Business model, businesses & strategy

February 2021



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Business model & strategy Borregaard is a global leader in biochemicals

High value added through full raw materials utilisation Borregaard's biochemicals are sustainable and environmentally friendly substitutes for petrochemicals





30% LIGNIN (BINDING MATERIAL)





Business model & strategy Operates one of the world's most advanced biorefineries

Integration models: Own integrated Partner integrated Independent



SPECIALITY CELLULOSE Construction materials Filters Inks and coatings Casings Food/pharma/personal care Textiles	CELLULOSE FIBRILS Adhesives Coatings Agricultural chemicals Personal care Home care Construction	BIOPOLYMERS Concrete additives Animal feed Agrochemicals Batteries Briquetting Soil conditioning	BIOVANILLIN Food and beverages Perfumes Pharmaceuticals	BIOETHANOL Biofuel Disinfectants Pharmaceutical industry Home and personal care products Paint/varnish Car care
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Integrated production system serving diverse markets

Borregaard

Business model & strategy Global niche player with a market driven organisation



BioSolutions (57%¹)

Largest supplier, technology leader in lignin-based biopolymers with global markets, only producer of wood-based vanillin

BioMaterials	
(33% ¹)	

Leading global speciality cellulose supplier, pioneer in cellulose fibrils

Fine Chemicals (10%¹)

Leading producer of fine chemical intermediates for contrast agents, significant producer of 2nd generation bioethanol



Market driven organisation

- ~120 FTEs strong sales/technical service organisation
- Dedicated sales force for each business unit
- ~90% of sales handled through own organisation



Business model & strategy The specialisation strategy

Specialisation in global niches

- Markets with high barriers to entry
- Leading market positions through application knowledge and proximity to markets
- Diversified market strategy and global market positions secure maximum flexibility

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

Competence is the main competitive advantage

- Competence differentiates Borregaard from the competitors
- Combination of competences in sales & marketing, R&D and production



Business model & strategy Strategic priorities

Specialisation and diversification within BioSolutions

- Specialisation through innovation and market development
- Balance market risk through diversification of product portfolio
- Timing of further volume expansion guided by demand development and profitability

Increased value added from the unique Sarpsborg biorefinery

- Leverage high-value lignin raw material base in biopolymers and biovanillin
- Enhance product mix in speciality cellulose and bioethanol
- Strong focus on innovation and productivity efforts

Development of the cellulose fibrils business

- Continued market development across multiple applications and geographies
- Timing of second step expansion guided by demand development

Sustainability

• Continued emphasis on ESG aspects along entire value chain

Business model & strategy Completed and ongoing strategic projects





Specialisation, diversification and growth within BioSolutions

- Florida plant (1st phase) started up mid 2018
- Upgrade and increased specialisation in Sarpsborg (2019)

Develop the unique biorefinery asset in Sarpsborg

- High-end bioethanol expansion started up in Q1-18
- Ice Bear capacity expansion completed end 2018
- Lignin upgrade/specialisation in operation from July 2019
- Wood based vanillin capacity expansion, completion 1H-21

Establish cellulose fibrils as a new business area

- Commercial-scale production facility completed in Q4-16
- Exilva market introduction ongoing



Sustainability Alignment with UN's Sustainable Development Goals



Sustainability Integral part of market offering

RAW MATERIALS



Natural, renewable, sustainable raw materials

Sustainable and certified wood

- Documentation
- PEFC¹⁾ and FSC¹⁾ standards
- Lignin raw materials from certified forests

PROCESSES



Efficient and sustainable production and value chain

Reduced emissions improve LCA²⁾

- Target based CO₂-reductions
 - Energy conservations
 - New/green energy sources
- Reduced emissions to water and air
- "Greener" logistical solutions

PRODUCTS



Sustainable biochemicals

Products add sustainability value to customers

- Climate: LCA²⁾ shows favourable GHG footprint
- Biobased: Natural raw materials preferred
- EHS³: Non-toxic, harmless products



2) Life Cycle Analysis



Sustainability Climate change – targets and rating



Science Based Targets for GHG emissions approved by CDP¹

- Targeted reductions in greenhouse gas emissions:
 - 53% by 2030
 - 100% by 2050
 - Base year = 2009
- Targets are in line with the ambitions in the Paris Agreement and the Norwegian Climate Law

Borregaard maintained a CDP 'A' rating in 2020

- Highlighted as a global leader in corporate climate action
- Achieved a place on the CDP Climate Change 'A List'
 - 9,600 companies reported to CDP in 2020
 - 270 (2.8%) were awarded an 'A' rating

