



# ENERGYLOOP

Innovation and technology for wind blade recycling



<https://energyloop.es/>



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EnergyLoop is a *Joint Venture* launched in 2022 by **FCC Ámbito** and **Perseo Iberdrola Ventures** with the aim of **leading the wind blade repurposing and recycling industry in Spain and Portugal**, a necessity with no industrial solution as of today, being landfill disposal the only option currently.



**FCC Ámbito** is the subsidiary of **FCC Servicios Medio Ambiente Holding S.A.U** focused on the comprehensive management of industrial and commercial waste, recovery of by-products and soil decontamination. Some key figures of Environmental Services activities are:

**120** Years of experience. **800** operational waste management facilities, of which **220** are environmental complexes.

**39** treatment industrial waste centres in Spain and Portugal with **67** processing lines. **24.7 MT** of waste managed in 2023.

**11** energy recovery projects with **3.2 million tons** per year. **4.9 MT** of secondary raw materials and waste-derived fuel.

**380 MW** of non-fossil electricity.



**Iberdrola** is today one of the largest power utilities worldwide and a global leader in renewable energy. It's subsidiary **Perseo**, corporate venture capital program open innovation, was created in 2008 to contribute to innovation through start-ups and new business models. Some of its key figures are:

**170** years of experience. **40,000** people employed in Spain, the United Kingdom, the United States, Mexico, Brazil...

**100 MM** people supplied. **40,000 MW** installed by 2022, world leader in installed renewable capacity.

**+25** pilots per year and more than **300** companies analysed through Perseo each year. **€200 M** invested by Perseo in the last **15 years**.

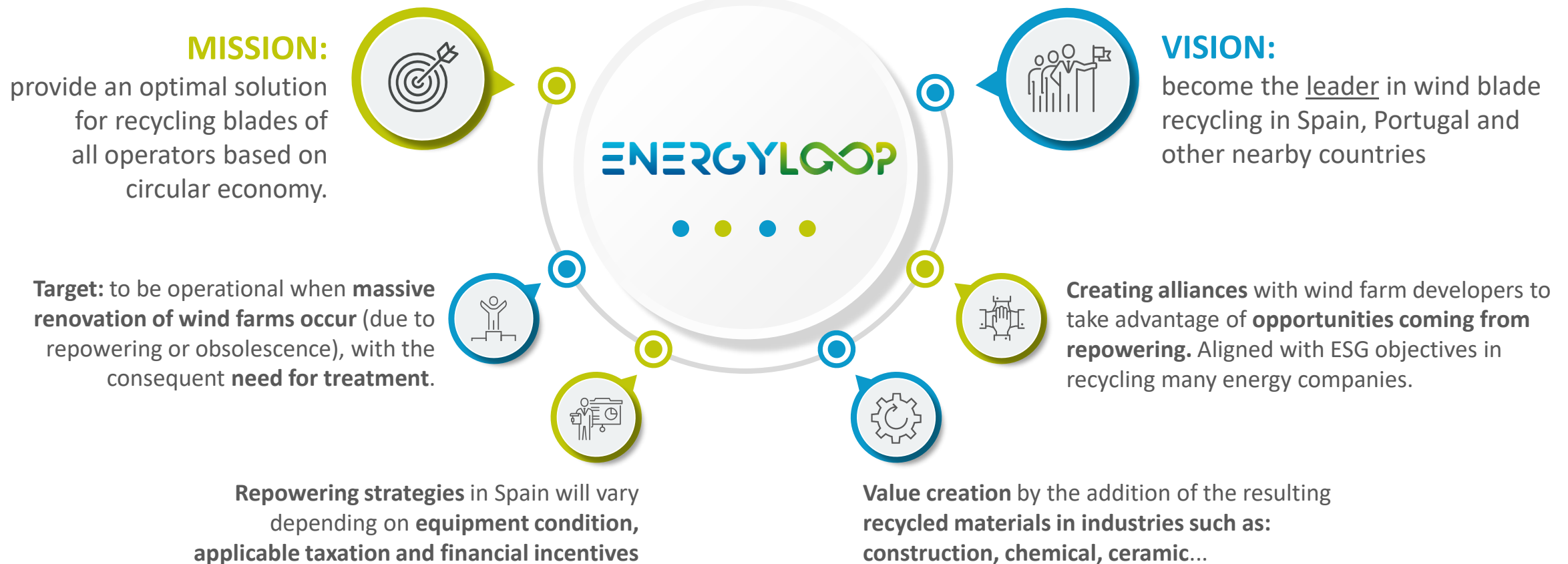
**95 GW** of renewable capacity expected by 2030, x3 its current renewable capacity.



