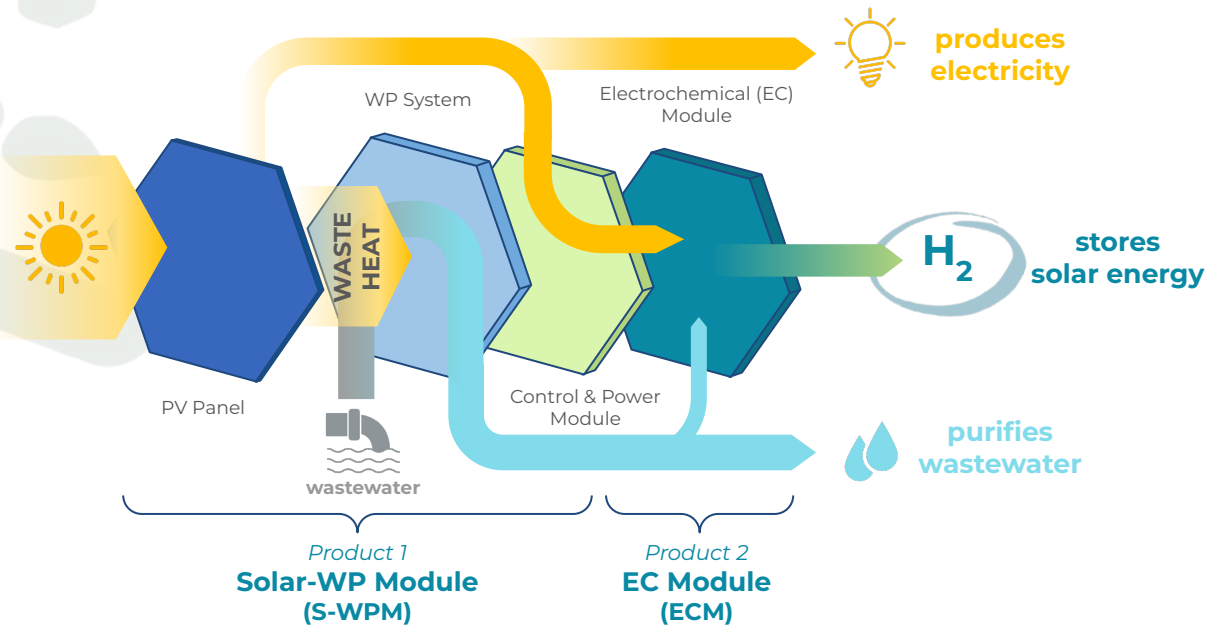
PROBLEMs	AVAILABLE COMMERCIAL TECHNOLOGIES		OUR SOLUTION
 FOSSIL FUELS DEPENDENCY	PV PANELS	only **20%** efficiency **X 3**	Exploits **60%** of solar energy
 WATER SCARCITY	REVERSE OSMOSIS	high energy consumption: **3-7 kWh/m³** of water purified **X 20**	Saves/produces 20 times the energy need for desalination **100 kWh/m³**
 RENEWABLES INTERMITTENCY	ELECTROLYZERS	store renewables with a very high cost **~20 €/kg** **X 20**	Reduces 20 times the production cost of green hydrogen down to **1 €/kg**

SOLUTION

New Artificial Leaf

The multifunctional solar panel



HOW IT WORKS:

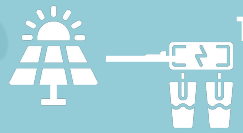
- Commercial **PV panels** typically convert 20% of the sunlight they receive into electricity. The remaining 80% is lost as heat.
- Our unique **Water Purification System (WPS)** is integrated with the solar panel. It harnesses this otherwise wasted heat to purify or desalinate water, all while the PV panel continues to generate electricity.
- If the clients wants to stores the electricity, our **Electrochemical Module (ECM)** steps in. Integrated within the system, the ECM converts the purified water into green hydrogen, operating locally and entirely off-grid.