¹ CDP: Global non-profit organisation that drives companies and governments to reduce their greenhouse gas emissions, safeguard water resources and protect forests



BioSolutions

Market position

- Largest supplier of lignin
- Only supplier of wood based vanillin
- Unique technical and application expertise

Production

• Norway, USA, South Africa*, Germany, Spain*, Czech Republic, UK

Applications

- Concrete admixtures
- Gypsum board
- Ceramics
- Animal feed
- Agro chemicals
- Soil conditioner
- Oil field chemicals
- Batteries
- Flavours & fragrances
- Personal care and pharmaceuticals

Key attractions

- A sustainable and broad product portfolio
- Large and diverse customer base
- High barriers to entry



BioSolutions Biopolymers: Lignin – a sustainable and flexible raw material

Product performance depends on the pulping process and the raw material

Sulphite pulping process

- Versatile lignin used in a variety of products/applications
- Quality depends on the chemicals base
- Water soluble
- Limited number of sulphite mills

Softwood (pine/spruce) vs hardwood and straw

• Softwood lignin has superior modification potential

Kraft (sulfate) pulping process

- Lignin is normally incinerated to recover energy and chemicals
- Not in water soluble form from the pulp mill
- Pulp producers are exploring potential for industrial use of kraft lignin





BioSolutions Diversity: Around 620 products to 3,000 customers

Properties	Applications
Binding agent	 Ceramics Dust solutions Feed Granulation aid
Dispersing agent/ rheology control	 Carbon black and pigments Concrete admixtures Dyestuffs Metals and minerals Micronutrients Plant protection and plant nutrition
Crystal growth control	BatteriesOil field chemicalsWater treatment
Functional additive	 Antioxidants Complexing agent Phenol replacement SoftAcid Soil conditioner UV protection
Flavours and fragrances	 Food Fragrances Personal care

Revenues by end-market and region¹⁾ Revenue by end-market (2020) Sales distribution (2020) RoW 2% Construction Chemicals/ 23% food/other 42% Europe Americas 35% 41% Agriculture Asia 35% 22% Top 10 and top 3 customers in % of revenues 50% 40% 30%



— Top 3 — Top 10



BioSolutions Current global lignin supply



Global lignin supply ~1 million mtds in 2021 (assuming South Africa and Spain not operating; Florida ramp-up)



BioSolutions Implications of reduced lignin raw material supply



- Lost volume is hardwood-based with limited potential for specialisation
 - Construction and Industrial low-end markets affected
- Construction a cyclical market with increasing use of oil-based alternatives to lignin, reinforced by a low oil price
 - Lignin offered in markets where its value is recognised
- Value-based diversification in Industrial markets
- Speciality markets not affected



BioSolutions Strategic priorities – key considerations



New supply situation - an opportunity to sharpen strategy

- Optimise value of biopolymers portfolio
 - Reduce exposure to low-end and cyclical markets
- Diversify based on value-added
 - Focus on advanced applications with high value-added, stable growth and preference for sustainable solutions
- Specialise through innovation and market development
 - Drive value growth based on expertise and sustainable solutions with unique performance



BioSolutions Industrial and Specialities



Industrial

- Significant global volume growth since 2015 across a wide range of applications
- Demonstrates capabilities in innovation, market development and sales
- Robust and growing customer and application base



Specialities

- Growth based on capabilities in innovation, application development and sales
- Lead acid batteries for automotive and industrial applications on steady growth path
- Increasing use of green alternatives in agrochemical applications, flavours and fragrances

BioSolutions Lignin applications, functionality and substitutes

				Value proposition:		
	Application	Functionality	Competing technologies	Green alternative	Cost/value vs. synthetics	
	Batteries	Crystal growth control	Few	\checkmark	\checkmark	
	Oil field chemicals	Dispersant and binder	Synthetics	\checkmark	\checkmark	
	Plant protection	Dispersant	Synthetic surfactants	\checkmark	\checkmark	
	Plant nutrition	Soil conditioner / complexing agent	Humic acid, ethylenediaminetetraacetic acid (EDTA)	\checkmark	\checkmark	
ARE	Animal feed pellets	Binder	Starch residues, bentonite and mechanical compacting	~		
	Concrete admixtures	Plasticiser	Naphthalene and melamine sulfonates, polycarboxylic acids	\checkmark	\checkmark	



