




ORIGIN^{BY}
OCEAN

Vision

Reclaimed origins



A photograph of a beach with waves crashing onto a shore covered in brown seaweed. The water is a pale, milky blue, and the sky is a hazy, light blue. The seaweed is a dense, brownish-green mat covering the beach.

The oceans are becoming
green and brown.

Less blue is less biodiversity.

Worse life in the sea and on land.

An existential crisis.

A microscopic image of a green alga cell. The cell is roughly circular and filled with a vibrant green, granular cytoplasm. A prominent, dark blue nucleus is visible in the upper right quadrant. The cell wall is thin and slightly irregular. The background is a deep blue, suggesting a liquid medium.

Mission

To make the
chemical industry
run on algae.

The global chemical industry

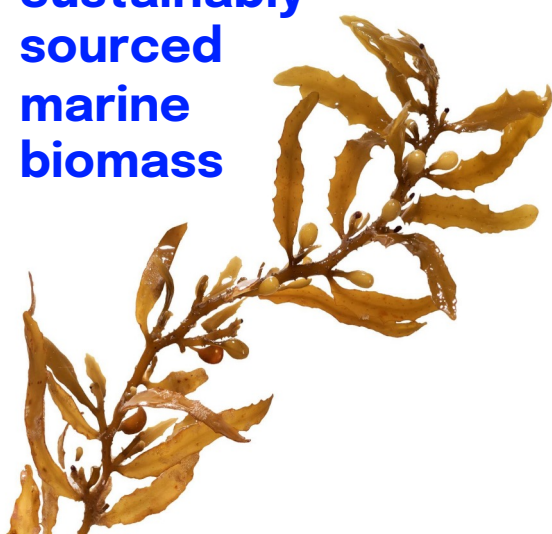
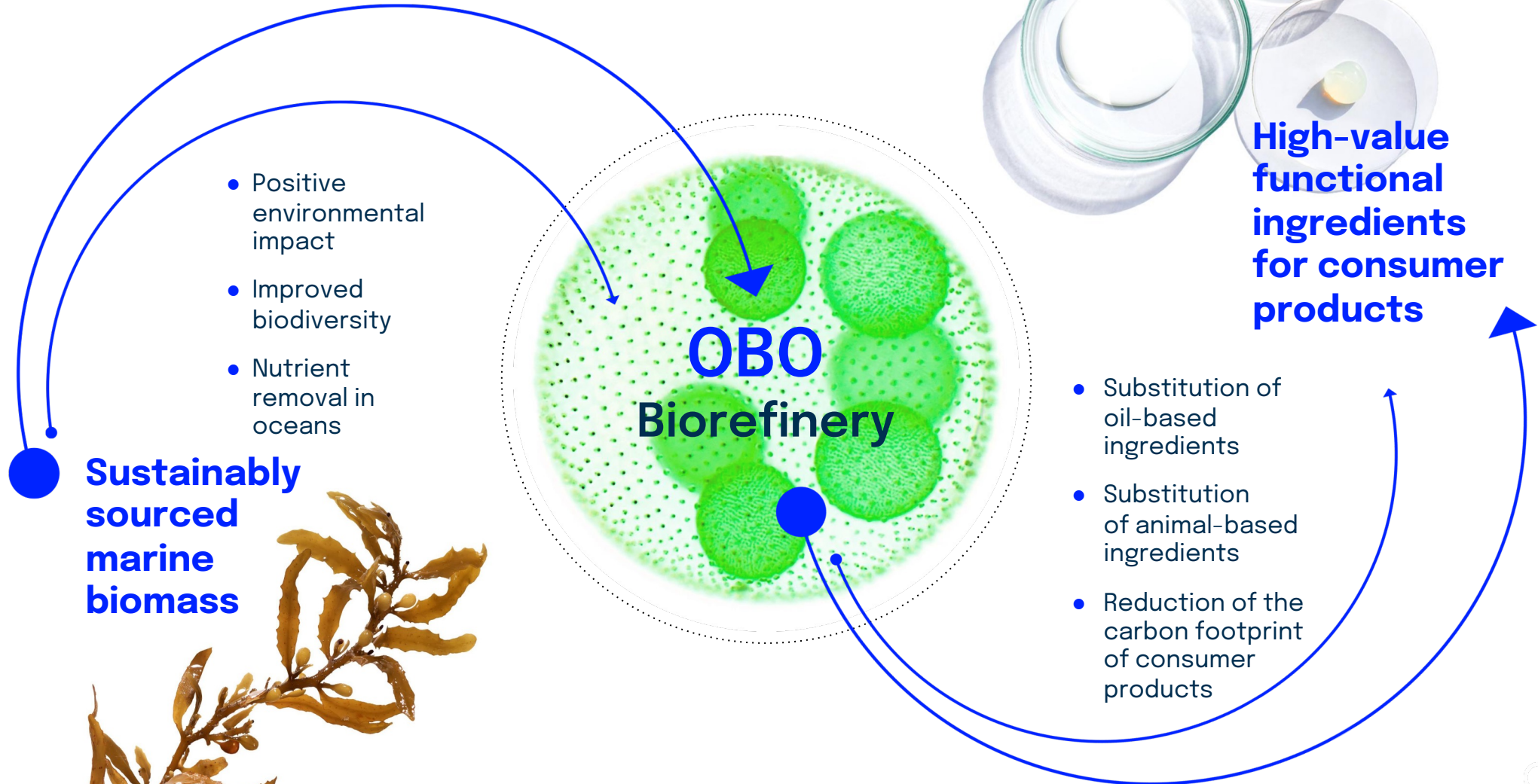
- a critical part of maintaining our standard of life
- worth around 4 trillion USD
- one of the main sources of human pollution, toxic emissions and poisonous substances
- 80% based on crude oil: everything from plastics, paints, cosmetics, glues to fertilisers





OUR REGENERATIVE BUSINESS

Commercially viable, scalable & sustainable biomass processing





THE SOLUTION

Algae-based functional ingredients to decarbonise consumer goods

Our Products

CAERULO™ (Sodium Alginate)

- > Thickening agent
- > Viscosity and rheology modifier
- > Humectant
- > Stabiliser



AXUREO™ (Fucoxanthin)

- > Pigment
- > Antioxidant
- > Nutraceutica



LIVIDO™ (Laminarin)

- > Biopesticide
- > Thickening agent
- > Binder



USAGE

Food



Cosmetics



Detergents



Textiles



Packaging &
materials



Agriculture



AZULO™ (Mycosporin)

- > UV filter
- > Antioxidant



CUMATILO™ (Fucoidan)

- > Antioxidant
- > Bioactive nutraceutical
- > Anti-inflammatory



Seaweed residue

- > Seaweed proteins
- > Fatty acids
- > Fibres



MARKET DRIVERS

Functional ingredients

Today's FMCG manufacturers are looking for functional ingredients to improve the performance, texture and characteristics of their products.

Natural cosmetics

Spiralling demand for vegan cosmetics among millennials is one of the primary growth stimulants of the market.

Changing legislation

Regulatory changes are implemented banning harmful to humans and the environment classified ingredients.

Manufacturers are facing an urgent need to transition from oil and animal-based formulations and ingredients. Driven by corporate strategies and consumer demand.



UNILEVER CARBON STRATEGY: Replacing fossil fuel based ingredients in cleaning and laundry products to reduce carbon footprint by 20%.



