

XPRIZE  
CARBON  
REMOVAL

TUM



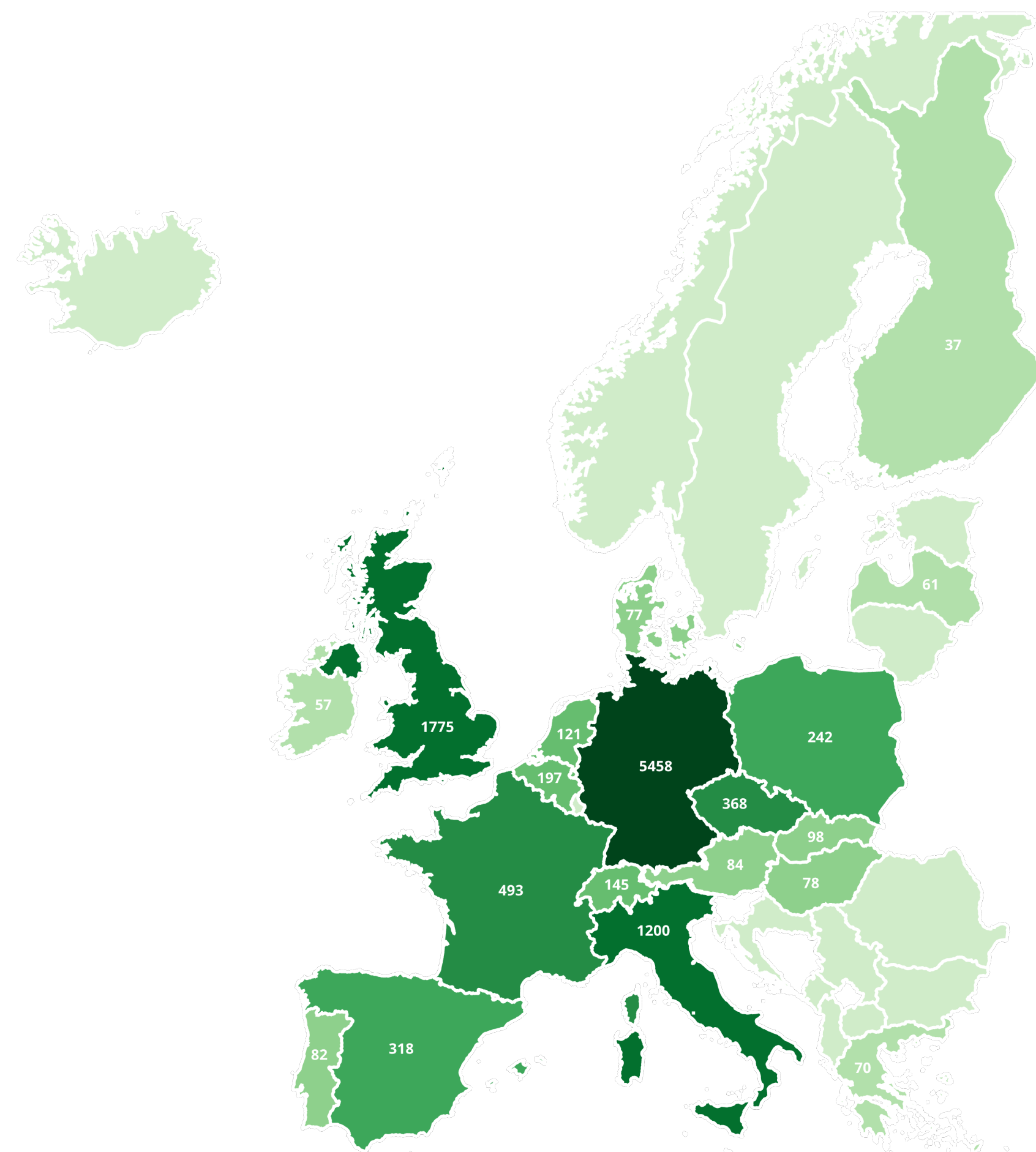
reverion

WE REVERSE CLIMATE CHANGE



**19.000+**  
BIOGAS PLANTS

**>11 GW**  
ELECTRICAL CAPACITY



EU-BIOGAS: INSTALLED ELECTRICAL CAPACITY [MW]