BioSolutions Lignin in agriculture

	Plant nutrition	Plant pro	otection	
Micro-nutrients (Zn, Fe, Cu, Mn)	Soil conditioners (source of organic carbon)	Macro-nutrients (N, P, K, S)	Pesti (dispe	cides ersant)
Complexing agent	Nutrient use efficiency	Basic nutrients	Water-based	Solvent-based
\checkmark	\checkmark	×	\checkmark	×
	Bin	der for feed, granulation aid f limestone and fertilisers	or	



BioSolutions Lignin in lead acid batteries

Conventional vehicle	Micro-hybrid	Hybrid	Electric vehicle
\checkmark	\checkmark	\checkmark	\checkmark
Flooded battery as start battery	Absorbent Glass Mat (AGM) and Enhanced Flooded Battery (EFB) as start/stop battery	AGM and EFB as start/stop battery	Flooded battery for hotel function ¹⁾
Fuel for motion	Fuel for motion	Fuel/NiMH/lithium ion for motion	Lithium ion for motion

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Automotive:

Other:

BioSolutions Concrete admixture formulation preferences



- with captive synthetic products
- Regional and local formulation preferences
- Climate influences formulation

Sources: Global Cement Magazine, www.statista.com, www.polygongroup.com, Chemistry World, www.grandviewresearch.com, Deutsche Bauchemie, Association of Building Chemistry Producers, European Federation of Concrete Admixtures Associations, www.futuremarketinsights.com, Borregaard estimates



BioSolutions Sustainability - competitive edge

Capitalise on Borregaard's biorefinery model and biobased solutions

- Replace fossil raw materials
- Documented favourable environmental footprint
 - Wood-based biopolymers
 - 2nd generation feedstock
- LCA Life Cycle Analysis
- EPD Environmental Product Declarations





BioSolutions Sustainability - competitive edge in use

Plant nutrition – favourable environmental footprint

- Borregaard's biopolymers the sustainable alternative to synthetics for formulating micronutrients
- High efficiency, lower dosage
- 90% reduction in CO₂ emissions compared to synthetics

Resins – sustainable replacement for petrochemicals

- Significantly increases the renewable content in resins
- >65 % reduction CO₂ emissions per feedstock unit

Animal feed additives - alternative to antibiotics

- Alternative to antibiotic growth promotors
- Less corrosive and safer to handle than organic acids in pure form
- Patented SoftAcid® technology







BioSolutions Innovation strategy

Priorities

- Specialisation and diversification
- High value applications
- Unique, tailor-made solutions
- Increase value of Florida product portfolio

Competitive edge

- Unique competence base
- Diverse raw material base and advanced technology
- Sustainability





BioSolutions Innovation - introducing novel products

Plant protection – opportunities in water-based formulations

• New products for water-based formulations, the fastest growing segment in plant protection

Batteries – unique product performance

- New organic expander for improved charging commercialised
- Proven performance in existing (AGM¹) and new (EFB²) battery technology, including automotive start/stop function

Oil field chemicals - launch of the BioDrill product line

• New, high performing, sustainable product for water-based drilling muds







BioSolutions LignoTech Florida



The venture

- Located at Rayonier Advanced Materials' (RYAM) Fernandina Beach softwood sulphite pulp mill
- Borregaard (55%) and RYAM (45%) ownership
- Borregaard's know-how and technology

Expansion project in two phases

- Phase one (2018) represents 100,000 mtds capacity, investment USD 110 mill.
- Phase two will give additional 50,000 mtds, investment USD 25 mill.

New plant officially opened 26 June 2018

- Investment completed on time and cost
- Production commenced in June

Commercialisation

- Diversified product and application portfolio established
- Sales volume developing according to plan



BioSolutions Update on Sarpsborg lignin investment programme

500 mNOK capex, 70% expansion/30% replacement

- Additional dryer with packaging capacity
- Tanks for storage of liquid materials
- Improved solutions for logistics, infrastructure and energy
- In operation from July 2019
- Capex ≈10% below budget

Several benefits

- Further specialisation on a unique raw material base
- Reduced exposure to cyclical market segments
- Optimisation of production campaigns, internal and outbound logistics
- Substantial environmental and safety benefits

