

23.8.2023 | REETTA STRENGELL

Kartonkikemikaalit ja lisäaineet – Hiilijalanjäljestä kädenjälkeen

23.8.2023 FIBERTECH 2023 SAVONLINNA

Content

- Kemira as a company
- Our role in fiber-based materials
- Our approach to sustainability
- Carbon footprint in additives in paper and board





We are global

Pulp & Paper
Industry & Water

2022
REVENUE

€3.6B

2022 OPERATIVE
EBITDA

€572M

MARGIN 16%

SALES TO

100+

Countries

NUMBER OF
EMPLOYEES

~5,000

Worldwide

Our role in fibre-based materials

WHITENESS AND BRIGHTNESS

Pulp bleaching

FORM AND STRENGTH

Retention, drainage, and strength

SAFETY AND HYGIENE

Microbial control for raw materials, processes, and end products

USABILITY AND FUNCTIONALITY

Sizing for hydrophobation, barriers for oil, greese, and moisture, surface additives, and colorants

BOARD MACHINE HOUSEKEEPING

Deposit control, foam control

WATER QUALITY AND QUANTITY MANAGEMENT

Water treatment for raw water, internal process water, and wastewater

Packaging & Board Tissue

40%

Pulp

45%

Printing & Writing

15%



MARKET POSITION

#2

WORLDWIDE

€2.03B

2021 REVENUE

55%

OF KEMIRA REVENUE



Global megatrends favor Kemira



Increased use of water, hygiene products, packaging and board



Higher need for chemical solutions that improve energy, water and raw material efficiency.



Stronger demand for water treatment and alternatives to fossil-fuel based solutions.

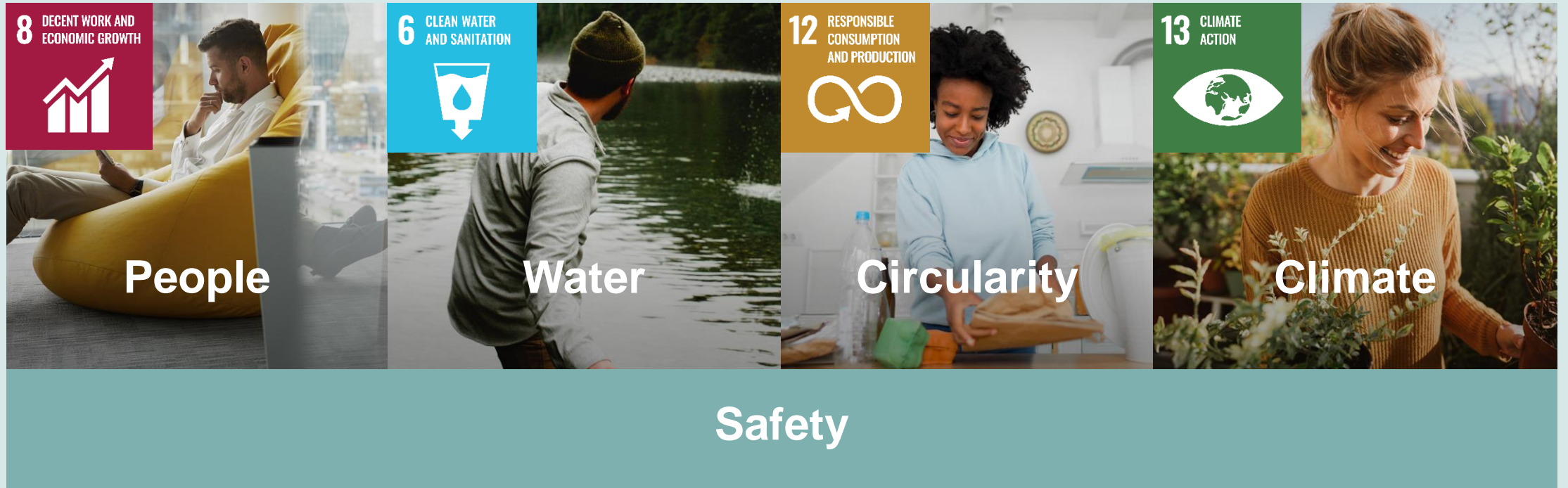
GROWING ENVIRONMENTAL AWARENESS

CHANGING DEMOGRAPHICS








Chemistry with a purpose. Better every day.

We share the worlds future ambition articulated in the
UN Sustainable Development Goals (SDGs).



Sustainability can be measured

We don't want to stop at the pledge. For us, sustainability needs to be measured. In that way, our sustainability transformation will become visible.