# BIOGAS ENABLES NET-ZERO

ENERGY TRANSITION SUCCESS FACTORS



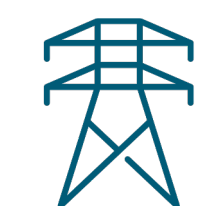
## 24/7/365 SUPPLY SECURITY

Unlike electricity from fluctuating wind and PV, 65 million EU households can be supplied with weather-independent, resilient and predictable bioenergy



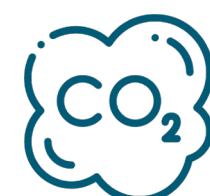
## LONG TERM ENERGY STORAGE

Power-to-gas with surplus electricity and biogenic CO<sub>2</sub> could generate >40 billion m<sup>3</sup> of renewable gas, replacing >10% of EU natural gas consumption



## DECENTRALISED SOLUTION

Limited power grid transmission capacity (e.g. GER north-south) can be relieved and infrastructure costs reduced using fossil substitutes in the existing gas grid



## REDUCE CO<sub>2</sub> EMISSIONS

Fit for 55: Cutting 9.6% of Europe's total emissions through biogas as the first climate positive energy source for economic carbon removal at gigaton-scale





# NOW

biogas plants exploit less than 40% of the energy potential and emit +92.3 Mt CO<sub>2</sub> per year



# WITH REVERION

we double the power production to 80% and turn biogas into carbon negative energy: -170 Mt CO<sub>2</sub> per year



# THE SOLUTION: REVERION

IS THE GAMECHANGER FOR THE ENERGY OF TOMORROW

## OUR INNOVATIVE ALL-IN-ONE SYSTEM DESIGN

Future-proofed through multifunctional application that offers our customers diverse and lucrative revenue streams from green electricity, renewable gases (hydrogen or natural gas substitute), balancing power and CO<sub>2</sub> certificates

## 80% REVOLUTIONARY EFFICIENCY

Using solid oxide fuel cells in our patented system design instead of market-standard combustion engines **doubles** electricity production by achieving 80%<sub>el</sub> efficiency



