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- EuCIA
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EuCIA

Circularity Roadmap

May 2024



Contents



- About EuCIA, our Goals, composition
- Composites Circularity and Recycling Technologies
- EuCIA's Roadmap & Conclusions



Our Vision & Mission



Vision statement

As the **unified voice of the European composites sector**, the European Composites Industry Association EuCIA represents the entire composites value chain through its membership of national and industry associations

Mission statement

We **support the sustainable growth** of the European **composites** industry and **promote the development of a flourishing business environment**, taking advantage of the combined expertise of our members

EuCIA in a few words



Our Goals



1 Position

Explain and promote the contribution of composites and the composites industry to European society

2 Advocate

Provide expertise to decision-makers in defining EU standards and legislation

3 Facilitate

Support the growth of the composites industry and the creation of a sustainable business environment in Europe

4 Educate

Support education of designers, engineers and students to advance understanding of composite materials

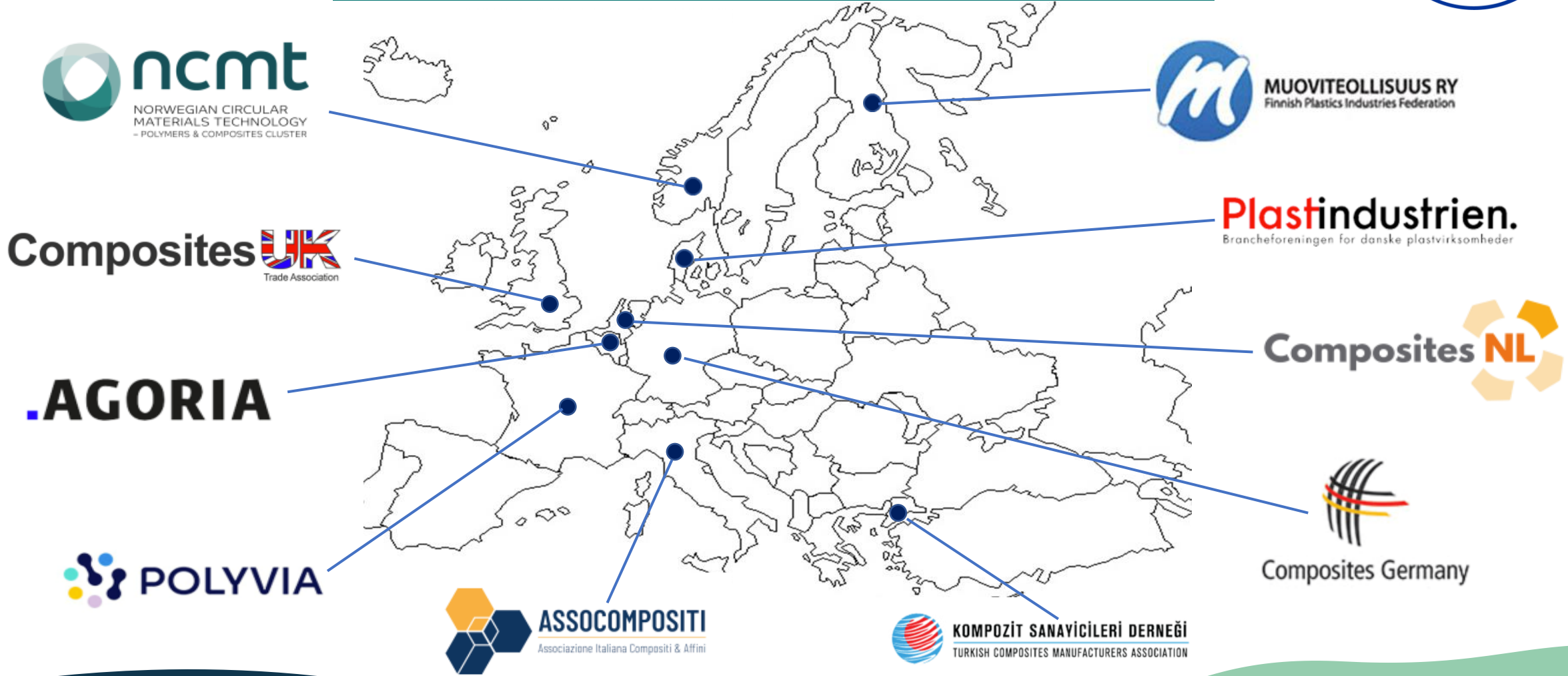
5 Network

Provide a platform for EuCIA members to network and share knowledge and experience

Our Members, Sponsors & Partners



National Composites Association Members



Our Members, Sponsors & Partners



Industry Sector Members



Sponsors



Partner



EU Projects



EuCIA represents 70%* of the European composites industry – more than 10,000 companies and an estimated 150,000 employees.

