

The origin of Pine chemicals - The forest

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Södra in short

Södra was founded in 1938 on the idea that we are stronger together. Södra is now the largest forest-owner association in Sweden, with more than 50,000 family forest owners as members, and a world-leading industrial operation that processes forest raw material into renewable products.



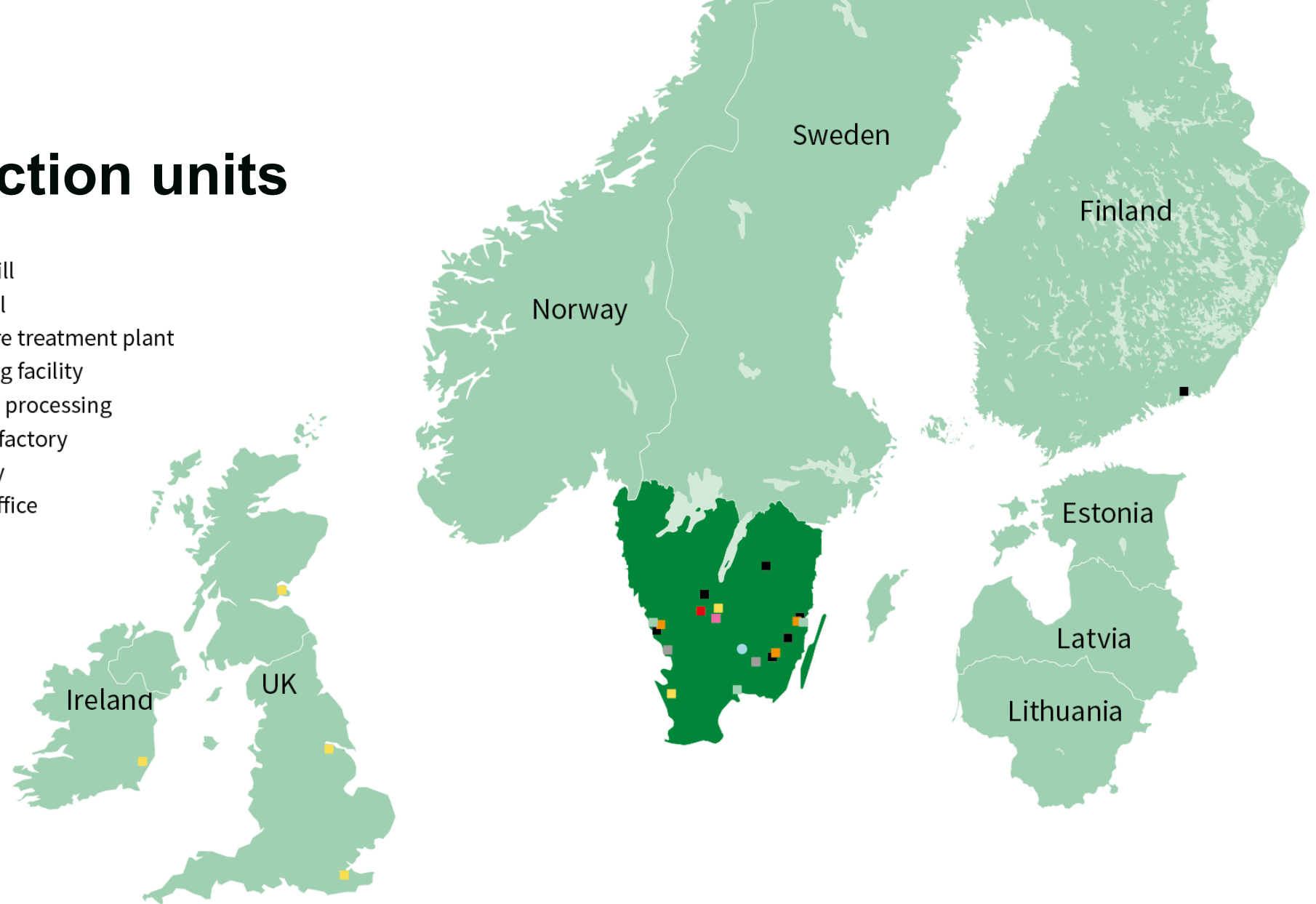


Our mission – Why we exist:

