



storaenso

Driving growth in biomaterials innovation

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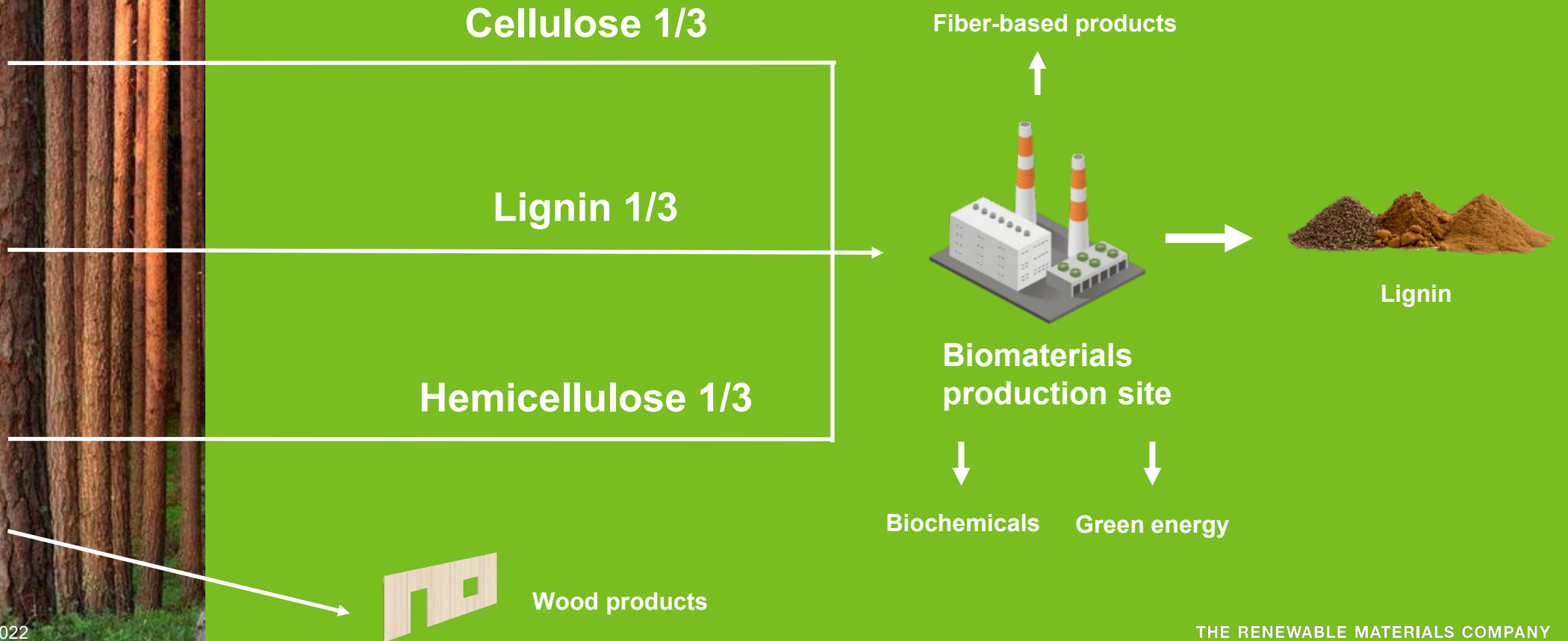
Disclaimer



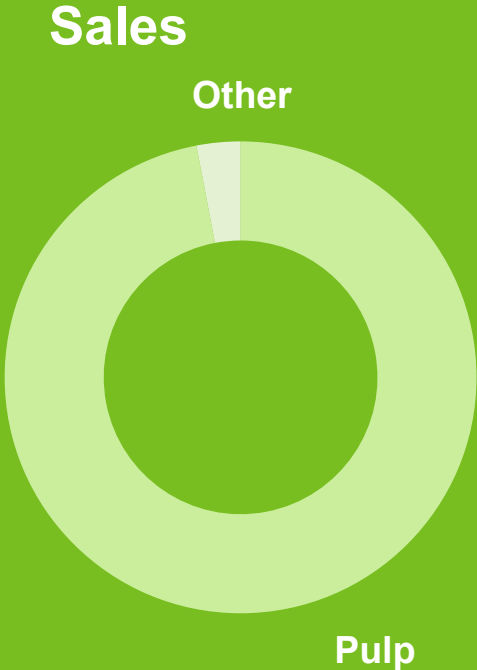
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Lignin makes up 1/3 of a tree with a world of possibilities



