



NaturePlast
Bioplastics Expert

A little bit of vocabulary:

Bioplastics

Biobased

Biodegradable

Bioplastics are **biobased and/or biodegradable polymers**. These materials are split into two groups: **biobased polymers** equivalent to existing fossil-based polymers (PE, PET, biobased PA, etc.) **and biobased and/or biodegradable polymers** with innovative structures (PLA, PHA, PBS, PBAT, etc.)

The term “biobased” (in agreement with the norm EN 16575 : 2014) represents a part **of material made completely or partially from renewable resources**. This part can represent a variable proportion of the material. To this day, there is no established minimum rate that specifies the use of this term.

We can talk about a **biodegradable** material if it can be **decomposed and absorbed** by micro-organisms (bacteria, fungus, algae, etc.). The result of this process is the **formation of water, CO₂ and/or methane** and possibly by-products non toxic for the environment (residues, a new biomass). (Technical Datasheets, ADEME, 2012).



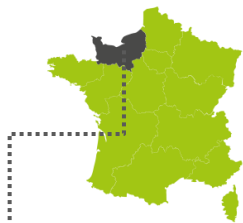
Presentation of the company:

2007



SAS with a capital of 163 572 €

NATUREPLAST remains the **only European supplier** of all kinds of bioplastics produced in the world.



Caen (Normandy)

2010

Subsidiary company



CIR and CII agreement

(Research and Innovation tax credit)

SASU with a capital of 30 000 €

BIOPOLYNOV is the **only R&D center** dedicated to the improvement and modification of bioplastic properties in Europe.

Sales Team



R&D and Production Team



Our goal?

TO SUPPORT OF FRENCH AND EUROPEAN INDUSTRIES
(manufacturers and end users)
in the transfer of technology to bioplastics.



YOUR IDEA



YOUR EXPECTATIONS



OUR EXPERTISE



YOUR BIOPLASTIC SOLUTION



Our areas of expertise:

3

areas of expertise
To support your projects

Service

Training
Technico-economical study
Project engineering

R&D

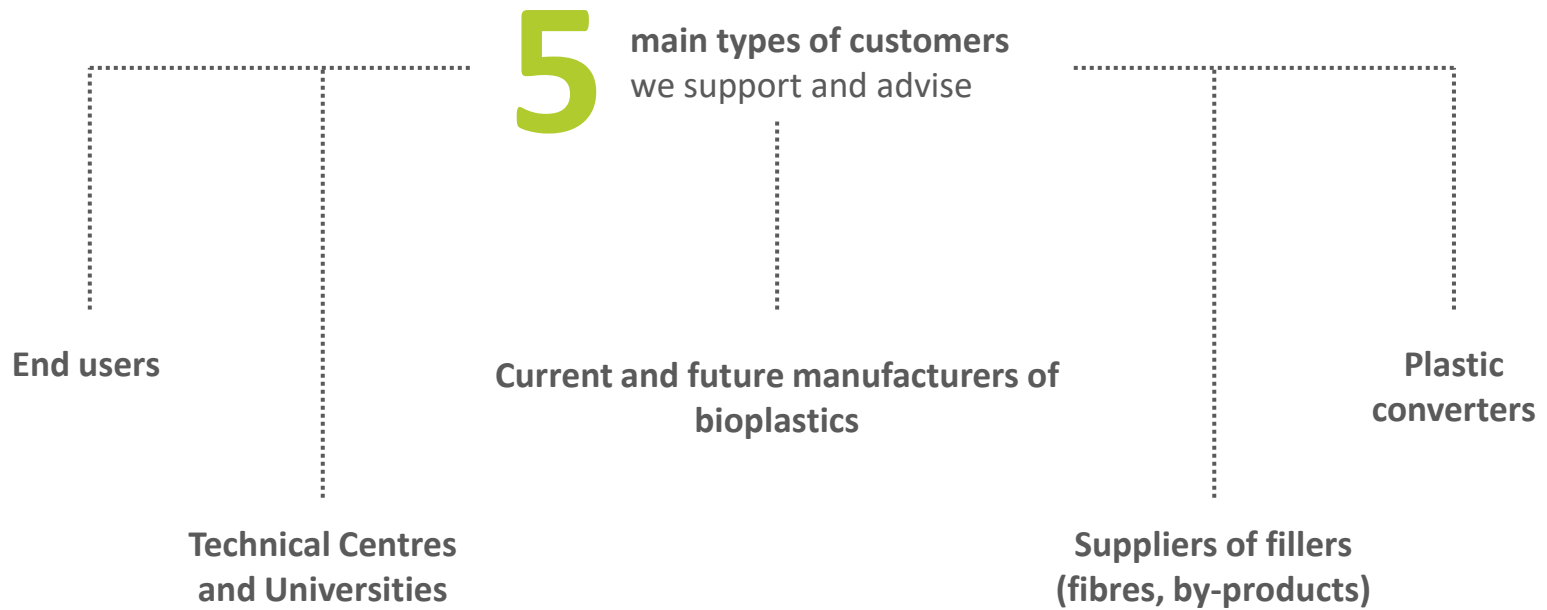
Customised formulation
Characterisation
Production of compounds