* The European Market for Fibre Reinforced Plastics and Composites 2022, AVK.

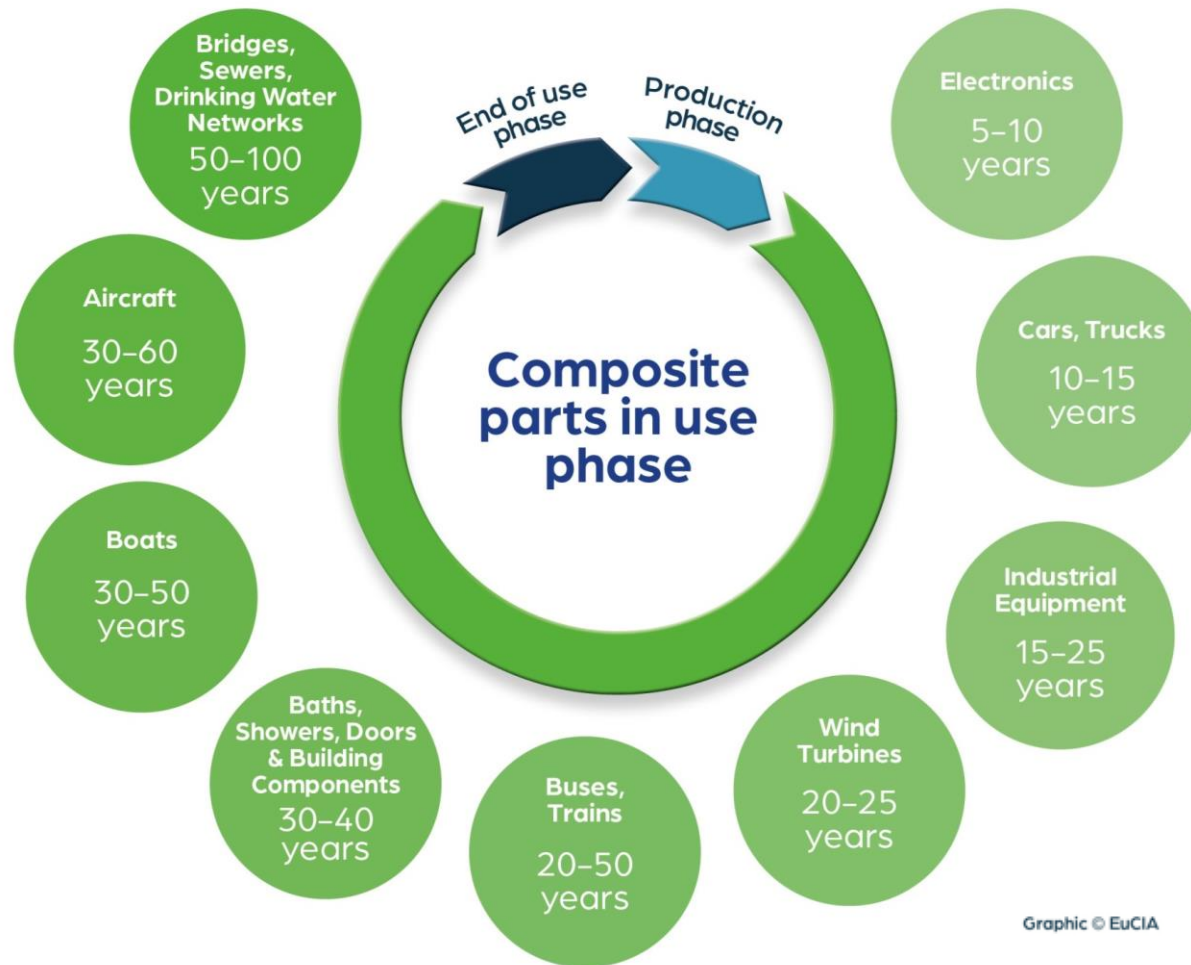
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Composites are Made to Last



