# Combined Annual Report 2019

BOREALIS

Keep Discovering

**Cover Image:**
Borealis Ecoplast in Wildon, Austria

# Contents

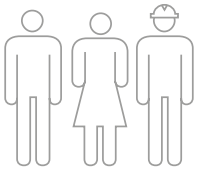
# Reviewing 2019

## Borealis at a Glance

### Safety

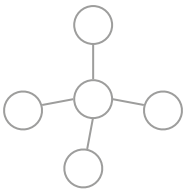
World-class safety record: **1.6 Total Recordable Injuries (TRI)** frequency per million working hours

### Worldwide



Head Office **in Vienna,** Austria. Operating on **five continents** in **120 countries.** **~6,900 employees** (Full-time equivalent)

### Line of Business

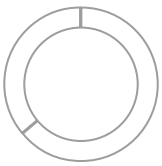


Production and distribution of **polyolefins, base chemicals and fertilizers**

### Market Position


**#2** among polyolefin producers in **Europe**

### Ownership Structure



**64%** Mubadala, United Arab Emirates / **36%** OMV, Austria

### Joint Venture

**Borouge** – the world's largest integrated polyolefin complex in Ruwais, UAE

### Joint Venture

**Bayport Polymers** – brings Borstar® technology to American polyethylene markets

### Circularity

Two **polyolefin recycling operations** in Europe

### Patents

**120 priority patents** filed in 2019

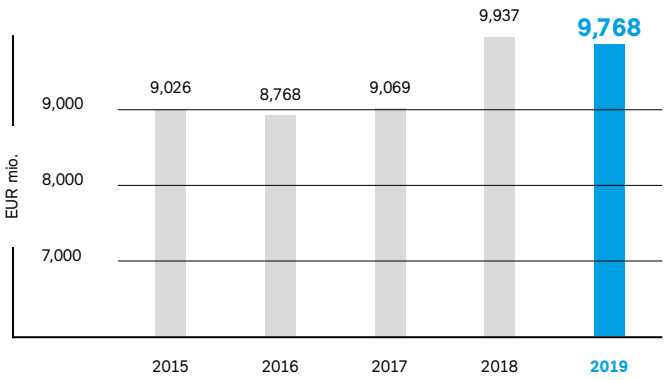
# Five Year Comparison of Key Figures

| | | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|
| **Health, Safety & Environment** | | | | | | |
| Total Recordable Injuries (TRI) | number/million workhours | 1.6 | 1.3 | 1.1 | 0.9 | 1.4 |
| EU ETS $CO_2$ emissions | kilotonnes | 4,625 | 4,302 | 4,210 | 4,600 | 4,270 |
| Energy consumption | GWh | 25,831 | 24,476 | 22,400 | 24,100 | 22,600 |
| Flaring performance [1] | tonnes | 27,619 | 26,273 | 51,620 | 38,740 | 47,687 |
| Waste generation | tonnes | 86,109 [2] | 53,713 | 61,398 | 49,036 | 157,000 |
| Water withdrawal | $m^3$ million | 750 | 316 | 300 | 724 | 752 |
| Number of employees (Full-time equivalent) | | 6,869 | 6,834 | 6,619 | 6,494 | 6,266 |
| **Income and profitability** | | | | | | |
| Net sales | EUR million | 8,103 | 8,337 | 7,564 | 7,218 | 7,700 |
| Operating profit | EUR million | 605 | 496 | 791 | 938 | 718 |
| Operating profit as percentage of net sales | % | 7 | 6 | 10 | 13 | 9 |
| Net profit | EUR million | 872 | 906 | 1,095 | 1,107 | 988 |
| Return on capital employed, net after tax | % | 11 | 13 | 15 | 16 | 15 |
| **Cash flow and investments** | | | | | | |
| Cash flow from operating activities | EUR million | 873 | 517 | 725 | 1,145 | 1,103 |
| Investments in property, plant and equipment | EUR million | 376 | 326 | 453 | 333 | 336 |
| Cash and cash equivalents | EUR million | 106 | 72 | 229 | 762 | 548 |
| **Financial position** | | | | | | |
| Balance sheet total | EUR million | 10,118 | 9,949 | 9,395 | 9,932 | 9,261 |
| Net interest-bearing debt | EUR million | 1,546 | 1,305 | 790 | 651 | 1,096 |
| Equity attributable to owners of the parent | EUR million | 6,445 | 6,421 | 6,365 | 6,496 | 5,697 |
| Gearing | % | 24 | 20 | 12 | 10 | 19 |

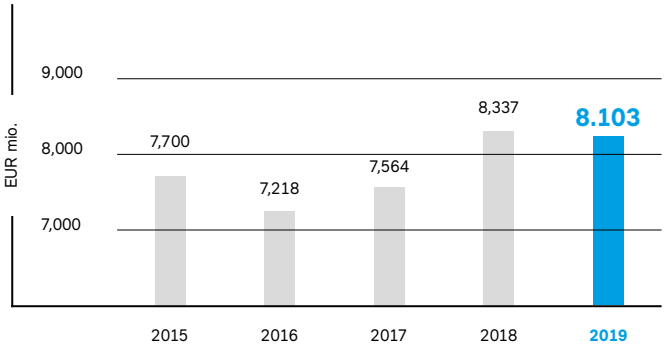
1) Values from 2015–2018 have been adjusted to display exact values. // 2) The main reason for the increase is the integration of the plastics recycling company mtm plastics GmbH into the monthly group reporting definitions.

# Key Financial and Sustainability Metrics

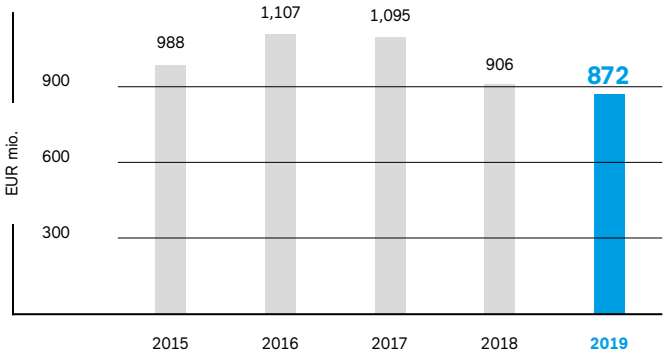
## Total Sales [1)]



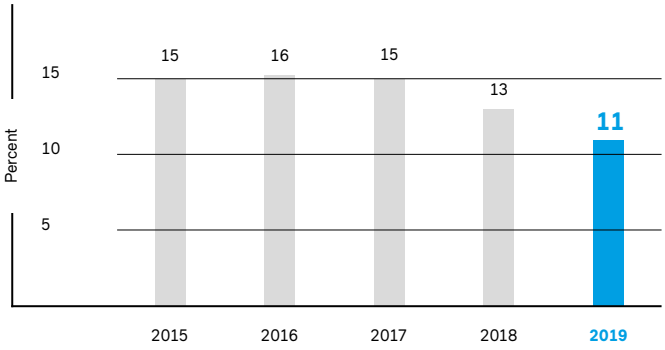

## Net Sales



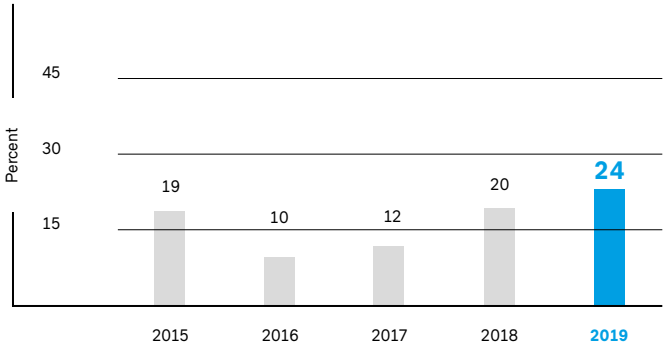

## Net Profit




## ROCE

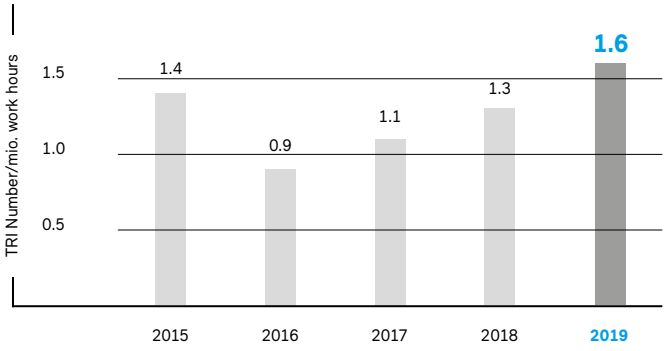



## Gearing

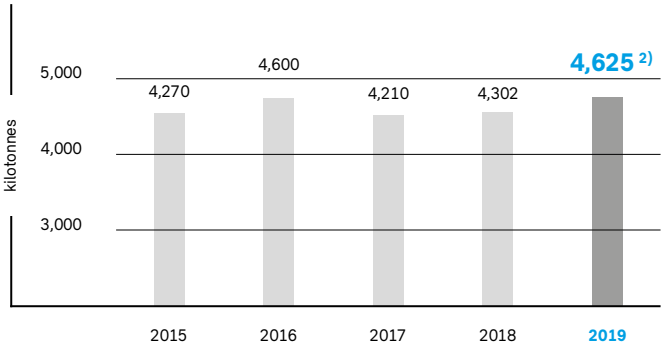



1) Total net sales of Borealis and pro-rata sales of at equity consolidated companies

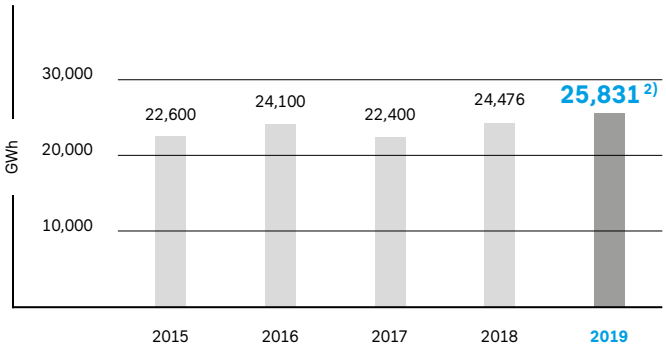
## Total Recordable Injuries (TRI) [1]



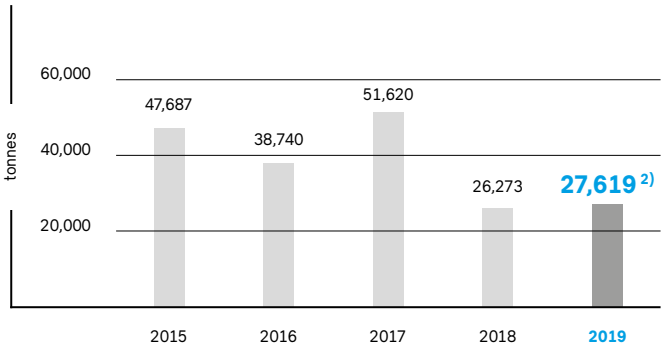

## EU ETS $CO_2$ Emissions



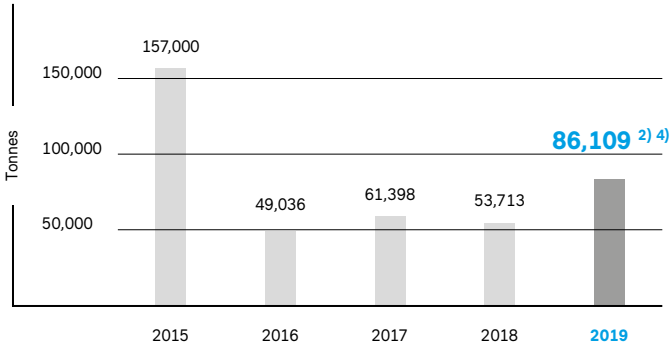

## Energy Consumption



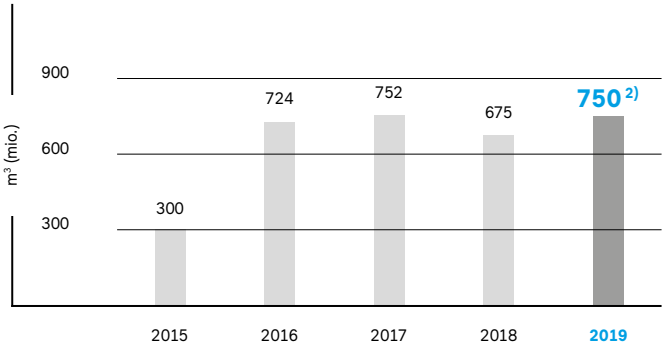

## Flaring Performance [3]




## Waste Generation




## Water Withdrawal




1) Includes own employees and contractors // 2) Environmental data might be subject to minor adjustments due to ongonig audits and missing 3rd party data at the time of closing of this report // 3) Values from 2015–2018 have been adjusted to display exact values // 4) The main reason for the increase is the integration of the plastics recycling company mtm plastics GmbH into the monthly group reporting definitions.

# Highlights 2019

## January–December 2019

**Safety** first: Continued focus on safety with a **TRI rate of 1.6** in 2019.

**Generation of 28 GWh power by windmills** connected directly to internal grid at Borealis facilities in Kallo, Belgium.

Borealis becomes **Core Partner of the New Plastics Economy** initiative led by the Ellen MacArthur Foundation.

Launch of **circular economy-related product innovations** at K 2019 in Düsseldorf, Germany.

Introduction of **new Borcycle™ brand** delivers pioneering circular solutions for demanding applications.

Record number of **120 priority patents** filed.

Scaled-up **Project STOP** receives prestigious **ADIPEC award.**

**Publication of "10 Codes of Conduct for Design for Recyclability"** to promote plastics circularity in the industry.

**ReOil collaboration with OMV** advances chemical recycling of post-consumer plastics.

Strategic **co-operation with Neste** to produce **renewable polypropylene.**

**Production capacity increased by 60% at plastics recycling facility in Wildon, Austria,** after strategic investment.

**Groundbreaking ceremonies** in Kallo for **world-scale propane dehydrogenation plant** and in Texas, USA, for **new Borstar® polyethylene unit.**

**Inauguration of polypropylene (PP) compounding plant** in North Carolina, USA, strengthens commitment to North American automotive industry.

**Memorandum of Understanding (MoU) with ADNOC, Adani and BASF** to evaluate collaboration on chemical production complex in Mundra, India.

**Resolution of tax case** in Finland by way of Mutual Agreement Procedure between Austrian and Finnish tax authorities.

Borealis **honoured as best European PP producer** in 2019 by Polymers for Europe Alliance.

# About Borealis

## Statement of the Supervisory Board

With a net profit of EUR 872 million in 2019, Borealis achieved a strong financial result in more difficult market circumstances, only slightly below the previous year's net profit of EUR 906 million. The 2019 result was impacted by a weak polyolefins market in Asia, leading to a significantly lower Borouge contribution to the Borealis financial result. However, the satisfactory integrated polyolefins margins in Europe as well as the recovery of the fertilizer business have offset this negative impact considerably.

In terms of safety performance, in 2019 Borealis reported a Total Recordable Injuries (TRI) frequency per million working hours of 1.6. While a TRI frequency of less than two is considered world-class in the industry, the 2019 result is not satisfactory, and is a deterioration versus 2018. Because safety is top priority at Borealis, the company has strengthened its commitment to working with all employees and contractors in order to reach the ultimate goal of zero injuries.

In 2019, political factors continued to negatively impact the overall market environment: increased concerns with regard to a general economic slowdown; trade wars – in particular between the USA and China; and Brexit-related worries. These concerns were reflected in the volatility of the Brent Crude oil price, which fluctuated throughout 2019. From 60 USD/bbl at the beginning of the year to a peak of 72 USD/bbl in April, it ended the year at 65 USD/bbl in December; the annual average price of 64 USD/bbl was down 11% versus 2018. Feedstock prices exhibited a similar pattern to Brent Crude, with polyethylene prices averaging 9% lower, and polypropylene prices 8% lower than in 2018.

Even though the European polyolefins market contracted by 1% compared to the previous year, Borealis was able to maintain the same sales volumes of European-produced polyolefins as in 2018, and hence increased its market share by 1% the versus previous year, i.e. to a total of 15%. While integrated polyolefin industry margins remained steady for the first three quarters of 2019, in the final quarter, margins slipped to a level last seen in 2014. This resulted in a lower 2019 profit contribution from the Polyolefins business segment compared to 2018.

Starting in the second quarter of 2019, the fertilizers market saw a favourable gas price development which led to reasonable industry margins, if not the anticipated market price recovery. Calcium Ammonium Nitrate (CAN) fertilizer sales prices hit a low in the second quarter from which they did not recover. However, overall higher production volumes due to higher operability of the assets and a successful transformation programme combined with the improved market environment led to an acceptable Fertilizer profit contribution in 2019. Fertilizer sales volumes improved by 10% in 2019, and the company's European market share increased accordingly, to 8%, up 1% from 2018.

### Changes to the Supervisory Board

As of 3 July 2019, Thomas Gangl, member of the Executive Board at OMV, was appointed Supervisory Board member, succeeding Manfred Leitner.

**Suhail Mohamed Faraj Al Mazrouei**
**Chairman**

**Rainer Seele**
**Vice Chairman**

**Musabbeh Al Kaabi**
**Board Member**

**Khalifa Al Suwaidi**
**Board Member**

**Thomas Gangl**
**Board Member**

### Corporate Strategy and Purpose

Borealis is preparing the global roll-out of a new corporate strategy in the first quarter of 2020. Equipped with an expanded definition of purpose, the new Group Strategy 2035 aims to build on core Borealis values and capabilities in order to achieve solid and sustained growth moving forward. The strategy's crucial components include the transformation to a circular economy, the creation of a customer-centric organisation that adds value on a global scale, and geographic expansion aimed at capitalising on demand in diverse global markets.

A new umbrella programme, StepChange2020, has been launched to make Borealis more agile, efficient, and cost-competitive. Approximately 180 initiatives have been started to ensure that Borealis will continue to be innovative, profitable, and ever more sustainable in its operations over the coming years.

### Focus on Sustainable and Global Growth

Substantial progress was made in 2019 in developing and/or initiating major growth projects in Europe, North America, Asia, and the Middle East.

Ground was broken on the new, world-scale propane dehydrogenation (PDH) plant located at the existing Borealis production site in Kallo, Belgium. With a targeted propylene production capacity of 750,000 metric tonnes/year (t/y), the facility will be among the biggest and most efficient plants of its kind in the world. Borealis is signalling its dedication to its operations in Europe by way of the EUR 1 billion invested over the course of this project, the largest single investment ever made by the company on the Continent.

Another important groundbreaking took place in 2019 for the new Borstar® polyethylene (PE) unit in Pasadena, Texas (USA). Part of the Baystar™ joint venture (JV) between Total Petrochemicals & Refining USA, Inc., and Novealis Holdings LLC, the facility will have an expected production volume of 625,000 metric t/y upon start-up in 2021. The JV also entails the construction of a separate ethane-based steam cracker in nearby Port Arthur. Once completed, Borealis will be able to offer its proprietary, state-of-the-art Borstar technology to North American customers for the first time to produce enhanced PE products for the most demanding applications.

At the end of 2019, Borealis and NOVA Chemicals signed an agreement with regard to a Borealis buy-out of NOVA Chemicals' 50% ownership interest in Novealis Holdings, the JV supporting the original foundation of the current Baystar JV. While the agreement is subject to regulatory approvals and other conditions, both parties foresee successful closure of the deal in the first half of 2020.

Borealis reinforced its commitment to serving its automotive customers in North America with the inauguration of the new polypropylene (PP) compounding plant in North Carolina (USA), from which compounds have already been supplied to major original equipment manufacturers and Tier customers for the production of interior and exterior automotive parts. This large facility has increased Borealis' and Borouge's total production capacity for thermoplastic olefins and short-glass fibre compounds by nearly 30,000 tonnes/year (t/y).

Subsequent to the Memorandum of Understanding (MoU) signed with ADNOC in March 2019 to evaluate strategic opportunities in the polyolefin industry, Borealis, ADNOC, Adani, and BASF signed another MoU to explore the joint establishment of a major chemical production complex in Mundra, India. Total investment is projected to amount to USD 4 billion and includes a world-scale PDH unit. Should the supply concept currently under development be realised, the new PDH unit would be the first in the world to be powered solely by renewable energy, further underscoring the companies' respective commitments to sustainability and energy efficiency in operations.

Progress was made in the fourth expansion phase of the Borouge complex in Ruwais, UAE, with the signing of vital contracts, including FEED (Front-End Engineering and Design). With a projected 1.8 million tonnes/year (t/y) ethylene capacity, the new cracker will be the fourth in the Borouge complex.

### Capitalising on Growth Opportunities in the Circular Economy Sphere

Borealis has remained at the forefront of the industry in redesigning the future of plastics by leveraging the polyolefins expertise it has built up over decades, creating value through innovation, and collaborating closely with value chain partners. In 2019, meaningful progress was made towards bringing about a circular economy in which plastics are always reused and recycled, and never wasted.

Borealis' circular economy-related efforts are wide-ranging. In 2019, many of its newly-launched products and innovations in the circular economy sphere were showcased at the K 2019 trade fair, including Borcycle™, a state-of-the-art technology; a series of monomaterial pouch solutions based on PE and PP and designed for recyclability; stand-up pouches combining virgin PE and up to 30% Ecoplast-produced post-consumer recyclate; the 100%-recyclable, monomaterial solution BorPure™ RF777MO for flip-top caps; and low-density material solutions for the automotive industry, several of which are based on the next generation of Fibremod™ Carbon.

Borealis continues to make its core business more circular through an increased focus on mechanical and chemical recycling as well as the use of renewable feedstocks. As announced by Borealis and Ecoplast Kunststoffrecycling GmbH in 2019, a capital investment in the Wildon (Austria) mechanical recycling plant has increased its capacity by 60%. Borealis and the EREMA Group signed a Letter of Intent to expand their existing co-operation, also in the area of mechanical recycling. Borealis and OMV are deepening their co-operation in the area of chemical recycling of post-consumer plastics at their integrated facilities in Schwechat (Austria). Finally, a new co-operation between Borealis and Neste has resulted in the production of renewable PP at Borealis facilities in Kallo and Beringen (Belgium), marking the first time that renewable propane dehydrogenation has been carried out on an industrial scale.

Borealis' dedication to being a leader in a circular economy of plastics is clearly visible through its work with leading industry and social welfare initiatives. In October 2019, Borealis became the first virgin polyolefins producer to be named a Core Partner in the New Plastics Economy, the pioneering initiative led by the Ellen MacArthur Foundation. Project STOP, the initiative co-founded by Borealis in 2017 that creates circular waste management systems to reduce ocean pollution, won the prestigious ADIPEC award in November. Throughout 2019, Project STOP continued to attract new and powerful project partners, including Borouge, Nestle, the technology company HP Inc., and The Alliance to End Plastic Waste.

### Continued Strong Performance Expected for 2020

Overall, management foresees a weaker market environment lasting well into 2020, with pressure on European polyolefin prices. This may result in a lower Polyolefins contribution to the bottom line. Yet, the profit contribution from Borouge to Borealis is expected to remain around the same as in 2019. The fertilizer business segment appears set to continue its recovery in 2020.

Thanks to the robust foundation built over recent years, Borealis' management believes that the company is in a strong position to take advantage of existing economic and market opportunities. Borealis will continue to build on its strong foundation of operational reliability and firmly established mind-set of commercial excellence. Implementation of the new Group Strategy 2035 will further enhance the long-term competitiveness of the company.

Borealis will uphold its commitment to being the leading provider of sustainable chemical and innovative plastic solutions that create value for society.

Vienna, 21 February 2020
**Supervisory Board**

# Executive Board

## Alfred Stern

**Chief Executive Officer**
Appointed: July 2018

In April 2018, Alfred Stern was appointed CEO effective 2 July 2018, after having held the position of Borealis Executive Vice President Polyolefins and Innovation & Technology since 2012. Alfred Stern joined Borealis as Senior Vice President Innovation & Technology in 2008. Prior to that, he spent over twelve years at E.I. DuPont de Nemours, holding leadership positions in R&D, sales and marketing, and quality and business management. Following posts in Switzerland and Germany, his final DuPont assignment was as Global Business Manager of an Engineering Polymers business unit in the US.

## Mark Tonkens

**Chief Financial Officer**
Appointed: November 2014

Mark Tonkens joined Borealis in 2009. Before assuming the position as Borealis CFO in November 2014, he had served as Borealis Senior Vice President Group Controlling. Mark Tonkens came to Borealis after holding a number of senior management roles in the Royal Philips group, acting as CFO and Senior Vice President of major business units and country organisations around the globe, from the Netherlands and Greece in Europe, to Taiwan and Hong Kong in Asia.

## Lucrèce Foufopoulos-De Ridder

**Executive Vice President Polyolefins & Innovation & Technology**
Appointed: January 2019

Lucrèce Foufopoulos was appointed to the Borealis Executive Board as Executive Vice President Polyolefins and Innovation & Technology in January 2019. She joined Borealis after a career of more than 20 years in the chemical and petrochemical industry, most recently at Eastman, where she served as Vice President & General Manager of the Rubber Additives business unit. Prior to that, Lucrèce Foufopoulos held a variety of positions at multinationals, including Dow Chemical, Rohm and Haas, Dow Corning and Tyco. She currently serves on the board of Royal Vopak.

## Martijn Arjen van Koten

**Executive Vice President Base Chemicals & Operations**
Appointed: September 2013

Martijn van Koten joined Borealis in 2013 and holds the role of Executive Vice President Base Chemicals & Operations. He joined Borealis after a 19-year career at Shell, where he held numerous and international leadership posts in Manufacturing, Technical Service, R&D and Strategic Development, culminating in the position of Vice President Manufacturing East, based in Singapore.

## Philippe Roodhooft

**Executive Vice President Middle East & Growth Projects**
Appointed: November 2017

Philippe Roodhooft was appointed Executive Vice President Middle East and Growth Projects in November 2017, after having served since 2013 as Chief Operating Officer of Borouge ADP in the UAE. Prior to that, Philippe Roodhooft held Vienna-based senior management positions, including Senior Vice President Supply Chain and Product Management for Polyolefins, Senior Vice President Operations for the Borealis Group, and General Manager for the Central European production sites.

from left: Philippe Roodhooft, Mark Tonkens, Alfred Stern, Lucrèce Foufopoulos-De Ridder, Martijn Arjen van Koten

# Our Mission and Strategy [1)]

Continuity combined with the flexibility to seize new opportunities

## Our Mission

To be **the** leading provider of innovative plastics, chemical and fertilizer solutions that create value for society.

## Our Strategy

We will

- Grow our PO business with a focus on **advanced applications** and **differentiated products,** strengthen our European base and ensure cost competitiveness from feedstock to customer.
- Pursue excellence and optimise **Borouge** in the Middle East and Asia, including **leveraging into Europe.**
- Continue to maximise the value of **Base Chemicals** with a focus on **strengthening the cracker asset base** with increased feedstock flexibility and integrated economics for our polyolefin products.
- Realise **growth opportunities** in other geographies/related businesses.
- Pursue **operational excellence** and a **Goal Zero** mindset
- Achieve a step change in **innovation.**
- Exceed in serving our customers with a focus on **quality** and **reliable execution.**
- Continue to develop our cross-cultural **organisational capability** and a learning organisation
- **Drive sustainability,** explore and realise business opportunities from the **circular economy.**

## Outperform Financially

**11%+**
average return on capital employed (ROCE) after tax

**40–60%**
debt to equity ratio

1) Borealis' Mission, Strategy and Purpose were updated during 2019. The new 'Group Strategy 2035' will be rolled out during 2020.

# Our Values

## Responsible

... is just a theory until you put it into action.

– We strive for zero incidents in health and safety.
– We consider our local and global responsibility for the environment in our decisions.
– We do business according to high ethical standards and lead by example.

## Respect

... is just a word until you live its meaning.

– We trust and involve people and communicate openly, respectfully and in a timely manner.
– We collaborate, support and help each other to develop for the best of Borealis.
– We build on diversity for better results as "One Company".

## Exceed

... is just a goal until it becomes your path.

– We win through Excellence and deliver beyond expectations.
– We commit to making joint decisions and follow through.
– We give feedback and make "Connect-Learn-Implement" and "Continuous Improvement" a natural way of working.

## Nimblicity™

... is just a concept until you make it your routine.

– We are fit, fast and flexible and seek smart and simple solutions.
– We encourage decisions on all levels of the organisation to increase ownership and speed to realisation.
– We welcome change and manage it to shape our future.

# An Interview with Borealis' CEO Alfred Stern and CFO Mark Tonkens

**Looking back on 2019, what stands out most?**

AS I would start with safety, which always comes first at Borealis. Although we made good progress on process safety, and even though we are still an industry leader when it comes to personal safety, our 2019 TRI rate of 1.6 incidents per million working hours is an increase versus 2018. Most incidents were what one could call "slips and trips," but a fatality at the beginning of the year marks our overall safety record in 2019. We must do better – and we will.

**How would each of you sum up the year's highlights?**

AS It was a fast-paced year full of changes. We made substantial progress on our numerous growth projects. And we have entered into promising new partnerships with Neste, EREMA, and OMV to drive the circular economy of plastics – this is EverMinds™ in action! In terms of business performance, the first half of 2019 was quite satisfactory, but later on, tougher conditions prevailed as the olefins and polyolefins industry environment became more challenging.

MT In our Fertilizer business we achieved a turnaround, and results are significantly better than in 2018. This positive development is the result of our joint effort to drive the transformation of this business. In olefins and polyolefins, our long-term strategy of investing in feedstock flexibility on the one hand, and Value Creation through Innovation with specialty polymers on the other, is truly paying off. We have been able to achieve solid results in 2019 despite the lower price environment in Asia, which has negatively impacted the profitability of Borouge.

**Borealis has a number of global outreach and growth projects. Please update us on their status.**

AS Overall, we have made excellent progress in our overarching aim to enhance customer centricity, in part by extending and deepening our geographic reach. A definite highlight in 2019 was the groundbreaking ceremony of our new, world-scale propane dehydrogenation (PDH) plant in Kallo, Belgium. This is a huge step for us and the biggest single investment Borealis has ever made in Europe. We are also implementing an 80 kilotonne capacity increase in our polypropylene (PP) plant in Kallo that will benefit from the feedstock supply from the new PDH. This investment will enable us to consolidate our strong position as a key polyolefins supplier in Europe in the long term.

In Texas, US, construction continues on the new Borstar® polyethylene (PE) unit and steam cracker as part of our Baystar™ joint venture with NOVA Chemicals and TOTAL. This project allows us to bring third-generation Borstar to our North American customers for the first time.

MT Another major project already in the execution phase is the fifth Borstar polypropylene plant of Borouge. At the same time, the next and fourth phase of Borouge expansion is currently in the FEED (front end, engineering, and design) phase, moving forward as we speak.

AS A truly global effort centres on the Memorandum of Understanding we signed at the beginning of 2019 with our Borouge joint venture partner, ADNOC, to explore strategic opportunities in the polyolefins industry. We have already identified a promising investment opportunity in India, where we plan to establish a world-scale PDH plant in Mundra together with our partners BASF and Adani. We would also build a PP complex based on our Borstar technology that would be jointly owned by ADNOC and Borealis and – ideally – be 100% powered by renewable energy. Should these ambitious plans be affirmed by our feasibility study, we see this petrochemicals complex as a great opportunity to expand our presence in one of the strongest growth markets in Asia. On a completely different note: we won two German brand awards in 2019. A strong brand reputation also supports us in generating and capturing business value for Borealis in the long-term.

**Mark Tonkens, could you discuss another focus area, Fertilizer and Melamine?**

MT In 2018, we took the decision to separate our Fertilizer, Melamine and Technical Nitrogen Products businesses from Polyolefins and Hydrocarbons & Energy. We are very pleased to see that our Fertilizer business has turned the corner and posted good results in 2019 after three straight years of under-par performance. Of course the overall fertilizer market environment has also been challenging, but we recognised that our own organisation needed to change. The internal improvement programme launched at the end of 2018 to revitalise this unit showed that our people are open to change: there is a true sense of excitement in being a dedicated unit with the flexibility to respond to its own market conditions, as opposed to being just one part of the larger Borealis business. That said, we do see a need for consolidation within the European fertilizer market.

from left: Mark Tonkens, CFO, and Alfred Stern, CEO

But for the time being, we intend to build on our track record of solid business and safety performance in order to further enhance our status in the fertilizer industry.

**Across the polyolefins industry, the move towards a circular economy of plastics appears to be accelerating. How has Borealis helped lead this transformation in 2019?**

AS At Borealis, we re-invent for more sustainable living. Plastic is a fantastic and versatile material, and for many applications it is the best material. The challenge now is to make it even better by making it circular.

Circular economy principles are present at all levels of our organisation. In October, we announced a strategic collaboration with Neste for the production of renewable PP in Kallo. This is the first time we have used bio-based feedstock as a partial replacement for fossil feedstock in the commercial production of PP, and the first time ever that renewable propane dehydrogenation has been carried out on an industrial scale.

We have more than doubled our total mechanical recycling capacity since 2016. This is due in part to recent investments in our own Ecoplast factory in Wildon, Austria, where we have boosted capacity by 60% thanks to a new state-of-the-art production line. In 2019, we also stepped up our partnership with EREMA. We also joined forces with OMV in May to advance the chemical recycling of post-consumer plastics as part of the ReOil project. Developing these three areas – renewable feedstock, mechanical, and chemical recycling – will close the loop completely, and make plastics more circular than any other material.

MT The drive towards circularity and sustainability is also a business imperative. The circular economy remains very high on our agenda because it is a true business opportunity that will bear fruit in the longer-term future. Although we still generate the most value from virgin polymer products, we will continue to drive the transformation by using the profits and cash flow we generate from our virgin business to invest in our efforts for the circular economy. The transformation process will likely take many years, and must be managed in a balanced way. We will remain focused on sustaining our current core business and providing our customers with solutions that deliver added value.

**"Our safety performance is the leading indicator for excellence in all aspects of business. If we are a safe company, we are an excellent company!"**

Alfred Stern, CEO

**How does the Borealis philosophy of Value Creation through Innovation manifest itself in the circular economy sphere?**

AS Creating added value for our customers through innovation is what drives us as a company. We all know that we must develop more sustainable ways of living, working, and manufacturing. Borealis is fortunate to have the ideal material to build upon in order to create an expanding range of circular technologies and material solutions.

We showcased many of these at the K 2019 in Düsseldorf: our new state-of-the-art recycling technology, Borcycle™, which transforms plastic waste streams into value-adding, versatile recycled polyolefins. We also launched a number of flexible packaging solutions developed in tandem with value chain partners, including PP- and PE-based monomaterial pouches as well as novel flexible packaging formats which contain up to 35% post-consumer recyclate. In caps and closures, we introduced a new BorPure™ resin which can be used to make monomaterial hinged caps that are 100% recyclable.

We were especially excited to offer our stand visitors – and we had 20% more than at the K 2016 – the chance to interact with a number of more sustainable products resulting from value chain co-operation: the stunning NIO ES8, an electric SUV which contains a range of lighter weight Daplen™ and Fibremod™ grades in its interior and exterior parts. Or the reusable and 100%-recyclable drinking cups made using Borstar PP and developed together with Bockatech.

MT In addition to developing these very visible proof points for greater sustainability, we are also harnessing the power of innovation in the area of energy and climate. For example, Borealis is one of five major petrochemical players to form the Cracker of the Future Consortium, which is exploring the use of technology to reduce the level of $CO_2$ emissions from steam crackers. And in Finland, Borealis is working with Neste to explore whether excess heat from our operations in Porvoo can be used to deliver district heating in the Helsinki area.

**A new corporate programme is in the works. Tell us more about StepChange2020.**

AS StepChange2020 is the umbrella programme we have created to empower us to become more agile, efficient, and cost competitive. In 2019, we kicked off this broader company transformation, which will accelerate into 2020. It is essential to start the transformation process now so that we can remain one step ahead of the market. Nearly 180 initiatives have been proposed throughout the company. In 2020, we will implement, then track and gauge the effectiveness of these initiatives in a review of the programme due around the end of June 2020.

**Mark Tonkens, what are your views on StepChange2020, and does it involve one of your focus areas, digitalisation?**

MT In a cyclical industry like ours, it is important to enact measures in a timely way in anticipation of a downturn – because the downturn always comes, sooner or later. The StepChange2020 transformation programme will make our organisation more resilient and enable us to keep investing in value drivers for the future, like innovation, circularity, customer focus and of course, digitalisation.

We continued our digitalisation journey in 2019 by launching and further developing several value-enhancing solutions in businesses, operations, and support functions. For example, MyBorealis, our online customer portal, as well as an essential internal customer relationship management tool.

**Looking beyond 2019 or even 2020, which areas of sustainability focus will take centre stage?**

AS We clearly see that momentum is growing to achieve greater sustainability and circularity in all areas of life, not only in our own operations and products. However, this means a paradigm shift for the industry and the most significant changes ever seen – at least in my lifetime. This shift will affect supply and demand and the way polymers are produced. It will even change our business models and the way we deliver value to customers and society.

It was thus essential to update our strategy now in order to address and anticipate these industry challenges and opportunities. Our Group Strategy 2035 builds on the foundational strengths of Borealis: our people, excellence, and sustainability. We call this approach "leading from the core." To ensure continued solid growth in the future, we will make the transformation to a circular economy and a truly customer-centric, value-adding organisation on a global scale. We will also expand our geographic reach to capitalise on demand and feedstock opportunities in growing global markets.
MT The Group Strategy 2035 we are rolling out at the beginning of 2020 offers the right building blocks to respond to change. It encourages us to create even more value for our customers in an increasing number of global markets, and helps find ways to reduce energy consumption and emissions from our plants. It also underscores our commitment to the health and safety of our people. All in all, I think it is an excellent plan to move the company forward and make our business more competitive and profitable.

**From a financial perspective, what should we expect in 2020, Mark Tonkens?**

MT Our focus will be on delivering our major and capital-intensive growth projects in a safe, timely and cost-efficient way. We expect to be operating in a weaker economic environment in 2020 as the industry "super cycle" comes to an end. The year may be especially challenging given the uncertainty that prevails in the Asian markets in particular. With regard to Fertilizer, I am optimistic that we will be able to capitalise on what is likely to be a stable market environment in 2020.

**"The circular economy remains very high on our agenda because it is a true business opportunity that will bear fruit in the longer-term future."**

Mark Tonkens, CFO

**And the last word goes to Alfred, how do you see 2020 shaping up?**

AS We must focus more than ever on operational excellence in our existing businesses, even as we drive company transformation.

If we keep our eyes on the aims of our StepChange2020 programme, we can remain competitive, solidly profitable, and enjoy sufficient cash flow. And we can achieve this with the full support from everybody in the organisation. Given the excellent 85% response rate of our 2019 People Survey, I think we can rely on our employees to keep "building a better Borealis," as the motto of our biennial survey says.

Most importantly, however, we must stay focused on the safety of our employees and our assets. Our safety performance is the leading indicator for excellence in all aspects of business. If we are a safe company, we are an excellent company!

# Borealis Worldwide

**– Borealis Locations**

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Fax +43 1 22 400 333
www.borealisgroup.com
info@borealisgroup.com

Customer Service Centres
Austria, Belgium, Brazil, Finland, France, Hungary, Turkey, United States

Production Plants
Austria, Belgium, Brazil, Finland, France, Germany, Italy, Sweden, The Netherlands, United States

Innovation Centres
Austria, Finland, Sweden

Sales Offices/Representative Offices
Argentina, Chile, China, Colombia, Czech Republic, Denmark, France, Hong Kong, Mexico, Morocco, Poland, Russia, South Africa, Spain, Turkey, UAE, UK

Borealis L.A.T Locations
Austria, Bulgaria, Croatia, Czech Republic, France, Greece, Hungary, Romania, Serbia, Slovakia

Borealis Rosier Locations
Belgium, The Netherlands

**O– Borouge Locations**

Head Offices
Singapore, UAE

Innovation/Application Centres
China, UAE

Production Plants
China, UAE

Sales Offices/Representative Offices
China, India, Indonesia, Japan, Singapore, Thailand, UAE, Vietnam

Logistics Hubs
China, Malaysia, Singapore, UAE

The purpose of this visualisation is of representational nature only. Though it was prepared with the greatest possible attention to detail, simplified illustrations may have been applied.

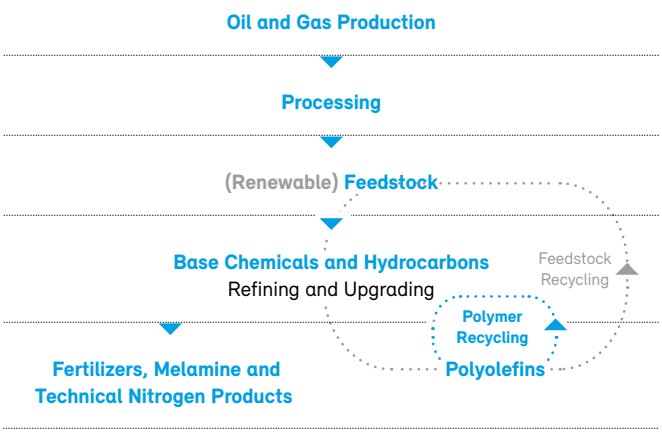
# Our Business

Borealis is a leading provider in the fields of polyolefins and base chemicals.

Borealis believes in progress. By driving ideas forward, Borealis aims to change the world for the better.

Borealis keeps discovering new applications and material solutions that address global challenges in the areas of climate, energy, food, health, water and sanitation, waste, and the waste, and the circular economy. As a reliable partner, Borealis creates ever more value for its customers and partners by developing new approaches, technologies and products.

Fig. 1: **Chemical production flow**




## Polyolefins

The polyolefin products manufactured by Borealis form the basis of many valuable plastics applications that are an intrinsic part of our daily lives. Advanced Borealis polyolefins have a role to play in saving energy along the value chain and promoting more efficient use of natural resources. Borealis works closely with its customers and industry partners to provide innovative and value-creating plastics solutions in a variety of industries and segments that make end products safer, lighter, more affordable and more sustainable.

Borealis provides services and products to customers around the world in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC).

## Base Chemicals

At Borealis, the Base Chemicals business is a solid foundation to build upon. Borealis produces a wide range of base chemicals for use in numerous and diverse industries, including phenol, acetone, ethylene and propylene.

## Fertilizers, Melamine and Technical Nitrogen Products

Borealis produces and then distributes and supplies around five million tonnes of fertilizers and technical nitrogen products each year via its Borealis L.A.T distribution network. With more than 60 warehouses across Europe and an inventory capacity of over 700,000 tonnes. The product portfolio comprises nitrogenous fertilizers, compound NPK fertilizers and speciality fertilizers with various formulas of primary and secondary nutrients as well as oligo-elements.

As the second-largest producer of high-quality melamine in Europe, Borealis produces melamine at its plants in Linz, Austria, and at its facility in Piesteritz, Germany. Converted from natural gas, melamine has become an essential material for the global production of synthetic resins.

A broad range of technical nitrogen product solutions is derived from the raw materials urea, ammonia, ammonium nitrate and nitric acid.

# Non-financial Report

# About the Non-financial Report

The Consolidated Non-financial Report 2019 has been prepared in accordance with the GRI Standards: Core option, as well as the legal requirements for the publication of a consolidated non-financial report (§ 267a UGB).
An overview of the consolidated subsidiaries included can be found on page 207 in note 33 of the Consolidated Financial Statements as of 31 December 2019.

The report covers information for the period from 1 January 2019 to the 31 December 2019.

Borealis applies an annual reporting cycle.

The last report was published for the year 2018 in March 2019.

