

FRP recycling exercise 2021-2022 KiMuRa-project

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- Composite Group



MUOVITEOLLISUUS RY
KOMPOSIITTIJAOSTO

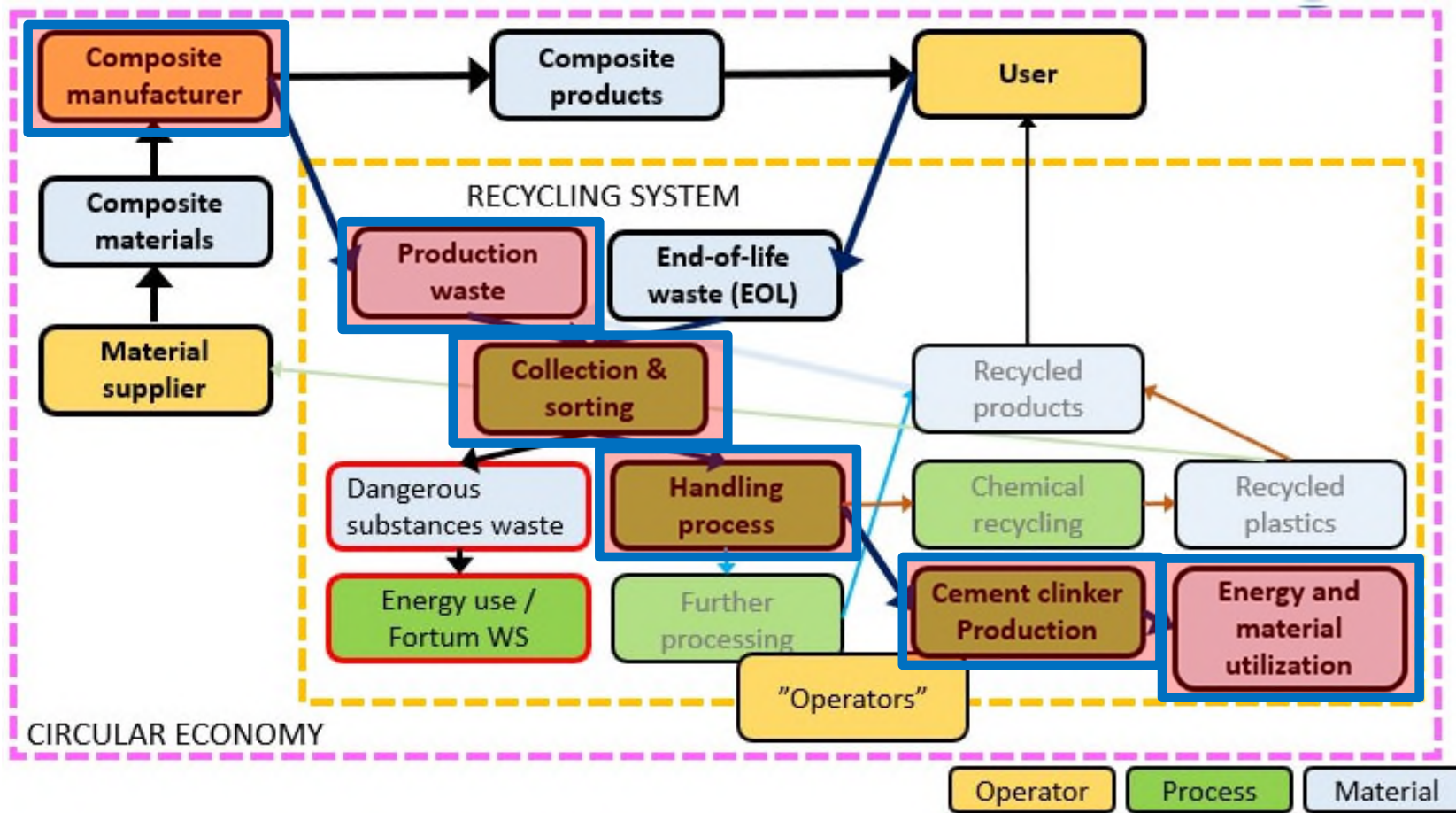
FRP recycling exercise 2021-2022

KiMuRa-project

- ▶ KiMuRa - Recycled and shredded raw material (for co-processing in cement-kiln production)
- ▶ Goal: technically and economically viable recycling process for industrial composite waste
- ▶ Support from Finnish government (ministry of environment)
- ▶ https://www.plastics.fi/eng/activities/kimura_in_english/