Graphic © EuCIA

During their long service life composite materials make a substantial contribution to decarbonization, supporting the EU Green Deal goal of climate neutrality by 2050

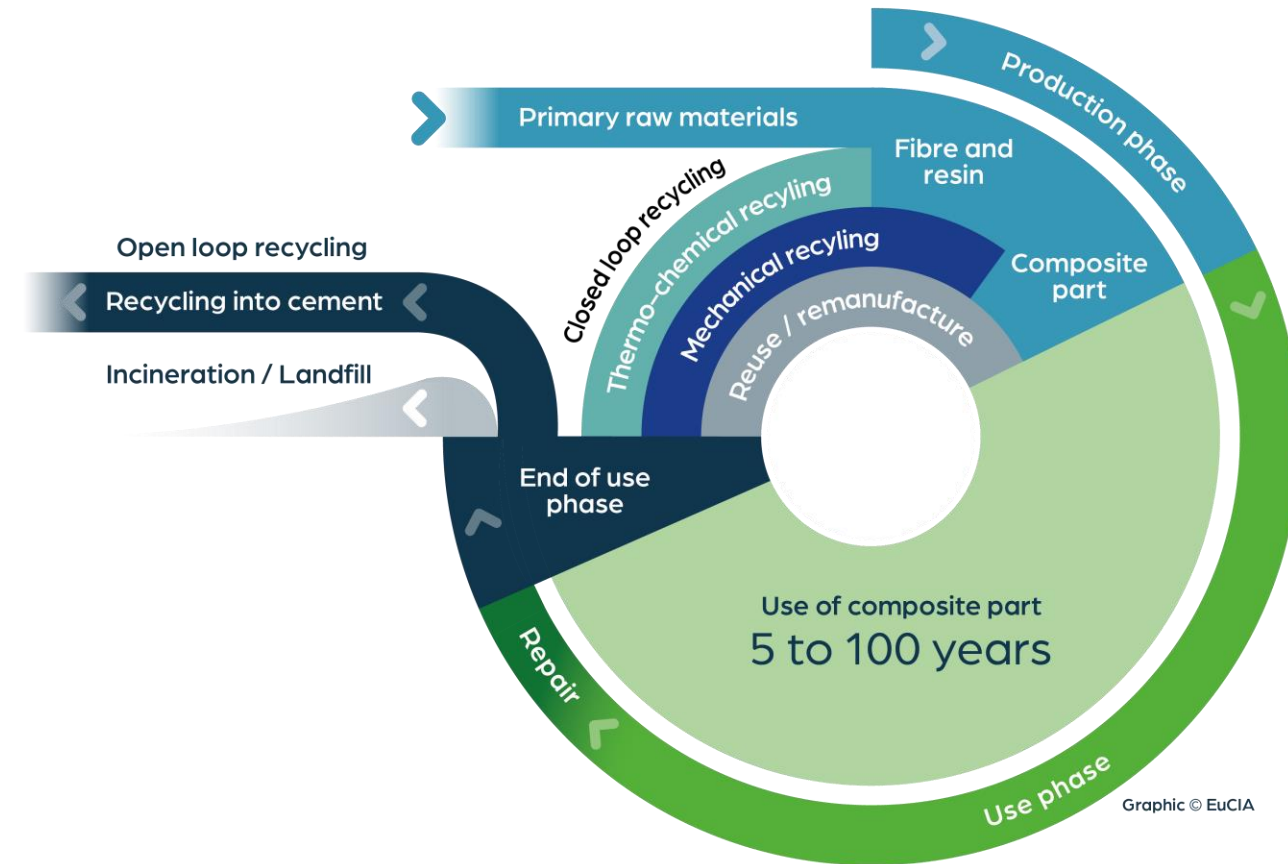
EU Wind Energy Targets Only Possible with Composites

- The Green Deal calls for 30% of the EU's electricity to come from wind energy by 2050 (~17% today)
- Composites are the **only** technology for manufacturing large wind turbine blades
 - Steel and aluminum too heavy to carry their own weight
 - Composites enable optimized aerodynamic shape for high energy efficiency and manufacturing at acceptable cost