Annual cost savings >40 mNOK expected

- Gradual realisation through 2020
- Full impact from 2021





BioSolutions Positive trend for Borregaard's wood-based vanillin

	Vanilla beans	Plant based vanillin			Oil based vanillin & ethyl vanillin		
	1	A second	JA P				
Raw material	Beans	Ferulic acid from bran/straw	Eugenol from clove	Lignin from wood	Guaiacol from creosote/tar	Guaiacol	Guethol
Key selling points	Natural/ flavour profile	Plant based/natural raw material/sustainability /flavour profile		Pri	ice		
Sales volume (MT) ¹⁾	≈2400 ²⁾		≈2000			≈15 000	≈5 000
Indicative price level USD/kg ¹⁾	≈350	≈400 25 - 100			10 -	- 15	
# of manufacturers ¹⁾	1000+	5	4	1	3	3 - 5	5
Growth ¹⁾		≈10%			≈1	.%	

1) Company estimates



2) Cured vanilla pods contain around 1-2% vanillin, corresponding to around 25 – 50 MT on pure vanillin basis

BioSolutions Biovanillin - well positioned for growth

Strong demand growth for plant-based vanillin

- Consumer preferences
- Sustainability

Competitive edge

- Global market leader in plant-based vanillin
- Attractive flavour profile
- Unique raw material base
- Certified spruce wood, sustainable forestry
- >90% reduced carbon footprint vs oil-based vanillin
- Cost competitive technology
- Capacity expansion ongoing





BioSolutions Capacity increase for wood based vanillin

- Capacity increase at least 250 tonnes
 - Part of the increase will be gradually realised during construction phase
- Construction started 2H 2019, completion 1H 2021
- Debottlenecking of existing facility
- Capex NOK 130 million







Market position

• Strong positions in Europe and Asia within high-end niches

Production

• Sarpsborg, Norway with capacity of 160,000 mt

Focused applications	Market growth ¹⁾
• Ethers	3-4%
• Acetate	-2-0%
Nitrocellulose	0%
• Casings	3-4%



High quality speciality cellulose with strong niche positions



BioMaterials The speciality cellulose market - 2020



1) Million metric tonnes

Source: Borregaard estimates, Celco market reports, RISI 2020

All figures in cellulose tonnes - wood pulp and cotton linter pulp/refined cotton. Dissolving pulp figures do not include fluff and (modified) paper pulp

Borregaard

BioMaterials Speciality cellulose market

Speciality cellulose demand 2019 (1.6 million mt¹⁾)



	Segments	Applications	Market size '000 mt (2019)	Annual growth 2019-2023
	Acetate	Cigarette filters, plastics, LCD, yarn	550	-2-0%
Highly specialised	Ethers ²⁾	Construction, coatings, food, pharma, personal care	480	3-4%
	Speciality paper	Automotive filtration, bank notes	60	1-2%
_	Tire cord	High-performance tire cords	60	3-4%
ties	Nitrocellulose (NC)	Coatings, printing inks, nail varnish, energetic grades	125	0%
er specialit	Microcrystalline cellulose (MCC)	Food, pharma	180	3-4%
	Cellophane	Food packaging	55	0-1%
Oth	Casings	Sausage casings	55	3-4%
	Sponges	Sponge cloths	20	1-2%

Source: Celco market reports, RISI and Borregaard estimates $^{1)}\mbox{Metric tonne}$

²⁾Cellulose ether capacity excl. technical grade CMC

BioMaterials Speciality cellulose suppliers

- 12 players supplying 1.6 million mt speciality cellulose
- Top 4 players (Rayonier Advanced Materials, G-P Cellulose, Bracell and Borregaard) have 90%¹⁾ market share
- Top 4 players use textile and fluff markets as capacity filler
- Limited volumes from viscose pulp producers into speciality segments due to barriers to entry



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BioMaterials Speciality cellulose industry

- Speciality cellulose market is approximately 1.6 million mt
- Top 4 speciality cellulose producers have 90% market share and use hardwood and softwood as raw material
- In addition, there are a few cotton linter pulp producers supplying this market
- Main end-uses for speciality cellulose include acetate and ether, accounting for more than 60% of the market

Top 4 speciality cellulose producers by wood species and pulping process

	Hardwood/ kraft	Softwood/ kraft	Hardwood/ sulphite	Softwood/ sulphite
Rayonier AM	\checkmark	✓		✓
Georgia-Pacific		\checkmark		
Bracell	\checkmark			
Borregaard				\checkmark







BioMaterials Cellulose ethers overview

Borregaard supplies speciality cellulose wood pulp to cellulose ether producers

The three main products manufactured by the ether producers are:

- Methyl cellulose derivatives (MC, MHEC, MHPC)
- Carboxy methyl cellulose (CMC)
- Hydroxy ethyl cellulose (HEC)

Almost all products are used as additives to modify the rheological properties of water-based systems