The Consolidated Non-financial Report 2019 differentiates between the product segments Polyolefins, Hydrocarbons & Energy and Fertilizer, Melamine and Technical Nitrogen Products. This approach was chosen to make the sustainability impacts of the different product segments more transparent. Kindly note that this approach differs from the segment reporting applied in the Financial Report 2019.

A reference table creates the connection between material topics, non-financial matters according to § 267a Abs 2 UGB, and the respective chapter in this report (→ chapter Sustainability Strategy and Objectives, p. 25). The GRI Content Index in the appendix of this report outlines where specific GRI reporting elements and indicators are addressed in the report (→ GRI Content Index, p. 216).

Numbers provided in tables of the non-financial report are rounded in a different way than in previous years in order to ensure consistency with numbers in the financial report.

## Scope of the Non-financial Information

The data presented in the report are consolidated at Group level. Non-financial data are collected for those activities where Borealis is the operator, or where Borealis has a stake of more than 50% and exerts controlling influence.

Exceptions:

- Procurement & Transportation Polyolefins (PO): Borealis Brasil S.A., Borealis Poliolefinas da América do Sul Ltda and Borealis Compounds Inc. are excluded from PO procurement data and from $CO_2$ emissions arising from shipment of PO products.
- Procurement & Transportation Fertilizer (FE): reporting includes the flows of Rosier S.A., Rosier Netherlands B.V. and Rosier France S.A.S products sold by Borealis L.A.T, but excludes all other flows of Rosier S.A., Rosier Netherlands B.V. and Rosier France S.A.S. The reporting scope of PO and FE will be further aligned in the next report.
- Exception of mtm plastics GmbH and mtm compact GmbH from the sick leave rate and process safety KPIs.
  → see figure 16, p.67

The exclusions listed above are not of significant importance with regards to the Group's total non-financial performance. However, Borealis will work on further increasing the scope of its non-financial reporting in future.

## Changes to the Previous Report

A new materiality analysis was performed leading to a new materiality matrix → chapter Sustainability Strategy and Objectives, p. 25. Further more, mtm plastics GmbH and mtm compact GmbH were integrated into TRI and waste figures. The Consolidated Non-financial Report 2019 has been subject to an internal quality review. For the first time this year, an external assurance was obtained. Please find the Independent Assurance Report on the Consolidated Non-financial Report 2019 enclosed. → Independent Assurance Report, p.112

For questions regarding sustainability or social responsibility, please contact sustainability@borealisgroup.com.

# Sustainability Management

## Sustainability Strategy and Objectives

### Borealis' Approach to Sustainability

To foster true sustainability throughout its business, Borealis takes responsible and fact-based decisions, balancing their contribution to the so-called 3Ps: People, Planet and Profit. Improving its sustainability performance will enable the Group to make a sustainable difference to the progress of society, while also being more efficient, reducing costs and mitigating long-term business risks.

Embedding sustainability in the business is therefore a key success factor for Borealis and a priority for the Executive Board. The Sustainability Advisory Team (SAT), comprising senior management from key functions across the organisation, meets bi-monthly to assess and guide sustainability projects and activities, prior to gaining approval from the Executive Board when necessary. In 2019, nine sustainability flagship projects were executed, as major contributors to Borealis' sustainability journey.

As part of embedding sustainability capabilities in the business, Borealis engages senior and mid-level managers from across the organisation in a bespoke Business Sustainability course, led by the IMD Business School. Since 2016, 72 managers have been successfully certified, including 16 in 2019. Through this course, Borealis supports continuous learning across the organisation to enhance and deepen their understanding of important sustainability issues and projects including the circular economy, materiality identification, marine littering, micro plastics and design for recycling. Interactive webcasts on current and emerging sustainability issues are held with a network of employees throughout the year, providing an effective tool for embedding sustainability in the functions.

During the year, Borealis continued to increase awareness of sustainability issues across the Group. It enhanced its Sustainability Access Point, a portal on the Group intranet, providing employees with direct access to information on sustainability topics and Borealis' position on current and emerging issues.

### Sustainability Strategy

In order to shape the Sustainability Strategy and contribute to the Group Strategy review, in 2019 Borealis carried out a Stakeholder Sustainability Materiality Assessment to identify current and evolving stakeholder concerns and priorities, thereby updating its 2013 assessment.

The assessment confirmed that Borealis' sustainability strategic framework remains relevant and that the Group is on the right path. Borealis' focus on the Circular Economy and Climate Change are as relevant today as they were before and the Group will further strengthen its efforts in these areas. As stated in the Sustainability Strategy, Health & Safety considers both operational aspects and product sustainability aspects, which likewise remain of utmost importance. A new Sustainability Strategic Framework has been developed based on the Sustainability Materiality Assessment and which has been launched in January 2020 (see figure 4, p.29).

In 2019, the Executive Board decided that a sustainability key performance indicator would be added to its Group Performance Scorecard from 2020, reinforcing the importance of sustainability performance to the successful development and growth of the organisation.

#### Sustainability Materiality Assessment

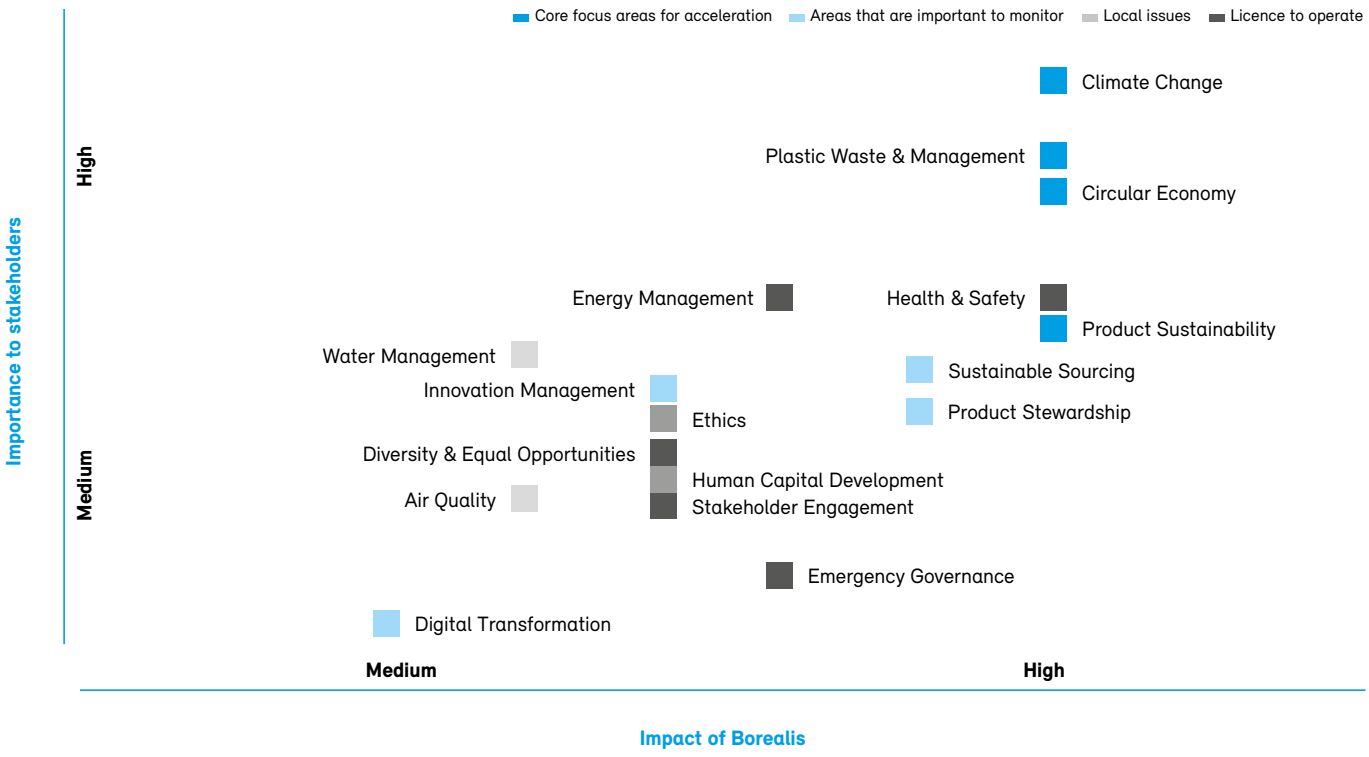
The Sustainability Materiality Assessment carried out in 2019 assessed 17 aspects, according to their importance to Borealis' stakeholders and their impact on the Group, society and the environment. The process was supported by an external consultancy.

The first step was to identify the stakeholder groups relevant to Borealis, which included customers, brand owners, suppliers, academics, non-governmental organisations, investors, representatives of local communities, regulatory authorities and the media. Next, desk research used big data algorithms to identify the most highlighted sustainability aspects related to the industry. An initial assessment was then performed of the relative importance of these aspects to the Group's stakeholders. The next step was internal engagement with a variety of functions and levels within Borealis. They indicated the importance of the highlighted aspects to their own function, in an iterative fashion.

In addition, Borealis' impact on society and the environment was analysed, given those same highlighted aspects. Through this process, Borealis determined the material aspects for its business.

As a result of the assessment, Borealis developed a Sustainability Materiality Matrix, based on four levels of response:
– Focus: core issues for Borealis
– Monitor: important sustainability issues to monitor
– Local: issues that are to be managed on a local level
– License to operate: issues that are considered necessary for the Group

Fig. 2: **Sustainability Materiality Matrix**




The following four topics were identified as the most important to Borealis and its stakeholders and are defined as "Core focus areas for acceleration".

1. Climate Change: this aspect is one of the must-win battles in Borealis' current sustainability framework and is the most highly rated topic in terms of its impact on Borealis and importance to all stakeholders.
2. Circular Economy: this aspect is one of the main drivers of sustainability in the plastics and chemicals industry. It provides Borealis with opportunities to differentiate itself from other companies in the industry.
3. Plastic Waste & Management: this aspect is of utmost importance for Borealis, at both corporate and operational level. Proactive engagement by Borealis reaffirms its commitment to zero plastics leakage.

4. Product Sustainability: this aspect is a key driver for developing and improving Borealis' products to minimise stress on the environment and protect public health.

In addition to the four core focus areas for acceleration, four topics have been designated as "monitor elements". Those are important sustainability topics for Borealis, which the Group must monitor and continuously improve:

1. Sustainable Sourcing: this aspect is important to ensure responsible sourcing and refers to the initial stages of product development, namely raw material sourcing.
2. Innovation Management: this aspect provides Borealis with opportunities to further differentiate itself from its industry peers, in respect of technological capabilities and research and development investments that lead to innovative and sustainable solutions for both products and processes.
3. Product Stewardship: this aspect is important for Borealis to ensure the environmental and social impacts of its products, predominantly based on life cycle assessments and the precautionary principle.
4. Digital Transformation: this aspect is an emerging topic and closely linked to IT and data security.

Air quality and water management were identified as local issues which require attention at an operational level, in conjunction with local authorities, laws and regulations.

In addition, the following topics are categorised under "License to operate" and are integrated into Borealis' corporate culture and processes:
– Health & Safety
– Energy Management
– Ethics
– Diversity & Equal Opportunities
– Human Capital Development
– Stakeholder Engagement
– Emergency Governance

Figure 3, p. 28 demonstrates the connection between the material topics, the respective chapter in this report, and the sustainability matters according to the Nachhaltigkeits- und Diversitätsverbesserungsgesetz (NaDiVeG), the Austrian law on non-financial reporting.

### Sustainability Flagship Projects

In 2019, the SAT focused on a list of nine initiatives called the Sustainability Flagship Projects. These are initiatives that affect the whole Group and had clear milestones for 2019. This provides visibility for Borealis' top management of real and winning sustainability initiatives. With that approach, the business units integrate sustainability into their own strategies.

The Sustainability Flagship highlights of the year were:
– the 2030 $CO_2$ roadmap
→ chapter Energy & Climate, p.58
– Borcycle™ technology launch in PO Recycling
→ chapter Innovation, p.44
– Replacement of ADCA in wire and cable grades
→ chapter Innovation, p.44
– Positive impact of plastic on the environment
→ chapter Circular Economy, p.52
– Portfolio Sustainability Compass assessment of 80% of portfolio (below)
– Implementation of Together for Sustainability targets for 2019
→ chapter Materials & Logistics, p.82
– Project STOP
→ chapter Social Sustainability, p.37
– Stakeholder Sustainability Materiality Assessment (above); and
– K-Fair
→ chapter Stakeholder Management, p.30

Going forward, a thorough review of the Sustainability Flagship Projects will be carried out at each year end. Incomplete and new Flagship Projects will be identified and their progress monitored, with reviews by the SAT.

### Portfolio Sustainability Compass

In 2018, Borealis established a method to do portfolio sustainability assessments, which we called the Portfolio Sustainability Compass, to identify how the Group's product portfolio contributes to a sustainable society. Borealis based its approach on the WBCSD chemical industry methodology for portfolio sustainability assessments.

In 2019, the Group extended the Portfolio Sustainability Compass from 10% of its products to 80%. Products are grouped into three segments, based on clearly identified sustainability criteria.
– Trailblazers are at the forefront of sustainability, providing a meaningful and enduring contribution to society. Examples include the Group's top technology products

within the automotive and energy sector, which are making cars lightweight and safe, enabling renewable energy to be transported with minimum loss and allowing electric vehicles to become a mass reality.
– Pacemakers are the standards, with benefits commonly known to society. These include components of appliances and furniture and hygienic fibres.
– "Drifters" are products that are only compliant and will be challenged by any sustainability trend. These include films used in unnecessary packaging and other solutions that overburden the waste system.

In addition to assessing the existing portfolio, the assessment tool is used to differentiate the innovation pipeline and new projects with high sustainability factors. The Portfolio Sustainability Compass is therefore a key instrument in developing solutions that deliver sustainable benefits to society.

### Sustainability Ratings

In 2014, Borealis voluntarily began annual assessments according to the systematic Ecovadis Standard, as it is one of the most accepted standards to assess sustainability of a company. In 2019, Borealis was awarded its third consecutive Gold Status for its Ecovadis Scorecard, placing the Group in the top 1% of all industry peers who participated during the year.

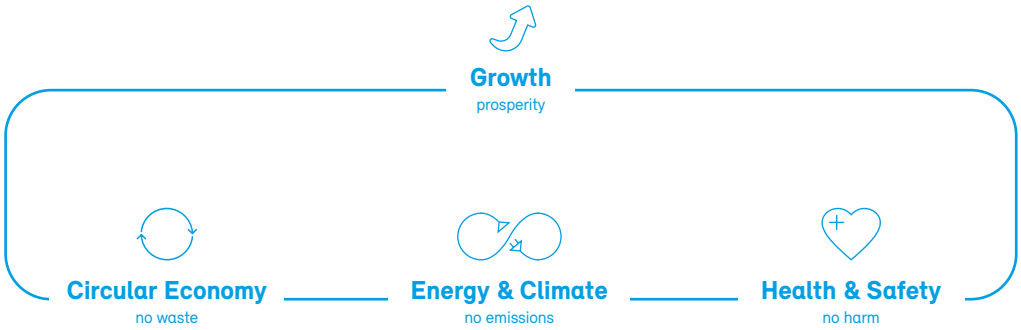
### Responsible Sourcing

Borealis is part of the Together for Sustainability initiative, which aims to improve the sustainability standards of the supply chain of chemical companies. Moreover, Borealis' Code of Business Conduct for Suppliers prohibits discrimination and requires suppliers to apply appropriate work hours and wages for their employees. It also states that no forced and compulsory labour, no harassment and abuse of labour, and no child labour should exist in our vendors' activities.
→ chapter Materials & Logistics, p.82

Fig. 3: **Overview of material topics, chapter of reference, and non-financial matters**

| Material topic | Chapter of reference | Non-financial matters |
|---|---|---|
| Climate Change | Energy & Climate, Environmental Management | Environmental matters |
| Circular Economy | Circular Economy | Environmental matters |
| Plastic Waste & Management | Circular Economy, Environmental Management | Environmental matters |
| Product Sustainability | Product Stewardship & Sustainability, Sustainability Strategy | Environmental matters, social matters |
| Sustainable Sourcing | Materials & Logistics | Environmental matters, respect for human rights, social matters |
| Innovation Management | Innovation | Social matters, environmental matters |
| Product Stewardship | Product Stewardship & Sustainability | Environmental matters, social matters |
| Digital Transformation | Digital Transformation | Social matters |
| Air Quality | Environmental Management | Environmental matters |
| Water Management | Environmental Management | Environmental matters |
| Health & Safety | Process Safety, Occupational Health and Safety | Employee-related matters |
| Energy Management | Energy & Climate, Environmental Management | Environmental matters |
| Ethics | Ethics & Compliance | Anti-corruption and bribery, respect for human rights |
| Diversity & Equal Opportunities | Our People | Employee-related matters |
| Human Capital Development | Our People | Employee-related matters |
| Stakeholder Engagement | Sustainability Strategy, Stakeholder Management | Social matters |
| Emergency Governance | Process Safety | Employee-related matters, social matters |

Fig. 4: **Borealis' Strategic Sustainability Framework**




| | | | |
|---|---|---|---|
| **Enhance sustainability in our operations and supply chain** | – Strive towards Zero Pellets Loss<br>– Optimise renewable feedstock for PO and explore chemical recycling of plastics<br>– Reduce packaging and waste | – Increase Borealis' energy efficiency and reduce flaring<br>– Leverage opportunities to use locally produced renewable energy<br>– Reduce $CO_2$ emissions in transporation | – Implement a pro-active strategy for chemicals safety and substitution planning<br>– Ensure occupational health & safety and process safety |
| **Support profitable business growth** | – Lead the transformation of the industry to a Circular Economy | – Enhance PO product portfolio to increase the use of renewable energy, improve energy efficiency and reduce emissions | – Launch innovations that enhance safety in food packaging, automotive, healthcare and water, sanitation, energy and communication infrastructure |

## Outlook

In 2019, Borealis made significant strides in its sustainability journey. In 2020, it will continue to reinforce its commitment to supporting the sustainable development of the Group and the industry. In addition to the ongoing initiatives that enhance our focus on sustainability, Borealis will notably:

– launch an updated Sustainability Strategy and Strategic Framework that is in line with the Group's newly-defined strategic purpose and recently assessed Sustainability Materiality Matrix;
– describe Borealis' sustainability ambitions;
– prioritise several Sustainability Flagship Projects that contribute to Borealis' delivery of the Circular Economy, Health & Safety, and Energy & Climate as well as the Group's growth ambitions;
– introduce a Group Key Performance Indicator for Sustainability in the Group Scorecard and improve sustainability performance management overall;
– augment Borealis' contribution to specific United Nations SDGs (Sustainable Development Goals);
– reinforce the industry's advocacy through the public affairs organisation;
– enhance employees' engagement and ambassadorship, specifically through the introduction of an innovative online course and enhanced Sustainability Access Point on the intranet;
– expand the Portfolio Sustainability Compass sustainability assessment tool across Borealis' innovation and investment projects;
– expand the Life Cycle Assessment of the Group's operations; and
– scale-up Project STOP to further address the critical issue of ocean-bound plastic waste.

# Stakeholder Management

**Goals**

Stakeholder engagement is imperative to Borealis' business. The aim of engaging with key stakeholders is to drive the best outcome for society, government, the industry and the Group. Borealis recognises that well-designed legislation and regulation can help to tackle issues such as resource efficiency, climate change, waste reduction, improved safety, fair trade and marine littering. Regulators, policy influencers and non-governmental organisations (NGOs) can all shape regulation and legislation that affect Borealis' business and its ability to implement its strategy. Borealis therefore needs to understand the policy, regulatory and NGO environment in the EU and ensure that it can contribute its knowledge and insight to discussions about the future of regulation and legislation. In line with the Group's Ethics Policy, Borealis strictly follows apolitical corporate governance practices in public affairs.

**Key Achievements and Results**

In 2019, the Group reviewed its materiality matrix to ensure it understood the key issues according to its stakeholders.

## Introduction

Collaborating with internal and external stakeholders is intrinsic to Borealis' ability to create value through innovation and is also evidenced in the Group's commitment to Responsible Care®. → Infobox Responsible Care®, p.81

Regular engagement with a broad range of stakeholders ensures that Borealis can address their concerns and expectations, and better anticipate and respond to business risks and opportunities, thereby supporting the implementation of the Group's strategy.

Borealis' business activities involve a diverse and complex range of stakeholders at a global, national and regional level. Mapping and prioritising Borealis' stakeholders is a continuous and dynamic process. During the year, the Group conducted a comprehensive stakeholder consultation, using both primary and secondary data, to identify matters stakeholders considered material. These matters were then qualified by considering them against a number of criteria: whether the matter related to internal or external factors, had a potential impact on the Group's bottom line, and was within Borealis' sphere of influence. Purely financial and operational issues were excluded. The matters identified through this process were those that should form the basis of Borealis' Sustainability Strategy: product sustainability, plastic waste, Circular Economy and climate change.
→ chapter Sustainability Strategy & Objectives, p. 25

Based on its Group-level stakeholder mapping, Borealis has rolled out a stakeholder mapping process and related issue and risk assessment in all of its major locations over the past few years. At the same time, individual departments have carried out stakeholder mapping for specific market segments, such as consumer packaging and mineral fertilizer.

Stakeholder management is done at three levels:
- Location leaders and their staff are responsible for capturing signals which are relevant to their operations.
- This information is an input to the Group's public affairs network (PAN), a cross-functional organisation at managerial level, which deals with matters that should be escalated to Group management.
- The last level of stakeholder management is performed by the Sustainability team and is the exercise of updating Borealis' Sustainability Materiality Matrix.

## Borealis' Stakeholder Groups and Activities

### Academia and Science

Borealis has ongoing research and development collaborations with leading universities, regularly participates in symposia, working groups and advisory committees, and supports research studies, such as Circumat (Transfercenter für Kunststofftechnik) or LIT factory (Linz Institute of Technology) at the Johannes Kepler University in Linz, Austria.

### Customers

Borealis has active customer dialogue through numerous channels, including face-to-face meetings, customer visits to Borealis, customer feedback and satisfaction surveys, trade fair activities, customer conferences and product launch events. Most importantly, Borealis partners with selected key customers to jointly develop new products and solutions with sustainability benefits.

Customers are an important part of Borealis' sustainability approach, as customers have more opportunities for direct contact with end users or society than the Group does, as a raw materials producer. Customers have been very interested in learning about ways to enable the circular economy.

In April 2019, Borealis led a Circular Packaging Industry Event. The event gathered customers, brand owners and other value chain players to discuss the circular economy and find ways to make materials more circular.

### Employees

In line with its value Respect, Borealis engages with its employees through regular evaluation and feedback from their line manager, within the framework of the Borealis performance management system. Moreover, The Corporate Co-operation Council (CCC) is an important platform for dialogue between management and employee representatives. It is a forum for exchanging information between the works councils at the various Borealis locations, top management and owners. Borealis also has a biennial employee survey, regular town hall meetings, an annual Executive Board tour to all locations, engagement walks by management and many other channels, to ensure continuous feedback and enhance engagement and well-being.

### Governments and Regulators

Interactions take place at a European, national and local level and through different channels, such as face-to-face meetings and participation in workshops. The Group also actively supports Government initiatives, such as the development of an EU Plastics Pact.

### Industry and Trade Associations

Borealis is an active member and has leadership positions in numerous national, regional, European and international associations, such as the World Plastics Council, CEFIC, Plastics Europe, Plastics Recyclers Europe and Fertilizers Europe, as well as health, safety and environment (HSE), logistics and industry sector, trade and networking organisations and their affiliated working groups.

This enables Borealis to take part in policy debates, to exchange expertise and experience, and to monitor trends and developments. Memberships also enable Borealis to support industry efforts that will help the Group to implement its sustainability and business strategy. Examples are the Cracker of the Future consortium and the consortium for Collaborative Innovation for Low Carbon Emitting Technologies in the Chemical Industry.

Borealis' memberships include the following organisations and associations (in alphabetical order; not exhaustive):

- ACTA (Austrian Corporate Treasury Association)
- CEFIC (European Chemical Industry Council)
- CEFLEX (A Circular Economy for Flexible Packaging)
- Ellen MacArthur Foundation – "The New Plastics Economy" (NPEC)
- Petrochemicals Europe
- Essencia (Belgium, Federation for Chemistry and Life Sciences Industries)
- Europacable (as associated industry partner)
- EUROPEN (European Organisation for Packaging and the Environment)
- Fertilizers Europe
- FSEU (Fire Safe Europe)
- IFA (International Fertilizer Industry Association)
- IV ("Vereinigung der Österreichischen Industrie", the Federation of Austrian Industries)
- IVA (Industrie Verband Agra, German Agrochemical Industry Association)
- Kemianteollisuusry (The Finnish Chemical Industry Federation)
- MPPE (MedPhamPlast Europe)
- PCEP (Polyolefins Circular Economy Platform)
- Petrochemicals Europe (petrochemicals industry sector within CEFIC)
- PlasticsEurope
- PRE (Plastics Recyclers Europe)
- TEPPFA (The European Plastic Pipes and Fittings Association)
- Together for Sustainability
- UNIFA ("Union des Industries de la Fertilisation", the association of the French fertilizer industry)
- WBCSD (World Business Council for Sustainable Development)
- WKO ("Wirtschaftskammer Österreich", the Austrian Federal Economic Chamber)
- WPC (World Plastics Council)
- WSUP (Water & Sanitation for the Urban Poor)

### Investors and Capital Providers
Borealis regularly holds Bankers & Investors Days.
The Group also actively participates in relevant treasury, funding and investor relations forums and associations.

### Local Communities
Borealis maintains an ongoing dialogue with communities in which it has production facilities, through channels best suited to local needs. These include face-to-face meetings with community representatives, regular newsletters and Open Door Days.

### Media
Borealis frequently interacts with the media via established channels, including media interviews and events, press releases and the news section of the Borealis website.

### Non-Governmental Organisations (NGOs)
Borealis acknowledges the importance of NGOs in increasing awareness of our material topics. For example, the Ellen MacArthur Foundation runs initiatives for making the Circular Economy a reality. In particular, the Foundation's New Plastics Economy (NPEC) initiative brings together key stakeholders to rethink and redesign the future of plastics, starting with packaging. Borealis provided constructive input to NPEC's "Reuse – Rethinking Packaging" book, and also pledged a target to increase substantially the quantity of recycled material in its portfolio of solutions.

### Owners
There are regular Supervisory Board meetings and owners' controllers meetings, as well as individual face-to-face interactions at executive level, project level (for example, where working on joint projects) or expert level, to exchange experiences or use synergies.

### Society
Borealis interacts with the general public through events such as Open Door Days at its plants, and through dialogue with representatives such as consumer associations.
The general public has been Borealis' most vocal stakeholder with regard to their preferences about the plastics industry as a whole, and to polyolefins in respect of topics such as the Circular Economy and plastic waste.

### Suppliers and Contractors
Borealis continuously interacts with suppliers and contractors through the Borealis Supplier Relationship Management programme, as well as regular face-to-face meetings, suppliers' events and annual industry conventions for experience exchange and relationship management. The Group also takes the lead in caring for the sustainability of its suppliers, by actively engaging with them through the Together for Sustainability association, aimed at improving sustainability standards in the chemical industry's supply chain. → chapter Materials & Logistics, p.82

### Value Chain Partners
In addition to regular engagement with companies throughout the plastics and fertilizer value chain, including the waste management and plastics recycling industries, Borealis actively participates at petrochemical and chemical industry conferences and events such as the K-Fair in Dusseldorf, the Stockholm World Water Week and GPCA Forum in Abu Dhabi, as well as various HSE conferences such as the EHS Conference in Berlin.

### Works Councils
There are regular meetings of the Corporate Co-operation Council, a dialogue platform between employee representatives, works councils and top management, in order to maintain a high level of trust and ensure that employee representatives are well informed and engaged for specific initiatives.

# Public Affairs

**Goals**

The goal of Borealis' Public Affairs organisation is to monitor and shape regulation and policy related to the sustainability focus areas of the Circular Economy, Energy & Climate and Health & Safety. Borealis' objective is to have an aligned approach, both within the industry associations and with many other relevant key stakeholders.

**Key Achievements and Results**

To support Borealis' Circular Economy sustainability focus and assist the Group's transition from a linear business model to a circular model, Borealis primarily focused its Public Affairs activities in 2019 on supporting the European Commission's regulatory and policy agenda on its strategy for plastics. In addition, Public Affairs collaborated with key influencing stakeholders, such as non-governmental organisations (NGOs) and governmental organisations to address societal concerns on topics such as climate change, the Circular Economy and chemicals safety, which are also key focus areas of the European Commission.

## Approach to Public Affairs

Borealis' Public Affairs function develops the Group's advocacy strategy and positions on key issues to support its business activities. The Group implements this strategy by engaging with key stakeholders through an effective Public Affairs organisation that is part of the Sustainability & Public Affairs organisation, reporting into the Group Strategy & Development function and managed through a Public Affairs Coordination Team (PACT). This team meets regularly to align on Group Issue positions. The members are Borealis representatives in industry associations and they play a key role to:

- advocate Borealis' position on Group Issues and influence policy;
- proactively engage with stakeholders;
- highlight and respond to issues of concern; and
- contribute to business strategies.

The central Public Affairs organisation orchestrates Borealis' advocacy efforts at location and Group level. At the Group level, the function:

- develops position papers on Group Issues;
- maps stakeholders and plans engagement activities with them;
- carries out research to determine material issues; and
- manages Borealis' membership of associations, such as the World Business Council for Sustainable Development and the World Plastics Council.

At the European level, Public Affairs helps to shape EU policies by engaging with decision makers and influencers, including industry associations, such as PlasticsEurope, Polyolefin Circular Economy Platform (PCEP) and the European Chemical Industry Council (CEFIC).

At a location level, Public Affairs supports the locations' stakeholder engagement process and manages industry association memberships and specific issues.

In line with the Group's Ethics Policy, Borealis does not join political parties or make financial contributions to them or their candidates.

## Activities 2019

### EU Advocacy

Borealis Public Affairs is actively collaborating with the EU to develop a policy framework which supports the Group's Sustainability Strategy in a number of focus areas, as described below.

Circular Economy

Borealis aims to contribute to the implementation of the non-binding EU Strategy on Plastics and the Circular Plastics Alliance. The vision of the Circular Plastics Alliance is to deliver on the circular economy for plastics and substantially increase the use of recycled plastics in new products. The Circular Plastics Alliance endorses the ambitious target that by 2025 at least 10 million tonnes of recycled plastics should find their way into products and packaging in Europe each year, helping to deliver the circular economy with a life cycle approach. Borealis made a pledge towards the EU Strategy on Plastics in 2018 and in 2019 signed the Circular Plastics Alliance declaration. Borealis was also elected Thematic Coordinator for Design in the packaging working group, in recognition of its leadership in the field.

In addition, Borealis has supported its associations and the European Commission to revise legal acts to assist the development of the circular economy. This included the revision of the essential requirements under the Packaging

and Packaging Waste Directive, which ensure that all packaging is designed to meet application requirements and for recycling.

During 2019, Borealis became a Core Partner of the New Plastics Economy (NPEC) initiative at the Ellen MacArthur Foundation to support the development of its strategy. Borealis also supported the development of guidelines for the eco-modulated Extended Producers Responsibility fee for packaging. The Group's extensive experience on the impact of design on final recycled material quality and costs of sorting and recycling, allowed it to provide valuable input to the EU Commission on the future guidelines.

Health & Safety

Borealis contributed to the "EU chemicals policy 2030 – building on the past, moving to the future" event, which was organised by the European Commission. The Group's contribution focused on future steps and potential developments in EU chemicals policy, in order to:

- improve the protection of human health and the environment, in line with the UN Sustainable Development Goals; and
- support the good functioning of the internal market, while enhancing the competitiveness and innovation of EU industry.

Climate Change

Borealis and a number of other petrochemical companies formed the 'Cracker of the Future' Consortium, which will explore electrical cracking in the case of base chemicals. This could stimulate the use of 100% renewable energy to power crackers and reduce greenhouse gas emissions. This transformation in technology is necessary to meet the EU's goal to be climate neutral by 2050. Other Borealis initiatives in this area include using renewable propane as a feedstock, through a cooperation with Neste.

→ chapter Circular Economy, p.52

Sustainable Finance

The action plan on sustainable finance adopted by the European Commission has three objectives. These are to:

- redirect capital flows towards sustainable investment to achieve sustainable and inclusive growth;
- manage financial risks stemming from climate change, environmental degradation and social issues; and
- foster transparency and long-termism in financial and economic activity.

2019 was dedicated to developing a common language for sustainable finance. This means a unified EU classification system or taxonomy which defines what is sustainable and identifies areas where sustainable investment can make the biggest impact. Borealis, in collaboration with CEFIC, played a key role in advancing the industry's positions with EU member states. The aims of this engagement were to:

- avoid a generalised "brown-listing" of all investments in the chemical sector as "unsustainable";
- include consideration of the "value chain" instead of "economic activity" as the basis for the technical screening criteria defining sustainable investments;
- include investments in sustainable technologies in the chemical industry in the definition of sustainable finance and in the technical screening criteria; and
- ensure that manufacturing industry, including chemicals, is fully involved in developing the technical screening criteria defining sustainable investments.

Regional Advocacy

To support its operation in Finland, Borealis engaged with the Finnish government while it held the EU Presidency during 2019. This engagement supported the EU policy agenda and the following legislative acts were discussed: the Drinking Water Directive, the Plastics Tax and the Taxonomy Proposal, which is part of the Green finance framework.

In March 2019, Borealis was awarded the Foreign Investment of the Year Trophy 2019 from Flanders Investment & Trade, receiving the trophy from President of Flanders Geert Bourgeois. The award recognises foreign direct investment of particular socioeconomic importance. The new 750 kilotonne per annum propane dehydrogenation plant at Kallo is Borealis' largest ever investment in Europe.

## Value Chain Advocacy

Borealis Public Affairs also actively supported other parts of the value chain during 2019, notably in the areas of packaging and cables.

### Enhancing the Circularity of Plastics

During the year, Borealis developed 10 Codes of Conduct for the design for recycling of packaging and shared them with a number of stakeholders, including converters, brand owners, retailers and policy makers. → chapter Circular Economy, p.52

The Group also played an important role in developing BARRIER guidelines with CEFLEX, which provide guidance on best practices for designers wanting to improve the recyclability of consumer unit flexible plastic packaging. The project was conducted in collaboration with the NPEC initiative at the Ellen MacArthur Foundation. In addition, extensive work was done on assessing end markets for collected and sorted PE and PP flexible packaging household waste.

Borealis also participated in Project Holy Grail, which was led by Procter & Gamble and facilitated by the Ellen MacArthur Foundation. As a full value-chain pre-competitive collaboration, the aim of Holy Grail was to discover how the tagging of packaging affects the accuracy of sorting and recycling systems. The project successfully concluded at the 'Digital Watermarks at Work' event at Tomra, which included a live demonstration of an add-on module to an existing sorting unit. Borealis played a key role in the realisation of the demonstration.

In addition, Borealis organised a rigid consumer products circular economy event in Munich in April 2019, attended by more than 100 customers and brand owners. The event aimed to answer concerns over the legislative implementation of circular economy initiatives and increase clarity on mechanical versus chemical recycling, as well as new technologies for improved sorting such as digital watermarking or reuse opportunities through foaming.

### Supporting the Development of a Sustainable European Energy Network

The Group held successful meetings with a range of distribution service organisations across Europe to promote its own offer and influence tender specifications. These included Vattenfall and Elenia in the Nordic countries; EnBW and Eon in Germany; Enexis and Alliander in the Netherlands; and PGE, Enea, Energa, Tauron and Eon in Poland and Slovakia.

Borealis also discussed other key issues with these organisations, including sustainability, recyclability, managing future grid loads and providing enough capacity to meet, for example, demand for electric vehicle charging.

Borealis takes an active role in the development of the high voltage undergrounded electrical grid in Europe. The Group participates in Europacable and extended its membership to include the newly formed Submarine group. This year's accomplishments include publishing joint recommendations with the European Network of Transmission System Operators on how to further improve the reliability of high voltage direct current (HVDC) cable systems. This recognises that well-interconnected electricity grids are vital for Europe to become a sustainable and carbon-neutral economy by 2050, in compliance with the Paris Agreement. Europacable has also strengthened its partnerships and interactions with the Renewable Grid Initiative and Wind Europe.

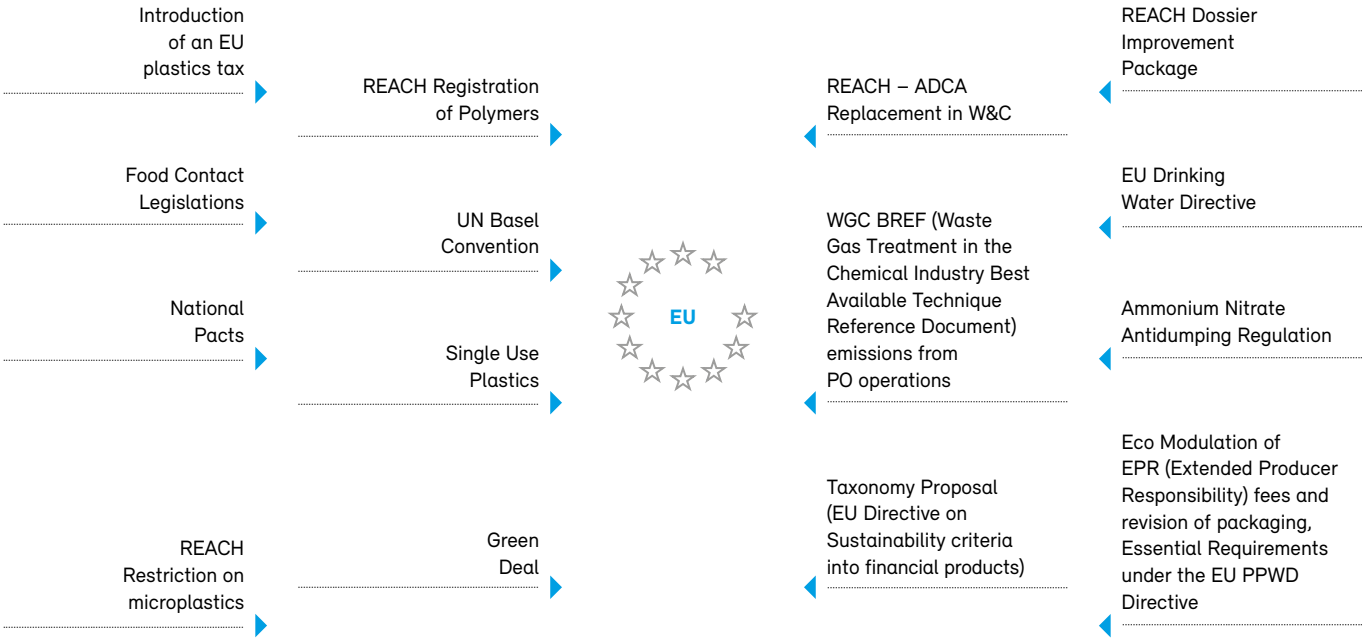
Borealis also actively engages in the power value chain through regular interactions and meetings with end users such as Tennet, Amprion, Scottish Southern Energy, RTE and Svenska Kraftnät.

Borealis is a member of the Advisory Board of Neptune, a large Belgian research project regarding HVDC and HVDC grids.

## Best Polymer Producers Awards for Europe 2019

Borealis was awarded as PP supplier of the year by EU converters and was runner-up in the LDPE category.

Fig. 5: **EU policy initiatives impacting Borealis' business**




## Issue Management

Borealis identifies emerging issues, primarily in relation to the Circular Economy, Health & Safety and Energy & Climate, and develops advocacy plans accordingly.

## Outlook

Borealis Public Affairs will continue to:
- strengthen the voice of Borealis;
- address societal concerns;
- increase Borealis' engagement with key stakeholders;
- align the Group's position on sustainability issues; and
- support Borealis' circular economy strategy.

Public Affairs will give particular attention to evolving regulations, policy and other developments that could potentially have a significant impact on Borealis' business, including:
- potential taxes on non-recyclable plastic packaging and carbon dioxide;
- the impact of the Basel Convention on the cross-border transportation of plastic waste;
- the Essential Requirements under the Packaging and Packaging Waste Directive;
- design for recyclability and mass-balancing of recycled and renewable feedstock;
- trade wars and the implications for European-based assets; and
- the restriction of microplastics and other widely used chemicals in Borealis' industry.

# Social Sustainability

## Introduction

Businesses can only grow sustainably in a healthy environment and stable society. To help foster its role as a socially responsible company, Borealis has established the Borealis Social Fund. To maximise the impact of its engagement and to align Borealis' social engagement activities with its Sustainability Strategy, the Group has defined three areas of engagement, contributing directly to the UN Sustainable Development Goals (UN SDGs):

### SDG 14: Life Below Water

Waste and Resource Efficiency and Prevention of Marine Litter, with the following focus:

- supporting research and innovation;
- improving waste management in emerging and developing countries to prevent marine litter; and
- raising awareness and encouraging behaviour change.

### SDG 6: Clean Water and Sanitation

Water and Sanitation (Water for the World), with the following focus:

- providing access to safe water and sanitation;
- supporting the preservation of water resources; and
- raising awareness and promoting best practices.

### SDG 4: Quality Education

Education and Social Integration, with the following focus:

- nurturing interest in chemistry and science;
- supporting education to meet future challenges; and
- integrating marginalised and underprivileged people.

## Waste and Resource Efficiency and Prevention of Marine Litter

Marine litter is a global challenge. Up to 13 million tonnes of plastic leaks into the ocean every year.

Around 86% of the plastic leakage comes from Asian countries, as a result of their fast-growing economies, population and consumption, and the necessary waste management infrastructure not being able to keep pace with this rapid development. Poor waste management contributes to reduced tourism and fishing productivity and impacts community health. Finally, ocean plastic severely pollutes the environment, rivers, oceans and impacts marine life.

The world needs to address the problem and become more resource efficient. The solution is to establish more sustainable and circular waste management systems and to stop plastic leakage at source.

### 2019 Project Highlights

Project STOP – Stop Ocean Plastics

In 2017, Borealis and SYSTEMIQ co-founded Project STOP (Stop Ocean Plastics), a programme that focuses on the regions with high leakage rates. Project STOP works hand-in-hand with cities to create leak-free, low-cost and more circular waste management systems. Supported by industry and government partners, Project STOP aims to achieve zero leakage of waste into the environment and to recycle more plastics. In the process, it also creates community benefits, including jobs in waste management and a reduction in the harmful impact of mismanaged waste on public health, tourism and fisheries.

Project STOP uses a "system enabler" approach, whereby a team of experts works with the local government, communities and non-governmental organisations (NGOs) to build institutional capacity and support financial and business planning, behaviour change, technical expertise, project management and recycling valorisation. Project STOP has been joined by more partners, who are each committed to bringing their expertise, know-how and financial and technical support to the initiative. Sustainable Waste Indonesia, Veolia, the Norwegian Embassy in Jakarta as well as NOVA Chemicals and Borouge joined the project in 2018. During 2019, Schwarz Group, Nestle and the Alliance to End Plastic Waste became partners in Project STOP.

The first STOP city partnership was launched in 2018 in Muncar, Indonesia, a fishing harbour with around 130,000 inhabitants. So far, the project has:

- created 84 new jobs in waste collection, sorting, organic processing and management and administration;
- provided waste collection services to around 47,500 people, for the first time in their lives;
- collected ~3,000 tonnes of waste (~360 tonnes of plastic);
- cleaned up 5,000m$^2$ of beach and removed additional 76 tonnes of waste;
- built a black soldier fly nursery to valorise organic waste;
- developed a financially transparent process for transferring funds;
- co-developed village waste regulations and inter-village agreements;
- held training sessions on organisational design, financial management and business plan development;
- improved the existing sortation facility and built a second one; and
- achieved break-even of operating costs in the sorting facility (TPST) of the Tembrokrejo district.