SOLUTION - USP

PATENTED (PCT)

1

1:1 PV/Electrolyzer Modular-Flexible size



PATENT PENDING

2

Waste-to-H_2 & Secondary Products

#3

Low Cost & Low Maintenance Electrochem. Cell

4

NO-noble metals & low maintenance (Alkaline electrolyzer)

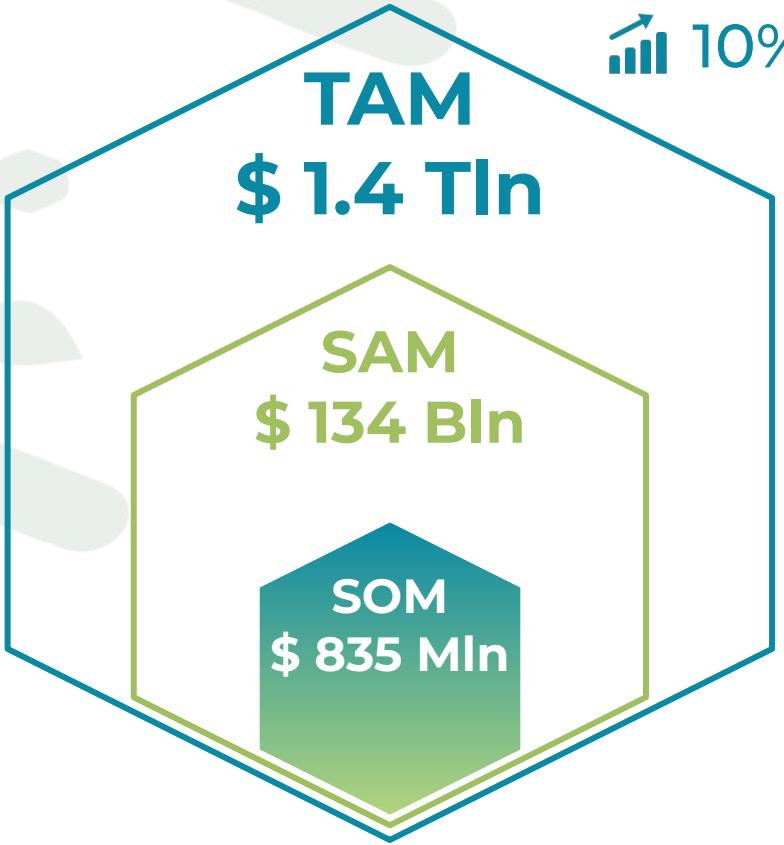
 # 1 Having **equal** solar peak and electrochemical **capacities** allows the system to be off-grid, eliminating the highest OPEX cost in hydrogen production (paid electricity); at the same time, the design will give **higher flexibility** thanks to a **dynamic work point** (we are also working on an innovative **cell design** using low-cost materials).

 # 2 Producing H_2 starting form wasted water will **reduce** the OPEX cost for its production; moreover, the possibility of **selling** the surplus of purified water will directly benefits H_2 levelized cost profile.

 # 3 Using a **low-cost** EC reactor will bring down CAPEX costs and O&M (OPEX) cost. Highly manufacturable and reusable reactor is a great contributor for reducing LCoH and increasing the adoption rate.

 # 4 Using a **low-cost** catalyst will bring down O&M (OPEX) cost. We have tested a **zero-platinum** catalyst that costs **30 times less** than a normal commercial (Platinum-based) catalyst but with **comparable performances**.

MARKET & CUSTOMERS



B2B

Energy Industries
- Renewables
- Water treatment
- Oil & Gas

Hard-to-abate
- Steel
- Cement
- Petrochemicals
- Glass
- Ceramics

Infrastructures
Heavy-duty
Transportation

BUSINESS MODEL

Our business model focuses on the **design**, **assembly** and **selling** of the Solar-Water Purification Module (S-WPM) first and then the complete New Artificial Leaf, once the industrialization will be completed. We will operate as an **Original Equipment Manufacturer** and we will also offer services such as Operation and Maintenance.