In Spain there are **1,371 wind farms** (2023) with over **22,210 WTGs** (66,630 blades)



In 2023-2030, 442 facilities will reach 25+ year old (**34,000+ blades**)





EnergyLoop has an **industrial wind blade recycling facility** in Cortes (Navarra)



● Wind farms with 25+ years old in Spain



**Market-open solution** which combine technological **innovation**, **sustainability** and **circular economy** for optimal management of materials from wind turbines at the end of their useful life.



**Available to any operator in the wind energy sector.**



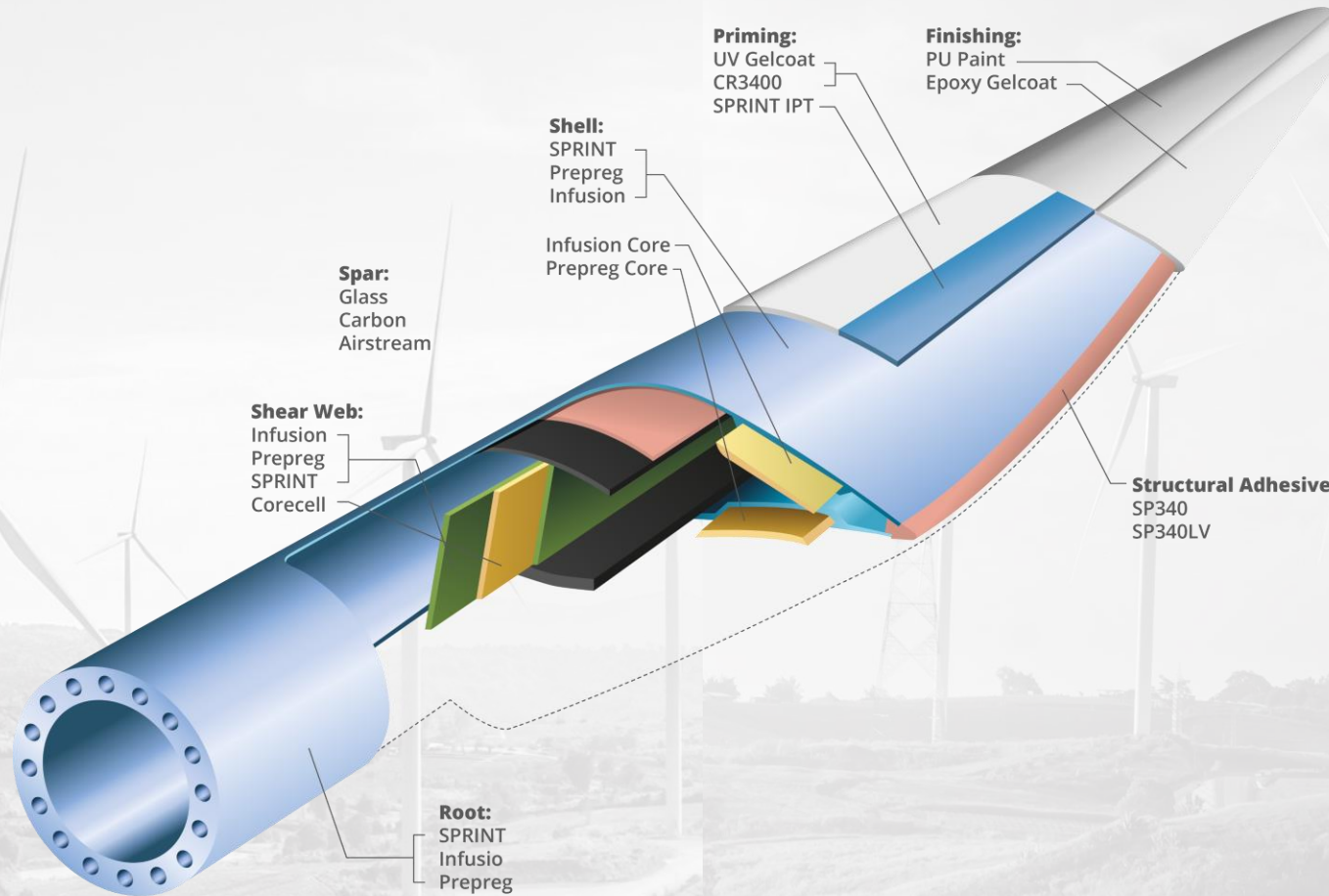
**Industrial ecosystem for recycled materials.**