The launch of two more city-partnership projects is planned for 2020. With these three cities, Project STOP will reach 450,000 people and prevent 80,000 tonnes of waste leaking into the environment every year.

In 2019, Project STOP received the renowned ADIPEC Award. This award recognises outstanding contributions to the future of the oil and gas industry and was presented at a ceremony in Abu Dhabi on 11 November 2019.
→ www.stopoceanplastics.com

## Water and Sanitation

Clean, accessible water for all is an essential part of the world we want to live in and there is sufficient fresh water on the planet to achieve this. However, due to bad economics or poor infrastructure, millions of people including children die every year from diseases associated with inadequate water supply, sanitation and hygiene. These problems also impact food security, livelihood choices and educational opportunities for poor families across the world. According to the United Nations, millions of people still lack access to basic drinking water and safe sanitation services. Drought in particular afflicts some of the world's poorest countries, worsening hunger and malnutrition.

Since 2007, Borealis and Borouge have contributed to solving this global challenge through Water for the World, a joint initiative to advance solutions, expertise and know-how to address the global water challenge in rural and urban communities, with a focus on South-East Asia and Africa.

To maximise the benefit it brings, Water for the World works in partnership with NGOs and the private sector, including business partners and customers of Borealis and Borouge. Since its launch, Water for the World has carried out numerous projects across Asia and Africa, including China, Ethiopia, India, Kenya, Nepal, Morocco, Myanmar and Pakistan, benefiting more than 800,000 people.

### 2019 Project Highlights

Providing a Life-Changing Safe Water Supply to Rural Villages in Morocco

Izgouren and Ilguiloda are the two poorest villages in Ait Abyoud, one of Morocco's remotest communities. To meet their essential need for water for drinking, cooking, washing and subsistence farming, women and children had to walk several kilometres to the nearest spring, often several times a day. This meant children were unable to attend school and the women could not work.

The solution was to pipe water to tanks fed by a well. Water for the World provided funds and the material for 6 kilometres of pipe. BorSafe™ PE100 HE3490LS ready-made compound was chosen for the pipe system, due to its long-term durability and ease of installation, when compared with the alternative of ductile iron.

The Columbia University chapter of Engineers Without Borders worked with local people to construct a pipeline from the first village, while local NGO High Atlas Foundation ensured close collaboration with the community. The Columbia University team will return in 2020 to help expand the system, so it reaches the second village. After the project was fully completed, education and women's development programmes began. These will result in more children in school and enable women to work, to provide financially for their families.

### Education and Social Integration

Young people's education and innovation skills will determine how society will cope with global sustainability challenges such as climate change and ocean pollution. Their critical minds are essential if we are to continue to find innovative solutions to the ever-more complex challenges facing society today.

Educational systems therefore need to adopt a framework and practices that enable young people to develop the right skills, so they can put their ideas into practice. Stimulating enthusiasm for science and chemistry at an early age means that today's young and inquisitive minds will become tomorrow's leading scientists and innovators. This is why Borealis supports initiatives to inspire children in the fields of science, technology, engineering and mathematics in particular.

Borealis has long-standing partnerships with a number of educational institutions in Europe as well as in the UAE and in 2019 announced a new round of support to three leading social organisations in the UAE – the Emirates Foundation, the UAE Paralympic Committee and the Emirates National Schools.

#### 2019 Project Highlights

ZOOM Children's Museum: Inspiring the Creative Spirit of the Young Generation

Borealis has been a main sponsor of the ZOOM Children's Museum in Vienna, Austria since 2013. ZOOM aims to strengthen children's creative capacity, enabling them to enjoy discursive approaches and nuanced ways of seeing, encouraging them to take a keen early interest in science and research, and promoting their problem-solving skills. Over 50,000 children visit exhibitions at ZOOM every year. They engage with topics from everyday life, science and art, presenting complex content playfully and using all their senses.

Since 2013, Borealis has supported a number of activities, such as two thematic exhibitions: 'Plastic' and 'Earth & Soil'. This successful collaboration, geared to promoting the spirit of research in children, has now been extended for a further three years, with another new exhibition to be co-developed on the topic of sustainability.

JKU MORE Scholarship

Asylum seekers' ability to integrate into their new society and the job world is largely dependent on their education and training. With this in mind, Borealis and the Johannes Kepler University (JKU) in Linz, Austria, have initiated the "Borealis MORE" scholarship programme. This is the first of its kind in Austria, enabling asylum applicants to start university studies and filling a critical gap in government support. An initial 25 students from eight nations were selected for the 2017/18 academic year and 21 for the 2018/19 academic year. In 2019, the first student participating in the programme finalised his masters thesis and graduated. Borealis and JKU aim to continue this programme and extend it to other universities.

# Borealis Business Activities

## Our Business Model

### Industry Segments

Borealis clustered its business in three units: Polyolefins; Hydrocarbons & Energy and Fertilizers, Melamine & Technical Nitrogen Products.

### Polyolefins

Energy

Borealis is a leading provider of polyolefin compounds for the global energy industry. Step-change innovations based on the Borlink™ technology make electricity power grids more robust and reliable, eliminate wastage, and help transport energy from renewable sources more efficiently, and over longer distances. The broad range of sophisticated solutions includes extra high, high, and medium voltage solutions for energy transmission, and low voltage solutions for energy distribution cable applications.

Safer wires and cables for the solar, automotive, and construction industries are made possible by unique Borealis polymer manufacturing technologies. Borealis also has a proven track record of innovation in the area of flame retardant cables for these industries. Borealis offers a comprehensive range of communications cables solutions for advanced data, copper multipair, fibre optic, and coaxial cables, all of which enhance the efficiency of data and communication networks.

Leading Borealis PP material solutions are used to produce capacitor film products. Exhibiting exceptional cleanliness standards, these materials help achieve outstanding electrical properties. Their consistent processing behaviour enables the production of extremely thin films.

Unique polymer and manufacturing technologies using Borlink™, Visico™/Ambicat™, Borstar® and Casico™ allow Borealis to offer innovative compounds tailored to specific customer needs.

With the launch of the new flagship solar brand Quentys™ in 2017, Borealis moved into the global solar industry.

Fig. 6: **Industries served by Borealis' polyolefins applications**

**Energy**

**Automotive**

**Pipes & Fittings**

**Consumer Products**

**Healthcare**

**Polymer Solutions**

**Circular Economy Solutions**

Pioneering new products based on Quentys are making solar energy more effective and affordable. For example, Borealis Polyolefin encapsulant films improve the operational reliability of photovoltaic modules throughout product lifetime. This results in better cost efficiency and thus greater viability for solar power.

Automotive

Borealis is a leading supplier of innovative polyolefin plastic materials for engineering applications in the automotive industry.

Proprietary Borealis technologies are lighter weight replacement solutions for conventional materials like metal, rubber and engineering polymers. Borealis' material solutions help facilitate lightweight construction and thus play an important role in reducing carbon emissions. For instance, over the lifespan of an automotive application like a bumper, eight kilogrammes (kg) of carbon emissions can be avoided by using one kg of polypropylene (PP) compounds. Borealis grades with post-consumer recycled (PCR) plastics content meet growing industry and end-user demand for high quality materials that make better use of the planet's resources. By combining PCR and virgin material to produce high-end grades of consistent quality, fewer resources are used and less waste is generated over the lifetime of the product.

Borealis offers these leading-edge, lightweight polyolefins for a wide range of exterior, interior, and under-the-bonnet applications, including: bumpers, body panels, dashboards, door claddings, central consoles, pedal housings, cooling systems, battery trays and semi-structural body parts. Working closely with key value chain partners, Borealis continually develops novel materials for specific composite applications such as structural carriers.

Pipes & Fittings

A trusted partner to the pipe industry for over 50 years, Borealis supplies advanced polyolefin pipe system materials to a wide range of projects and communities around the world. By offering more durable and reliable pipes, Borealis' step change innovations continue to boost the sustainability of pipe networks by making them safer and more efficient. These improved networks also help eliminate wastage and loss whilst at the same time offering energy savings.

Water and sanitation systems can be made more efficient and reliable by using proprietary Borealis materials. For example, when compared to conventional materials, modern polyethylene (PE) systems reduce water losses by a factor of eight. Trenchless technology reduces installation costs by up to 60%.

Using its proprietary Borstar technology as a base, Borealis offers pipes used in many different industries: water and gas supply, waste water, drainage and sewage disposal, and plumbing and heating.

For the oil and gas industry, Borealis provides reliable and high-quality solutions from one end of the pipeline to the other, including multi-layer coating solutions for onshore and offshore oil and gas pipelines.

Consumer Products

With over 50 years' experience in the industry, Borealis is an innovative and reliable supplier of superior polyolefin plastic materials used in advanced packaging, fibre, and appliances.

Value-added packaging and fibre innovations play a role in safeguarding the quality and safety of consumer and industrial products, but also fulfil demand for enhanced functionality and convenience. Plastic food packaging, for example, helps protect and preserve food from farm to fork. Spoilage is avoided thanks to efficient filling systems and leak-resistant packaging. Food stays fresher longer, and less must be thrown away. What is more, the consumer has a wider range of choices when it comes to convenient and appealing packaging formats.

Superior and proprietary Borealis technologies, such as Borstar, also make advanced applications possible in flexible packaging (including lamination film, shrink film, stand-up pouches); rigid packaging (caps and closures, bottles, thin wall and transport packaging); and non-woven and technical fibres (filtration systems, hygiene products, technical textiles).

Advanced PP solutions offered by Borealis make white goods (such as washing machines, refrigerators, air conditioning units and more); and small appliances (toasters, ventilators, power tools etc.) lighter yet more robust, more energy efficient yet visually appealing.

Healthcare

Borealis offers reliable solutions that add value to healthcare thanks to an impressive track record in Value Creation through Innovation, and close cooperation with customers. The growing Bormed™ polyolefins portfolio offers superior technical performance for medical devices, pharmaceuticals, and diagnostic packaging. Borealis' innovations help make healthcare packaging and medical devices safer and more affordable whilst improving usability, a key criterion in today's ageing society.

Healthcare products that have all been enhanced by advanced polyolefins made by Borealis include, among others: medical devices, medical pouches, sachets, syringes, insulin injection devices, unbreakable transparent bottles, and single-dose eye drop dispensers.

Importantly, as a global supplier, Borealis can ensure the security of supply, and provide technical support tailored to the specific and stringent requirements of the market.

Polymer Solutions

Borealis continually develops novel and performance enhancing solutions such as polymer modifiers (plastomers and elastomers), foam solutions, and reinforced polyolefins for structural parts. These material solutions may be designed for new or existing applications.

In polymer modifiers, Borealis continues to expand its wide range of attractive solutions. The multitalented Queo™ brand helps bridge the performance gap between conventional plastics such as PE and conventional elastomers like ethylene propylene diene monomer. Queo makes it possible to meet or even surpass the most demanding requirements in sealing, flexibility, compatibility and processability.

Borealis' high melt strength (HMS), PP-based foamed products fulfil the varying and sophisticated needs of both converters and consumers in the packaging, automotive and construction industries. For example, foam solutions in packaging offer excellent recyclability, especially when compared to conventional alternatives. Furthermore, HMS PP foam also offers weight reduction, heat stability (for microwavable packaging) and good thermal insulation properties.

Borealis' reinforced polyolefins are novel, performance-enhancing material solutions. The wide range of PP compounds are globally available and help contribute to enhanced sustainability, for example through improved cost and energy efficiency.

Circular Economy Solutions

Borealis Circular Economy Solutions is dedicated to discovering new opportunities for long-term business growth, primarily in the areas of mechanical recycling and design for recyclability (DfR).

Over the recent years, mechanical recycling has proven to be effective, and will likely remain the eco-efficient method of choice in the foreseeable future when implementing the principles of the circular economy. The circular economy opens up new ways to reinvent the economy in the interest of preserving natural capital and minimising waste. Another important aspect of eco-efficient waste stream management is DfR, which incorporates recycling principles into the design process itself in order to achieve optimised circulation of material for recycling and re-use. To this end, Borealis is collaborating with value chain partners – designers, retailers, packaging producers and brand owners – to develop material solutions and concepts to improve end-of-life recyclability and the performance properties of recyclate material.

## Base Chemicals

Hydrocarbons & Energy

Borealis produces a wide range of products for use in numerous and diverse industries, including, phenol, acetone, ethylene and propylene; Borealis sources various feedstock such as naphtha, butane, propane and ethane from the oil and gas industry. Through its olefin units, it converts these into the building blocks of the chemical industry: ethylene, propylene and C4 hydrocarbons (petrochemical derivatives consisting of butanes, butylenes and butadienes), among others. Steam crackers in Finland, Sweden, and Abu Dhabi – the latter operated by Borouge – produce ethylene, propylene and C4 hydrocarbons, while propylene is also produced in a propane dehydrogenation plant in Kallo, Belgium. Feedstock and other olefins required for Borealis and Borouge polyolefin plants are either sourced from its owners, or purchased on the market. A range of co-products from the steam cracking process, including butadiene, butene compounds, and pygas, are also sold on international markets.

Phenol, benzene, cumene, and acetone are produced in Finland, and sold mainly to the adhesive, fibre, epoxy resin and polycarbonate industries. In the Nordic and Baltic regions, Borealis is the leading producer of phenol, which is used in adhesives, construction materials, carpets, CDs, DVDs, mobile phones and household appliances. Acetone is commonly used in solvents for paints, acrylics, fibres and pharmaceuticals.

### Fertilizers, Melamine and Technical Nitrogen Products (TEN)

Fertilizers

Efficient and effective use of fertilizers has become more essential than ever. The world's population is expected to rise from today's 7.6 billion to over 9.6 billion by 2050, and an increasing number of people will live in densely populated urban areas. As incomes in emerging nations rise, more meat is consumed and thus more grain to feed livestock must be produced. Biofuels also generate demand for increased yields. Because space for agricultural expansion is limited, yields must be optimised.

At the same time, in many nations there is a heightened environmental awareness of the need to promote fertilizers with low carbon footprints, maintain healthy soil environments, and reduce run-off from fields.

Borealis produces and then distributes and supplies around five million tonnes of fertilizers and technical nitrogen products each year via its Borealis L.A.T distribution network. With more than 60 warehouses across Europe and an inventory capacity of over 700,000 tonnes. The product portfolio comprises nitrogenous fertilizers, compound NPK fertilizers and speciality fertilizers with various formulas of primary and secondary nutrients as well as oligo-elements. Non-European markets are serviced mainly via the Borealis Rosier distribution network.

Melamine

Borealis produces melamine at its plants in Linz, Austria, and at its facility in Piesteritz, Germany. Converted from natural gas, melamine has become an essential material for the global production of synthetic resins. Around 80% of Borealis' melamine production is destined for the wood-based panel industry, for example for decorative surface coatings of wood-based materials.

In the manufacture of everyday objects used in the kitchen or around the house, melamine also plays an important role, for example as one component used to make handles for pots and pans.

Technical Nitrogen Products

A broad range of technical nitrogen product solutions is derived from the raw materials urea, ammonia, ammonium nitrate and nitric acid.

AdBlue®

AdBlue, a high purity aqueous urea solution, is used as a $NO_x$ reduction agent for trucks, buses, tractors, construction machinery, and diesel passenger cars.

Ammonia

A compound of nitrogen and hydrogen, ammonia has many and diverse uses: as a precursor or intermediate product in the production of nitrogenous materials; as a refrigerant in cooling systems; as an $NO_x$ reduction agent; and as a hardening agent for metal surfaces.

Urea

Urea is a synthetically produced organic compound of ammonia and carbon dioxide. It is utilised in the production of melamine and the glues used in particle boards, but also as a raw material for resins, and as an $NO_x$ reduction agent.

# Innovation

**Goals**

Borealis has the following innovation-related goals:

- in Polyolefins (PO), to continue to develop unique products and solutions based on proprietary technology, with high purity, improved performance and recyclability;
- in Hydrocarbons & Energy, to evaluate new technologies, improve energy efficiency and emissions and improve feedstock purity and flexibility, as well as contribute to the Circular Economy with alternative feedstocks, chemical recycling and $CO_2$ avoidance; and
- in Fertilizer, Melamine and Technical Nitrogen Products (TEN), to improve processes, reduce emissions, develop and improve products, and investigate alternative feedstocks.

More generally, the Group has a continued innovation focus on health, safety and the environment (HSE), project implementation and innovation delivery.

**Key Achievements and Results**

During 2019, Borealis made further progress with its innovation projects across the Group.

In Polyolefins, Borealis continued its key innovation programmes, resulting in:

- new breakthrough applications enhancing the circularity of packaging products;
- breakthrough compounds for automotive, energy and new business development;
- new products including record-breaking cable insulation, solar panel solutions and lightweight materials for automotive applications;
- 120 priority patent applications being filed in 2019; and
- the launch of several step-change products, including:
  * Bormed™ BJ868MO, a heterophasic polypropylene copolymer with a high melt flow rate and good toughness within a wide temperature range, which is easy to process for complex shapes. It is intended for use in the production of medical and diagnostic devices, such as pipettes tips;
  * ADCA – ME1254, an ADCA-free grade used to produce foamed telecom cables; and
  * Borcycle™ MF1981SY, a compound especially suited for use in appliances, for black parts needing good surface aesthetics. This compound is a valuable addition to Borealis' rPO portfolio owing to its unique recipe, with talc and over 80% recycled material, providing an ideal balance between stiffness and impact.

In Hydrocarbons & Energy, innovation achievements in the year included:

- supporting implementation of light feedstock opportunities and evaluating and testing alternative hydrocarbon sources;
- evaluating and testing bio-feedstock technology; and
- a successful pilot of electrical splitting as a liquid separation technology .

In Fertilizer, Melamine and TEN, Borealis' innovation achievements included:

- finalising the low-temperature shift catalyst benchmark, with clear recommendations for new catalyst loads; and
- delivering several metallurgy investigations, with high impact on locations and HSE in terms of root-cause analysis for plant failures, leading to increased plant reliability or avoidance of unplanned plant shutdowns, and material selection for new investments in corrosive environments.

## Introduction

Innovation is fundamental to Borealis' ability to create added-value products that benefit society. It also helps the Group to improve its competitiveness and enhance its efficiency and sustainability, and therefore has a direct impact on people, the planet and profit.

Borealis' global innovation community comprises more than 500 employees. The Group spends approximately 1.8% of its revenue in innovation and R&D, in line with Borealis' position as the technology powerhouse of the industry.

In Polyolefins, innovation focuses on providing solutions to societal challenges, for example by increasing food durability through efficient packaging, improving the effectiveness of water and energy distribution or enabling new medical applications. Innovation is therefore driven by market needs and is focused on specific outcomes. It enables Borealis to remain among the leading European polyolefins producers, as the only producer that operates all types of polymerisation processes. Borealis is also able to use its leading technology position in venture-based licensing, in which Borealis provides the technology and its partners bring their complementary strengths.

Similarly in Hydrocarbons & Energy, Borealis looks to find innovative approaches to using new feedstock sources, improving resource efficiency and reducing energy consumption and flaring, which in turn reduces emissions of greenhouse gases and other substances such as dust. Hydrocarbons & Energy's innovation activities also include $CO_2$ avoidance and chemical recycling.

In Fertilizer, Melamine and TEN, innovation enables Borealis to make its processes more reliable and enhance its efficiency and sustainability. Examples include finding new ways of utilising waste, reducing emissions or adapting to alternative feedstocks, such as secondary phosphorous sources for NPK fertilizers.

## Innovation Culture

In Polyolefins, Borealis has a Value Creation through Innovation strategy that sets it apart from other companies. This is because Borealis' strategy does not focus on one product or solution, but on the entire polyolefins value chain. Together with Borouge, Borealis examines the complete life cycle of a product: how it can be created, processed, deployed and, ultimately, recovered or recycled. Special focus is given to Circular Economy solutions, developing new recyclates based on polymer recycling technologies with a focus on new polymer compounds, and monomer recycling technologies. In 2019, the Group announced a cooperation agreement with EREMA to help accelerate the transition to a Circular Economy (→ Innovation Success Stories, below). The cooperation with Qpinch to scale up revolutionary waste-heat-recovery technology, which was announced in 2018, is another excellent example of how Borealis works with other companies, including start-ups, to reduce its environmental footprint.

Hydrocarbons & Energy is following Borealis' open innovation strategy in its cooperation with OMV at the companies' shared location in Schwechat, Austria. Together, Borealis and OMV are looking to advance the monomer recycling of post-consumer plastics. Evaluation of monomer recycling technologies is ongoing, in order to obtain virgin polymer products based on feedstock from recycled plastics. Borealis is also participating in the "Cracker of the future" consortium, targeting a new furnace concept that uses renewable electricity rather than fossil fuels, to significantly reduce carbon emissions.

The Visioneering Philosophy™ describes this drive towards Value Creation through Innovation. This philosophy is about pushing the boundaries of science to develop customer solutions with exceptional performance. This means understanding what the customer wants and leveraging the right competencies, tools and expertise to develop the best solution with a specific service level. Borealis therefore works to address the challenges of society with smarter, more sustainable solutions for the future.

## Organisational Structure

Borealis' key innovation sites are its Innovation Headquarters (IHQ) in Linz, Austria, and two Innovation Centres in Stenungsund, Sweden, and Porvoo, Finland. Three PE and PP pilot plants are also integral to Borealis' competencies in Innovation and Technology. Two of these pilot plants are in Porvoo and one is in Schwechat, Austria. The Group's innovation facilities engage in independent but coordinated efforts, with the common aim of developing innovative solutions that provide added value for customers and end users.

The IHQ's main R&D focus is on polymer design and compound research for polymer applications in the energy, automotive, advanced packaging and healthcare industries. Another important focus is the surface aesthetics of plastics. In the Innovation Centre in Stenungsund, the focus is on polymer design, scientific services and R&D in the area of energy and infrastructure industry solutions. This Innovation Centre includes Borealis' newly expanded high-voltage testing centre. The Innovation Centre in Porvoo is an important site for advanced catalyst and process research, as it includes catalyst scale-up facilities and fully integrated Borstar™ PE and PP pilot plant lines. All Innovation Centres have close collaborations with local and international universities and research institutes.

The Borouge Innovation Centre in Abu Dhabi, UAE, cooperates closely with Borealis' Innovation Centres to explore enhanced infrastructure, automotive and advanced packaging application solutions.

In addition to its internal collaborations, Borealis undertakes a wide range of engagement with relevant stakeholders in innovation. It is a member of the Dutch Polymer Institute, attends polyolefins industry conferences and publishes papers. The Borealis Innovation and Technology management team is invited to present at about ten leading conferences around the globe each year, such as the Society of Plastics Engineers International Polyolefins conference and the Polyethylene-Polypropylene Chain Global Technology & Business Forum. Borealis is also a member of the European Ethylene Producers Conference (EEPC) and participates in a number of EEPC issue groups.
→ chapter Public Affairs, p.33

## Borealis Innovation Process

The Borealis innovation process comprises Idea, Innovation Project and Portfolio Management.

Idea management is the front-end phase of the innovation pipeline. It involves scouting and generating ideas and selecting the right ones as either an innovation project or as a pre-study, in the case of an investment project.

Innovation projects serve to develop new product platforms, new or improved process or application technologies or new catalysts. The projects can have a number of different aims, including:

- achieving step-change product improvements;
- reducing the fixed or variable costs of existing products and processes;
- understanding and resolving specific issues in an existing production process; or
- assessing opportunities aimed at new business development.

An important reason to push the boundaries of technology is to ensure a strong intellectual property right (IPR) position and strengthen Borealis' position as licensor. An innovation project therefore applies for any temporary multi-disciplinary effort to create a unique product or service.

Innovation portfolio management ensures that the right innovation programmes are executed to achieve specific innovation objectives and support venture-based licensing. Portfolio management also ensures that the allocation of resources is consistent with Borealis' strategy.

## Protecting Intellectual Property

Borealis has an extensive patent portfolio comprising around 6,900 granted patents and around 3,000 pending patent applications. In 2019, Borealis filed about 120 new priority patent applications, which further contribute to safeguard Borealis' proprietary technologies and protect its licensees. Many patents also protect products and applications.

## Risks and Opportunities

Borealis faces both general and business-unit-specific risks in relation to innovation.

In general, the Group must ensure it protects the confidentiality of its innovation projects and that it can attract and develop the talent it needs. There is a diminishing talent pool available, which Borealis looks to address by attracting young people into the industry.
→ chapter Corporate Governance, p.68

Borealis raises its profile with talented individuals through the Borealis Student Award, which goes to students with the best Diploma, Masters and PhD thesis. The Group also develops its own R&D talent, for example through its Talent Expert Pool. Through this activity, ten or twelve colleagues are engaged in learning over a period of two years. The Borealis Business Academy also offers an extensive range of training, covering a wide variety of skills.

In Polyolefins, market volatility affects Borealis' profitability but the business continues to invest similar amounts in R&D and innovation each year, independent of the market situation. The industry is mature, which means that step-change product development, rather than small improvements, is needed to drive growth. Borealis' philosophy includes a long-term commitment to innovation and technology.

In Hydrocarbons & Energy, potential legislation regarding $CO_2$ emissions is both a risk and a driver for innovation.

In Fertilizer, Melamine and TEN, feedstock prices and operational excellence are the drivers of business performance, so the task of Innovation and R&D is to help ensure high-quality feedstock sourcing and assist in continuously increasing the uptime of Borealis' assets.

## Innovation Success Stories

### Polyolefins

Within Polyolefins, the New Business Development function identifies and assesses new opportunities and develops them accordingly. At present, the Foam & High Melt Strength Polypropylene, Solar and Emerging Markets units are addressed within New Business Development.

To turn innovative ideas into new business, New Business Development first identifies opportunities across all areas of Borealis Polyolefins and beyond. As polyolefins show advantageous Life Cycle Analysis, they are increasingly replacing incumbent materials such as paper, metal, glass, PVC, polystyrene and engineering plastics. Then, after a systematic assessment which evaluates both market demand and unmet market needs, as well as any technical and commercial factors crucial to success, the new business opportunity is cycled into development.

Sustainability is an important part of the project assessment process. All projects must be HSE compliant and must pass a review of their sustainability impact compared with any existing solutions. In 2019, Borealis' bespoke 'Portfolio Sustainability Compass' was introduced to all new innovation projects and product developments. The Portfolio Sustainability Compass is based on an industry sustainability assessment methodology and is used to assess the entire polyolefin portfolio, demonstrating the research contribution to Borealis' sustainability journey. It considers specific criteria such as basic requirements in terms of ethics and profitability, chemicals of concern, stakeholder management and comparative environmental performance.
→ chapter Sustainability Strategy & Objectives, p. 25

Once the project has achieved certain predefined goals, it is transitioned to the business within Advanced Products, where development and growth of this emerging business continues.

Key achievements in 2019 included the following:
- in New Business Development, several applications such as polyolefin backsheet and encapsulant materials were launched for solar photovoltaic panels;
- in Automotive, next generation Fibremod™ carbon and additional grades for interior and exterior applications were developed;
- in Pipe, the BorSafe™ family for water, gas and industrial pipe systems is growing and getting stronger, with new industrial pipe applications with enhanced performance and glass fibre reinforced PP-RCT ready-made compounds for plumbing and heating applications;
- in Advanced Products, new sustainable solutions were developed for markets including appliances, concentrates & polymer modifiers, healthcare, oil & gas and structured products; and
- in Circular Economy Solutions, high-performing polyethylene and polypropylene film grades for highly circular flexible packaging were launched, and new recyclable polypropylene-based food packaging has attracted widespread attention from customers.

Other notable developments in the year included Borealis:
- stepping-up its cooperation with EREMA, the global market leader in the development and production of plastics recycling systems, to advance mechanical recycling technologies in order to tackle the challenge of plastics recyclability;
- launching the new plastics recycling technology Borcycle (→ Innovation Highlights, p.49) and new recycled PO compounds at K 2019; and
- winning the Solar Encapsulant Film of the Year Gold award at Solar PV Module Tech India 2019.

### Hydrocarbons & Energy

In Hydrocarbons & Energy, feedstock prices are volatile and innovative new sources of feedstock are required. This means that Innovation and R&D focused, among other things, on:
- developing high-speed analytical tools and methods for rapid purity assessment of the feedstocks on offer; and
- scouting of chemical recycling technology.

### Fertilizer, Melamine and TEN

In Fertilizer, Melamine and TEN, Operations and Research & Development work closely together to identify innovative ideas, evaluate them through innovation projects and advance them to implementation in Borealis' operational units, as well as with customers. Examples of new developments include new ways of utilising waste, implementing monitoring tools, reducing emissions and adapting to alternative feedstocks, such as secondary phosphorous sources for NPK fertilizers.

## Outlook

Borealis will continue to develop technologies enabling the production of advanced materials that satisfy customers' needs and keep the Group competitive in the market. The Group is also making a significant effort to develop and participate in the circular economy of polyolefins. → chapter Circular Economy p.52. Technologies that will enable or simplify the recycling of polyolefins are being actively developed with the highest priority.

Borealis will also continue to work on further improving the efficiency of its Hydrocarbons & Energy plants, as well as $CO_2$ avoidance, monomer recycling and bio-feedstocks.

## Innovation Highlights

### Borcycle: An Evolving Recycling Technology

With its Borcycle technology, Borealis' ambition is to drive the shift from linear to circular product offerings, while caring for the environment. Borcycle transforms polyolefin-based waste streams into value-adding versatile solutions for demanding applications. Borealis strives to deliver peace of mind to its business partners, by providing premium and reliable performance and quality for recyclable PO solutions. The Group's Borcycle portfolio offers solutions for applications in the rigid packaging, appliance and automotive industries. Moreover, partnership opportunities are being pursued in advanced mechanical recycling (for example, with EREMA) and in chemical recycling (for example, with OMV).

### BorPure™ RF777MO: A New Resin for Flip-top Caps

Borealis launched BorPure RF777MO at K 2019. Based on the proprietary Borstar Nucleation Technology (BNT), this new resin fulfils demand for high-quality solutions offering excellent quality in terms of odour and excellent productivity. BNT allows for certain caps applications cycle time reductions of more than 10% thanks to fast crystallisation behaviour. As a next generation random polypropylene, BorPure RF777MO has been designed for use in flip-top caps, a growing caps and closures market segment.

### Borstar HE6069: The World's First Laser-Printable, Extra-Low-Shrink Jacketing Compound for Fibre Optic Microcables

Global internet traffic is growing by 24% a year. This drives the need for better connection through fibre optic cables. As space is a limitation, especially in cities, the end connection is normally through micro cables. Traditional embossing techniques risk destroying the micro cables and ink jet text can be scraped off. Laser printing is therefore an interesting alternative. The problem is that most micro cables use black jacketing, which makes laser printed text unreadable. Borstar HE6069's unique benefits include very fine contrast when using conventional laser-printing systems and scratch resistance. This offers customers a more efficient and environmentally friendly way to print on fibre optic cables. Borstar HE6069 also offers extra-low-shrink properties at high extrusion line speeds and excellent UV resistance with a fully formulated compound.

### Collaboration between Borealis and Mondi Generates More Easily Recyclable, Polypropylene-Based Food Packaging

Borealis generated a breakthrough application, based on its proprietary BNT, that enhances the circularity of plastic food packaging. Using Borealis BC918CF, a special BNT-modified copolymer, Mondi – a global leader in packaging and paper – is producing new monomaterial packaging solutions for meat and dairy products. These offer the same excellent performance characteristics as conventional multimaterial packaging, while increasing yields for mechanical recycling plants. Borealis' collaboration with Mondi has also shown that even better material performance can be achieved by using BC918CF in tandem with the random copolymer RB707CF.

# Digital Transformation

**Goals**

Borealis began its Digitalisation Programme in June 2017, with the aim of creating value for both the Group and its customers. The Digital Studio was founded in 2018 and is Borealis' creative and agile enabler for developing smart solutions for customers and employees. It consists of a diverse, cross-functional team of digital professionals, including designers, usability experts, business analysts, software developers and engineers. Its role is to:

- change the way Borealis interacts with customers and employees, by radically improving the customer and employee experience;
- build new value propositions for customers and innovate the Group's business;
- help to use resources and plan processes more efficiently and effectively; and
- enable Borealis to make better decisions, based on improved use of data.

**Key Achievements and Results**

During 2019, the Group focused on transforming and improving processes to optimise the customer and employee experience. In particular, it:

- continued to roll out the online customer portal;
- rolled out the customer relationship management (CRM) tool in Hydrocarbons & Energy;
- created Energy Trendboards for operators;
- issued two new releases of NutriGuide, a digital tool to optimise crop nutrition, focusing on integration into the Farm Management System and extra features for resellers; and
- launched an algorithmic trading tool for naphtha.

**Digitalisation Programme**

Increasing the use of digitalisation will be a transformational enabler for Borealis, supporting the delivery of its strategy to 2035. Digitalisation will improve the Group's productivity and the customer experience, and also promote the Circular Economy of plastics, thereby creating new and profitable business solutions.

The Digital Studio is Borealis' autonomous delivery unit for digital solutions. It helps the business to collaborate with end-users and digital professionals to search for solutions to clearly defined business opportunities. The Digital Studio looks to create additional business value, by implementing agile working principles and design thinking throughout the project life cycle. When reviewing ideas, the Digital Studio aims to score each one consistently, objectively and transparently on three key factors: business viability (Should we do it?), technological feasibility (Can we do it?) and user desirability (Do users want it?). This all happens in an innovative setting where business and technical know-how is combined in co-located teams, focusing on building, learning and adapting along the way, and keeping focus on the real business value they are aiming for.

Digital Studio projects have the following phases:

- Capture: identify the business opportunity or customer/employee "pain point", by capturing digital ideas from user interviews and across the organisation.
- Concept: identify how to solve the issue identified by selecting the best digital ideas, validating the customer pain point and developing the initial business plan.
- Prototype: develop a prototype and run a proof of concept for the idea.
- Pilot: develop a fully functional Minimum Viable Product and pilot it in the chosen business unit(s).
- Roll-out and scale: launch the business, run the day-to-day operations and scale up.

## Activities 2019

### NutriGuide

Borealis introduced NutriGuide in 2018. It supports sustainable farming practices, by helping to optimise fertilizer use according to crop and soil requirements, while being fully compliant with local fertilizer regulations. It also integrates crop-rotation planning. NutriGuide therefore helps to increase crop yields and reduce fertilizer costs for farmers. Farmdok integration also offers a unique user experience, by ensuring a seamless workflow from planning to application and documentation. During 2019, there were two new releases focusing on integration into the Farm Management System and extra features for resellers.

### Customer Online Portal

The online portal for Polyolefins customers supports customer service representatives and sales managers in their daily interactions with customers. It puts easy order management at the customer's fingertips, as well as a complete library of order, product or complaint documentation. The application works round-the-clock, providing instant access to up-to-date information, with ordering fully integrated into supply chain and IT processes. A single global portal supports eight languages, allowing organisations in Europe, North America and South America to use it. In the first nine months after it was launched (on 22 October 2018), 315 customers were onboarded to co-create and improve visibility of the platform. Around 70% of customers returned after their first login, showing the significant interest among customers for using digital sales channels. The portal was successfully scaled to 1,500 customers in Q4 2019.

### CRM Tool

This strategic, forward-looking CRM tool is accessible to all Borealis departments and ensures the Group keeps customer information and insights in one place, enabling easy sharing of information and collaboration around a customer. During 2019, the tool was rolled out in the Hydrocarbons & Energy business.

### Plant Monitoring & Optimisation: Energy Trendboard for Operators

The Digital Studio has worked with operators and engineers to create an Energy Trendboard. This intuitive display gives operators simplified access to complex data and the corrective actions they need to take to optimise the plant.

The Energy Trendboard was piloted in Porvoo, Finland, in Q1 2019 and rolled out in Q2 and Q3, including further work to define the operator journey and adjust Energy Trendboards in Schwechat and Burghausen.

### Algorithmic Trading Tool for Naphtha

The Digital Studio, in collaboration with data scientists from Borealis' IT innovation team, developed a machine learning model predicting the price direction of naphtha. The ultimate goal is to make better trading decisions on naphtha, within the limits of the risk policies.

## Outlook

In 2020, the Digital Studio aims to support Borealis' overall business strategy by accelerating digital transformation and developing digital solutions and services which transform the way Borealis works, with a particular emphasis on Circular Economy solutions.

In addition, the Digital Studio will investigate:

- the potential to use artificial intelligence and blockchain technology to provide proof of authenticity, by allowing products to be tracked from feedstock, through production and delivery; and
- connected plants and 3D modelling, with the aim of increasing predictive maintenance, reducing energy consumption, running automated production processes and enhancing safety awareness.

# Sustainability Focus Areas

## Circular Economy

**Goals**

Borealis' circular economy goals are to:

- launch innovative solutions for customers that advance the circular economy by being designed for recycling and/or which are manufactured using recycled or renewable raw materials;
- increase the circularity of plastics by collaborating with partners to advance recycling technologies and by enhancing the Group's own recycling capabilities; and
- engage and collaborate with other players in the plastics value chain on the topic of the circular economy.

**Key Achievements and Results**

During 2019, Borealis:

- launched several grades under the new Borcycle™ technology brand, which stands for an evolving recycling technology which transforms polyolefin-based waste streams into value-adding versatile recycled polyolefin materials;
- collaborated with value chain partners to develop and launch fully recyclable monomaterial pouch solutions for both polyethylene and polypropylene-based materials;
- began a strategic cooperation with Neste to use renewable propane as a feedstock at Kallo and Beringen, Belgium;
- completed the investment programme to increase recycling capacity at Ecoplast's location at Wildon, Austria, by 60%;
- deepened its cooperation with EREMA Group to advance mechanical recycling technologies;
- announced a collaboration with OMV to chemically recycle plastic waste into high-quality feedstock for Borealis;
- developed and launched 10 Codes of Conduct for packaging design to enhance recyclability; and
- continued its programme of advocacy for the circular economy, for example by becoming a core partner of the New Plastics Economy initiative of the Ellen MacArthur Foundation.

**Introduction**

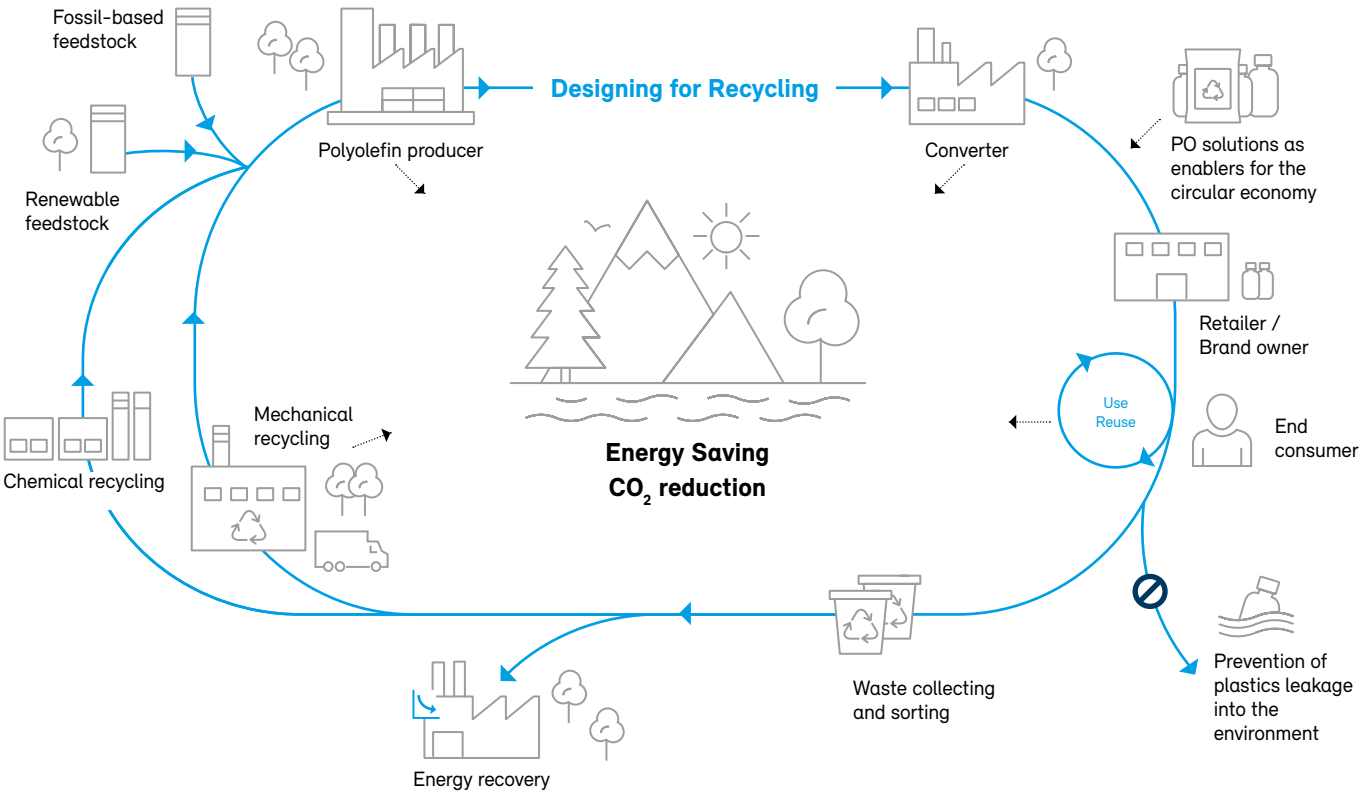
The unique properties of plastics have been a key factor in their global success. Their malleability and versatility enable the production of products which make daily life safer, more efficient, sustainable and convenient. These properties mean that as the global population grows, demand for plastics is increasing.

Within the linear economy model, plastic products are made, used and disposed of. Continuing with this model will lead to more plastic waste and environmental pollution, while putting pressure on the planet's limited resources. The solution is to further transition to a circular economy, where plastics are reused, recycled and made from renewable feedstock. A circular economy decouples economic growth from resource constraints, while reducing the leakage of waste into the environment, and in particular the oceans, and to landfill. The circular economy will also reduce global warming: greenhouse gas emissions can, for example, be lowered by 30% by substituting recyclates for virgin feedstock.

The potential for polyolefins to help mitigate global warming is widely known. However, in recent decades the entire plastics value chain, from producers to governmental bodies, has paid too little attention to the after-life of plastic materials, with the inefficient waste management of plastics leading amongst others things to unacceptable marine littering. The entire plastics industry therefore needs to transition towards a more circular model to future-proof the industry's existence.

The creation of a truly circular economy has wider implications. It will provide economic benefits to society by reducing the significant financial burden of ineffective waste management systems and pollution management,

Fig. 7: **Borealis' vision for a circular economy**




and will create new business opportunities and employment at various stages of the value chain. A circular economy will also result in better living and working conditions and in general in a cleaner environment.

A circular economy, in which waste and pollution do not exist by design, also offers much promise for achieving numerous UN Sustainable Development Goals, including those relating to economic growth, sustainable consumption and production, climate change and the oceans.

### Borealis' Positioning as a Circular Economy Frontrunner

Borealis is fully committed to advancing the circular economy as an industry frontrunner. The circular economy is one of the three focus areas in the Group's Sustainability Strategy, alongside Energy & Climate and Health & Safety, and also features prominently in the Borealis Strategy 2035. All of Borealis' circular economy initiatives are positioned under the EverMinds™ umbrella.

In addition to the environmental and social benefits outlined above, the Group sees the circular economy as a business opportunity which will support its growth ambitions. Borealis is therefore working towards offering its customers a broad portfolio of circular products and solutions, based on different technologies. In particular, the principles of recycling plastic waste, designing products for recyclability and reusability where possible, while maximising resource efficiency, present clear business opportunities for Borealis. Successes in 2019 included the launch of the Group's Borcycle technology brand for recycled polyolefins and the development of 10 Codes of Conduct to promote designing polyolefin packaging for recycling.

