We make Ammonia from Air

"Nitrogen Fixation" – Production of organic fertiliser in a sustainable way

Microbiology to Feed the World

Third-Generation Farming

Photobioreactors Technology
***Hybrid*: Bacteria/Microalgae Nitrogen Fixation + Carbon Capture**

Using Carbon Capture as the energy source: 1000 tons of CO_2 per Ha per year

Funded by an EIC Accelerator Horizon 2020

European Commission

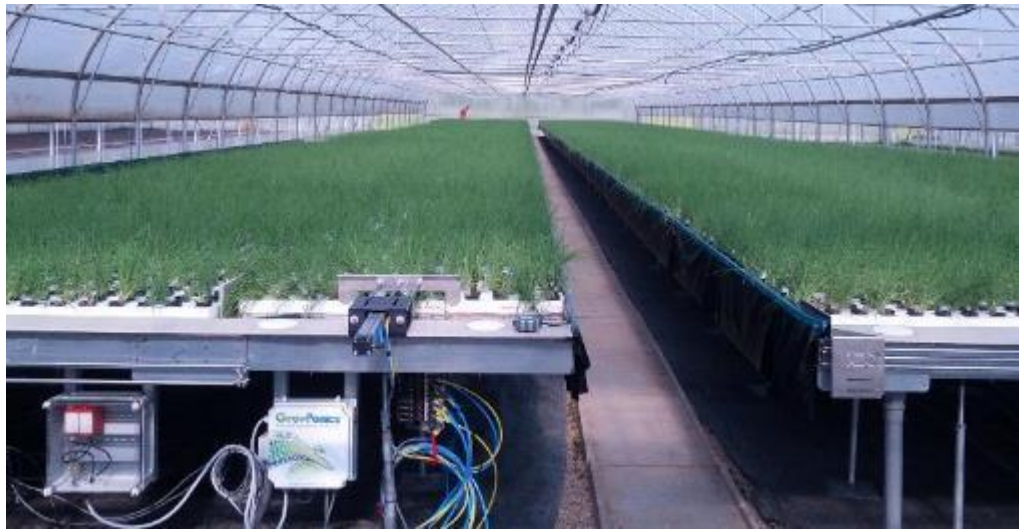
We need fertilizer to grow food.

Ammonia is essential to make fertilizer and protein.

Ammonia is the building block, the most important raw material in food production.

Ammonia production is known as: “ Nitrogen Fixation” – connecting nitrogen from the air to hydrogen.

Ammonia production is an energy-intensive process.



Problem

Farmers have **two bad options for Fertiliser**

Organic Fertilizer

From waste: With bacteria, **(since creation)**

'Nitrogen cycle"

When industrialized:

Inefficient

Pathogens, hormones, antibiotics

25% of global Production

Chemical Fertilizer

Petrochemical: Haber Bosch Process **(100 years)**

Burning fossil fuels

Polluting

Environmental Hazzard, Dangerous

75% of global Production

Solution – We use bacteria in a bioreactor to make ammonia.

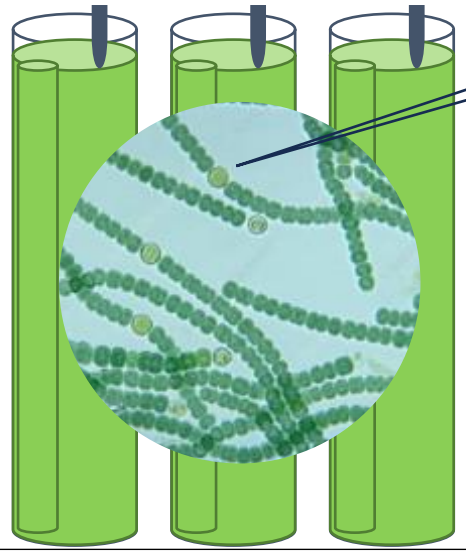
78% of the air is Nitrogen. Our **bacteria** "fixes nitrogen" and produces bio ammonia.

A solar factory that makes ammonia from the air

In a 2-micron cell

Inputs:

- **SUN**
- **WATER**
- **AIR (N)**
- **Carbon Capture**



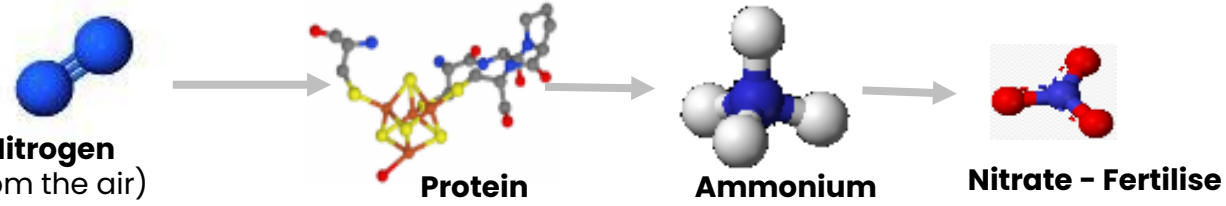
Photobioreactor(PBR)

