Milano, 20-02-2025

Innovative approaches in plastic waste chemical recycling

BOOST PROJECT – INNOVATION FUND 2024

MAIRE

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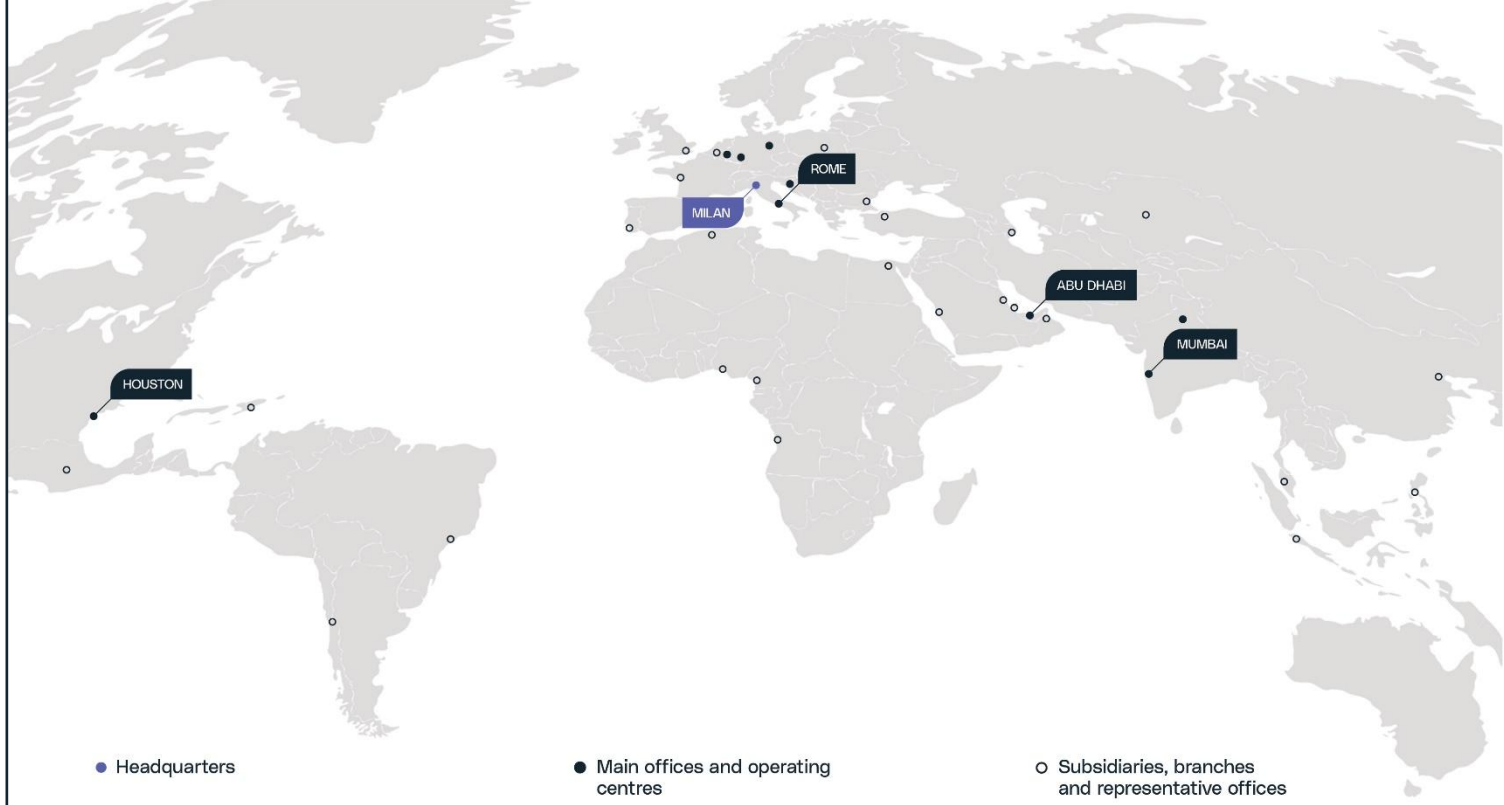
Introducing MAIRE group and NEXTCHEM

MAIRE AT A GLANCE

We are a technology and engineering Group that develops and implements innovative solutions to enable the Energy Transition.