A key part of Borealis' circular economy strategy is a scaled-up mechanical recycling business, which will help with the Group's transition from a model based on the extraction of fossil resources towards one based on the circulation of materials. Borealis has been actively advancing its recycling efforts and has made a public commitment to quadruple the volume of its recycled plastics solutions to 350kt per year by 2025. In support of this, in 2019 the Group invested in its 100% subsidiary Ecoplast's new and highly advanced plastics recycling plant in Wildon, Austria, increasing production capacity by 60%.

As mechanical recycling cannot serve all applications, Borealis will also offer polyolefin solutions based on renewable and chemically recycled feedstock, and has intensified its activities in these areas in 2019 through its collaborations with Neste on renewable feedstock and with OMV on the chemical recycling of post-consumer plastics.

These activities align with Borealis' circular polyolefins vision, with the Group aiming to become a leading "plastic-neutral" producer of advanced and sustainable polyolefin solutions. The concept of plastic neutrality refers to a truly circular economy, where plastics produced with fossil-based feedstocks will be offset, for example, by recovering the same amount of plastic waste.

To achieve this, it is imperative that the entire value chain collaborates. A circular polyolefins industry means that all products are optimally designed for recyclability, increasing the amount and the quality of waste streams available for recycling operations. The waste collection rates and the efficiency of waste sorting are prerequisites for the quality of feedstock for recycling. The willingness of converters and brand owners to accept high percentages of recycled content is equally important.

The implementation of Borealis' vision for a circular economy entails a considerable redesign of the way the industry works, and several potential risks need to be mitigated, while the industry transitions towards a more circular economy. For example, the industrialisation of the recycling industry means working standards need to be improved, with stronger health and safety considerations in the production environment. Product safety is another area where the recycling industry needs to improve and get closer to the standards of the virgin industry. Risk related to external factors influencing the profitability of recycling businesses must also be mitigated, for example Extended Producer Responsibilities (EPR) fees. In general terms, the entire waste management and recycling industry must also become more efficient.

## Success Stories

### Promoting Design for Recyclability

One of the biggest issues preventing greater recycling of plastics is that many products are not designed for recycling. For example, flexible packaging often uses multiple layers of different materials to protect and preserve the packaged good, making separating and recycling the plastic layers extremely difficult, both technically and economically. The challenge is to create packaging using only one (mono) material, while maintaining or even improving the packaging's performance. To promote design for recyclability in the solutions it offers, Borealis has developed 10 Codes of Conduct for polyolefin packaging designers.

In addition, Borealis applies its considerable innovation activities to offer alternatives to materials and material combinations that are not recyclable today, for example by producing fully recyclable monomaterial solutions for film products. The Group also continues to collaborate with strategic value chain partners to expand its range of monomaterial solutions for flexible packaging. Following the successful launch of the Full PE Laminate in 2016, the latest collaboration has generated a series of fully recyclable monomaterial pouch solutions for both PE and PP-based materials, which were presented at the industry's biggest trade fair (K Messe) in October 2019. One of these solutions also contains 30% recyclate material.

Borealis has also generated a breakthrough application based on its proprietary Borstar® Nucleation Technology, which enhances the circularity of plastic food packaging. Using a special modified copolymer, Mondi – a global leader in packaging and paper – is producing new monomaterial packaging solutions for meat and dairy products. These offer the same excellent performance characteristics as conventional multimaterial packaging, while increasing yields for mechanical recycling plants.

### Advancing a Circular Economy Through Partnerships

A cornerstone of Borealis' circular economy strategy is engagement and collaboration with various players in the plastics value chain on the topic of the circular economy. These organisations range from waste management and sorting companies to converters and brand owners who want to increase the share of recyclates in their products and applications. This is an ongoing engagement and the Group will look to build on the opportunities and relationships created. During 2019, Borealis intensified its relationship with EREMA Group, the global market leader in the development and production of plastics recycling systems. Borealis and EREMA intend to deepen their cooperation, in order to advance mechanical recycling technologies and accelerate the transition to a circular economy of plastics. Enhancing recycling processes will help to satisfy increasing market demand for higher-quality recyclates used in high-end applications.

Borealis is also helping to improve the circularity of polyolefins by joining forces with like-minded partners and by creating and participating in activities and platforms that drive recycling options and solutions. For example, Borealis initiated the Polyolefins Circular Economy Platform (PCEP), shares its expertise as a core partner of the New Plastics Economy (NPEC) initiative of the Ellen MacArthur Foundation, and is a member of CEFLEX. These organisations aim to drive the circular economy by improving product design to make it easier to reuse or recycle, helping to develop common standards for sorting plastic waste, exploring new technologies to address the limitations of mechanical recycling, and developing after-use markets for recycled plastics.

Borealis plays an important role in supporting these goals, for example, by having expert representation in all six of PCEP's working groups. These cover product design and quality standards; innovation for increased recycling of flexible packaging; developing end-use markets for PO recyclates; improving mechanical recycling and conversion technologies; driving collection and sorting of packing; and advocacy and awareness building.

During 2019, Borealis stepped up its engagement with the NPEC and became a core member of the project. Alongside global brand owners and waste management companies, Borealis is the first plastics company to join and will actively shape the initiative's strategy, focus and work. Borealis sponsored the CEFLEX General Meeting in Vienna in October 2019. In conjunction with the General Meeting, Borealis invited a group of CEFLEX members to the recycling plant in Wildon, Austria, offering them the chance to see a state of the art facility. → chapter Public Affairs, p.33

The Group supports and encourages policy makers in developing legislation that will advance the circular economy of plastics, in particular the European Commission's Strategy on Plastics. Borealis was one of the few plastics companies to sign the European Commission's Circular Plastics Alliance (CPA) and is now leading the work group on design for recyclability. Borealis is also looking to use its European recycling experience to develop an effective blueprint for the end-of-use phases for plastics that can be adopted in other parts of the world.

### Innovating to Create New Markets for Recyclates

In 2016, Borealis laid the foundation of its involvement with the circular economy by acquiring two of Europe's largest producers of post-consumer polyolefin recyclates – mtm plastics GmbH and mtm compact GmbH (together "mtm"). Subsequent investment at mtm plastics' Niedergebra production location means Borealis is now even better equipped to respond to the increasing demand for solutions with recycled content.

In 2018, Borealis completed the 100% takeover of Ecoplast Kunststoffrecycling GmbH, based in Wildon, Austria. Ecoplast is one of the largest European manufacturers of low-density polyethylene post-consumer polyolefin recyclates, destined primarily for the plastic film market. Shortly after the acquisition, an investment programme began to upgrade and increase the production capacity of the site by 60%. This programme was completed in 2019.

Building upon the expertise gained as an integrated virgin and recycling player, Borealis continues to develop compounding solutions with different recycling contents. To highlight this value-add approach, Borealis introduced the Borcycle technology brand in 2019 and launched several grades under the brand. The high-end compound solutions Borealis has offered to the automotive industry since 2014 were also rebranded under Borcycle during 2019.

The Borcycle brand stands for transforming polyolefin-based waste streams into value-adding, high performance and versatile solutions for demanding applications. As a scalable and modular technology, Borcycle has been developed to meet growing market demand for high-quality recyclate that helps producers and brand owners to meet environmental and regulatory challenges.

All these developments are delivered in close collaboration with customers and partners. For example, the Group invited more than 100 customers and value chain partners to a Circular Packaging Industry Event in Munich, Germany, during April 2019. The event brought leading industry representatives together to exchange information about sustainable rigid packaging solutions in an interactive way.

### Developing the Circular Technologies and Solutions of the Future

Chemical recycling will be part of the future technology mix, to enable a circular economy for waste feedstock which cannot be mechanically recycled. During the year, Borealis announced its cooperation with OMV in relation to the ReOil project, at their location in Schwechat, Austria. Plastic waste is recycled into synthetic crude oil in OMV's ReOil pilot plant and can then be reused in OMV's refinery on the site to create high-quality feedstock for Borealis.

To showcase prototypes of food packaging made from 100% chemically recycled plastic waste, Borealis has joined the "ChemCycling" project. In this collaboration between BASF, Borealis, Südpack and Zott, BASF supplied chemically recycled polyamide, while Borealis provided sustainably produced polyethylene. Südpack, one of Europe's leading producers of film packaging for food products, used these materials to produce multilayer film for mozzarella packaging for Zott Gourmet Dairy.

During 2019, Borealis achieved a milestone by launching renewable polyolefin grades based on second-generation feedstocks sourced from bio-mass waste. To that end, Borealis and Neste, the world's leading provider of sustainable renewable diesel, renewable jet fuel, and an expert in delivering drop-in renewable chemical solutions, have entered into strategic cooperation for the production of renewable polypropylene. The cooperation enabled Borealis to start using renewable propane produced with Neste's proprietary NEXBTL™ technology as renewable feedstock at its facilities in Kallo and Beringen, Belgium. This marks the first time that Borealis has used renewable feedstock to partially replace fossil feedstock in commercial production. It is also the first time ever that renewable propane dehydrogenation has been carried out at an industrial scale. The process is certified by the ISCC Plus (International Sustainability & Carbon Certification), whose full value chain scope ensures that the renewable feedstock used is certified renewable, sustainably produced and traceable to the point of origin.

### Gearing Up Borealis for a Circular Future

To manage the growth of circular economy products and innovation, Borealis enhanced its organisational focus during 2019. In the Borealis Innovation Headquarters in Linz, a Circular Economy Solutions Innovation Studio has been created, where all the innovation and research activities around the circular economy have been bundled. The studio works on the development of circular solutions, design for recycling and recycling technologies. It is also involved in several open innovation projects.

Other parts of the organisation were also adapted during the year. For example, the Group more closely integrated its circular economy solutions business with the existing virgin business, to position Borealis more firmly as an integrated solution provider offering both virgin and recycled products.

### Outlook

Borealis will remain fully committed to advancing the circular economy. The Group will continue to expand its range of circular solutions based on a broad range of technologies. As true circularity can only be implemented in a joint effort, Borealis will develop these solutions in close collaboration with partners from several value chain steps.

# Energy & Climate

**Goals**

Energy & Climate is one of the key sustainability focus areas for Borealis. To excel in these aspects, the Company established clear long-term goals and ambitions to drive sustainable performance. Borealis has two energy and flaring targets, which it aims to achieve in 2020.
The Group aspires to achieve:
– a 10% improvement in energy efficiency against a 2015 baseline; and
– a 50% reduction in flaring against a 2013 baseline, which equals zero non-emergency flaring.

During the year, the Group also established two further targets, which it aims to achieve by 2030. These are
– an increase in the energy efficiency target from 10% to 20% against the 2015 baseline; and
– an ambition to source 50% of the Group's energy needs from renewable power for the Hydrocarbons & Energy and Polyolefins businesses.

**Key Achievements and Results**

By the end of 2019, Borealis had:
– approved projects which will result in energy savings of 2,191 GWh of primary energy, equivalent to 91% of the ambition level set out for 2020;
– achieved a 32% reduction in flaring compared to the baseline;
– generated 28 GWh power with windmills directly connected to the internal grid in Kallo.

**Introduction**

Energy consumption accounts for a significant proportion of Borealis' total costs and for around 55% of its greenhouse gas (GHG) emissions, which are a key contributor to climate change. Process emissions from ammonia production represent 35% of GHG emissions and flaring losses and nitrous oxide ($N_2O$) emissions, represent a further 10%. This means that improving energy efficiency is the most effective way to reduce the Group's direct carbon footprint and its energy costs, while increasing its competitiveness. Energy efficiency also reduces Borealis' reliance on public energy grids and improves the security of supply.

Borealis therefore aims to continuously reduce its energy footprint through greater energy efficiency and by developing innovative solutions that save energy along the value chain. These solutions range from lightweight plastics to chemicals used for renewable energy solutions and accurate fertilizer dosing in farming. Borealis also looks to increase its use of renewable energy. → chapter Materials & Logistics, p.82

Flaring is a necessary safety measure used in refineries and petrochemical operations, in which excess gases which cannot be recovered or recycled are safely burned. However, the noise and emissions caused by flaring affect surrounding communities and flaring also incurs high costs for the Group. Flaring is incident driven and Borealis strives to reduce the need for it by continuously improving its plants' operational performance and reducing the number of plant interruptions and upsets. Flaring only occurs in hydrocarbon and polyolefin plants and not at the Group's production sites that produce fertilizers or melamine.

Issues related to energy and climate change present both risks and opportunities for the Group. The risks include increased costs for energy and for $CO_2$ emission rights, declining social acceptance for businesses emitting $CO_2$ and possible reputational damage as a result.

Opportunities will also arise for Borealis as society increasingly focuses on reducing $CO_2$ emissions towards net zero carbon production. Multiple new technologies will need to be developed to achieve that, which are currently not financially feasible. Selecting the right technologies to develop will be crucial, as the associated investments will be high and Borealis must avoid stranded assets. The transition to renewable energy is also an opportunity for Borealis.

### Organisational Structure

The Hydrocarbon board is Borealis' governing body for energy and carbon management. It develops and implements Group-wide energy and emission targets, strategies and guidelines, and measures performance using key performance indicators (KPIs). The committee is headed by the EVP Base Chemicals and Operations, and comprises representatives from relevant businesses and functions.

Borealis' Group-wide certifications to ISO 9001, ISO 14001 and ISO 50001 cover almost all locations. Energy is an integral part of the environmental management system. Plants that process raw materials for the automotive industry are also certified and regularly audited to ISO/TS 16949. The full list of certificates can be found on Borealis' website.

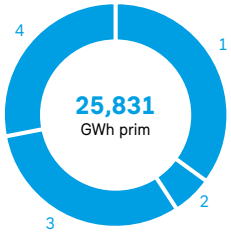
### Measuring Energy Consumption and Efficiency

Borealis' main sources of energy are electricity, heat (primarily from steam), natural gas and fuel gas. The Group documents, tracks and follows up on all sources of energy each month, for every location.

Borealis' total primary energy consumption was about 25,831 GWh in 2019. In total, 227 GWh of steam were sold. Figure 9 shows the activities for which energy was used.

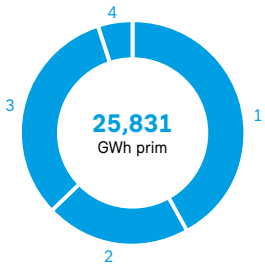
Data on all of Borealis' energy consumption is collected as it is metered, then converted to the equivalent in primary energy using the Group's environmental data management tool. This allows Borealis to summarise different energy sources using one consumption figure, enabling comparability across plants and production lines and providing the Group with better information for identifying technological improvement opportunities.

Fig. 8: **Total energy consumption per source in 2019**




1. Electricity ..... 34%
2. Steam ..... 7%
3. Fuel gas ..... 31%
4. Natural gas ..... 28%

Fig. 9: **Total energy consumption per product group in 2019**




1. Hydrocarbons ..... 41%
2. Polyolefins ..... 21%
3. Melamine and Fertilizer ..... 32%
4. Infrastructure, offices, warehouses, research ..... 6%

### Borealis Energy Roadmap 2020

In 2015, Borealis initiated a comprehensive energy roadmap to drive the implementation of projects that will result in a 10% improvement (or 2,400 GWh) in 2020 compared to 2015. In 2019, Borealis extended this ambition to 2030, by doubling the energy savings target to 20% (or 4,800 GWh) compared to 2015. The roadmap sets out a sequence of different activities, starting with establishing a baseline and followed by three levels of action known as levers, which will deliver increasing optimisation.

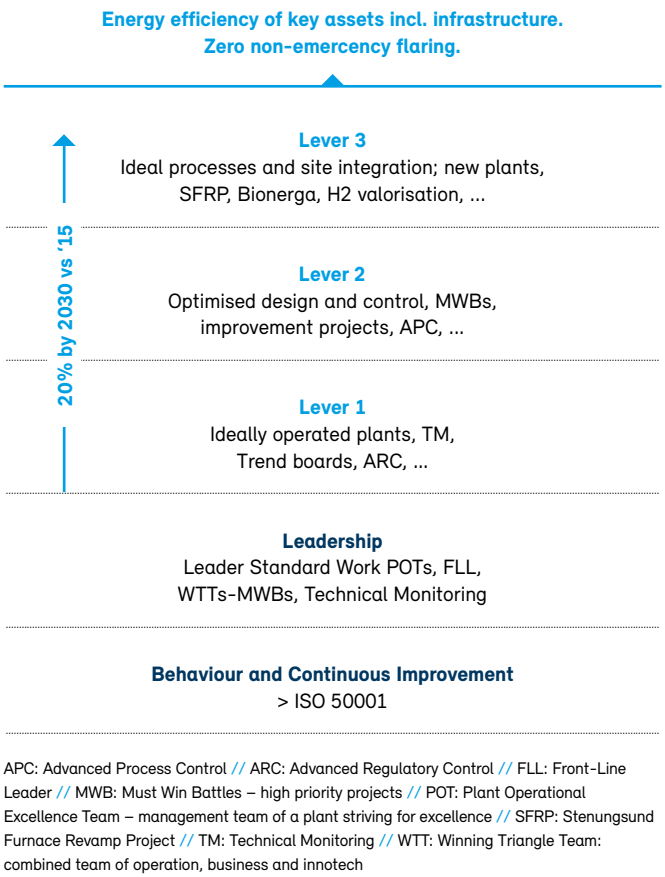
The baseline for any energy efficiency improvement is to implement and comply with ISO 50001, combined with continuous leadership engagement from key teams. Initiatives include energy teams at each production location that drive the location's energy planning process, increase awareness, act as a forum for energy issues and ensure ISO 50001 compliance.

To progress beyond this baseline, all Borealis locations run energy screening programmes every four years, often with third-party support, to evaluate their energy performance and identify improvement opportunities. Actions are prioritised based on their benefit to people (for example through improved working conditions), profit (such as the ability to generate cost savings) and the planet, in the form of environmental benefits. The prioritisation is based on factors such as a risk and opportunity assessment, total cost of ownership, internal rate of return and organisational capacity.

The three levels of actions are as follows:

- Lever 1: As a first step, Borealis is implementing tools to run its plants in the ideal way, such as introducing an Energy Trendboard which helps operators to continuously focus on energy consumption → chapter Digital Transformation, p.50
- Lever 2: Running plants most effectively requires continual optimisation of plant design and control, and the implementation of improvement projects to remove potential barriers to optimisation.
- Lever 3: Another way to increase energy efficiency is to implement new technologies during periodic production line revamps, and to seek energy integration through industrial clusters.

Fig. 10: **Building blocks of the Energy Roadmap 2020+**




APC: Advanced Process Control // ARC: Advanced Regulatory Control // FLL: Front-Line Leader // MWB: Must Win Battles – high priority projects // POT: Plant Operational Excellence Team – management team of a plant striving for excellence // SFRP: Stenungsund Furnace Revamp Project // TM: Technical Monitoring // WTT: Winning Triangle Team: combined team of operation, business and innotech

## Activities 2019

### Energy Efficiency

Borealis has approved investment programmes which will lead to savings of 2,191 GWh of primary energy savings in 2020 compared to the 2015 baseline. The following projects are examples of measures that were implemented in 2019:

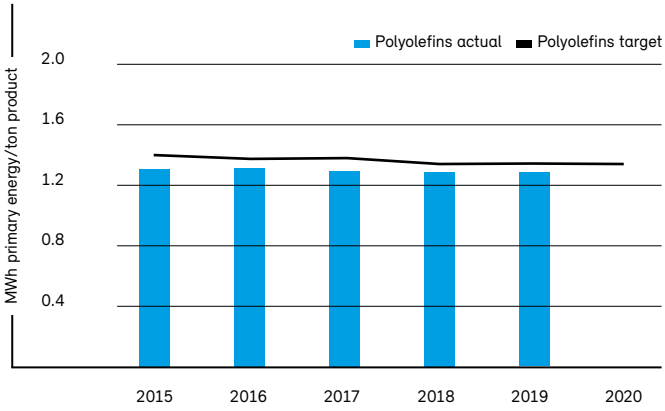
- at Stenungsund, Sweden, a second cracking furnace was upgraded to improve its thermal efficiency, saving 30 GWh of energy a year;
- at Schwechat, Austria, optimising an LDPE extruder saved 15.9 GWh of primary energy a year; and
- at Porvoo, Finland, the Group achieved energy savings of 30 GWh a year through flaring improvements. A new cavern enables zero flaring when unloading rail tank cars, the amount of flared gas has been significantly reduced due to operational changes and new measurement equipment enables root cause analyses and improvements.

The Group also undertook a series of internal audits to prepare for certification of the energy management system. This enabled Borealis to confirm the ISO 50001 certification across its European locations during the year. All energy efficiency measures are being tracked and their performance monitored.

In 2019, Borealis' total primary energy consumption was about 25,831 GWh compared to 24,476 GWh in 2018. This represents an increase of 1,355 GWh compared to the previous year due to fewer turnaround activities and higher production output.

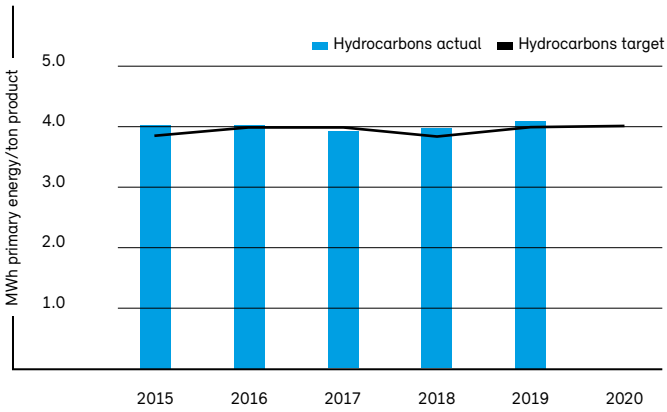
Figures 11, 12 and 13 show the Group's energy intensity since it established its Energy Roadmap for each business unit. Longer term progress in energy efficiency can be seen when splitting the energy intensity by product type. In addition, a shift in production amounts, feedstock and grades masks some of the achieved energy savings. For Hydrocarbons production, the turnaround cycle of the plants has an effect.

Fig. 11: **Polyolefins production energy intensity 2015–2019 and ambition 2020**



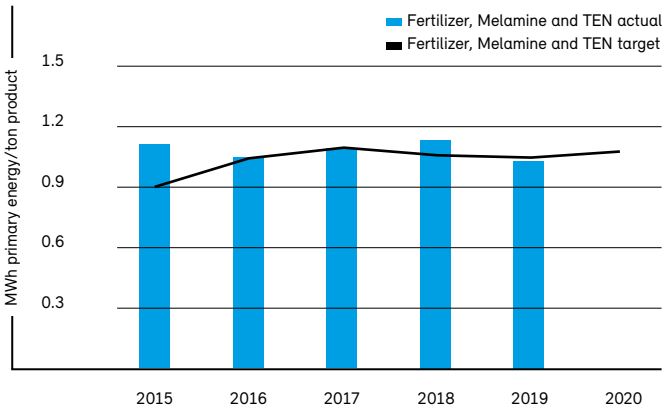

| Year | PO target | PO actual |
|---|---|---|
| 2015 | 1.400 | 1.304 |
| 2016 | 1.390 | 1.312 |
| 2017 | 1.380 | 1.291 |
| 2018 | 1.365 | 1.284 |
| 2019 | 1.374 | 1.283 |
| 2020 | 1.357 | |

Fig. 12: **Hydrocarbons production energy intensity 2015–2019 and ambition 2020**




| Year | HC target | HC actual |
|---|---|---|
| 2015 | 3.840 | 4.032 |
| 2016 | 4.003 | 4.038 |
| 2017 | 4.003 | 3.916 |
| 2018 | 3.792 | 3.960 |
| 2019 | 3.996 | 4.088 |
| 2020 | 4.015 | |

Fig. 13: **Fertilizer, Melamine and TEN production energy intensity 2015–2019 and ambition 2020**




| Year | Fertilizer, Melamine and TEN target | Fertilizer, Melamine and TEN actual |
|---|---|---|
| 2015 | 0.903 | 1.110 |
| 2016 | 1.049 | 1.049 |
| 2017 | 1.091 | 1.089 |
| 2018 | 1.054 | 1.136 |
| 2019 | 1.045 | 1.028 |
| 2020 | 1.076 | |

## $CO_2$ Emissions

The absolute level of $CO_2$ equivalent emissions is related to Borealis' overall production volumes and to the number of turnarounds, which result in flaring-related $CO_2$ emissions from emptying storage and plants. The Group is committed to continuously improving its energy efficiency and thereby reducing its $CO_2$ equivalent emissions, while increasing production volume and ensuring plant reliability. This remains a challenging journey.

To calculate its emissions performance, Borealis uses a broad range of emission factors, which are a means to calculate the GHG emissions for a given source. Each EU member state has a national inventory of emission factors, which means that, for example, natural gas use in Austria would have the specific Austrian emission factor applied to it. Other emission factors are standard factors from scientific literature or are measured by a certified laboratory. All emission factors are permitted and approved by the relevant authorities.

In 2019, Borealis produced 4,625 kilotonnes of scope 1 $CO_2$ equivalent emissions. This is more than the 4,302 kilotonnes in 2018, due to fewer turnaround activities and higher production output.

In Hydrocarbons & Energy and Polyolefins, Borealis has set up a team to create a roadmap to reduce fossil fuel $CO_2$ emissions, resulting from industrial activities. The team will prepare to guide the Group to 2050 in relation to $CO_2$ emissions and will evaluate technologies, business challenges and innovation. The team is led by the VP base chemicals and operations and will work closely with the international Circular Economy team.

### $N_2O$ emissions

$N_2O$ emissions from nitric acid plants increased to 1,351 tonnes in 2019, compared to 1,330 tonnes in 2018 due to higher production output.

### Flaring

Flaring losses in 2019 were 27.6 kilotonnes, compared to 26.3 kilotonnes in 2018, with the continuous effort on reducing upsets and flaring improvements, the major difference being that we had one very significant upset caused by an external power failure accounting for almost 3 kilotonnes.

Every year, the Group defines its targets for flaring. Turnarounds and other internal and external factors require ongoing adaptation. In particular, flaring increases in years with higher numbers of turnarounds. These regular maintenance programmes inevitably lead to more flaring, as plants or lines must be shut down, emptied and ramped up again.

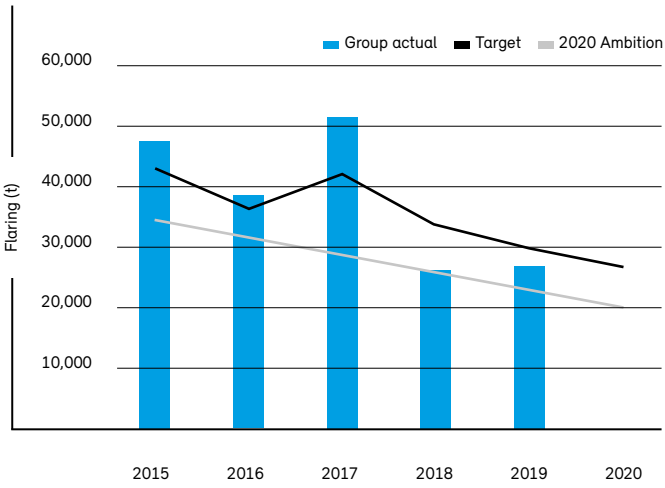
Borealis is also enhancing its reporting of flaring incidents. This will support its ability to achieve zero non-emergency flaring.

## Outlook

Borealis' energy-related objectives are to:

- continue to focus on the energy roadmap to deliver on the ambition of a 20% improvement in 2030;
- further roll-out the Energy Trendboards; and
- implement the new, more detailed reporting and new ambition for 2030 for flaring.

Fig. 14: **Flaring performance 2015–2019 and ambition 2020**




| Year | Group actual | Target | Ambition |
|---|---|---|---|
| 2015 | 47,687 | 43,500 | 34,286 |
| 2016 | 38,740 | 36,925 | 31,429 |
| 2017 | 51,620 | 42,355 | 28,571 |
| 2018 | 26,273 | 34,200 | 25,714 |
| 2019 | 27,619 | 30,000 | 22,857 |
| 2020 | | 27,500 | 20,000 |

# Occupational Health & Safety

**Goals**

Health & Safety is one of the key sustainability focus areas in Borealis and the number one priority in the organisation. Borealis had the following occupational health and safety goals for 2019:

- to continue to reduce Total Recordable Injuries (TRI), with the ultimate aim of achieving zero accidents;
- to set up a new health, safety and environment (HSE) organisation, after Borealis' Fertilizer, Melamine and Technical Nitrogen Products (TEN) business was separated from the Polyolefins (PO) and Hydrocarbons (HC) & Energy businesses; and
- to install safety centres in the major PO & HC production locations to further improve safety training via hands-on training sessions.

**Key Achievements and Results**

In 2019, Borealis:

- achieved a TRI rate of 1.6 incidents per million working hours. Sadly this includes a fatal accident by a contractor.
- set up a new HSE organisation which now directly reports to the CEO, for the PO and Hydrocarbons & Energy businesses;
- held its second Group-wide Safety Day, in all locations;
- installed safety centres in the major PO production locations to further improve safety training;
- reviewed the HSE training matrix to make it compatible with the Group's training database;
- rolled out a refresher campaign about the Life Saving Rules; and
- updated the Responsible Care® Policy to bring it into line with ISO 45001.

## Introduction

Chemical operations involve highly flammable, toxic and hazardous substances that could pose a significant risk to people and the environment, if not handled correctly. Health and safety is therefore the number one priority in Borealis. In addition, safety incidents have a direct link to lost working time and damage to valuable assets, both of which could affect the Group's ability to supply its customers and its profitability and performance.

Borealis has achieved a world-class health and safety record for many years. However, the Group must stay vigilant and therefore adopted a Goal Zero journey in 2014, which aims to develop a zero-accidents mindset among everyone in Borealis. To keep its safety culture at the top of people's minds, Borealis constantly promotes the motto "If we can't do it safely, we won't do it at all." In addition, for its second safety day Borealis used the motto "There's always time for safety."

## Organisational Structure

The Borealis Responsible Care Committee comprises all the Executive Board members and is chaired by the Chief Executive. The committee oversees the implementation of the Group's Responsible Care Policy and programmes and monitors overall HSE performance against key performance indicators (KPIs). The committee also assesses any serious HSE incidents to help avoid future risks to people and the environment.

At a location level, the local leadership and HSE team meet each month to discuss HSE performance. A number of informal platforms and meetings ensure that all employees of operational sites are represented.

### Responsible Care Policy Statement

- We aim to be a recognised leader in Responsible Care in our industry.
- We believe world-class health, safety, environmental and energy performance is a foundation for leadership in Responsible Care.
- We are committed to following legal requirements and other requirements to which we subscribe, and to exceeding them when they do not meet our standards.
- We are committed to advancing sustainable development along the value chain and to giving priority to innovative, value-creating solutions according to the principles of Product Stewardship.
- We have a Responsible Care management system based on continuous improvement and verification of our performance.
- We openly discuss Responsible Care issues with our stakeholders, with the aim of further promoting health, safety and the environment and to save energy along the value chain.

## Preventing Health & Safety Incidents

Borealis proactively prevents accidents by developing risk management tools, implementing controls, undertaking awareness campaigns and safety training, and conducting regular audits for both employees and contractors. The Group is committed to eliminating hazards and reducing

occupational health and safety risks, and continuously improves through systematic learning. Training packages are available to raise employees' competence in areas such as social psychology, office ergonomics, musculoskeletal disorder and use of hydraulic tools. Borealis also coordinates emergency planning with external medical and public health experts, and implements detailed exposure controls as part of its corporate standards.

The Group introduced its Life Saving Rules in 2013, and refreshed them in 2019, to make employees aware of the biggest health and safety risks across Borealis. The rules cover working at height, entry into confined spaces, lifting operations and working under suspended loads, working on potentially energised or pressurised equipment, and exposure to traffic. Safety Centres were introduced during the year to improve training in relation to the Life Saving Rules.

Meetings in Borealis commonly start with health and safety topics and, at many meetings, it is a mandatory topic. In addition, at every Corporate Co-operation Council (CCC) meeting, health and safety issues are a standard agenda point. All visitors to Borealis' locations must pass safety training before they get access to the site. Some Borealis sites also organise an annual meeting with their neighbours, where safety performance and initiatives are discussed.

Learning from incidents is important. Lessons learned are shared and discussed throughout the organisation. The Engagement Board has been developed and is in place in all Borealis locations, as a tool to share and discuss with employees and contractors about incidents that happened in or outside Borealis. Learning from incidents is also part of the Group's three-day Operational Excellence (OPEX) training. Borealis organises several OPEX courses every year. Software for incident management is in place to help monitor incidents and identify improvements.

All levels of management in Borealis, from front-line leaders to Executive Board members, carry out regular engagement walks. These ensure dialogue between management, employees and contractors. The walks are designed to spot safety risks and encourage positive changes in daily work routines. They focus on effective employee-management dialogue, by using open questions and carefully listening to what is said, as well as what is not said. The aim is to truly engage employees in Borealis' Goal Zero journey. Each year, Borealis has more than 18,000 walks across its locations.

Borealis wants to develop its HSE culture from a calculative level (where safety is based on having systems in place to manage hazards) via a more proactive level (where safety leadership and values drive continuous improvement) towards a generative level, where health and safety becomes "how we do business". The ultimate goal is to create an accident-free workplace. Effective field leadership is a key enabler of this. In addition, each Borealis employee has a shared responsibility for others. "Care for my colleague" means encouraging employees to report incidents, actively participating in investigations and contributing to making Borealis safer for all.

The responsibility for handling major incidents lies with the locations, functions and offices. Borealis distinguishes between three levels of major incidents. Level one and two incidents can be managed fully at the locations, functions and offices. When there is the potential for an escalation to level three, a crisis management leader will be appointed at Group level to coordinate Group-related activities, such as communication, legal, business continuity and insurance.

The Group Major Incident Management manual aims to minimise the impact of any adverse situation, to prevent it from developing into a crisis and to ensure that Borealis retains control of the agenda throughout. A SharePoint application eases communication between involved parties. Group HSEQ organises exercises at least every two years, involving various levels and departments of the organisation, and including an Executive Board representative.

### Promoting Employees' Health and Well-being

Borealis promotes and protects its employees' health in several ways. In addition to detailed chemical exposure monitoring, which is carried out in accordance with local laws, the Group offers physical examinations and subsequent check-ups, periodic screenings and evaluations. Employees may also take part in voluntary health counselling programmes to identify and monitor health problems.

As working lives become longer, the Group actively manages well-being across all generations, so it can secure a healthy, engaged and productive workforce.

Borealis' well-being concept sets common standards across all locations, enables sharing of best practices and builds on existing activities. It takes a holistic view of well-being and identifies four key areas for ensuring motivated

and healthy employees. These are health, job engagement, competence, and work and private life balance.

The Group's employee health initiatives vary depending on local needs, but they typically include addressing issues such as back pain, blood pressure and weight management. Employees can receive on-site flu vaccinations, learn about stress prevention, find help to quit smoking and consult a psychologist. Borealis also encourages healthy eating by providing fresh fruit and healthy meals in many locations. A global health campaign was also rolled out during this year's Safety Day.

Borealis conducts a regular programme of workplace health surveys, which covers every location in the Group every five years. The surveys identify, evaluate and document the current standard of the working environment in both operations and offices, to establish a base for further improvement and prioritise an action plan. Their primary focus is to prevent occupational health risks, occupational illnesses and accidents. The health surveys also put a considerable focus on the psychosocial aspects of work and work-life balance. There are three main elements to the surveys: a workplace evaluation which identifies and assesses all potential hazards and exposures; an anonymous questionnaire; and an individual medical check-up. The outcomes are department- or site-specific and an action plan is created based on the results, which is followed up regularly.

### Activities 2019

In 2019, the Group recorded a higher number of TRI compared to 2018. This triggered a second refresher campaign about the Life Saving Rules and the introduction of a Safety Moment to discuss safety at the beginning of most meetings. Safety Centres were installed in all major PO & HC production locations to improve the effect of safety training by training employees in the Life Saving Rules via hands-on trials and discussions. The Group also reviewed the HSE training matrix, which gives an overview of all mandatory HSE training courses and their frequency. Finally, internal auditors were trained as certified internal auditors for ISO 45001 to prepare for the transition of OHSAS 18001 certified sites to the new ISO standard for occupational health and safety.

### Performance 2019

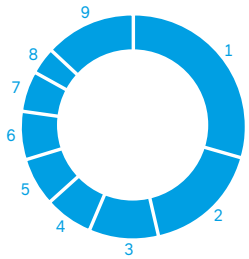
TRI per million working hours has been a Borealis Group Scorecard KPI for many years. Recordable injuries are those that require medical treatment, restrict work or result in lost working hours. Both Borealis' employees and contractors are tracked. A TRI frequency of two or less is considered world class in the industry.

Borealis has set an ambitious target of a TRI of 1.1 or less and continuously works towards zero TRI. In 2019, Borealis' TRI was 1.6 compared with 1.3 in 2018. Unfortunately, Borealis had one fatal accident in 2019, when a contractor fell from a roof in Stenungsund, Sweden. After that accident, Borealis further increased its focus on safety with a number of targeted initiatives to drive safety performance toward the goal of zero injuries. In 2019 the TRI frequency for Borealis' employees was 1.3 against 1.1 in 2018, while that of its contractors was 2.6 compared to 1.8 in 2018.

Data analysis showed that hands and fingers remain the main body parts harmed in accidents.

Slips, trips and falls still cause several TRI each year, despite Borealis running a number of health and safety campaigns over recent years. Although the nature of Borealis' business means there is high potential for exposure to chemicals, such incidents are rare.

Fig. 15: **Part of the body harmed; analysis of 981 injuries between 2017 and 2019**




| | | |
|---|---|---|
| 1. | Hand, finger, wrist | 30% |
| 2. | Arm, elbow | 17% |
| 3. | Leg, knee | 10% |
| 4. | Foot, ankle, toe | 7% |
| 5. | Neck, shoulder | 7% |
| 6. | Face, mouth | 7% |
| 7. | Eye | 6% |
| 8. | Back | 4% |
| 9. | Others | 13% |

The sick leave rate is another important occupational health indicator. Borealis has a target of 3.2% or less, which is below the industry average in countries where the Group operates. In 2019, the sick leave rate was 3.4% compared to 3.6% in 2018.

## Outlook

Health and safety remains the number one priority for Borealis and for 2020 the Group has identified three primary focus areas. These are to:

- provide refresher training in social psychology for front-line leaders;
- maintain the focus on the Goal Zero journey, with a focus on the Life Saving Rules, engagement walks and cross-learning from incidents; and
- ensure that by 2021, the Hydrocarbons & Energy and Polyolefin businesses meet the new ISO 45001 international standard for occupational health and safety management systems. → chapter Process Safety, p.78

Fig. 16: **Health & safety and process safety performance indicators 2015–2019** [1)]

| Issue | Definition | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|
| Total Recordable Injuries (TRI) | number/million work hours | 1.6 | 1.3 | 1.1 | 0.9 | 1.4 |
| TRI Borealis | | 1.3 | 1.1 | 0.9 | 0.8 | 1.0 |
| TRI Contractors | | 2.6 | 1.8 | 1.3 | 1.3 | 2.4 |
| Fatalities | | 1 | 0 | 0 | 0 | 1 |
| Sick leave rate [2)] | % of total hours worked | 3.4 | 3.6 | 3.3 | 3.3 | 3.2 |
| Incident action completion rate | % of finalised action in due time | 98.5 | 99.3 | 98.8 | 98.4 | 98 |
| Response rate on process safety incidents | % actions completed on time | 92.9 | 97.1 | 97.9 | 96.7 | 97.3 |
| High severity accidents | | 0 | 0 | 1 | 0 | 0 |
| Medium severity accidents | | 11 | 16 | 19 | 16 | 23 |

1) mtm plastics GmbH and mtm compact GmbH is excluded from the sick leave rate, the incident action completion rate and the response rate on process safety accidents; Ecoplast Kunststoffrecycling GmbH is excluded from all KPIs // 2) Borealis' definition for sick leave rate differs slightly from the absentee rate defined by GRI ("absent from work because of incapacity of any kind, not just as the result of work-related injury or disease; excludes permitted leave absences such as holidays, study, maternity or paternity leave and compassionate leave")

### Definitions

**Total Recordable Injuries (TRI):** Accidents resulting in absence from work, the need to do a different type of work or any other case in which medical treatment is required. The frequency is calculated as the number of accidents per million working hours. Borealis' employees and contractors working on company premises are included in this calculation.

**Sick leave rate:** The sick leave rate indicates the amount of time employees were absent from work due to sickness or injury. The overall sick leave rate is calculated as a percentage of the total number of planned working days in the current year.

**Incident action completion rate:** This monitoring parameter is focusing on action completion in due time. It is calculated on a monthly basis and is looking at the actions due in the past months for all incidents reported, regardless of their consequences, with a risk factor ≥8. The parameter represents the percentage of actions finalised in due time. The incident action completion rate includes all incidents reported on the incident management module including HSE, Quality and Operational incidents.

**Response rate of process safety incidents:** Process safety incidents of a certain severity or risk potential are recorded and investigated through root cause analysis. Corrective actions are defined to prevent re-occurrence. The response rate of process safety incidents is measured as the ratio (%) of corrective actions completed within a defined time period.

**High-severity accidents:** are accidents with significant consequences rated above 300 in Borealis' severity rating tool. No high-severity accidents were reported in 2019.

**Medium-severity accidents:** are those resulting in a loss of containment, with medium consequences towards people, planet and profit. There were 11 medium-severity accidents reported in 2019, a significant improvement on the 16 accidents in the previous year. This shows the clear effect of Borealis' intensive awareness campaign and the roll out of improved Process Safety processes.

# Responsible Business

## Corporate Governance

**Goals**

Borealis' corporate governance goals for 2019 were to:

- include all European locations in the integrated ISO certification scope for Borealis (the Group matrix certificate);
- start to expand the matrix certification to selected locations in North America;
- change the certification body for the standard for the Automotive industry (IATF 16949) from SABS to BSI; and
- create continuous awareness of the importance of having one integrated Management System for Borealis Group.

**Key Achievements and Results**

In 2019, Borealis

- successfully passed all surveillance audits, achieved recertification to the 2015 versions of relevant ISO standards at all European locations and integrated Ottmarsheim, France, and Rockport, NJ, into the Group matrix certificate;
- achieved recertification to the IATF 16949 standard from the BSI certification body;
- achieved declaration of conformity in accordance with IATF 16949 and ISO 9001 certification for the new Compounding site in Taylorsville, NC, with immediate integration of the site into the Group matrix certificate; and
- successfully steered Group governance by maintaining one integrated Management System, despite the organisational split into the Fertilizer, Melamine and Technical Nitrogen Products (TEN), Polyolefins (PO) and Hydrocarbons & Energy businesses.

### Introduction

Good corporate governance is essential for gaining and retaining the trust and respect of shareholders, and other stakeholders interested in Borealis, including employees, customers, suppliers, governments, capital markets and the general public. It ensures everyone in the Group follows defined processes, resulting in consistency, effectiveness and the inclusion of relevant stakeholders in decision making. Well-defined governance also supports compliance with legislation, industry standards and market and customer requirements. This approach supports the achievement of key performance indicators, which relate amongst others to the Group's profitability and employee and customer satisfaction, while helping to optimise the efficient use of resources.

Borealis' approach to governance is documented in the Borealis Management System (BMS), which sets high standards of professional and personal conduct and assures Group-wide compliance with these standards. Addressing risks and opportunities is an integral part of the management system, to ensure the Group continuously improves and identifies mitigating actions where needed.