VALIO CARBON STRATEGY: The emission reduction target for milk is 50% by 2030 and 85-90% of the impact is generated before milk is brought to a dairy.



KIILTO CARBON STRATEGY: Aiming carbon neutrality by 2028 by reducing fossil oil utilisation

Sustainably produced consumer goods



CASE

MARIMEKKO X ORIGIN BY OCEAN

- Fabric printed with seaweed
- Improved lifecycle assessment of the manufacturing process
- No microplastics
- Superior printing performance
- Reducing the environmental problem of the oceans while decarbonising the process



CASE

OUR SUNSCREEN SOLUTION

The first 100% bio-based
UV-filter AZULO™

Our first sunscreen
formulation demonstrates
a high SPF of 22

Tested and verified

Ocean and people safe

AZULO™



CASE

FOOD

Texture

Stability

Increased bio-based
content

Improved nutritional value



CASE

COSMETICS

Functionality first

Skin care with antioxidant power

Diverse formulation from creams to sprays to gels

Natural cosmetics in focus

Increased bio-based content

Ocean and people safe

Triple impact strategy

1

GET THE CO₂ AND NUTRIENT OUT OF THE OCEANS IN THE FORM OF SEAWEED: The invasive seaweed we harvest contains the CO₂ and nutrients behind eutrophication. A net positive impact - It is regenerative for the ecosystem and biodiversity.

2

MITIGATE THE IMPACT OF OPERATIONS: Non-toxic process chemicals, renewable energy and process optimization are used to mitigate the emissions of harvesting, transporting and producing the valuable chemical components. A net negative impact - But a sustainable process compared to the industry standard

3

DECARBONIZE OIL-BASED CONSUMER GOODS: Products by Origin by Ocean decarbonize consumer goods. Less oil, less emissions, less environmental harm. Net positive impact - oil-based chemical components in goods are substituted by algae-based ones.



ORIGIN^{BY}
OCEAN

Eco-Art to Promote Change

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Artistic research (NGO, grassroots, community projects)

ASTE

Art Science Technology Education

ART+

www.artplus.app

Work within an academic structure



MPLab

mākslas pētījumu laboratorija

“White Clover”

“Roots”

Maija Demitere,

Lauris Taube

2022

***Artworks to
comment on
use of tap water
for watering
private lawns and
public parks***



ART+

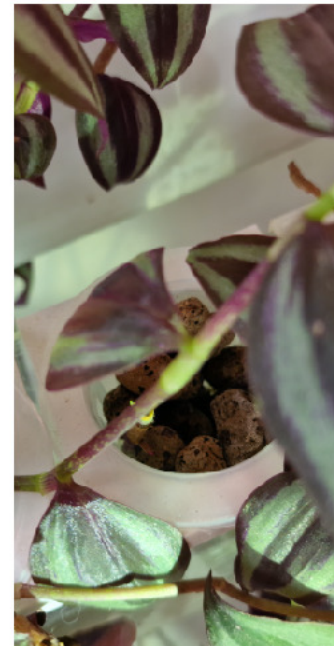
www.artplus.app

“Plastic Rain”. *Maija Demitere, Oleksandr Sirous* (2023)
Imagining microplastics in our everyday lives





Ongoing experiments in the living room



Liepaja ZIIC Nature House

Eco-Art to Promote Change

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 <https://aste.gallery/>



@aste.gallery

 <https://artplus.app/>



@artplus.app



The hidden treasure of the Baltic Sea

Tanel Ilmjärvi
Founder

red algae
vetik.eu

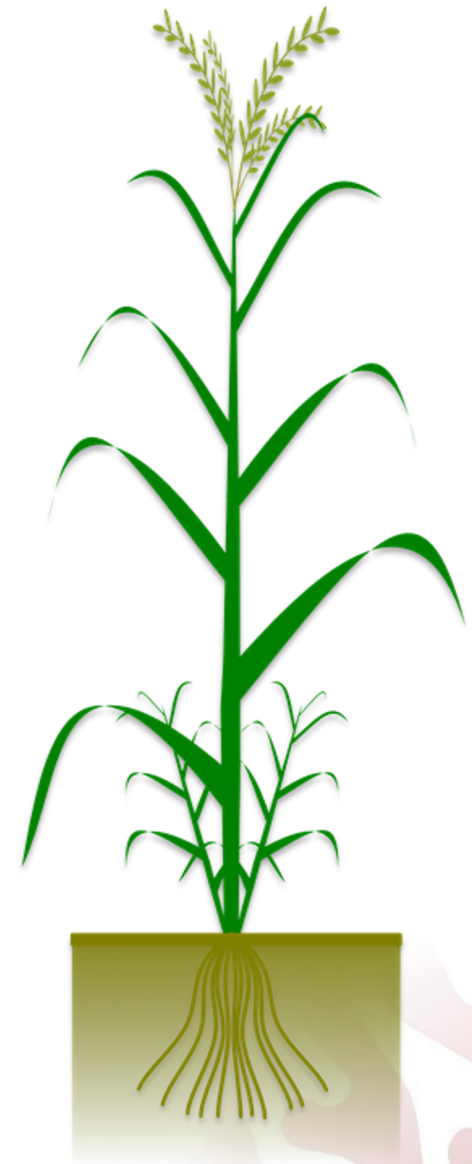
Reduction of lands fertility is a global problem!