We offer Sustainable Technology Solutions and Integrated E&C Solutions in nitrogen fertilizers, hydrogen, circular carbon, fuels, chemicals, and polymers.



4.3
Revenues (€ billion)

15.0
Backlog (€ billion)

129.5
Net Income (€ million)

~45
Countries

~8,300
Employees

29,000+
People engaged worldwide*

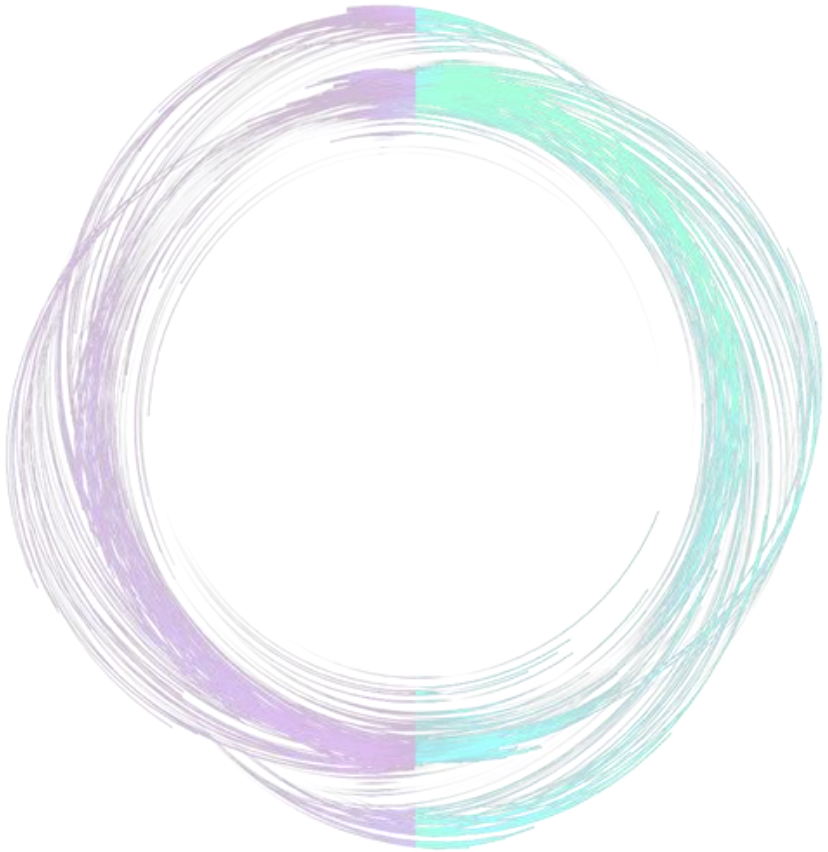
Data as of 31st December, 2023
*The data includes employees, collaborators and sub-contractors

HOME TO THOSE WHO MAKE TO INSPIRE

SUSTAINABLE TECHNOLOGY SOLUTIONS

We offer Sustainable Technology Solutions to fully ENABLE energy transition.

Innovative and sustainable processes, optimizing conventional ones and creating new processes from non-fossil feedstock.



INTEGRATED E&C SOLUTIONS

We MAKE energy transition happen through our Integrated E&C Solutions.

We bring into reality complex plants and frontier projects designed to provide access to the latest technologies.

