



# WASTE is an asset

TURN-KEY SOLUTIONS

BIODEGRADABLE  
WASTE MANAGEMENT

[WWW.ALLOPTIMAL.NL](http://WWW.ALLOPTIMAL.NL)

# Biodegradable organic waste is an opportunity

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Our **vision** is to make biodegradable waste treatment possible at a corporate and personal level, as it will collectively contribute to a systematic reduction of global organic waste and emissions output.

Our **mission** is to deploy scalable, attractive, accessible, and widely applicable solutions of circular biodegradable (organic) waste (BW) management for everyone and, in effect, convert their own BW into valuable resources.

Alloptimal's (AO) business activities develop total engineering solutions and provide the design, construction, maintenance, and consulting services you need. Our BW management solutions improve installation speed and quality and are user-friendly.

We offer:

- **Waste treatment lines** at waste handling centers, before composting
- **Business integrated waste treatment units** in the production sector.





**John D.M. Koppies**  
Chairman of the Board



**Spiros Kyrgiopoulos**  
Board member & Founder



**Jan Driegen**  
Board member & Founder



**Victor H. Kyrgiopoulos**  
Board member

AllOptimal BV was founded in 2015 in the NL and is a Dutch company with a great vision and a clear mission.

The core of our operation is supported by our dedicated staff, close external associate engineers & Project managers (NL & DE), and an international associate network.

A network of Regional Managers and Local Agents are responsible for the local sales, technical, and after-care operations and support. The development and engineering of our solutions maximize customers' benefits.

Centralized steered operations combined with centrally supported and coordinated outsourcing decentralize the operations, minimize the cost, and provide the flexibility and efficiency needed to increase the accessibility and applicability of our products.

## ► TURN-KEY SOLUTIONS

### Anaerobic digestion

A custom-made or standardized Anaerobic & Aerobic treatment create Energy & organic fertilizer production.

AllOptimal (AO) combines efficient large-scale technological BOWTI solutions (Biodegradable Organic Waste Treatment Installations) and focuses on the flexible **BioBlox®** small-scale systems.

AO offers innovative solutions for desired waste management, producing biogas through anaerobic digestion of biomass, adjustable for small or large capacity, that will provide the user with circular waste management, profits, healthy soil improvers, and reduction of emissions (CO<sub>2</sub>, H<sub>3</sub>, etc.).

- **Reliable.** Since 1980 building a know-how and experience in methanization.
- **Highly efficient** by pre-treatment and composition of the input materials, separate hydrolysis and high temperature digestion to realize hygienization.
- **Good Return on Investment** with:
  - Higher biogas production
  - Better digestibility • Faster digestibility
  - Shorter retention time • Less waste
  - Low energy auto-consumption
  - Low cost of maintenance.



AllOptimal, the optimum for all

## SOLUTIONS

**BOWTI** plants are for centralized waste treatment of large capacities, applicable both in public sector operations as well as a profitable stand-alone investment private project.

**BioBlox®**, the brand name for Plug & Play, decentralized BOWTI units are for small-scale capacity. The BioBlox® makes it possible for the customers to manage their waste locally and produce personal benefits efficiently.

The BioBlox® systems are:

- ▶ Compact installations and robust technology. Our structures have an optimum design to occupy relatively little space.
- ▶ Designed for flexibility.



*...circular & practical solutions, balancing the participants' benefits and social responsibility*

# Environment & People



## QUALITY OF LIFE

AllOptimal B.V. wants to be part of the solution to the current environmental issues and positively influence people's quality of life. It is a vital principle fully applicable to the purposes and objectives of the company, holding a leading role in the company's strategy. We know that business, profit, people, and the environment are equally important factors to ensure long-term success for all of them!



## VALUES

AllOptimal B.V. stands for:

- Optimal order & installation procedures!
- Optimal operation and service!
- Optimal general conditions!
- Optimal guarantees!
- The optimal economy of scale and finances  
*(purchase, operation & service paid by energy savings) ...*

### ...leading to

- Optimal waste management! *(waste = raw materials)*
- Optimal energy use! *(less use of energy from conventional sources)*
- Optimal company savings *(increasing the monthly profit & cash flow)*
- Optimal and significant environmental policy!  
*(actively less CO<sub>2</sub>, NH<sub>3</sub>, and more, emissions due to the process, the use of self-produced energy, less transport, and less stimulation of conventional energy production. A procedure concerning direct suppliers down the chain of production to raw materials)*

### ...resulting in

- Certified active participants in the global CO<sub>2</sub>, NH<sub>3</sub>, etc. emission reduction
- Sustainable (and in some cases independent) consumers of self-produced energy
- Sustainable, future-proof organizations that comply with environmental-related adjusting requirements and legislation and social demands.



