

Microwave-assisted WTB recycling: the role of chemical recycling routes

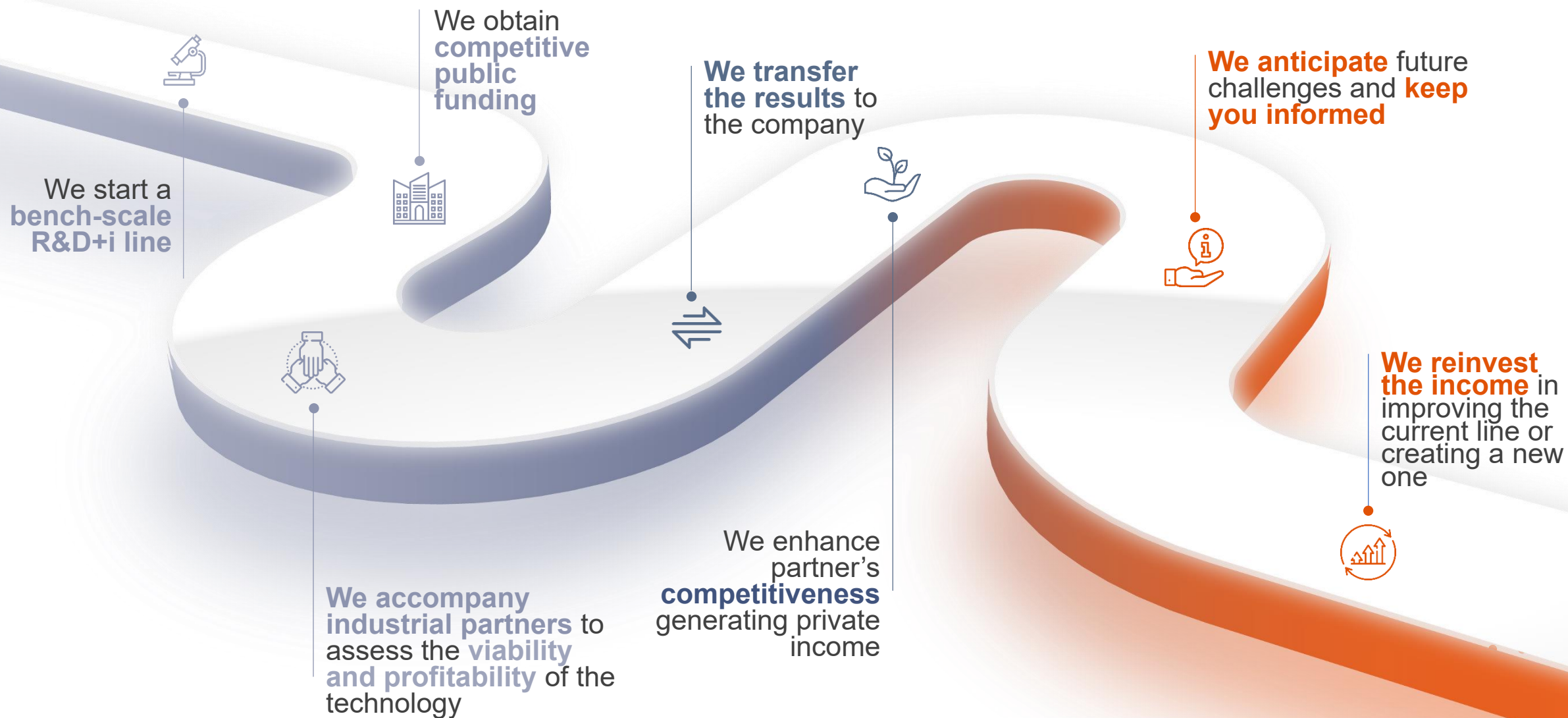
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LinkedIn Live Panel Discussion
28 April 2026 – Online event