NH_3

Liquid Bio-Fertilizers

Bio Ammonia

3 years ROI – Going Organic



Nitrogen (from the air) → **Protein** → **Ammonium** → **Nitrate - Fertilise**

We are raising $3.0m

TWO YEAR R&D PROGRAM:

$2m

Accelerate program

MARKETING AND HEADQUARTERS:

$0.5m

Management and marketing team

β SITES AND COMMERCIAL INSTALLATIONS:

$0.5m

Fund matching

Our Results

Bio Fertilizer :

- Organic certified
- Negative CO_2 emission
- Carbon capture
- Clean from residues of: Pathogens, Hormones, Antibiotics
- Low Sodium
- 35% additional yield
- Competitive cost
- Fully soluble in water (Suitable for fertigation)

Algaenite vs. Competition

	algaenite	BIOTA NUTRI	AgroThrive
Available Nitrogen	5.5%	0.4%	0.16%
Nitrogen source	Air	Plant residue	Organic wastes

EU quality label for excellent ideas worthy of funding

CERTIFIED ISO 9001:2015 COMPANY

Automated remote-controlled PBR :

Business Model

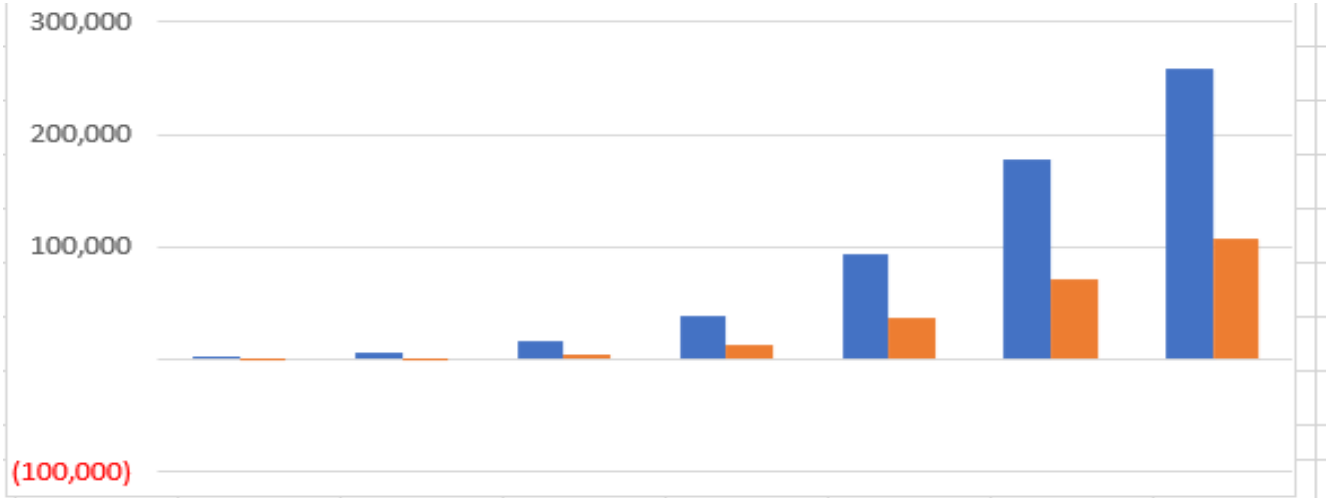
Three revenue streams

On-Farm On-Line Business Model – ROI for the farmer - 3 Years

- The **Algaenite™** systems are installed on farms. Connected to the fertigation system.
- Produces nitrogen fertiliser from the air on the farm.
- **Licensing / Leasing -** Recurring revenues for the company.
- Sales of the PBR equipment and services.