Production & Installation

We will start with selling and installing the S-WPM. Then, we will upgrade to the complete NAL tech

2-2,5 M€/ha / 4-4,5 M€/ha

Annual Revenue Share

The benefit (either savings or revenues) coming from the plant will be shared with the customer

30-60k €/yr

Operation & Maintenance

The cost of this service is estimated at an annual revenue equal to 5% of the value of the plant

200k €/yr

Licencing royalties

The licencing will be for markets that we cannot reach directly for geographic reasons (i.e. Australia, Asia) or for entry barriers such as the aerospace market

CUSTOMER BENEFITS

Water related cost reduction

Water related industries instead of consuming energy (-5 kWh/m^3), will be able to **produce energy** (+100 kWh/m^3) **while purifying water**, drastically lowering cost for water disposal, technical water procurement and/or water desalination through water recycle and solar energy production.

Cost-effective SOLAR WASTE-TO-HYDROGEN

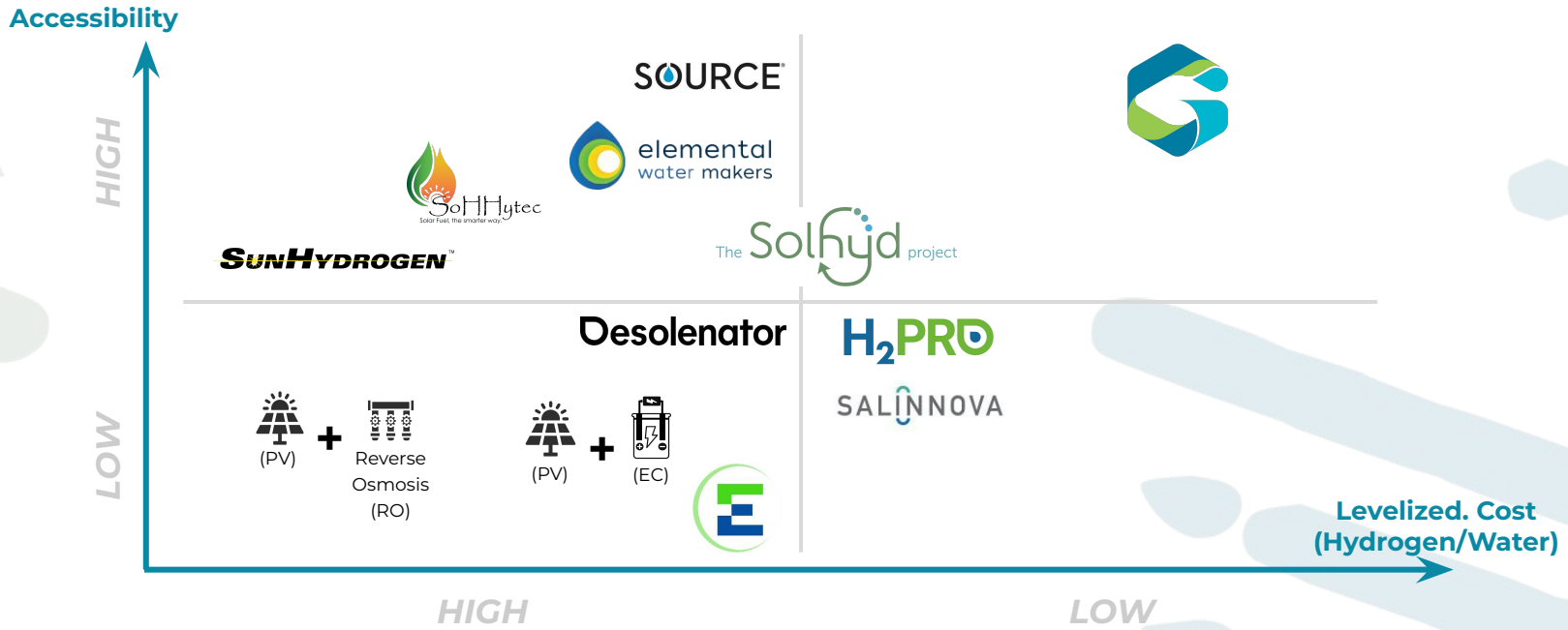
Reducing OPEX cost of water and paid electricity will enable a cost-effective production of green hydrogen directly from wastewater. Renewable energy producers will **reduce curtailment**, oil and gas industries and hard-to-abate sectors (i.e. steel, cement, glass) will **reduce carbon footprint** and **improve P&L**.