PROJECT DEVELOPMENT

MAIRE INTEGRATED ORGANIZATION

NEXTCHEM BUSINESS LINES

Sustainable Fertilizers & Nitrogen-Based Fuels

Driving sustainable nitrogen solutions in **fertilizers**, leveraging our leadership in **urea,** while innovating in **ammonia** for hydrogen transport

Low-Carbon Energy Vectors

Advancing low carbon energy via **hydrogen** and **CO_2 valorization**, powering aviation, shipping, chemicals, as well as **sustainable plastics** innovation

Sustainable Materials & Circular Solutions

Enhancing **circularity** by transforming waste into valuable resources, while using **chemical** and **mechanical recycling** for sustainable material recovery

02

MyRemono and NXRe™ technology

MyRemono activity started in 2015 and is already bringing sizeable results

2015
BIORENOVA

Biorenova starts the development of its innovative depolymerization technology based on molten lead.

2018
PILOT PLANT

First semi-industrial scale prototype with 200kg/h capacity starts operation.

2023
MYREMONO

- JV between NextChem (51%) and Biorenova (49%).
- Focus on development and licensing of **NXRe™**, a depolymerization technology for chemical recycling of plastic waste.

2024
EU FUNDING AND RÖHM AGREEMENT

- The Innovation Fund recognizes MyRemono's innovative technology and supports its industrial scale-up.
- Toll manufacturing agreement with Röhm for the chemical recycling of PMMA.

2025
FIRST INDUSTRIAL PLANT CONSTRUCTION

MyRemono will chemical recycle PMMA scrap at its first-of-its-kind industrial-scale plant. The plant is expected to be completed in 2026 with an initial processing capacity of about 5,000 tons per year of PMMA.

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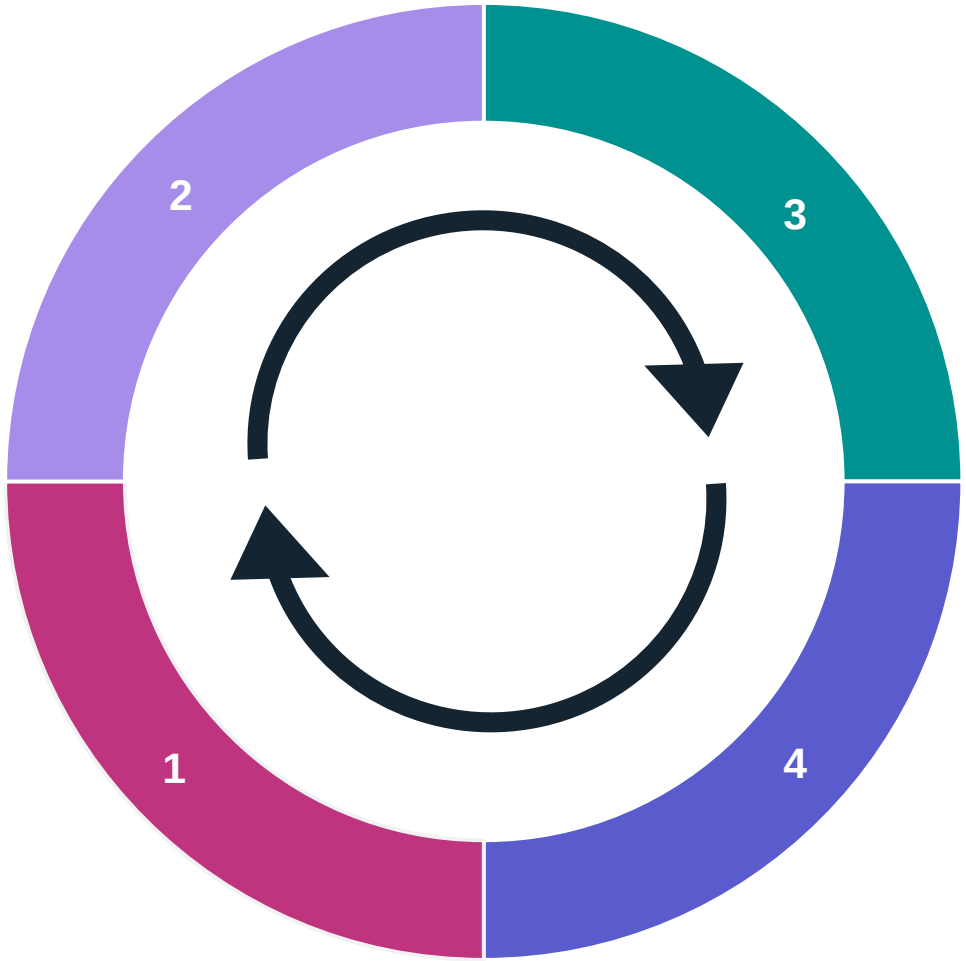
A CIRCULAR SOLUTION TO THE PLASTIC WASTE DILEMMA