The Circular Economy Model for Composites Products



Project partners

Composite companies

Ekin Muovi Oy, Exel Composites Oyj,
Fenix Marin Oy
Muovilami Oy, Muovityö Hiltunen Oy,
NCE Oy, Patria Aerostructures Oy

Circular economy Utilizer

Kuusakoski Oy
Finnsementti Oy

Support

Finnish Plastics Industries Federation
Finnish Marine Industries Federation Finnboat
Finnish Wind Power Association

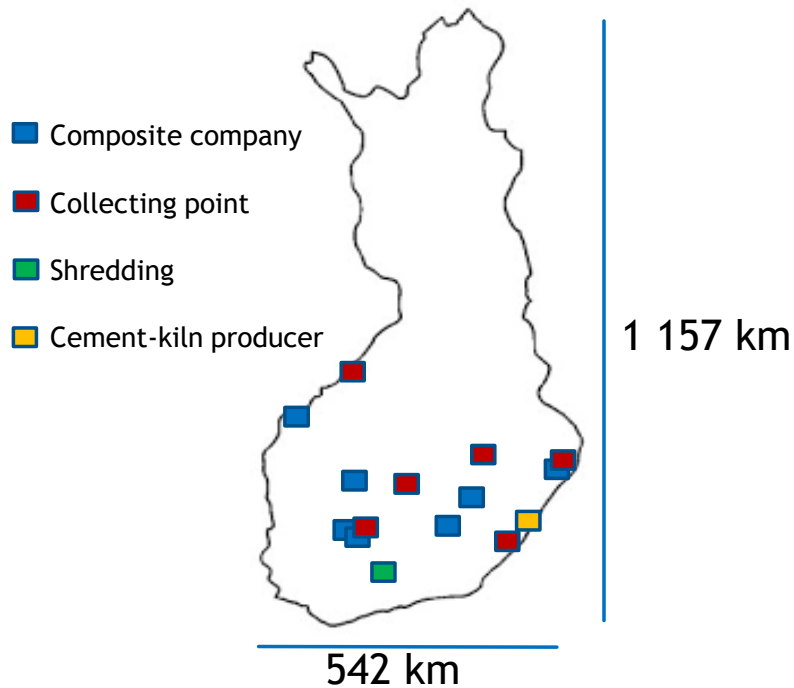


KiMuRa: Partners as Operators in Circular Economy

- ▶ **Sorting and collection** at composite companies
- ▶ **Collection** at Kuuskoski collection plants at
 - ▶ Hyvinkää, Imatra, Joensuu, Jyväskylä, Kalajoki, Kuopio, Tampere
- ▶ Kuusakoski **crushes/shreds** the material
- ▶ **Transportation** to Finnsementti
 - ▶ Quality requirements for COMPO waste
 - ▶ Magnitude and uniformity of the waste stream



KiMuRa: Challenges



Company with composites waste from production

- Sorting
- Transport to recycling plant

Company that uses the circular raw material

- Amount of waste is scarce
- Waste is geographically dispersed i Finland



KiMuRa: Current Scaling Possibilities

- ▶ Companies / industry outside the project can already deliver composites production waste to Kuusakoski
- ▶ EOL-waste
 - ▶ Boats and wind turbine blades
 - ▶ Dismantling before circulating the composite
 - ▶ Larger amounts of windmills for recycling in 2030s
 - ▶ Used containers and pipes
 - ▶ Consumer waste



Thank you!



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