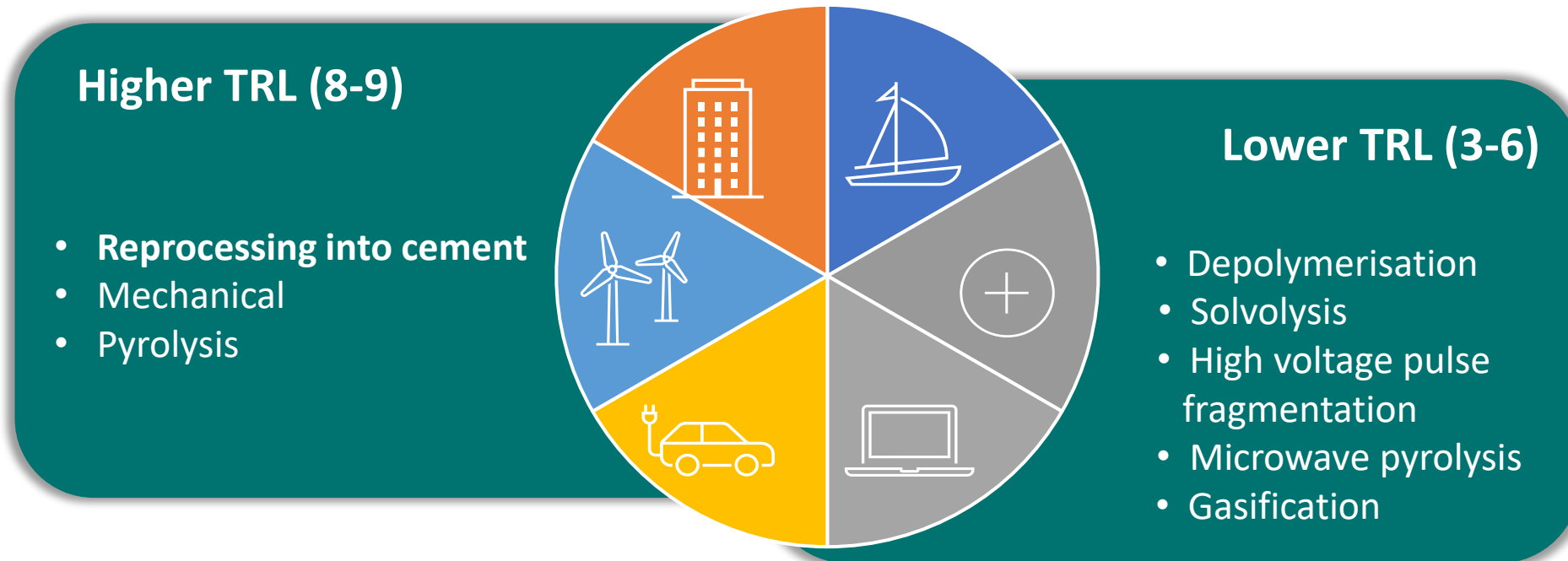


Composites and the Circular Economy

- Composite materials enable **novel lightweight designs** (improved performance, lower environmental impact)
- Composites provide a **long service life**, and the lifetime can be extended (repair, reuse, repurpose ...)
- Composites **recycling technologies are available** now, and more are being developed
- Composites are **circular materials** because re-use is possible either in **open loop** or **closed loop** recycling