BioMaterials Cellulose ethers – solid growth and attractive opportunities

- In 2015-19, demand for ether pulp grew > 4% annually, expected at 3-4% going forward
 - Solid growth in all segments temporary setback due to Covid-19
- Top 6 cellulose ether producers represent approx. 50 % of global capacity
 - Major players are Dow, SE Tylose, DuPont, Ashland, Lotte and Nouryon
 - High concentration of producers and growth in Europe and Asia
 - 1/3 of global capacity is in China, mainly using cotton linters pulp and refined cotton as a cellulose source, except for non-GMO regulated products for Europe
- New cellulose ether capacity under construction in Europe and Asia
- Industry consolidation ongoing
- Borregaard well positioned for growth and further specialisation in close cooperation with key customers



Cellulose ether industry structure (total 480 kt ether pulp)





- Top 5 acetate flake producers represent >90% of global capacity (Celanese, Eastman, Daicel, Cerdia and NCFC)
- Borregaard supplies speciality cellulose wood pulp to acetate flake producers. In 2015-19, demand for acetate pulp declined 2% annually, expected at -2-0% going forward
 - Global cigarette consumption declining, China is the key market
 - 'Heat-not-burn' cigarettes (e.g. PMI IQOS) becoming popular, still small share
 - Growing concern for waste issues related to cigarette filters

Ice Bear is an enabler for entering non-filter tow applications

BioMaterials Ice bear – continued growth and new applications

Strategic initiative defending existing market positions and enabling further specialisation and flexibility within acetate

Ramp-up based on market demand and customer qualification

• Further growth projected in 2021-23 within several speciality applications

Stricter regulations and issues with fossil-based plastics driven by consumer trends creates opportunities for Ice Bear

- Acetate yarn and plastics are plant-based products
- End products can be tailored for biodegradability
- Joint product development with key customers

Further opportunities in ethers and tire cord





BioMaterials Speciality cellulose – sustainability driving growth

- Increasing demand for wood certification and sustainability assessments driven by current consumer trends
- Customers active in consumer goods applications (food, pharma and personal care) are very committed to sustainable sourcing of renewable or biodegradable raw materials – growing interest in all segments
- Water based paints with ether-based thickeners gained share over the last 20 years at the expense of solvent based paints driven by reduction of volatile organic carbons emissions by law
- Cotton is becoming increasingly controversial





BioMaterials Cotton linter pulp vs. speciality wood pulp

- Cotton linter pulp (CLP), a by-product from cotton farming, is an alternative raw material for cellulose based products like ethers and acetate
- Used "as is" or in blends with fluff pulp
- Where GMO-free is a must, CLP cannot be used
- Cotton's use of land, pesticides and water is increasingly controversial
- CLP has a significantly larger environmental footprint compared to speciality wood pulp
- Growing environmental concern among consumers may favour speciality cellulose produced from wood





BioMaterials Exilva cellulose fibrils

Global leader in micro-/nanofibrils

• Competitors in pilot plant or captive use phase

Large scale plant with 1000 tonnes dry capacity

- Use cellulose as raw material
- Zero emissions

Embryonic but fast-growing market

Product is a network of micro and nano fibrils with large surface area

• 1 gram covers a tennis court

Key benefits

- Improve and control flow
- Create a barrier or a film

More than 30 application areas

• From pharma to concrete





BioMaterials Cellulose fibrils – Exilva

- Microfibrillar cellulose (MFC) is cellulose fibers defibrillated into millions of tiny fibrils (100,000 times thinner than hair)
- Exilva is Borregaard's brand name for microfibrillar cellulose used in industrial applications
- Exilva is a sustainable biobased material with multifunctional properties
 - Improves flow, stability, flexibility and strength in industrial formulations and materials
 - Enables customers to develop new and improved products





BioMaterials Nanocellulose landscape

Three main product categories, with significant variations within each product group, few standards exist

- NCC/CNC nano cellulose crystals
- NFC/MFC nano/microfibrillated cellulose
- CNF ionic cellulose nano fibrils
- Typically more complementary than competing in use, some overlaps
- Crystals and ionic fibrils classified as nano by EU and USA (EPA), while NFC/MFC are not as they form micro clusters

One commercial size plant exists in each category

- NCC/CNC Celluforce, Canada
- NFC/MFC Exilva, Norway
- CNF Nippon Paper, Japan
- Many pilot plants with 5-30 mt capacity







