

Innovasjon i Borregaard

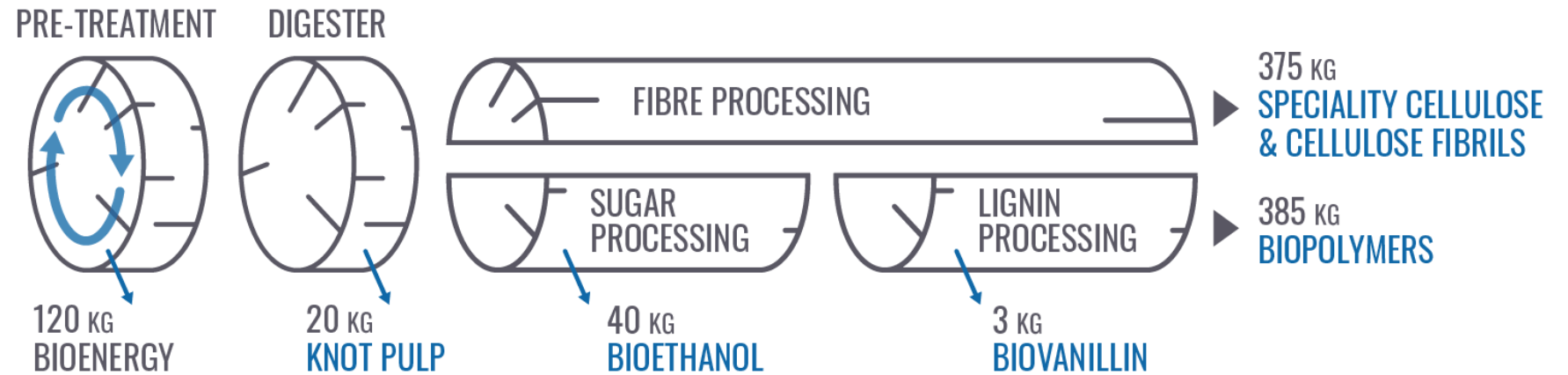
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One of the world's most advanced biorefineries

1000 KG
WOOD



94%
UTILISATION



A wide range of end applications



The specialisation strategy



Specialisation in global niches



Competence is the main competitive advantage



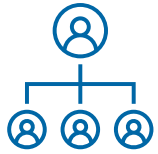
Strong innovation efforts and continuous improvement

- Business driven innovation model that involves the entire organisation
- Continuous productivity improvement through more efficient organisation, competence development and smart use of technology



Sustainability – key decision criterion to innovation and new initiatives

Market driven innovation



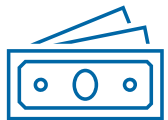
Innovation Management Teams (IMT)

- Interdisciplinary team
- Strategic projects



97 employees in R&D and innovation

- R&D centres in Norway, USA and India



Significant R&D and innovation efforts

- 2024: NOK 229 million (≈3% of revenues)