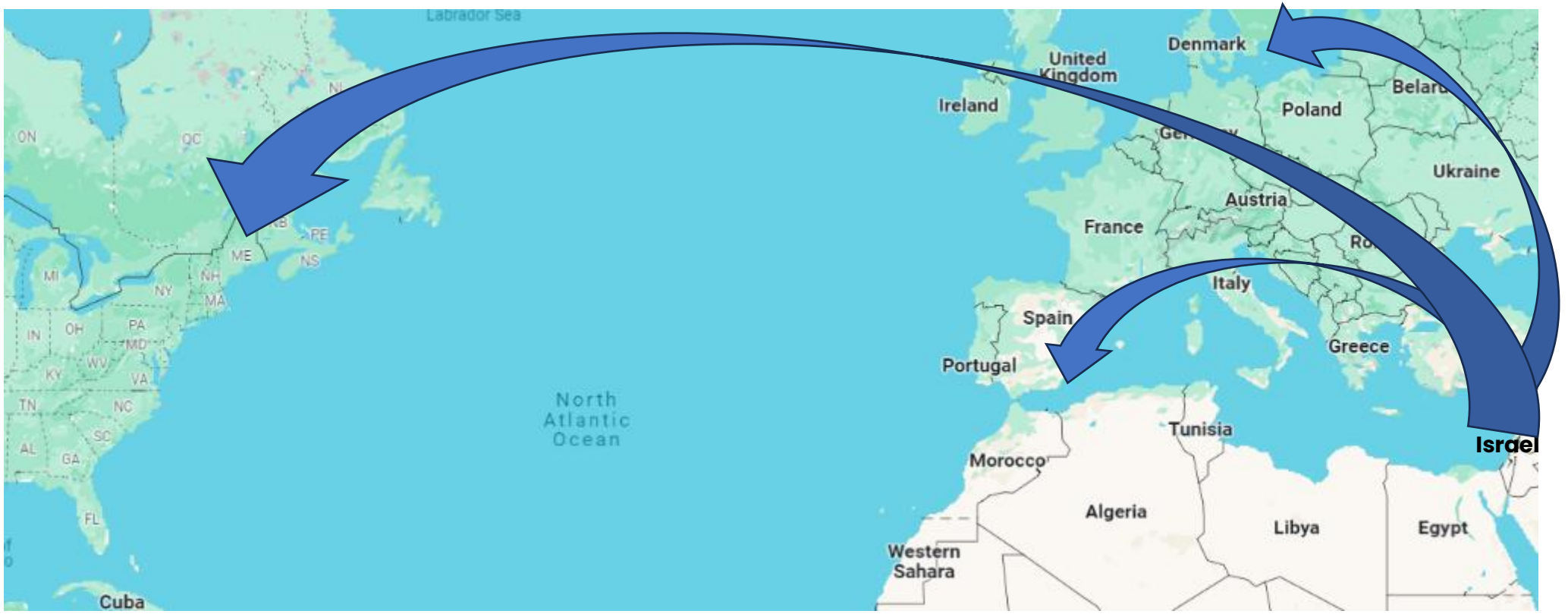
Sales of BLF – Bio Liquid Fertiliser

- *The best organic nitrogen-rich liquid fertiliser (**available nitrogen**)*
- *35% higher yield than competing organic fertilisers*



	2027	2028	2029	2030	2031	2032	2033
Sales	1,480	6,434	16,954	38,864	93,172	178,524	258,552
EBITDA	(1,338)	(371)	4,916	13,016	37,171	71,463	106,951

Beta Sites in Ramat Negev, Connecticut, Almeria and Denmark



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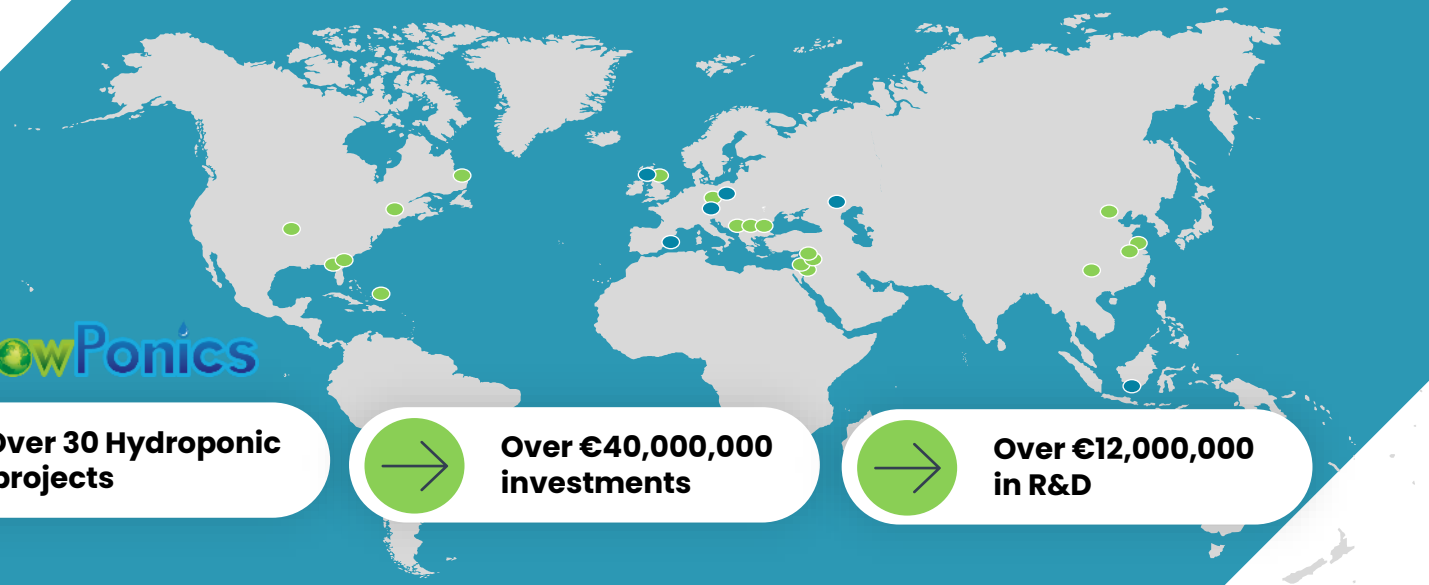
Who we are

www.Algaenite.com

Technology developed in Kfar Bialik, Israel, funded by the EU Horizon 2020

A spinoff from the Growponics, Go Green technology powerhouse



GrowPonics

- **Over 30 Hydroponic projects**
- **Over €40,000,000 investments**
- **Over €12,000,000 in R&D**

