ERANOVA

ERANOVA

Technology from the sea

No planet B

Algae pollution

Algae is a strong pollutant in any country of the world .
Climate change is a factor

Agriculture challenge

feed 8 Billions people in 2050

Plastic Pollution

10% of the plastic produced worlwide end up in the ocean .

Customers are waiting for government and brands to take actions

THERE IS A NEED FOR NEW TECHNOLOGIES TO MAKE THE TRANSITION WITH EXISTING ONE IN A SMOOTH WAY

Demand for a healthy and a sustainable planet

CONSUMER EXPECTATIONS

- Zero plastic
- Preserving natural resources

GOVERNMENT'S RESPONSES

- EU legislation, ban of single-use plastics (SUP)
- Objective : 100% recycled plastics in France in 2025

DISTRIBUTION /BRAND

- Capture new customer
- Show commitment for the planet

TECHNOLOGY REQUIRED BY INDUSTRIALS

- No change of industrial equipment
- Price
- Local supply

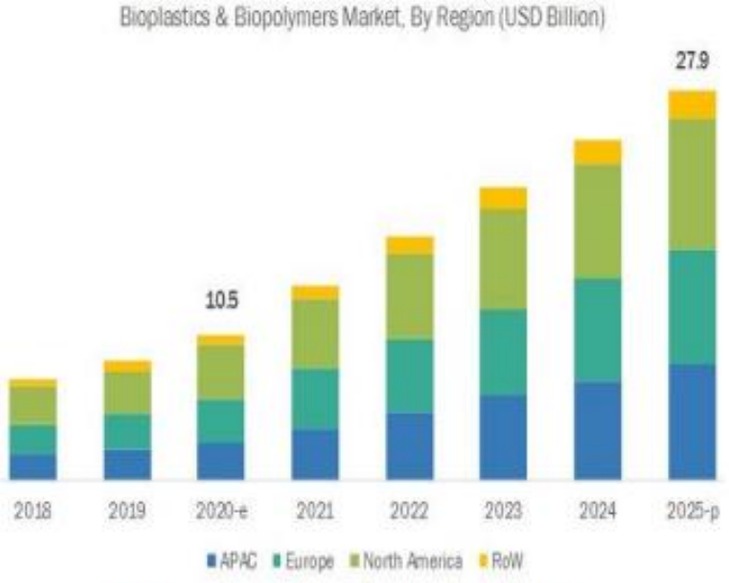
Data on packaging and plastics market

The global bioplastics & biopolymers market size

- 2020 USD 10.5 billion
- 2025 USD 27.9 billion
- CAGR of **21.7%** during the forecast period.

Main Drivers

- Growing demand of **Packaging**
- **Reduced carbon footprint**
- Stringent **Government regulation** across the globe



Europe : 30% World market

Global production capacities of bioplastics

Source: European Bioplastics, nova-Institute (2019)
More information: www.european-bioplastics.org/market and www.bio-based.eu/markets

ERANOVA Volume capacity

- 2024 -22 kt ie **3,3% EMS**

1 Number :World plastic market 350 MT

Part of our future is to unlock resources from the sea

Eranova 3rd generation of bio-based polymer

Generation 1

Source: Food

Soybean, palm, sunflower, etc.
Starch: corn, wheat, potato, tapioca, etc.

– Disadvantage: direct competition with food and feed

Generation 2

Source: Non-food

Lignocellulosic biomass: wood, co-products or waste from agriculture or wood (sugar cane bagasse, straw, etc.)

– cultivation on land intended for food production

Generation 3

Source: non-food, not using agricultural land

Biomass derived from algae ;,
Micro organisms

+ Algae have a higher yield or efficiency
NO need fertilizers, pesticides, or arable land

Source : Bioplastics news

Eranova 3rd generation of bio-based polymer

ALGX
GREENER THAN GREEN

GREEN ALGAE

Algae do pollute beaches municipalities have to collect the algae to reduce environmental impact

.

ENRICHMENT

After collecting the green algae, the starch enrichment is made in large pools following a patented process.

BIO EXTRACTION

We produce 14 times more starch compare to terrestrial plant.

