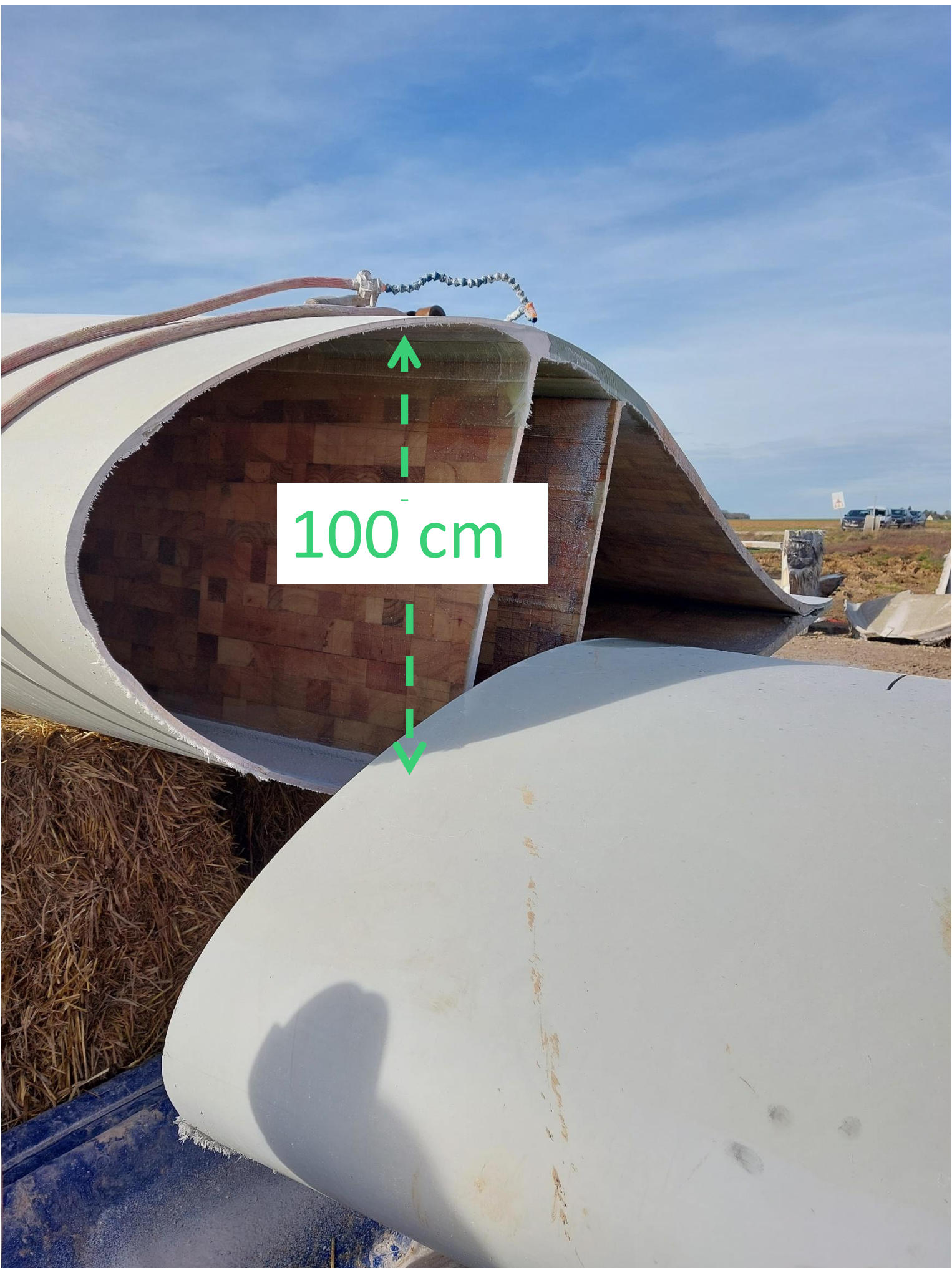