[Algaenite Video S2]

[Video PPT]

Winners of the EU Seal of Excellence 2022
For the Algaenite™ technology

20 years of greenhouse innovation and Hydroponics

Lior Hessel Co-Founder and CEO
Agricultural Engineer, M.Sc. NYU School of Engineering
liorh@algaenite.com

THE TEAM

Lior Hessel

Co-Founder and CEO

Entrepreneur with vast experience in Ag-Tech.
Founder and CEO of Growponics

Anders Thomsen

CEO Algaenite ApS Denmark

Marketing

Tim Macal

CEO Algaenite Inc. USA

Marketing

Dr Yuri Belilovsky

Head Engineer

35 years of engineering experience
Energy and thermodynamics expert

Amos Daskal

Controls and Microprocessors Engineer

25 years of engineering experience in the Israeli high-tech industry

Liat Hessel

Co-Founder and CRO

Food scientist with over 15 years of experience in alternative portion R&D. Adv, Food Law Consultant.

Dr Omer Grundman

CTO Director, The Ramat Negev Desert Agro Research Centre
Biotechnology executive with deep expertise in microalgae cultivation

Dr Yuval Kaye

Director, The Ramat Negev Desert Agro Research Centre
Chief Agronomist

Dr Noga Waissman

Ramat Negev Desert Agro Research Centre
Biotechnology and microalgae expert

Professor Yoram Gerchman

Research and development

Full Professor at Oranim Academic College. Researcher at the University of Haifa. Vast experience in biotechnology, including nitrogen-fixing cyanobacteria and biochemistry.

Global business development, microbiology, food science, control, automation, sensor technology and artificial intelligence (AI) software.
Ag-Tech R&D and business development for more than 24 years.