Authorized for the treatment of **EOL wind blades** and fiberglass composites. Fully operational in Q2 2025

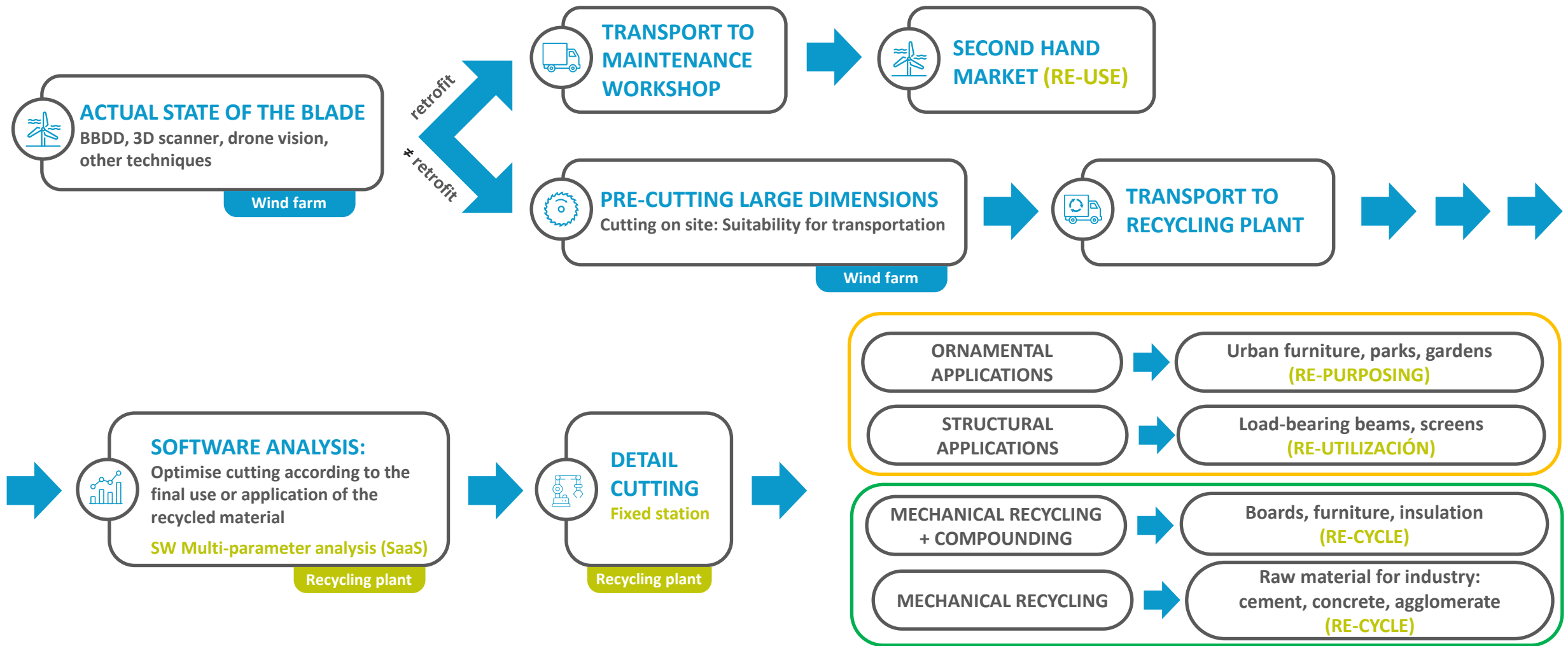


Considering all the active wind farms in Spain, an estimated generation of **5,000 blades each year** for treatment.