 <p>PEOPLE</p> <p>Our employees drive our sustainability transformation. A diverse and inclusive culture enables us all to bring our best selves to work every day.</p> <p>KPI: Reach top 10% cross industry norm for Diversity & Inclusion by 2025</p>	 <p>WATER</p> <p>We believe in clean water and sanitation for all. Our actions set the example for world class water management.</p> <p>KPI: Improve water management to Leadership level based on CDP Water Security scoring methodology by 2025</p>	 <p>CIRCULARITY</p> <p>We set sustainability at the center of every design. Our sustainable chemistry and digital solutions accelerate the circular- and bio-economies.</p> <p>KPIs: Reduce disposed production waste intensity by 15% by 2030. Biobased/renewable products >500 million EUR revenue by 2030.</p>	 <p>CLIMATE</p> <p>We cut our climate impact throughout our value chain. Clean energy and processes will support our ambition to go carbon neutral by 2045.</p> <p>KPIs: Scope 1&2 emissions -50% by 2030.</p>
 <p>SAFETY</p> <p>We prove that a safe business is a sustainable business. Safety of people, products & processes and the environment is the foundation of everything we do.</p> <p>KPIs: TRIF 1.5 by 2025 and 1.1 by 2030.</p>			

Kemira vision on sustainable chemistry

We want to ensure profitable growth by becoming the leading provider of sustainable chemistry solutions for water-intensive industries.

<p>CURRENT REVENUE 2022</p> <p>>250 MEUR</p> <p>From biobased products</p>	<p>TARGET REVENUE IN 2030</p> <p>>500 MEUR</p> <p>From biobased products</p>
<p>CURRENT SHARE</p> <p>20%</p> <p>Of renewable carbon of all carbon containing raw materials</p>	<p>TARGET SHARE IN 2030</p> <p>40%</p> <p>Of renewable carbon of all carbon containing raw materials</p>

KEMIRA'S FOCUS IS ON THE SOLUTIONS OF TOMORROW

Future offering aims at sustainable transformation

Kemira patents and trademarks support commercialization of new concepts and enable competitive edge in the market.

			
<p>OPTIMIZING PROCESSES</p> <p>Kemira KemConnect™ Predictive Wet End</p> <p>KemConnect™ PT</p> <p>Kemira FlytoLite™</p>	<p>RECYCLABLE AND REPULPABLE PAPER AND BOARD PACKAGING</p> <p>FennoGuard™ GO</p>	<p>STRENGTH AND LIGHTWEIGHTING TECHNOLOGY FOR FIBER BASED PACKAGING GRADES</p> <p>EcoBond™</p> <p>FennoBond™</p>	<p>SUNFLOWER OIL FOR RENEWABLE SIZING</p> <p>FennoSize™ MO</p>

The mix of products and raw material sources requires large amounts of primary data

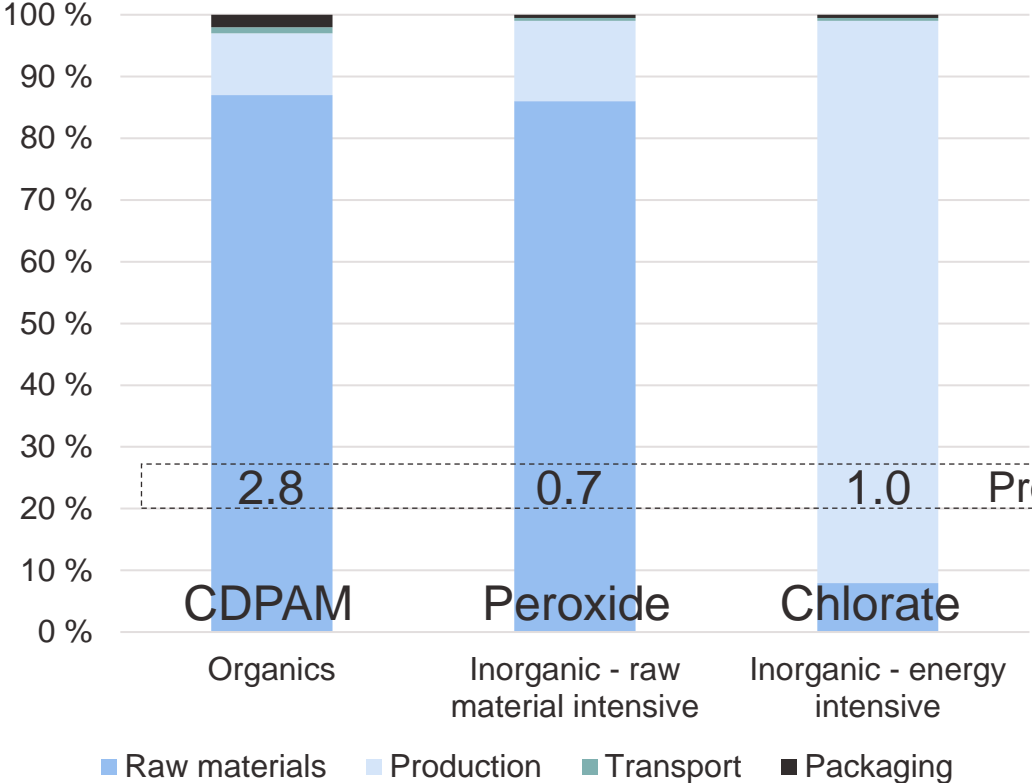
Strategic claim: *We want to become the leading provider of sustainable chemical solutions for water-intensive industries.*

How do we reach this?