~14% of Borregaard's revenues in 2024 came from new products



Our innovation focus

Application-oriented innovation



Crop protection, plant nutrition, feed

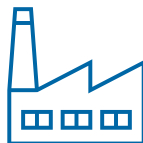


Batteries, pigments, inks, home care and resins



Concrete, coatings, packaging

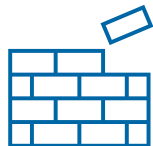
Process-oriented innovation



Process improvements
Capacity, quality, sustainability



Cellulose Acetate
Purity



Cellulose ethers
Viscosity

Business development

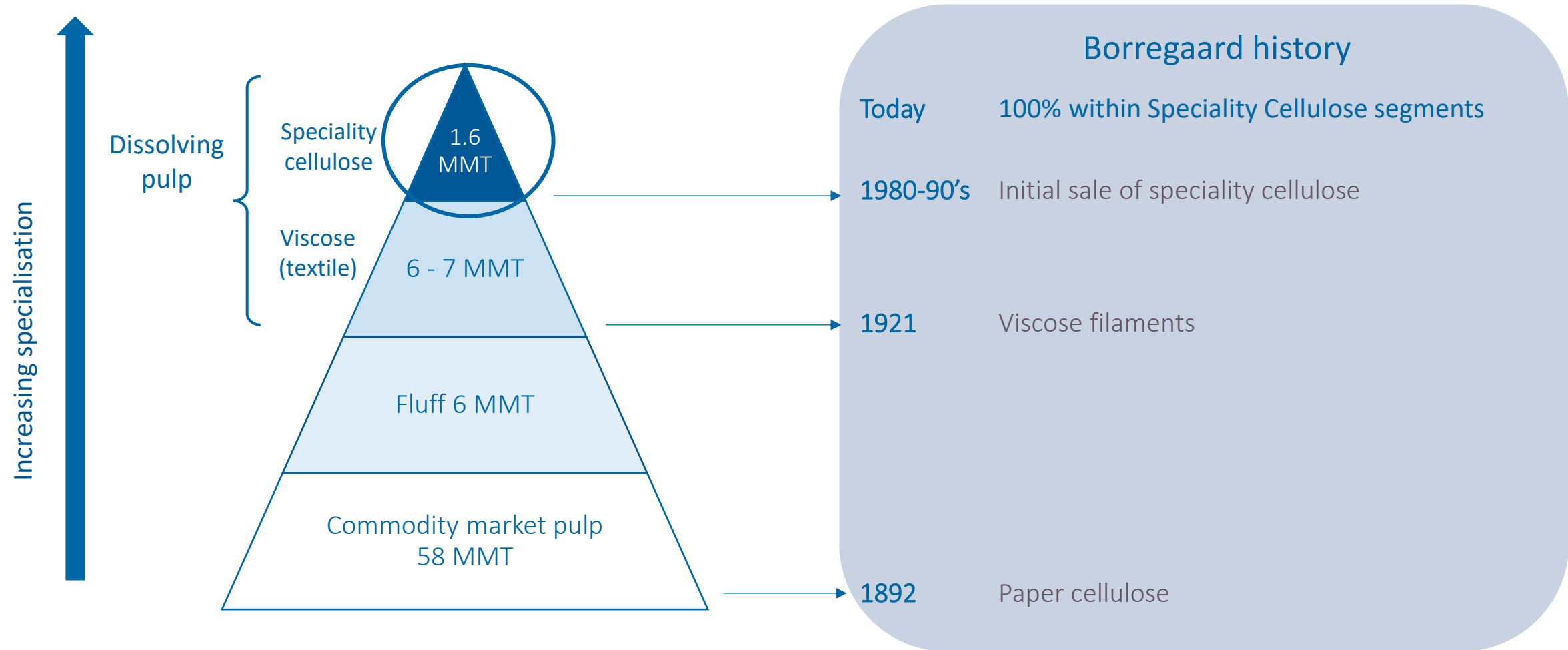


Disruptive innovation
New processes and products

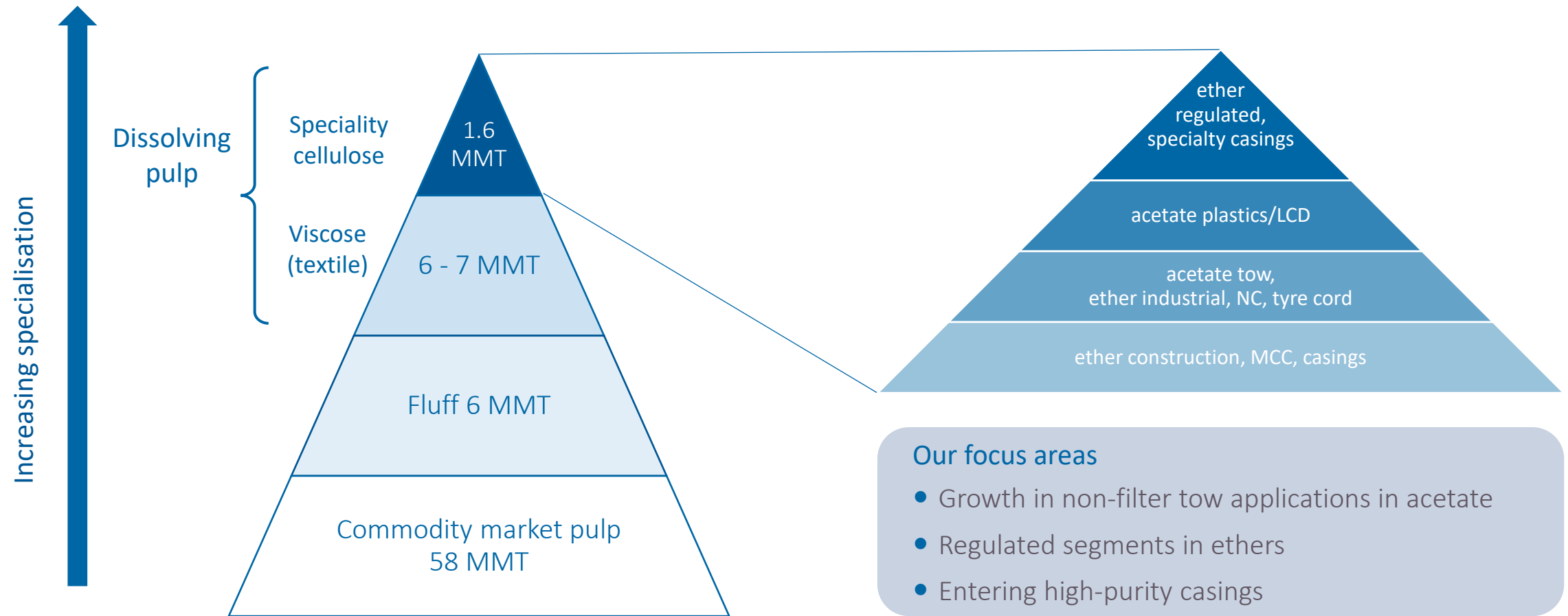


Bio-based investments
Investing for the long term

Borregaard in the global cellulose market



Borregaard specialisation strategy: Speciality cellulose





Ice Bear: Driving high-value product portfolio



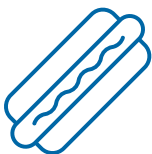
Technology

- High purity speciality cellulose
- Development project since 2012, lab to full scale
- Several investments for increasing capacity
- Crucial: Close collaboration across the organisation



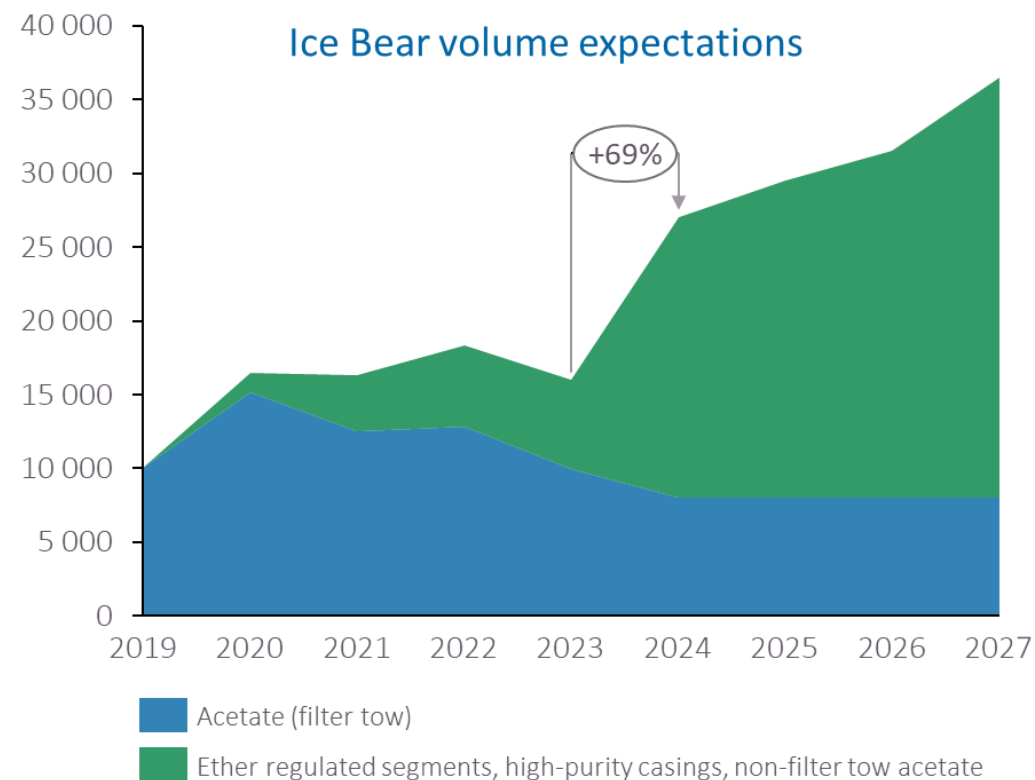
Cellulose acetate

- Significant market share growth within bio-based plastic



Viscose specialties

- ICE Bear commonly used in cellulose-based sausage casings
- Growth in high-purity casings



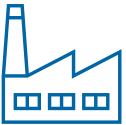
Ramp-up of Ice Bear production based on market demand

Cellulose fibrils: The bio-based problem solver



Network of micro fibrils with large surface area

- Improves flow, stability, flexibility and strength in industrial formulations and materials



Large scale plant with 1,000 tonnes dry capacity

- Operational since 2016
- Products: 2% or 10%



Applications

More than different 30 applications: Coatings, adhesives, agriculture, construction, home care, personal care

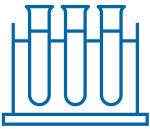


LignoBrite: Bio-based cleaning booster



Natural polymer backbone

Modified lignin-based polymer from sustainably managed Norway spruce



Unique features

Enables Borregaard to compete with advanced fossil-based polymers like e.g. polyacrylates



Dish washer

Anti-filming and -spotting agent
Reduces film in auto dish



Laundry

Anti-redeposition
Boosting cleaning performance in laundry



Laundry detergent commercially launched!

Kiilto and Borregaard have worked closely together on launching a sustainable laundry detergent for the professional market, including LignoBrite. Look for Kiilto Pro Textile Wash.



Questions?



Thank you!