The Group's governance is supported by compliance with industry-accepted standards. Being certified to standards such as ISO provides independent confirmation that Borealis applies these best practices in its daily activities. Embedding ISO standards also requires Borealis to continuously improve, so it generates more value for customers and other stakeholders.

### Corporate Governance Structure

The Supervisory Board governs the Borealis Group and consists of members of Mubadala and OMV, Borealis' two shareholders. The Supervisory Board currently comprises the chairperson, the vice-chair and three additional members. It has established Audit and Remuneration Committees and delegated the respective responsibilities to those sub-committees. The Supervisory Board met five times in 2019. The Audit Committee met three times in 2019 and the Remuneration Committee met once in 2019.

The Supervisory Board appoints the members of the Borealis Executive Board, who manage Borealis' business activities. The Executive Board members lead their respective areas of responsibility and hold monthly meetings to align the Group's activities and decide on strategic matters and key investments.

### Sustainability Governance

The Executive Board is Borealis' highest governance body for sustainability. It:

- approves the Group's overall sustainability and public affairs strategy;
- reviews the strategy's implementation and performance regularly;

– provides guidance and decides on major topics, such as group operative plans, capital allocation and investments; and
– approves the Group's position on key sustainability issues, such as the Circular Economy, Climate & Energy, and Health & Safety.

The Executive Board has delegated the routine management of social, environmental and economic issues to senior leaders in their respective functions.

The Director of Sustainability & Public Affairs leads the development of the Group's Sustainability Strategy and reports to the Vice President Strategy & Group Development, who in turn reports to the CEO. The Sustainability & Public Affairs organisation leads Borealis' commitment to sustainability, by driving and guiding the Sustainability Strategy throughout the Group and catalysing sustainability-related initiatives that create value for Borealis' stakeholders. The team supports the leaders of key functions to develop sustainability-oriented strategies and implement a sustainability roadmap through capability building, expertise, consultancy and dedicated methodologies and tools.

A Sustainability Advisory Team, comprising leaders from key functions across the organisation, reviews the Group's progress against the sustainability roadmap, providing guidance on key projects' objectives, targets, deliverables and gaps, proposing new areas of involvement and ensuring excellence and rigour in execution.

## Borealis Management System

Borealis' core values (Responsible, Respect, Exceed and Nimblicity™) are supported by five corporate governance principles. These principles ensure a common understanding of leadership throughout the Group and establish effective organisational structures and control. The principles are that

1. Borealis is managed as ONE cross-cultural Group;
2. the Borealis Executive Board steers the Group through directional guidance and empowerment of its people;
3. Borealis is steered by centrally organised functions and businesses;
4. Borealis promotes a performance culture based on clear accountabilities for delivery; and
5. Borealis' leaders follow explicit processes and pursue transparent and effective decision-making.

The values and governance principles run through the Group at all levels and are the foundation for the BMS.

### Group Policies

The BMS is set up as a layered pyramid, with ten Group Policies on top. The Group Policies define how Borealis works as a company and thus guide subsequent governance documents. All employees must apply the policies in their day-to-day activities.

The ten Group Policies are:

1. Authority Schedule
2. Commercial Policy
3. Communication Policy
4. Ethics Policy
5. Innovation Policy
6. People Policy
7. Project Policy
8. Quality Policy
9. Responsible Care® Policy
10. Risk Management Policy

Each Group Policy is owned by the CEO or Chief Financial Officer (CFO) and is issued by the Executive Vice President (EVP), (Senior) Vice President (SVP) or Director responsible. Any change to a Group Policy must be approved by either the CEO or CFO as the policy owner, and subsequently by the Borealis Supervisory Board.

The Authority Schedule defines how authority is delegated in all business and functional areas and establishes the approval levels for senior management in key processes.

### Secondary BMS Documents and BMS Setup

In addition to the Group Policies, the BMS encompasses procedures and handbooks, process descriptions, operative instructions and committee and meeting charters.

Below the Group Policy level there are about 30 procedures and handbooks. These provide specific guidance, describe key processes and explain the purpose, scope and setup at a departmental level. The subsequent process descriptions and operative instructions have a more operative focus and provide detailed guidance on the execution of activities at a Group, business or location level.

The BMS has both Group and location dimensions, which together document the complete way of working in Borealis.

Fig. 17: **The Borealis Management System**

**The Borealis Management System is the basis for Borealis' governance**

**Policies**
10 Group Policies define how Borealis works.

**Procedures and Handbooks**
About 30 procedures/handbooks provide specific guidance, connecting key processes, organisational purpose/scope and setup.

**Processes**
Processes provide detailed guidance on the execution of activities on group, business or location level.

**Instructions**
Instructions provide detailed guidance on the execution of activities on group, business or location level.

The Group BMS is managed in a centrally controlled document management database and applies to all locations and upon decision of the Executive Board to the respective Borealis affiliates. The policies and governance documents in the Group BMS are revised at least every three years. Local BMSs apply to a particular location and are written in the local language to ensure local employees fully understand them. Controlled documents in the local BMS are revised at least every five years.

### Committees

For particularly important social and environmental matters, Borealis has set up committees in addition to the Executive Board to provide additional governance and ensure continuous improvement in these areas. These committees are cross-functional and are overseen by Executive Board members. Notable examples of these committees are:

- The Borealis Responsible Care Committee, which comprises all the Executive Board members and is chaired by the CEO. The committee oversees implementation of the Group's Responsible Care Policy and programmes and monitors overall health, safety, energy and environmental (HSEE) performance against key performance indicators (KPIs). The committee also assesses any serious HSE incidents to help avoid future risk to human safety and the environment.
- The Product Stewardship Committee → chapter Product Stewardship & Sustainability, p.92
- The Quality Committee, which is chaired by the CEO. The committee sets the Group's quality management priorities and drives implementation of all quality management programmes and initiatives. It also evaluates the BMS's effectiveness and efficiency each year during the management review and develops continuous improvement actions. In particular, the committee discusses market requirements, customer feedback and changes to industry standards, as input for improvement programmes.

### Ensuring Compliance with the BMS

Compliance with the BMS is monitored at multiple levels and by various stakeholders:

- Process owners across the organisation use performance indicators to continuously monitor the effectiveness and efficiency of their respective processes. Processes are also reviewed regularly through internal audits. → Internal Control Systems and Audits, p.71.
- The BMS is reviewed annually at location level by the location leadership teams and at Group level by the Executive Board as part of the Management Review.
- In addition to audits by external certification bodies and governmental institutions, a number of Borealis' customers audit selected locations as part of their supplier qualification and review process. Borealis uses these audits as a key source of continuous improvement initiatives. In 2019, more than 40 ISO and customer/authority audits were conducted at Borealis' locations.

### Managing Customer Complaints

The Group has a tightly integrated set of controls which operate before, during and after production, for example while supplying the products to the customer. Despite these controls, customers might still not be fully satisfied with Borealis' products and services. In such cases, Borealis uses a formalised customer complaint handling process, recognising that effective complaint handling can enhance its reputation, customer relationships and customer satisfaction, even when it has initially not lived up to the customer's full expectations. Each complaint is taken seriously, registered, processed and seen as an opportunity

to learn. The information obtained through the complaint handling process therefore helps Borealis to improve its products, services and processes. The Group also uses regular customer satisfaction surveys as a source of information for continuous improvement.

### Internal Control Systems and Audits

Borealis has established a system of internal controls, in line with EU regulations. These controls assess the robustness of the Group's systems and processes, and support the monitoring, management and reporting of related risks. The system of internal control is owned by the CEO and senior management. The Audit Committee is responsible for monitoring its effectiveness.

Internal controls are defined for core processes and require control owners to complete self-assessments. Borealis has an independent Internal Audit function, which supports and monitors these self-assessments to ensure compliance, while external auditors assess the effectiveness of the internal controls.

Internal Audit is headed by the Director of Internal Audit and Risk Management, who reports directly to the Audit Committee. The Audit Committee reviews the effectiveness of Internal Audit and Risk Management and approves the annual internal audit plan proposed by Internal Audit. All audit results are reported to and discussed by the Audit Committee.

In 2019, Internal Audit performed more than 20 internal audits, special investigations and internal control reviews for key processes. The audits covered all business groups, as well as Group functions. Audit areas encompassed: compliance; operations; strategic and financial topics including risk management, compliance, ethics and management control; procurement; strategy execution; and innovation. Internal Audit also conducted prevention, risk management and process-safety-related audits at Borealis' locations. During the year, Borealis completed the five-yearly External Quality Assessment of the audit function, as required by the Institute of Internal Auditors' guidelines.

The Audit Coordination Forum, headed by the Director of Internal Audit and Risk Management, coordinates the separate audits carried out by the Health, Safety, Environment & Quality (HSEQ), Internal Audit and Risk Management departments, in order to align their approach.

### Risk and Opportunity Management

Borealis' Risk Management Policy is owned by the CFO. Its objective is to establish sound risk management practices in all business areas and in all places where Borealis operates. While every Borealis employee is responsible for managing risk within his or her own area of activity, the Executive Board owns the Group-wide risk landscape and frequently reports on it to the Supervisory Board. The Supervisory Board reviews the effectiveness of Borealis' risk management practices and processes, the Group's risk exposure and the effectiveness of its mitigating actions. The Supervisory Board delegates some of these responsibilities to the Audit Committee.

Borealis is committed to proactive and effective risk management. Its approach is based on the core objectives of identifying, assessing and managing risks that could affect the performance of any part of its operations, and gaining a better understanding of how the explicit consideration of risk may affect the choice of strategy. Risk management therefore contributes to achieving Borealis' long-term strategies and short-term goals and is designed to enrich management dialogue, by adding a risk perspective to the strengths and weaknesses of a strategy, as conditions change. Risk management also enhances Borealis' enterprise resilience, which is the ability to anticipate and respond to change and enable the organisation to identify factors that affect performance and necessitate a shift in strategy. This process, known as Enterprise Risk Management, is driven by Internal Audit.

#### The Three Lines of Defence

Borealis applies the "three lines of defence" approach to risk management. This recognises that each line of defence has a distinct role in identifying, assessing and mitigating risk, and overseeing the effectiveness of these processes. The approach ensures that risk management is:

- embedded in Borealis' daily business, rather than being a standalone process; and
- a key part of the Group's decision-making process, for example for investments and capital allocation.

The three lines of defence are:

1. Operational management, which is responsible for maintaining effective internal controls and for carrying out risk and control procedures on a day-to-day basis.

2. Risk management and compliance functions, which ensure that the first line of defence is well designed and working effectively.
3. Internal Audit, which provides independent and comprehensive assurance about the effectiveness of governance, risk management and internal controls, including how well the first and second lines of defence are achieving their risk management objectives.

This risk management process ensures that all parts of the Group routinely identify and assess their risks, including environmental and social risks, and develop and implement appropriate mitigating actions. Key risks across the Group are periodically discussed at a Group-wide level and consolidated to produce the Group's overall risk landscape. Each quarter, Executive Board members review these key risks, validate the Group's risk tolerance levels and risk appetite, monitor the implementation of mitigating actions and ensure they are integrated into strategic planning.

### Sustainability Risks

Borealis' commitment to controlling sustainability risks is stipulated in the Group's Responsible Care Policy Statement. This sets out Borealis' aim to be a recognised leader in Responsible Care, based on world-class health, safety, environmental and energy performance. The Group is committed to following the legal and other requirements to which it subscribes, or exceeding them when they do not meet the Group's standards. Borealis is also committed to advancing sustainable development along the value chain, prioritising innovative, value-creating solutions according to the principles of Product Stewardship. The Group has a Responsible Care management system, based on continuous improvement and verification of its performance, and openly discusses Responsible Care issues with its stakeholders to further promote health, safety and the environment and to save energy along the value chain.

The Responsible Care Policy Statement is the basis for all of Borealis' activities and the development of processes in areas such as occupational health and safety, energy and environmental management, process safety, product stewardship and others. The Group takes a risk-based approach to all that it does, meaning it uses a proactive risk assessment for daily work and continuously reviews the risk of its installations. This is managed using a risk-prioritisation process, resulting in the allocation of resources and funds to reduce the risk to an acceptable level, followed by an embedded review stage, to assess the effectiveness of the mitigating measures.

Figure 18, p.73 summarises the main sustainability risks that Borealis poses on the environment and the society. Risks are negative effects of unplanned events on sustainability matters (environmental, social and worker-related matters, diversity, human rights and anti-corruption) that can occur along the whole value chain. Borealis is committed to mitigate and reduce the risks on sustainability matters.

### Borealis' Engagement with the Task Force on Climate-related Financial Disclosures (TCFD)

Borealis has supported the TCFD recommendations since they were released in June 2017 and has begun to implement them. The TCFD guidance covers four areas: governance, strategy, risk management and metrics and targets. For governance, Borealis integrates climate change into its standard governance structures, for example the HC Board and $CO_2$ issue team, and manages climate risks across different business functions through this governance (→ chapter Energy & Climate, p.58, chapter Environmental Management, p.96). In relation to strategy, Borealis sees climate-related risks affecting its business in the medium term, for example through changes in regulation and consumer preferences and reputational risks. There are also opportunities that might arise, such as innovative feedstocks and demand for products that mitigate climate change. The Sustainability Portfolio Compass – a portfolio sustainability assessment method – is specifically applied to assess those challenges and opportunities, amongst other topics such as the Circular Economy (→ chapter Sustainability Strategy & Objectives, p.25).

The Group's Enterprise Risk Management framework is explained above and any climate-change-related risk that needs to be considered is accounted for there. Physical risks are not yet accounted for and more work is needed to evaluate them.

In relation to metrics and targets, in 2019 Borealis committed to new long-term targets for reducing its $CO_2$ emissions (→ chapter Energy & Climate, p.58). As Borealis' TCFD implementation progresses, the Group will also focus more attention on financial metrics.

Fig. 18: **Sustainability risks**

| Sustainability risk | Risk description | Mitigation measures |
|---|---|---|
| Operations' unexpected emissions to the environment | If the Group's operations do not operate according to engineered process levels, emissions to the environment can occur beyond those expected. These emissions can be emissions to air, $NO_x$, dust, soil and water, energy and flaring, nuisance or waste. | The Group employs HSE&Q management procedures and processes to remediate unexpected events. It proactively addresses these risks through its opportunity and risk management system, which positively influences safety, reliability, quality and cost by identifying, setting priorities and allocating funds and resources to the highest priorities in the risk register, while enhancing cross learning of best practices in order to continuously reduce the risk level. → chapter Process Safety, p.78 |
| Work accidents due to unexpected event | The sudden and uncontrolled release of explosive material, for example due to vessel or tube ruptures, could lead to major explosions, such as vapour cloud explosions or boiling liquid expanding vapour explosions. Catastrophic process equipment failure could result in the intoxication of the community, through the uncontrolled release of toxic material such as ammonia. | The main objectives of Borealis' Process Safety Goal Zero journey and its internal procedures is to prevent accidents and mitigate the potential consequences effectively. The Group develops and ensures compliance with safety critical processes, such as management of change, safe permit to work, safe start up and integrity of safety critical protection layers. Borealis' inspection group ensures the integrity of the Group's installations and protects them against corrosion or sudden pressure or temperature increases. Combined with Process Safety awareness campaigns and tailor-made safety training, such as Process Safety in design and specific front-line leader training, the required understanding and competence is made available in the organisation. Leading indicators such as compliance to safety critical inspection plans, regular testing of the functionality of the Group's safety devices and instrument protection loops, the timely closure of actions from hazard assessments and the bypass management system, are reviewed by regular deep dives in the Process Safety committee, self-assessments in the locations, cross location health checks and Borealis Blue audits. → chapter Process Safety, p.78 |
| Plastics in the environment | Plastic pellets could enter the environment through spills at Borealis' locations and spills by downstream hauliers and customers. | Borealis is a signatory to Operation Clean Sweep and has an internal zero pellet loss programme. All locations have participated in this programme to eliminate pellet loss and plastic powder to the environment. Borealis proactively cooperates with hauliers, customers and local initiatives to create holistic solutions to eliminate pellet losses to the environment. → chapter Environmental Management, p.96 |
| Substances of concern | Substances of concern could end up in the Group's products and processes. | Borealis expects its raw material suppliers to inform it of the full chemical composition of the materials it procures. Product Stewardship maintains this information and monitors the regulatory development and public debate of all chemicals used in Borealis' processes and products. The risk of each substance is evaluated using a tailor-made risk matrix. High-risk substances are brought to the cross-functional Product Stewardship Committee and the risk will be entered into the Borealis risk matrix of the department concerned. The Product Stewardship Committee recommends and monitors mitigation actions such as substitution projects. In addition, each Borealis product and innovation project undergoes a product stewardship assessment, where general and application-related product safety is assessed. → chapter Product Stewardship, p.92 |

# Ethics & Compliance

**Goals and Principles**

Borealis' ethics and compliance goals are to
- ensure that Borealis acts in an ethical and compliant way in all its business dealings;
- continue to train the organization on ethics and compliance requirements and risks;
- ensure full compliance with applicable laws worldwide;
- standardise the integration of compliance and ethical aspects into key business projects; and
- promote a culture of speaking up and raising concerns.

**Key Achievements and Results**

During 2019, the Group:
- promoted and created awareness of its new Ethics Policy, by publishing the Ethics Policy on Borealis' website, creating a special version of the policy for external business partners and holding information sessions in almost all of the Group's locations;
- established and published policies relating to Anti-Bribery & Corruption and Anti-Trust & Competition Law;
- established an Ethics Council; and
- conducted dedicated ethics and compliance training sessions and workshops.

## Introduction

Maintaining the highest standards of integrity is essential for securing and maintaining the trust of Borealis' customers, suppliers, employees, shareholders and other key stakeholders, and for protecting the Group's reputation. Failure to meet its ethical and compliance obligations could expose Borealis to the loss of stakeholder trust and reputational damage, as well as to fines, legal claims, loss of business, contracts or licenses, or even the imprisonment of management and employees involved. An unethical or non-compliant culture can also affect employees' engagement, job satisfaction and emotional well-being. This in turn could affect Borealis' efficiency and profitability.

Borealis' commitment to ethical business conduct is strongly reflected in its core values of Responsibility, Respect, Exceed and Nimblicity™. The Ethics Policy (Code of Business Conduct) is the Group-wide standard for ensuring Borealis has an ethical culture and complies with all applicable laws. The main areas covered by the Ethics Policy are ethical principles, anti-corruption, business and personal integrity, compliance with competition laws and data privacy.

## Organisational Structure

The Compliance & Ethics function has both preventative and controlling roles. It looks to prevent infringements of laws, ethical principles and compliance matters, and to mitigate risk, react to issues and implement lessons learned. The function is headed by the Group Compliance & Ethics Officer, who reports to the Chief Legal Officer and also has a reporting line to the Audit Committee, which receives an annual report on compliance and ethics issues. The Group Compliance & Ethics Officer is supported by an Ethics & Compliance Manager and a network of more than 85 Ethics Ambassadors. The Ethics Ambassador network is a key tool for promoting and strengthening Borealis' ethics culture. The network has global coverage, with one ambassador at almost every location and all functions covered.

Borealis' Compliance & Ethics function has regular exchanges of information with its counterparts at the Group's owners, Mubadala and OMV. In addition, the Group Compliance & Ethics Officer meets and updates Borealis' CEO each quarter.

## Ethics Policy (Code of Business Conduct)

The Borealis Ethics Policy sets out Borealis' commitment to ethical business conduct and compliance with applicable national and international laws and regulations. It applies to all Borealis employees, managers and temporary workers. The Ethics Policy is accessible to all employees and to the public on Borealis' website.

Borealis' contractors and other business partners are asked to adhere to the Ethics Policy or to have their own policies which are of a similar standard. Borealis has also created a special version of the Ethics Policy for external business partners. In addition to the Ethics Policy, eligible Borealis suppliers must adhere to the Responsible Sourcing Policy, which was launched in 2017. This defines the Group's approach to key aspects of business ethics when sourcing, such as anti-corruption, compliance and child labour, as well as health, safety and the environment. Key areas covered by the Ethics Policy are:

### Corruption and Bribery

Before entering into a relationship with business partners from countries which are rated as high-risk in Transparency International's Corruption Perception Index, Borealis conducts a compliance clearance review. This is supported by an IT application provided by Thomson Reuters, which

verifies legal entities and associated individuals. Borealis will only proceed with the business relationship if the review shows no negative results. In all other cases, Borealis will not enter into any business relationship or will conduct further thorough due diligence to clarify any concerns. Borealis' anti-corruption and anti-bribery rules include not accepting or tolerating any kind of facilitation payments. The Group also strictly prohibits offering, giving or accepting gifts or anything of value in order to obtain or grant an improper business advantage. Any gift or hospitality in connection with Borealis' business activities must be reasonable and appropriate and must have a legal and reasonable business purpose.

### Human Rights

Borealis does not tolerate any form of harassment, bullying, discrimination, disrespect, exploitation of a person's vulnerability or dependency, or any other violation of human rights. Borealis expects all its suppliers, customers and other business partners to strictly comply with human rights laws.

Borealis has in place an internal Operative Instruction to comply with the requirements of the UK Modern Slavery Act.

### Competition

Borealis is committed to healthy, lawful, equitable and ethical competition between companies. The Group applies policies to ensure full compliance with applicable competition laws in all of the jurisdictions where it does business. Borealis also puts special focus on antitrust and competition requirements in its compliance trainings and workshops.

### Data Privacy

Borealis must treat all personal information relating to its employees and business partners sensitively, confidentially and in line with legal requirements. The Group takes its obligations under the General Data Protection Regulation (GDPR) and any other applicable data protection laws seriously and takes care to prevent unauthorised disclosure. Certain employees may, as part of their role, legally handle personal information about other employees or third parties. Those employees receive specific training on what is required from them, in relation to such data. Borealis expects all employees encountering personal data to treat it sensitively and in accordance with the law, no matter the context.

## Activities 2019

### Ethics & Compliance Performance

Borealis, to the best of its knowledge, was not involved in any material violations of anti-corruption, anti-trust or competition law, human rights or data privacy restrictions during 2019. Consequently, no penalties, fines or other permanent sanctions were imposed on Borealis and no legal action was initiated against Borealis or any Borealis employee for non-compliance with these legal requirements.

### Ethics Council

In February 2019, Borealis introduced a new Ethics Council. This Group-wide and cross-functional committee aims to align and foster consistent ethical standards to strengthen Borealis' values. The Ethics Council discusses measures to enhance the Group's ethical culture, reviews compliance incidents and discusses disciplinary consequences in cases of substantiated unethical behaviour. The Council meets quarterly and consists of senior representatives from across the Group.

### Ethics Training

Borealis provides regular training in promoting its Ethics Policy, which is based on the principles of honesty, integrity, working together, respect for each other, accountability and health, safety and the environment.

Since December 2018, Borealis has provided e-learning for employees through its new service provider Learn Research Network Limited (LRN). LRN is one of the global market leaders for e-learning solutions. The training plan is illustrated in figure 19, p.76. In 2019, 8,476 training sessions were completed by Borealis employees.

Borealis also conducted 78 tailored classroom training sessions for 1,062 employees. Training sessions were provided by the Group Compliance & Ethics team, Legal and Ethics Ambassadors. Group Compliance & Ethics also conducted a roadshow in almost all Borealis locations to inform employees and promote the new Ethics Policy.

Training on human rights issues is part of every classroom training and 10 Codes of Conduct e-learning training. Topics covered include non-discrimination, respect, fair treatment and data protection.

Fig. 19: **E-learning schedule**

| Training title | Target group | Training description | Frequency |
|---|---|---|---|
| Annual Certification | All white-collar employees | Commitment by each white-collar employee that the Ethics Policy is understood and followed | Annually |
| 10 Codes of Conduct | All employees | Principal rules of the Ethics Policy | Annually |
| Combating Bribery in Business | Managers, Sales & Procurement | Anti-corruption requirements | Annually |
| Data Privacy & Safeguarding Information | All white-collar employees | GDPR and data security requirements | Every second year |
| Anti-Trust & Competition Law | Managers, Sales & Procurement | Legal requirements for complying with competition and anti-trust laws | Annually |
| Preventing Harassment in the Workplace | All employees | Training to ensure a work environment that is characterised by mutual courtesy and respect | Every second year |
| Trade Compliance | Managers, Sales, Procurement, Tax & Customs | Sanctions, embargoes and trade control requirements | Every second year |
| Information Security | All employees | Protection of confidential information, internal and external rules for IT, email, housekeeping and visitors | Once in February 2019 |
| Ethical Leadership | All Borealis managers | Line managers are trained on how to create an ethical culture in their teams | Once for every manager |

### Whistleblowing and Speak Up Campaign

Borealis' Ethics Policy encourages employees to report any unethical behaviour. To file a report, employees can contact their manager, HR, local Ethics Ambassador, the Compliance & Ethics team or a dedicated ethics hotline, which enables individuals inside and outside Borealis to report witnessed or suspected violations of the Ethics Policy. Reports can be anonymous, in which case Borealis guarantees to respect the anonymity of the reporter and will not investigate his or her identity. Borealis does not accept any retaliation against any reporter of alleged compliance incidents. Once a report is received, the Group follows an investigation and disciplinary procedure to ensure potential ethical breaches are thoroughly, confidentially and professionally investigated and that there is appropriate action in any cases of substantiated misconduct.

In support of the Ethics Policy, Borealis continuously promotes "speaking up", to encourage employees to report any actual or suspected ethical or compliance breaches. In 2019, Group Compliance & Ethics received more than 50 reports, of which 16 cases were investigated. 8 of the investigations substantiated or partially substantiated misconduct, one did not substantiate misconduct but identified process failures, three did not substantiate any allegation and four are ongoing.

Since September 2019, Group Compliance & Ethics has issued a quarterly Ethics Newsletter to all Borealis employees to inform them about ethics-related topics, compliance incidents and relevant facts and figures.

## Outlook

### Know Your Business Partner

Borealis aims to ensure that it only does business with external business partners who underwent thorough due diligence, a compliance review and a compliance-based risk assessment before entering into a contractual relationship. Borealis furthermore aims to conduct regular compliance checks on all existing business partners. The frequency, extent and scope of these checks depend on the compliance risk associated with the business partner. In order to achieve its targets, Borealis is implementing a global, holistic, IT and risk-based Know Your Business Partner programme, comprising:

- a standardised due diligence process, applied consistently across all business units;
- a secure, shared platform to automate processes, determine the level of risk and identify where further due diligence is required; and
- regular compliance checks of business partners.

A standalone version of the application was implemented in December 2019. In 2020, Borealis will interface the application with SAP and other internal data bases.

### Ethical Leadership Workshops

In 2020, Group Compliance & Ethics will conduct in-person workshops on ethical leadership for Borealis' managers. In the first phase, the workshop will be mandatory for all newly promoted line managers and in the second phase, the workshop will be provided for all other managers. The workshops train leaders to create and enhance an ethical culture in their teams, based on honesty, openness and respect.

### Compliance & Ethics Integration

Group Compliance & Ethics is implementing a new process to ensure that newly acquired companies are well integrated from a compliance and ethics perspective. The process has been applied since February 2020 and will include:

- promoting and creating awareness of the Borealis Ethics Policy;
- compliance with GDPR;
- access to Borealis' policies;
- the appointment of a local Ethics Ambassador; and
- in-person compliance and ethics training for the local management team.

### Culture Audits

Group Compliance & Ethics, HR and Internal Audit will jointly conduct audits in locations, business units or teams to assess the ethical culture and recommend measures to improve it. A pilot audit was conducted in August 2019.

# Process Safety

**Goals**

Borealis' goals for 2019 were to:

- continue to reduce the number of medium- and high-severity process safety accidents, with the ambition of achieving Goal Zero in process safety accidents and high-risk process safety near misses;
- ensure corrective actions from incident investigations are completed on time;
- raise awareness of potentially hazardous situations and strengthen cross-learning;
- implement training programmes in process safety for key target groups; and
- develop systems and procedures to cover identified gaps in process safety topics.

**Key Achievements and Results**

During 2019, Borealis' key achievements were:

- achieving the targeted level of medium- and high severity accidents with 11 cases, against a target of 16;
- utilising the new de/recommissioning approach for a major shutdown in Linz, leading to good and timely start-up of all plants;
- processing and executing quantitative risk assessments (QRA) to support the risk management process towards internal as well as external stakeholders;
- continuing with process safety training for engineers; and
- finalising the assessment of the barriers to major incidents for Borealis' fired heaters (process furnaces or steam boilers).

## Introduction

Borealis processes large quantities of flammable and/or toxic materials under high pressure and temperatures, creating the potential for serious process safety incidents. In a worst-case scenario, leaks, fires or explosions could cause multiple fatalities, both inside and outside Borealis, as well as major environmental impacts. In addition, this could lead to substantial disruption of supply to customers and financial costs.

The possible significant consequences of a serious incident mean that Borealis has a duty to invest in process safety and to properly design, maintain and operate its plants. In respect of the Seveso directive, which is the main EU regulation dealing with the control of on-shore major accident hazards involving dangerous substances, Borealis works closely with national authorities and emergency organisations to ensure the safe operation of its plants and a high level of preparedness in case of incidents. The Group also actively supports industry-wide efforts to enhance process safety, as a member of the European Process Safety Centre.

To reach Borealis' objective of achieving zero accidents, the Group launched the Goal Zero programme in 2014. The programme covers both occupational health and safety and process safety and is a key deliverable of the Group's Sustainability Strategy. As Borealis employees are encouraged to see Goal Zero as a journey to be taken together, the programme helps establish a collective health and safety mindset.

## Organisational Structure

The Executive Vice President (EVP) Base Chemicals and Operations chairs the Group-level Process Safety Committee. The Committee's members are directors and departmental leaders from all of the relevant operational streams: Group Health, Safety, Environment & Quality, Manufacturing Excellence, Operations Polyolefins and Operations Hydrocarbons, and Project & Expert Support. Each production location also has its own Process Safety Sub-Committee, chaired by a nominee appointed by local management. Its members come from different areas in the location to ensure cross-learning and a link to Group developments.

The Process Safety Committee and Sub-Committees meet regularly to oversee Borealis' process safety performance and programme, steer the Group's process safety Goal Zero roadmap, review progress and provide guidance on priorities, key activities and performance measures. Priorities are identified based on reoccurring or severe incidents, leading to a programme being launched to improve performance by multifunctional teams. These teams determine best practice and roll it out in the locations, with support and supervision from Group Process Safety. Group Process Safety also takes an active role in resolving challenges for Borealis' large growth projects, by providing its expertise in an early stage study.

The Group Process Safety department has developed a process safety management system that enhances risk identification and mitigation. The primary Group Policies that are relevant to Process Safety are the Risk Management Policy and the Responsible Care® Policy.

The Risk Management Policy defines Borealis' risk management framework by providing principles, roles and responsibilities, guidelines for risk assessment, mitigation and reporting. The policy aims to ensure the implementation of sound risk management practices at all levels across the Group. The Responsible Care Policy statement sets out the guiding principles for the Groupwide implementation of Responsible Care at Borealis. → Infobox Responsible Care®, p.81

Borealis also works with other organisations to help improve process safety standards. Borealis' joint venture Borouge established its process safety network at the start of 2018 and Borealis is sharing best practice in three areas: learning from incidents across borders, defining the minimum process safety design requirements for new plants, and setting minimum competence levels and education programmes related to process safety.

The Group is an active member of the European Process Safety Centre and shares lessons from incidents and supports process safety developments. The Group also takes part in a number of fora related to process safety, such as the High Pressure Safety Conference, Fertilizer Europe, the European Ethylene Producers Conference and the European Chemical Industry Council (CEFIC) Plant & Process Safety Network. In addition, the Group exchanges information with other companies to assess the best technical solutions for preventing and mitigating the escalation of major scenarios.

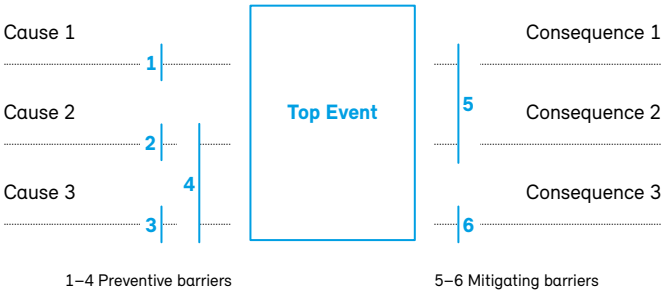
### Activities 2019

Borealis undertook a wide range of activities during 2019, which were designed to further improve its process safety.

In a joint effort with Project & Expert Support, the process for managing changes in a technical plant environment was reviewed and streamlined, and now includes business changes. This better aligned and strengthened the Health, Safety and Environment (HSE) Management of Change process to ensure good identification and mitigation of HSE risks, which can emerge from implementing technical, process or organisational changes in a plant environment.

Borealis also finalised the "bow tie" analysis for its fired heaters in 2019. A bow tie is a graphical representation of a possible dangerous event, setting out the initiating events, potential causes and related preventive and mitigating barriers. The analysis assessed if the fired heaters have sufficient and effective barriers to prevent major accidents such as boiler explosions. The identified gaps were integrated into Borealis' risk and opportunity process, where all risks and opportunities are assessed on a similar basis, by using a standard risk matrix to guide the organisation in priority setting. Using this prioritisation, the locations have started closing the gaps identified by the exercise. Examples of actions to close these gaps include retrofitting fired heaters with flame detectors, employing low-fuel-gas-pressure interlocks as preventive barriers or enabling remote start-up from a safe distance and using surveillance cameras as mitigation barriers.

Fig. 20: **Bow tie diagramme**




The Group has continued its specific safety training for engineers on process safety in design. So far, about 100 engineers have been trained. This training is also jointly provided to Borouge engineers. The programme will continue to integrate new focus areas to ensure it keeps pace with developments in process safety.

During 2019, a process for conducting quantitative risk assessments (QRA) was developed and a relevant procedure was issued to define the basic requirements. This process and procedure were applied to conducting a QRA for the cracker location in Stenungsund, Sweden.

To improve process safety during shutdown and start-up operations, the de/recommissioning procedure was revisited in 2018. This procedure was applied successfully in the turnaround at the Linz location in 2019, significantly improving the coordination between production, maintenance, contractors and projects. There was no medium- or high-severity process safety accident during the shutdown and start-up operations, making the turnround one of the most successful of this size in terms of process safety.

During 2019, Borealis continued its fourth five-year cycle of safety audits for all plants. These audits are known as "Blue Audits" and focus on areas such as operations, plant availability and engineering, and health and safety. The Blue Audit scope has been extended and now includes an audit covering the environment (including Operation Clean Sweep, an international programme to reduce pellet loss → chapter Environmental Management, p.96) and Energy Management. Six Blue Audits were carried out in 2019, in Porvoo (Finland), Antwerp (Belgium), Piesteritz (Germany), Stenungsund Polyolefins and Hydrocarbons (Sweden) and Itatiba (Brazil). This represented all of the planned reviews for 2019. Overall, 4 major and 41 minor non-conformities were identified, as well as a larger number of opportunities for improvements and positive observations.

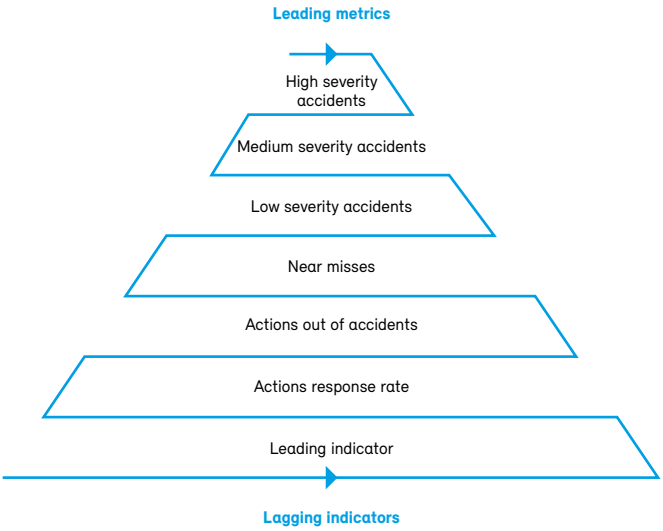
Borealis' insurance brokers conducted six insurance audits and four follow-up audits during the year. All of these audits reassured the Group's insurance brokers that the Group has a well-managed process to prevent and limit the impact of incidents.

### Performance 2019

Borealis uses a so-called Loss of Primary Containment Pyramid tool (see figure 21) to support the monitoring of incidents and ensure they are investigated and that actions are completed in time, to prevent reoccurrence.

The pyramid includes the performance of the safety critical processes designed to prevent accidents. This performance is measured using indicators such as the status of safety critical inspections, the testing of critical interlocks and the closure of actions. The leading indicators are followed up annually through a 'deep dive' into overall performance and review by the Process Safety Committee.

Fig. 21: **Borealis' Loss of Primary Containment Pyramid**




Borealis follows the CEFIC standards for the classification of process safety accidents.

High-severity accidents would include, for example, a large fire or explosion resulting in injuries or fatalities, and significant business loss and impact on the environment.

Medium-severity accidents are those resulting in a loss of containment, with medium consequences for people, planet and profit. A medium-severity accident would normally result in limited possible injuries, easy-to repair damage and a controllable environmental impact.

Low-severity accidents are those where substances are released but which result in a very low to zero impact.

In 2019, the Group's target was to have no high-severity accidents and a maximum of 16 medium-severity accidents, including fires.

In 2019, 0 high-severity accidents were reported. 11 medium-severity accidents and 815 low-severity process safety accidents were reported, along with 786 process safety near misses, of which 15 were high potential. As general process safety awareness increases due to Borealis' educational initiatives and campaigns, more low-severity accidents are being reported. → chapter Occupational Health & Safety, p.64

The process safety response rate measures the number of actions closed against the number due to be closed, on a 12-month rolling basis. In 2019, the response rate was 92.9% (2019 target: 98%). A total of 1,732 actions were implemented in response to high-, medium- and low severity accidents.

**Outlook**

During 2020, the Group will focus on the following areas in process safety:

- developing standardised safeguards for similar scenarios to ensure an adequate level of safety for all locations and across all business units;
- finalising and rolling out a management system of flexible connections in petrochemical units;
- reviewing and establishing an overall isolation process to ensure safe maintenance work in plants;
- continuing process safety competence development for front-line leaders, engineers and managers, through training; and
- developing a standardised process for safe line-breaking, which is the first opening of equipment or lines.

## Responsible Care®

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

Borealis is committed to implementing the guidelines of the Responsible Care® Global Charter, which is the chemical industry's voluntary initiative aimed at continuous improvement in health, safety and environmental (HSE) performance. The guidelines contained in the charter, such as efficient use of natural resources and efforts to avoid the production of waste, are also among the central principles guiding Borealis.

Through Responsible Care®, Borealis commits to:

- Ensuring it has a corporate leadership culture which proactively supports safe chemical management through the global Responsible Care® initiative.
- Safeguarding people and the environment by continuously improving the HSE performance and security of Borealis' facilities, processes and technologies, and by driving continuous improvement in chemical product safety and stewardship throughout the supply chain.
- Strengthening chemicals management systems by participating in the development and implementation of life cycle-oriented, science- and risk-based chemical safety legislation and best practices.
- Influencing business partners to promote the safe management of chemicals within their own operations.
- Engaging stakeholders, understanding and responding to their concerns and expectations for safer operations and products, and communicating openly on Borealis' performance.
- Contributing to sustainability through improved performance, expanded economic opportunities and the development of innovative technologies and other solutions to societal challenges.

# Materials & Logistics

**Goals**

Borealis had a wide range of procurement goals for 2019. These included

- continuing to enhance the Group's sustainable profitability through supplier selection;
- reducing the volume of packaging materials used and increasing the use of reusable pallets;
- supporting the development of the Circular Economy through dedicated procurement functions and activities;
- continuing and accelerating the Group's renewable energy strategy and its energy risk and trading tools;
- accelerating energy efficiency and a carbon neutrality roadmap; and
- improving the safety and environmental performance and reducing the cost of its logistics suppliers.

**Key Achievements and Results**

During the year, the Group:

- continued to take part in the Together for Sustainability programme, a chemical industry initiative to assess and improve sustainability practices in the global supply chain;
- further reduced the material used in the main packaging type for polyolefins, and received the Green label award from the Group's pallet pooling supplier, PRS for the pallet reusage system;
- supported the Circular Economy, by assigning a procurement coordinator for all capital expenditure activities and a category manager;
- reached new agreements including a strategic co-operation with Neste on renewable propane for Kallo, and with OMV on ReOil in Schwechat, Austria, enabling Borealis to accelerate circularity and renewables in plastics production;
- promoted the Group's renewable energy strategy and continued to add to the renewable energy portfolio, including the ongoing construction of a waste-to-energy plant in Beringen, Belgium;
- improved logistics safety by changing logistics partners, carrying out safety audits and enhancing incident recording, defining of actions and follow up; and
- launched new digitalisation initiatives, including a Customer Relationship Management (CRM) tool, an online customer portal and Energy Dashboards → chapter Digital Transformation, p.50

## Introduction

To manufacture and deliver its products, Borealis purchases and sources feedstock, energy, utilities, technical equipment and services, raw materials and packaging materials, logistics and general business services from around 7,000 vendors. Approximately 68% of the procurement volume relates to feedstock, energy and utilities, around 13% to technical equipment and services, 11% to raw materials and packaging, 4% to logistics and 4% to business and other services.

The products and services the Group procures can have an important influence on its business performance, including critical areas such as safety, environmental impact, quality and customer service. The Group therefore looks to carefully manage its procurement activities to optimise performance in these areas. Borealis does this by developing the right procurement strategies for the individual product and service categories. The Group also looks to further improve the security of its raw materials supply by approving alternative and equivalent sources, and to optimise the cost, material volume and performance of its packaging.

In response to the splitting of the Fertilizer, Melamine and Technical Nitrogen Products (TEN) business, a dedicated procurement department was set up for the new organisation. This department is responsible for three areas: power, gas and utilities; raw materials and packaging; and technical procurement and business services for these particular business areas. Group Procurement continues to provide functional support, in relation to systems and procedures.

## Resources and Performance

### Feedstock

Hydrocarbons & Energy

Borealis sources non-renewable hydrocarbons feedstock such as naphtha, butane, propane and ethane, and converts them into ethylene, propylene and a range of co-products through its olefin units. Steam crackers in Finland and Sweden mainly produce ethylene and propylene, while propylene is also produced in a PDH plant in Kallo, Belgium.

During 2019, HC&E has started to develop the strategy for renewable feedstocks via the mass-balance certification for all locations, leading to contract negotiations and test runs in several locations in the course of 2020.

The Group's main focus is on the quality, availability and value of feedstock. Global sourcing is crucial as it gives the Group a more diversified supplier base, so it can obtain the right quality of feedstock, remain competitive and avoid supply disruptions. A dedicated team of feedstock traders and product managers is responsible for sourcing the whole Borealis European feedstock range. Feedstock and olefins required for Borealis' plants are either sourced from Borealis' owners or purchased globally via strategic long-term supply agreements, short-term contracts and spot trading, covering deliveries from the US, Russia and Europe.

Where applicable, the Group looks to ensure appropriate quality by sourcing feedstock using either industry or Borealis specifications.

The cost of feedstock is highly linked to swings in the crude oil price. Borealis therefore implements hedging strategies and ensures it develops and maintains a high-performing commercial sourcing team. The Group actively screens specific new markets, maintains its market knowledge through report subscriptions and by attending industry and market conferences, and engages with industry partners to share best practices. Borealis is a member of a number of industry groups, such as the European Chemical Industry Council's (CEFIC) Lower Olefins Sector Group, and takes part in industry gatherings such as the European Petrochemical Association and the European Petrochemical Luncheon.