PATENTED PROCESS
in 30 countries

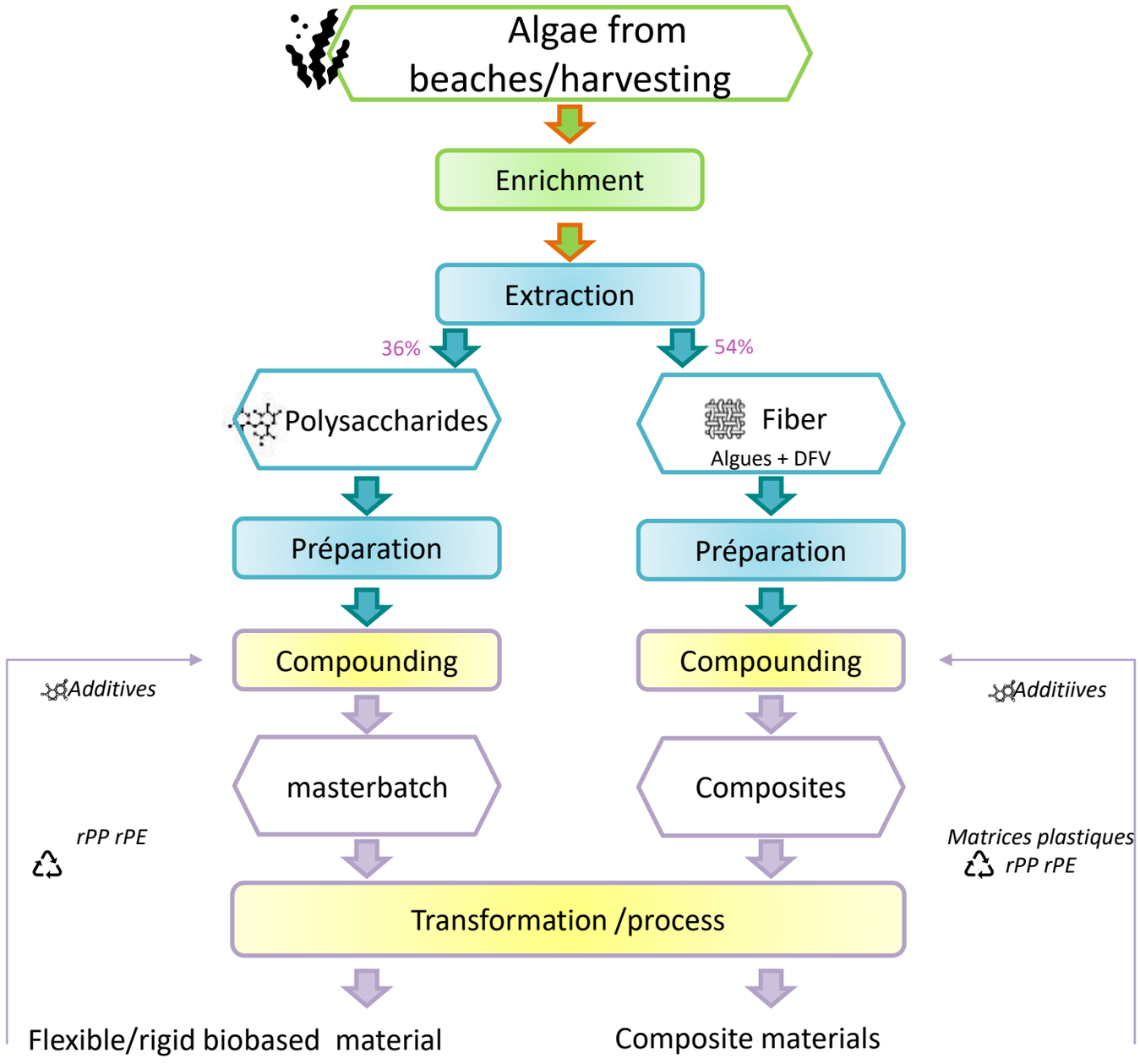
TRANSFORMATION

The starch extracted from the algae is blended and transformable by traditional machinery

FINISH PRODUCT

Biobased
Co2 +++

Our process


Algae from beaches/harvesting
Enrichment
Extraction
36%
54%
Polysaccharides
Fiber
Algues + DFV
Préparation
Préparation
Compounding
Compounding
Additives
Additiives
masterbatch
Composites
rPP rPE
Matrices plastiques
rPP rPE
Transformation /process
Flexible/rigid biobased material
Composite materials

(12) DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITÉ DE COOPÉRATION EN MATIÈRE DE BREVETS (PCT)

(19) Organisation Mondiale de la Propriété Intellectuelle
Bureau international

(10) Numéro de publication internationale
WO 2017/046356 Al

(43) Date de la publication internationale
23 mars 2017 (23.03.2017)

WIPO IPCT

Procédé de préparation d'une poudre d'algues à teneur réduite en protéines et composition bioplastique formulée à partir d'une telle poudre

INSTITUT NATIONAL
DE LA PROPRIÉTÉ
INDUSTRIELLE

BREVET DÉPOSÉ

30 pays dans le champ d'application

Patented in 30 countries

Source : Présentation ERANOVA

ALGIX

GREENER THAN GREEN

A bio-based solution coming from the sea for a new generation of packaging

ALGX

GREENER THAN GREEN

New generation of bio based Plastics using a pollutant

Recyclable

Biodegradable*

Compostable*

Soluble*

* Programmable end of life , application dependent

APPLICATIONS ALREADY AWARDED

Alg&co Recyclable

Alg&Bag

Alg&Pack

Alg&Cup

Innovation Award
Carrefour 2021

Present in grocery stores

Present at Food trucks
festival 2021 - 45,000 visitors

Environmental Benefits

CLIMAT CHANGE IMPACT

ALGX resin reduce Co2 impact by a factor of 10 compared to existing fossil based material .

