



**ECONWARD** TECH

Triple Impact Technology



# Content Overview

## 01

### Who we are

- ▶ ECONWARD
- ▶ What we are dealing with
- ▶ What drives us
- ▶ What we do

## 02

### How we do it

- ▶ Our solution
- ▶ Key features

## 03

### Application

- ▶ Innovation at the service of Circular Economy
- ▶ ECONWARD's plant design
- ▶ Model advantages

## 04

### Why ECONWARD

- ▶ R&D
- ▶ Certifications
- ▶ Strategic Alliances
- ▶ We are ready

- Find it out

# 01 WHO WE ARE

## ▼ Innovation at the service of Circular Economy

We provide an alternative solution that reduces organic waste disposal to landfills and generates economic and social values.

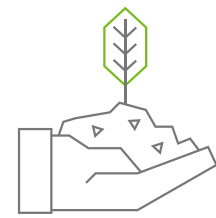
**Efficient use of resources**



## WHO WE ARE

# ▶ The most efficient, frontier technology for sustainable Municipal Solid Waste management

We are a global technology company that has developed an innovative system for treating, recycling and recovering the organic fraction of solid waste and residuals.



Our technology transforms waste into a versatile biomass that provides environmental, economic and social value.



We have offices, labs and R&D Department in Madrid and California.





WHAT WE ARE DEALING WITH

▸ We provide a solution to the global waste challenge

- We treat the organic fraction of MSW
- We reduce waste disposal to landfills
- We minimise GHG emissions



WHAT DRIVES US

Contribute to achieving European and International targets of increasing recycling rates, the importance of renewable energies and the rapid decarbonisation of the waste treatment sector.



WHAT WE DO

- ▶ We research, design and develop new technologies

We invest over **80%**  
of our resources in **R&D**

Autoclave system in ECONWARD's Industrial Plant  
Rivas Vaciamadrid - Madrid, Spain.





WHAT WE DO

- 
- ▶ We transform organic waste into a biomass with various certified applications

Hygienised, homogenous, biothermally stabilised, free of pathogens and chemically degraded.