Fertilizer, Melamine and TEN

Borealis' Fertilizer, Melamine and TEN business consumes natural gas and electricity for its production sites. Natural gas is mainly consumed through its conversion to gaseous hydrogen through steam reforming to produce ammonia.

Fig. 22: **Feedstock sourced for production of olefins and polyolefins (kt) 2015–2019**

| kt | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Feedstock for Olefins | 2,934 | 2,558 | 2,388 | 2,779 | 2,517 |
| Olefins for Polyolefin production | 1,520 | 1,420 | 1,382 | 1,396 | 1,412 |

Fig. 23: **Feedstock sourced for production of fertilizer (GWh) 2015–2019** [1)]

| GWh | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Feedstock for Fertilizer production | 14,777 | 13,117 | 13,887 | 14,382 | 13,719 |

1) The unit for the reporting of feedstock data for fertilizer production was changed from kilotonnes (kt) to gigawatt hours (GWh) in order to comply with common international standard units.

## Performance in 2019

In 2019, the Group sourced 2,934 kilotonnes (kt) of feedstock for its olefins production units (namely the crackers and PDH unit) and 1,520 kt of olefins for its polyolefin units. The Group also sourced 14,777 GWh of feedstock for fertilizer production, which includes natural gas as a raw material for the production of ammonia. During 2019, the Group successfully sourced additional monomers needed for the Polyolefins (PO) business, on top of Borealis' own production. The Group achieved a good result in line with its target, despite volatile market conditions affecting both price and availability.

Deliveries linked to the long-term supply agreement for US-sourced ethane started in 2019, after a period of delay in 2018. This contributed to the competitiveness of Borealis' European cracker assets.

In light of the new PDH plant that is planned to start operating during 2022, Borealis is already starting to expand its sourcing of feedstock on a more global basis. Efforts are under way to include the US as a structural propane and butane sourcing region, so Borealis can leverage the large demand position in Europe.

### Energy & Utilities

Hydrocarbons & Energy and PO

Borealis is actively scouting for industry alliances to prepare for a carbon neutral future and has approved an aspiration of 50% of its electricity use coming from renewable sources by 2030. → chapter Energy & Climate, p.58

In addition to the sustainability aspect, energy and utilities represent an important cost for Borealis. The Hydrocarbons & Energy business is responsible for the sourcing and risk management of electricity, natural gas, emission rights and utilities for all plants except for the Fertilizer, Melamine and TEN business. The Group's energy contracts are generally spot indexed and contracted on a one to five-year basis. Borealis has also started looking into power purchase agreements (PPA) to source renewable electricity on a longer-term basis. Commodity pricing risk is managed using financial risk instruments.

Utilities are sourced on a longer time horizon of ten to fifteen years and very often within the context of petrochemical clusters, enabling delivery by pipelines from neighbouring industry.

As part of the journey towards increased sustainability, in 2019 Borealis started to implement International Sustainability & Carbon Certification (ISCC) in its plants in Kallo and Beringen. Further roll-out is planned to its locations in Schwechat, Porvoo and Stenungsund in 2020. The ISCC system will be used to certify that both renewable-based and recycled feedstock is used in the production of the Group's hydrocarbon and polyolefin products. Borealis is making progress towards launching product lines that must specify their sustainable feedstock source.
→ chapter Circular Economy, p.52

Fertilizer, Melamine and TEN

From 1 January 2019, the Fertilizer, Melamine and TEN business has been responsible for its own sourcing of electricity, natural gas and utilities and has been focusing on transformation of the business. It follows the same policies and principles described above.

### Raw Materials & Packaging (RMP)

Raw materials and additives play a vital role for Borealis, giving unique product properties which enable the Group to produce value-added specialty products that conform to both customer and legal requirements. Reliable supply of these materials, on time and in the agreed quality and quantity, supports Borealis' operational excellence.

Packaging materials are needed for all solid products that Borealis delivers to customers. They are essential for protecting Borealis' goods in transit and for preventing pellet losses into the environment. They also help customers to dose the goods accurately, influence Borealis' transport energy consumption and support the Group's branding.

Borealis uses dedicated procurement teams to source RMP for polyolefins globally, primarily from suppliers in Europe, North America, Japan, China and Korea. The Group maintains an approved list of suppliers, with 100 strategic suppliers representing around 80% to 85% of the total yearly spend on RMP.

Borealis buys several polymer additives which are produced using renewable feedstocks, such as palm oil or rapeseed oil. The majority of the additives that use palm oil are sourced from suppliers certified by the Roundtable on Sustainable Palm Oil (RSPO). Borealis also uses four recycled polypropylene grades as feedstock for its compounding plants in Europe and Brazil.

The Group continually looks to balance the cost of packaging with the volume of material used and its functionality, such as the packaging's ability to prevent damage, contamination or pellet spills. Packaging is an important part of the Group's approach to achieving a circular economy, and Borealis uses reusable packing where possible, such as reusable pallets. Over the last 20 years, reusing pallets has saved the equivalent of a small forest, similar in size to all Borealis Europe locations combined. During 2019, Borealis received a Green label award from its pallet pooling supplier, PRS.

For semibulk packages, which are those containing between 450 kg and 1,200 kg of product, key packaging types include big bags, which are woven from polyethylene or polypropylene, and octabins, a type of cardboard packaging. Due to customer demand, the trend is to sell more packaged products, to the detriment of products sold in bulk, resulting in an increase in the packaging ratio per tonne sold.

Borealis improves its polyolefin packaging material by carefully balancing energy and material efficiency against cost and packaging quality. In 2019, the Group continued to implement the use of a thinner packaging film in its main packaging type. The thinner film is now being used in 90% of bags. Tests are ongoing for the use of recycled plastics for bottom and top sheets on pallets. Further study of the packaging flow from Borealis to its customers is being finalised, in order to prepare for recycling. For the time being, the used polyolefins in the packing are coming from non-renewable sources.

Fig. 24: **Packaging consumption based on 1,000 kg of Fertilizer sold (kg) 2017–2019**

| kg | 2019 | 2018 | 2017 |
|---|---|---|---|
| **Fertilizers** | | | |
| Form fill seal | 0.09 | 0.13 | 0,22 |
| Big bags | 0.96 | 0.53 | 0.59 |
| **Total** | **1.05** | **0.66** | **0.82** |

Fig. 25: **Packaging consumption based on 1,000 kg of Polyolefin sold (kg) 2017–2019**

| kg | 2019 | 2018 | 2017 |
|---|---|---|---|
| **Polyolefins** | | | |
| Carton | 1.60 | 1.55 | 1.60 |
| Form fill seal | 0.44 | 0.45 | 0.45 |
| Bags | 1.96 | 2.04 | 2.06 |
| Other materials | 0.02 | 0.02 | 0.02 |
| **Total** | **3.96** | **4.06** | **4.13** |

## Technical Procurement

Technical Procurement encompasses all procurement activities related to investing in or maintaining Borealis' assets, as well as supporting the Group's growth strategy globally. This includes large engineering, procurement and construction (EPC) contracts, as well as equipment, materials, services and spare parts.

Procurement category teams are formed, based on sustainable asset care location masterplans. Group-wide equipment roadmaps are developed for static and rotating equipment, automation, valves, electrical equipment and material handling equipment. A location masterplan applies a long-term view to maximise an asset's lifetime, to reduce risk and to generate capital efficiency improvements. It is connected via an interactive process to an equipment roadmap, where standardisation and volume bundling opportunities are explored and implemented via group-wide Enterprise Frame Agreements.

The category teams establish and maintain procurement for core services and disciplines such as civil works, steel works, piping works, mechanical works, electrical and automation works, scaffolding, insulation, industrial cleaning, facility management and waste management. These services and disciplines are managed locally by our Maintenance Execution Efficiency managers.

Borealis sources technical equipment globally. Services related to capital expenditure are also sourced globally (for example, engineering or EPCM (engineering, procurement, construction and management) services for major investment projects) while maintenance services are sourced predominantly within Europe. In total, the technical supplier base covers 6,500 suppliers, out of which Borealis has identified long-term strategic suppliers and established a strong supplier management programme. The Group focuses on using high-performing and continuously improving strategic partners, who provide high-quality services in a consistently safe manner. In line with the Group's strategy, sustainability requirements are embedded in all new contracts. Special attention is paid to circular economy initiatives.

In 2019, the new automotive compounding line in Taylorsville, North Carolina, US, was started up successfully. Total and Novealis also awarded an EPC contract during the year to build a new ethane cracking unit, as well as a new PE Borstar® production line.

In Europe, the EPCM contract for the new PDH plant in Kallo, Belgium, was awarded. Engineering is proceeding to plan, all items with long lead times have been ordered and the first service contracts are in place.

## Sourcing

### Processes and Standards

Borealis follows a strict process when purchasing goods and services, to ensure legal compliance, product quality and consistency and reliability of supply. To get the best value when purchasing, Borealis applies the Total Cost of Ownership philosophy. This requires the Group to consider the full costs it will incur during the lifetime of the product or service, rather than looking only at the up-front cost. When defining and adopting sourcing strategies, Borealis also considers market and technology intelligence and supplier innovation potential.

The process takes account of sustainability considerations, supported by Borealis' Responsible Sourcing Policy (Codes of Conduct) → chapter Sustainability Strategy & Objectives, p.25. This has been communicated to all major suppliers and is also available on the Group's website. The policy defines the Group's approach to key aspects of business ethics when sourcing, such as anti-corruption, anti-slavery, compliance and child labour, as well as health, safety and the environment. All existing major suppliers have been asked to confirm their commitment to the policy and must expect audits by Borealis focusing on social and environmental aspects, on top of the Group's commercial and quality related agenda. New major suppliers must agree to the policy by signing the contract. The Group does not see significant sustainability risks with major suppliers in North America and Europe, where most have implemented similar Codes of Conduct and may also be members of Together for Sustainability.

After defining Borealis' procurement needs (including scope and specifications), reviewing the supply market and defining the sourcing strategy, the process moves to supplier selection. This includes the use of questionnaires and on-site audits. All of Borealis' counterparts for feedstock, cracker products and logistics services are thoroughly screened and vetted by the Borealis risk management department. The risk department runs a background check on the reputation of the counterparty and its key management and gathers all necessary information including, but not limited to, information on bribery and sustainability.
Every year, Borealis defines a set of strategic suppliers, based on criteria such as turnover, innovation, impact on operability and potential for growth. The Group uses a

supplier relationship management process for strategic suppliers, which combines KPI-based performance management with supplier segmentation and professional knowledge of business risks. Activities with strategic suppliers can include top management meetings and common innovation programmes. On a monthly basis, Procurement monitors the performance of around 80 strategic suppliers, evaluating risks and taking mitigating actions where needed.

Borealis is a member of the chemical industry's Together for Sustainability (TfS) initiative, which supports and promotes the principles of the UN Global Compact and Responsible Care®. TfS enables its members to implement sustainable procurement by sharing the results of supplier audits and assessments performed by independent experts. Areas of sustainable business practice are covered, including environmental impact, health and safety, labour and human rights, management and governance. The audits and assessments benefit both members and suppliers, who only need to go through the process once and avoid multiple assessments by different customers. 148 of Borealis' most-strategic suppliers have been assessed against the TfS standard.

All new Borealis suppliers are requested to provide a TfS or EcoVadis assessment or equivalent. Future suppliers in higher-risk countries will be requested to provide a TfS audit report. → chapter Sustainability Strategy & Objectives, p.25

## Logistics

### Introduction

Borealis' businesses transport a combined volume of up to 10.7 million tonnes of raw materials and finished products to the Group's sites or customers' premises each year.

The Group considers its logistics service providers to be part of Borealis and therefore requires them to adhere to the same standards of safety, ethics and environmental improvement. When Borealis is awarding contracts, it takes costs, service and quality, safety and sustainability into account. The weight of each factor is dependent on the business needs and can vary depending on customer requirements, transported products (dangerous / non dangerous), business environment. However, at all times, the safety and ethical standards of Borealis shall be met.

Fig. 26: **Total transported volumes per business segment in 2019**

| Business segment | Transported volume (kt) |
|---|---|
| Polyolefins | 3,351 |
| Hydrocarbons & Energy | 2,864 |
| Fertilizer, Melamine and TEN | 4,505 |

The primary sustainability impacts relating to logistics are:
- safety, in particular potential accidents and spills, and also including smoking, speeding, alcohol use, working at heights without safety protection and a severe incident on the road; and
- greenhouse gas emissions, primarily in the form of carbon dioxide ($CO_2$), which are measured on the basis of tonnes per kilometre for different modes of transport.

### Actions in 2019

Introducing Liquefied Natural Gas (LNG) Trucks

Borealis is leading the way in using LNG-fuelled truck transportation for regular deliveries to customers. So far, the Group has implemented two initiatives to use LNG-fuelled trucks, with Hydrocarbons & Energy signing an agreement with transportation company J.Deckers and Polyolefins forming an agreement with Limpens. Using LNG reduces $CO_2$ emissions by around 25% and also decreases CO, $NO_x$ and fine particle emissions, as well as significantly lowering noise. When bio-LNG becomes available, it will further reduce Borealis' $CO_2$ emissions from truck transportation.

Hydrocarbons & Energy completed its first LNG-fuelled phenol delivery in August. Polyolefins has begun transporting product from Belgium and the Netherlands to a customer in Spain using LNG-fuelled trucks, which will save approximately 63 tonnes of $CO_2$ each year compared to diesel trucks.

Reducing Truck Movements at Porvoo, Finland

During May and June 2019, Polyolefins expanded an on-site container yard in Porvoo, Finland. This doubled the size of the yard, allowing 312 additional containers to be stored on-site and making it the largest container area in the country, excluding ports. This will lead to a large decrease in truck traffic to Vuosaari harbour, where surplus containers were previously sent. In total, truck movements will fall by 3,100 a year, saving 173 tonnes of $CO_2$ emissions annually.

The expanded yard will also provide better control over pellet spills. The material handling will happen on site and any spills will be directed to a dedicated canal, in which the pellets can be retained, supporting Borealis' Zero Pellet loss goal.

Cutting the Cost of Logistics

The Fertilizer, Melamine and TEN business has achieved significant cost savings for road transport of a key intermediate product and for transport by river. Hot ammonium nitrate solution (HANS) is produced by Borealis in France and used as a raw material in the Rosier plants in Belgium and the Netherlands. During the year, the business conducted a transport tender based on health, safety, environmental and commercial requirements. This allowed the business to reduce the number of logistics service providers from 13 to seven, secure transport for 193 kilotonnes per annum of HANS and generate cost savings of around 12%, based on 2018 volumes.

The Fertilizer, Melamine and TEN business also conducted a tender for river shipping, selecting carriers with a similar safety mindset to Borealis who are investing in their fleets to support sustainable business on the Danube. This has resulted in cost savings of around 7%, based on 2018 volumes.

## Transport Modes

Polyolefins

Borealis' Polyolefins business has approximately 120 providers of road transport, container transport, maritime transport, warehousing and on-site logistics services. The business manages these providers through logistics contract managers who cover bulk transport, packed transport, maritime shipments and warehousing, respectively, and logistics operations managers.

The Group currently requires its polyolefins logistics suppliers to be certified according to the Safety & Quality Assessment System (SQAS) and to have a proven track record of reducing their $CO_2$ emissions year on year. By 2020, the aim is for all polyolefins logistics suppliers to be part of a Responsible Care programme (or similar) and to be either SQAS certified or to have an acceptable EcoVadis rating. An EcoVadis rating helps procurement teams to monitor sustainability practices in their supply chains.

In 2019, the business focused on its suppliers' SQAS certifications. More than 95% of its logistics partners are certified with an acceptable rating.

Fertilizer, Melamine and TEN

Fertilizer, Melamine and TEN has around 400 providers of road, maritime and rail transport. About 150 logistics service providers carry out 90% of the business's transport. Logistics service providers transporting dangerous liquid cargo are required to have an SQAS certification.

The Logistics team focused on various cost-saving initiatives during 2019 and developed a negotiation playbook to ensure all tenders and negotiations are run in a structured way, to share experiences across the different regions and to support the team in negotiations with carriers. The business continued to move away from the spot market and negotiated longer term contracts with the target to achieve better prices, a higher reliability and improved safety performance.

River transport is a key element of the European distribution network. Climate change is having an impact on logistics. A major issue that has come to the fore in the course of the last year is the low water levels on European rivers, in particular the Danube and Rhine. Water levels have been extremely low for a long time, with the consequence that many river ports are not reachable and river traffic is heavily disrupted. The business has reviewed its supply chain risks and put preventive actions in place, such as using train deliveries to Germany and loading barges with lower volumes.

Hydrocarbons & Energy

The main transport modes for feedstock and cracker products are seagoing vessels, pipelines and rail. The Hydrocarbons & Energy business has three contract partners for shipping, two for external pipeline services, two for rail transport and several for storage and throughput services. Some road transportation is used for phenol and acetone, with targets to increase lot sizes and the share of intermodal flows. The business unit has five partners for road transport. Road transport companies are required to have SQAS certification. The Group also uses its time charter vessel, Navigator Aurora, to source additional ethane from US-based shale gas for its flexible cracker in Stenungsund, Sweden.

The business has long-term partnerships with its strategic logistics partners, helping it to develop optimal solutions with them. These long-term partners are encouraged to obtain EcoVadis ratings. With its contracted ship-owners, Borealis tracks the fleet's safety performance and energy efficiency, and promotes the use of environmentally friendly bunker solutions.

During the year, Hydrocarbons & Energy renegotiated a shipping contract for chemical flows. This will result in substantial cost improvements from 2020 onwards.

### Transportation Safety

Transportation safety is key for Borealis. During 2019, Borealis defined and documented the process for reporting logistics incidents, to ensure consistent reporting across regions and enable more effective follow-up. The Group requires all its logistic partners to report the following accidents:

- any injury or fatality to their own personnel, as well as third parties;
- any damage to property of any party involved in the accident;
- all material damage while transporting Borealis' goods to the final customer;
- any public disruption; and
- any intervention by the emergency services.

Within 24 hours of an accident, the logistics partner must send a report to Borealis which includes information on the cause of the accident.

Preventing pellet spills during transportation is key to avoiding pellets ending up in the environment and ultimately the ocean. Borealis is committed to achieving zero pellet loss in and around its operations and has set a range of measures to achieve this. The Group has a truck driver manual in place at all sites, which includes guidelines for safe loading and unloading of material. The European Chemical Transport Association (ECTA) and CEFIC also provide comprehensive guidelines for safe loading and unloading of pellets in bulk. These have been communicated to all of Borealis' logistics service providers and shared with the Group's sales team for communication to customers. The objective is to increase awareness regarding the safety, quality and environmental aspects of bulk unloading processes.

During 2018, the Polyolefins business introduced more detailed follow-ups of spills at its own sites and at external logistics partners to continue its progress towards zero incidents. All its logistics partners for bulk transport have signed the CEFIC guideline for zero pellet spills. Polyolefins reduced safety incidents by more than 100% in 2019, resulting in approximately 0.5 severe safety near misses per 1,000 shipments.

Spills of hydrocarbons are potentially dangerous and can have a greater impact on people and the environment, as the size of cargos is larger than for the other business units. The Hydrocarbons & Energy business looks to continuously improve transport safety and carries out an annual transport safety audit plan. In 2019, this plan included audits on rail, road and external terminal operations. Road and rail service providers undergo SQAS audits and reports are reviewed by an internal safety expert. Each vessel movement is subject to an internal ship vetting approval process and contracted shipping companies undergo a Tanker Management and Self Assessment (TMSA) audit regularly. Hydrocarbons & Energy will define a transport safety audit plan for 2020, with a primary focus on high-risk flows or new physical flows or operations.

Hydrocarbons tracks transport safety performance using a key performance indicator (KPI) based on CEFIC definitions to classify incidents. The KPI score for 2019 is better than target, corrective actions with service providers are being taken to avoid re-occurance. The business collaborates closely with hauliers and has a process in place to define improvement actions for every incident within 40 days after the incident.

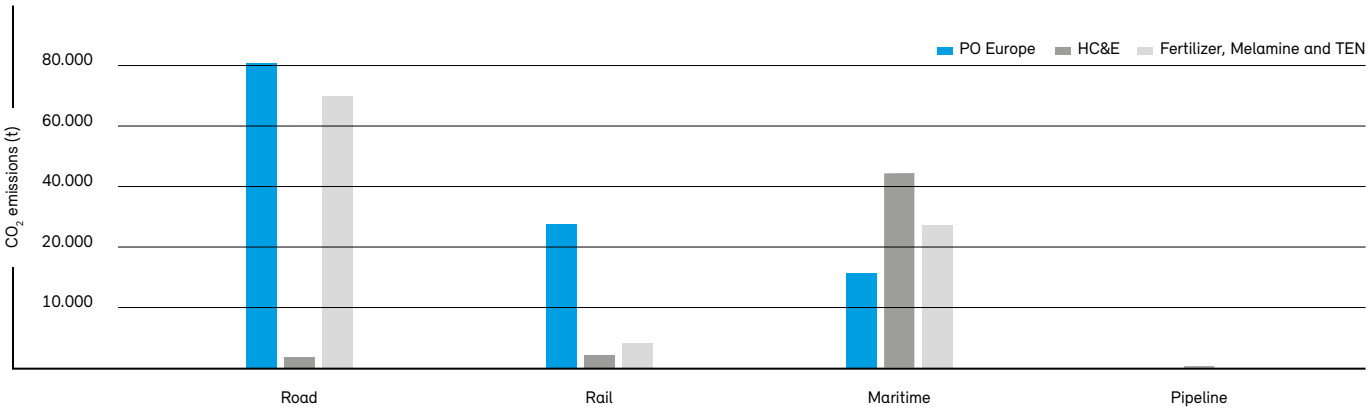
Drivers transporting dangerous goods require a special licence and training and must operate under restrictions, such as parking only in secure areas. For the Fertilizer, Melamine and TEN business, any loss of ammonium nitrate must be reported to the authorities as it can be used as an ingredient for explosives.

Fertilizer, Melamine and TEN had no major transport incidents in 2019.

### Emissions from Transport

The Group looks to balance the cost of transport with the potential to reduce $CO_2$ emissions. Wherever possible and economically feasible, the Group seeks to transport products off-road via rail, barges, vessels or pipelines. In total, around 60% of Borealis' polyolefins and around 70% of its fertilizer products are transported by road, with the result that road transport generates the large majority of Borealis' emissions from logistics activities, as shown in figure 27, p. 91. The Group is trialling LNG trucks to reduce emissions from road transport (→ Activities in 2019, above).

Fig. 27: **Borealis' $CO_2$ emissions by mode of transport in 2019 (t)**




Where possible, the Group looks to maximise pipeline deliveries, as it is the transport mode with lowest emission levels. Borealis also aims to optimise logistics via terminals which are closer to the customer, requiring shorter transport distances.

Analysis of Polyolefin European, Hydrocarbons & Energy and Fertilizer transportation has shown that Borealis' downstream transportation produced 265 kilotonnes of $CO_2$ emissions in 2019.

Deep sea shipping produces significant emissions of $CO_2$, sulfur oxides and nitrous oxides, which may be subject to stricter global targets in future. During 2019, the engine of the Navigator Aurora vessel used by Hydrocarbons & Energy was converted to run on LNG or ethane to reduce its environmental footprint. When contracting new long-term shipping capacity, a key decision element is the option to run ships on cleaner gas fuels than traditional gas-oil based bunkers.

## Outlook

Borealis' goals in relation to its logistics suppliers for 2020 are:

### Polyolefins

- continue to focus on safety and environmental factors to achieve the goals for 2025;
- ensure that logistics suppliers maintain their high reliability, without compromising on cost.

### Fertilizer, Melamine and TEN

- continue to focus on safety and work closely with logistic service providers to increase their safety awareness;
- continue to increase transparency of the total cost to save and analyse unplanned costs during logistics operations, with the aim of reducing them.

### Hydrocarbons & Energy

- continue the high focus on transport safety as a main priority for suppliers and customers; and
- continue to reduce costs through the optimisation of transport routes and contract negotiations with key service providers.

# Product Stewardship & Sustainability

**Goals**

Borealis has the following product stewardship goals for the Group as a whole:

- to rank questionable or hazardous chemicals according to their risk level, identify mitigating actions for all high-risk substances, and update the Borealis Banned Substances List; and
- to keep Borealis' registrations under the European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) up-to-date, as requested by the European Chemicals Agency (ECHA).

The following additional goal has been defined for the Hydrocarbons & Energy business:

- to actively follow and implement the Lower Olefins and Aromatics Consortium's category testing approach, which was agreed with the ECHA in the Petroleum and Coal Stream Substances Working Group, and update registration dossiers accordingly.

The following additional goals have been defined for the Polyolefins (PO) business:

- to strive to fully integrate its recycling business and set standards for regulatory compliance and the safety of recycled polyolefin products; and
- to assess the whole PO portfolio for chemical risk and regulatory trends, as input for the Portfolio Sustainability Compass evaluation.

The following additional goal has been defined for the Fertilizer, Melamine and Technical Nitrogen (TEN) business:

- to implement the new European regulation harmonising the requirements for fertilizer products, which will be mandatory from 2022.

**Key Achievements and Results**

During the year, Borealis:

- continued the ongoing risk rating of critical chemicals, with four substances added to the Borealis Banned Substances List; and
- committed, under the European Chemical Industry Council (CEFIC), to the REACH dossier improvement programme and updated 43 REACH registration dossiers.

In 2019, Hydrocarbons & Energy updated its lead registrant registration dossier for methane.

In 2019, Polyolefins:

- performed risk assessments and began analytical tests, collaboration and the joint creation of Product Safety Information Sheets and other compliance statements for its 100% subsidiaries mtm plastics GmbH and Ecoplast Kunststoffrecycling GmbH;
- evaluated the polyolefin portfolio for the categories "Chemical hazard and exposure across the life cycle" and "Global regulatory trends", as input to the Portfolio Sustainability Compass assessment; and
- phased-out the use of the chlorinated flame retardant dechlorane plus, which has been identified as a substance of very high concern (SVHC).

In 2019, Fertilizer, Melamine and TEN:

- launched an internal project to implement the new European fertilizer regulation, with the workload divided into nine work packages.

**Introduction**

Chemical substances, or products containing them, can pose risks to health, safety and the environment. These include negative health effects such as sensitisation, irritation or intoxication; physical hazards such as fires, explosions or exposure to dust; or environmental hazards such as bioaccumulation or persistence.

Product stewardship and product sustainability are becoming increasingly important for companies such as Borealis. The foundation of this work is ensuring that all products are legally compliant in all the countries in which the Group operates and sells. In addition, Borealis is committed to the principles of Responsible Care® and enforces high product stewardship standards to ensure that its products do not pose a risk at any stage along the value chain.

Borealis monitors and evaluates the risks of substances of concern very closely. A proactive approach is taken to open up new opportunities if Borealis is first to market, for example with a product in which critical chemicals have been replaced.

The Group also ensures it understands consumer perceptions of product stewardship issues, which are driven by non-governmental organisations, the media and brand owners, and anticipates the development of legislation concerning chemicals, their applications and the environment, so it can ensure continued compliance.

Making plastics more circular is one of Borealis' main goals. Product stewardship is supporting the Group's work to maintain product safety while using recyclates.

### Product Compliance

Borealis' product stewardship procedures cover the health, safety and environment (HSE) aspects of a product throughout its life cycle, from raw material sourcing, through the production process, conversion and use, to its recycling, recovery or disposal.

All new or modified products undergo mandatory HSE assessments and continuous monitoring to ensure they are suitable for use in the countries where they are being sold, and that they comply with all applicable legislation. This includes chemicals management legislation, such as the Toxic Substances Control Act in the United States and REACH in the EU. This comprehensive and stringent regulation targets the safe use of chemicals, which must be proven by the participants in the chemicals value chain.

Other relevant legislation and regulations include the Globally Harmonised System (GHS) for the classification and labelling of hazardous chemicals, the Classification, Labelling and Packaging of substances and mixtures regulations (CLP) and, depending on use, any application-related legislation, such as the EU framework regulation on food contact materials.

Borealis also closely monitors emerging legislative initiatives, so it can anticipate and take measures to maintain its products' legal compliance. In line with the REACH principle of "no data equals no market", this is essential to sell any product worldwide. Borealis therefore incurs the significant costs of registration fees, data creation and external consultancy, to ensure compliance.

### Controlling and Approving Raw Materials

All incoming chemicals used in Borealis' products are assessed using a sophisticated incoming material process, before they are approved for use. An initial assessment is performed by Group Product Stewardship to ensure basic legal compliance. Local Product Stewardship teams then perform additional assessments at each plant to ensure the chemical meets plant-specific requirements and complies with national or community related legislation.

This system ensures that the procurement organisation does not purchase any substance before the Product Stewardship team has controlled and approved it. Once materials are approved for purchase, they are subject to Borealis' quality control to ensure they continue to comply with the agreed material properties.

All materials are documented based on Borealis' knowledge of the exact composition of the raw material and on detailed information about the material's hazardous constituents. Proper documentation of the raw materials used is a key element of high-quality Borealis product compliance statements, such as safety data sheets (SDSs), application-related statements such as medical use, food contact and drinking water, and other statements such as on raw materials origin. During 2019, product stewardship reviewed and updated its process to collect raw material data from its suppliers, with the raw material questionnaire being completely revised and a categorised roll-out to the suppliers has been started.

Borealis also regularly audits its raw material suppliers for compliance with, for example, their legal and hygiene requirements, with a special focus on new and strategic suppliers. In 2019, the Group audited 25 suppliers of polymer and fertilizer related raw materials. The Group requires its suppliers to provide documentation for each raw material and to keep it up to date, including the information required by national chemical inventory control laws, the CLP and REACH. This enables Borealis to issue the respective SDSs for its customers.

In addition to these measures, Borealis' production sites are subject to frequent external audits. For example:

- Sites that manufacture products with sensitive hygiene requirements are regularly audited by external expert organisations and customers. This includes products for use in drinking water, food contact, personal hygiene and medical applications, which represent about 50% of Borealis' polyolefin products. In 2019, more than 40 ISO and customer/authority audits were conducted at Borealis' locations.
- The fertilizer business is regularly inspected by local authorities. In addition, every three years, Borealis must pass an external audit by Fertilizers Europe Product Stewardship, which covers the HSE and security aspects of the whole life cycle of fertilizers, from raw material to application.

– Urea feed grades are audited each year by the Feed Additives and Premixtures – Quality and Safety organisation. The audit was successfully passed in 2019.

### Assessing Chemical Risks

The Group has adopted a hazardous chemicals strategy. This follows the precautionary principle of continuously assessing the risk potential of all substances used in Borealis' products, to identify critical chemicals whose use needs to be stopped or that need to be replaced by less hazardous alternatives. This includes all substances which were already classified as substances of very high concern (SVHC) according to REACH and other comparable legislation around the world, or which fulfil the criteria to be considered as SVHC in the future. Examples include raw materials based on cadmium salts, polycyclic aromatic hydrocarbons or many poly-halogenated organic compounds.

The risk evaluation utilises a tailor-made tool, which ranks the substances according to their overall risk. It considers related HSE risk and regulatory aspects, evolving stakeholder concerns, the technical feasibility of substitution and the financial consequences of doing so, such as the required innovation costs, approval costs and modifications to technical equipment. Substances with the highest identified risk are further assessed by the Product Stewardship Committee.

The Product Stewardship Committee is chaired by the Director Health, Safety, Environment and Quality and brings together experts from across the Group, including areas such as Product Stewardship, Ethics and Innovation & Technology, as well as all of Borealis' business sectors and operations. This range of competencies ensures that the Group's risk assessments take a holistic perspective and consider market needs, legal and technological requirements and stakeholder views.

The committee updates the Borealis Banned Substances List, which contains more than 220 substances and substance groups that the Group has banned for use in its production processes and products. It also selects the substances to be evaluated using the Borealis Risk Matrix, which is a proprietary ranking tool to evaluate risks in detail. These assessments enable Borealis to identify, mitigate and manage the risks posed by hazardous chemicals.

### Product Sustainability

The Portfolio Sustainability Compass is Borealis' method for assessing the sustainability standards of its products. It is fully compliant with the World Business Council for Sustainable Development (WBCSD) Chemical Industry Methodology for Portfolio Sustainability Assessments, and it highlights Borealis' sustainability focus areas of Circular Economy, Climate & Energy and Health & Safety. Product Stewardship is an essential part of this assessment, when Borealis assesses its products in two categories: "Chemical hazard and exposure across the life cycle" and "Global regulatory trends". This assessment is performed for both current products and innovation projects. Any finding, opportunity or threat is followed up using Product Stewardship's established processes. → chapter Sustainability Strategy & Objectives, p.25

### Maintaining Open and Transparent Communication

One of the cornerstones of Responsible Care is open and transparent communication with stakeholders about the substances used in products. Borealis takes this obligation very seriously. Issues raised by stakeholders include substances of concern, REACH and similar developments around the world, and non-intentionally added substances in food and drinking water contact.

Borealis communicates with its stakeholders through a wide range of channels. The Borealis website allows anyone to find information about the Borealis Banned Substances List. The website also includes examples of successful substitutions of hazardous chemicals and some position statements regarding "hot topics".

The Group also provides information and support to its customers in other ways. These include documentation that covers REACH information and CLP classifications, and product information sheets which provide technical data

such as physical properties and performance in application, recommendations for safe handling and storage, and specific guidance regarding product use.

Less than 10% of Borealis' products require an SDS. For all other products, Borealis issues a product safety information sheet (PSIS). Borealis continually monitors this set of statements and keeps them up to date. All SDSs and PSISs for the Group's commercial products are available to download on the Borealis website.

When product modifications may influence customers' safety or require additional testing of finished articles, Borealis informs customers or authorities in due time before it makes the modifications. Borealis also informs customers in advance when legislative changes have consequences for them.

In addition, Borealis offers training and education to customers. Healthcare is one of the most sensitive application segments in terms of reliability, hygiene and product consistency. Sharing Borealis' expert product stewardship knowledge with value chain partners therefore makes an important contribution to helping customers continuously meet the highest product quality standards. Borealis shares this knowledge via formal customer training sessions and through technical dialogues throughout the year. Borealis' plants have been subject to 12 healthcare customer audits during 2019. Borealis Polyolefins also took part in several customer initiatives regarding non-intentionally added substances (NIAS) in contact with food and drinking water, identifying problem areas and proposing alternatives.

In the Fertilizers area, Borealis offers education and awareness activities for farmers. This informs them about proper use of chemical fertilizers and how to avoid pollution of groundwater or soil.

Borealis actively participates in industry associations and standardisation groups to stay at the forefront of regulatory and public requirements. Borealis is a member of various chemical industry consortia and several CEFIC sector groups, including the Lower Olefins Sector Group, the Aromatics Producer Association, Fertilizers Europe and the European Melamine Producers Association. Borealis is also a member of PlasticsEurope's work groups on food contact materials, and the "European Drinking Water" initiative, which focuses on regulatory schemes for drinking water pipes and fittings.

Borealis is an active member of the Product Stewardship teams at CEFIC, PlasticsEurope and related national organisations. The Group works closely with its own experts, customers and suppliers, and engages in experience exchange at REACH conferences and other activities. As a member of Fertilizers Europe and related national associations, Borealis takes part in discussions on draft regulations and their applications. In 2019, the relevant topics were details of the new fertilizer regulation and its guidance on labelling as well as the guideline for the new European regulation on explosive precursers.

Good internal communication is also critical to robust product stewardship. Borealis uses an e-learning tool for its employees and specific teams hold regular meetings involving Product Management, local Product Stewardship, raw material owners, Innovation & Technology and the business units.

### Outlook

The Group's future product stewardship objectives are to

- support Borealis in maintaining its position as a leader in regulatory compliance;
- improve the quality of EU REACH registration dossiers;
- drive sustainability by minimising potential hazards and risks associated with Borealis' portfolio;
- continue to implement globally emerging legislation, such as chemical inventories and registration, and application-related legislation; and
- implement the Circular Economy, including the integration of Ecoplast Kunststoffrecycling GmbH and mtm plastics GmbH into the Group's standard processes and systems for product stewardship.

# Environmental Management

**Goals**

In 2019, Borealis' goals were to
- further reduce emissions to air and to water;
- continue to focus on waste prevention and recycling rates, including packaging waste;
- achieve 40% recycling of waste from the Group's production processes;
- ensure zero cases of environmental non-compliance;
- upgrade the environmental and energy data management system, covering all locations and sites; and
- update self-assessments on environmental risks and opportunities.

**Key Achievements and Results**

During 2019, Borealis:
- implemented a major upgrade of its environmental and energy data management software, including new waste reporting (in line with GRI) and covering all new locations;
- contributed to the European development of stringent Operation Clean Sweep (OCS) requirements;
- updated the locations' five-yearly environmental self-assessment report to identify and revaluate Borealis' environmental and energy risks, regulatory compliance and possible liabilities covering all aspects of the environment such as water, air, waste, soil and energy; and
- introduced a new instruction on extended producer responsibility (EPR) management of packaging waste, which defines a centralised organisation to ensure packaging directive compliance, including the collection of data to be used when reporting the quantity of packaging put on the market.

## Introduction

Borealis' approach to environmental management encompasses managing its emissions to air, its use of water and discharge of wastewater, its production and use of secondary resources in the form of waste, and its overall environmental compliance.

For Borealis, the most relevant environmental impacts from emissions are the contribution to climate change at a global level and the generation of ground-level ozone and eutrophication at a local level.

Borealis' emissions to air result from its production processes and from combustion for energy generation. In addition to carbon dioxide and nitrous oxide (→ chapter Energy & Climate, p.58), these emissions comprise:
- nitrogen oxides ($NO_x$) emissions, created by the burners in steam boilers and furnaces;
- volatile organic compounds (VOC), which are fugitive emissions of hydrocarbons, occurring due to high pressure and temperature; and
- dust and ammonia ($NH_3$) emissions, from production and handling solid material in fertilizer plants.

Borealis requires water for its operations. Industrial water has less strict purity standards than drinking water and is used for production purposes in processes such as cooling, steam generation and product handling. Lower quantities of water are needed for drinking, cleaning, sanitary and firefighting purposes. The Group looks to minimise its water use by recycling water in its production process. It also looks to improve the quality of the water it discharges and to comply with its legal obligations, through filtration, neutralisation and biological wastewater treatment.

The most common types of waste produced in Borealis' operations include excavated soil, wastewater treatment sludge, solvents, mixed industrial waste and inert construction material. Borealis' aim is to minimise the production of waste where possible, to treat waste as a resource and to better handle products at end of life.

Borealis is committed to complying with its environmental obligations, recognising that if it failed to meet them, there could be a severe impact on the Group and other parties. The loss of plastic particles could lead to marine litter and emissions of $NO_x$, dust and VOC could affect the air quality of the Group's neighbours. If such failures occurred, they could result in fines, loss of business, reputational damage, loss of permits and enforcement action by the relevant authorities, all of which could affect the Group's financial performance.

## Management Approach

Borealis is committed to implementing the guidelines of the Responsible Care® Global Charter, the chemical industry's voluntary commitment for continuous improvements in health, safety and environmental (HSE) performance, as well as the Product Stewardship standard of Fertilizer Europe.

At least every three years, the Group performs a detailed and systematic environmental risk and opportunity assessment for every plant in all locations. The assessments are also performed if there have been major changes, near misses, incidents or accidents, or if potential improvements have been identified. The risk assessments are based on an evaluation of the legal framework and possible upcoming changes, any deviations from permit limits and selected stakeholder input.

Based on these assessments, Borealis defines and documents HSE objectives and targets for each location. Clear responsibilities and timelines are agreed and reviewed at the Group HSE level twice a year. The consolidated outcomes, including HSE performance, are reported to the Responsible Care Committee. → chapter Occupational Health & Safety, p.64

In 2019, the Group carried out a materiality assessment. This confirmed that reducing $CO_2$ emissions and energy consumption are the main drivers of Borealis' performance improvement and have the biggest impact on the environment. It also confirmed that the Circular Economy is a key driver, including a strong focus on packaging waste management.

Nevertheless, emissions to air of $NO_x$, $NH_3$, dust and VOC, as well as water, waste and effluents, also play a significant role in high-quality HSE management. As a consequence, they are included in the Group's HSE management process and are monitored as part of the environmental objective of each location. All Borealis production locations are part of an ISO 14001 compliant environmental management system.

Borealis uses an integrated environmental data management system and reporting software. This ensures control of data flows from varied sources, in multiple formats and on different schedules, as well the traceability and transparency required for reporting.

## Emissions to Air

With all emissions, the Group follows its legal requirements and the stipulations in its permits. In addition, Borealis has established its own requirements for measuring and following up on key pollutants. Deviations from the norm are reported within the Borealis incident management system and then investigated and addressed through corrective actions. The approach taken depends on the magnitude of the emissions' impact and their criticality.

Actions are prioritised using the principles contained in the Group's Risk Management Policy, in line with Borealis' general sustainability management approach. High-risk items and proposals with significant potential for improvement are regularly discussed and addressed by the Responsible Care Committee.

### Volatile Organic Compounds (VOC) Emissions

Borealis' goal is to reduce its VOC emissions by detecting and repairing leaks quickly. In 2019, Borealis' VOC emissions were 3,122 tonnes, compared to 3,784 tonnes in 2018.

### Dust Emissions

Dust reduction and prevention is a focus for all Borealis operations and for improvement projects. Dust emissions are continuously measured in the Group's fertilizer locations, which are the main contributor. Borealis' polyolefin production plants monitor dust emissions using spot samples, which do not allow for an annual average to be calculated.

Dust emissions from the fertilizer production units totalled 455 tonnes in 2019, compared to 437 tonnes in 2018.

### Nitrogen Oxides ($NO_x$) Emissions

Borealis measures most of its $NO_x$ emissions, with the remainder being calculated using a standardised emission factor. Absolute $NO_x$ emissions in 2019 were 3,000 tonnes, compared to 3,035 tonnes in 2018.

### Ammonia ($NH_3$) Emissions

Ammonia emissions are a consequence of either failures during the ammonia production process or leaks during storage or transportation. These emissions amounted to 881 tonnes in 2019, compared to 727 tonnes in 2018.

### Sulfur Oxide ($SO_x$) Emissions

Borealis does not produce $SO_x$ emissions, as it only uses gaseous fuels (natural gas and hydrocarbons) where no sulfur is present.

## Water

### Water Withdrawal

Borealis' water withdrawal was 750 million $m^3$ in 2019, compared to 675 million $m^3$ in 2018. The increase in consumption is due to the reduced turnaround activities and higher cooling water consumption during summer because of extreme weather conditions.

The majority of the water Borealis uses in its operations is surface water, for example from water bodies such as rivers and oceans. The remainder is extracted from ground water, wastewater from another organisation, municipal water supplies or other water utilities, and rainwater is also collected.

Fig. 28: **Borealis' water withdrawal by source in 2019** [1)]

| Sources | 2019 |
|---|---|
| **Water Withdrawal** | **750 Mio. m³** |
| Surface water | 97.24% |
| Ground water | 1.92% |
| Water from 3rd party | 0.22% |
| Municipal water | 0.39% |
| Rainwater | 0.24% |

1) The calculation slightly changed in 2019. Without this change, the percentage of Water from 3rd party would have been 0.18% and 0.42% for Municipal water.

Water availability or scarcity varies by location. Borealis has not identified any major risk related to water at the locations where it operates. Borealis' environmental experts in each operation continuously monitor water consumption as part of the Group's environmental monitoring programme, and in order to comply with the permit limits set by the respective local authorities.

Every five years, Borealis performs an in-depth environmental liability assessment at each location, of which water consumption is a key element. Assessments in all production locations were carried out in 2019. The findings will be evaluated at the beginning of 2020 and addressed in the objectives and targets for 2020 onwards.