ALGX*Algae based resin	vs	PLA Corn based resin	vs	PE fossil based resin
X 1		**X 2,4**		**X 10**
210 kg CO2 e/T		500 kg CO2 e/T		2000 kg CO2 e/T

*source innovertis publication CARBON FOOTPRINT (2020 LCA)

COMPETITIVE ADVANTAGES

Compared to PE production
28 000 t of AlgX
produced in 2024
will **save**
50 000 t Co2eq/kg

	Existing Bio-based solutions	Eranova solution
Mechanically Recyclable	No	**Yes**
Origin	agricultural resources	**Do NOT use agricultural resources**
LCA (environmental impact)	Negative LCA Compared to fossil based material	**Better LCA on 8 out of 9 categories**
Supply	Dependant on season	**High productivity X 20/hectare**
Carbon footprint Kg Co2 eq/kg	CO2 sequestration	**CO2 sequestration : 14 times more per hectare**

Industrial Plant

Projection and scale UP

COMPLETED

MARCH 2019

1st pilote (Palavas) for the tests.

- PIA ADEME 2017
- We raised 6 M€
- 5 mains industrials partners
- 3 banks
- Region

November 2020

COMPLETED

September 2021

Industrial pilot on the port autonome of Marseille (1,3 hectare).

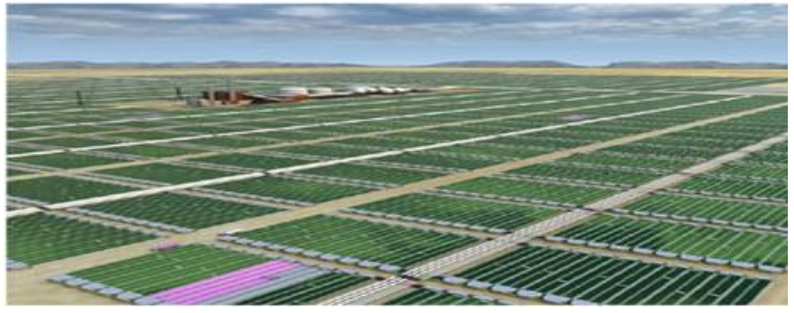
end 2021

Fund raising

International scale up 2021

JAN 2022

Scale up : 100 hectares in the area of Marseille.
Full capacity 29000 000t in 2024
Letter of Intent 80 000t