**We refine and renew
the values of the forest estate**

Södra's production units

- Pulp mill
- Sawmill
- Pressure treatment plant
- Grinding facility
- Further processing
- Pellets factory
- Nursery
- Head office



Our product areas



Biochemicals



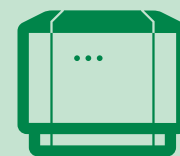
Biofuels



Biomaterials



Building systems



Dissolving pulp



Electricity



Heating



Paper pulp



Seedlings



Wood products



Södra 2024

2.8

Members' forests
Million hectares

52,000

members

29

Net sales
SEK billion

3,200

employees

24

Forestry member
teams

17

Wood volume
million m³ sub

03

Pulp mills

07

sawmills

01

Factory for
cross laminated timber

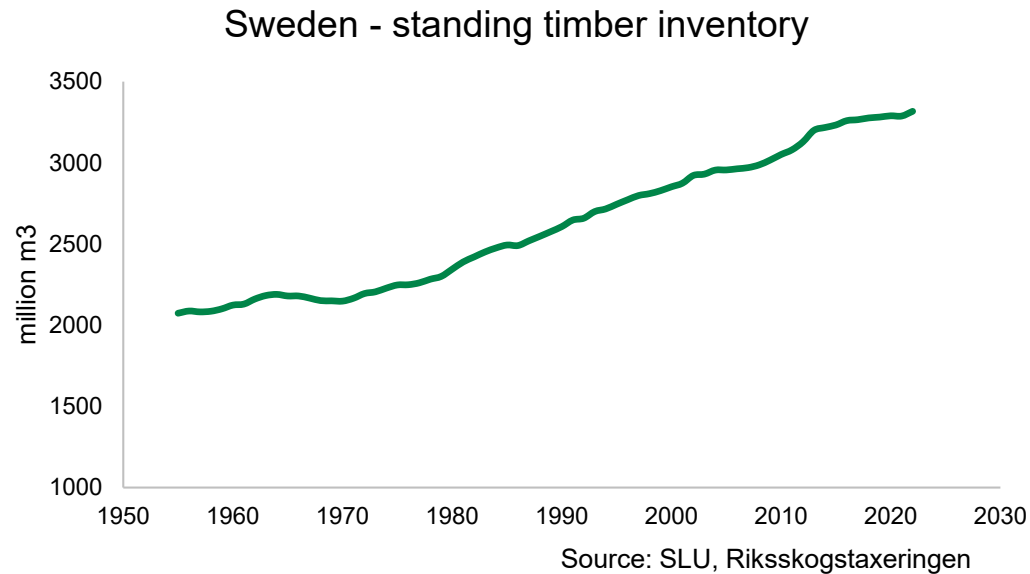


The raw material for Pine Chemicals

Responsibly managed forests

Forests are important for people, and always have been. We want to continue to benefit from our forests and everything they have to offer, we have to use them sustainably and apply a long-term approach with consideration for their natural, social and cultural values.