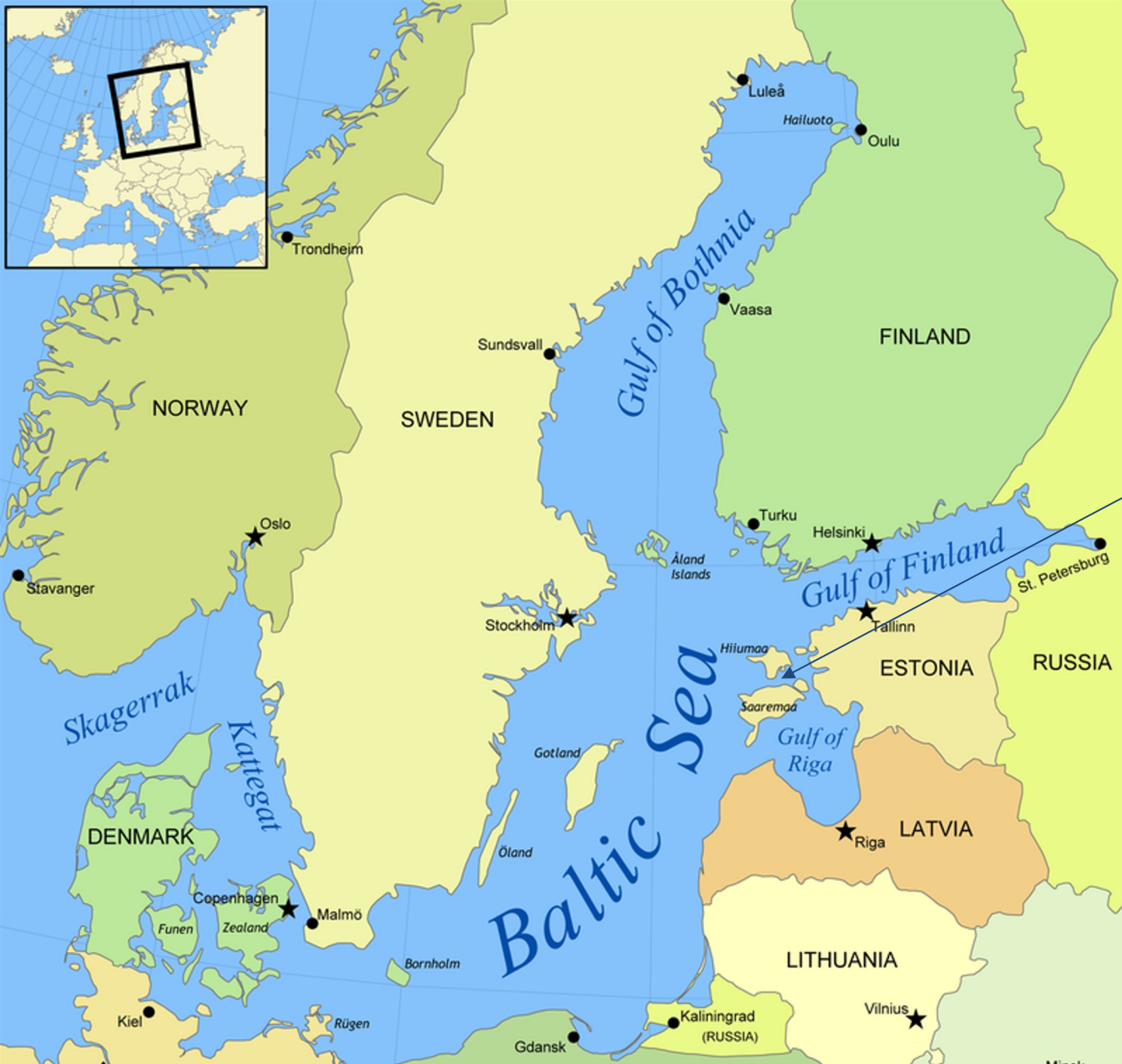


Solution: Local seaweed based **Biostimulants**



- Increase in crop yield (>10%)
- Extremely low cost per ha
- Reduces the need for fertilizers
- Makes plants stronger against drought





Opportunity

The only red seaweed in the Baltic Sea available in industrial quantities is in Kassari Bay

Vetik has the licence and equipment to harvest this stock

Sources of seaweed biomass

Wild harvest

>1000t(ww)
First priority



Beach cast

>5000t(ww)



Cultivation

(work in progress)



Wikimedia commons
seaweed cultivation in Philippines

Biostimulant market

Global market: 900 M EUR, CAGR 13%

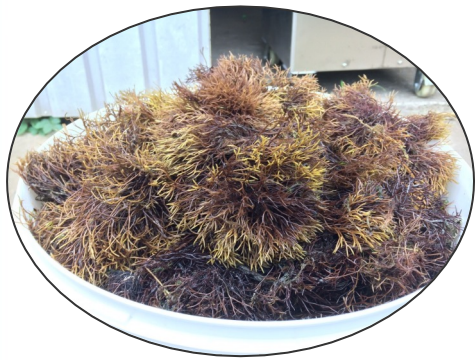
Capacity (wild harvest): 3000 tons ~ > **15 M €**

Beachhead market: row crop treatment in Estonia

Revenue 2027: 1.5 M €

Business model is **B2B**

First revenue



Biostimulant



EUR/L



Farmers

Future revenue

Seaweed extracts for other biostimulant producers

Crop specific biostimulants:

- Barley
- Wheat
- Rapeseed
- Corn
- Others

The team



Tanel Ilmjärv
CEO
Founder

Arvi Talk
Seaweed harvester
Founder

Toonika Rinke
R&D

Valmar Kasuk
Sales and
marketing
Founder

Timeline:



Pre-seed investment
Building pilot scale
biorefinery



ERA-NET Blue Bio grant „TACO Algae“

HORIZON-MISS-2022 OCEAN-01-06  **AlgaePro BANOS**



~500 k EUR public and own funds invested

Vetik is developing sustainable seaweed industry in Estonia!

- Contact us!
- Tanel Ilmjärv, CEO
- tanel@vetik.eu

The logo for Vetik features the word "Vetik" in a bold, black, handwritten-style font. Below the text is a stylized, wavy line in shades of orange and red, resembling a splash or a wave.

red algae
vetik.eu

Supercharger[®]