### Water Discharge

The volume and nature of the wastewater Borealis generates depend on the type of production at its locations. Borealis therefore installs water treatment techniques that are appropriate for each plant's production process. These techniques can include filtration, neutralisation, osmosis, gravimetric and biological water treatment.

Almost all Borealis locations are connected to wastewater treatment installations, consisting of internal treatment units, external plants or both. The exception is the location in Grandpuits, France, where Borealis has no permit to discharge into the surface water but discharges into a special salted groundwater aquifer instead.

Each operation carefully monitors wastewater flows and contaminants to ensure that all parameters are within permitted levels, and reports this regularly to the respective authorities.

On a regular basis, national authorities evaluate Borealis' water use and wastewater discharge. Under the EU's Industrial Emissions Directive, Borealis locations producing melamine and hydrocarbons are currently developing soil and groundwater baseline reports, together with national experts and the national authorities, to ensure the Group minimises its negative impact on water bodies.

The locations are also working on a gap analysis in relation to the content of the Best Available Technology (BAT) reference document for Common Waste Water and Waste Gas Treatment. This document details the techniques to prevent or, where this is not practicable, reduce the environmental impact of operating installations. Due to the publication of the Best Reference (BREF) document on Large Volume Organic Chemicals (LVOC) in December 2017, Borealis conducted a gap analysis on all the applicable published BREFs in 2018. In 2019, the Group collaborated with the European Commission on data collection and with site visits to enable detailed insight into production processes for the Commission's experts, to support the work for defining a new BREF that is to be published in 2021. Additionally, the environmental experts contributed to the national BREF workgroups or national shadow group, to help national members of the workgroup to foster insights into production processes, emissions and reduction technologies.

### Recycling and Reusing Water

To increase water use efficiency, Borealis seeks, whenever possible, to recover its process water or to reuse wastewater. For example, in some operations cooling towers use recycled water or rainwater. This is not possible in all locations, as it depends on permit stipulations and on the water body.

As noted above, Borealis prioritises reductions in energy consumption and $CO_2$ emissions. As water consumption and energy use are linked, due to the energy recovery from cooling water, the Group may on some occasions decide to increase its water withdrawal in order to recover more energy.

### From Waste to Secondary Resources

Borealis generates waste during production and during short regular shutdowns and plant turnarounds. Turnarounds are regularly scheduled events, during which a plant is temporarily taken out of operation to ensure asset integrity and process safety, by carrying out important maintenance works and inspections.

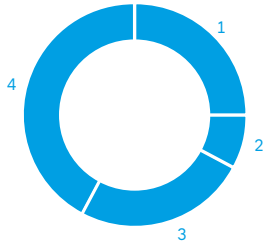
Borealis monitors waste production and implements control measures in all its operations, based on the requirements of regulations and ISO 14001 standards. The Group has waste management plans for each location, which are coordinated by local environmental experts. All locations follow the "4R" rules: reduce, reuse, recycle and recover.

Borealis' overall aim is to avoid producing waste. The Group has therefore implemented an integrated manufacturing process, which recovers as much co-product as possible. For example, the $CO_2$ emitted by the ammonia production site in Linz, Austria, is used in the production of urea at the same site. In the fertilizer production process, condensate from steam contains co-products which are reinjected into the process to minimise loss of resources. If a co-product cannot be reused and therefore becomes waste, the Group's preference is to recycle it, taking into account relevant regulations and environmental considerations. The Group only employs accredited contractors for handling its waste streams.

By-products of polymer production, such as non-prime material or material from cleaning activities, are used to the extent possible in the Group's recycling plants.

In 2019, the Group's total waste volume was 86.1 kilotonnes, compared to 53.7 kilotonnes in 2018, the main reason for the increase being the integration of our recycling plants into the monthly group reporting definitions. Approximately 25% of Borealis' waste volume was recycled, 25% was recovered and 50% was disposed of, with 8% going to landfill and 42% receiving a different treatment.

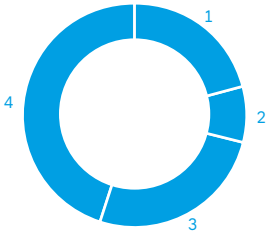
Fig. 29: **Waste treatment in 2019** [1)]




1. Energy recovery ..... 25%
2. Landfill ..... 8%
3. Recycling ..... 25%
4. Other treatment ..... 42%

1) Environmental data might be subject to minor adjustments due to ongoing audits and missing 3rd party data at the time of closing of this report.

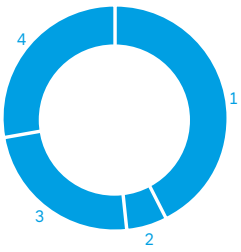
Fig. 30: **Non-hazardous waste treatment in 2019** [1)]




1. Energy recovery non-hazardous ..... 21%
2. Landfill non-hazardous ..... 8%
3. Recycling non-hazardous ..... 26%
4. Other treatment non-hazardous ..... 45%

1) Environmental data might be subject to minor adjustments due to ongoing audits and missing 3rd party data at the time of closing of this report.

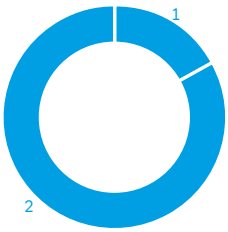
Fig. 31: **Hazardous waste treatment in 2019** [1)]




1. Energy recovery hazardous ..... 43%
2. Landfill hazardous ..... 6%
3. Recycling hazardous ..... 24%
4. Other treatment hazardous ..... 28%

1) Environmental data might be subject to minor adjustments due to ongoing audits and missing 3rd party data at the time of closing of this report.

Fig. 32: **Waste characterisation in 2019** [1)]




1. Hazardous waste ..... 17%
2. Non-hazardous waste ..... 83%

1) Environmental data might be subject to minor adjustments due to ongoing audits and missing 3rd party data at the time of closing of this report.

As part of the environmental and energy data management software upgrade, a new way of waste reporting has been developed and implemented. The more-detailed report now allows better follow-up. All newer locations, such as recycling plants and warehouses, have been added to the system to allow high-quality and automated reporting.

## Zero Pellet Loss

Plastic pellets released unintentionally during production and transportation can end up in streams, rivers and oceans. Preventing spillage is a core responsibility for the industry. Borealis is committed to achieving zero pellet loss in and around its operations and was therefore an early signatory to Operation Clean Sweep® (OCS), an international programme initiated by the Society of the Plastics Industry and the American Chemistry Council and rolled out in Europe by PlasticsEurope. Borealis is also a signatory of the "Zero Pellet Loss" pact in Austria, which is similar to the OCS programme.

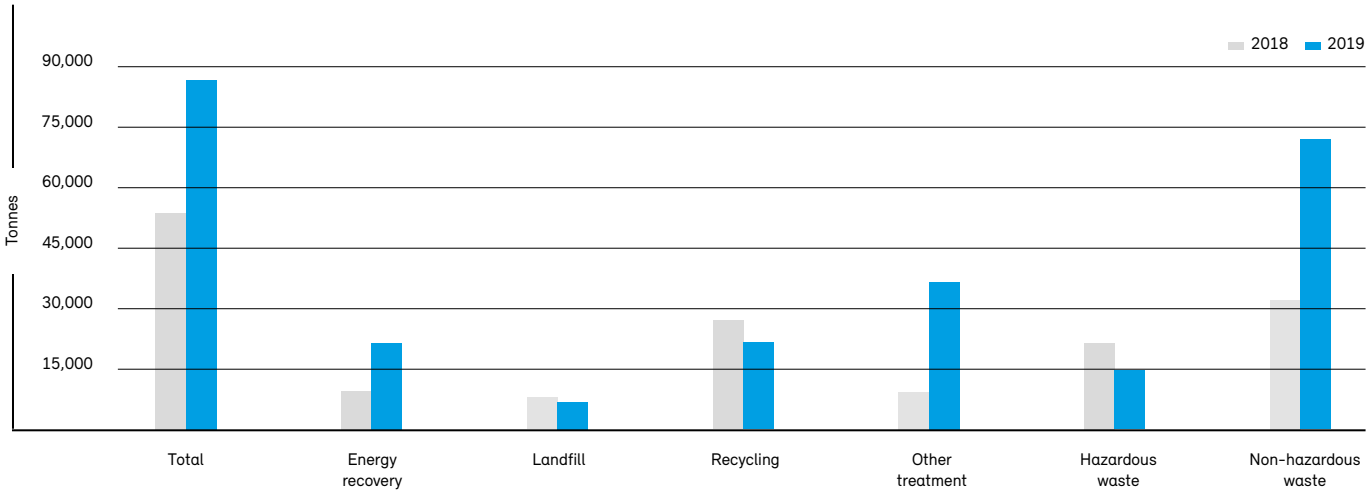
Achieving zero pellet loss is challenging and requires continuous leadership, effort, targeted and effective work practices and investment. Together with Total, Borealis has developed a comprehensive audit catalogue covering the assessment of all factors leading to potential pellet loss, based on 14 categories and a rating level of one to five (with one being the lowest score), leading to three maturity levels: basic containment, advanced and world class. Borealis aims to reach or exceed an average rating level of four for all 14 categories at all sites.

The Group started in 2016, with a first set of audits at all of its polymer sites. In 2018, a second set of audits confirmed that Borealis locations met or exceeded its ambition of a rating of four in many categories. The primary reason for not reaching level four was the complexity of implementation, which requires more time. Action plans for the areas that are not yet at level four are in place and regularly followed up.

In parallel to the Group's continuous internal efforts, Borealis has worked hard as part of PlasticsEurope's OCS task force to:

– develop detailed and auditable requirements that every OCS signee must comply with;
– develop a joint EU-wide approach for auditing and certification against the OCS requirements; and
– update a self-assessment tool, combining the lessons from the Borealis and Total tool and the new mandatory requirements.

Fig. 33: **Waste treatment comparison between 2018 and 2019 for all total waste, all treatments and the ratio of hazardous and non-hazardous waste** [1)]




1) Environmental data might be subject to minor adjustments due to ongoing audits and missing 3rd party data at the time of closing of this report.

## Environmental Compliance

Borealis is committed to complying with all relevant environmental laws, regulations, standards and other legal requirements, such as operational permits. This ensures the Group can continue to operate and is protected from fines, reputational damage and the costs of impact mitigation. The Group reviews all cases of non-compliance and takes action to prevent them from reoccurring. In 2019, no significant fines or non-monetary sanctions for non-compliance with environmental laws have been imposed on Borealis.

## Outlook

The Group's priorities for 2020 are in line with those of 2019, with a focus on enhancing valorisation of sidestreams and research of industrial symbiosis. The purpose is to minimise the production of waste, consume fewer resources and better handle the end-of-life of Borealis' products. For example, one of the areas of progress is a collaboration between producers and distributors of fertilizers in France, to work on the design of packaging to facilitate their recycling, while not degrading their resistance and permeability for safety and quality.

## Fig. 34: Key environmental performance indicators 2015– 2019 [1)]

| Issue | Unit | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|
| EU ETS $CO_2$ emissions | kilotonnes | 4,625 | 4,302 | 4,210 | 4,600 | 4,270 |
| $N_2O$ emissions | tonnes | 1,351 | 1,330 | 866 | 1,207 | 978 |
| Flaring performance [1)] | tonnes | 27,619 | 26,273 | 51,620 | 38,740 | 47,687 |
| VOC emissions | tonnes | 3,122 | 3,784 | 3,333 | 3,599 | 3,055 |
| $NO_x$ emissions | tonnes | 3,000 | 3,035 | 2,891 | 3,330 | 4,055 |
| Dust emissions | tonnes | 455 | 437 | 477 | 489 | – |
| $NH_3$ emissions | tonnes | 881 | 727 | 862 | 909 | – |
| Primary energy consumption | GWh | 25,831 | 24,476 | 22,400 | 24,100 | 22,600 |
| Water withdrawal | $m^3$ (million) | 750 | 675 | 752 | 724 | 300 |
| Waste generation | tonnes | 86,109 [2)] | 53,713 | 61,398 | 49,036 | 157,000 |

1) Values from 2015–2018 have been adjusted to display exact values. // 2) The main reason for the increase is the integration of the plastics recycling company mtm plastics GmbH into the monthly group reporting definitions.

### Definitions

**EU Emission Trading Scheme (ETS) $CO_2$ emissions:** All greenhouse gas emissions (GHG) as per the European ETS expressed in $CO_2$ equivalents (since 2009 this indicator has replaced the reporting of direct carbon dioxide emissions).

**Nitrous Oxide ($N_2O$) emissions:** Emissions of $N_2O$ (also known as laughing gas) are generated by the production of nitric acid in the fertilizer plants. $N_2O$ is a GHG with a global warming potential (GWP) 310 times higher than $CO_2$.

**Flaring losses:** All streams sent to the flare, except streams that assure a constant flame (e.g. fuel gases to pilot burners, fuel gas purges to flare lines for safety reasons, steam, nitrogen).

**Volatile Organic Compound (VOC) emissions:** Emission of all organic compounds (from C1 to Cn) with a vapour pressure of 0.01 kilopascal (kPa) or more at either room temperature or at actual temperature when processed. The quantification is based on measurements and estimates. Total volatile organic carbon, expressed as C, includes Methane.

**Nitrogen Oxide ($NO_x$) emissions:** Emissions of all nitrogen oxides from all relevant sources, including flares. The emissions are quantified as $NO_x$. When $NO_x$ measurements are not done, emission factors correlated to the fuel type and heating value are used.

**Dust:** Emission of dust from production of fertilizers.

**$NH_3$ (Ammonia):** Emissions of $NH_3$ from fertilizer plants, loading stations and water treatment of fertilizer locations.

**Primary energy consumption:** Consumption of all energy vectors (i.e. fuels, electricity and steam). Electricity and steam are converted into primary energy with standard conversion factors of 40% (electricity) and 90% (steam).

**Water consumption:** Total amount of fresh water withdrawn from surface or groundwater sources for any type of usage (e.g. cooling, steam generation, cleaning, sanitation).

**Waste generation:** Generation of all waste at company locations during normal operation as well as during special projects. Any substance or object that is to be discarded is included in the definition of waste. Exceptions are atmospheric emissions, liquid effluents and by-products with commercial value.

# Our People

**Goals**

The Group's primary people-related goals in 2019 were to:

- implement a Top Leaders team to drive Borealis' transformation towards the Circular Economy;
- fine tune the new organisational structure for Human Resources (HR) and in particular increase the efficiency of the HR Services organisation, primarily by continuing to upgrade the HR-related IT infrastructure to increase end-user satisfaction and add new functionalities;
- run the 2019 People Survey, including improving the tool and its reporting functionalities, defining a nimbler action follow-up process and achieving a target response rate of 83%;
- implement the new talent acquisition strategy, differentiating between four different hiring processes; and
- design a comprehensive new onboarding process to shorten the time to full performance and keep retention at high level.

**Key Achievements and Results**

During 2019, Borealis:

- formed a group of Top Leaders, who jointly developed Borealis' new purpose and shaped the Group strategy update;
- supported all employee-related aspects of the new company structure resulting from the separation of Borealis' Fertilizer, Melamine and Technical Nitrogen Products (TEN) business, such as the organisational split and legal transfers;
- digitalised workflow implementation to increase HR Services' efficiency and fulfil its service level agreements with Borealis' leaders and employees;
- ran the 2019 People Survey with a response rate of 85% (compared to 83% in 2017, the last People Survey), with the results evaluation and action plans to be developed in 2020;
- clustered recruitment into differentiated hiring categories as part of the talent acquisition strategy, to focus resources where they will add most value; and
- focused on the standardisation of onboarding programmes, developing the Global Onboarding Programme for new employees for launch in 2020.

## Introduction

Borealis' People Strategy focuses on creating a learning organisation, supporting the requirements of a growing company which is developing towards globalisation and the Circular Economy, and leveraging the benefits and opportunities of digitalisation. To implement this strategy, the Group focuses on five areas: employee engagement, diversity and equal opportunity, training and people development, process automation and fair remuneration. Achieving the Group's goals in these areas supports Borealis' profitability, helps to ensure high levels of employee engagement and satisfaction, contributes to operational excellence, encourages a strong health and safety performance and continuous improvement, and broadens the talent pool from which the Group can recruit. In 2019 7,397 employees (compared to 6,671 in 2018, now including mtm plastics GmbH, Ecoplast Kunststoffrecycling GmbH, Rosier S.A. and Rosier Netherlands B.V.) worked for Borealis on a permanent (98%, same as 2018) or temporary (2%, same as 2018) basis. This workforce was supported by 159 (177 in 2018) leasing employees who are not employed by the Group, primarily in Austria, as shown in figure 37, p.107 and some 300 summer workers, job students, apprentices and interns.

## Organisational Structure

Borealis' HR organisation provides people-related support and guidance to leaders and employees throughout their career. The needs supported by HR include talent acquisition and onboarding, organisational, cultural and individual development, change management, and compensation and benefits.

The Vice President (VP) HR, together with the Executive Board, identifies how HR can best support the Group's strategy and initiatives and, together with the HR leadership team, ensures that the Group has the relevant competences, tools and resources. The VP HR reports to the CEO.

The Borealis HR Handbook sets out the Group's HR governance, which is managed through the Borealis People Policy and a number of HR Group procedures and operative instructions. These cover areas such as performance management, including bonuses and development, the Borealis Incentive Plan, succession planning and talent management. The Borealis Management System collates all these documents in one system. Documents are reviewed and updated at least every three years, or as needed.

Borealis reorganised its HR organisation in 2018. The HR organisation now has two parts:

1. HR Business Partners, who provide improved HR support, focusing on coaching and challenging leaders at all levels on their leadership behaviour, supporting them in performance management and organisational change, and using HR data to provide leadership teams with more impactful consulting on people and teams.
2. HR Service Partners, who provide HR operational services such as payroll, administration and recruitment to employees and leaders across the Group. HR Service Partners are established in most Borealis locations and are steered centrally, to achieve process standardisation and ensure a "one company" approach.

As part of the 2018 HR reorganisation, Borealis updated all of its HR processes to meet the requirements of the new structure. In addition, service level agreements and key performance indicators (KPIs) have been developed to clarify when services will be delivered and to what quality, as well as to improve planning and budgeting. In 2019, KPIs relating to recruitment, performance management, mobility, people engagement and data quality were incorporated in an agile approach, to measure delivery against performance goals. These KPIs are part of the incentive goals of most HR employees.

As a result of the new company organisation, a dedicated HR department was set up for the Fertilizer, Melamine and TEN business. Borealis Group HR functions still provide defined support and governance to the Fertilizer, Melamine and TEN organisation.

### Improving the Human Resources Information System

SAP is the Group's ERP system. Borealis' HR administration is centrally managed via SAP on one platform. This includes payroll, employee data, organisational management, time management, competence management, merit and long-term incentive plan. All employees data are documented in SAP, except for the employees of Borealis subsidiaries mtm plastics GmbH, mtm compact GmbH, Ecoplast Kunststoffrecycling GmbH and all Rosier subsidiaries.

In 2017, Borealis HR began a three-year project to implement SuccessFactors, a cloud solution interfaced with the existing SAP core system, to help employees and leaders make better use of important HR processes. Following the launch of the Employee Profile, Learning, Succession Planning and Talent Management modules in 2018, the Performance module was successfully introduced in Q1 2019. The module covers the following HR processes: goal management, development plans, well-being, feedback to line manager, calibration, role description review, career aspiration and mobility. End users have given positive feedback about the module's user-friendliness.

In addition to this performance module, HR has further developed automated HR processes, digitalising administration and measuring implementation using service level agreements and KPIs.

Currently, the Recruitment module is being set up which will offer new functionalities to ensure a positive applicant experience, strengthen employer branding, focus on recruiting manager involvement and enhance new hire administration.

### Employee Engagement

Achieving high employee engagement strengthens employee satisfaction and is in line with Borealis' Values and desired behaviours. As engaged employees are more productive, high engagement is also important for delivering Borealis' growth strategy and links directly to the Group's profitability. Borealis has the opportunity to further improve engagement and its business by maintaining an open dialogue with employees, to understand what drives engagement.

The Borealis People Survey is the Group's key tool for obtaining feedback from employees, evaluating employee engagement and measuring the effectiveness of Borealis' people management. It takes place every two years and has a tagline of "Building a better Borealis". The overall participation rate in the 2019 People Survey was 85%, compared to 83% in 2017. Actions are being defined based on the survey results and their implementation will be closely tracked.

One of Borealis' four core values is Respect. This value includes respecting employees who wish to organise themselves and be represented by unions or works councils. In Borealis, 90,31% of all employees are covered by collective bargaining agreements. In some countries, no comparable agreement exists.

The Corporate Co-operation Council (CCC) is an important platform for dialogue between management and employee representatives. It is a forum for exchanging information between the works councils at the various Borealis locations, top management and owners. The CCC holds four meetings and one conference each year. Anticipating Borealis' future transformation, the 2019 CCC Conference addressed the topic of "Balance in Times of Change". The aim of the event was to ensure that the successful well-being approaches at the different sites can be sustained and to find activities to further improve local cooperation between employer and employee representatives.

Borealis also has Open Fora and other opportunities for interaction at all of its locations. Common topics discussed at these events include the Group's financial performance, different Group initiatives and other topics of interest.

### Diversity and Equal Opportunity

Diversity and equal opportunity, in terms of gender, origin, religion, nationality or any other facet, are integral elements of Borealis' open culture and enrich the Group's working environment. Borealis strongly believes that diverse teams are more creative, resourceful and knowledgeable, and that they generate broader perspectives, ideas and options. Diversity and inclusion therefore have a strong impact on people and teams, improving engagement and job satisfaction and directly contributing to the Group's profitability and sustainability.

Gender diversity is one area where Borealis is only in line with the industry average, with about 20.6% (20.1% in 2018) of the Group's employees being female. Borealis is therefore starting to take a more structured approach to increase gender diversity. Diversity will be one of the core people themes in the new Company strategy and is also part of the People KPI in the Group Scorecard 2020.

Fig. 35: **Total number of employees by employment contract (permanent or temporary) by gender & by region / and total number of employees by employment type (full-time or part-time) by gender & by region in 2019** [1) 2) 3)]

| M ... male // F ... female | Gender | Permanent | Temporary | Total | Full time | Part time | Total |
|---|---|---|---|---|---|---|---|
| Total | M | 5,775 | 95 | 5,870 | 5,304 | 566 | 5,870 |
| | F | 1,468 | 59 | 1,527 | 1,176 | 351 | 1,527 |
| | Total | **7,243** | **154** | **7,397** | **6,480** | **917** | **7,397** |
| Austria | M | 1,558 | 19 | 1,577 | 1,417 | 160 | 1,577 |
| | F | 443 | 17 | 460 | 306 | 154 | 460 |
| | Total | **2,001** | **36** | **2,037** | **1,723** | **314** | **2,037** |
| Belgium | M | 997 | 8 | 1,005 | 859 | 146 | 1,005 |
| | F | 258 | 12 | 270 | 174 | 96 | 270 |
| | Total | **1,255** | **20** | **1,275** | **1,033** | **242** | **1,275** |
| Finland | M | 709 | 25 | 734 | 719 | 15 | 734 |
| | F | 192 | 12 | 204 | 190 | 14 | 204 |
| | Total | **901** | **37** | **938** | **909** | **29** | **938** |
| France | M | 725 | 10 | 735 | 731 | 4 | 735 |
| | F | 133 | 2 | 135 | 122 | 13 | 135 |
| | Total | **858** | **12** | **870** | **853** | **17** | **870** |
| Sweden | M | 725 | 17 | 742 | 710 | 32 | 742 |
| | F | 220 | 15 | 235 | 229 | 6 | 235 |
| | Total | **945** | **32** | **977** | **939** | **38** | **977** |
| Other Europe | M | 785 | 13 | 798 | 590 | 208 | 798 |
| | F | 172 | 1 | 173 | 108 | 65 | 173 |
| | Total | **957** | **14** | **971** | **698** | **273** | **971** |
| Non-Europe | M | 276 | 3 | 279 | 278 | 1 | 279 |
| | F | 50 | 0 | 50 | 47 | 3 | 50 |
| | Total | **326** | **3** | **329** | **325** | **4** | **329** |
| Borealis AG (also included in Austria above) | M | 100 | 7 | 107 | 103 | 4 | 107 |
| | F | 113 | 9 | 122 | 102 | 20 | 122 |
| | Total | **213** | **16** | **229** | **205** | **24** | **229** |

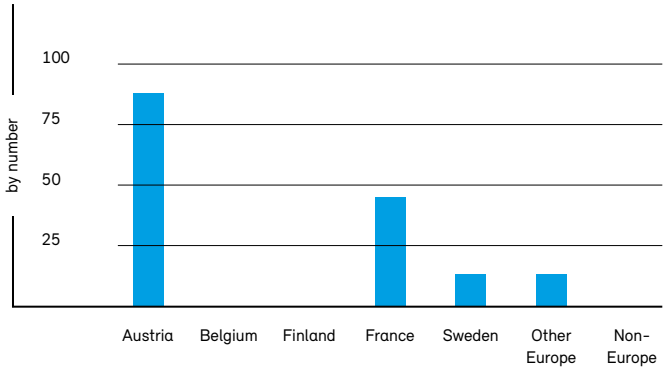
1) Total number: headcount (employees hired for more than 3 months, excluded: externals, trainees, apprentices, summer workers, long term absences,temporary employees less than 3 months). Permanent: employee contract without end date. Temporary: employee contract with an end date. Full-time: working 100% or work in a shift model (even if that does not sum up on average to the weekly working hours). Part-time: working only a certain percentage as agreed in an individual contract. // 2) Austria, Belgium, Finland, France and Sweden are our significant locations of operation with more than 500 employees. All other European production or sales locations are summarised under Other Europe. Non-Europe covers all production or sales locations outside Europe. // 3) All numbers as of 31.12.2019.

Fig. 36: **Percentage of employees by employee category & by gender & by age in 2019** [1) 2) 3)]

| in %<br>M ... male // F ... female | Gender | <30 | 30–50 | >50 | % per gender per employee category |
|---|---|---|---|---|---|
| Senior Leaders | M | 0.00 | 30.99 | 53.52 | 84.51 |
| | F | 0.00 | 8.45 | 7.04 | 15.49 |
| Managers | M | 0.36 | 45.75 | 31.46 | 77.58 |
| | F | 0.00 | 16.09 | 6.33 | 22.42 |
| Team Leaders | M | 1.81 | 51.40 | 35.63 | 88.83 |
| | F | 0.16 | 7.55 | 3.45 | 11.17 |
| Experts | M | 7.09 | 41.39 | 26.42 | 74.90 |
| | F | 2.32 | 17.28 | 5.50 | 25.10 |
| Administration | M | 7.02 | 32.36 | 19.04 | 58.43 |
| | F | 5.39 | 26.12 | 10.06 | 41.57 |
| Blue Collar | M | 16.11 | 45.48 | 31.28 | 92.87 |
| | F | 1.64 | 3.69 | 1.81 | 7.13 |

1) Employee category grade refers to the internal role classification system (grade 1 to 21): Senior Leaders: all line managers grade 16 and above. Managers: all line managers grade 12 to grade 15. Team Leaders: all line managers grade 11 and below. Experts: all non-line managers grade 10 and above; Administration (white collar employees): non-line managers grade1 to grade 9. Blue collar employees: non-line managers grade 1 to grade 9. // 2) All numbers as of 31.12.2019 // 3) Numbers are correct to two decimal places in order to maintain granularity.

Fig. 37: **Total number of non employees per region in 2019**




| Region | |
|---|---|
| Austria | 88 |
| Belgium | 0 |
| Finland | 0 |
| France | 45 |
| Sweden | 13 |
| Other Europe | 13 |
| Non-Europe | 0 |
| **Total** | **159** |

The Group tracks the proportion of women it hires, the number of female successors for key roles and the number of women who are promoted. Borealis has not yet set targets at a Group level for increasing the percentage of women it employs but will from 2020 onwards track the percentage of female leaders, as well as the percentage of new female hires via the Group Scorecard. These actions include KPIs for female successors for key positions. The Group has seen an increase in the number of female senior leaders, showing the positive effect of role modelling and driving gender diversity awareness top down. Since 2019, there has also been female representation on the Executive Board.

At Group level, Borealis is continuously working to encourage more women to join its workforce and to take on more responsibilities. Borealis HR actively engages with national institutions, such as universities and chemical schools, to promote Borealis and the chemical industry as an attractive employer for women and to increase women's interest in a technical career path. The new SuccessFactors Recruitment tool described earlier in this chapter will improve the Group's ability to measure applicant activities and engagement, which will provide

more insights to ensure that Borealis' recruitment marketing activities are equally attractive for all genders.

The Group also facilitates and supports an internal network at top management level, which aims to support women who aspire to a management career. In addition, Borealis encourages line managers to nominate women to take part in talent programmes.

Fig. 38: **Percentage of new hires / turnover by gender & by region & by age in 2019** [1) 2) 3) 4)]

| in % | % of new hires per total gender / per total region / per total age cluster | % of turnover per total gender / per total region / per total age cluster |
|---|---|---|
| **gender** | | |
| male | 6.20 | 2.64 |
| female | 8.65 | 4.94 |
| **region** | | |
| Austria | 6.72 | 3.12 |
| Belgium | 7.98 | 2.60 |
| Finland | 4.37 | 1.58 |
| France | 5.17 | 2.88 |
| Sweden | 3.79 | 3.58 |
| Non-Europe | 15.16 | 5.59 |
| Other Europe | 8.27 | 4.39 |
| **age** | | |
| <30 | 19.62 | 5.30 |
| 30–50 | 6.84 | 3.44 |
| >50 | 1.83 | 1.79 |

1) The percentage of new hires is based on employee changes during the year in the respective category (e.g. 100 employees with 10 new hires is 10% new hires) // 2) Austria, Belgium, Finland, France and Sweden are our significant locations of operation with more than 500 employees. All other European production or sales locations are summarised under Other Europe. Non-Europe covers all production or sales locations outside Europe // 3) Turnover refers to employees who left Borealis voluntarily // 4) Numbers are correct to two decimal places in order to maintain granularity.

The Group's gender diversity is also raised at some CCC meetings and Open Fora. This includes discussions of how everyone can contribute to improving diversity and inclusion and what might help women looking to take a next career step, including considering cultural effects.

### Training and People Development

Borealis looks to continuously train and develop employees, as well as external people who work with and for the Group. The Group's ambitions require employees to understand how their work affects customer satisfaction and to have a zero-accidents mindset that puts safety first. Providing appropriate training for functional and workplace skills that are rooted in Borealis' values, safety and ethics ambitions helps the Group to protect the health and safety of all employees, offer them job security, conduct business ethically and ensure production processes and products are safe. It also helps employees to develop their skills and to advance their careers within Borealis.

The Group identifies each employee's training and development needs through its yearly performance management process. This results in line managers and employees agreeing on Individual Development Plans (IDPs). Employees with performance gaps have mandatory Performance Improvements Plans (PIPs). The catalogue of trainings made available to employees is then designed based on IDPs and PIPs. Line managers and management teams can also contact the Borealis Learning Network if a new training need is identified in their organisation. Borealis is continuing its journey to upgrade its HR IT tools and technologies to gather more data and insights, resulting in a better understanding of what the organisation requires.

Fig. 39: **Percentage of total employees by gender and by employee category who received a regular performance and career development review in 2018** [1)]

| in % | Female | Male |
|---|---|---|
| Senior Leaders | 100.00 | 100.00 |
| Managers | 100.00 | 97.00 |
| Team Leaders | 93.59 | 96.45 |
| Experts | 94.74 | 97.94 |
| Administration | 83.78 | 90.63 |
| Blue Collar | 87.56 | 81.89 |

1) As the performance and career development circle ends with March 31st figures are only available from the previous circle (2018). // 2) Numbers are correct to two decimal places in order to maintain granularity.

### Talent Management and Leadership Development

Offering meaningful careers and ways to unlock people's potential is essential for attracting and retaining a highly skilled, qualified and diverse work force. The Borealis Talent Management Process focuses on attracting, identifying, promoting and developing potential for leadership and expert positions, using Leadership Talent Management Programmes and Expert Talent Programmes. In addition to global leadership programmes and courses, the key businesses have developed function-specific programmes. The Group also offers outplacement programmes for employees who leave Borealis.

### Fair Remuneration

Fair remuneration means ensuring fair pay for performance, based on transparent performance evaluation. It supports strong business results by incentivising high-performing individuals and teams and encouraging employees to continuously improve.

It is important for Borealis that people feel fairly paid, as this will support affect retention and Borealis' reputation. Borealis is therefore committed to providing fair and transparent reward packages for all employees, whether full-time or part-time. Every employee reward package in Borealis consists of a base salary and incentive compensation. The reward package is based on the systematic evaluation of roles, using an external evaluation methodology linked to Borealis' internal grading structure. This requires up-to-date role descriptions which define core activities and responsibilities. In 2019, the Group implemented a new role description database, which captures all evaluated roles at a Group level and ensures completeness and transparency. The reward package is evaluated regularly, in the context of insights into national remuneration market data and developments. This approach ensures the reward package is competitive both internally and externally. Some reward packages for temporary employees are linked to the duration of their employment with Borealis.

Borealis' reward evaluation processes are gender neutral by design. Each grade in the Company grading system has a country specific pay range and the pay position of employees within this range is monitored at both country and Group levels to control overall pay equality. The group shares this aggregated gender pay analysis with its employees, as legally defined in the various countries. Employees are also entitled to information about how their salary compares to the respective market.

An annual merit review process allows management to adjust pay, for example for inflation or performance reasons, and enables each country to request funds for eliminating any pay gaps among employee groups. Individual performance can influence the size of the reward package.

Employees are offered additional benefits aligned to local markets, such as subsidised lunches, access to or subsidised gym membership, health and dental care insurance and company pension plans, on top of the national social security system. The benefits and, where applicable, the level of subsidy are aligned with the Group's ambition to promote a healthy lifestyle, taking into account local market practice and national taxation rules.

Borealis performs a yearly equal pay analysis to identify focus areas for improvement. Borealis' owners may provide additional focus areas through the Remuneration Committee. This committee also assists the Supervisory Board in reviewing and approving Borealis' compensation approach. The Pension & Benefits Council, which is led by the CFO, sets the overall principles for employee benefit programmes, monitors the implementation of these programmes across the Group and takes decisions on significant changes to those programmes. Based on the output from the Pension & Benefits Council and the Remuneration Committee, the Executive Board then gives HR a mandate to design new concepts for remuneration and to propose changes when needed.

## Data Protection

Borealis ensures it protects employee data by following its data protection procedure. As part of this, the Group has two Operative Instructions for HR.

The first Operative Instruction covers HR Authorisation and defines, for example, who has access to which HR data, how to request authorisation and approval workflows. The 8th EU Directive requires Borealis to monitor critical authorisations (such as salary data) and ensure segregation of duties. This means, for example, that the same person cannot change salary levels and run the payroll. To meet these obligations, Borealis has defined self-control actions.

The second instruction covers HR Data Protection, which includes tools to ensure compliance with the General Data Protection Regulation, an EU law on data protection and privacy. The instruction contains definitions of purpose limitation (meaning that personal data collected and stored shall only be used for specific purposes), data minimisation, data accuracy, storage limitation, integrity and confidentiality, transfer of personal data to third parties, the right to be forgotten, portability of data and consent management.

## Outlook

The Group's HR goals for 2020 are to:

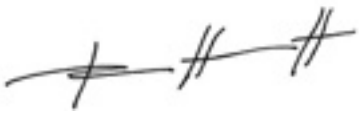
- enhance HR's change management capabilities to successfully implement the new Group strategy and company transformation;
- increase the focus on people mobility to ensure sufficient supply of expertise to Borealis' growth projects and joint venture companies;
- increase the focus on workforce diversity and inclusion to ensure equality of opportunity for all employees to work to their full potential;
- implement a HR dashboard to capture key metrics on Borealis' workforce;
- implement a workforce planning tool that helps to identify demographic challenges proactively;
- develop a Group-wide learning strategy;
- train HR teams to become more knowledgeable about financial matters and KPIs;
- evaluate the 2019 People Survey results and develop action plans, in close cooperation with management and the CCC;
- introduce the global onboarding process to provide a general framework of best practices across locations;
- further increase the efficiency and user-friendliness of HR Services; and
- introduce a new applicant system which will go live in Q1 2020, together with a new career site.

Vienna, 19 February 2020
**Executive Board:**

**Alfred Stern**
Chief Executive

**Mark Tonkens**
Chief Financial Officer

**Martijn Arjen van Koten**



**Philippe Roodhooft**

**Lucrèce De Ridder**

# Independent Limited Assurance Report on the Consolidated Non-financial Report 2019 [1)]

We have performed a limited assurance engagement of the Consolidated Non-financial Report 2019 of Borealis AG, Vienna, and its subsidiaries (the "Group") for the year ended 31 December 2019.

### Management's responsibility

The Management is responsible for the preparation of the Consolidated Non-financial Report 2019 in accordance with the requirements of Section 267a UGB as well as the GRI Standards: Core option. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of the Consolidated Non-financial Report 2019 that is free from material misstatement, whether due to fraud or error.

### Auditor's Responsibility

Our responsibility is to express a limited assurance conclusion based on our procedures performed and evidence obtained.

We performed our engagement in accordance with the professional standards applicable in Austria with regard to KFS/PG 13 "Other assurance engagements", KFS/PE28 "Selected issues in connection with the assurance of non-financial statements and non-financial reports pursuant to sections 243b UGB and 267a UGB as well as sustainability reports" and the International Standards on Assurance Engagements (ISAE) 3000 (Revised) "Assurance engagements other than audits or reviews of historical financial information". These standards require that we comply with our ethical requirements, including rules on independence, and that we plan and perform our procedures by considering the principle of materiality to be able to express a limited assurance conclusion based on the assurance obtained. As provided under Section 275 (2) UGB (liability provision regarding the audit of financial statements of small and medium-sized companies), our responsibility and liability towards the Company and any third parties arising from the assurance engagement are limited to a total of EUR 2 million.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement; consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.
The selection of the procedures lies in the sole discretion of the auditor and comprised the following:

- Critical assessment of the Group's analysis of materiality considering the concerns of external stakeholders by interviewing the responsible employees and inspecting relevant documents
- Obtaining an overview of the policies pursued by the Group, including due diligence processes implemented as well as the processes used to ensure an accurate presentation in the non-financial report by interviewing the Company's management and inspecting internal guidelines, procedural instructions and management systems in connection with non-financial matters/disclosures
- Obtaining an understanding of reporting processes by interviewing the relevant employees and inspecting selected documentations
- Evaluating the reported disclosures by performing analytical procedures regarding non-financial performance indicators, interviewing relevant employees and inspecting selected documentations
- Examining the non-financial report regarding its completeness in accordance with the requirements of Section 267a UGB as well as the GRI Standards: Core option
- Performing additional procedures on site if required as a consequence of the risk assessment and the results of analytical procedures
- Evaluating the overall presentation of the disclosures and non-financial information

The following is not part of our engagement:
- Examining the processes and internal controls particularly regarding their design, implementation and effectiveness
- Performing procedures at individual locations as well as measurements or individual evaluations to check the reliability and accuracy of data received
- Examining the prior-year figures, forward-looking information or data from external surveys
- Checking the correct transfer of data and references from the (consolidated) financial statements to the non-financial report; and
- Examining the information and disclosures on the website or further references on the internet

Neither an audit nor a review of financial statements is objective of our engagement. Furthermore, the disclosure and solution of criminal acts, as e.g. embezzlement or other kinds of fraud, and wrongful doings, nor the assessment of the effectiveness and profitability of the management are objectives of our engagement.

**Conclusion**

Based on the procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the Consolidated Non-financial Report 2019 is not prepared, in all material aspects, in accordance with the requirements of Section 267a UGB as well as the GRI Standards: Core option.

Vienna, 19 February 2020
**PwC Wirtschaftsprüfung GmbH**

**Aslan Milla**
Austrian Certified Public Accountant

1) We draw attention to the fact that the English translation of this report is presented for the convenience of the reader only and that the German wording is the only legally binding version.

# Consolidated Financial Statements including Group Management Report (“Financial Report”)

# Auditor's Report [1)]

We draw attention to the fact that the English translation of this auditor's report according to Section 274 of the Austrian Commercial Code (UGB) is presented for the convenience of the reader only and that the German wording is the only legally binding version.

## Report on the Consolidated Financial Statements

### Audit Opinion

We have audited the consolidated financial statements of Borealis AG, Vienna, and its subsidiaries (the Group), which comprise the consolidated balance sheet as of 31 December 2019, the consolidated income statement, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated cash flow for the fiscal year then ended, and the notes to the consolidated financial statements.

In our opinion, the accompanying consolidated financial statements comply with legal requirements and give a true and fair view of the financial position of the Group as of 31 December 2019, and of its financial performance and cash flows for the year then ended in accordance with the International Financial Reporting Standards (IFRSs) as adopted by the EU and the additional requirements under Section 245a Austrian Commercial Code.

### Basis for Opinion

We conducted our audit in accordance with Regulation (EU) No. 537/2014 (hereinafter EU Regulation) and Austrian generally accepted auditing standards. Those standards require the application of the International Standards on Auditing (ISAs). Our responsibilities under those provisions and standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements" section of our report. We are independent of the Group in accordance with Austrian Generally Accepted Accounting Principles and professional requirements, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the fiscal year. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have structured key audit matters as follows:
– Description
– Audit approach and key observations
– Reference to related disclosures

### Recoverability of Property, Plant and Equipment and Intangible Assets including Goodwill

Description

In the consolidated financial statements of Borealis AG, Vienna, as of 31 December 2019, an amount of 2,941.4 million EUR (29.1% of total assets) is presented under "property, plant and equipment", an amount of 522.2 million EUR (5.2% of total assets) is presented under "intangible assets" which includes goodwill in the amount of 111.6 million EUR (1.1% of total assets).

The carrying amounts of property, plant and equipment and intangible assets are reviewed for impairment triggers on each reporting date. Goodwill is tested for impairment at least annually and whenever triggering events occur that indicate that property, plant and equipment and intangible assets including goodwill may be impaired. For this purpose, Borealis AG, Vienna, estimates the recoverable amount using the discounted cash flow methodology.

Property, plant and equipment and intangible assets including goodwill are allocated to cash-generating units ("CGUs"). The carrying amounts of the CGUs are compared to the recoverable amounts (value in use) derived from the valuation model. As far as the recoverable amount is lower than the carrying amount, this will be impaired.

Because of the impairment recognized for the Fertilizer & Melamine CGU in the fiscal year ending 31 December 2018, management has also tested for a potential reversal of the impairment as of 31 December 2019.

Given the complexity of the impairment model, the estimation uncertainty involved in the derivation of data and parameters used and the immanent discretionary decisions, the recoverability of property, plant and equipment and intangible assets including goodwill is considered as a key audit matter.

Audit Approach and Key Observations
As part of our audit of the consolidated financial statements, we have assessed the annual process, the procedure for budgeting, and the impairment test for property, plant and equipment and intangible assets including goodwill. In particular we have verified the appropriateness of the significant assumptions used in the valuation model.

We evaluated whether the assumptions used to derive the future cash flows are based on the most recent five-year planning prepared by management and approved by the Supervisory Board. We made the accuracy of the five-year planning plausible by performing an analysis of historic budget deviations.

We have further evaluated the tenability of assumptions used to determine the discount rates. Our internal specialists have evaluated whether the assumptions used for the discount rates as well as the growth rates for the perpetuity are in line with external market and industry data.

Additionally, we carried out own sensitivity analyses to determine the impact of parameter changes (changes in discount rate and cash flows) on the recoverable amount. Furthermore, we have assessed whether the long-term profitability in the terminal value period is plausible. We also evaluated whether the disclosures on impairment made by Borealis AG, Vienna, in the notes to the consolidated financial statements are complete and accurate.