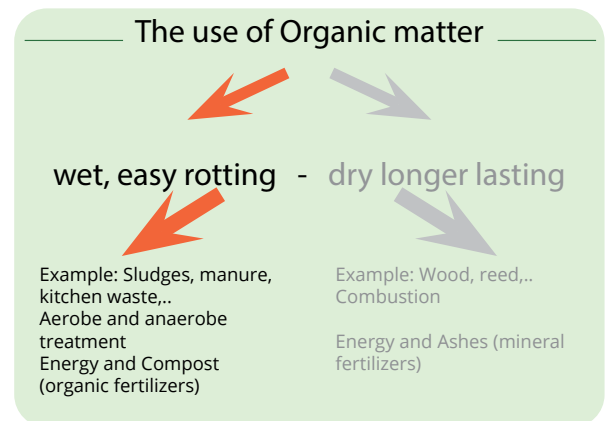
# Biodegradable Organic Waste Methanization

## The sectors:

- Food sector
- Resorts / Hospitality
- Agricultural
- Industrial units
- Waste management centers
- Municipalities
- Military
- Hospitals
- Universities
- ... and more

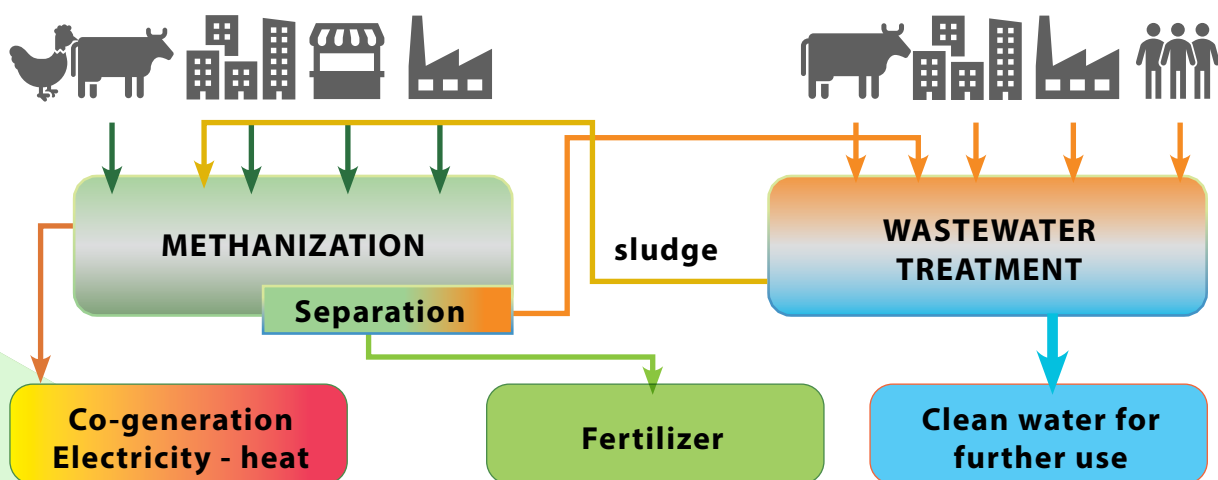
## The challenges:

- The undesired by-product
- Management & Costs
- CO<sub>2</sub>, NH<sub>3</sub>, etc. emissions
- The energy use
- Legislation rules
- Adjustment requirements
- Transport from A to B
- CO<sub>2</sub>, NH<sub>3</sub>, etc. from transport
- Traditional energy production
- CO<sub>2</sub>, NH<sub>3</sub>, etc. from energy centers
- Social & Environmental issues
- Management & Costs down the chain



## Transformation Process Paths

**Primary users:** organizations with biodegradable organic waste as undesired by-product of their production process, with expenses in waste management and with a desire for durability.







# Biodegradable Organic Waste Treatment Installation (or BOWTI)

AllOptimal designs and develops large BOWTI plants for **centralized waste management**, assessing customer needs according to the socio-economic landscape and proposing the best waste management solution.