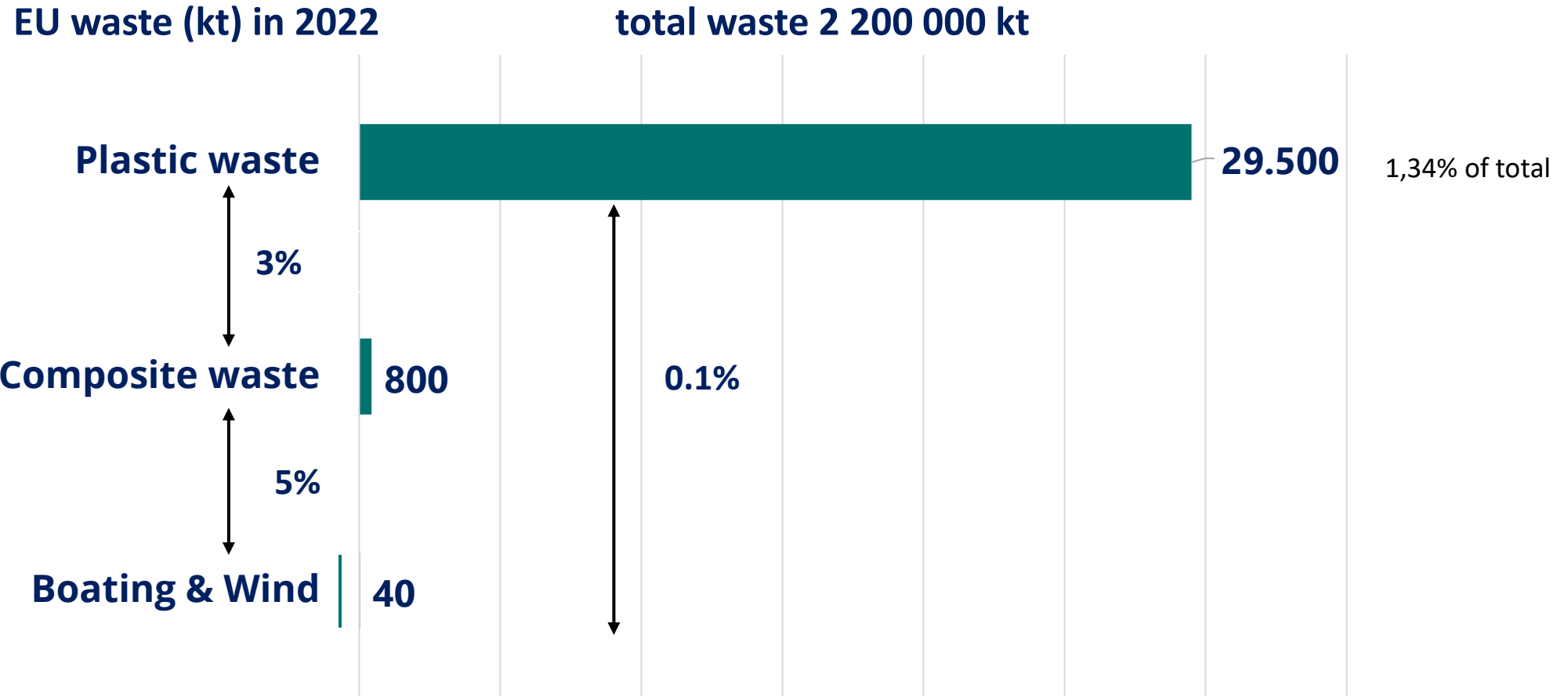


Composites Recycling Technologies are Reaching Higher Technology Readiness Levels