NFC/MFC – rheology focus

CNF – composites focus



BioMaterials Exilva – growing pipeline and customer base

50+ regular customers

- Sales doubling year on year
- Good growth with key customers

More than 2000 active prospects

- Classified as a prospect when a sample is sent
- Net increase (adjusted for closed/lost) +50 per month
- >100 in plant trial phase
- Positive from lab trials + 400
- Long lead times/feedback; varies from 1-5 years, with 3 years average

Approx 650 prospects closed/lost

- No clear trends on technologies or applications
- <10% lost due to cost issues







BioMaterials Sustainability and performance driving demand

Moving from solvent based to water-based

• Exilva enables some coatings and adhesives to be reformulated to water-based systems without reducing performance

Replacing carbomers

- Carbomers are versatile acrylic copolymers used amongst other in personal and home care products
- Exilva can replace these in certain formulations

Removing or reducing the use of boron compounds

- Borons are classified as Substances of Very High Concern
- Exilva can replace boron in certain applications like adhesives for corrugated board

Enhancing strength of bioplastics

- Product strength is the main challenge
- Exilva can increase strength in some of these polymers





BioMaterials Sales distribution 2020

Borregaard is positioned in high-end segments in Europe and Asia, with strong and long-lasting customer relationships





Source: Borregaard estimates 1) Acetate, ether and tire cord grades



Fine Chemicals

Fine chemical intermediates

Market position

• Leading producer of intermediates for contrast agents

Production

• Sarpsborg, Norway

Products

- C3 aminodiols
- Intermediates for pharmaceutical products

Applications

- Contrast agents for medical imaging
- Medicines

Market growth¹⁾

• 5-7%

49





Bioethanol

Market position

• Leading producer of second-generation bioethanol

Production

• Sarpsborg, Norway

Products

• Pure and denatured bioethanol

Applications

• Biofuel, disinfectant, pharmaceutical industry, home and personal care products, paint/varnish, car care

Capacity

• 20 million liters

Fine Chemicals Sustainability

Favourable climate footprint



2nd generation bioethanol vs petroleum-based fuel

• Increased demand in different countries due to incentives





1) GHG emissions "cradle to grave", third party analysis based on ISO 14044/48

Innovation management Research & development

- ~18%¹⁾ of Borregaard's revenues come from new products²⁾
- Innovation Management Teams
- ~90 employees in R&D of which 67 at the research centre in Sarpsborg 28 have a PhD
- R&D and innovation spending 3.6% of revenues in 2020³⁾
- IP strategies for each BU and major innovation projects



Cellulose Fibrils: Exilva microfibrillar cellulose



«BALI»: Utilisation of various biomasses for lignin products



Continuous specialisation and improved products



Innovation management Business driven innovation model





Financial objectives Financial objectives and dividend policy

Financial objectives

- ROCE²⁾ >15% pre-tax over a business cycle
- IRR >15% pre-tax for expansion capex
- Average net working capital at 20% of operating revenues
- Replacement capex at depreciation level
- Maintain key financial ratios corresponding to an investment grade rated company
 - Leverage ratio¹⁾ targeted between 1.0 and 2.25 over time

Borregaard's dividend policy

- To pay regular and progressive dividends reflecting Borregaard's expected long term earnings, free cash flows and expansion capex
- Annual dividend is targeted between 30% and 50% of net profit for the preceding fiscal year





Financials Value creation since IPO



	CAGR
Share price, including reinvestment of dividend ¹⁾	30.1%
Enterprise value = market cap + net debt	22.5%



Financials Key figures 2015 – 2020





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1) Alternative performance measures – see Appendix

Key segment figures 2015 – 2020

Financials Key cost items 2016-2020

- Total costs in 2020 close to 4.2 billion NOK
- 4.9% CAGR from 2016 to 2020
- Main cost components' share of total costs relatively stable over time

Mood	 75%-85% sourced from Norway, the rest mainly from Sweden Annual price and volume contracts, mid-year adjustments occur Includes inbound logistics, ~30% of wood cost
Energy	 Energy consumption: Heat energy 2/3, electricity 1/3 Heat energy: Base load mainly covered by renewable energy sources, peak-load mainly covered by LNG and spot electricity Electricity: Long term contract to 2029 for substantial part of needed volume
Other CoM	 Chemicals¹⁾ and other raw materials like lignin raw material Internal production of caustic soda Contract manufacturing of petrochemical-based vanillin Change in inventories
Distribution costs	 Most products sold delivered customer Logistical optimisation important, especially for Performance Chemicals
Payroll expenses	 Continuous productivity improvement, including de-manning and cost reduction activities
Other	 Repair and maintenance, external services, rental/leasing and other operating expenses

Financials Sensitivity on EBITDA¹⁾

- Global presence, diversified product portfolio and GDPdriven demand reduce market risk
- Oil price affects demand and competition in certain markets, but main effect historically has been on NOK FX rate
- Significant FX exposure, softened by FX hedging²⁾ in the medium term
- No major single component in other cost of materials
- Distribution costs: Most products sold "delivered customer"
- Other expenses are repair and maintenance, external services, rental/leasing etc.