The Swedish forest landscape changes over time

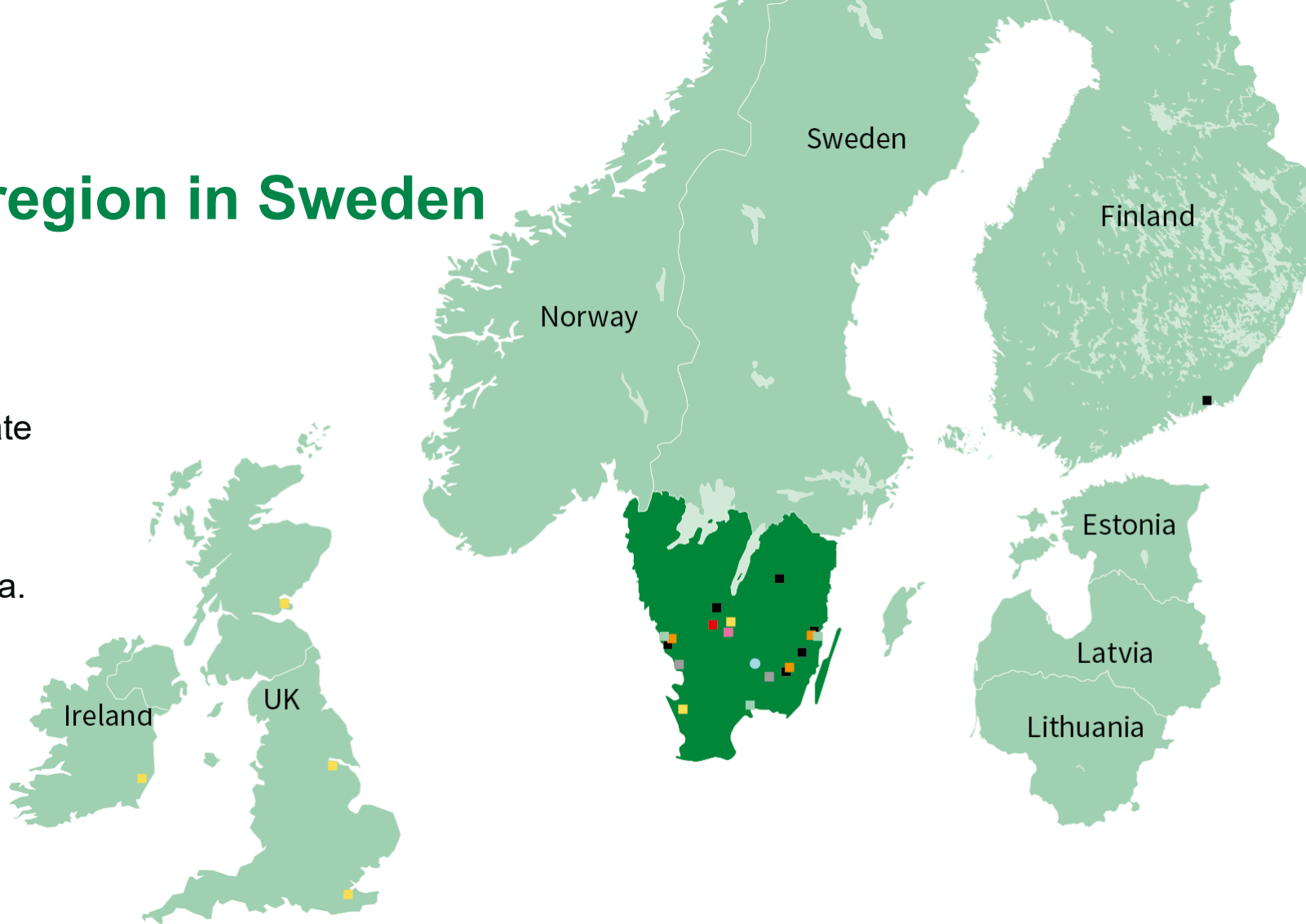


- 120 years ago – heathlands and sparse or no forests at all dominated the landscape.
- Today, growth in Swedish forests significantly exceeds harvesting – the timber stock is increasing.



Götaland – A forested region in Sweden

- **63%** of the land area is forest land.
- **80%** of the forest land is owned by private forest owners.
- **50%** of all privately owned forest land in Götaland is owned by members of Södra.
- Forestry is small-scale and family-run, with an average final felling area of 1.5 hectares; 58% of all final felling's are smaller than 2 hectares.



The rotation period in the forest



Responsible Swedish forestry backed by certification

Examples of the requirements a certified (FSC and PEFC) forest owner follows in Sweden:

- Forest measures are carried out so that high conservation values are not destroyed, and environmental considerations are taken into account in all forestry measures
- At least 5 per cent of the forest area is set aside
- A certain proportion of the forest area is managed with adapted methods to benefit environmental or social values
- PEFC-certified contractors are hired for measures in the forest
- Internal and external audits
- Using the green forest management plan





Group of trees

Standing dead wood

Development trees

Buffer zone

Buffer zone

High stumps >3 m

Lying dead wood

General consideration

Cultural heritage stumps 1.3 m

Cairn

Family forestry – Commitment over generations

Södra's forest ownership structure reflects a rich and diverse social landscape.

