

# Construction materials from alkali-oxidation technology


**Metsä**

## Description

Unique lignin upgrading technology based on cost-competitive alkali-O<sub>2</sub> oxidation using non-toxic bulk chemicals to produce versatile lignin dispersants.

## Objectives

- To assess impacts on environment and society of lignin extraction and oxidation processes to quantify the Social Return on Investment and technical costs to demonstrate sustainability, business potential and socio-economic impacts of lignin-based products,
- To ensure exploitation of results and efficient management of project data, to define business models and plans, including relevant market analyses, and to ensure widespread of processes scale-up.

## Activities

- Sustainability assessment:
  - Life-Cycle Assessment LCA,
  - Life-Cycle Costing LCC,
  - Social Life-Cycle Assessment SLCA.
- Market uptake:
  - Market analysis,
  - Business plan.

## Challenges

- Input data complex to collect 
- Technical knowledge required 
- Legal & legislation barriers 
- Technology readiness level 

## Expected outcomes

- + 20% bio-based chemical and materials, - 15% alkali consumption,
- - 50% investment costs, - 60/70% operational costs,
- Comprehensive analysis of potential market niches, competitive advantages, internal and external levers,
- Commercial strategy to assure solid market uptake.