1) Alternative performance measure – see appendix

- 2) Hedging based on expected net cash flow (EBITDA)
- Base hedge 75%/50% on a rolling basis for 6/9 months for major currencies

- Extended hedge - 75%/50% of the next 24/36 months if USD and EUR are above predefined levels

FX impact and policy

Currency hedging strategy

- Purpose is to delay effects of currency fluctuations and secure competitiveness
- Hedging based on expected net cash flow (EBITDA¹)²⁾
- Base hedge 75%/50% on a rolling basis for 6/9 months for major currencies
- Extended hedge 75%/50% of the next 24/36 months if USD and EUR are above defined levels
 - EUR; gradually increased at effective rates from 9.25 to 9.75
 - USD; gradually increased at effective rates from 8.00 to 8.50
- Contracts ³⁾ 100% hedged
- Balance sheet exposure hedged 100%
- Net investments in subsidiaries hedged up to 90% of book value in major currencies

FX exposure

- Borregaard's revenues are primarily in USD or EUR, while costs are primarily in NOK
- Net FX exposure in 2019 USD: 65% (approximately 203 mUSD)
- EUR: 35% (approximately 98 mEUR)
- Other: 0% (GBP, BRL, JPY, SEK, ZAR)

Borregaard currency basket⁴⁾

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1)Alternative performance measures - see Appendix

2)Net cash flow hedging mainly in the Norwegian company

3)Strict definitions for contracts applied for 100% hedging (mutually binding agreement in which price, currency, volume and time are defined)

4)Currency basket based on Borregaard's net exposure in 2019 (=100)

Cash flow, NWC and investments 2015 – 2020

NWC avg

——% of OpRev ex hedging

Borregaard

INVESTMENT FORECAST 2021-2023

Replacement investments

- Targeted at depreciation level
- Upgrade of caustic soda production facility a major investment in 2020 and 2021

Expansion² investments

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- Capacity expansion for wood-based vanillin the main project (130 mNOK, completion mid-2021)
- A few smaller expansion projects are ongoing or planned

Revised forecast due to carry-over from 2020

• Mainly related to the caustic soda production facility (replacement) and capacity expansion for wood-based vanillin (expansion)

New projects may lead to additional investments

Financials Major expansion investments – BioSolutions

Florida – Biopolymers New lignin plant

Investment 890 mNOK (110 mUSD) in 100,000 mtds¹⁾ capacity (phase 1)

Sarpsborg site – Biopolymers Upgrade and specialisation of plant

Investment 450 mNOK in increased drying capacity, storage tanks and improved solutions for logistics, infrastructure and energy

Sarpsborg site – Biovanillin Capacity expansion

Investment 130 mNOK in increased capacity of at least 250 tonnes for wood-based vanillin

Volume ramp-up in line with 3-year plan, profitability behind expectations, mainly due to an unfavourable product mix and higher distribution and fixed costs

Cost savings in Norway according to plan, additional restructuring of German operation. Reduced exposure to cyclical market segments and further specialisation Completion of capacity increase mid-2021, part of the increase in production already realised during last twelve months

EBITDA improvement target next 3 years:

150-250 mNOK vs 2020 LTM²) through volume increase, optimisation of product mix, further specialisation and cost savings

Financials From CMD September 2020 Major expansion investments – BioMaterials & Fine Chemicals

Sarpsborg site – Speciality cellulose Ice Bear project

Sarpsborg site – Cellulose fibrils Exilva plant and commercialisation

Smaller expansion projects Bioethanol and pharma intermediates

Investment 215 mNOK in increased capacity and quality improvement for high purity cellulose

Investment 225 mNOK in commercial scale (1,000 tonnes dry material) production facility for Exilva cellulose fibrils Investments totalling more than 100 mNOK in increased capacity for water-free bioethanol and pharma intermediates