BOWTI plants are custom-made and designed to cover the four stages of the digestion process:

- Preparation and hydrolysis of the substrates
- Intensive digestion in special reactors
- Secondary digestion of the liquid fraction of digestion combined with biogas storage
- Biogas processing and conversion in Combined Heat and Power units.

Unique and innovative technological adjustments to the well-known methanization processes result in homogenized and hygienized fertilizer production, higher efficiency, and increased biogas production demanding less service and energy consumption.

AO holds decades of engineering and construction experience and has an equal dedication and commitment to bringing solutions for projects of any size.



Photo by Joshua Hoehne on Unsplash

# BioBlox® (or BB)

AllOptimal focuses on the deployment of the BB; a modular and scalable circular organic-waste-treatment solution, for broad applicability as a:

- company's integrated (plug & play) waste treatment solution or
- stand-alone investment object.

## Purchase process

We make it easy for the customer before deciding to build an installation.

- AO conducts a preliminary **estimation of profitability, energy returns, and change in carbon footprint** to advise the customer if it is for his advantage to investigate further.
- AO confirms the **most profitable plant** for the customer to install. If necessary, AO will manage the application for grid connection. The **benefits & viability aspects** include Financial, Energy, Soil improvers & Emissions aspects.
- **Site assessment:** AO evaluates the customer's location for ideal placement of the BioBlox®, against the customer's workflow.
- **Project Permits process.** AO will research and apply for all necessary permits and subsidies.
- **BioBlox® offer:** all assessments come together in an optimal final proposal, including a definite prediction of annual profitability and energy returns.
- **BioBlox® Order & Production**
- **BioBlox® Installation**  
Realization period 6-7 months including Start-Up.
- **BioBlox® Release** to the customer.
- **BioBlox® Aftercare.**





# BioBlox® Modular systems

## The concept

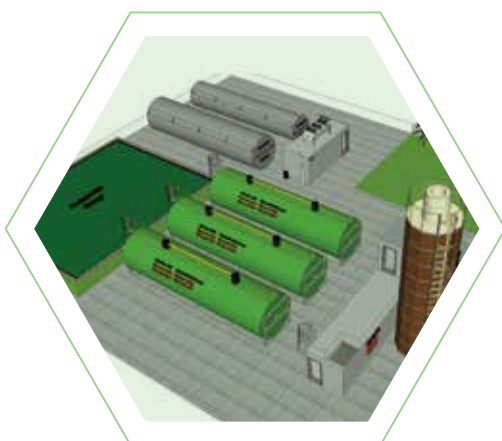
The **BioBlox®** is a smart, circular, "industrial garbage bin" that reduces emissions. BB treats biodegradable organic waste into hygienized and homogenized soil improver & fertilizer, biogas, electricity, and heat, even for own consumption.

**Brand:** the BioBlox® is an affordable, qualitative, and plug-and-play product. BB invites the industry to join a global collective that combats global emissions.

**Plug-and-play:** BB is a simple product to operate against conventional waste treatment. It is a singular product that the customer can purchase, expand, and benefit from by creating energy, being free of waste at no cost, AND making a profit..... Simple!