LOCAL Green H_2 production

The local production of green hydrogen will trigger a steep **reduction** of hydrogen **transportation and compression need** and it's consequent **cost**; this will not only **benefit the P&L** of stationary industries but will also enable the creation of a **sustainable network** of H2 **fueling stations** and the production of H2 along infrastructures (pipelines, highways, railways, off-shore).

COMPETITORS

The competitors panorama is populated on one side by established technologies and innovators on the other; the **established technologies** mainly focus on centralized approaches that are characterized by low accessibility and high levelized cost; **innovators** are trying to focus either on accessibility or cost; nobody, besides **GI**, is providing a solution that is **both low cost and accessible**.

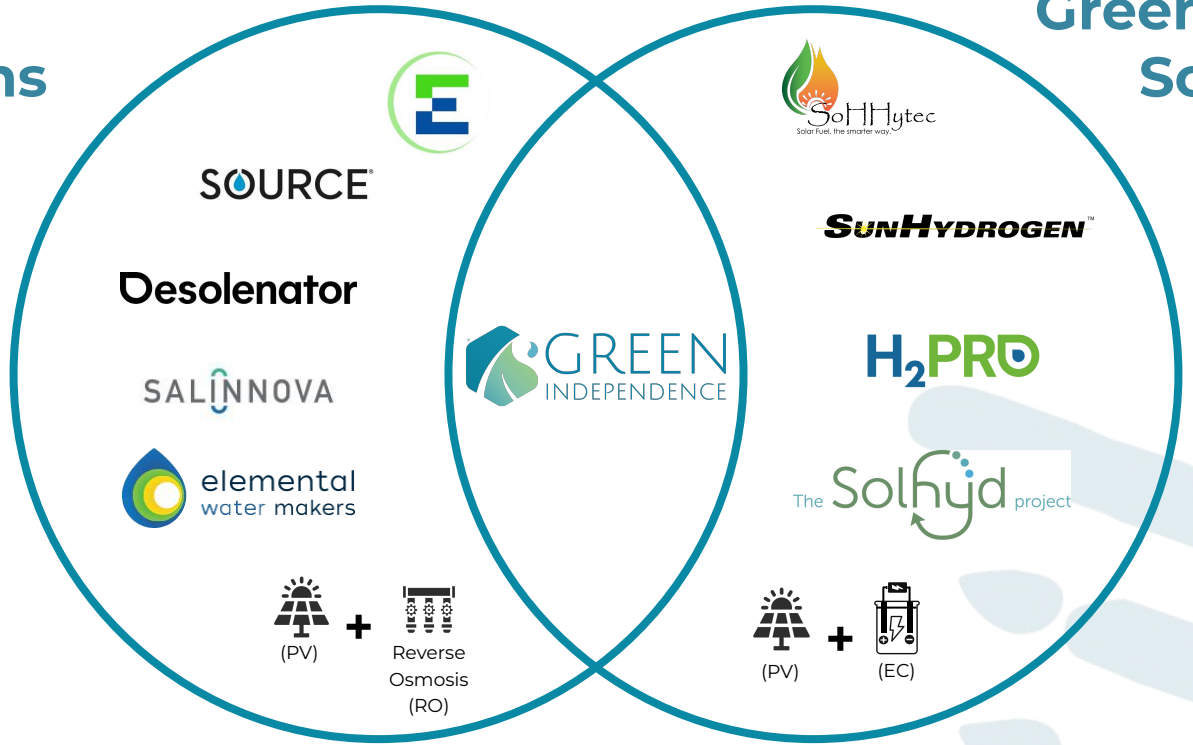


COMPETITORS

GI's New Artificial Leaf is the only tech that **combines and integrates** into one product **water solutions and green hydrogen technologies**.