Riga 26.04.2024

Liina Joller-Vahter

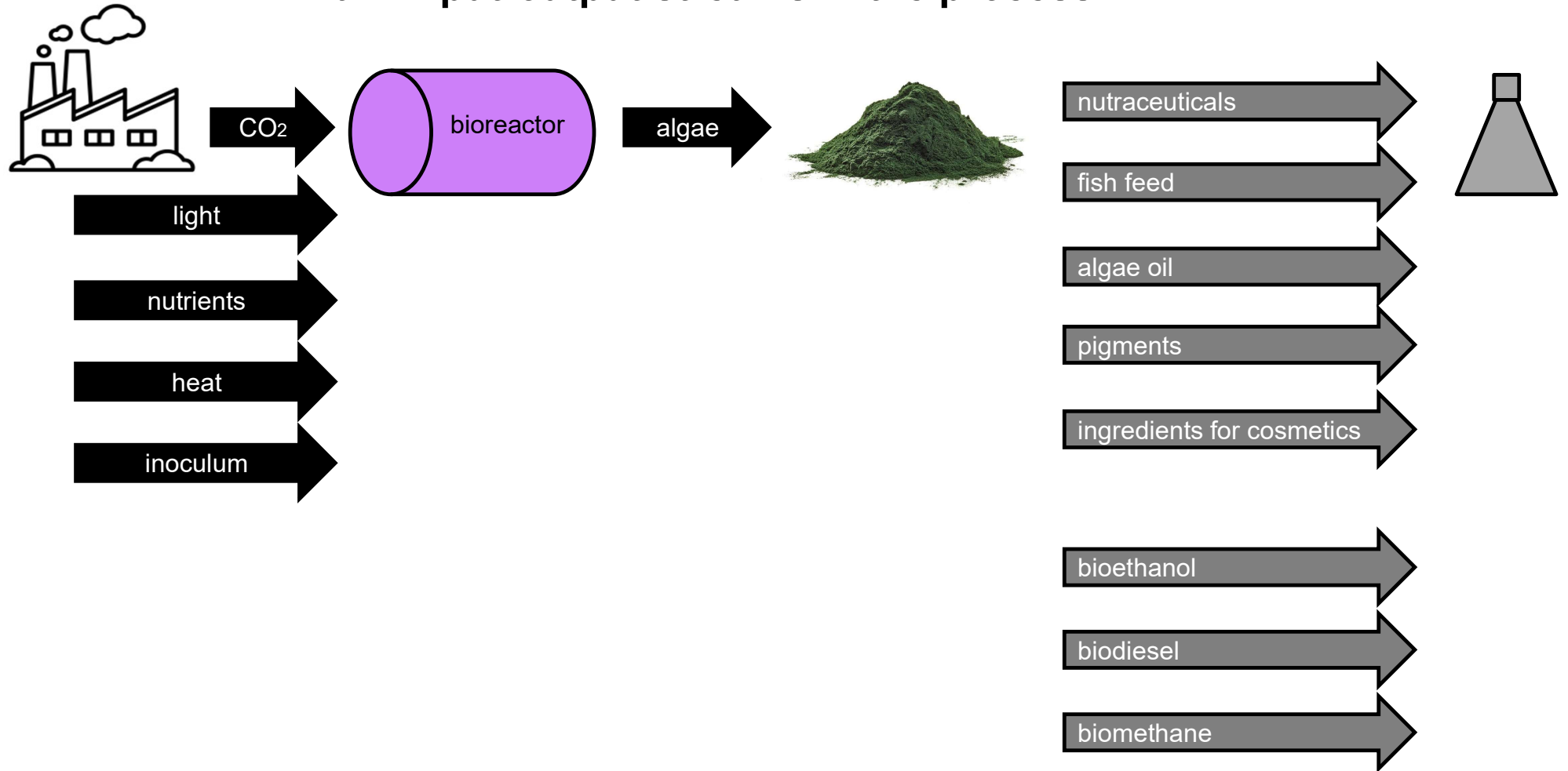
Power Algae Ltd, CEO



Supercharger®



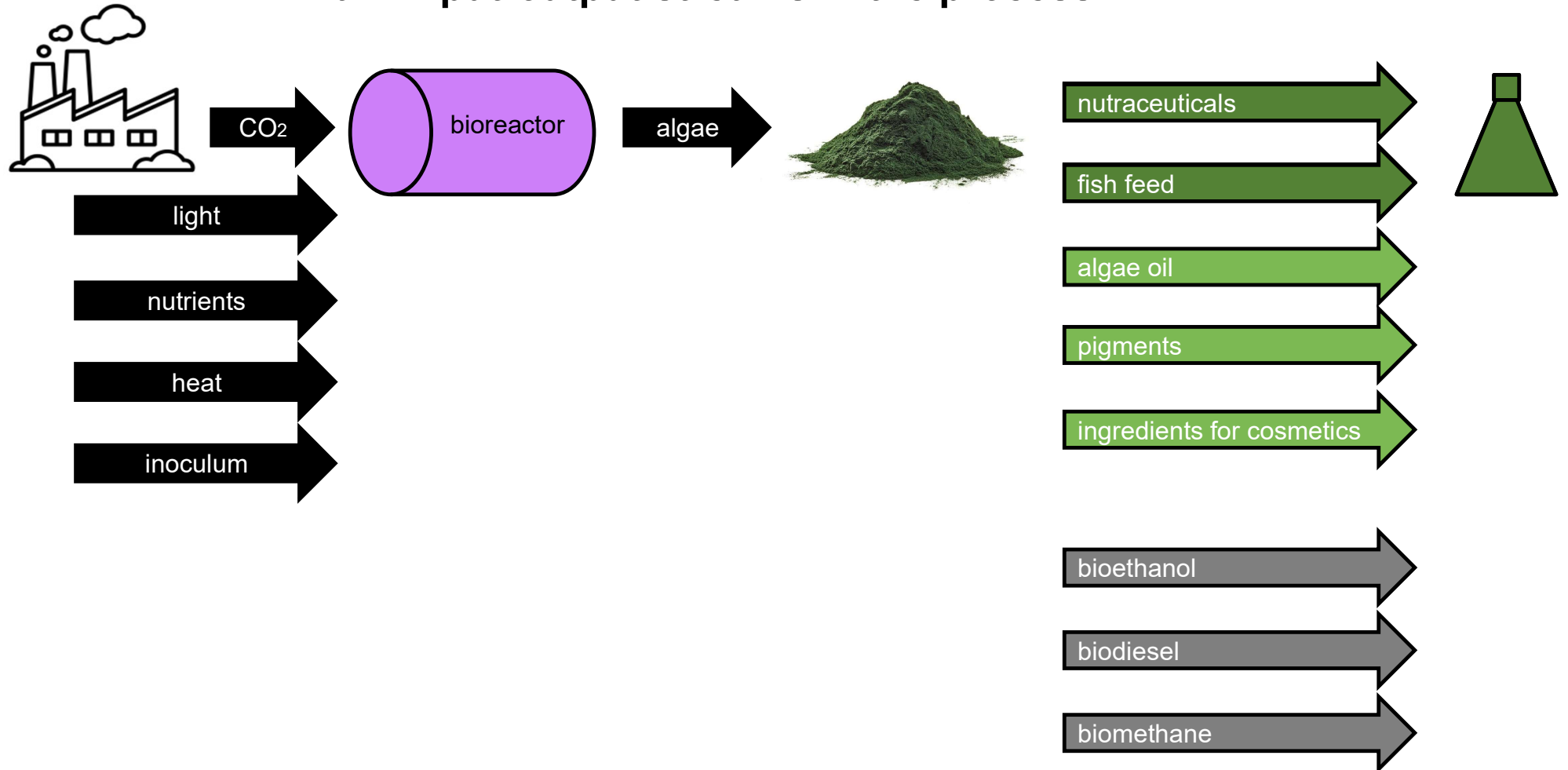
Main input-output streams in the process



Supercharger®



Main input-output streams in the process



Supercharger®



Cultivation with proprietary photobioreactor technology

Power Algae



- Modular and easily up-scalable system
- Energy-efficient artificial lighting
- Enables use of industrial CO₂ and excess heat
- Integrated sensors for measuring critical parameters
- Full automation possible with special algorithms

Supercharger®



Next steps in the feed: feed trials with salmonoids



Next steps in the food/nutraceuticals (under *Supercharger*[®] brand)

Launching retail products

- own webshop
- Amazon Marketplace
- presence in physical shops in Estonia
- collaboration with food industry/HoReCa

Looking for partners: fish feed producers, fish farmers, nutraceuticals' retailers, food industry, HoReCa, universities