2 NXRe PMMA

- The waste is transformed into high-purity monomers through a **continuous chemical recycling process** using a thermal carrier such as a molten metal.



3 MMA

- High-purity recycled **r-MMA product can displace the use of fossil-based MMA**.

1 PLASTIC WASTE

- The process starts from sorted plastic waste, particularly PMMA (polymethyl methacrylate).
- **PMMA is a scarcely recycled polymer**: in Europe about only 15% of the 330kt of PMMA consumed per year is recovered[1]. The remaining part is exported predominantly to India and other Asian countries.

4 APPLICATION

- **PMMA is obtained from MMA polymerization**. It is a versatile and transparent thermoplastic, commonly known by its trademarks, such as Plexiglas, Lucite, Perspex.
- PMMA is widely used in industries such as automotive, construction, electronics and healthcare.
- PMMA demand is expected to increase at 4.1% CAGR by 2027[2].

[1]Source: S&P Global's Chemical Economics Handbook – Polymethyl Methacrylate (PMMA), Dec 2022
[2]Source: S&P Global Inc. Copyright © S&P Global Inc., 2023; BCG Analysis

TECHNICAL OVERVIEW
MAIN TECHNOLOGY FEATURES

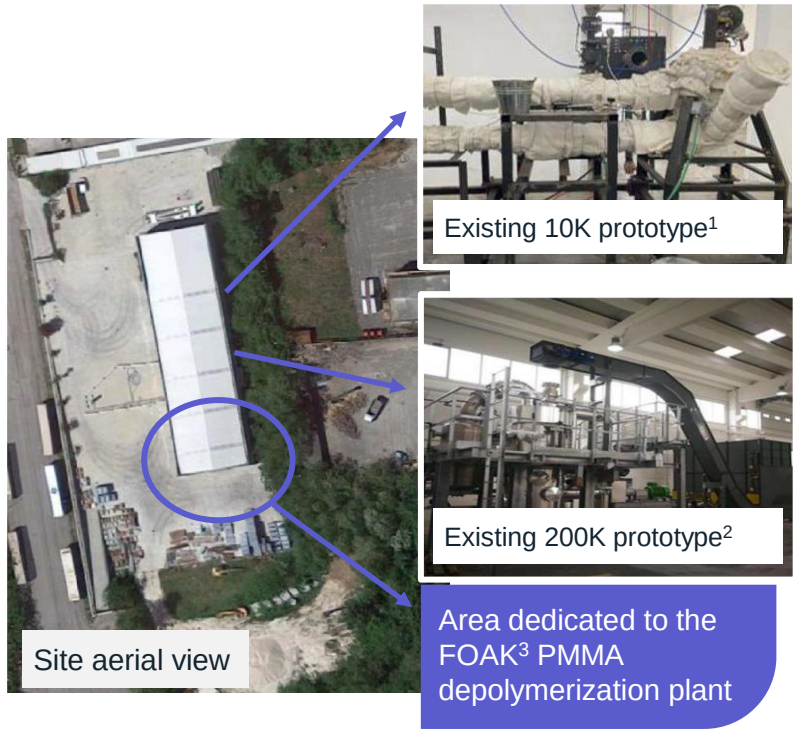
Main technical objective

First **breakthrough commercial application** of the patented NXRe technology (EP3645664B1 and US11220633), based on continuous depolymerization using a “molten metal flow”, **achieving TRL9 starting from current TRL7**

NXRe™ Main Characteristics

- Low investment costs
- High conversion efficiency
- Replicable technology
- Small footprint and dimensions
- Simple, sound and continuous process
- Technology suitable for treating different plastic matrices
- Low Energy Consumption

NXRe PMMA modular technology has been **tested** through both **a lab-scale and a semi-industrial** scale prototypes using different plastics waste and materials.

