

Project Duration

42

Months
from September 2020
to February 2024

€5 M

Of EU & BBI
contribution

€6,4 M Total cost

17 Partners from 7 European countries:

4 RTOs



5 large companies



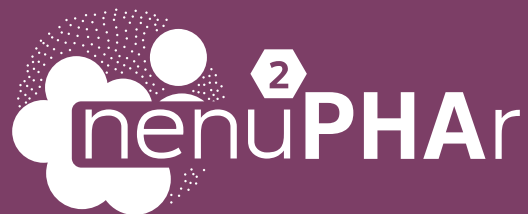
6 SMEs



1 academic



1 innovative cluster



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#research&innovation #biopolymers
#microalgae #bioplastics
#bacteria #biodegradable
#biomass #recyclable
#PHA #sustainable



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For a sustainable
and European value
chain of PHA-based
materials for high-volume
consumer products

& Context & Concept

A NEW VALUE-CHAIN FOR PHA-BASED MATERIALS

In 2020, the European Commission adopted a new Circular Economy Action plan. It is setting initiatives responding to the necessity to close the loop of the circular economy for the plastics industry. It emphasises the urgency to address the challenges relating to littering and the end-of-life options for plastic waste.

To this end, nenu2PHAr will develop an innovative European value chain of PHA-based plastics products from a sustainable and renewable resource such as micro-algae biomass using CO₂ as a carbon source and processed by selected bacterial strains.

Objectives

- > **Develop competitive and sustainable PHA polymers**
- > **Formulate and functionalise PHA polymers for masterbatch and compound development**
- > **Develop a range of prototypes of eco-designed PHA-biobased products**
- > **Demonstrate the sustainability of the project value chain**



Expected Impacts

ENVIRONMENTAL



Increase the environmental sustainability of PHA bioplastic materials



Increase the overall resource efficiency

ECONOMIC



Create a completely new bio-based value chain



Support the implementation of the circular economy in the EU



Increase the share of sustainable and efficient bio-based materials



Foster the future market uptake of the developed bio-based materials

SOCIAL



Improve the public awareness on plastics' end of life

Application Fields



Food packaging



Medical device



Cosmetic packaging



3D printing filament



Agrotexile

Contribution to SDGs



- Production of a carbon feedstock from algae & extraction of PHA at pilot scale
- Development of PHA-plastic material preliminary prototypes



- Implementation of circular economy principles
- Valorisation of sustainable & non-food raw materials
- Improvement of materials recyclability



- Participate in the transition towards a bio-based economy



- PHA materials are biodegradable and do not release toxic microplastics