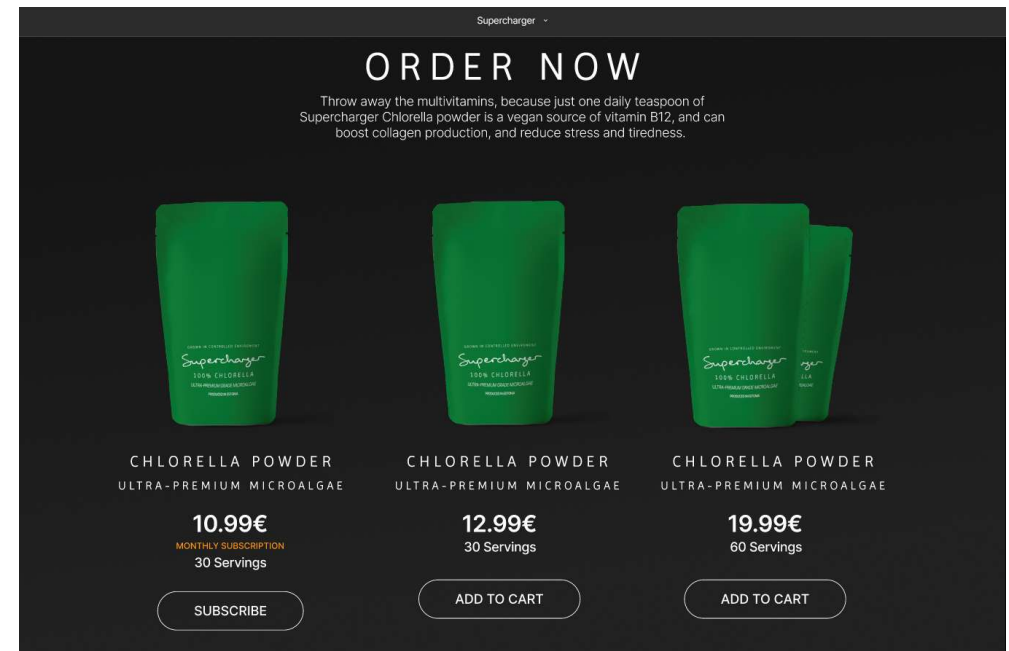
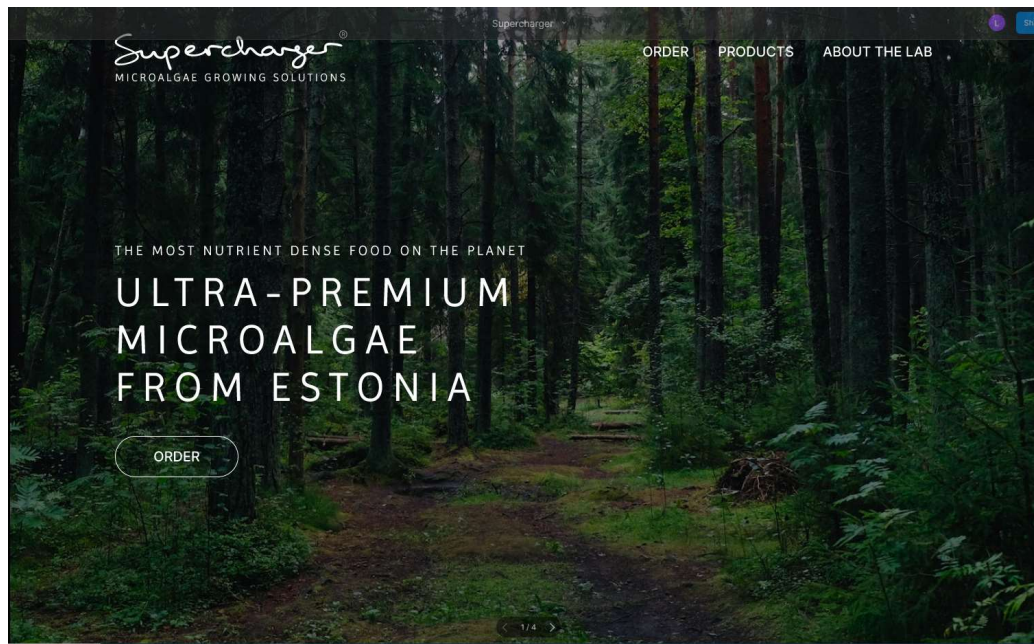
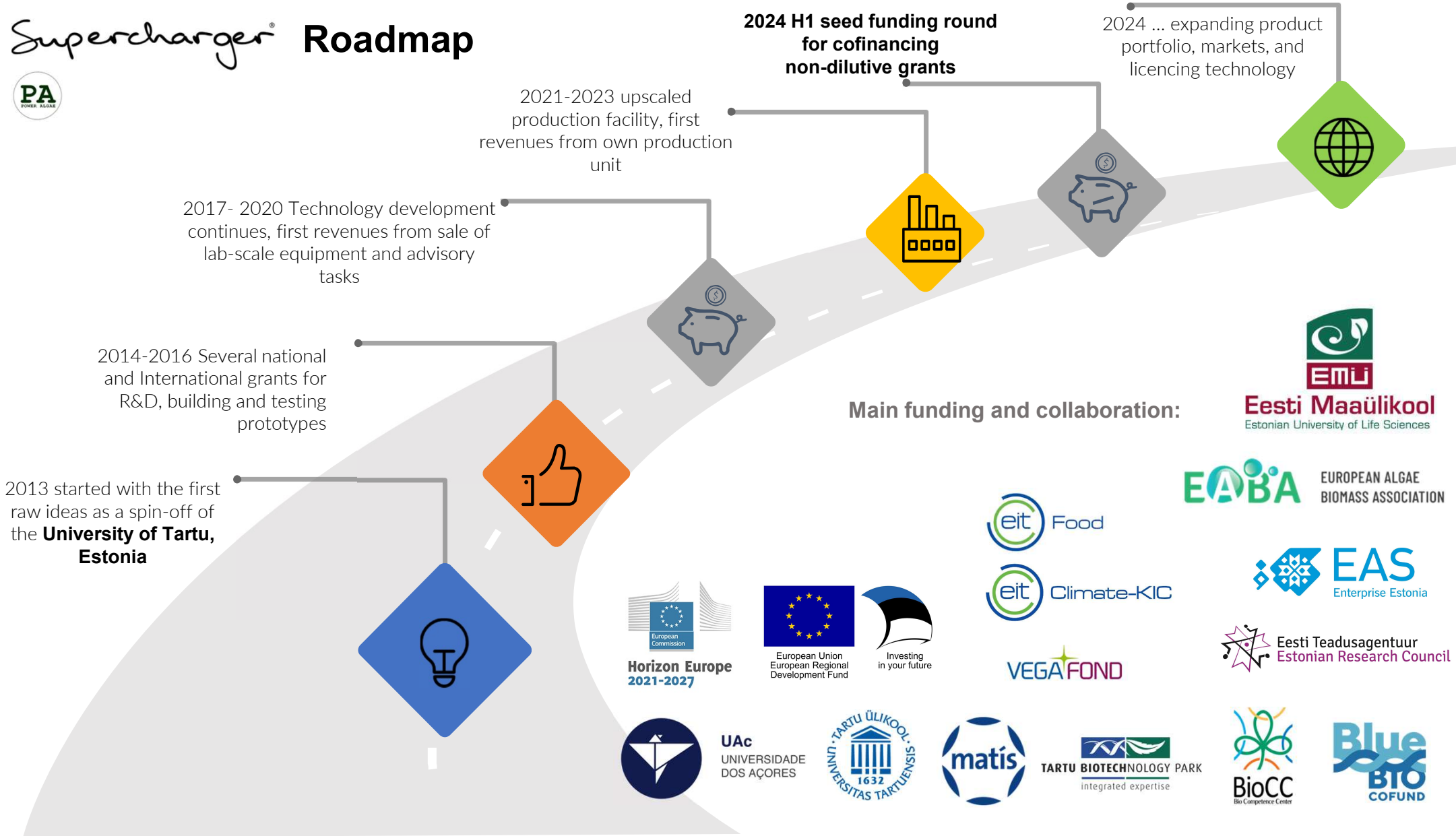


Fig. Draft mockups for the e-shop (design, prices, quantities not confirmed)

Supercharger[®] Roadmap





Supercharger[®]