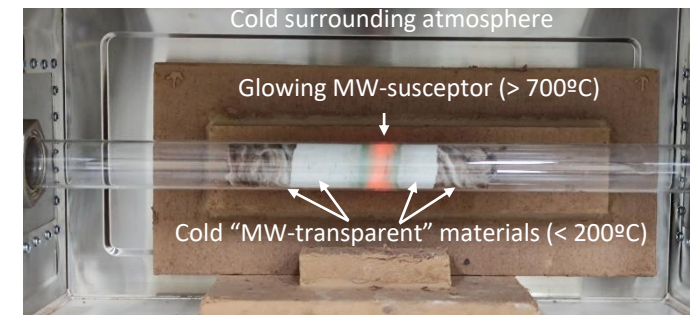
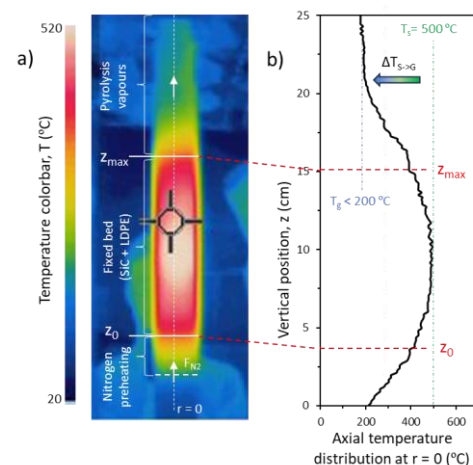
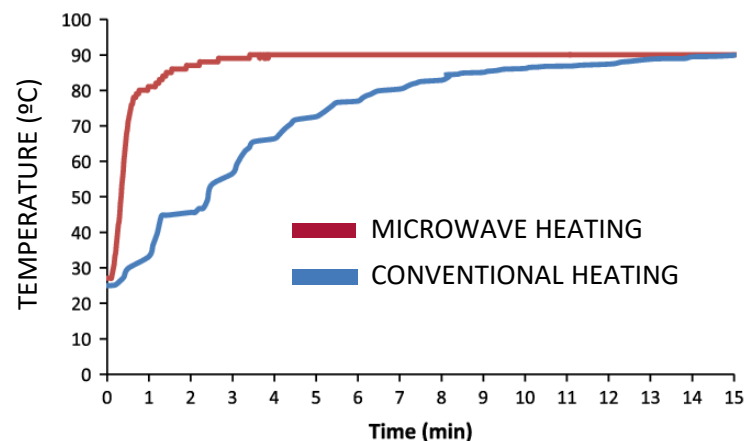
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WTB recycling: why using microwaves?



Horizon Europe
101096858

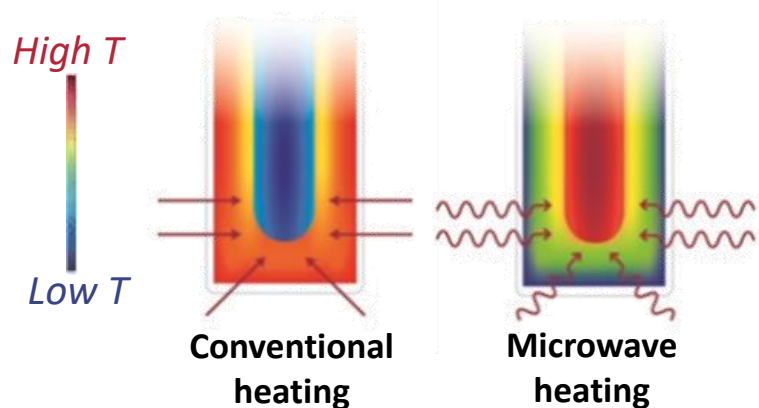


Limitations of conventionally-heated pyrolysis/solvolytic processes:

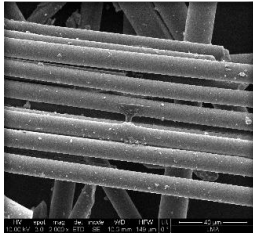
- Resins heat transfer is very poor: large temperature gradients along the heated medium **limit recycling process controllability**
- Gas-phase cracking in the hot reaction system atmosphere also **limits oil product distribution controllability**

Microwave-assisted heating advantages:

- Fast, selective and volumetric heating
- Enhanced control over pyrolysis process and **oil product distribution**
- Lower apparent processing temperature for a given depolymerization extent



Technology assessment: MW-pyrolysis and MW-solvolysis (TRL 3/4)



Recovered pyrolyzed
fibers

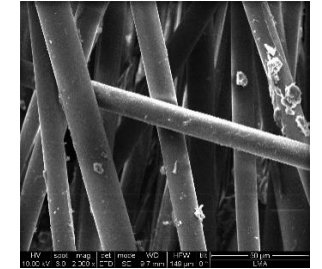


Isolated pyrolysis oil &
waxes



MW-Pyrolysis

MW-Solvolysis



Recovered solvolysis
fibers



Isolated
solvolysis oil

MW-pyrolysis and MW-solvolysis technologies for WTB composite recycling, enabling the **recovery of glass fibres plus complex oils that could be used either as fuels or chemical building blocks**

Next steps

By the end of the project, we aim to generate valuable technical and energy-related insights into the implementation of microwave-assisted thermochemical recycling technologies.

Our key objectives are to:

- Assess the **energy performance** of conventional pyrolysis and microwave-assisted processes
- Improve control over thermal pathways to influence **product yields and composition**
- Generate **technical data** to support decision-making on the implementation of microwave heating
- Identify potential **advantages and limitations** of microwave-assisted pyrolysis versus conventional



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Thank you for your attention!

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