- Building upon our well established product carbon footprint (PCF) portfolio
- Supplier engagement for high quality primary data
- Strong life-cycle assessment (LCA) capabilities
- Making results available to value chain partners and utilization in innovation activities

Carbon footprint of Kemira products and solutions come from supply chain

Product carbon footprint of different product groups, typical example values



- **Cationic DPAM:** Footprint depends on raw material composition. Production methods also impact
- **Hydrogen peroxide:** Footprint depends on production of hydrogen raw material
- **Sodium chlorate:** Footprint depends on emission profile of purchased energy source, regional emission free energy options become a competitive edge

When comparing footprints of products, it is important to understand the related uncertainties. Comparison without knowledge of details, can result in wrong conclusions.

MAIN SOLUTIONS TO REDUCE CARBON FOOTPRINT

Substituting raw materials and focusing on emission free energy

New sustainable raw materials and emissions free energy

Organics:

- Renewable feedstocks
- Biomass-balanced products
- New innovative chemistries

Inorganics:

- By-products, sidestreams and recycled raw materials
- Emission free energy

<p>500M€ in biobased products revenue by 2030</p>	<p>-50% target for scope 1&2 emissions reductions by 2030</p>	<p>41% Of raw materials come from by-products today</p>	<p>68% of total global energy use is emission free today</p>
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2/3/2022 - PRESS RELEASE

Kemira celebrates breakthrough in the production of biobased water-soluble polymers

Kemira Oyj, Press Release, February 3, 2022 at 13:30 (EET)

Kemira celebrates breakthrough in the production of biobased water-soluble polymers

12/17/2020 - PRESS RELEASE

Kemira and DuPont Nutrition and Biosciences partner for development and commercialization of new breakthrough biomaterials

Kemira Oyj, Press release, December 17, 2020 at 2 pm (EET)

Kemira and DuPont Nutrition and Biosciences partner for development and commercialization of new breakthrough biomaterials

Kemira announces exclusive partnership with Danimer Scientific to develop biodegradable coating for paper and board industry

Kemira Oyj, Press release, December 8, 2020 at 1:15 pm (EET)

Kemira announces exclusive partnership with Danimer Scientific to develop biodegradable coating for paper and board industry

2/12/2021 - PRESS RELEASE

Kemira signs a new wind power deal to further reduce GHG emissions

Kemira Oyj, Press Release, February 12, 2021 at 12:00 pm (EET)

Kemira signs a new wind power deal to further reduce GHG emissions

RENEWABLES ARE A VIABLE SOLUTION BUT DO NOT AUTOMATICALLY EQUAL TO SUSTAINABLE

Reducing the carbon footprint of chemistry with renewable solutions

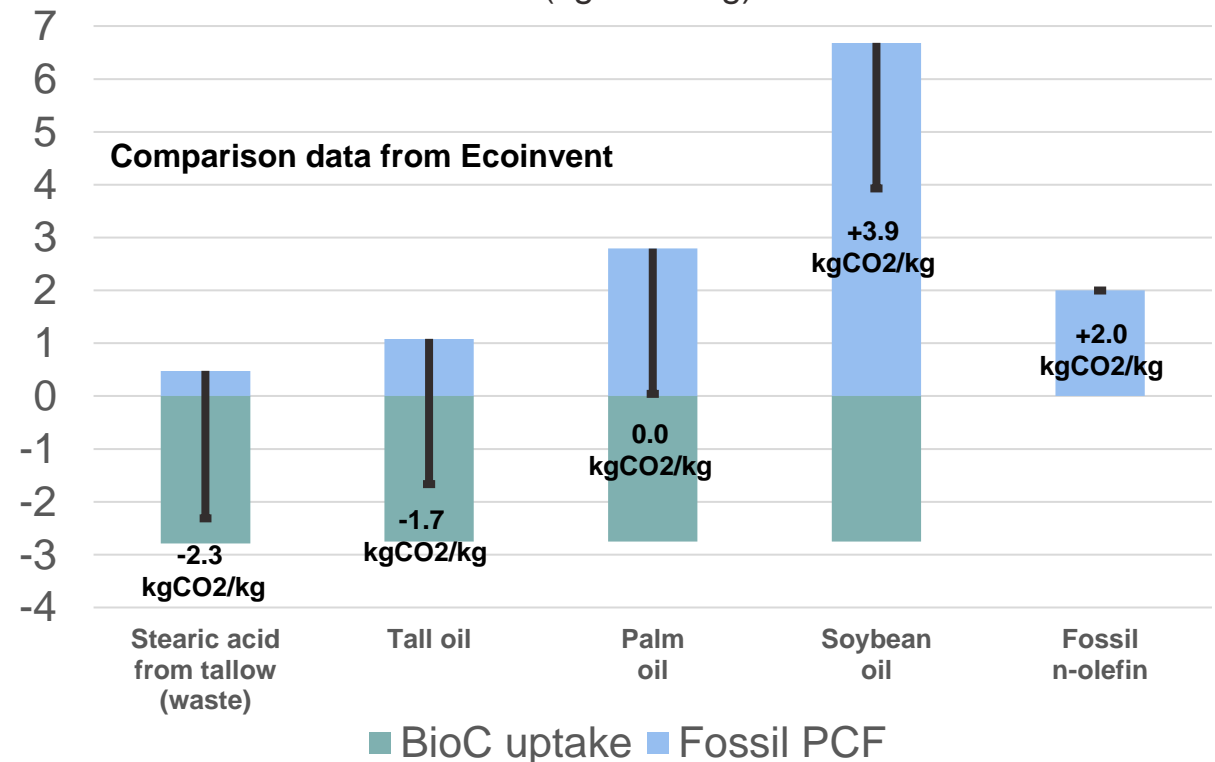
Raw material **emission factors** are major source of uncertainty and show variation depending on region