Ice Bear volume has gradually increased, significant contributor to stabilise results over time and reduce exposure to textile cellulose Strong interest from the market and growing number of commercial customers. Sales volume still low and lead-times continue to be quite long Successful bioethanol expansion with extraordinary result in Q2-20, cost effective debottlenecking for pharma intermediates

EBITDA improvement target next 3 years: 75-125 mNOK vs 2020 LTM¹⁾ through volume increase and further specialisation

Financials Impact from investments on key financials

If targets are met, Borregaard will improve profitability and meet ROCE objective in 2023

Assumptions

- Actual FX rates USD 9.00 and EUR 10.70 vs NOK, including effects from existing hedging positions
- Forecasted investments at midpoints. NWC increasing with revenues. Dividend increased in line with policy. Potential larger expansion investments beyond forecast may negatively affect key financials in the period
- Other parameters constant (major uncertainties are market demand, world economy, Covid-19 situation, general cost inflation and input factor prices)

Alternative performance measures - see Appendix
 Earnings per share

Financials Capital structure

Target for capital structure

- Maintain key financial ratios corresponding to an investment grade rated company
- Leverage ratio¹) targeted between 1.0 and 2.25 over time

Solid capital structure as per 31.12.20

- Leverage ratio 1.58 (covenant <3.25)
- Equity ratio¹⁾ 53.9% (covenant >25%)

Long term credit facilities

- New revolving credit facilities (RCF) in July 2020, maturity 2023 and 2025, margin linked to sustainability targets
- 60mUSD term loan for LignoTech Florida (LTF), tenor 8.5 years from completion of project phase 1
- Bond issues, 400 mNOK, maturity June 2023
- Nordic Investment Bank (NIB) loan, 40 mEUR, maturity 2024

Short term credit facilities

- 225 mNOK overdraft facilities
- 15 mUSD overdraft facility in LignoTech Florida
- 400 mNOK commercial paper

Management Highly experienced and proven management team

CEO

Per A. Sørlie

- CEO since 1999
- Member of management team since 1990
 - 31 years with Borregaard

• EVP BioSolutions

In current position from May 2019

Per Bjarne Lyngstad

• CFO

• 23 years in current position

• 33 years with Borregaard

Tom Erik Foss-Jacobsen

• 22 years with Borregaard

Gisle Løhre Johansen

• EVP Speciality Cellulose and Fine Chemicals

• In current position from May 2019

• 30 years with Borregaard

Ole Gunnar Jakobsen • Plant Director - Sarpsborg Site

- 13 years in current position
- **26 years** with Borregaard

Liv Longva

- SVP Strategic Sourcing
- In current position from June 2020
 - 13 years with Borregaard

- SVP R&D and Business development
- In current position from May 2019
 - 28 years with Borregaard

Dag Arthur Aasbø

- SVP Organisation and Public Affairs
 - 13 years in current position
 - 28 years with Borregaard

Sveinung Heggen

- General Counsel
- 8 years in current position
- 8 years with Borregaard

Appendix – alternative performance measures

In the discussion of the reported operating results, financial position and cash flows, Borregaard refers to certain measures which are not defined by generally accepted accounting principles (GAAP) such as IFRS. Borregaard management makes regular use of these alternative performance measures and is of the opinion that this information, along with comparable GAAP measures, is useful to investors who wish to evaluate the company's operating performance, ability to repay debt and capability to pursue new business opportunities. Such alternative performance measures should not be viewed in isolation or as an alternative to the equivalent GAAP measure.

- *EBITDA:* Operating profit before depreciation, amortisation and other income and expenses.
- EBITDA margin: EBITDA divided by operating revenues.
- Equity ratio: Equity (including non-controlling interests) divided by equity and liabilities.
- *Expansion investments:* Investments made in order to expand production capacity, produce new products or to improve the performance of existing products. Such investments include business acquisitions, pilot plants, capitalised R&D costs and new distribution set-ups.
- Other income and expenses: Non-recurring items or items related to other periods or to a discontinued business or activity. These items are not viewed as reliable indicators of future earnings based on the business areas' normal operations. These items will be included in the Group's operating profit.
- Leverage ratio: Net interest-bearing debt divided by last twelve months' EBITDA.
- Net interest-bearing debt (NIBD): Interest-bearing liabilities minus interest-bearing assets.
- *Return on capital employed (ROCE):* Last twelve months' capital contribution (operating profit before amortisation and other income and expenses) divided by average capital employed based on the ending balance of the last five quarters. Capital employed is defined as the total of net working capital, intangible assets, property, plant and equipment, right-of-use assets and investment in joint venture minus net pension liabilities.