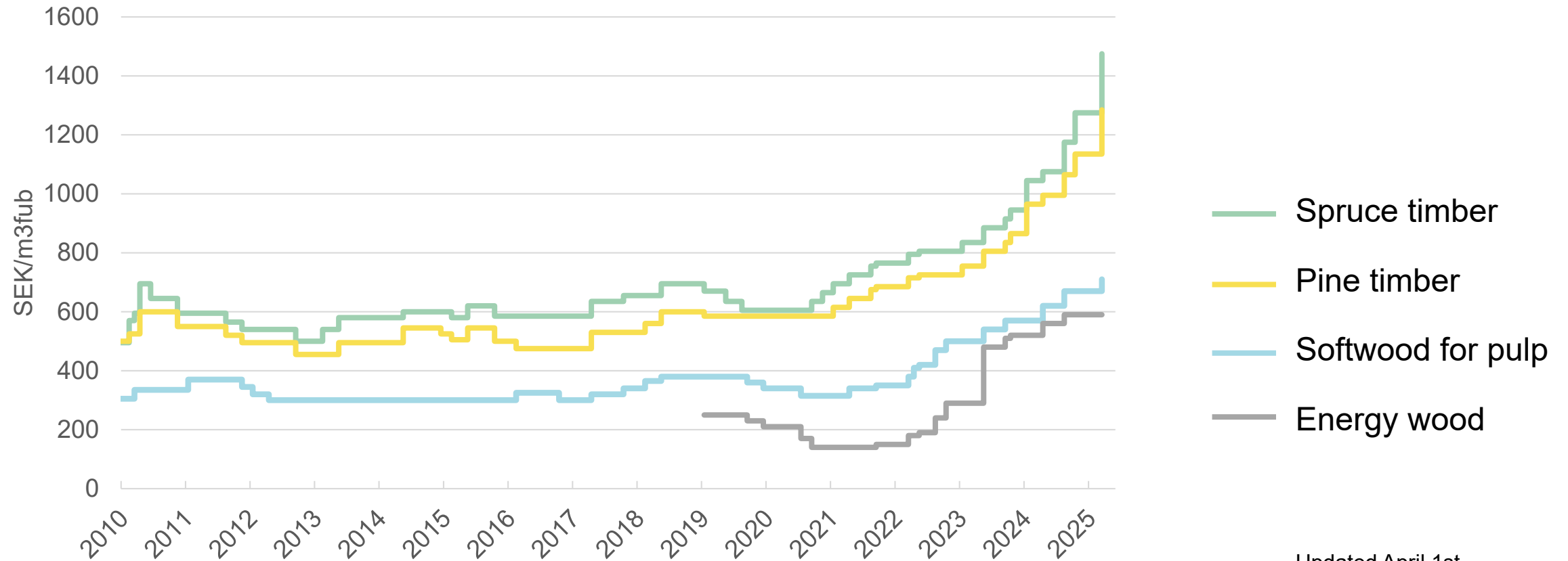
- Half of Sweden's forest land is owned by private individual owners
- Almost 40% of forest owners are women
- About 3 out of 4 estates are acquired from family or relatives
- The different goals of family foresters contribute to variation in the forest landscape



Many different things affect the wood market



Wood price development in southern Sweden



Updated April 1st,
data from sodra.com

What to do when the raw material cost increases?