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Thank You

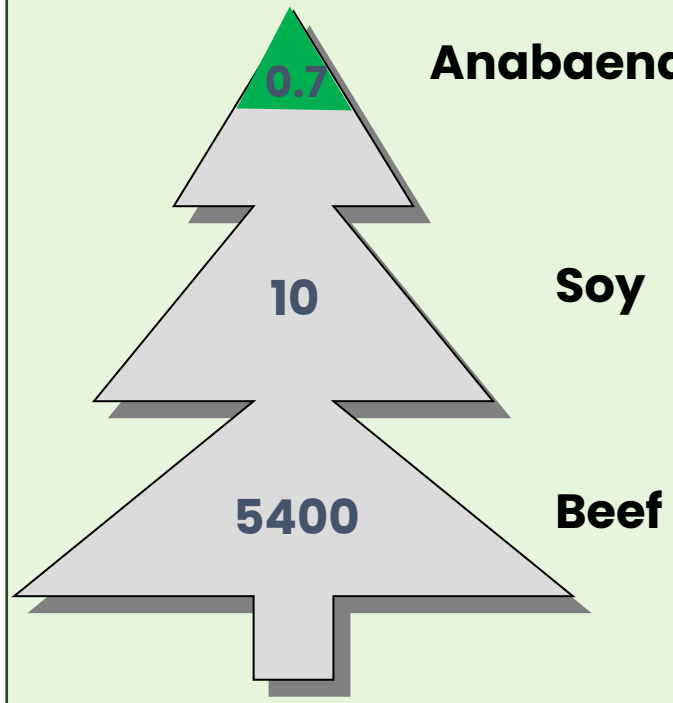
More slides to follow

Algaenite Video S2

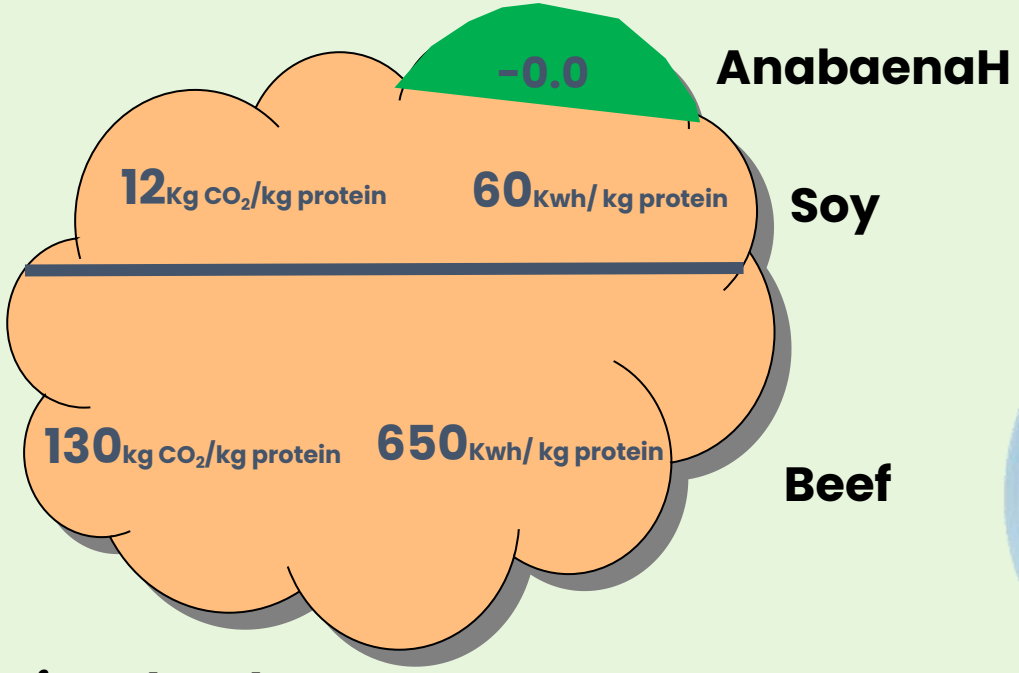
Dec 2024

Our Planet's Future Depends on Microalgae for Efficient Use of Natural Resources

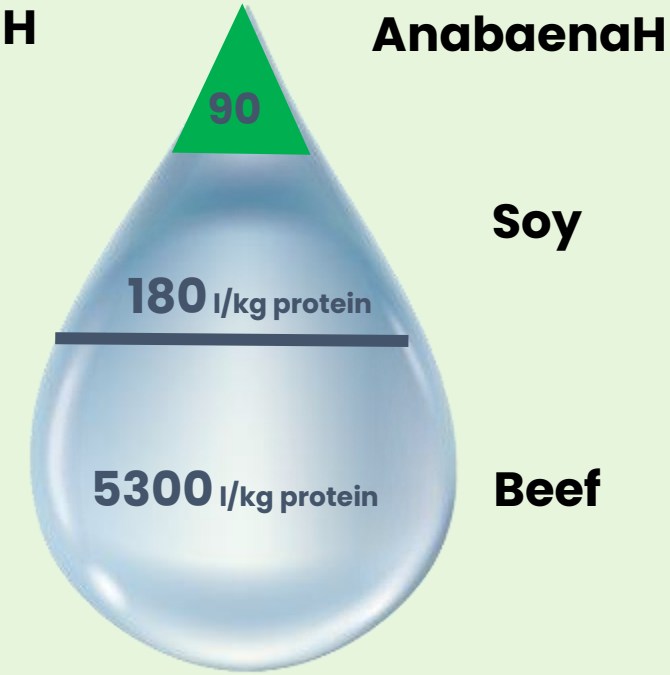
Land Use
(1000m2 / Kg Protein)



CO_2 Emissions / Energy



Water Consumption
(Litre of water/kg protein)



Saving the Planet's Resources

The PBR - Protein production system - Technology for future Protein farms

Next-generation farming

A columns system that enables the efficient growth of cell biomass, from which protein is subsequently extracted.
The columns are transparent to allow light to penetrate, for the benefit of the photosynthesis process carried out by the microalgae. At the bottom is the manifold, a system of pipes that hold the columns with a seal, which channels air enriched with carbon dioxide essential for algae growth. The airflow creates gas exchange and allows for the mixing of the biomass generated within the PBR.
To enable good control of the system (from a distance over the cloud), the PBR has a control and monitoring system that also optimizes the growth process. The development includes an algorithm for growing a culture called NightKeep™.