- Primary data from suppliers preferred vs Ecoinvent or other databases

In some cases renewable materials can have a very high footprint

- **Kemira strives to focus on renewable sources where the carbon footprint is clearly lower than the fossil alternative**

Fatty acid vs. Fossil n-olefin carbon footprints
(kgCO₂e/kg)

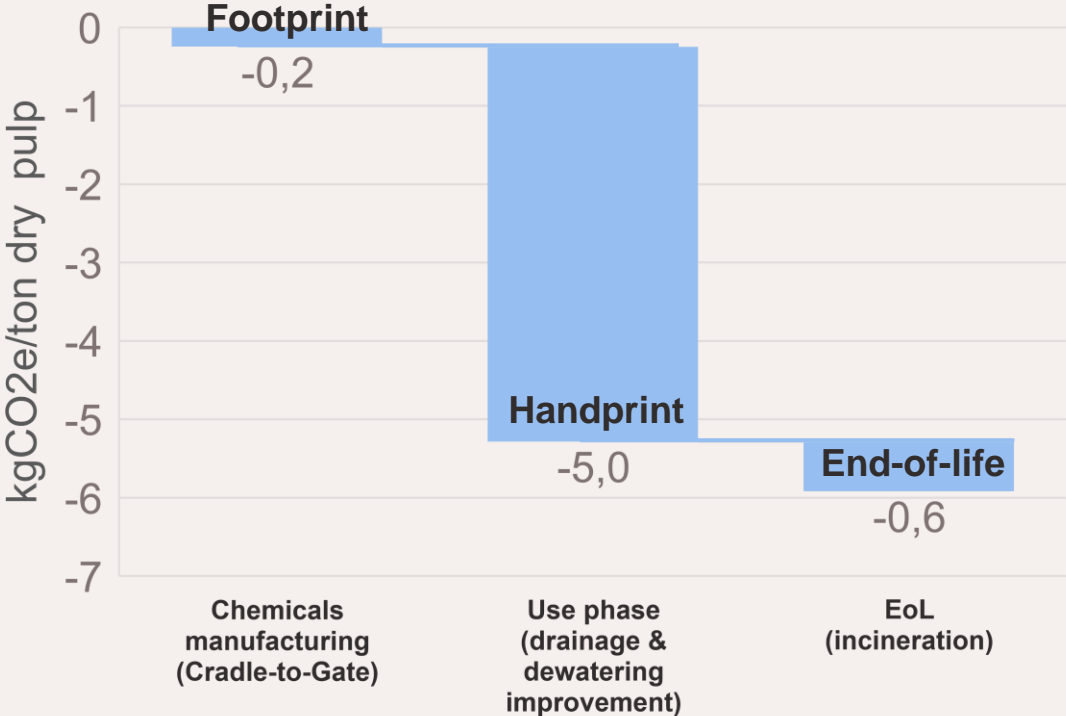


THE TRUE SUSTAINABILITY OF A PRODUCT IS MEASURED THROUGHOUT THE LIFECYCLE

Novel engineered renewable chemistries can bring major benefits and new EoL features



GHG emission avoidance (kgCO₂e/t dry pulp) of RCF furnish drainage & dewatering





Thank you!

kemira

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