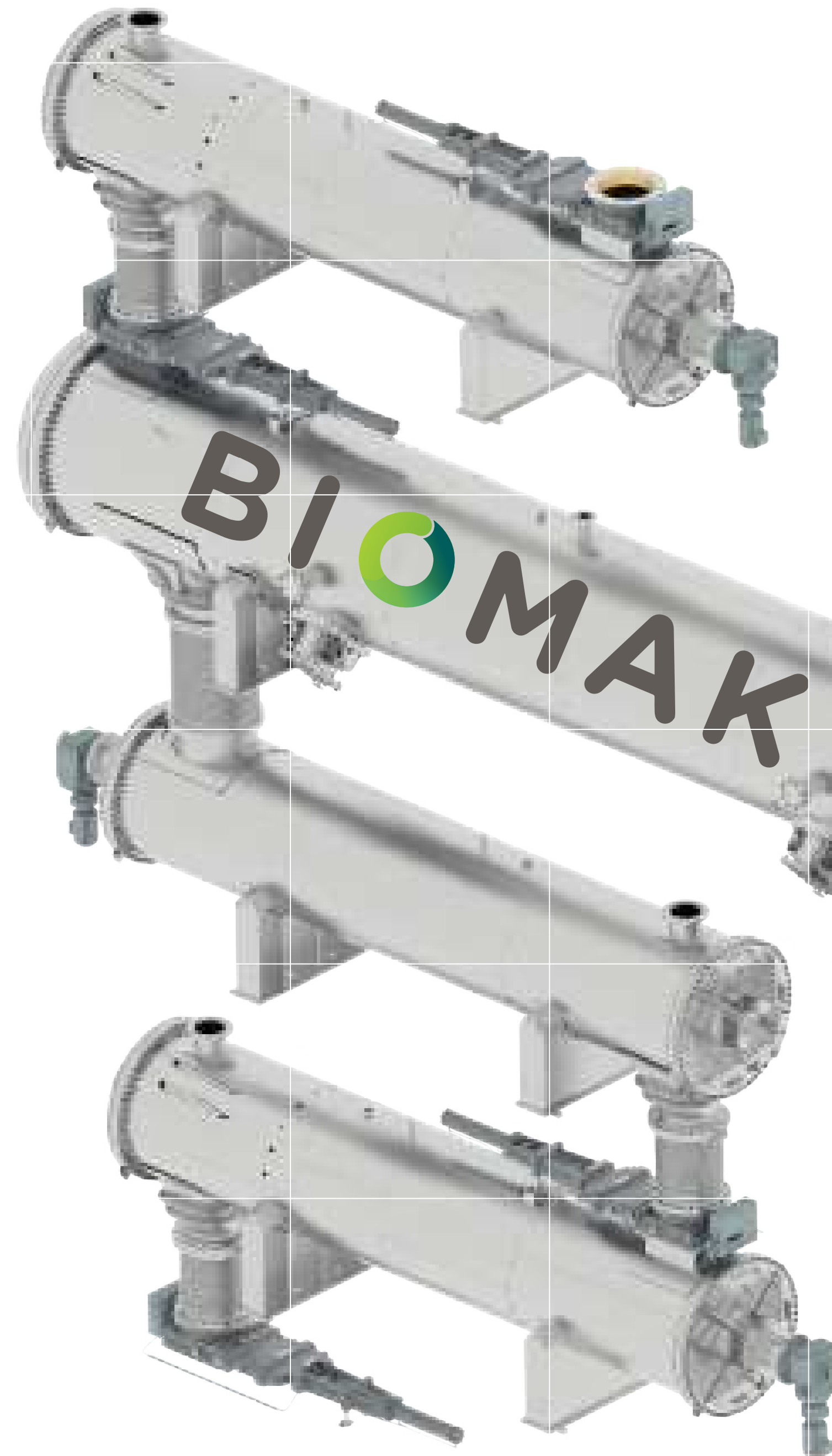
- ▶ Why our technology works

# 02 HOW WE DO IT



## Our Solution

**Fully-automated autoclave system** for organic waste treatment using a **thermal hydrolysis process** in **semicontinuous operation**



### INLET CHAMBER

Pressurisation.

The load enters through a feed hopper, the hydraulic valve is closed and saturated steam is injected until the desired pressure and temperature conditions are reached.

### REACTOR

Pressure-temperature stability.

After reaching the preset parameters, the organic matter changes its morphology and properties.

### TRANSIT CHAMBER

The material keeps flowing.

An effective and efficient thermal hydrolysis is guaranteed.

### OUTLET CHAMBER

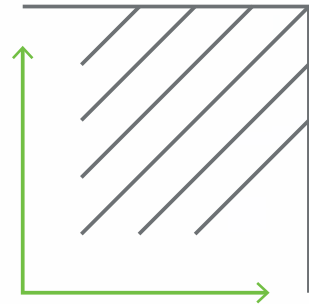
Depressurisation.

The material is unloaded at atmospheric pressure.

The system is synchronised to reuse the steam from the depressurisation for a new inlet chamber pressurisation process.