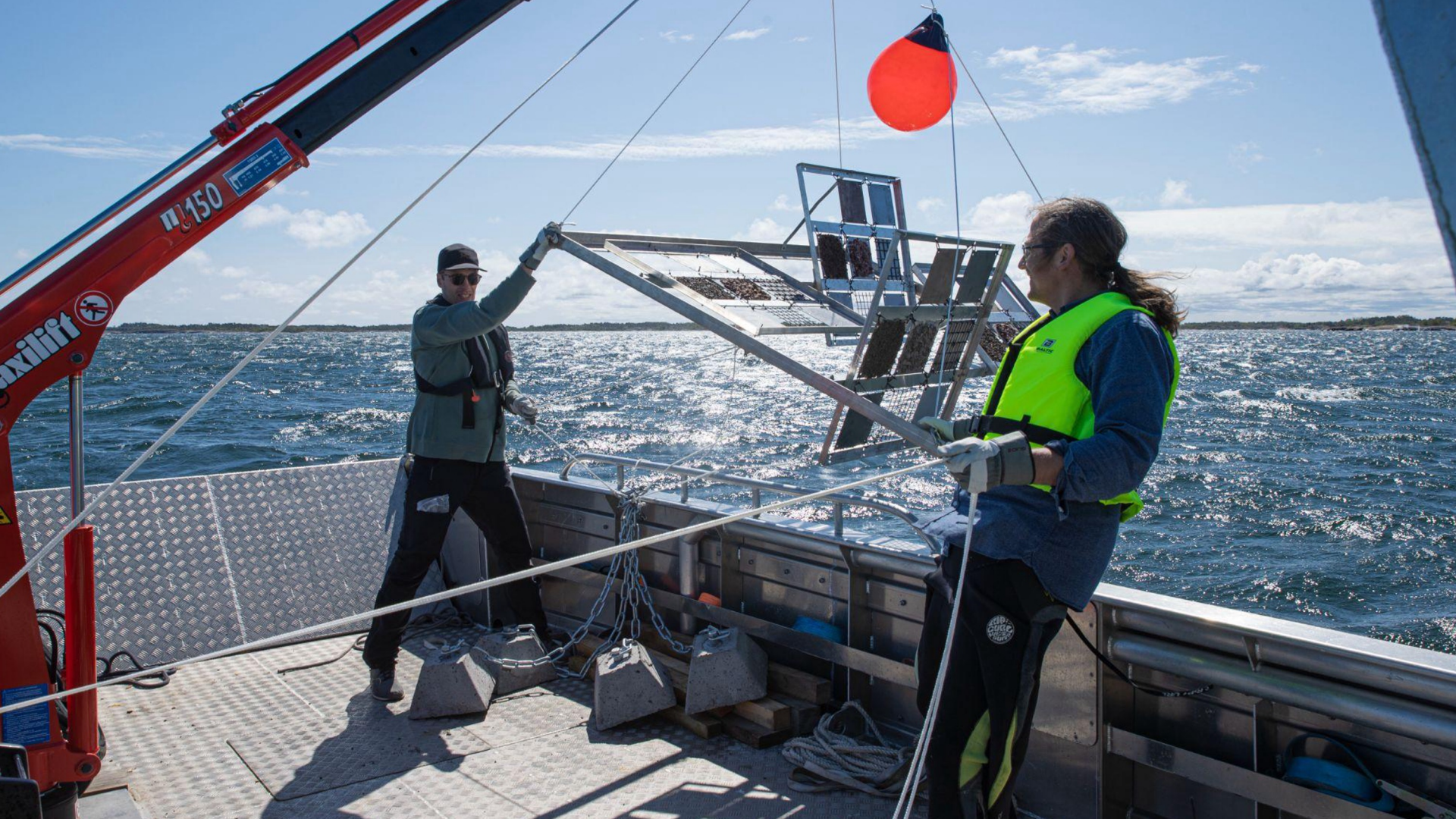
Happy to discuss collaboration options!



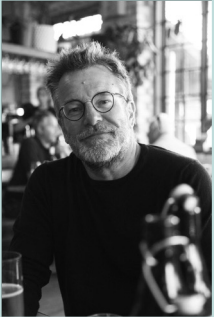
Liina Joller-Vahter
liina@poweralgae.eu

Liina Joller-Vahter, Ph.D Econ
Power Algae OÜ / Co-founder & CEO





Under Ytan



Under Ytan wants the Baltic Sea to thrive.

By increasing biodiversity, we create better conditions for animals and plants in our sea. We are a startup company that focuses on cultivation and cultivation techniques for macroalgae from the Baltic Sea, and its uses as food and other products. The company operates according to a regenerative business model, which means that we restore more than we consume. We strengthen ecosystems and reduce eutrophication in the Baltic Sea through the cultivation of macroalgae and the use of macroalgae, molluscs and other species as a restoration method to strengthen habitats.

UNDER

Pioneering farming



- Trialing rigs adapted to Baltic Sea conditions
- Ready to launch as soon as we have seedlings

Food & Seaweed communication



- Green Beanie Seaweed Soda
- Seaweed as a communication tool

Ecosystems



- Scaling up restoration techniques
- Designing best practices for multiple ecosystems and species

UNDER

**Mikko
Koskinen**



**Co-founder, Chair &
Business development**

Serial entrepreneur with skills in branding, storytelling and engineering.

**Magnus
Hanstén**



**Co-founder, CEO &
operations**

Natural resource specialist, a Baltic Sea enthusiast with an explorer's mindset.

**Olli
Laaksonen**



**Co-founder, design &
technology**

Entrepreneur. Versatile experience in R&D and design. Born and raised in Kustavi on his family's fish farm.

NEMO

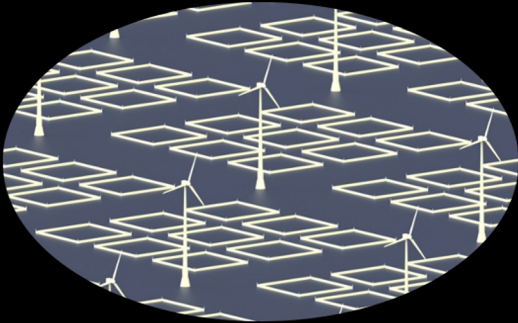
Seafarms

**We strive to create
healthy businesses
and healthy ecosystems.**

NEMO

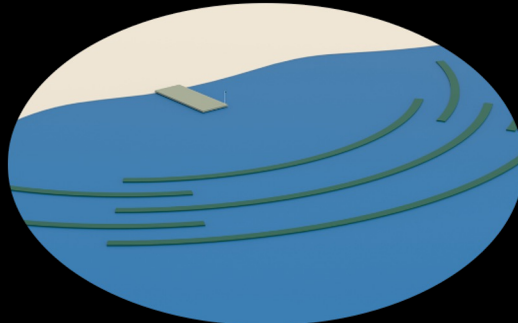
Seafarms

OFFSHORE



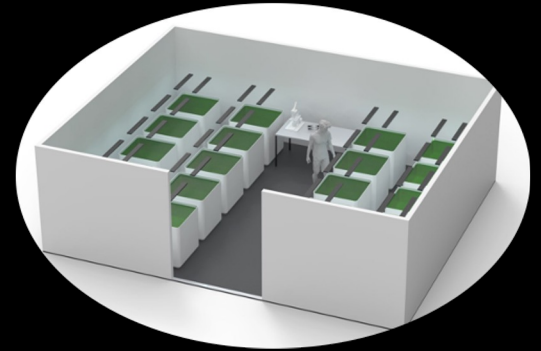
- Multi-use concept
- Seaweed Cultivation

