



**ORIGIN
BY OCEAN**

Industrial use of Marine biomass

Production ecosystem



Our purpose



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**For the natural balance
of ocean-life**



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Chief Business Activist



The Global Challenge

Costs and damages

2,2bn \$

Annual economic damages caused by eutrophication in freshwaters in the United States

2,2bn €

Annual economic losses caused by depletion of perennial vegetation and fish stocks in the Baltic Sea.

3,6bn €

Annual cost to citizens' welfare around the Baltic Sea. Based on individuals' willingness to pay.

Marine biomass & Industrial use



Bringing the balance of ocean life

Initial numbers, demo facility Southern Finland



1. Farm & Harvest

Feed from blue-green algae & bladder wrack

Industrial scale collection of blue-green algae and large scale bladder wrack farming

4. Purify

Through extraction of blue-green algae and bladder wrack aquaculture, the sea we operate in is purified.

Resulting in a annual total nutrient removal from the Baltic Sea of:

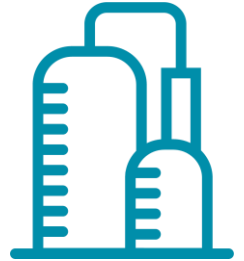
~ 90 Tons Phosphorous

~ 900 Tons Nitrogen



2. Refine

Origin by Orchard
neo-ecology refinery



Our first Neo-ecology refinery will annually process:

- 30,000 Wet tons of blue-green algae
- 50,000 Wet tons of bladder wrack

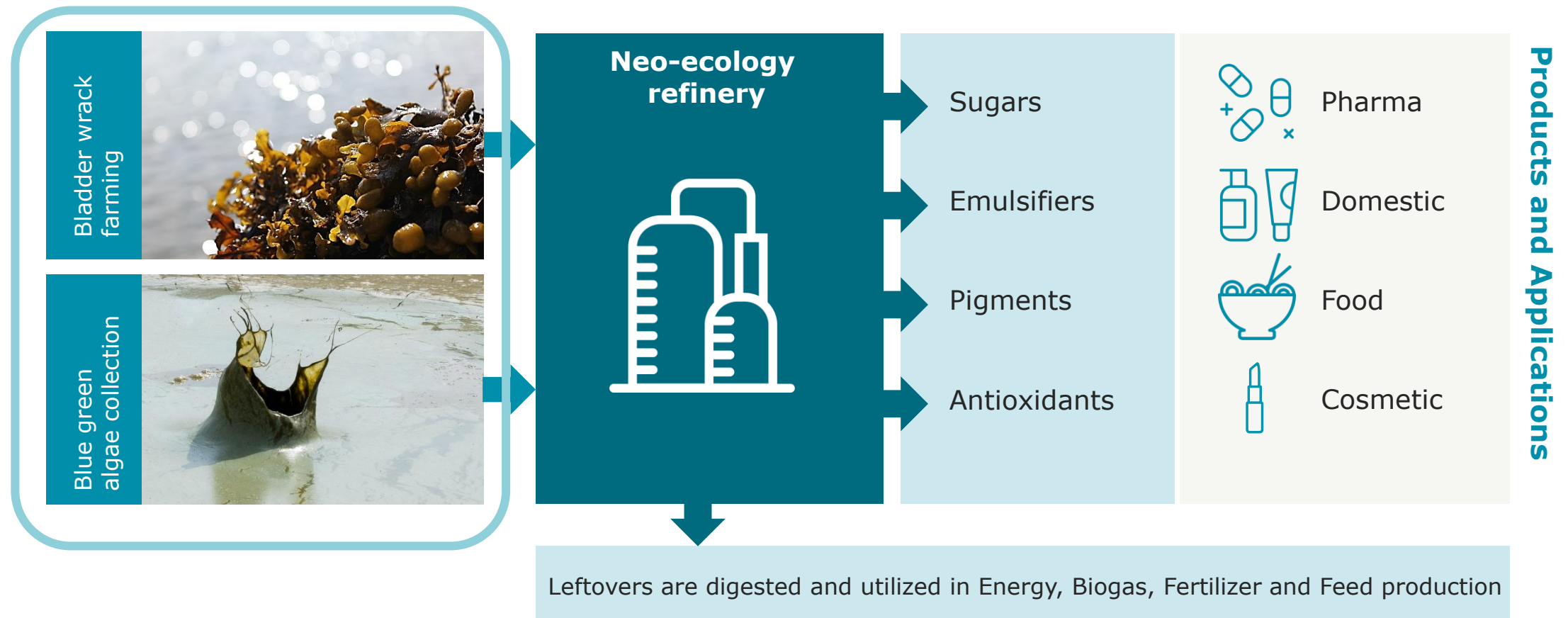
3. Apply

Global and domestic industry customers can utilise extracted components in their products

The Neo-ecology refinery will produce 10,000 Dry tons of Biomolecule products

Harvesting value

Our neo-ecology refinery



Marine Biomass Eco-system

Creating value and work opportunities



Bladder wrack farming



Marine Biomass Eco-system partners

Biomass raw-material logistics
Bladderwrack farming activities
Aquaculture structures production
Bladderwrack Seedling production
Bladderwrack Breeding



Biomass raw-material logistics
Blue green algae Harvesting
Blue green algae Harvester production



Blue green algae collection



Benefits we create

For society

Generate opportunities for people living in coastal areas to earn a living, creating new value streams and contributing to a more sustainable society.

For industries

Generate a new line of high tech industry which can become a new “trademark” for Finland.
Creating new seaweed and algae based products for use in different industry applications.

For nature

Generate new habitats and breeding grounds for marine species in the bladder wrack farms, thus improving bio diversity of the sea's.

For individuals

The creation of high value products from marine biomass, contributing to sustainability goals worldwide, thru consumer goods.

Legal and Government related

How to boost the birth of a Marine biomass production eco-system?

1. Create simple & Clear approval process for large scale bladder wrack farming and blue green algae collection, rules and regulation
2. Enforce by law, compensation measures for related industries (farming, fish farming, industrial i.e. paper & pulp, mining etc.), create win-win-win-win scenarios for the involved players, environment & government
3. Create incentive measures for bladder wrack farmers and blue green algae collectors based upon captured nutrients in farmed bladder wrack and collected blue green algae, "environmental grant"
4. Support bladder wrack farmers and blue green algae collectors with investment funding mechanisms for needed infrastructure investments



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