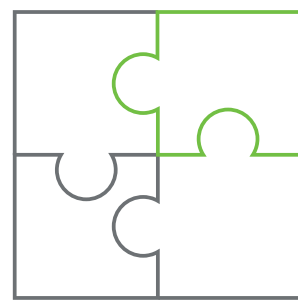


# Key features



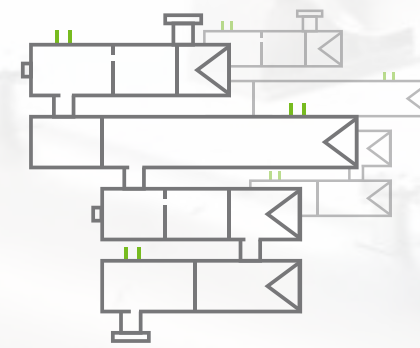
## High treatment capacity

65,000 t/year per module



## Optimised and compatible

With existing technologies



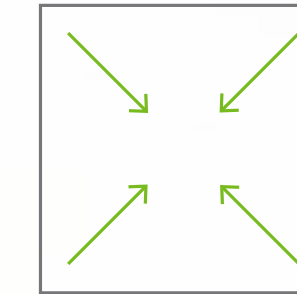
## Scalable and modular

Adaptable, easy integration



## Automated

In-house software development



## Small footprint

270 m<sup>2</sup> of area required per module



## Low operating costs

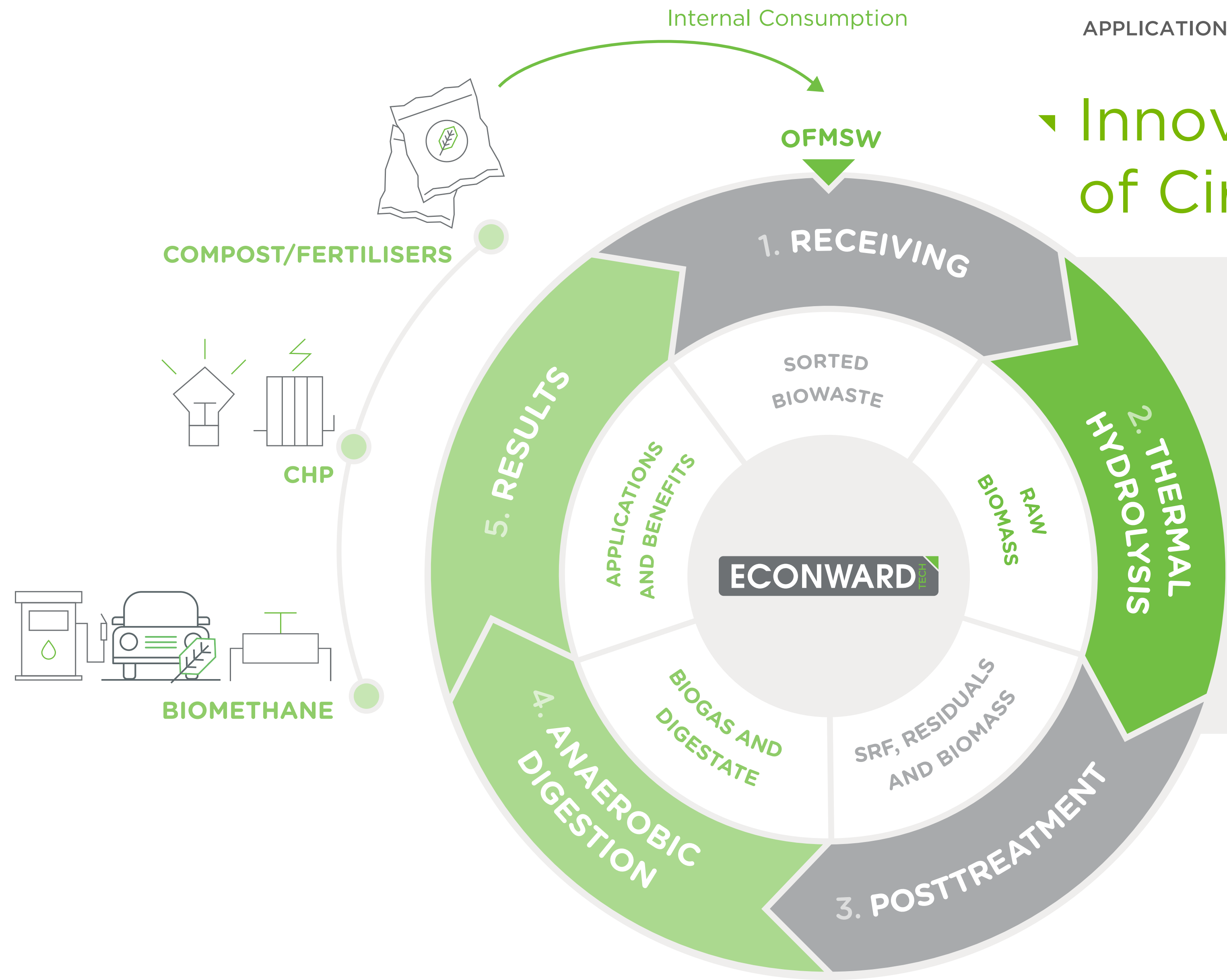