Water Solutions

Green Hydrogen Solutions



TRACTION

2 POCs
90k€

Pilot/Demonstrator
200k€

- ✓ Low Platinum Catalyst
- ✓ LCoH Model Analysis

NDA

- ✓ ZERO Platinum Catalyst
- ✓ Stability stress test

ELLE

ongoing throughout 2024

Letters of Interest & Support:

Early Adopters

snam
eni
SIRAM VEOLIA
Italgas
acea
acquedotto pugliese

Tech Partners

3SUN
enel Green Power
CETMA
Fluid-o-Tech
proplast
ATHENA
PUNCH Hydrocells
Sirti
FaradaIC
MASMEC

Institutions

MINISTERO DELL'AMBIENTE E DELLA SICUREZZA ENERGETICA
UniCredit
REGIONE PUGLIA
INTESA SANPAOLO INNOVATION CENTER
DiTNE

OUR TEAM

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EMPOWER EVERYBODY

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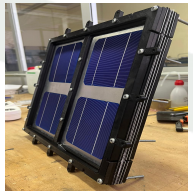
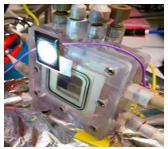
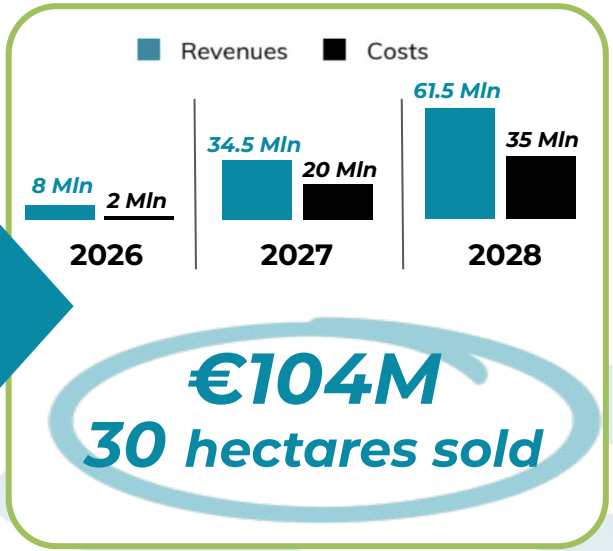
ROADMAP







Electrochemical Module (**ECM**) is at TRL 5 with a patent (PCT). Solar-Water Purification Module (**S-WPM**) is at TRL 6 with a patent filed. The market entry roadmap foresees the completion of the S-WPM's development by 2025, while the complete NAL by 2026.

Within 5 years we expect to reach a market share of 0.8% of the SAM (equivalent to **€ 104M ($110M) cumulated revenues**) resulting from **30 hectares of installations**. We expect to hit breakeven point between 4th-5th year.