Our products and sales mix form the foundation for biomaterial innovation



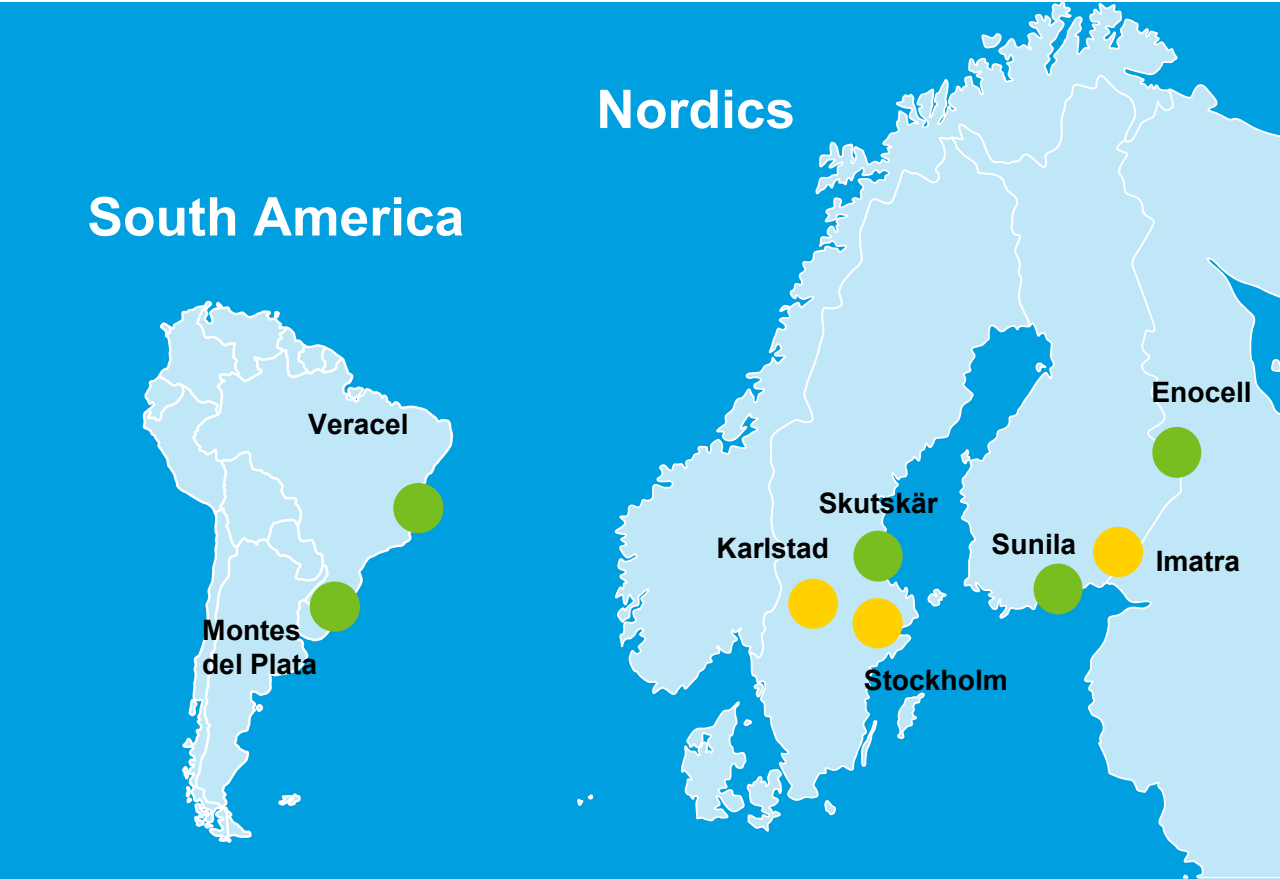
Pulp Market size €45 billion, CAGR +2%



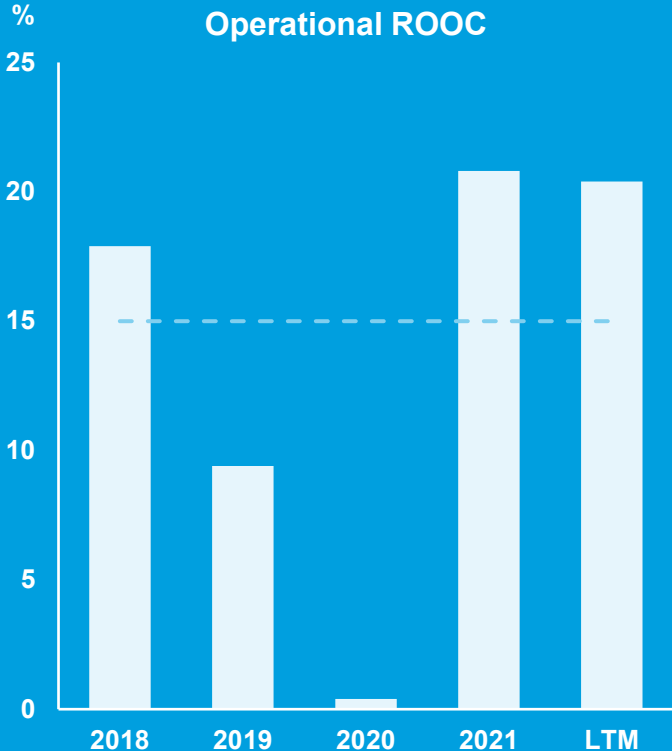
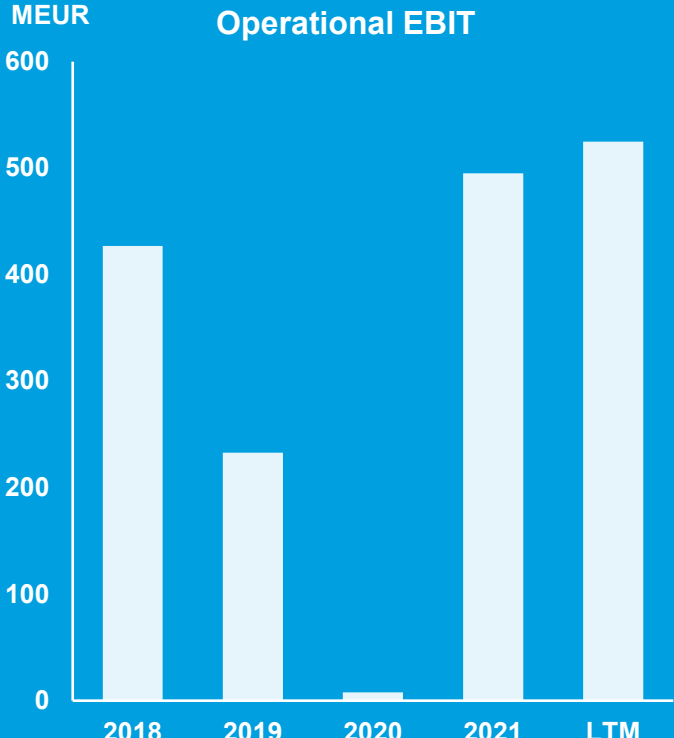
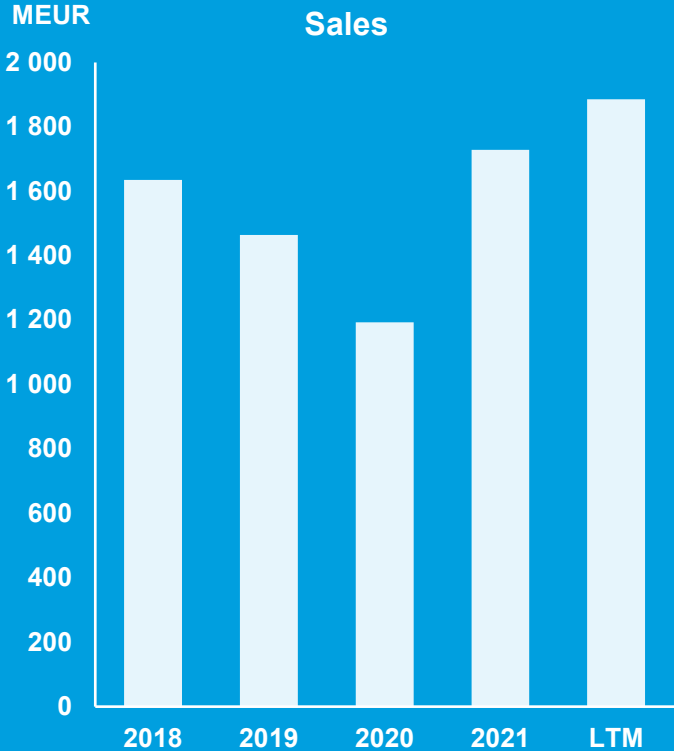
Innovative biomaterials



Leading edge research with worldwide reach



Strong financial performance in Biomaterials



LTM = Q3/2021-Q2/2022

Significant growth opportunity in biomaterials innovation



Market size	€10 billion	€20 billion
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Long-term EBITDA margin potential	50%	40%
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Anode material
+25-30% CAGR



Bio-binders
+3-4% CAGR

CAGR

Reducing carbon footprint with bio-based binders



High bonding strength
and water resistance

Replacing fossil-based
chemicals

Market €20 billion

Current share <1%





Electrification is great

But batteries still rely on fossil-based materials

European anode demand is estimated to be 1 million tonnes by 2030

Lignode replaces non-renewable graphite in batteries



**Anode material
Lignode®**



**Anode material
on foil roll**



**Rolled into
Lithium-ion cells**



**Cells are stacked
into battery pack**



- Electric vehicles
- Stationary energy storage
- Other electric products

Higher performance and faster charging compared to pure graphite



Properties	100% Lignode	Lignode/graphite mixtures
Fast charging/ discharging		
Low temperature performance		
Cycling stability		
Energy density		
Sustainability		



Accelerating the development and scale-up with customers and partners



Significant sales potential with selected stakeholders in the battery supply chain

Biomaterials ~2030 ambition



€1bn sales in innovative biomaterials

Reduced market pulp position

Full scale-up of Lignode

Leadership in European fluff

50% carbon footprint reduction

Maintaining strong competitiveness



THE RENEWABLE MATERIALS COMPANY