Rapid Return on Investment



- ▶ The most efficient biowaste and biomass valorisation

# 03 APPLICATION

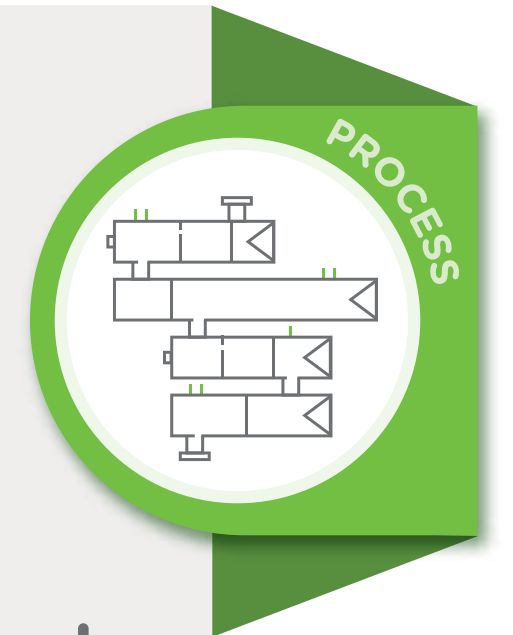




APPLICATION

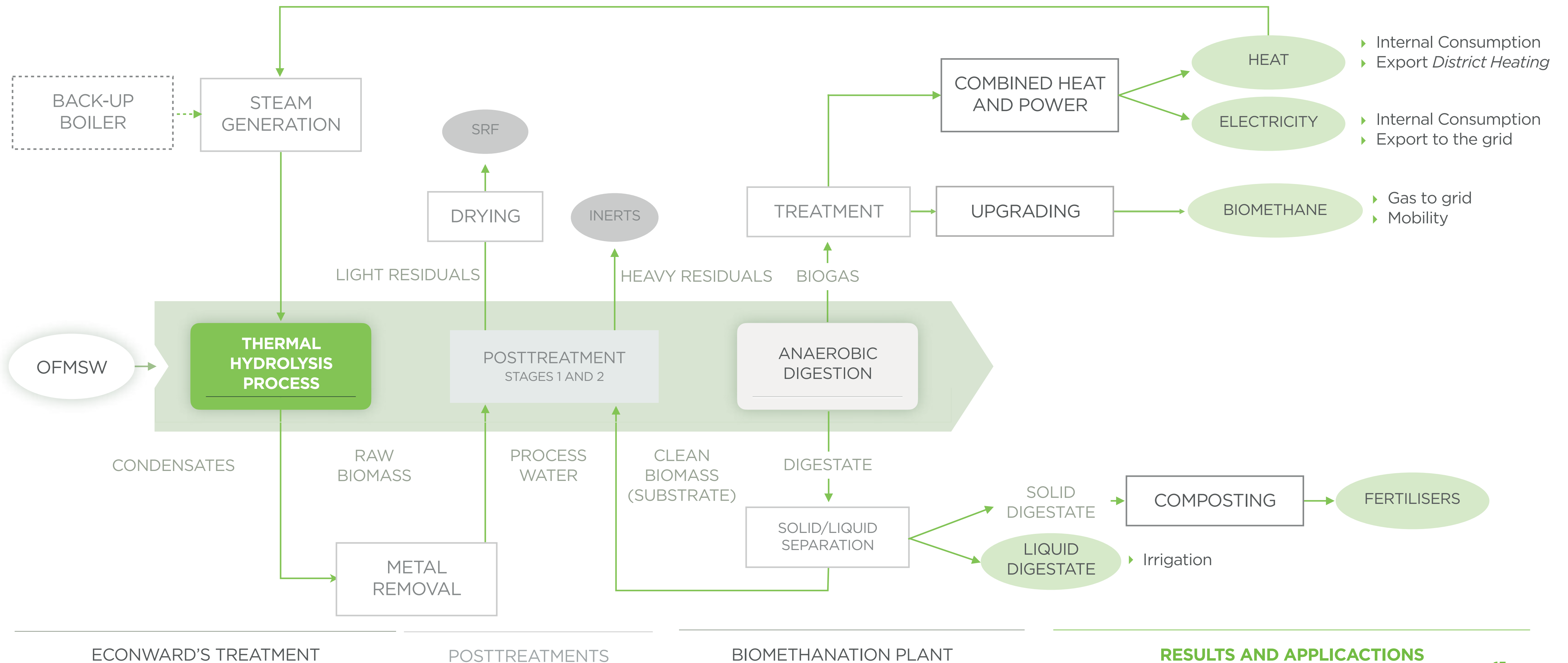
# ▶ Innovation at the service of Circular Economy

- ▶ **Treating** the OFMSW and Residuals.
- ▶ **Reducing** waste disposal to **landfills**.
- ▶ Producing an **optimised biomass** for high quality valorisation
- ▶ **Minimising GHG** emissions.