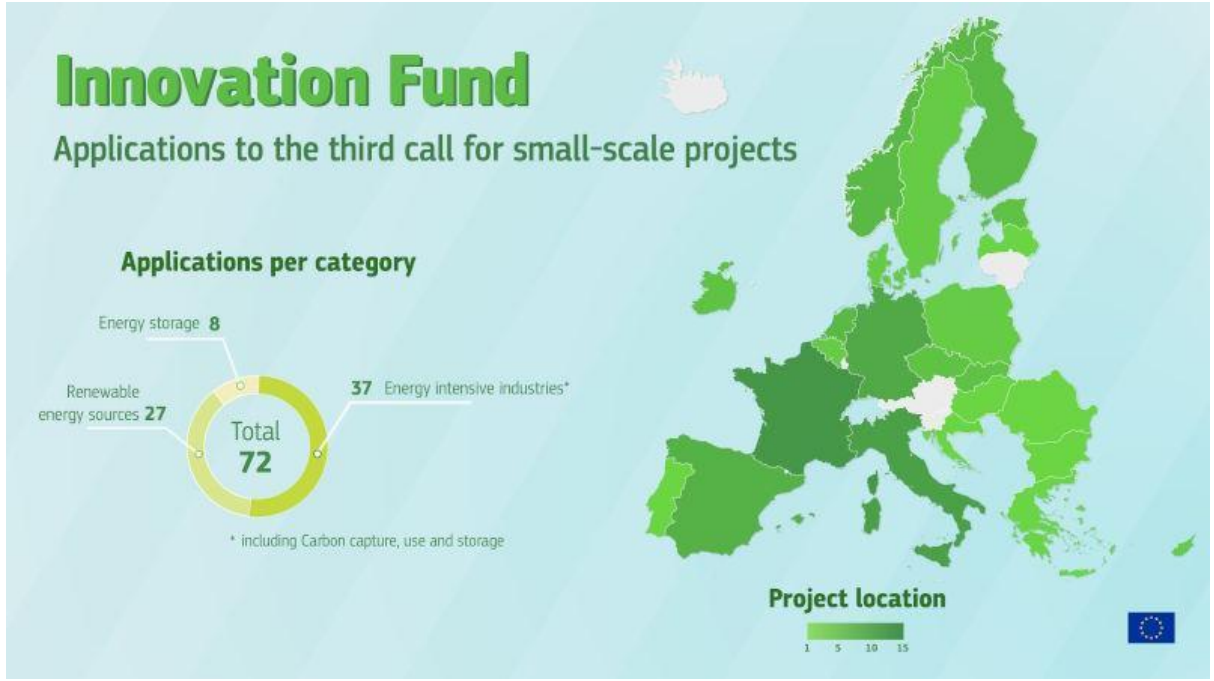


[1]*small R&D prototype*
[2]*pre-industrial prototype (20x scale up factor)*
[3] ***FOAK: First of a kind***

03

BOOST PROJECT

BOOST: BACK-TO-MONOMER RECYCLING OF POLYMERIC MATERIALS USING MOLTEN METALS



Project Name

BOOST: Back-to-mOnOmer recycling of polymeric materials using molten meTals

Project Description

Implementing the first-of-its-kind commercial plant of MyRemono's **NXRe PMMA** modular **technology** for producing high-quality recycled Methyl Methacrylate **(**r-MMA).

Scope of the project

Closing the waste recycling loop for different plastic waste and enhancing the production of sustainable plastic products.