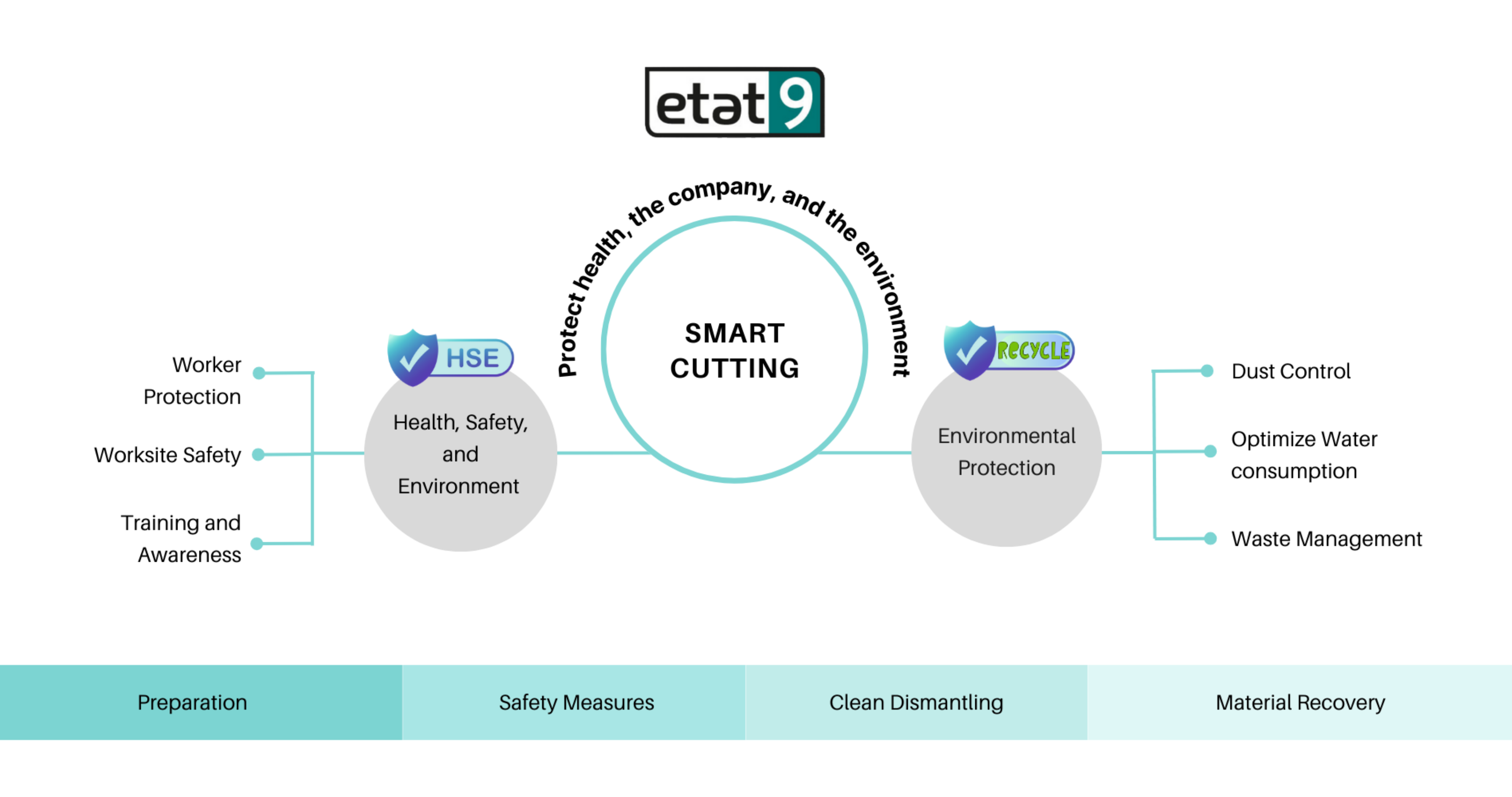


