



FRP recycling in progress - KiMuRa-route

In Finland we have a national system that provides a possibility to get composite waste to be fully utilized as raw material in cement kiln co-processing. KiMuRa-route started with the waste from composite industry but nowadays also boats and windmill blades have been successfully utilized.

KiMuRa-project has successfully demonstrated a composite recycling logistics from Finnish composites industry (production waste) to full utilization in co-processing in cement industry.

To the challenges solved during developing the KiMuRa-route belong:

- sorting the waste to separate the appropriate fraction suitable for KiMuRa (composite industry)
- organizing the transportation of composite waste fraction to dedicated locations (composite industry)
- developing processes of circular economy actor: crushing technology and dust control (Kuusakoski Oy)
- defining rules for industry to sort suitable fractions for cement industry (Finnsementti Oy)

Until now more than 1000 tons of composite waste has been processed and as an extra effort, blades of three windmills in Finland were recycled domestically for the first time instead of exporting them to Europe.



The KiMuRa-route was demonstrated as a project supported by the Ministry of Environment. The key actors are still committed in running this recycling and the number of companies involved has more than doubled during KiMuRa. The next steps will be getting more industrial companies involved and getting ready for EOL composite product recycling. In future, the crushed composites bulk can be utilized also in processes other than cement kiln co-processing whenever such recycling/recovery technology would be industrially available.

The first composite companies involved in KiMuRa were

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

Recycling solution provider

Kuusakoski Oy (Recycling)

Cement producer

Finnsementti Oy

Supporting parties

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

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