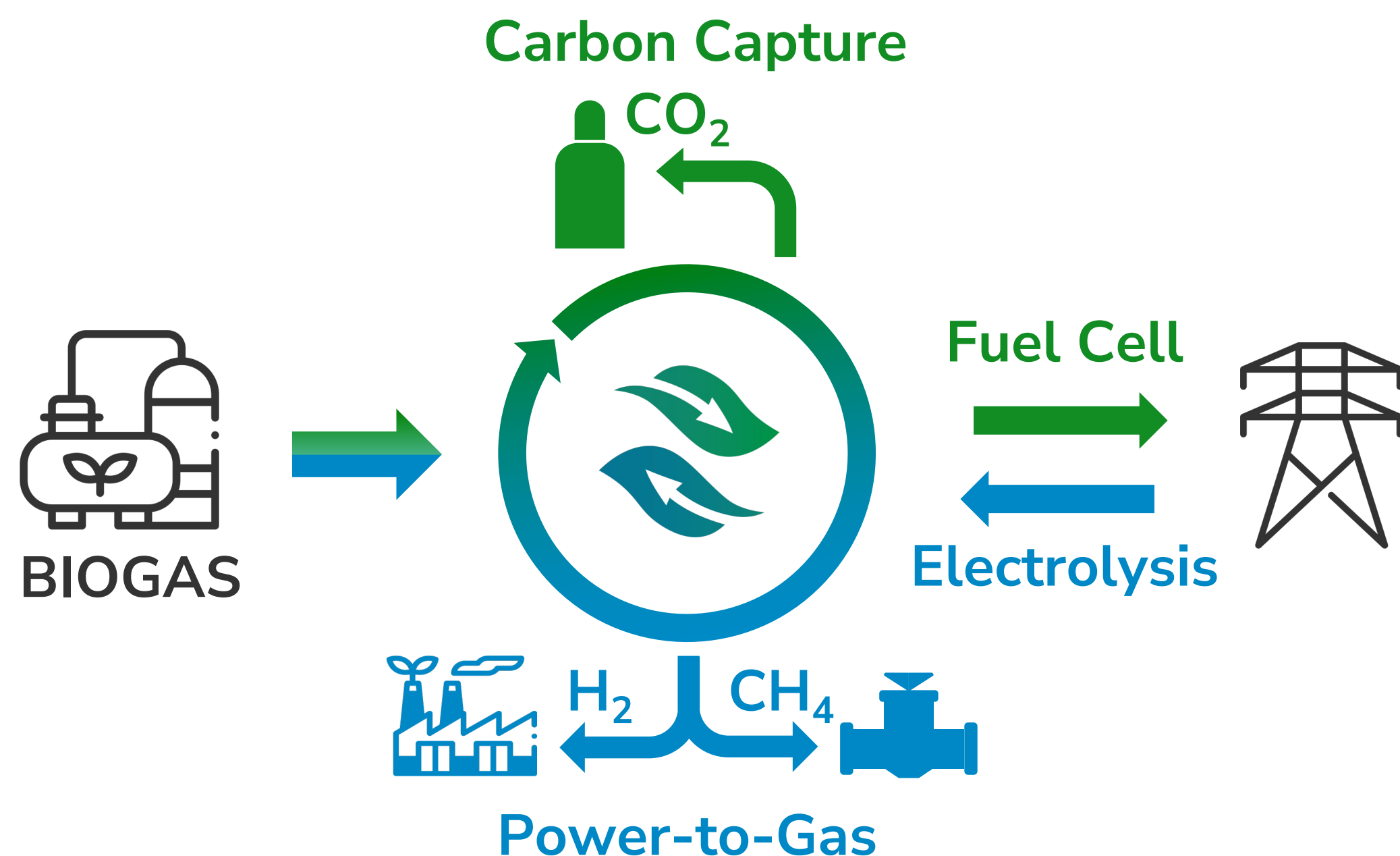
## REVERSIBLE OPERATION

Two operating modes with switching in seconds provide balancing power to stabilize the grids and **maximum** flexibility by generating green H<sub>2</sub>/CH<sub>4</sub> on demand