Distribution

Raw material
Compounds

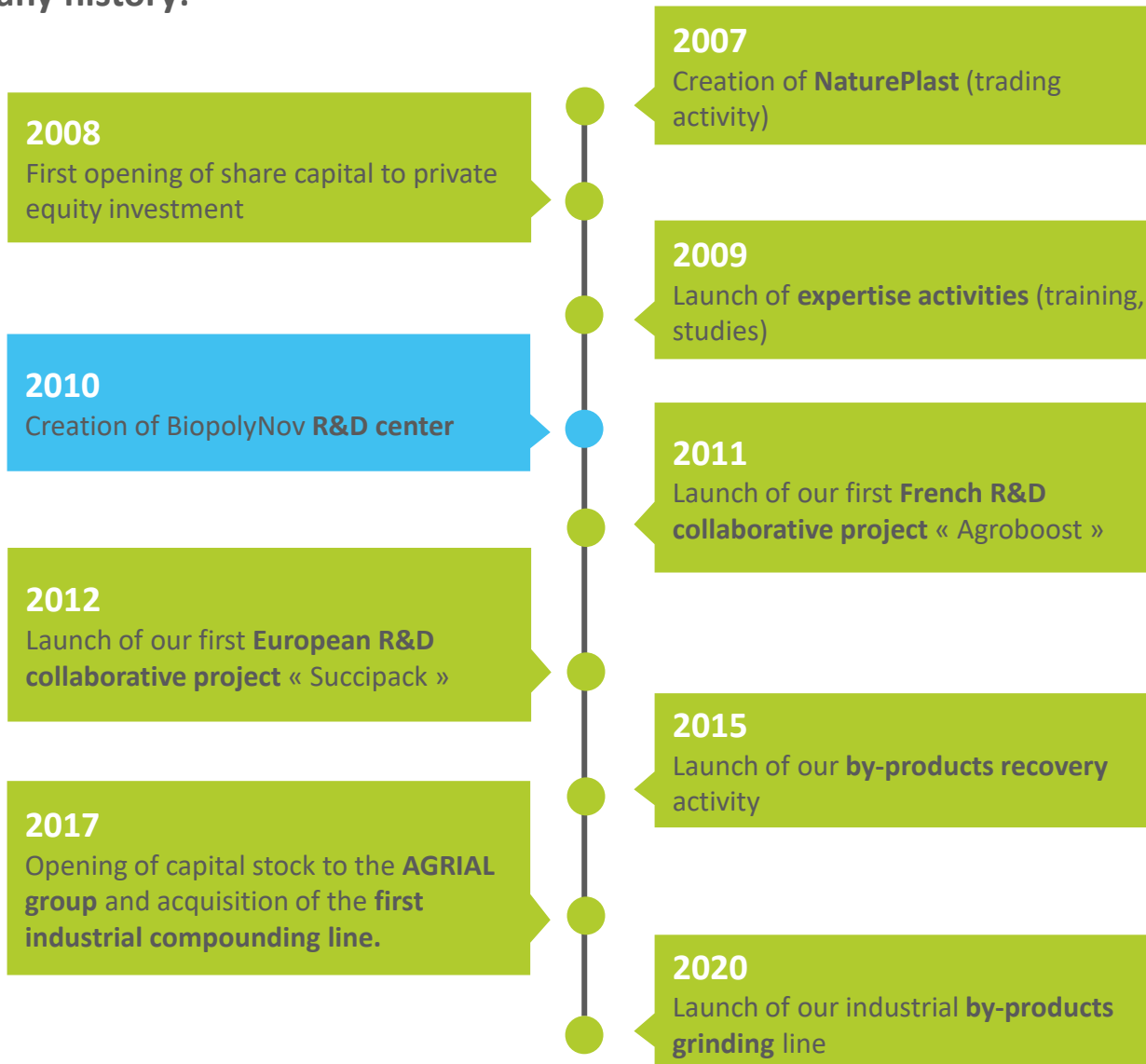


Who do we work for?





Company history:



Our three ranges of products:

RAW MATERIAL bioplastics

NaturePlast is **the only supplier in Europe** providing all biobased and/or biodegradable bioplastics



COMPOUNDS bioplastics

NaturePlast produces a range of bioplastic compounds with **optimised properties**



BIOCOMPOSITES fibres and by-products

NaturePlast produces a **range of biocomposites containing natural fibres or by-products from different activities**



 Our sectors of activity :



**Agriculture
and horticulture**



Pet industry



Construction



Cosmetic packaging



Food packaging



High Tech



Luxury industry



Toys



Medical



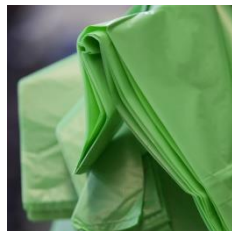
Stationery



Disposable products



Baby product industry



Plastic bags



Sport and leisure



Textiles and nonwoven



Transport



Our production equipment:

8

Characterisation equipments:

1/ Thermal:

- HDT / Vicat (ISO 75 / 306)

2/ Mechanical:

- Tensile / Flexural (ISO 527 / 178)
- Charpy Impact (ISO 179)

3/ Rheologic:

- MFI (ISO 1133)

4/ Physico-chemical:

- Shore Hardness (ISO 868)
- Accelerated ageing station
- Water content analysis Karl Fischer (ISO 15512)
- Density (ISO 1183)

4

Production equipments:

- **Laboratory** twin-screw **extruder** (21mm)
- **Industrial** twin-screw **extruder** (27mm)
- Prototyping by **extrusion, calendering, blowing**
- **Injection** machine (80 T)

4

Equipment for the valorisation of by-products:

- **Dryer**
- **Grinder**
- **Micronizer**
- **Sifter**

Thanks to our network of industrials and R&D, we have access to other equipment that help us to finalise/validate our work.



Our expertise:



Optimisation
of bioplastics' properties



Valorization
of by-products

4

Major thematics in which
Biopolynov is specialized.