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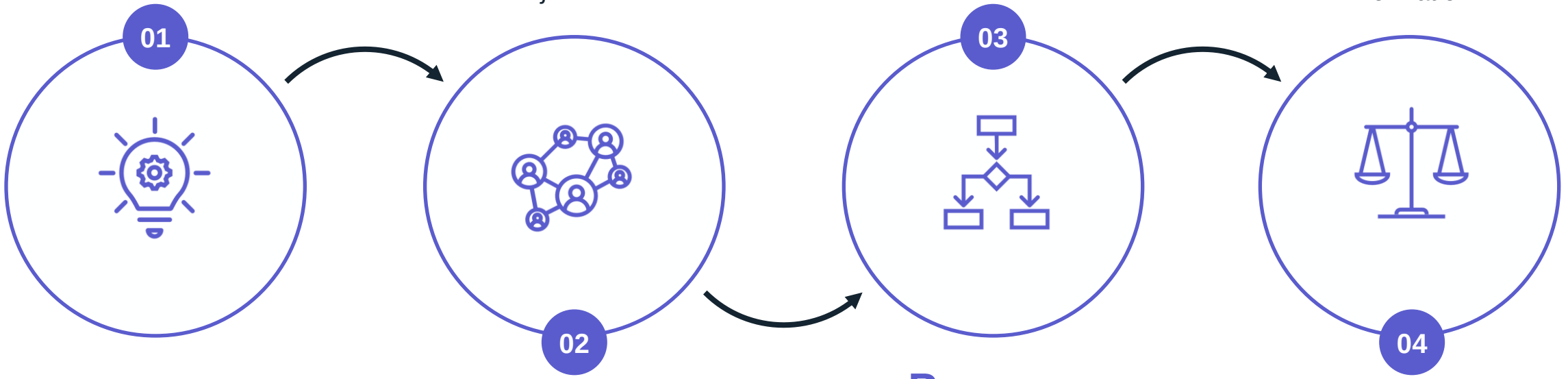
BOOST PROJECT INNOVATION FUND APPLICATION FUNDAMENTALS

People

Integrated and multidisciplinary Project team

Accuracy

Working on the quality of the information.



Opportunity

Identification of the opportunity and Project definition

Process

Application preparation by sticking to the IF requirements.

A SUCCESS STORY STARTS WITH THE OPPORTUNITY IDENTIFICATION

01

Opportunity

- **Screening** of Company solutions to identify the potential and suitability to the Innovation Fund criteria
- **Key parameters** (sectors, application, synergies, etc.) analysis based on the public funding specialist expertise
- Preliminary technical and economical analysis to assess the **maturity** level of the project
- Identification of the **potential innovation** based on the available information (meetings and interviews)

A SUCCESSFUL PROJECT IS MADE OF RIGHT AND COLLABORATIVE PEOPLE

02

People

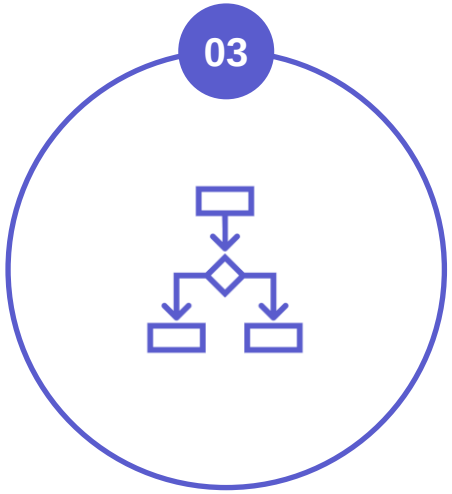
Project management structure definition for all the Project phases

Key **technological partners** (EPC capabilities, technical capabilities) selection

Ensure the creation of a **multidisciplinary team** where people with different backgrounds and experiences are always involved

External support to include different points of view and supervision in the application drafting part

BOOST PROJECT HAS BEEN PLANNED AND EXECUTE STEP BY STEP



Process

Permitting activities (such as, the Integrated Environmental Authorization) to be addressed in advance to be credible and to contain any delays