## NEGATIVE CO<sub>2</sub> BALANCE

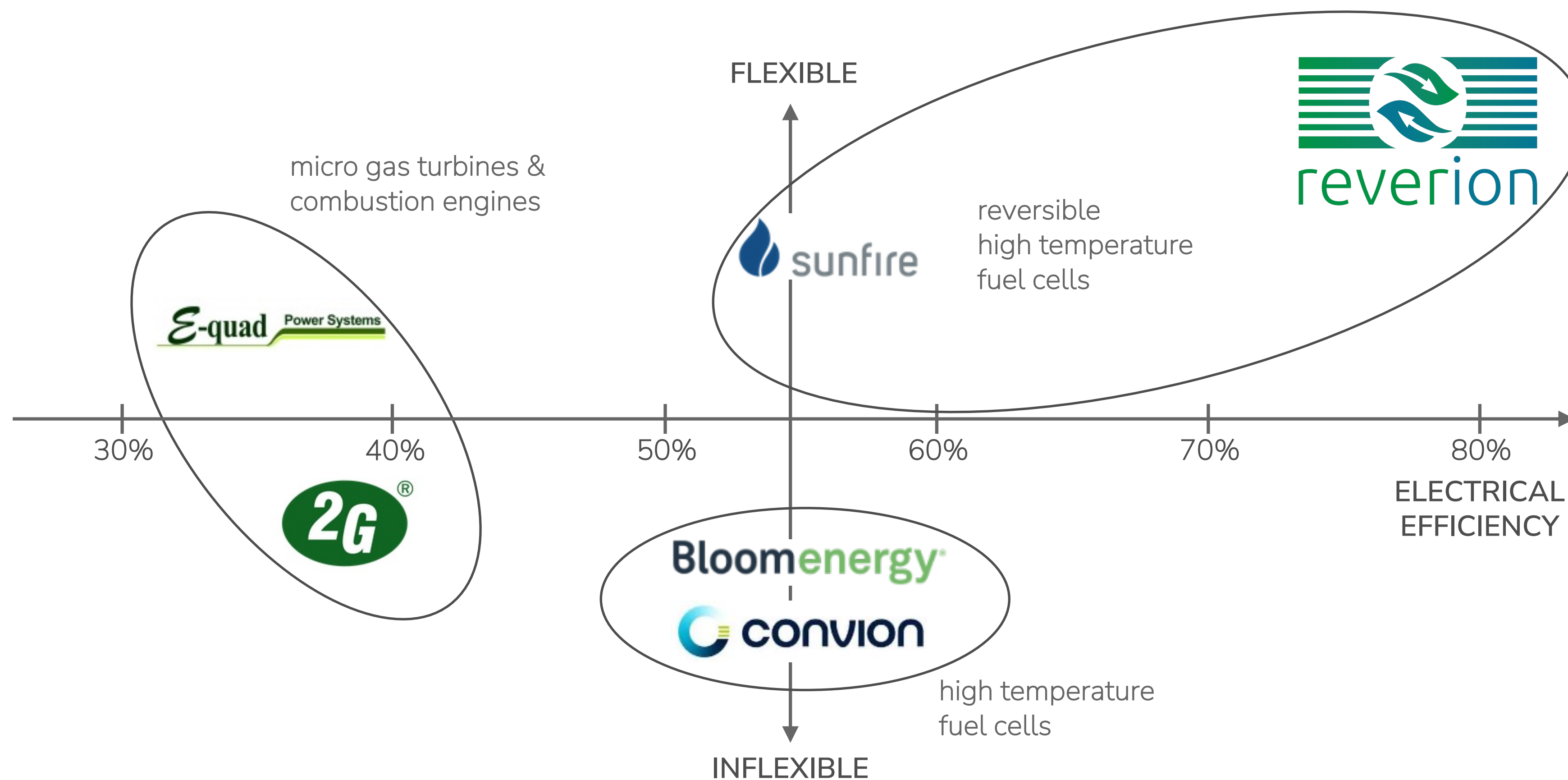
Integrated carbon removal technology using pure biogenic CO<sub>2</sub> as the **only** waste product during power generation/ fuel cell mode, ready for utilization or long-term storage (CCUS)