Cutting end of life wind turbine blade on-site in a sustainable approach before recycling or re-use

Magali BAZIN
ETAT9

Worksite onshore
Blades up to 80 m
Selective sorting of materials on site



- The method developed has made it possible to prove the practical feasibility of carrying out a full-scale blade-cutting operation in compliance with Safety / Environment / Quality / Cleanliness standards.
- This innovative method will help increase turbine recyclability. Improvements are also needed in reuse, sorting, recycling and will lead to more productive and sustainable end-of-life managing channels.
- This technique also allows the blades to be cut to size for re-use as street furniture, billboards, garden furniture, etc

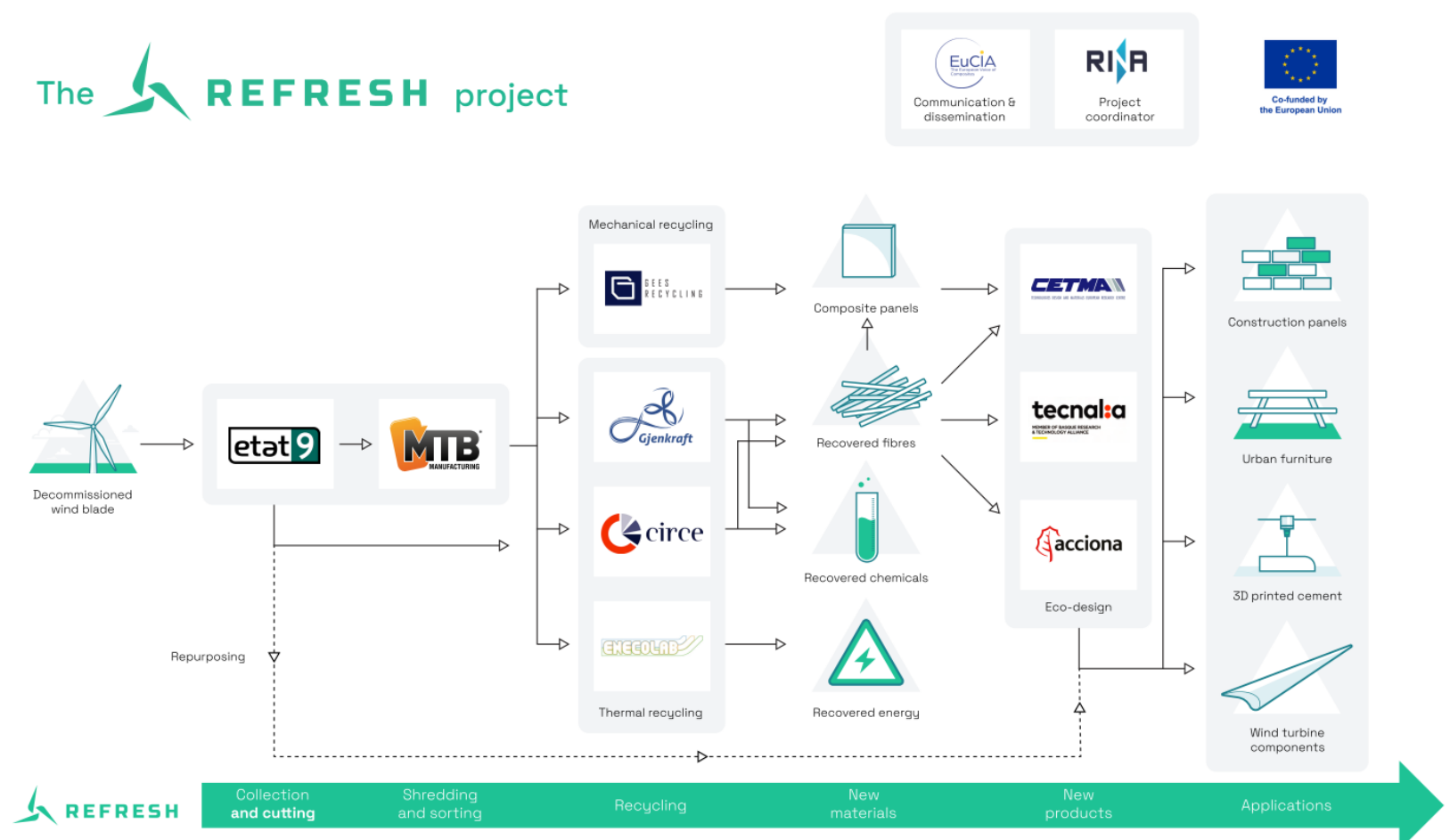


The REFRESH concept

REFRESH (Smart dismantling, sorting and **RE**cycling of glass Fibre **RE**inforced composite from wind power Sector through **H**olistic approach) is a European project aiming at developing and demonstrating a novel circular and smart system that enables improved recycling of glass fibre reinforced composites. These composites are derived from wind turbine dismantling or reblading.

The REFRESH project has received funding from the European Union’s Horizon Europe programme under grant agreement no. 101096858.

The REFRESH programme has the objective to build a circular and self-sustainable value chain.



Our role in REFRESH

Our role is to design an advanced dismantling system and to prototype the dismantling solutions.

The study we carried out was based on five criteria we considered most important for such interventions:

- impact on workers,
- impact on the Environment,
- cutting precision,
- transportability and mobility of the technology on site,
- cost.

What is « SMART CUTTING »?

- Cutting technologies: the selection and use of our cutting techniques, inspired from dismantling industries like the aeronautical one, were chosen for their precision, low environmental impact, and efficiency.
- Dust control: the methods implemented to minimize dust emissions during the cutting process shall optimize misting systems and on-site dust measurements. We ensure compliance with highest safety rules and best environmental standards.
- Water recycling processes: the treatment and recycling of water used in the cutting operations prevents overheating and dust dispersion. The system involves collection, filtration, and reuse, thus significantly reducing water consumption and environmental impact.

Interest for wind energy key players

- Wind industry: communicating on a green energy value chain, presenting the dismantling of a wind turbine in a positive and sustainable way
- Operator: take account of dismantling costs based on real life data
- End-of-life industry: consider the creation and/or supply of new end-of-life products

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