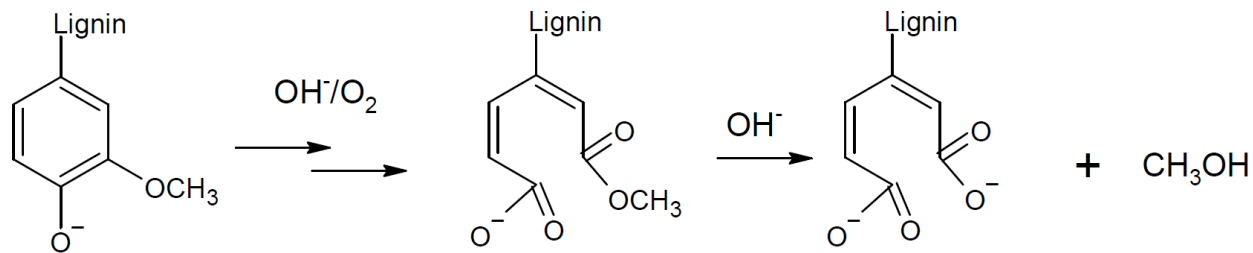
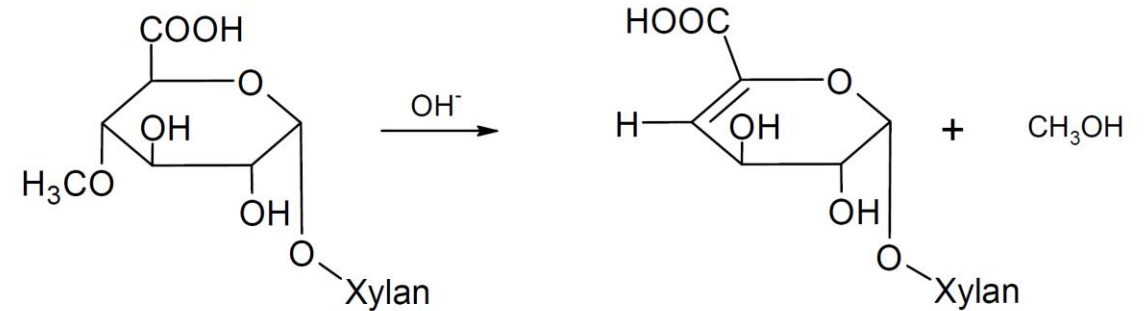
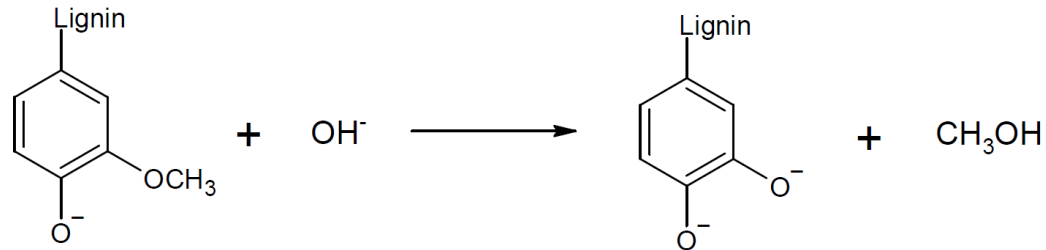
- Remember our role as an economical association
- Increase the ability to pay
 - Be more efficient
 - Produce more products from the same raw material