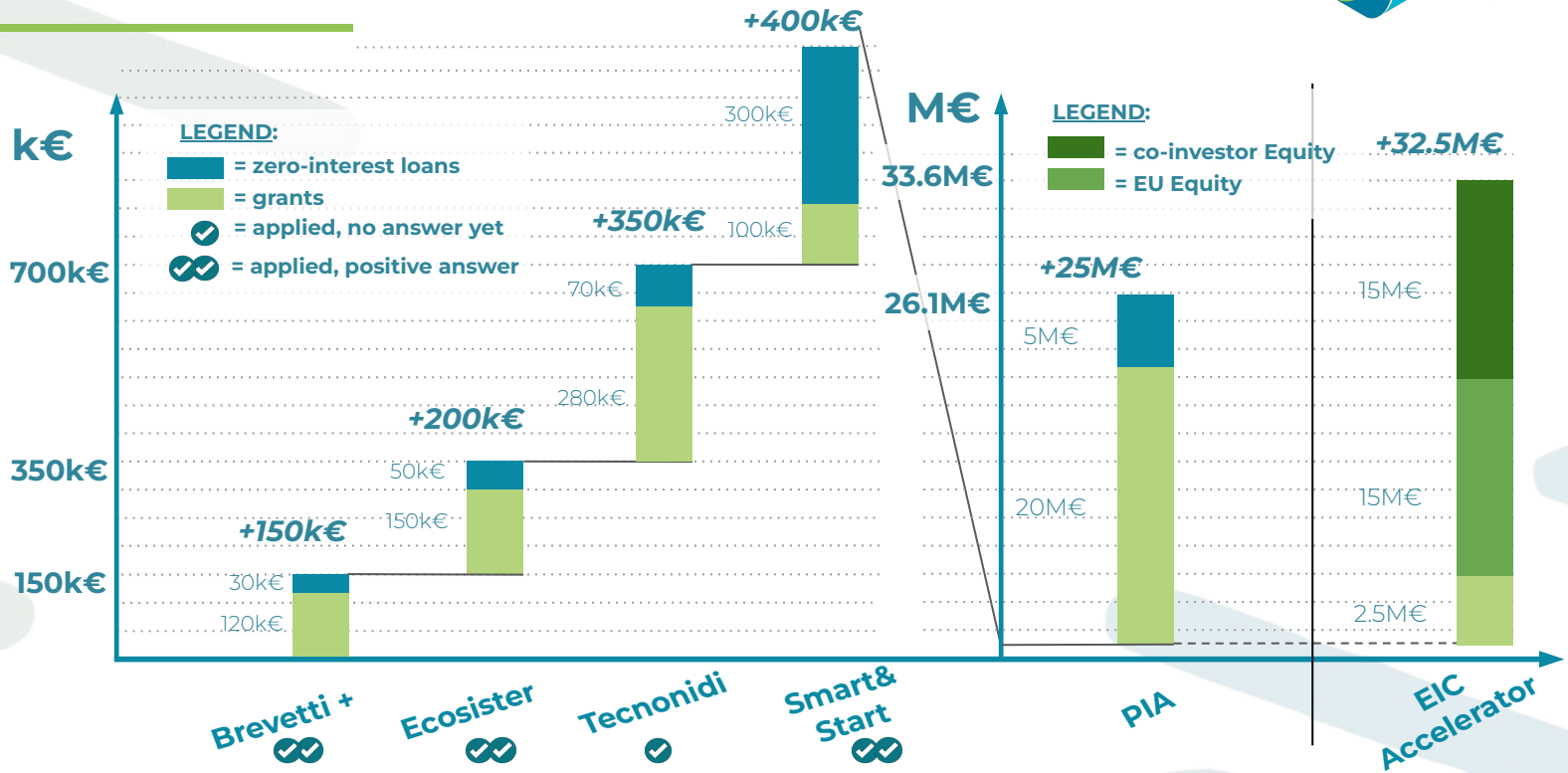
VALUE CHAIN

To accelerate market entry, Green Independence will, in the first phase, **outsource the production** of the main subcomponents to focus only on design, assembly, testing and installation at the customer. In this regard, we are already in contact with some of the most important **suppliers** for us and we are working on the **agreements** regarding possible **co-development** and **production**.