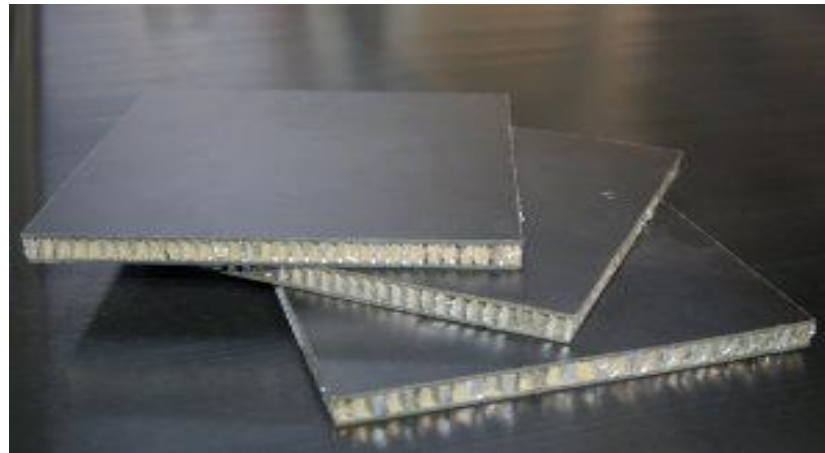
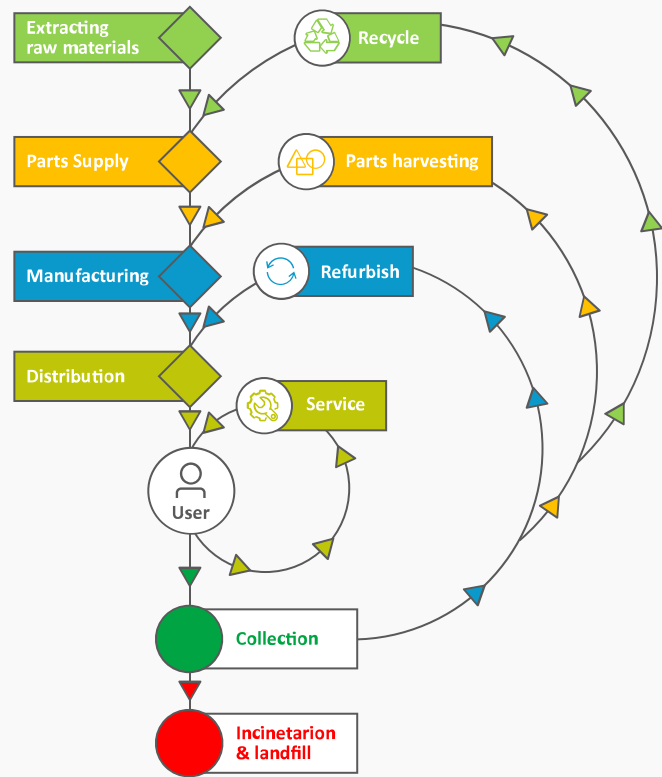


Wind turbine blades are generally made of composites: **glass fiber and resins**

Other structural materials give **lightness**: polyurethane, PVC, balsa wood; and **durability**: covers, gealcoats



- The **reconditioning / reuse** allows most of the structural value of the blades to be retained. Tailor-made solutions
- **Mechanical recycling** is oriented towards the production of secondary raw material for different industrial processes.



BASED ON THE CIRCULAR ECONOMY:  
MAXIMUM VALUE RETENTION

**A large number of sectors can be positively affected by the introduction of recycled raw materials from wind blades to reduce costs and/or improve properties**



LOCATION: **CORTES (NAVARRA)**.  
NORTHEAST OF SPAIN



**DECLARED OF REGIONAL INTEREST BY**  
THE GOVERNMENT OF NAVARRA



**AUTHORISED FOR THE MANAGEMENT OF EOL WIND**  
BLADES AND OTHER COMPOSITES FROM WIND TURBINES



ENERGY USED IN THE OPERATION: **100% RENEWABLE**



**OWN SYSTEM THAT GUARANTEES A COMPLETE**  
TRACEABILITY OF ALL MANAGED ELEMENTS



**OPERATIONAL FLEXIBILITY AND**  
TECHNOLOGICAL **INNOVATION**



**FULLY RESPECT FOR ENVIRONMENTAL**  
AND **OCCUPATIONAL SAFETY**

# WIND BLADE RECYCLING PLANT



# THANK YOU

**ENERGYLOOP**



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