# COMPETITIVE ADVANTAGE

THROUGH HIGHEST FLEXIBILITY AND EFFICIENCY



SUPERIOR  
SYSTEM DESIGN



LOAD FLEXIBILITY,  
SWITCHOVER <1min



CHEAP GREEN H<sub>2</sub>/CH<sub>4</sub>  
LONG TERM STORAGE



READY FOR  
CO<sub>2</sub> MARKETS





# BUSINESS MODEL



## MANUFACTURE AND SALES

100 kW fuel cell | 250 kW electrolysis



## PLUG&PLAY CONTAINER SOLUTION

easy scalable plant size | instant installation



## SERVICE, CONTRACTING & LEASING

additional revenue | diversification



## FARMERS – ENERGY UTILITIES

established customer relations | direct marketing



# BIOGAS IS THE PERFECT ENTRY MARKET

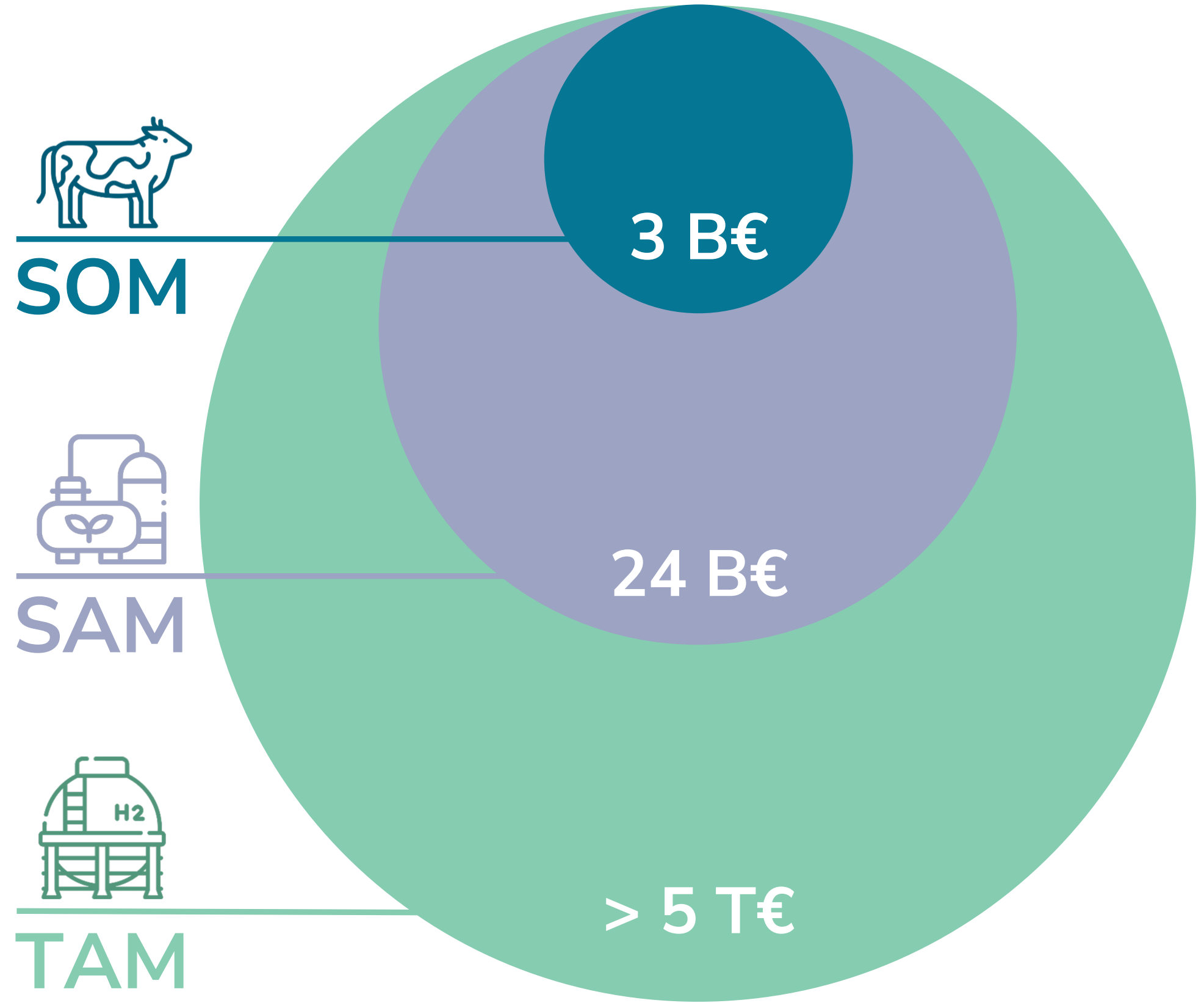
BUT THERE ARE MANY MORE MARKETS

## 3-STAGED-ROLLOUT PLAN:

- Start

+3 years

+5 years
- 1. **NEW INSTALLATION**  
5% of 100,000 cattle farms
  - 2. **RETROFIT & UPGRADE**  
existing biogas/biomethane plants
  - 3. **OTHER & FUTURE MARKETS**  
hydrogen, carbon capture, data centers...