binding contracts signed

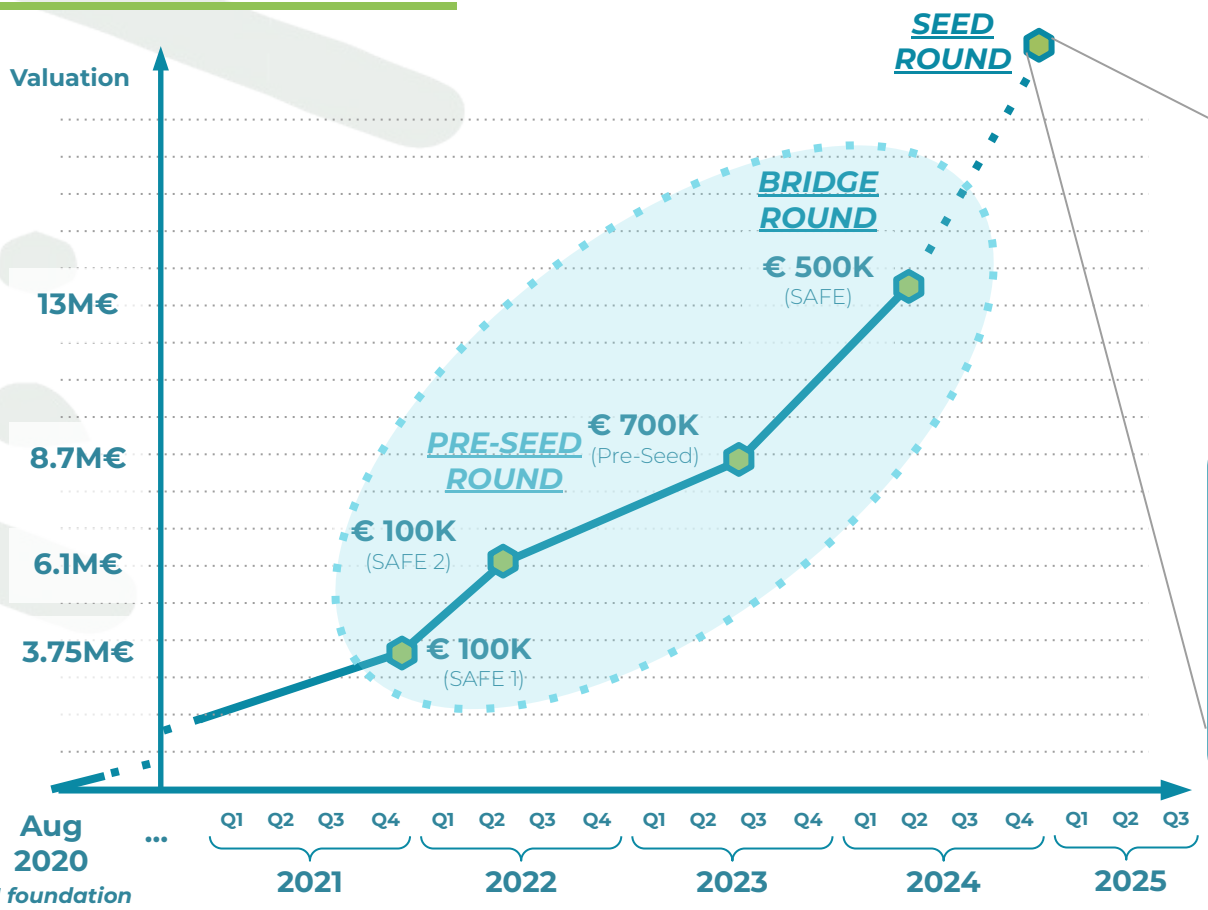
Preliminary discussion and/or LOI signed but NO contract yet in place

GRANTS



Green Independence is eligible for a large number of additional financial resources like grants, zero-interest funds and equity-matching investments. Initially focusing on smaller grants to enhance technology and market readiness, we intend to pursue larger grants for supply chain and market expansion. We already requested **€ 1.1 Mln**, about **60%** of witch is in grants; of those we **already secured €750k**. We aim to secure more funding in the next 6-8 months while applying to larger grants.

FUNDING



GI has already secured a total **€1.4M from VCs and Business Angels**

GI seeks additional total **€5M to expand its supply chain and manufacturing**

SEED ROUND

(Q1 2025)

USE OF FUNDS

- **25%** Product & R&D
- **40%** Operations
- **30%** CapEx
- **5%** Sales & Marketing

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We are building
the **NEW ARTIFICIAL LEAF**
because we believe that

we only need
sun and water
to empower
a greener future!

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