Our IP – Two Patent Applications where filed, in 2018 and in 2024

Provisional patents

62/724,457

August 2018

63/588,724

October 2023

PCT

IB2019/057284

Aug 2019

PCT

18/357,188

October 2024

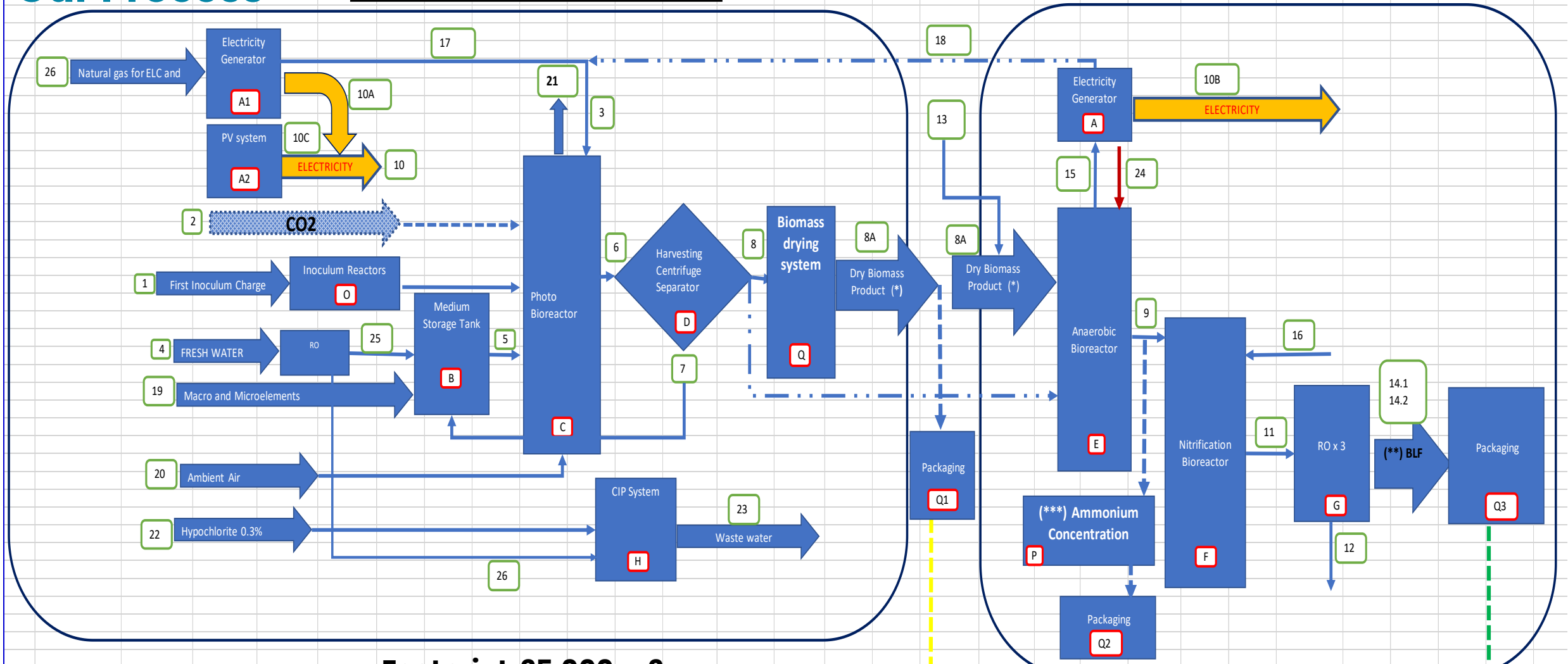
Applications in **Europe** and in the **US**

Covering process engineering, algorithms, and machine learning
Over $35,000 invested in IP protection (Leading Israeli IP Law Firm)

Our Process

Biomass Photo Bioreactor (BPB) Plant

Bio Liquid Fertilizer (BLF) Plant



Footprint 25,000 m2

75 Ton/Ha Of Protein

(*) Biomass: 374 Tons of Biomass Annual Production (52% Protein 8.2% Nitrogen)

- Feed Stock for Biofertilizers Production
- Plant Based Protein (Bio) - Meat/Fish Analogs
- Food and Feed Additives
- Feed Stock for Bio Cosmetics Industry

(***) Beauty Industry
15% Ammonium Solution
250 ton annual production

(**) BLF - Bio Liquid Fertilizer Composition:

- 3-0-0+6CaO+Me (856 m3/Y)
- 5-0-0+10CaO+Me (545 m3/Y)
- 3/5-0-Hold + Hold + Me (Hold)

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Meets EU Green Deal Objectives

The European Green Deal will improve the well-being and health of citizens and future generations

- Cleaner air, water and soil
- Zero CO_2 emissions
- Pathogen free
- In line fertilizer production
  No packing materials
- High yield organic farming
- Less pesticides and fertilizers
- Cleaner energy
- Healthier Food
- Local production
- Sustainable approach
- High quality fruits and vegetables
- More environmentally-friendly products in our shops

Addressing 6 of the 17 United Nations Sustainable Development Goals:

UNITED NATIONS

https://sdgs.un.org/goals

Competing Organic Fertilizers:

	algaenite	BIOTA NUTRI	AgroThrive ORGANIC BIO-FERTILIZERS
Available Nitrogen	**5.5%**	**O.4%**	**0.16%**
Nitrogen source	**Air**	**Plant residue**	**Organic wastes**

And we have:

- ✓ **30% Additional yield**
- ✓ **Competitive cost**
- ✓ **Suitable for fertigation: Fully dissolved in water**
- ✓ **Free of pathogens, hormones, antibiotics**

Competing Nitrogen Bio Fixation Technologies

	algaenite	PIVOT BIO	azotic TECHNOLOGIES
Bacteria Species	**Anabaena**	**Klebsiella Variicola**	**Gluconacetobacter Diazotrophicus**
Energy source	**Sun**	Sugar	Sugar
Application	On site fertigation or hydroponics	In furrow.	In furrow or foliar
Applicable in fertigation	Yes	Yes	Yes
Applicable in hydroponics	Yes	NO	Only foliar application
Crops	**All**	Maize, wheat, sorghum	rice, wheat, maize, soybean and others
% of N supply	**100%**	20-30%	Up to 50% w/o yield increase
Organic input certified	Not yet	No	Not yet
Enables organic certification of the farm	**Yes – in the US**	No	Requires additional organic fertilizers
Time to market	Six months	Commercial	Commercial
Funding raised	€2.5M from the EU	€430M series D	N/A. From angels and Virya LLC