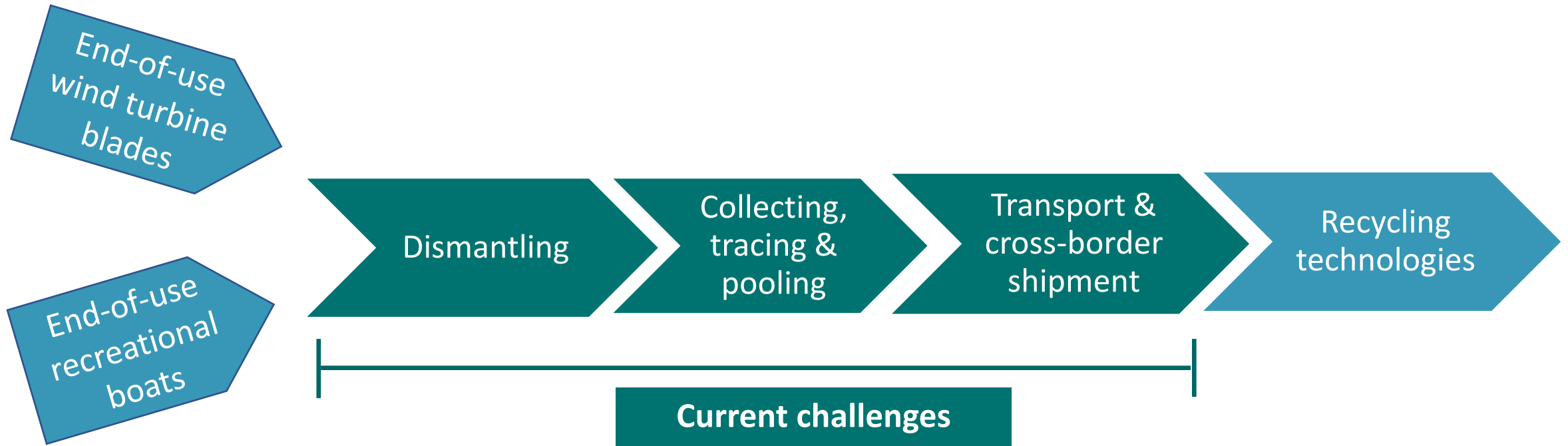


➔ Recycling into cement paves the way for other technologies

Small Volumes, Serious ambitions, Pro-active Approach



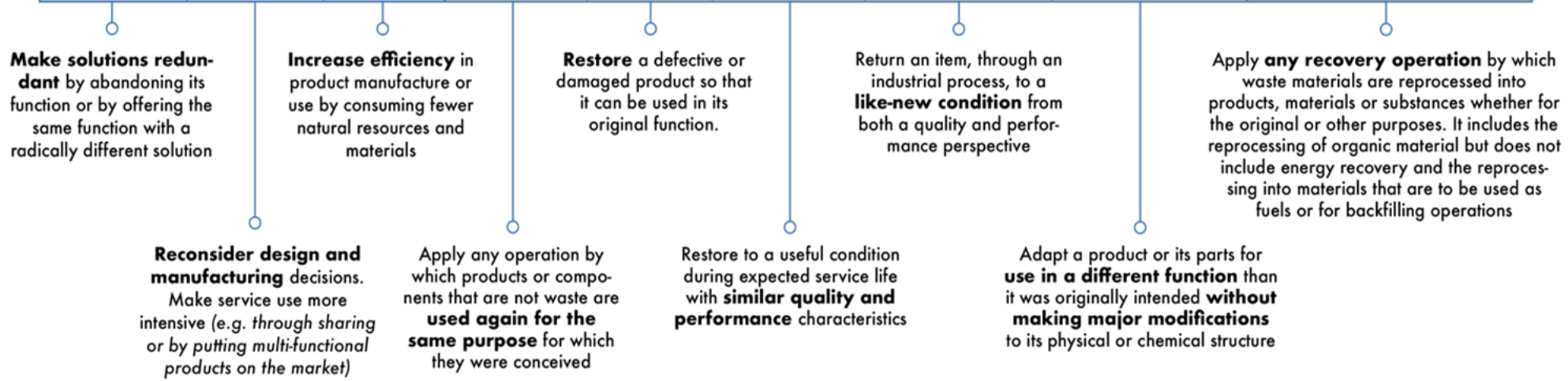
Still some Challenges for Industrial-scale Recycling



EuCIA vision on circular strategies : Not only R9!



Redesign			Extend the lifetime of the component					
REFUSE	RETHINK	REDUCE	RE-USE	REPAIR	REFURBISH	REMANUFACTURE	REPURPOSE	RECYCLE
R1	R2	R3	R4	R5	R6	R7	R8	R9



Sources: - WASTE DIRECTIVE 2008/98/EC of the European Parliament and of the Council, 19 November 2008
 - ISO FDIS 59004-2024 "Circular economy – Vocabulary, principles and guidance for implementation"

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EuCIA's Circularity Roadmap Objectives

- **Communicate**
 - Composites are essential for the decarbonisation of our society
 - Composites are circular materials
- **Expand the knowledge base**
 - Continue to build knowledge on recycling and reuse (LCA, cost etc.)
 - New Website section : Knowledge hub, by June 24.
 - Identify barriers in the supply chain (logistics, standardisation, waste codes, applications etc.)
- **Encourage stakeholder cooperation**
 - Develop a cross-sector approach and models for cooperation (Ex : Wind- Boat- Cement)
- **Promote actions to drive sustainability and net zero**
 - E.g. Acceptance of recycled materials in existing markets, new markets

Conclusions

- During their long service life **composites make a substantial contribution to decarbonization** and are **essential for the transition to a climate-neutral economy**
- **After a long service life, end-of-use is being addressed:**
 - Open loop: recycling into cement today, and further technologies in future
 - Closed loop: composites into composites
- To **increase the circularity of composites** there is a need to improve systems for collection, sorting and transportation of waste, and **develop markets for secondary materials**
- EuCIA will continue to **work with all stakeholders**, through alliances, to support the composites industry in creating a sustainable future