NEARSHORE



- Ecosystem Restoration
- Seaweed Cultivation

ONSHORE



- Seaweed hatchery
- Land-based cultivation

ÖSTERSJÖPROJEKTET
BALTICSEAPROJECT
ITÄMERIPROJEKTI



Project
Björkskär



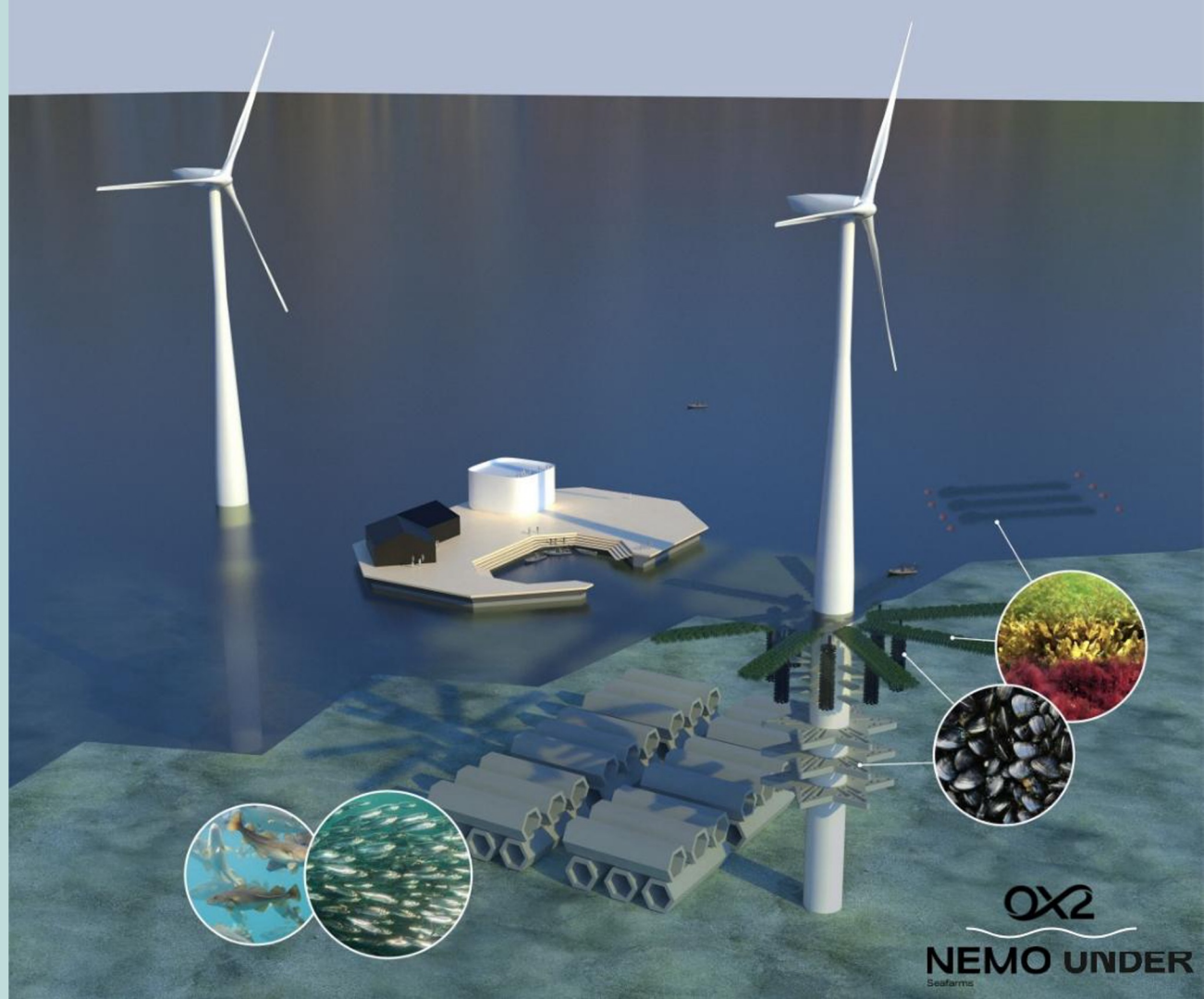
NEMO UNDER

Seafarms

UNDER YTAN

This is how we started:

- We started mentally in 2032 and made a visual image of how the offshore wind parks will look like.
- Then we started to break down the picture in smaller actions
- We have started with the most challenging aspects that needs time for innovation
- **We see it as place to visit not only an industrial area!**



- Innovation with an ecosystem mindset
- Species specific problem solving
- Target local species and let them flourish
- Value creation from biomass
- Multi-use Co-operation



Biodiversity foundation for the Baltic Sea

Visionary image for full scale tests 2025

0-2 m
Rörhinna
(*Ulva intensalis*)
Sudare
(*Chorda Filum*)
Dammussla
(*Anodonta anatina*)

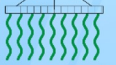
Hjärtmussla
(*Cerastoderma glaucum*)
Grönslick
(*Cladophora glomerata*)



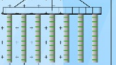
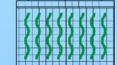
YTSKIKT X

2-8 m
Blåstång
(*Fucus Vesiculosus*)
Rödslick
(*Polysiphonia s.p.*)
Blåmussla
(*Mytilus edilus*)

Hjärtmussla
(*Cerastoderma glaucum*)
Sudare
(*Chorda Filum*)
Gaffeltång
(*Furcellaria-lumbricalis*)



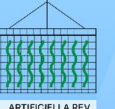
KASSE 1



YTSKIKT Y

5-20 m
Rödslick
(*Polysiphonia s.p.*)
Blåmussla
(*Mytilus edilus*)

Kilrödblad
(*Coccotylus truncatus*)
Gaffeltång
(*Furcellaria lumbricalis*)



YTSKIKT Z

20-30 m
Blåmussla
(*Mytilus edilus*)