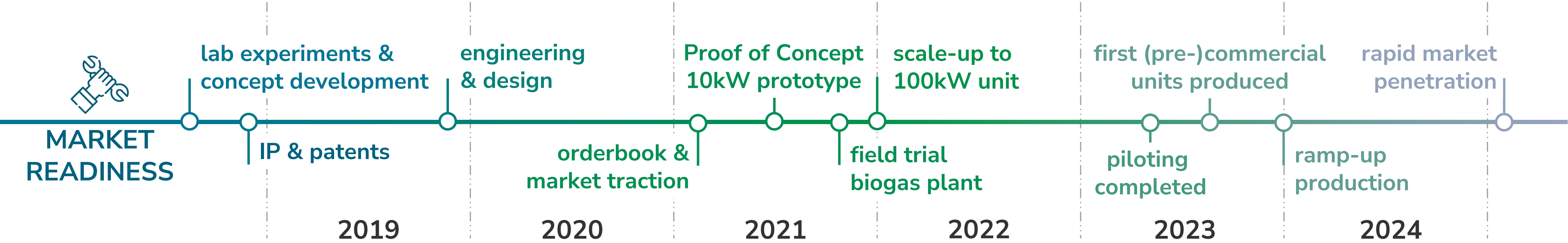
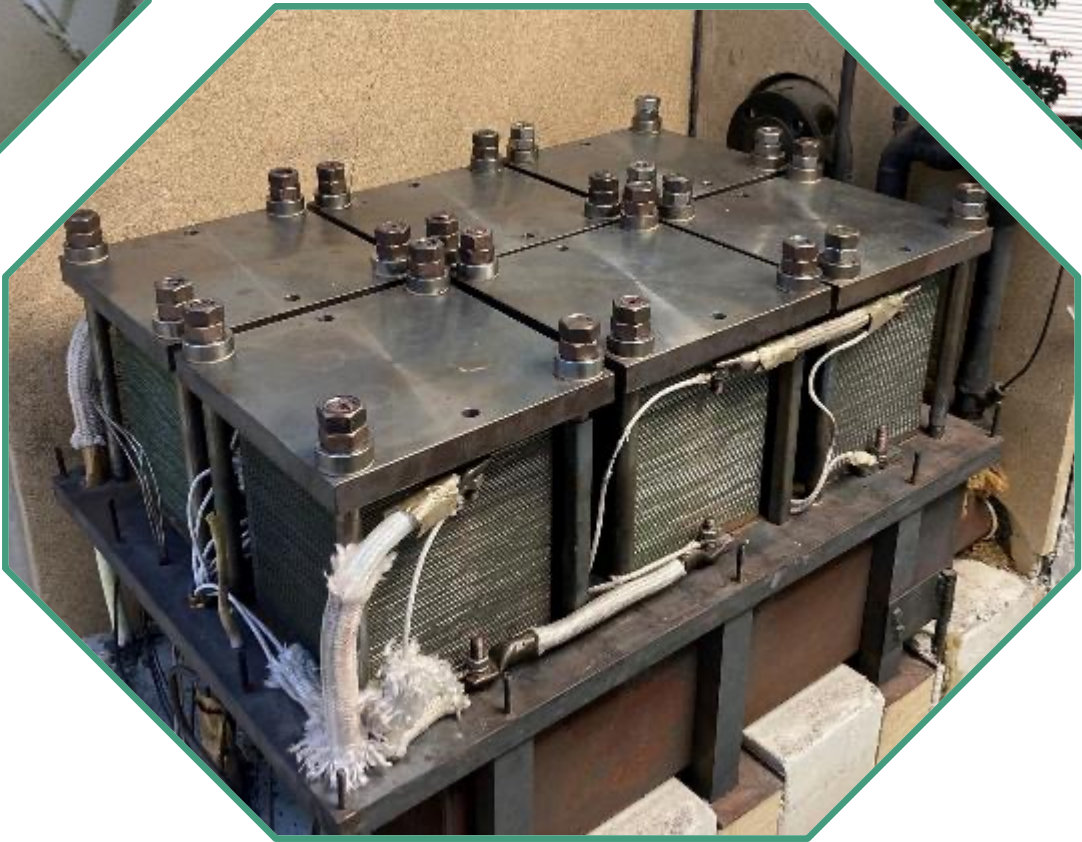


EU MARKET POTENTIAL UNTIL 2030



# ROADMAP

FROM THE IDEA TO TECHNOLOGY LEADERSHIP





11/21

Winner XPRIZE Student Award

250 k\$



XPRIZE  
CARBON  
REMOVAL

12/21

Field test completed &  
10kW prototype successfully validated

01/22

Scaling up to  
100kW pilot plant

02/22

(Pilot) customer acquisition  
& pre-orders for 15+ units

03/22

Start EXIST Research Transfer

04/22

Incorporation

New production site

05/22

Seed financing round completed

## TRL 6+ REACHED

- ✓ complete system design (-steam turbine)
- ✓ validated under real operating conditions
- ✓ fully automated operation & load changes
- ✓ >1000 hours of operation
- ✓ +98% fuel utilization
- ✓ >1500 kg CO<sub>2</sub> ready for capture



# WITH OUR UNIQUE SKILL SET & PARTNERS

OVERCOMING ALL POTENTIAL MARKET ENTRY BARRIERS



**STEPHAN HERRMANN**  
CEO & Managing Director

- Inventor, strategist & pioneer
- Broad experience in business development and leadership
- Long-standing head for innovative power plant concepts at TUM



**FELIX FISCHER**  
COO & Managing Director

- Talented organizer & communicator
- Responsible for quality management, procurement and recruiting
- Sales expert: successful customer acquisition for the first 2-3 years



**MAXIMILIAN HAUCK**  
CTO

- Expert in fuel cells, high temperature materials and thermofluid dynamics
- In-depth engineering & research background ensuring highest efficiencies and fast product launch



**JEREMIAS WEINRICH**  
Head of Engineering

- Genius in fast prototyping and creative mind behind plant design
- >6 years of professional experience in manufacturing & commissioning of experimental testing facilities



**LUIS POBLOTZKI**  
Head of Automation

- Software developer with hands-on mentality and engineering background
- Worked several years in measurement & control technology as well as process automation for power plants at E.ON



## MENTORING

- Supporting business development and fast company building
- Providing continuous reality checks and market analysis



## DISTRIBUTION

- Access to customer channels to overcome all potential market entry barriers
- Cooperative elaboration of attractive business cases in a highly regulated market