good restriction drawback

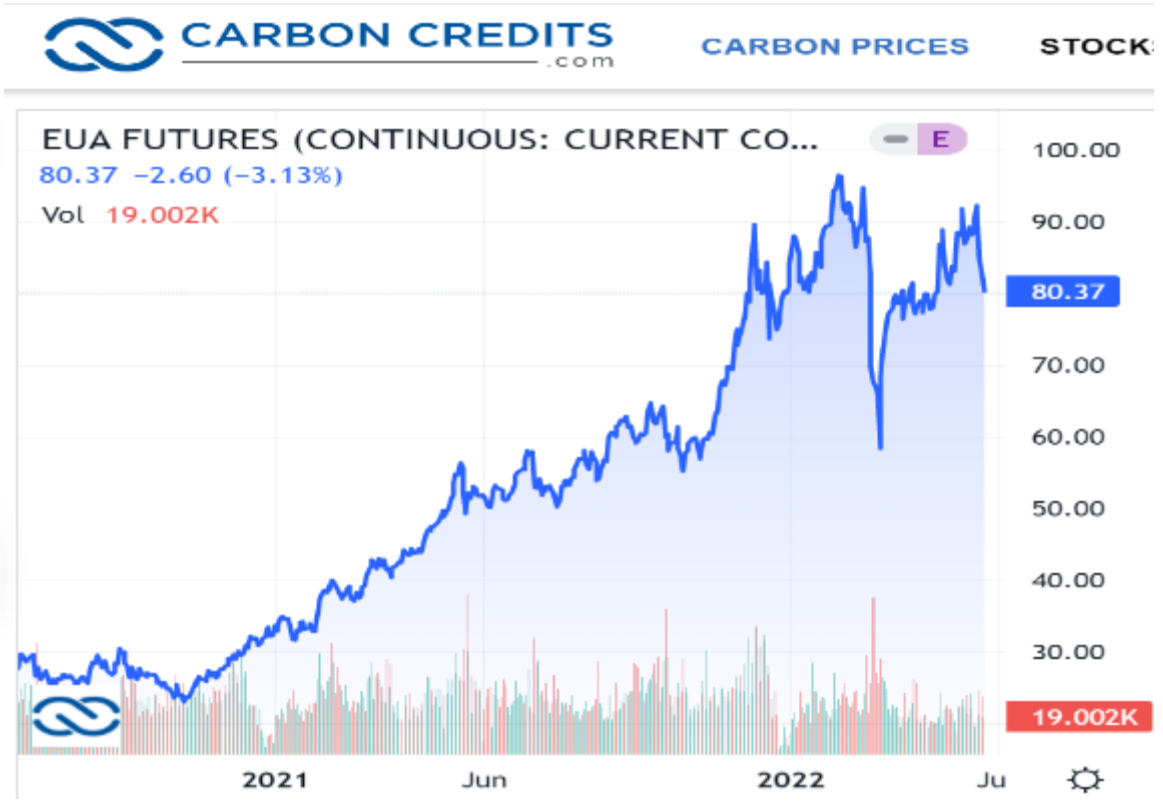
Environmental Benefits

Produces Renewable Energy

Methane is a by-product of the reactor and is used for generating 1/3 of the electricity needed to run the factory

Negative CO2 Emission

Carbon Dioxide Removal (CDR)
337 Tons per year per 3ha production unit
Current price - €80.37 per Ton



1.5 tons of CO_2 absorbed per 1 ton of Biomass

The Organic Fertilizer Market

- **Global organic fertilizer market will reach $15.8 billion by 2026 with a CAGR of 13.7% from 2020 to 2026**
- Retail sales for organic products have increased by over 128% in the last 10 years, from approximately $18b in 2009 to $41b in 2019.
  - Organic food sales have grown +36% in Germany between 2018 and 2020**.
  - 344,000 organic food producers in Europe in 2019, +5.1% more than in 2018 (IFOAM Organics Europe).
  - European Green deal target: 25% of all land under organic farming by 2030 from 8.5% in 2018

Current Market Prices for Organic Fertilizer (275 Gallon Totes - 1m³)
$5,000 (low quality) – $13,000 (premium fertilizer)

*Source: ReportLinker 2021 - ** Statista

THE MARKET – GERMANY: LARGEST BIO MARKET IN EUROPE

Growing demand for organic produce

The German Government Strategy for the Future of Organic Farming

"20 percent organic farming in Germany by 2030" is the Federal Government's target, as set out in the Sustainable Development Strategy, because organic farming is a particularly resource-efficient, environmentally sound and sustainable form of agriculture.

Federal Ministry of Food and Agriculture

2018	2019	2030
8.2% farmland[2]	9.7% farmland[1]	20% farmland

In 2020, the organic market in Germany grew by 22% to €14.99 billion[1].

About 20% of the organic produce is imported.

Every day, on average five farms convert to organic – roughly 500 football fields[2].