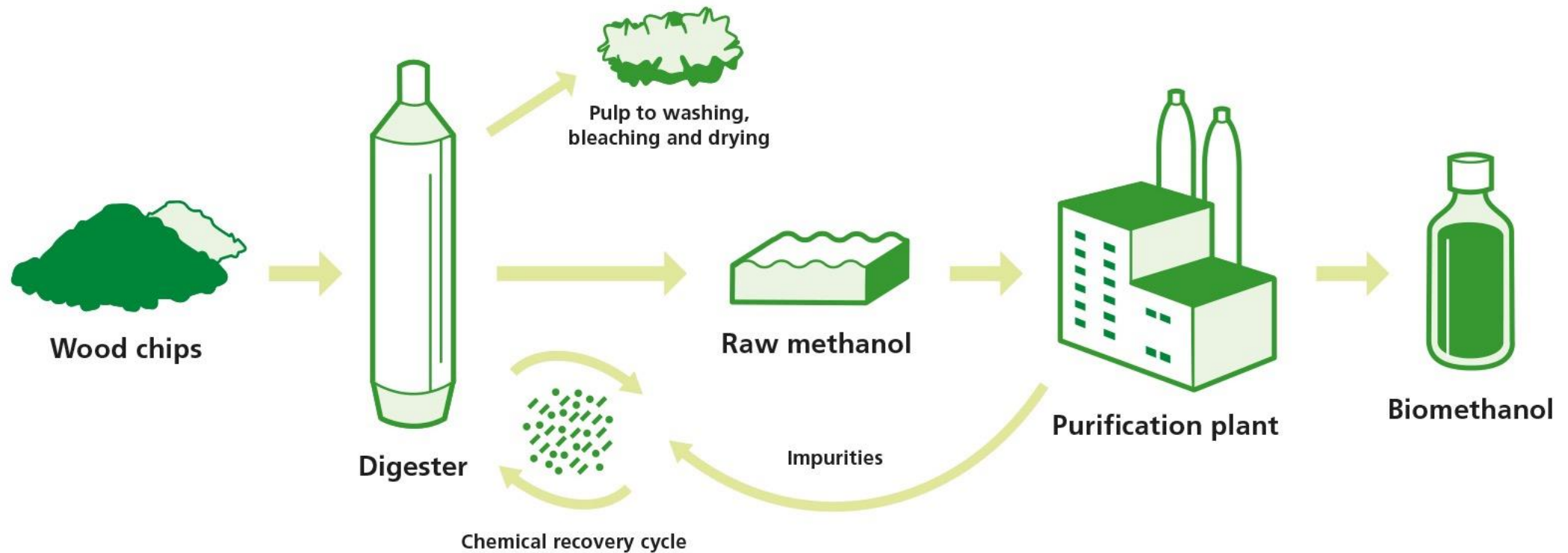
Biomethanol – The worlds first plant



Methanol is formed in all Kraft processes around the world



Södra's biomethanol process





Saves 94% GHG emissions

Fuel	g CO ₂ eq/MJ
Diesel	95
Gasoline	93
Renewable Diesel (HVO100)	22
Biodiesel (FAME100)	25
Ethanol (E85)	33
Biogas (70/30%)	20
Liquid Forest™ Biomethanol	5.3

Tannin from Södra



What's tannin?

- Polyphenol oligomers and polymers present in plant tissues
 - Protects the plant against herbivores and parasites
- The astringency from the tannins is what causes the dry and puckery feeling in the mouth when drinking red wine or tea, or eating an unripened fruit
- Used for hundreds of years in the process of tanning hides to leather using bark from various trees
- Tannin is great at binding to amino acids/proteins and other organic compounds



Södra in Värö

Start-up year: 1972
Pulp capacity: 750,000 tonnes/year
Sawn timber cap: 610,000 m³/year
Raw material: Spruce and Pine