Detailed **state-of-the-art investigation** to substantiate the technology degree of innovation and demonstration of the **advancements** beyond the state-of-the-art

Technical feasibility of the Project is addressed along with technical risks and mitigation measures, and considering the potential GHG avoidance in the design

Drafting of a **credible business plan** to meet the growing demand for greener and more sustainable alternatives

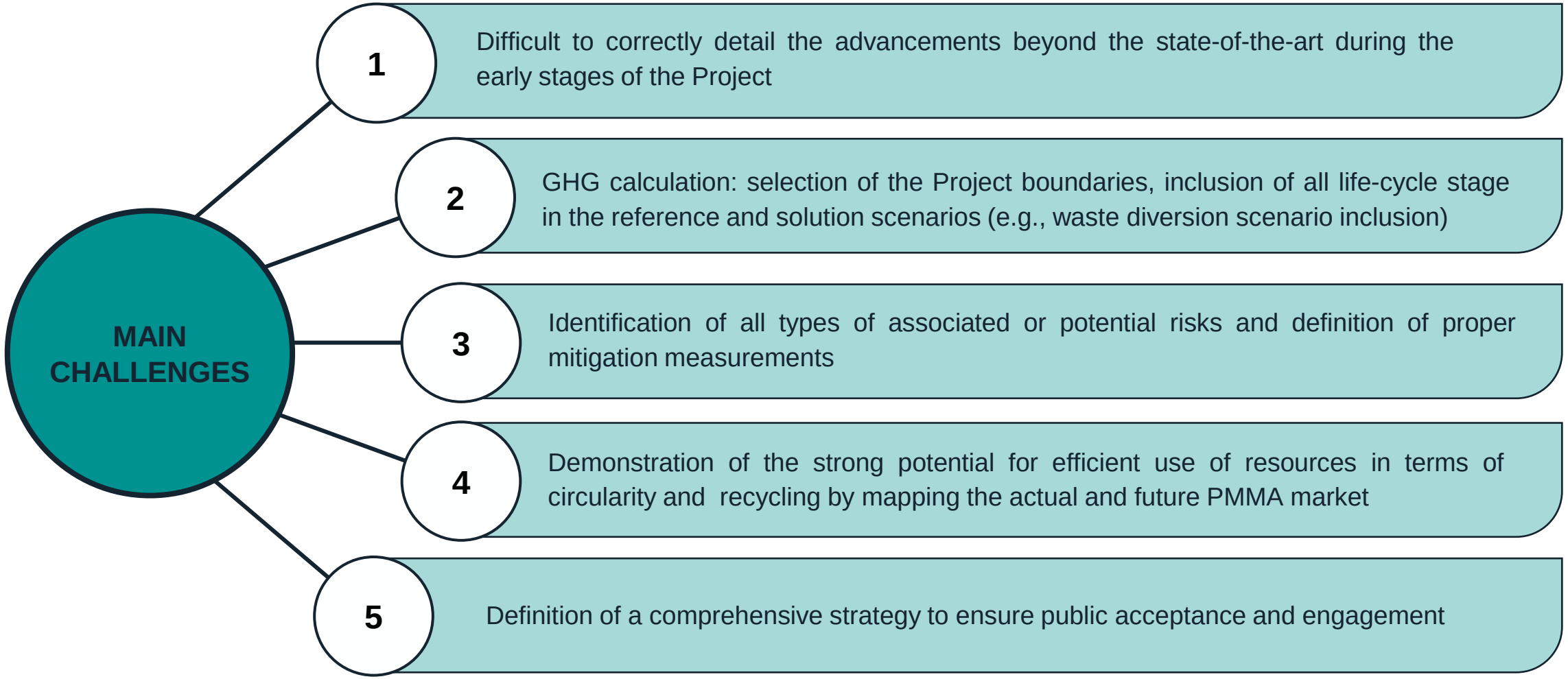
BOOST PROJECT PROPOSAL CAREFULLY TOOK CARE OF INFORMATION

04

Accuracy

- Use of all the available **reference material** and support provided by the IF, such as best practices, webinar
- Provide credible information characterized by **transparency and objectivity**
- **Substantiate any shortcoming and assumptions** related to the proposal aspects
- Ensure **consistency and coherence** in the entire proposal, among operational, technical and financial sections