(1) https://www.bmel.de/EN/topics/farming/organic-farming/strategy-future-organic-farming.html
(2) https://www.deutschland.de/en/topic/environment/how-germany-is-promoting-organic-farming

Algaenite In Europe

Anders Thomsen
CEO Algaenite ApS Denmark

1. Establishment of Algaenite ApS in Denmark, with Anders Thomsen as CEO.
2. Establish Algaenite demonstration site (beta sites) at Legro A/S, DTI/Nordic Greens is in Denmark (**LOI**), and TECNOVA Technology Center is in Spain. (**LOI**)
3. Documentation and Validation from the beta sites.
4. Certification of Algaenite products in Denmark and Europe. (**Novel Food**)
5. Business plan, financial projections, marketing & sales strategy for the European market.
6. Hiring and scaling up the Algaenite ApS company in Denmark for sale, marketing & technical support.
7. *Alternative protein* 2 year R&D (*from TRL6 to TRL8).* **Product A** – Protein powder AnabaenaH Consecrates. **Product B** – Phycocyanin – Functional, high-value protein.

Algaenite ApS – three-year work plan in Europe :

The go-to-market plan for the BLF PBR systems is based on a phased approach: Demonstrate – Validate- Expand – Scale (BOT).

1. The Algaenite ApS company establishment with Anders Thomsen as CEO.
2. Establish Algaenite demonstration site (beta sites) for liquid bio-fertilizers at
   - Legro A/S
   - Danish Technological Institute in Denmark
   - TECNOVA Technology Center in Spain.
3. Documentation and Validation from the three beta sites.
4. Certification of Algaenite products in Denmark and Europe.
5. *Alternative protein (from TRL6 to TRL8).*

Product A – Protein powder Anabaena Consecrates.

Product B – Phycocyanin – Functional, high-value protein.

Environmental Benefits

The system contributes to the quality of the environment since it is produced based on solar energy only, and the innovative development allows for 0 GHG emissions. The ISO 9001 certified

Produces Renewable Energy

Methane is a by-product of the reactor and is used for generating 1/3 of the electricity needed to run the factory

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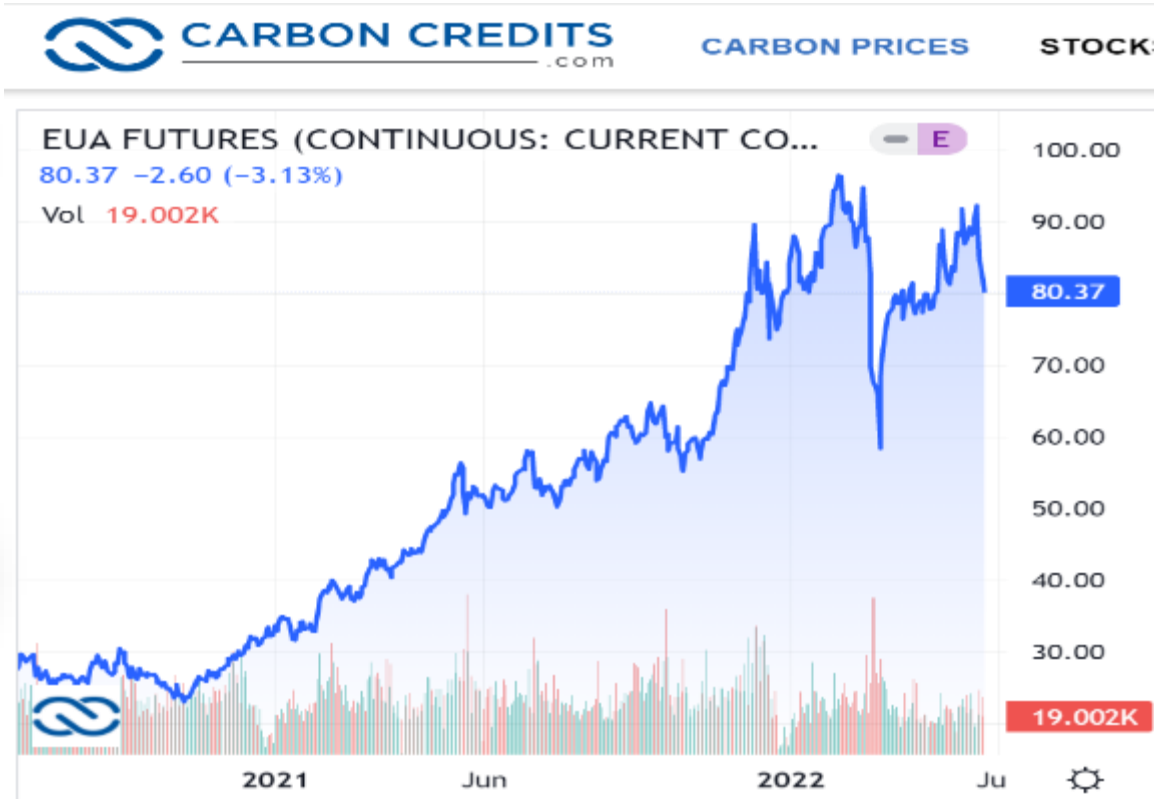

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