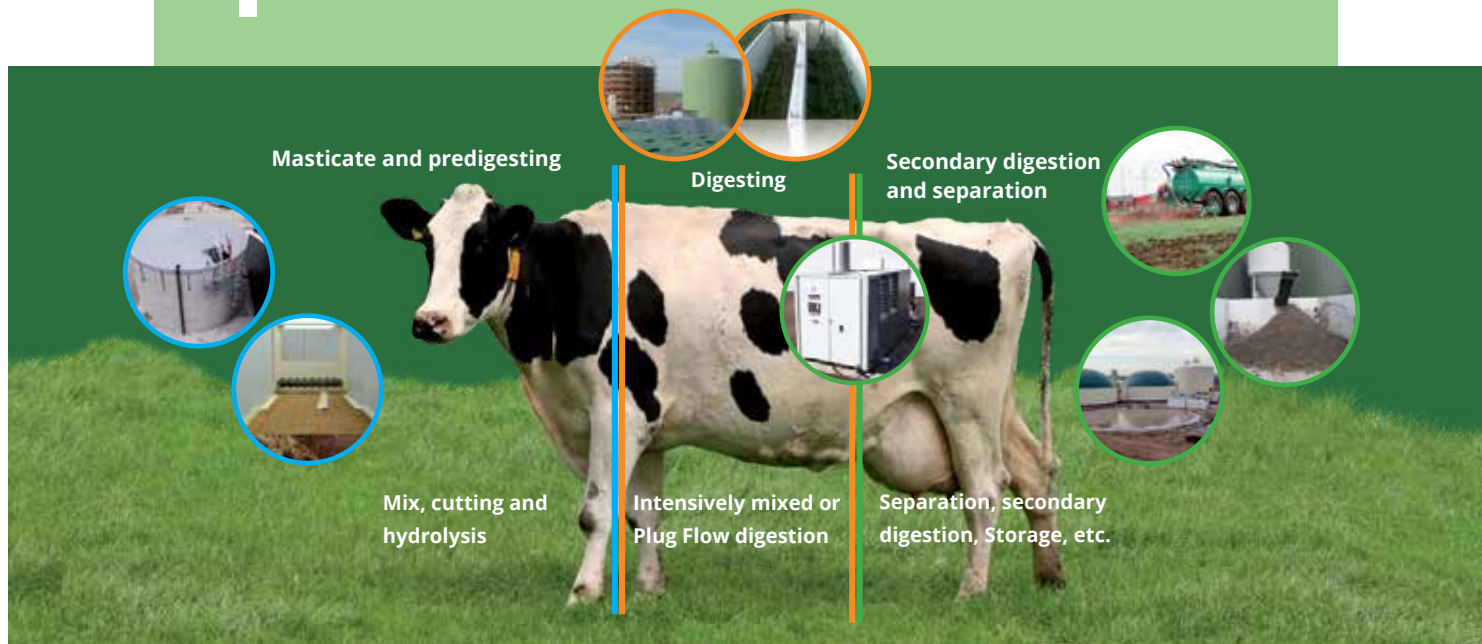
## Dry-substrates PFR

## Wet-substrates CSTR



## Biogas for every-one

The beginning of the anaerobic digestion process is mechanical, comparable to the digestion in ruminant animals, making it a complete, highly profitable, and effective system that converts biomass into clean energy and fertilizer with almost zero emissions.



## Advantages

- Modular, Scalable, Portable, Flexible
- 95% standard modules, limited footprint
- Applicable in the direct area of organic waste production
- Production of Biogas, Power kWhe & Heat kWhth (CHP) and Soil improver & fertilizer
- Certificate and logo "Active CO2-Reducer," incl. tons/day
- Do not require specialized personnel or operation by the owner
- Guaranteed Operation, Result, and Profit
- A viable concept with good to excellent ROI
- Independent of external funding, loans, or subsidies
- Total Care Service Contract, Company's general service policy
- Fix price of BioBlox®, Operation & Service, Results
- Complete Concept / Solution. No surprises
- Clear & Strict communication and marketing of BioBlox®



## Why AllOptimal?

A Dutch company with a great vision and a clear mission.

AllOptimal B.V. is Reliable, and Up to date

- ✓ Experience and know-how in anaerobic digestion since 1980
- ✓ Relatively low initial and total project investment
- ✓ Efficient organic waste treatment
- ✓ Innovative technology
- ✓ Green technology
- ✓ Green company profile
- ✓ Maximize your benefits as a certified Active emissions Reducer

## Why BioBlox®



It will provide the user with valuable resources:

Production of biogas, heat, electricity, hygienized and homogenized soil improver & fertilizer, for the user's own profit.



### EXPENSES TURNS INTO SAVINGS

Payments for waste management, energy & fertilizer are reduced or, in some cases, even banished.



### CIRCULAR APPLICABILITY

Businesses integrate treatment locally in a circular manner.



### SCALABLE & FLEXIBLE

Small & modular, allowing organizations to detach from collective waste management and its entailing expenses.



### AFFORDABLE

The low cost of BioBlox® allows a company to invest without being dependent on subsidies or loans. Instead, loans and lease plans can either leverage higher relative returns or lower the investment requirements.



### FOCUS ON CORE BUSINESS

BioBlox-concept is coordinated by AO from order to installation and after-care, allowing the customer to spend all his attention on his core business.



### INDEPENDENT

The user will no longer be dependent on subsidies or central waste management services, only less dependent on the power grid.





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