A PROJECT WITH OVERCOMED CHALLENGES



BOOST – THE FIRST INDUSTRIAL PLANT BASED ON NXRe™ TECHNOLOGY

Funded by the European Union
Emissions Trading System
Innovation Fund

- **Location:** Montorio, Italy
- **Capacity:** 5,000 ton/year
- **Entry in operation:** Q1 2026

FIRST INDUSTRIAL PLANT

MyRemono has being awarded by the INNOVATION FUND for the construction of its first industrial plant at the first application stage.

A Greenhouse Gas (GHG) emissions reduction of about 96% is expected to be obtained respect to the fossil-based virgin MMA traditional production process

Saving of fossil-based raw materials: about 13’000 ton per year with respect to the reference scenario

Ongoing discussion with leading global MMA producers

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04

OUTLOOKS

NXRe TO UNLOCK PLASTIC DEPOLYMERIZATION

MyRemono is an innovative technology company focused in **developing** and **licensing** a novel, patented, and highly efficient **depolymerization technology (NXRe™)** for the **chemical recycling of plastics waste and materials**.

WE SUPPORT OUR CLIENTS REACHING THEIR SUSTAINABILITY TARGETS

NXRe™ Multiple Chemical Recycling Applications

Polymethyl methacrylate (PMMA)

- ✓ Raw recycled methyl methacrylate (Raw R-MMA)

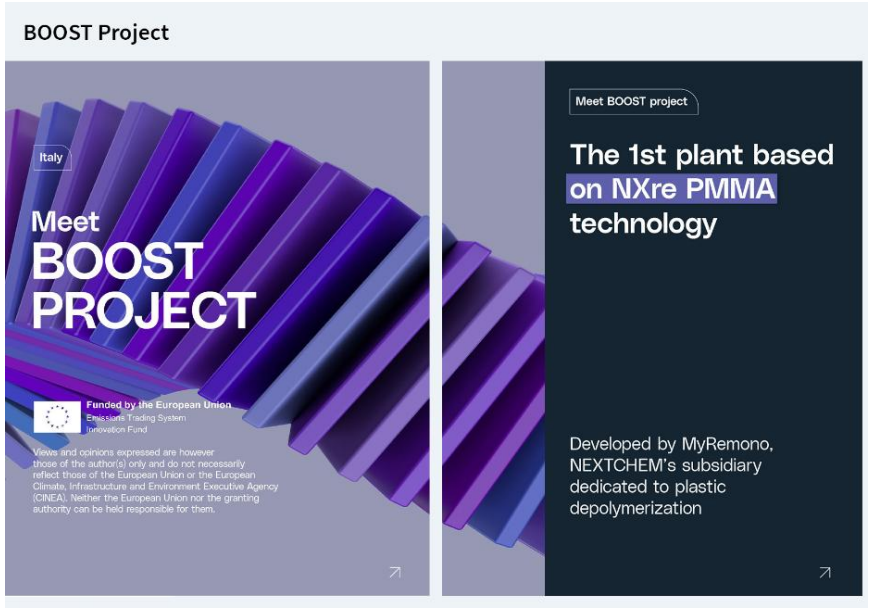
Polystyrene (PS)

- ✓ Styrene
- ✓ Alpha - Methylstyrene
- ✓ Toluene
- ✓ Ethyl benzene

Polyolefins mix (mainly PE+PP)

- ✓ Ethylene
- ✓ Propylene
- ✓ n-Pentane
- ✓ C4 hydrocarbons

STAY TUNED AND DISCOVER MORE



Both on NEXTCHEM's website and NEXTCHEM's LinkedIN profile.

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