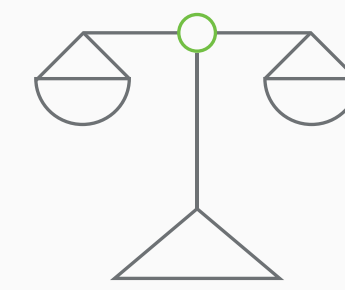


# ▶ ECONWARD's plant design



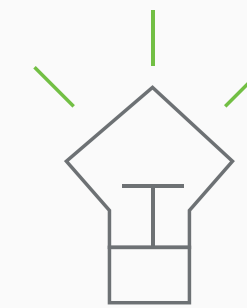


# ▼ An integration model which optimises AD plants' operation



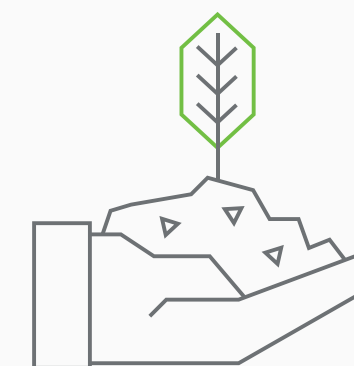
## High process stability

Accurate estimation in biomethane production



## Energy efficiency

Internal consumption or export to grid



## Excellent quality digestate

Hygenised and free of pathogens  
Class B compost

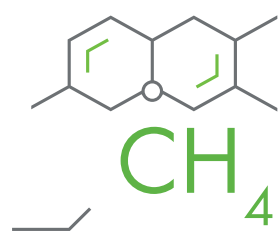


- ▼ A greater process stability generates an increase in biogas quality and quantity. These benefits are translated into greater mechanical simplicity and lower operating costs of the facility

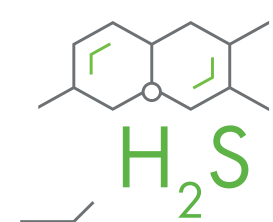
We produce 98 Nm<sup>3</sup> of methane per tonne of organic waste received in pit



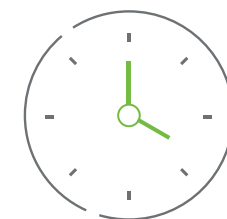
147 Nm<sup>3</sup> Biogas/tonne of organic waste received in pit



CH<sub>4</sub>: 67%



H<sub>2</sub>S: 200-1,500 ppm

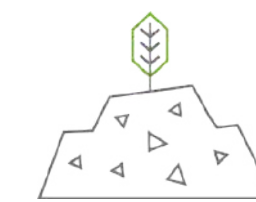


HRT: 15 days



Organic Loading Rate

5-7 kg COD/m<sup>3</sup> per day



Material Biodegradability

86-91% COD  
90-92% VS



Absence of inhibitory or toxic compounds



- ▶ Some good reasons

# 04 WHY ECONWARD



## ▼ R&D Activities

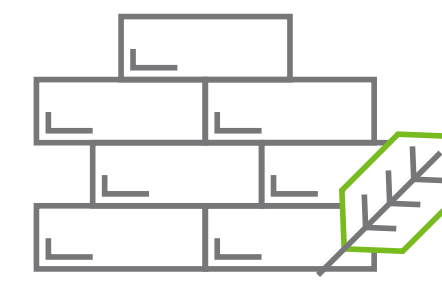
We research and invest in developing different applications for our biomass due to its significant potential uses.

The known versatility of ECONWARD's biomass ensures better use and valorisation.



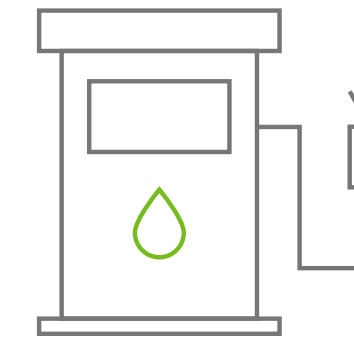
### Green Chemistry

Extraction process to obtain high added-value compounds.



### Bioconstruction

Biomaterials for infrastructure and building.



### Biofuels

Renewable energy and mobility solutions.





# ▾ Sustainable Development Goals

We clearly contribute to protecting the environment to make the world a better place for all.



## We are certified



ISO 9001



ISO 14001



ISO 45001



# Strategic alliances

Members of:



R&D Activities:



## We foster the Circular Economy Principles

Signatories of *'Pact for a circular economy: The commitment of the economic and social agents 2018-2020'* to promote the transition to the Circular Economy in Spain.





WHY ECONWARD

# ▶ We are ready

## ▶ Human Capital

Our talent is made up of highly qualified professionals from the Energy and Waste Management sectors.

## ▶ Solvency

We belong to a large group of investors that supports our growth and soundness.

## ▶ International Presence

We have offices and labs in Madrid (Spain) and California (United States).





# Let's lead the change!

Contact us for a custom case study

## **ECONWARD TECH, LLC**

401 Wilshire Blvd. 12th Floor,  
Santa Monica, CA 90401, USA  
+1 (844) 669 6610  
info@econward.com

## **ECONWARD TECH, SLU**

C/ Alcalá 21, 10º Dcha.  
28014 – Madrid, SPAIN  
+34 911 441 324  
info@econward.com