Modulation
of bioplastics' shelflife

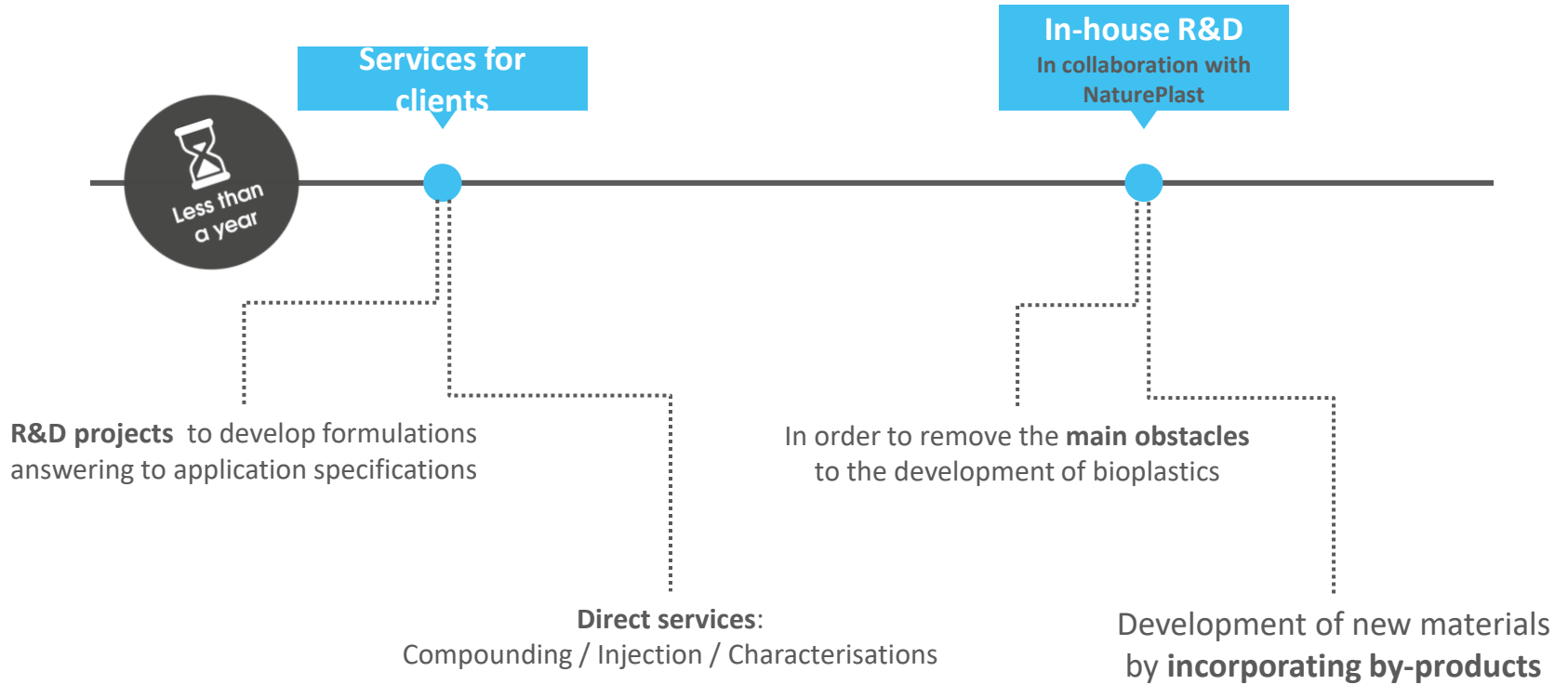


Adding
of function to a biopolymer





Our R&D projects by BiopolyNov:



100 formulations developed per year (clients/collaborative projects /in-house R&D)



Our R&D projects - NaturePlast:

{ Regional, National and European fundings }

7 Current collaborative R&D projects, NaturePlast being a partner:



- **ALGRIPLAST** – *Région Normandie / FEDER* – Production of biobased and biodegradable materials based on byproducts
- **INDIGO** – *Interreg France Angleterre* – Development of biodegradable fishing gear
- **BIOPLASTICS EUROPE** – *H2020 BG 2018-2020 IA* – Development of biobased and biodegradable solutions
- **URBIOFIN** – *H2020 BBI JTI 2016* – Valorization of municipal waste to produce biobased materials (including PHAs)
- **MYPACK** – *H2020 SFS 2017* – Development of innovative technologies for food packaging
- **WOW !** – *Interreg NWE* – Production of biobased materials (including PHAs) using waste water
- **DEEP PURPLE** – *H2020 BBI-JTI-2018* – Conversion of urban bio-waste into sustainable materials (including PHAs) by photo-biorefinery process

8 Finished projects

- **AGROBOOST, SUCCIPACK, NICEDAY, BIOSOURC’AIR, SEAPLAST, COPROPLAST, MATADORE, BIOCAMPLACK, etc.**

NaturePlast-BiopolyNov team is task leader for activities which involves modification / optimization of materials:

- **Supplier sourcing / Materials supply**
- **Research and development of formulations**
- **Compounds production / Injection of test specimens / Characterization**



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