## MANUFACTURE

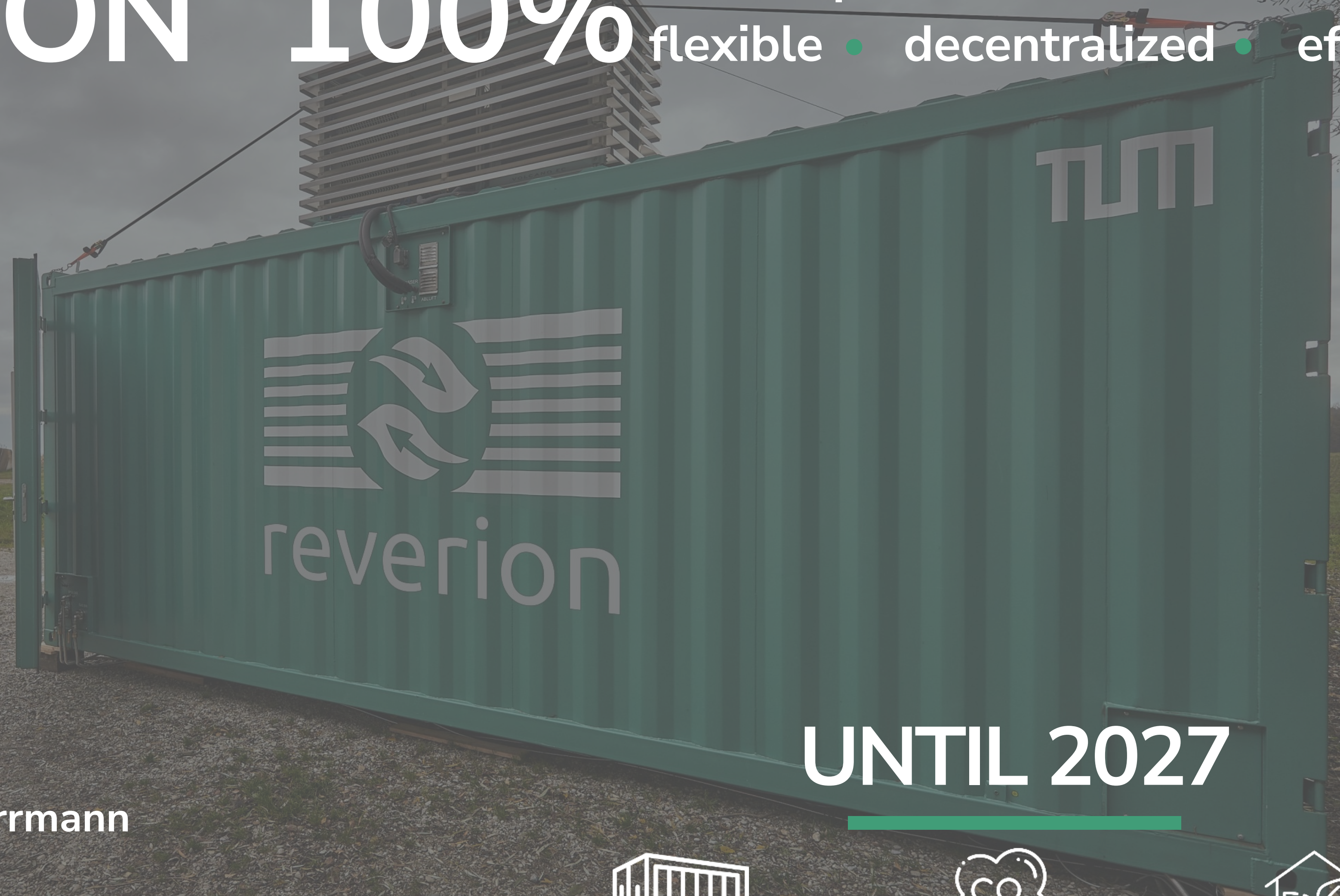
- Supplier of core components or external service provider for the production of the 10kW prototype
- Established market players for rapid upscaling and production ramp-up



# OUR MISSION

# 100%

climate positive renewable energies  
flexible • decentralized • efficient



UNTIL 2027

 **Dr.-Ing. Stephan Herrmann**

 +49 8193 36392-0

 [info@reverion.de](mailto:info@reverion.de)

 <https://reverion.de>



+630



-1Mt/a



>200k