C+N
+P

N+P

MUSSELREP

30-40 m
Fiskar och botten djur

YTSKIKT A

FUNDAMENT

REVKONSTRUKTION BETONG A

REVKONSTRUKTION TRÄ

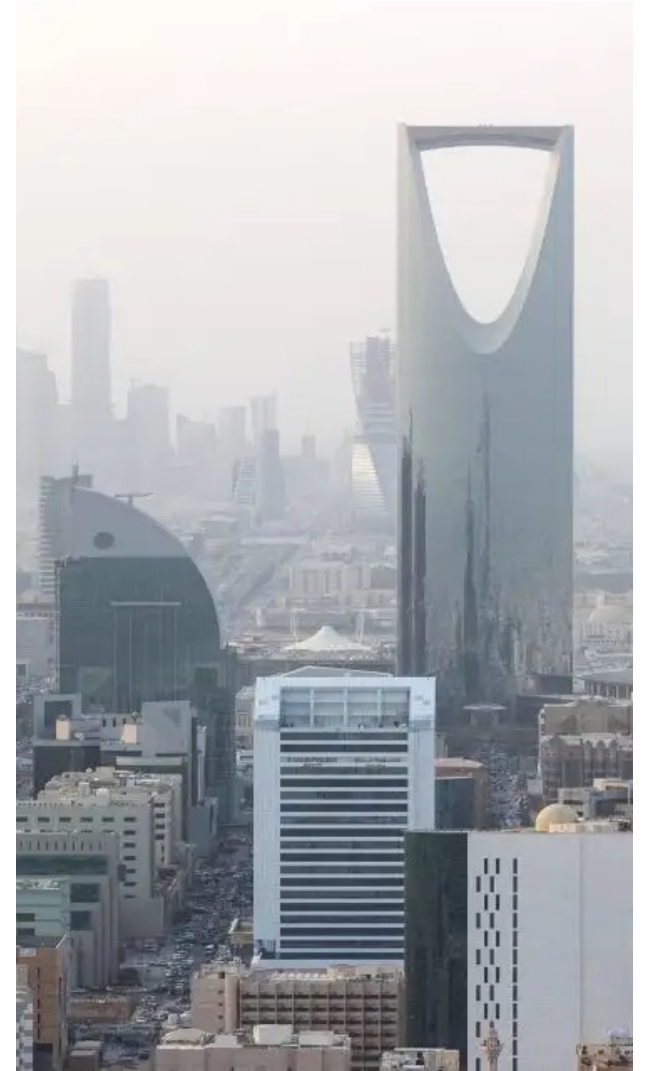
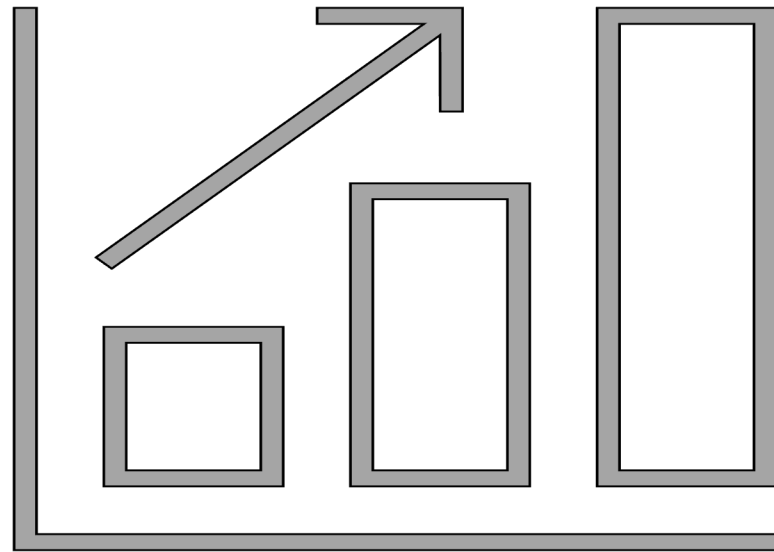
REVKONSTRUKTION BETONG B



SPIRULINA NORD

Fresh & delicious spirulina
from local urban farm

The world population is increasing



and cities are growing

Can we merge CITY & AGRICULTURE?





Should we put it



Vertically ?

20 000 m²

carrot field



=

1 m³

SpirulinaNord urban farm



**SPIRULINA
NORD**

Urban farm benefits

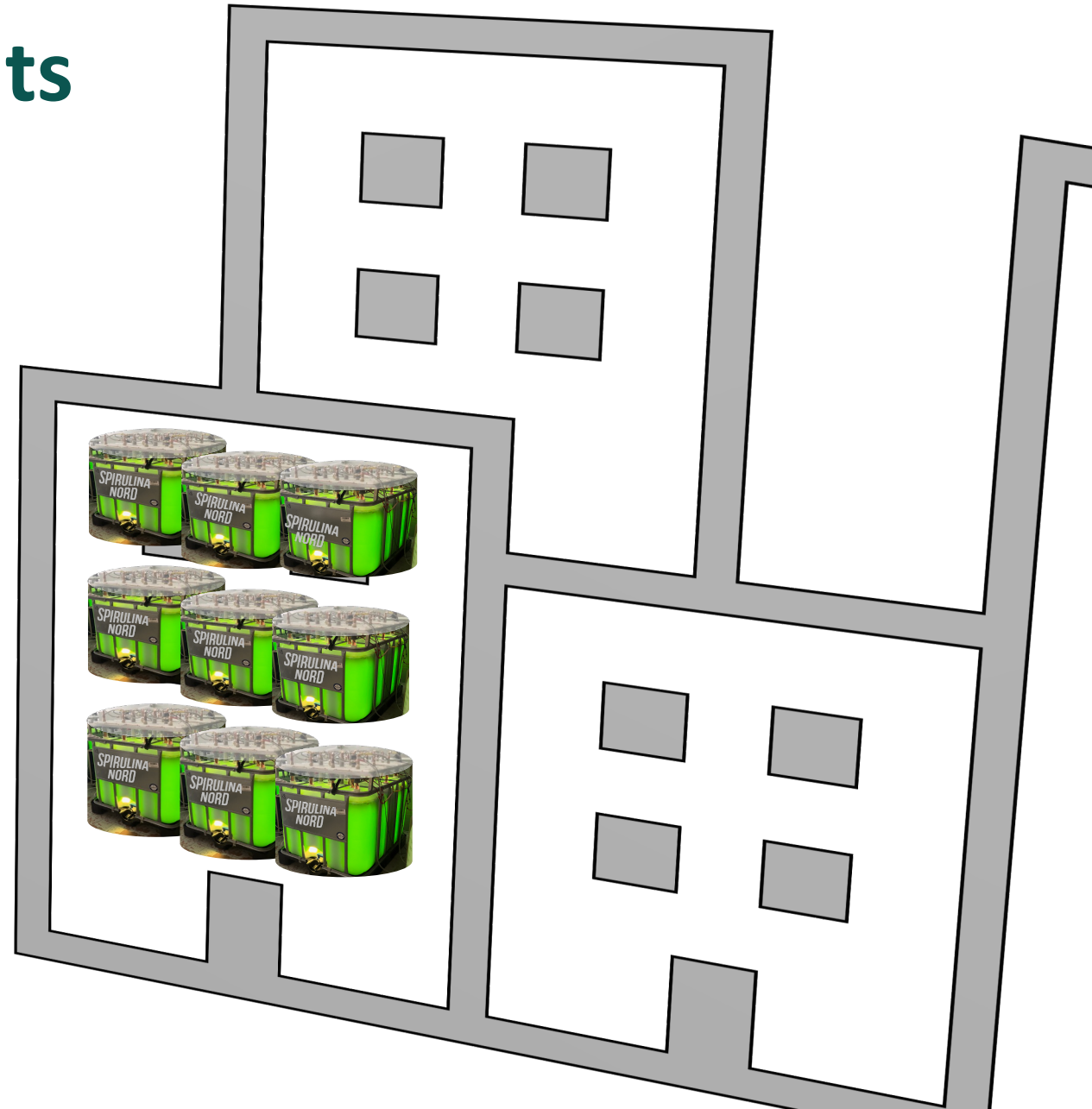
Resource efficient

Climate independent

Contamination free

Premium quality 12 months a year

Non-seasonal business



Global agriculture market

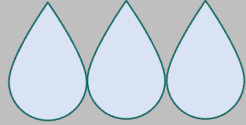
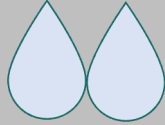


5 tn \$



Urban farming market share is hardly noticeable

Competitive landscape

Spirulina cultivation technologies

Season (months)	6	9	9	12
CAPEX	\$	\$\$	\$\$\$	\$
Quality	Low	Medium	Medium	Premium
Water consumption				



shutterstock.com · 15603264



SPIRULINA NORD

story





SPIRULINA NORD

Fresh & delicious spirulina
from the local urban farm

Dr.sc.ing. Agnese Stunda-Zujeva, CEO

www.SpirulinaNord.eu

IG FB Lin TikTok