Tannin from Södra

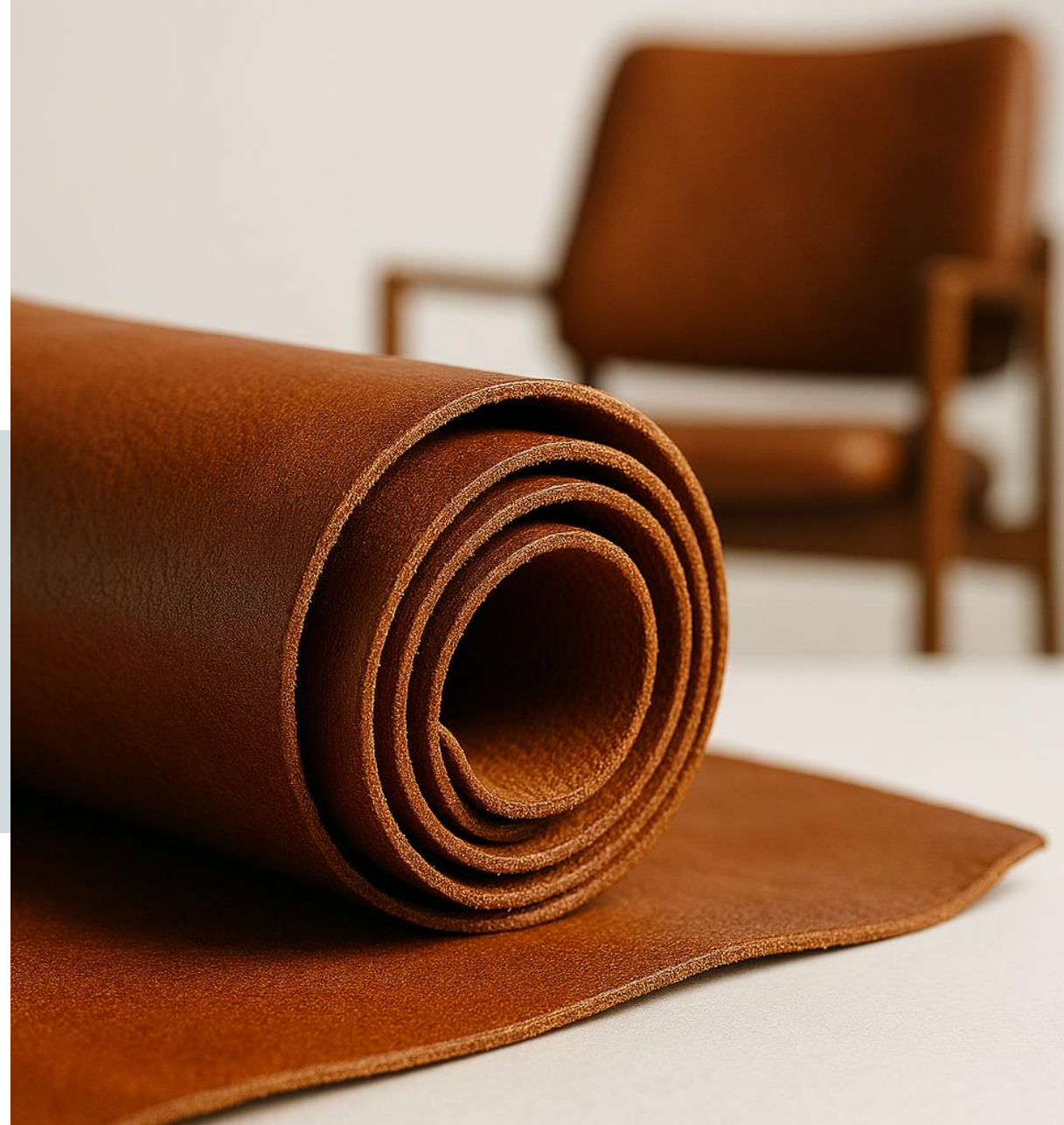
No Additives

Natural derived from the current industrial process

Low CO₂ emissions

100% traceability of origin

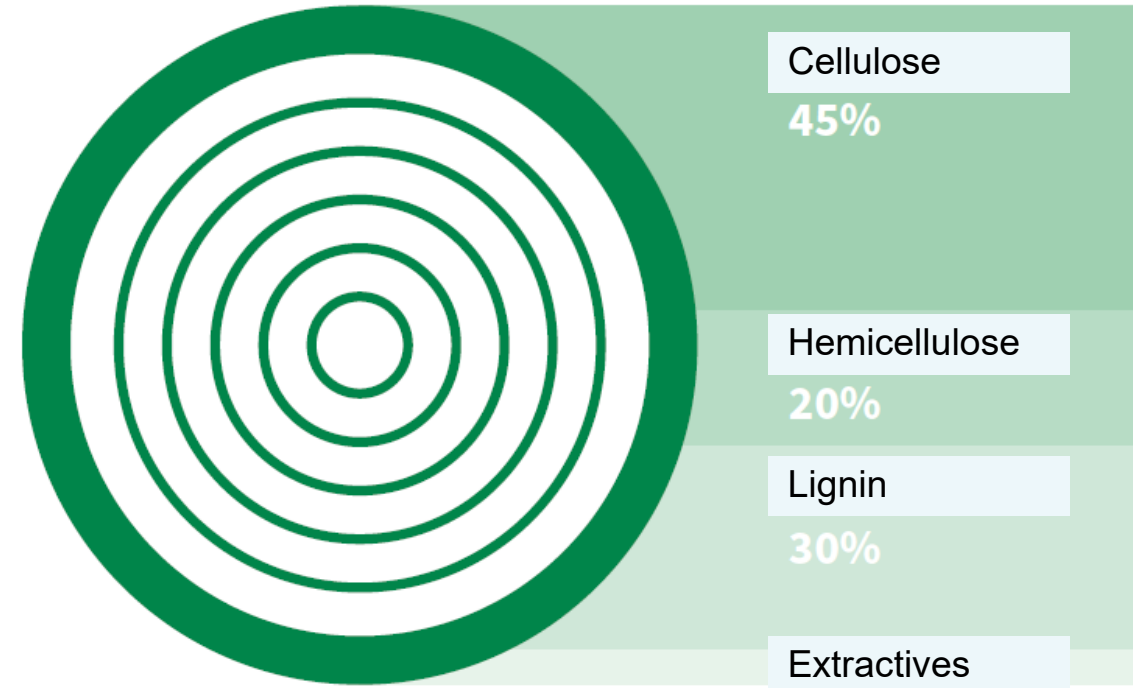
FSC and PEFC certification



Lignin – A bond for the future

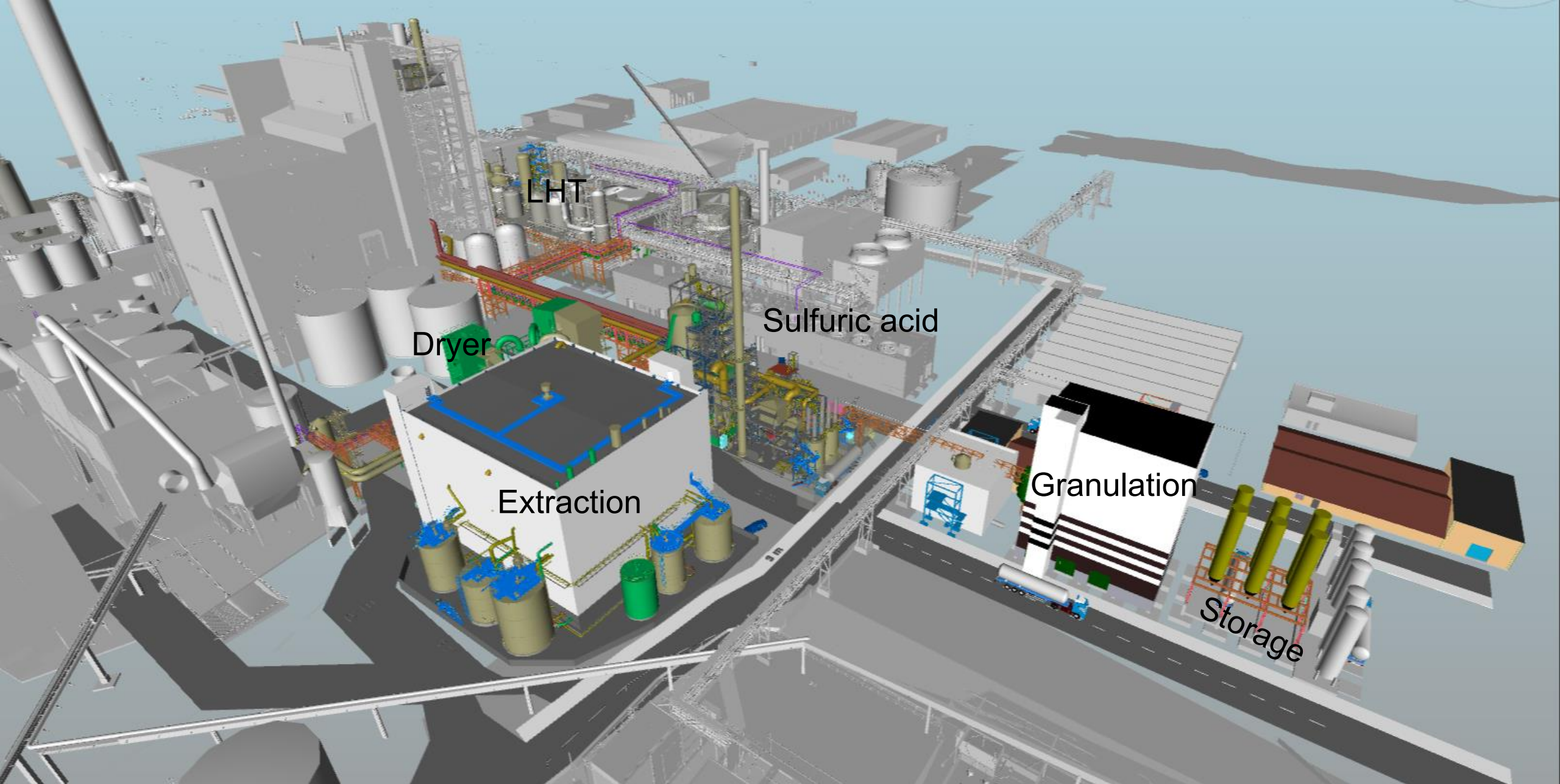
What's lignin?

- All biomass (trees, grass etc.) consist of cellulose, lignin and hemicellulose.
- Lignin (15-35%)
 - The bonding part of the tree
 - Strength and the typical hard structure
 - Transport water and nutrients in the tree
- Lignin is a degraded macromolecule made out of phenolpropane units



Mönsterås: a combined pulp- and sawmill

750,000 tonnes paper pulp
400,000 m3 sawn timber
Regional office
Port
Wind power



The product

A granule: 1-4 mm



The lignin application space

- Increased focus on usage of renewable carbon in existing value-chains
- The largest application for kraft lignin is resins
- Many applications are growing
- Future growth also in high-end applications



Conclusion

Everyone likes the forest

- Responsibly managed forest is a must
- The competition increases and new uses are coming up
- Do more from the same raw material basket
- From Södra you will find Tannin and Lignin on the market in the near future