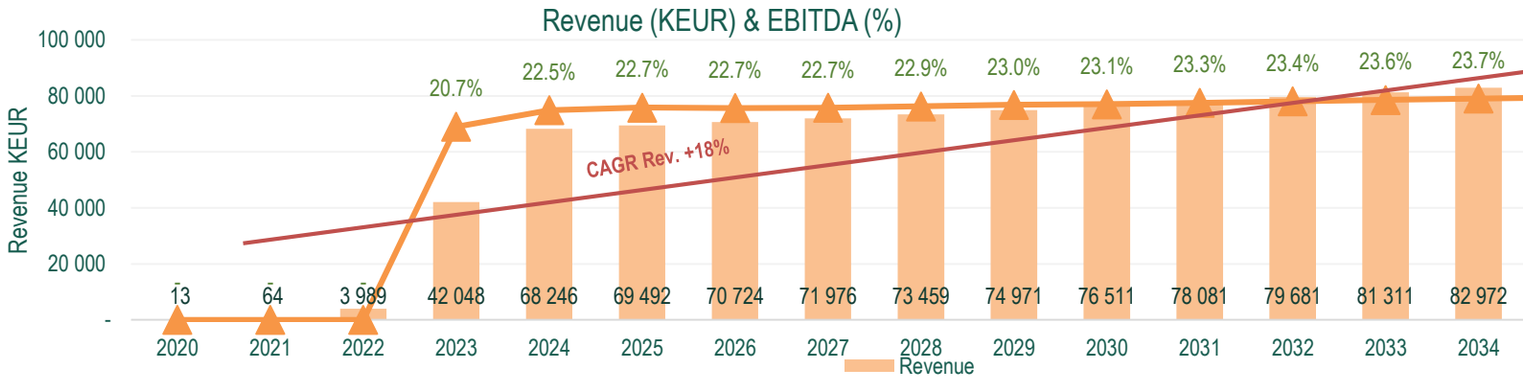


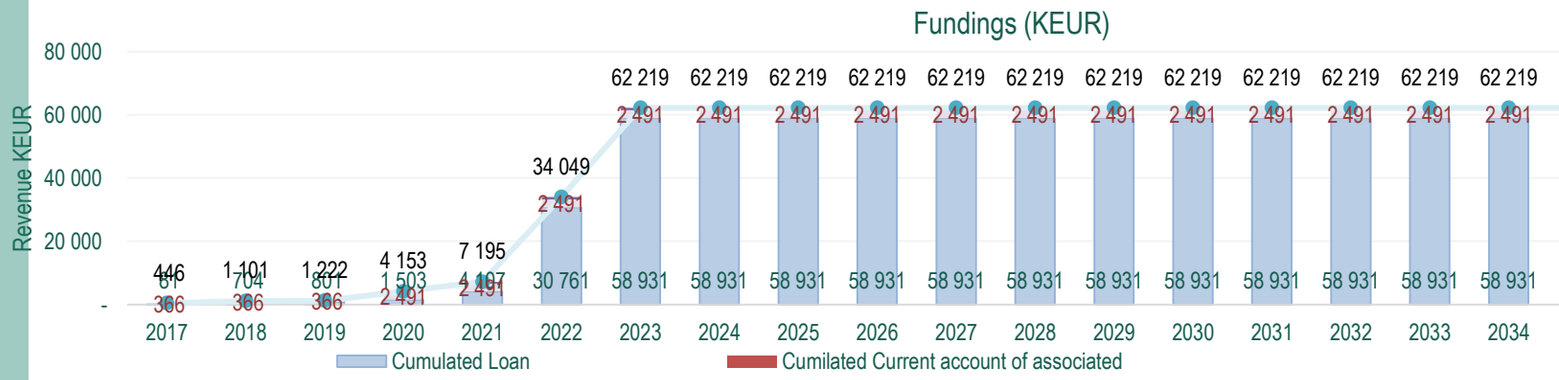
Financials

FINANCIAL DATA 2022-2024

Key Numbers 2024 onward

- Biomass wet production :69 000 t
- Bioplastic production :28 000t
- Surface production :100 hect
- Turnover 2024 >63 M€
- EBITDA : > 22%
- EBIT: >16%
- Funding : 62 M euros by 2022/2023
- Production secured by 80 000t of letter of intent
- More than 25 NDA signed for development





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LETTER of INTENT

80.000 Tonnes of letter of intent

Innovation Award with Alternative Plastics
Carrefour 2021

Source : Présentation ERANOVA

Scale up 2022-2024

- Searching for 65 M Euros
- Equity /Loan for scale up
- Production of 69000 t of biomass
- 28000 t of plastic product but not only

Construction and Land

Offices and laboratories

Raceways of 4000 m2

Machinery

Pumping

Starch Extraction

Laboratory equipment

Machineries for compounding

ERANOVA
A MULTI VALUE PROJECT

1

NEW GENERATION OF BIOBASED

NEW

Resin made from a pollutant. .
Non-use of agricultural resources.

2

UPCYCLING FROM THE SEA

Transformation of a pollutant into a value-added product.

3

RECYCLABLE PRODUCT

Our resin is recyclable and don't disturb the waste sorting process.

4

UP TO 65% BIOBASED MATERIAL, REDUCTION IN THE USE OF FOSSIL RESOURCES

5

POSITIVE CARBON IMPACT

1kg of dried algae = 1kg of CO^2 captured.

6

ENVIRONMENTAL & SOCIETAL VALUES

French expertise, local employment on every level of competence.
Depollution and rehabilitation of industrial site.

Organizational chart

Eranova teams

We are organised around a core of high expertise in the field of polymer,algae expertise and finance

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Founders

Philippe
Lavoisier
CEO

Philippe
Michon
Business Dev

Garri Golberg
financial advisor
Ernest Young

J F SASSI
Ext Scientific advisor
CEA tech

JY Berthon
Strategic advisor
Greentech

Vincent Gernigon
PHD

Xavier Marquat
Industrial Manager
Australia

Maelie Heuls
PHD

ERANOVA
Technology from the sea

With us on our track

Awards

Key part

Investors

Altina

Euro Capital LLC

ERANOVA
Technology from the sea

FOR RESPONSIBLE AND INNOVATIVE PACKAGING

STAY IN TOUCH !

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