Our audit procedures have verified the tenability of the valuation model used by the entity to carry out an impairment test as required by IFRS (impairment test in accordance with IAS 36) as of 31 December 2019. The assumptions and parameters used in the valuation are appropriate. The disclosures required by the relevant standards are complete and appropriate.

Reference to Related Disclosures
Management has disclosed this key audit matter under "4. Intangible assets" in the consolidated financial statements.

## Responsibilities of Management and the Audit Committee for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the EU, and the additional requirements under Section 245a UGB, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

The audit committee is responsible for overseeing the Group's financial reporting process.

## Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the EU Regulation and with Austrian generally accepted auditing standards, which require the application of ISAs, will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the EU Regulation and with Austrian generally accepted auditing standards, which require the application of ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:
- identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risks of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the audit committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the audit committee with a statement that we have complied with all relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the audit committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

## Report on Other Legal and Regulatory Requirements

### Comments on the Management Report for the Group

Pursuant to the Austrian Commercial Code, the management report for the Group is to be audited as to whether it is consistent with the consolidated financial statements and as to whether the management report for the Group was prepared in accordance with the applicable legal requirements.

Management is responsible for the preparation of the management report for the Group in accordance with the Austrian Commercial Code.

We conducted our audit in accordance with Austrian Standards on Auditing for the audit of the management report for the Group.

### Opinion
In our opinion, the management report for the Group was prepared in accordance with the applicable legal requirements, includes accurate disclosures pursuant to Section 243a UGB and is consistent with the consolidated financial statements.

### Statement
Based on the findings during the audit of the consolidated financial statements and due to the obtained understanding concerning the Group and its circumstances no material misstatements in the management report for the Group came to our attention.

### Other Information
Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated financial statements, the management report for the Group and the auditor's report.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

### Additional Information in Accordance with Article 10 of the EU Regulation
We were appointed as statutory auditor at the ordinary general meeting dated 21 February 2019. We were engaged by the Supervisory Board on 21 February 2019. We have audited the Group for an uninterrupted period since 2016.

We confirm that the audit opinion in the "Report on the Consolidated Financial Statements" section is consistent with the additional report to the audit committee referred to in Article 11 of the EU Regulation.

We declare that we did not provide any prohibited non-audit services (Article 5 (1) of the EU-Regulation) and that we remained independent of the audited group in conducting the audit.

### Responsible Engagement Partner
Responsible for the proper performance of the engagement is Alexander Riavitz, Austrian Certified Public Accountant.

Vienna, 19 February 2020
**PwC Wirtschaftsprüfung GmbH**

**Alexander Riavitz**
Austrian Certified Public Accountant

1) This report is a translation of the original report in German, which is solely valid. Publication and sharing with third parties of the consolidated financial statements together with our auditor's report is only allowed if the consolidated financial statements and the management report for the Group are identical with the German audited version. This auditor's report is only applicable to the German and complete consolidated financial statements with the management report for the Group. For deviating versions, the provisions of Section 281 (2) UGB apply.

# Group Management Report

### Safety Performance

In 2019, Borealis reported a Total Recordable Injuries (TRI) frequency per million working hours of 1.6. While a TRI frequency of less than two is considered world-class in the industry, the 2019 result is not satisfactory, and is a deterioration versus the 1.3 reported in 2018. The ratio reflects the 28 individuals injured during 2019 as well as one fatal accident in Stenungsund, Sweden. Borealis deeply regrets this tragic accident and all other incidents. The company has strengthened its commitment to working with all employees and contractors in order to reach the ultimate goal of zero injuries. Safety continues to be the top priority at Borealis.

### Market Environment

The Brent Crude oil price was impacted in 2019 by increasing global instability rooted in the China-US trade conflict, uncertainty with regard to Brexit, and concerns over a general economic slowdown. Accordingly, the oil price was marked by higher volatility, fluctuating throughout 2019 from 60 USD/bbl at the beginning of the year, to a peak of 72 USD/bbl in April, and ending at 65 USD/bbl in December. The annual average Brent Crude oil price of 64 USD/bbl was down 11% from the average 72 USD/bbl in 2018. Feedstock prices developed in a similar pattern as the Brent Crude oil price. In accordance with feedstock prices, polyethylene prices averaged 9% lower compared to 2018; polypropylene prices averaged 8% lower in 2019 than in 2018.

Borealis' sales volume of its European-produced polyolefins was stable in 2019, while the European-produced polyolefins market contracted by 1% compared to 2018.

Thus, Borealis' reported market share of 14% in 2018 improved to 15% in 2019. Fertilizer sales volumes increased by 10% in 2019 compared to 2018 and the European market share increased to 8% in 2019 accordingly.

In 2019, the integrated polyolefin industry margins remained solid for the first three quarters of the year. However, the margin contracted in the last quarter of the year to a level last seen in 2014. Consequently, the profit contribution delivered from the Polyolefins business segment was lower than in 2018.

As of the second quarter 2019, the fertilizers market benefitted from a favourable gas price development, leading to a reasonable industry margin despite the absence of the expected market price recovery. Calcium Ammonium Nitrate (CAN) fertilizer sales prices hit a low in the second quarter of 2019, in line with typical seasonality, but failed to recover from this low level as would be expected in a typical fertilizer season. Higher production volumes thanks to the improved operability of the assets, and a successful turnaround programme in combination with the improved market environment led to an acceptable profit contribution in 2019 being a material improvement from the loss – giving situation in 2018.

### Strategy and Purpose

In the first quarter of 2020, Borealis will begin with the roll-out of the new corporate strategy that includes an expanded definition of purpose. The new Group Strategy 2035 aims to build on core Borealis values and capabilities in order to achieve sustainable growth moving forward. The essential dimensions of the new strategy include the transformation to a circular economy, creation of an even more customer-centric organisation that adds value on a global scale, and geographic expansion aimed at capitalising on demand in global growth markets.

Accompanying the Group Strategy 2035 is a new umbrella programme, StepChange2020, which encompasses an entire range of measures aimed at making Borealis more agile, efficient, and cost-competitive. To this end, around 180 initiatives have been launched to ensure that Borealis will continue to be innovative, profitable, and ever more sustainable in its operations over the coming years.

### Company Focus Remains on Sustainable Growth on a Global Scale

In 2019, Borealis passed several major milestones in the advancement of significant growth projects in Europe, North America, Asia, and the Middle East.

In September, Borealis held the groundbreaking ceremony for its new, world-scale propane dehydrogenation (PDH) plant located at the existing Borealis production site in Kallo, Belgium. With a targeted production capacity of 750,000 metric tonnes/year (t/y) of propylene, the Kallo facility will be one of the largest and most efficient plants of its kind in the world. The EUR 1 billion investment over the course of this project is the largest single investment

ever made by Borealis in Europe. It signals the company's dedication to its operations on the Continent, and its aim to be the supplier of choice to its European customers.

Another important groundbreaking ceremony took place in February 2019 in Pasadena, Texas (USA), where a new Borstar® polyethylene (PE) unit is currently under construction as part of the Baystar™ joint venture between Total Petrochemicals & Refining USA, Inc., and Novealis Holdings LLC (a joint venture co-owned by Borealis and NOVA Chemicals). With an anticipated production volume of 625,000 t/y upon start-up in 2021, the facility will enable Borealis to offer its Borstar technology to North American customers for the first time. Using this proprietary, state of-the-art technology, Baystar will produce enhanced PE products for the most demanding applications. The Baystar joint venture is also building an ethane-based steam cracker in nearby Port Arthur, Texas, which is projected to supply around 1 million t/y of competitively-priced ethylene, and will supply its monomer for its existing 400,000 t/y PE units as well as the new Borstar PE unit.

At the end of 2019, Borealis and NOVA Chemicals agreed that Borealis will buy NOVA Chemicals' 50% ownership interest in Novealis Holdings LLC, the joint venture co-owned by Borealis and NOVA Chemicals which supported the original foundation of the current Baystar joint venture. While the new agreement is subject to regulatory approvals and other conditions, both parties foresee the successful closure of the deal in the first half of 2020.

Borealis' commitment to serving its automotive customers in North America was cemented with the inauguration of the new polypropylene (PP) compounding plant in Taylorsville, North Carolina (USA), in May. In its first phase of operations, this large (over 4,645 $m^2$) facility has added nearly 30,000 t/y (66,000 US lbs per year) capacity of thermoplastic olefin and short-glass fibre compounds to Borealis' and Borouge's global output. The first batches of compounds produced at the plant have been used by major original equipment manufacturers and Tier customers to produce interior and exterior automotive parts.

Following the March 2019 signing of a Memorandum of Understanding (MoU) with ADNOC to examine strategic opportunities in the polyolefins industry, ADNOC, Adani, BASF and Borealis announced that they had signed another MoU to explore potential collaboration on the establishment of a major chemical production complex in Mundra, India. With a total investment estimated at up to USD 4 billion, the chemical complex would feature a world-scale PDH unit which would produce propylene based on propane feedstock supplied by ADNOC. Project partners are currently developing a supply concept that would enable the complex to be 100% supplied by renewable energy sources. If the concept can be realised, the new plant would be the first in the world to be powered solely by renewable energy and would significantly advance the companies' respective commitments to achieving greater sustainability and energy efficiency in operations.

A major milestone was passed in the fourth expansion phase of the Borouge complex in Ruwais, UAE, upon the ceremonial signing of vital contracts for FEED (Front-End Engineering and Design), PMC (Project Management Contract), and the licence contract associated with the cracker. The new cracker will be the fourth in the Borouge complex.

**EverMinds™ – Thinking Circular: Borealis Keeps Discovering Opportunities for Growth in the Circular Economy Sphere**

As a global provider of innovative plastics solutions, Borealis intends to capitalise on the enormous potential for business growth offered by the circular economy. Within the industry, Borealis continues to lead the way towards a future in which plastics are always reused and recycled, and never wasted. By leveraging the polyolefins expertise built up over decades, creating value through innovation, and co-operating with value chain partners, Borealis has made meaningful progress in 2019 towards effecting a circular economy of plastics. Its efforts are wide-ranging, from the launch of multiple products and innovations in the circular economy sphere, to investments in mechanical and chemical plastics recycling, but also through its dedication to effecting change by working closely with leading industry and social welfare initiatives.

A clear sign that Borealis' leadership in a circular economy of plastics is bearing fruit is the announcement made in October that Borealis had become the first virgin polyolefins producer to be named a Core Partner in the New Plastics Economy, an important global initiative led by the Ellen MacArthur Foundation that seeks to unite a broad range of global stakeholders to bring about a circular economy of plastics.

Borealis is making its core business more circular by focussing on recycling and the use of renewable feedstock. It aims to increase the volume of recycled plastics solutions to 350,000 t/y by 2025 by continuing to invest in plants and recycling technology. For example, in October Borealis and Ecoplast announced that the capacity at the Wildon, Austria, recycling plant had been increased by 60% after a capital investment in the facility. In June, Borealis and the EREMA Group, the global market leader in the development and production of plastics recycling systems, signed a Letter of Intent signalling their aim to deepen their existing co-operation in mechanical recycling. In the field of chemical recycling, Borealis and OMV announced their plans in May to step up collaboration in the area of chemical recycling of post-consumer plastics at their integrated production location in Schwechat, Austria. Most recently, as announced towards the end of 2019, a strategic co-operation between Borealis and Neste made possible the production of renewable PP at Borealis' facilities in Kallo and Beringen, Belgium, through the use of Neste's proprietary NEXBTL™ technology.

### Wide Range of Product and Technology Innovations in 2019

Borealis' commitment to Value Creation through Innovation is unwavering. Because it applies not only to individual products and solutions, but also to the polyolefins value chain in its entirety, it involves truly circular thinking. Value Creation through Innovation embraces the entire life cycle of a product: from genesis, to design, processing, deployment, and ultimate recovery for recycling or reuse.

Over 500 employees work in R&D at the Borealis Group. This figure includes scientists and researchers at the Innovation Headquarters in Linz, Austria, and the two Innovation Centres in Stenungsund, Sweden, and Porvoo, Finland.

Among the numerous circular-economy related launches in 2019 is Borcycle™, a state-of-the-art technology grounded in profound Borealis polymer expertise. It transforms plastic waste streams into value-adding, versatile recycled polyolefins (rPO). Since its introduction in June, Borcycle has been used to produce high-quality compounds made of rPOs, such as Borcycle MF1981SY, an rPO with over 80% recycled content intended for use in visible appliance parts.

A number of value-added product innovations with enhanced circularity were launched in 2019, including a series of new, monomaterial pouch solutions based on PE and PP which have been designed for recyclability; and two new stand-up pouches that combine virgin PE and up to 30% Ecoplast-produced post-consumer recyclate (PCR). In the caps and closures market segment, the new monomaterial solution BorPure™ RF777MO was designed for use in flip-top caps and fulfils value chain demand for high-quality and 100%-recyclable solutions. Finally, in automotive, new and more sustainable low-density material solutions have been introduced, several of which are based on the next generation of Fibremod™ Carbon, a second-use carbon fibre.

In February, Borealis Healthcare expanded its dedicated Bormed™ portfolio of PE and PP products to include the regulated solution Bormed BJ868MO, a high flow, heterophasic polypropylene copolymer used for the production of medical and diagnostic devices. In November, it also announced the launch of a new service solution, Bormed InCompounds. This offer enables the customisation of compounds based on Bormed for use in an even wider range of targeted healthcare applications and products. It builds on value-chain co-operation with trusted and established partners in healthcare compounding.

### Operational Development of the Group

With a net profit of EUR 872 million, Borealis achieved a strong financial result in more difficult market circumstances, only slightly below the net profit of EUR 906 million in 2018. The 2019 result was impacted by a weak polyolefins market in Asia, leading to a significantly lower Borouge contribution to the Borealis financial result. The satisfactory integrated polyolefins margins in Europe and a recovery of the fertilizer business have offset this negative impact to a large degree.

Return on capital employed (ROCE) after tax of 11% in 2019 was in line with the Company's target of 11% through the cycle, but was 2 percentage points below the 2018 result. This decrease reflects the lower net profit combined with an increased average capital employed, the latter mainly impacted by the new accounting treatment of leasing contracts under International Financial Reporting Standard (IFRS) 16, as well as substantial capital investments in growth projects.

In 2019, Borealis' net debt increased by EUR 241 million. This resulted in a gearing ratio of 24% at the end of 2019, compared to 20% at the end of 2018. This gearing level is below the target gearing of 40%–60%. Borealis benefits from a well-diversified financing portfolio and a balanced maturity profile, which was further developed in May with the placement of another Schuldschein (German Private Placement) with a final volume of EUR 140 million and USD 70 million. In October, an inaugural dual currency "Samurai" loan was placed, with a final volume of USD 175 million and JPY 5,000 million, which in total amounts to approximately EUR 200 million equivalent and a tenor of five years. In December, a US private placement was successfully closed, covering 10-, 12-, and 15-year tenors for USD 165 million as well as 10- and 15-year tenors for EUR 40 million.

## Review of Results

### Sales

Borealis sold 3.8 million tonnes of polyolefins in 2019, which is at the level of 2018. Borealis Fertilizers sales reached 4.3 million tonnes, an increase of 0.3 million tonnes versus 2018. Melamine sales volumes were 146 thousand tonnes in 2019, an increase of 11 thousand tonnes versus 2018.

### Cost Development

In the lower feedstock price environment, production costs decreased in 2019 compared to 2018. Sales and distribution costs increased from EUR 704 million in 2018 to EUR 717 million in 2019; administration costs increased by 10% to EUR 249 million. Research and development costs amounted to EUR 145 million in 2019 compared to EUR 128 million in 2018. The number of full-time equivalent employees (FTE) as per year-end 2019 was 6,869, an increase of 35 compared to last year.

### Operating Profit

Operating profit amounted to EUR 605 million compared to EUR 496 million in 2018. The increase is thanks to a recovery of the Fertilizer business within the fertilizer, melamine and technical nitrogen unit and due to a strong result in the Base Chemicals business segment compared to 2018, which was partially offset by a weaker polyolefins contribution.

### Return on Capital Employed (ROCE)

The return on capital employed after tax decreased to 11%, compared to 13% in 2018, mainly as a result of the reduced net profit, the higher CAPEX spent for the Growth projects as well as applying the new accounting Standard for lease contracts (IFRS 16).

### Financial Income and Expenses

Net financial expenses amounted to EUR 36 million, an increase from EUR 31 million in 2018, due to an increased debt position, unfavourable exchange rate effects and the application of the new leasing Standard (IFRS 16).

### Taxes

Income taxes amounted to EUR 82 million, a decrease of EUR 82 million from tax charges of EUR 164 million in 2018. The reduced overall tax charge in 2019 was mainly due to the agreement reached between the Finnish and Austrian tax authorities on two cases regarding the taxation of Borealis' Finnish subsidiaries Borealis Technology Oy and Borealis Polymers Oy. The dispute was resolved through a Mutual Agreement Procedure (MAP) between Finland and Austria which finally eliminates double taxation. Borealis paid income taxes of EUR 225 million in 2019, compared with EUR 154 million in 2018.

### Net Profit and Distribution of Dividend

The net profit for the year amounted to EUR 872 million, compared to a net profit of EUR 906 million in 2018. During 2019, Borealis distributed a dividend of EUR 825 million to its shareholders, EUR 525 million for 2018 and EUR 300 million as interim dividend for 2019.

## Financial Position

### Total Assets/Capital Employed

At year-end, total assets and capital employed stood at EUR 10,118 million and EUR 8,110 million, respectively, compared to EUR 9,949 million and EUR 7,814 million at the end of 2018.

The solvency ratio was 63% at year-end 2019, compared to 64% at year-end 2018. The gearing ratio increased to 24% at year-end 2019, compared to 20% in 2018, as a result of the increased net debt not fully compensated by an increased total equity.

### Cash Flows and Liquidity Reserves

Cash flow from operations was EUR 873 million, driven by solid operating profitability. Liquidity reserves, composed of undrawn, long-term committed credit facilities and cash balances, amounted to EUR 1,214 million at year-end 2019, compared to EUR 1,072 million at year-end 2018. Net interest-bearing debt increased to EUR 1,546 million at year-end, up from EUR 1,305 million at the end of 2018. The change in net interest-bearing debt is analysed in the following table.

| EUR million | 2019 | 2018 |
|---|---|---|
| **Change of net interest-bearing debt** | | |
| Cash flow provided by operating activities | 873 | 517 |
| Capital expenditure | -471 | -420 |
| Capital contributions to and financing of associated companies and joint ventures | -85 | -94 |
| Loans granted to third parties | -156 | 0 |
| Dividends of associated companies | 651 | 573 |
| Acquisitions of subsidiaries net of cash | 0 | -28 |
| Acquisitions of associated companies | 0 | -86 |
| Proceeds from sale of shares in joint ventures | 22 | 0 |
| Proceeds from sale of intangible assets | 0 | 33 |
| Other (mainly relating to foreign exchange differences) | 1 | -10 |
| Dividends paid to equity holders and non-controlling interest | -826 | -1,000 |
| Additions lease liabilities | -250 | 0 |
| **Total change** | **-241** | **-515** |

### Capital Expenditure

Investments in property, plant and equipment amounted to EUR 376 million in 2019, compared to EUR 326 million in 2018. The largest portion of the total investment relates to the new, world-scale propane dehydrogenation (PDH) plant in Kallo, Belgium, the upgrade and revamp of four cracker furnaces in Stenungsund, Sweden, the debottlenecking of a PP-plant in Kallo, Belgium, and an investment into a new Naphtha cavern in Porvoo, Finland. Health, Safety and Environment (HSE) capital expenditure amounted to EUR 43 million, compared to EUR 34 million in 2018. Depreciation and amortisation amounted to EUR 427 million, compared to EUR 457 million in 2018.

### Shareholders' Equity

The shareholders' equity at year-end 2019 was EUR 6,445 million.

| EUR million | 2019 | 2018 |
|---|---|---|
| **Equity development** | | |
| Net result attributable to the parent | 873 | 907 |
| Exchange and fair value adjustment (net) | -22 | 154 |
| Gross increase/decrease | 851 | 1,061 |
| Dividends paid | -825 | -1,000 |
| Reclassification of cash flow hedges to balance sheet | -2 | -13 |
| Net increase/decrease | 24 | 48 |
| Opening equity | 6,421 | 6,365 |
| Adjustments on initial application of IFRS 9 | 0 | 8 |
| **Ending equity** | **6,445** | **6,421** |

## Risk Management

Borealis has a documented risk management process ensuring that all parts of the Group routinely identify and assess their risks, and develop and implement appropriate mitigation actions. Risk management contributes to achieving the Company's long-term strategies and short-term goals. Borealis believes that an effective risk culture makes it harder for an outlier, be it an event or an offender, to put the Company at risk.

The Company's overall risk landscape is periodically consolidated, reported and reviewed. While the risks discussed below exemplify the Company's risks, the list is not exhaustive. Borealis distinguishes between the following risk categories.

Strategic & reputational risks are those that may severely impact Borealis' strategy or reputation. Often, strategic risks are related to unfavourable long-term developments, such as market or industry developments, technology, innovation, a change in the competitive environment, or a threat to the reputation of the Group.

Operational & tactical risks usually refer to unfavourable and unexpected short-term or mid-term developments, and include all risks that may have a direct impact on the Group's daily business operations. All operational risks are assessed according to documented guidelines and procedures that are administered by the respective business functions. A pro-active risk prevention management approach has been implemented in the Operations function, covering risks

in the areas of Production, Health, Safety and Environment (HSE), Product Stewardship, Plant Availability and Quality. The risk management approach also safeguards the Responsible Care® approach towards risks in Operations. The standard risk management process includes a common risk matrix and risk registers, built bottom-up from plant level up to portfolio level, enabling a common risk rating system for the whole of Operations.

HSE risks are assessed according to the procedures and framework described in the Borealis Risk-based Inspection Manual. The Director HSE is responsible for managing all HSE-related risks and reports the Borealis HSE risk landscape to the Executive Board periodically.

Project-related risks are assessed in the Borealis project approval process. The applicable key risks related to an individual project are assessed. These include financial, market, technical, legal, patent infringement, strategic, operational, country-related, and political factors. The risk assessment also reflects the probability of project completion within the estimated time frame and forecasted resource requirements, and the likelihood that key project objectives will be achieved. Project-related risks are managed by the Project Manager and reported to the Project Steering Committee.

Financial & market risks may refer to risks arising from unexpected changes in market supply, demand, price of commodity, services or financing costs, for instance. Risks arise from liquidity, interest rates, foreign exchange rates, credit, commodity prices, and insurance, the inability of a counterparty to meet a payment or delivery commitment but also extend to incorrect assumptions or the inappropriate application of a model, for instance. The assessment of financial risk management is described in detail in note 17 of the consolidated financial statements. The Director Treasury & Funding and the General Counsel shall be responsible for reporting and coordinating the management of all financial risks.

Compliance Risks focus on legal and regulatory risks, code of conduct (ethics policy), standards as well as contracting compliance. Doing business in an ethical manner is vital to Borealis' good reputation and continued success. Tactical or generic risks are risks identified as part of standards or compliance. These risks relate mainly to processes or control weaknesses.

Information security risks relate to the confidentiality, integrity and availability of critical company information. The Director IT and the General Counsel support line managers with the assessment of information security risk, and the development and implementation of risk mitigation actions.

The Executive Board periodically reviews the Group's key risks, defines the Group's risk tolerance levels, monitors the implementation of mitigation actions, and reports the key risks and mitigation steps to the Supervisory Board. The Executive Board safeguards the integration of risk assessment in its strategic planning.

The Supervisory Board is responsible for reviewing the effectiveness of Borealis' risk management practices and processes, risk appetite / tolerance levels, risk exposure of the Group, and the effectiveness of mitigation actions. The Supervisory Board delegates some of these responsibilities to the Audit Committee, which is a sub-committee of the Supervisory Board.

All Borealis employees are responsible for managing risk, within their authority and in their field of work, in order to ensure that risk management is properly embedded in the organisation and reflected in the daily decision-making processes.

### Greater Energy Efficiency

In 2019, Borealis extended its initial ambition under the Borealis Energy Roadmap 2020 to improve energy efficiency by 10% (equivalent to 2,400 GWh) in 2020 versus the reference year 2015. The enhanced target is to double the energy efficiency reduction by 2030, meaning an increase in energy efficiency by 20% by 2030.

Having implemented ISO 50001 in 2018, Borealis will use this international energy management Standard as the foundation for achieving its energy efficiency targets. Borealis will therefore implement tools to operate its plants in the most efficient way, continuously optimise plant design and monitoring, and implement new technologies to optimise energy efficiency. Furthermore, industrial clusters will be used to seek further energy integration.

### Changes to the Supervisory Board

Effective as of 3 July 2019, Thomas Gangl, member of the Executive Board at OMV, was appointed Supervisory Board member, succeeding Manfred Leitner.

### Following up on the 2019 Borealis People Survey

The Borealis People Survey is a very important instrument for enabling employee feedback. Among other things, it measures levels of employee engagement, and compares these to other companies in the chemical sector and beyond. The response rate to the 2019 survey, which was sent to employees in the fall of 2019, was 85%. This rate is excellent and a slight improvement over the previous survey cycle. The results will be reviewed in detail and translated into tangible "People Actions" in the first quarter of 2020.

### Economic Development and Outlook

Management expects that the weaker market environment will last into 2020. Building on the strong foundation established over recent years, an improved operational reliability, and its well-established commercial excellence mind-set, Borealis will implement the new Group Strategy 2035, which will further improve the long-term competitiveness and the growth of the Company. With European polyolefin prices coming under pressure, a declining contribution from the Polyolefins business is expected, while the profit contribution from Borouge to Borealis is expected to remain at the same level as in 2019. In the fertilizer segment, a continuation of the recovery of the market environment in 2020 is expected. Borealis' management believes that the Company is in a strong position to take advantage of the opportunities that the current economic and market environments provide by maintaining their commitment to being the leading provider of sustainable chemical and innovative plastic solutions that create value for society.

### Other Information

In accordance with section 267a (6) of the Austrian Commercial Code ("UGB"), Borealis prepares a separate consolidated non-financial report.

| | | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|
| **Health, Safety & Environment** | | | | | | |
| Total Recordable Injuries | number/million workhours | 1.6 | 1.3 | 1.1 | 0.9 | 1.4 |
| EU ETS $CO_2$ emissions | kilotonnes | 4,625 | 4,302 | 4,210 | 4,600 | 4,270 |
| Number of employees (full-time equivalent) | | 6,869 | 6,834 | 6,619 | 6,494 | 6,266 |
| Flaring performance [1] | tonnes | 27,619 | 26,273 | 51,620 | 38,740 | 47,687 |
| **Income and profitability** | | | | | | |
| Net sales | EUR million | 8,103 | 8,337 | 7,564 | 7,218 | 7,700 |
| Operating profit | EUR million | 605 | 496 | 791 | 938 | 718 |
| Operating profit as percentage of net sales | % | 7 | 6 | 10 | 13 | 9 |
| Net profit | EUR million | 872 | 906 | 1,095 | 1,107 | 988 |
| Return on capital employed, net after tax | % | 11 | 13 | 15 | 16 | 15 |
| **Cash flow and investments** | | | | | | |
| Cash flow from operating activities | EUR million | 873 | 517 | 725 | 1,145 | 1,103 |
| Investments in property, plant and equipment | EUR million | 376 | 326 | 453 | 333 | 336 |
| Cash and cash equivalents | EUR million | 106 | 72 | 229 | 762 | 548 |
| **Financial position** | | | | | | |
| Balance Sheet total | EUR million | 10,118 | 9,949 | 9,395 | 9,932 | 9,261 |
| Net interest-bearing debt | EUR million | 1,546 | 1,305 | 790 | 651 | 1,096 |
| Equity attributable to owners of the parent | EUR million | 6,445 | 6,421 | 6,365 | 6,496 | 5,697 |
| Gearing | % | 24 | 20 | 12 | 10 | 19 |

1) Values from 2015–2018 have been adjusted to display exact values.

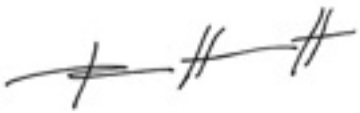
| **Definitions** | |
|---|---|
| **Capital employed** | Total assets less non-interest-bearing debt |
| **Return on capital employed** | Operating profit, profit and loss from sale of operations, net result of associated companies plus interest income, after imputed tax, divided by average capital employed |
| **Solvency ratio** | Total equity less goodwill divided by total assets |
| **Gearing ratio** | Interest-bearing debt, less cash and cash equivalents divided by total equity |
| **HSE** | Health, Safety and Environment |

Vienna, 19 February 2020
**Executive Board:**

**Alfred Stern**
Chief Executive

**Mark Tonkens**
Chief Financial Officer

**Martijn Arjen van Koten**



**Philippe Roodhooft**

**Lucrèce De Ridder**

# Consolidated Financial Statements

## Consolidated Income Statement

| EUR thousand | 2019 | 2018 | Note |
|---|---|---|---|
| **Net sales** | **8,102,872** | **8,337,127** | 1, 2 |
| Production costs | -6,387,617 | -6,806,867 | 6, 7, 13, 14 |
| **Gross profit** | **1,715,255** | **1,530,260** | |
| Sales and distribution costs | -717,138 | -703,723 | 6, 7, 13, 14 |
| Administration costs | -249,469 | -226,284 | 6, 7, 13, 14 |
| R&D costs | -144,616 | -127,699 | 3, 6, 7, 13, 14 |
| Other income | 500 | 23,374 | 29 |
| **Operating profit** | **604,532** | **495,928** | |
| Net results of associated companies and joint ventures after tax | 385,748 | 605,760 | 8 |
| Financial income | 25,342 | 9,372 | 18 |
| Financial expenses | -61,778 | -40,841 | 18 |
| **Profit before taxation** | **953,844** | **1,070,219** | |
| Taxes on income | -81,845 | -164,034 | 10 |
| **Net profit for the year** | **871,999** | **906,185** | |
| Attributable to: | | | |
| Non-controlling interest | -1,419 | -1,233 | |
| Equity holders of the parent | 873,418 | 907,418 | |

## Consolidated Statement of Comprehensive Income

| EUR thousand | 2019 | 2018 | Note |
|---|---|---|---|
| **Net profit for the year** | **871,999** | **906,185** | |
| **Items that may be reclassified subsequently to the income statement** | | | |
| Net gain/loss on translation of financial statements of foreign operations | 65,891 | 131,226 | |
| Reclassifications during the period to the income statement | 0 | 0 | |
| Tax effect recognised in other comprehensive income | 0 | 0 | |
| Net gain/loss on long-term loans to foreign operations | -3,398 | -8,210 | 19 |
| Reclassifications during the period to the income statement | 0 | 0 | 19 |
| Tax effect recognised in other comprehensive income | 849 | 2,056 | |
| Net gain/loss on loans to hedge investments in foreign operations | -2,735 | -8,079 | 19, 22, 23 |
| Reclassifications during the period to the income statement | 0 | 0 | 19, 22, 23 |
| Tax effect recognised in other comprehensive income | 683 | 2,020 | |
| Fair value adjustments of cash flow hedges | -53,512 | 81,703 | 19, 22, 23, 24, 25 |
| Reclassifications during the period to the income statement | -1,829 | -38,888 | 19, 22, 23, 24, 25 |
| Tax effect recognised in other comprehensive income | 13,836 | -10,704 | |
| **Items that will not be reclassified to the income statement** | | | |
| Actuarial gains and losses | -56,060 | 3,284 | 14 |
| Tax effect recognised in other comprehensive income | 13,528 | -1,680 | |
| **Net income/expense recognised in other comprehensive income** | **-22,747** | **152,728** | |
| **Total comprehensive income** | **849,252** | **1,058,913** | |
| Attributable to: | | | |
| Non-controlling interest | -1,595 | -2,085 | |
| Equity holders of the parent | 850,847 | 1,060,998 | |

## Consolidated Balance Sheet

| EUR thousand | 31.12.2019 | 31.12.2018 | Note |
|---|---|---|---|
| **Assets** | | | |
| **Non-current assets** | | | |
| Intangible assets | 522,208 | 418,314 | 3, 4 |
| Property, plant and equipment | | | 5 |
| Production plants | 2,515,431 | 2,596,705 | |
| Machinery and equipment | 34,742 | 33,058 | |
| Construction in progress | 391,257 | 256,790 | |
| | 2,941,430 | 2,886,553 | |
| Right-of-use assets | 210,022 | 0 | 6 |
| Investments in associated companies and joint ventures | 3,631,061 | 3,755,171 | 8 |
| Other investments | 31,692 | 29,984 | 9, 28 |
| Other receivables and other assets | 294,831 | 153,401 | 2, 9, 27, 28 |
| Deferred tax assets | 59,377 | 46,737 | 10 |
| **Total non-current assets** | **7,690,621** | **7,290,160** | |
| **Current assets** | | | |
| Inventories | 1,109,438 | 1,198,362 | 11 |
| Receivables | | | |
| Trade receivables | 749,888 | 768,256 | 26, 27, 28, 30 |
| Income taxes | 153,230 | 66,628 | |
| Other receivables and other assets | 308,837 | 552,903 | 27, 28 |
| Total receivables and other assets | 1,211,955 | 1,387,787 | |
| Cash and cash equivalents | 106,273 | 72,347 | 28 |
| **Total current assets** | **2,427,666** | **2,658,496** | |
| **Total assets** | **10,118,287** | **9,948,656** | |

## Consolidated Balance Sheet

| EUR thousand | 31.12.2019 | 31.12.2018 | Note |
|---|---|---|---|
| **Total equity and liabilities** | | | |
| **Shareholders' equity** | | | |
| Share capital and contributions by shareholders | 1,599,397 | 1,599,397 | 12 |
| Reserves | 22,791 | 47,349 | |
| Retained earnings | 4,823,040 | 4,774,622 | |
| Shareholders' equity | 6,445,228 | 6,421,368 | |
| Non-controlling interest | 12,524 | 14,740 | |
| **Total equity** | **6,457,752** | **6,436,108** | |
| **Liabilities** | | | |
| Non-current liabilities | | | |
| Loans and borrowings | 1,211,886 | 726,478 | 20, 21, 28 |
| Lease liabilities | 172,371 | 0 | 6, 20 |
| Deferred tax liabilities | 216,548 | 238,093 | 10 |
| Employee benefits | 474,776 | 426,404 | 14 |
| Provisions | 61,222 | 67,653 | 15 |
| Government grants | 18,684 | 18,474 | 16 |
| Other liabilities | 13,923 | 12,548 | 21, 28 |
| **Non-current liabilities** | **2,169,410** | **1,489,650** | |
| Current liabilities | | | |
| Loans and borrowings | 229,603 | 651,145 | 20, 21, 28 |
| Lease liabilities | 38,513 | 0 | 6, 20 |
| Trade payables | 746,527 | 852,525 | 21, 28, 30 |
| Income taxes | 39,131 | 94,871 | |
| Provisions | 3,481 | 4,123 | 15 |
| Government grants | 566 | 0 | 16 |
| Contract liabilities | 41,789 | 41,485 | 2 |
| Other liabilities | 391,515 | 378,749 | 21, 28 |
| **Current liabilities** | **1,491,125** | **2,022,898** | |
| **Total liabilities** | **3,660,535** | **3,512,548** | |
| **Total equity and liabilities** | **10,118,287** | **9,948,656** | |

## Consolidated Statement of Changes in Equity

| EUR thousand | Share capital [1] and contri-butions by share-holders | Reserve for actuarial gains/losses recognised in equity | Hedging reserve | Reserve for unrealised exchange gains/losses | Retained earnings | Total attributable to the equity holders of the parent | Non-controlling interest | Total equity |
|---|---|---|---|---|---|---|---|---|
| **Balance as of 1 January 2018** | **1,599,397** | **-219,832** | **25,709** | **100,873** | **4,867,204** | **6,373,351** | **16,825** | **6,390,176** |
| Net profit for the year | 0 | 0 | 0 | 0 | 907,418 | **907,418** | -1,233 | **906,185** |
| Other comprehensive income | 0 | 1,604 | 32,111 | 119,865 | 0 | **153,580** | -852 | **152,728** |
| Total comprehensive income | 0 | 1,604 | 32,111 | 119,865 | 907,418 | **1,060,998** | -2,085 | **1,058,913** |
| Dividend payments | 0 | 0 | 0 | 0 | -1,000,000 | **-1,000,000** | 0 | **-1,000,000** |
| Reclassifications of cash flow hedges to balance sheet | 0 | 0 | -12,981 | 0 | 0 | **-12,981** | 0 | **-12,981** |
| **Balance as of 31 December 2018** | **1,599,397** | **-218,228** | **44,839** | **220,738** | **4,774,622** | **6,421,368** | **14,740** | **6,436,108** |
| Net profit for the year | 0 | 0 | 0 | 0 | 873,418 | **873,418** | -1,419 | **871,999** |
| Other comprehensive income | 0 | -42,532 | -41,505 | 61,466 | 0 | **-22,571** | -176 | **-22,747** |
| Total comprehensive income | 0 | -42,532 | -41,505 | 61,466 | 873,418 | **850,847** | -1,595 | **849,252** |
| Dividend payments | 0 | 0 | 0 | 0 | -825,000 | **-825,000** | -621 | **-825,621** |
| Reclassifications of cash flow hedges to balance sheet | 0 | 0 | -1,987 | 0 | 0 | **-1,987** | 0 | **-1,987** |
| **Balance as of 31 December 2019** | **1,599,397** | **-260,760** | **1,347** | **282,204** | **4,823,040** | **6,445,228** | **12,524** | **6,457,752** |

1) Share capital of Borealis AG (parent company) amounts to EUR 300,000.00 (EUR 300,000.00)

A dividend of EUR 525,000 thousand was paid in 2019 out of the result of the year 2018.
Furthermore, an amount of EUR 300,000 thousand was paid in 2019 as interim dividend for the fiscal year 2019.

## Consolidated Cash Flow

| EUR thousand | 2019 | 2018 | Note |
|---|---|---|---|
| **Cash flows from operating activities** | | | |
| Payments from customers | 8,167,211 | 8,221,622 | |
| Payments to employees and suppliers | -7,022,044 | -7,507,450 | |
| Interest received | 10,256 | 1,516 | 18 |
| Interest paid | -40,396 | -35,693 | 18 |
| Other financial expenses paid | -16,886 | -8,448 | 18 |
| Income taxes paid | -224,980 | -154,072 | 10 |
| | **873,161** | **517,475** | |
| **Cash flows from investing activities** | | | |
| Investments in property, plant and equipment | -375,754 | -326,297 | 5 |
| Investments in intangible assets | -94,975 | -93,793 | 4 |
| Acquisitions of subsidiaries net of cash | 0 | -27,758 | |
| Earn-out payments | -1,500 | -4,000 | 28 |
| Investments in other financial investments | -653 | 0 | |
| Acquisitions of associated companies | 0 | -86,460 | 8 |
| Dividends of associated companies | 651,104 | 573,073 | 8 |
| Capital contributions to and financing of associated companies and joint ventures | -85,232 | -93,848 | 8 |
| Loans granted to third parties | -155,801 | 0 | 9 |
| Proceeds from sale of shares in joint ventures | 21,529 | 0 | 8 |
| Proceeds from sale of intangible assets | 0 | 33,397 | |
| | **-41,282** | **-25,686** | |
| **Cash flows from financing activities** | | | |
| Non-current loans and borrowings obtained | 590,435 | 300,628 | 20 |
| Current loans and borrowings obtained | 244,832 | 425,912 | 20 |
| Current loans and borrowings repaid | -768,874 | -374,601 | 20 |
| Principal elements of lease payments | -38,703 | 0 | 6 |
| Dividends paid to equity holders of the parent | -825,000 | -1,000,000 | |
| Dividends paid to non-controlling interest | -621 | 0 | |
| | **-797,933** | **-648,062** | |
| **Net cash flow of the period** | **33,947** | **-156,273** | |
| Cash and cash equivalents as of 1 January | 72,347 | 229,062 | |
| Effect of exchange rate fluctuations on cash held | -21 | -442 | |
| **Cash and cash equivalents as of 31 December** | **106,273** | **72,347** | |

# Notes to the Consolidated Financial Statements

## Reporting Entity

Borealis AG (the Company or Group) is a company domiciled in Austria. The address of the Company's registered office is Wagramer Strasse 17–19, 1220 Vienna, Austria. Borealis is a leading provider of chemical and innovative plastics solutions.

Borealis reports the Business result in 3 segments:
In the Polyolefins segment Borealis focuses on the application areas Automotive, Energy, Consumer Products, Pipe, Advanced Products, New Business Development and Circular Economy Solutions.

Base Chemicals includes essentially the following product ranges: Phenol, Acetone, Ethylene and Propylene.

The third segment is "Borealis NITRO" consisting of: Fertilizers, Melamine and Technical Nitrogen Products.

## Statement of Compliance

The consolidated financial statements have been prepared in compliance with the International Financial Reporting Standards issued by the IASB as adopted by the EU and additional Austrian disclosure requirements. The consolidated financial statements were authorised for issuance by the Executive Board on 19 February 2020.

## Basis of Preparation

The consolidated financial statements are presented in thousand euro (EUR thousand), rounded to the nearest thousand, hence rounding differences may arise. The consolidated financial statements are prepared on the historical cost basis except for the following assets and liabilities, which are stated at their fair value: derivative financial instruments and financial assets at fair value through profit or loss (FVPL). Recognised assets and liabilities that are hedged are stated at fair value in respect of the risk that is being hedged.

## Consolidation Principles

The consolidated financial statements include the financial statements of Borealis AG, the parent company, and all the companies over which it has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Companies in which the Group has significant influence (interest of 20% or more) but no control nor joint control are considered associated companies. A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

The consolidated financial statements are based on audited financial statements of the parent company and of each individual subsidiary. The consolidated financial statements have all been prepared in accordance with the Group's accounting policies. Items of a similar nature have been combined. Intra-group transactions (revenues and costs), intra-group profits, internal shareholdings, and intra-group balances have been eliminated.

Acquired subsidiaries, associated companies and joint ventures are included in the consolidated financial statements from the date of control or significant influence, respectively, and until control or significant influence ceases. A remeasurement of the acquired net assets is made at the date of acquisition. Any remaining positive difference between the fair value of the assets and liabilities and the purchase consideration is capitalised as goodwill and subject to an annual impairment test. Any gain from a bargain purchase is recognised in the income statement. Investments in associated companies and investments in joint ventures are recorded under the equity method in the consolidated financial statements.

## Significant Accounting Judgements, Estimates and Assumptions

The preparation of the Group's consolidated financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, at the end of the reporting period. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods. The judgements, estimates and assumptions relate mainly to the useful life and impairment of intangible assets and property, plant and equipment (note 4 and note 5), determination of lease liabilities (note 6), value of tax assets and liabilities and unused tax losses (note 10), inventory impairment (note 11),

actuarial assumptions for employee benefits (note 14), future cash-outflows for provisions (note 15), allowance for impairment in respect of trade receivables (note 27) and are included in the description of the respective note to the position.

## Foreign Currency

### Transactions and Balances

Monetary assets and liabilities denominated in foreign currencies have been translated into euro (EUR) at the exchange rates quoted on the reporting date. Non-monetary items that are measured at historical cost in a foreign currency are translated using the exchange rate as at the date of transaction.

All foreign exchange related gains and losses, both realised and unrealised, are recorded as financial items in the income statement. However, the exchange adjustments arising from the following items are recognised in other comprehensive income: conversion of the net assets of foreign subsidiaries and associated companies as of 1 January using the closing rate on 31 December, translation of long-term intra-group receivables that are considered part of investments in subsidiaries or associated companies, conversion of long-term loans hedging net assets of foreign subsidiaries and associated companies or intra-group receivables considered part of investments in subsidiaries and associated companies, and conversion of the net income of foreign subsidiaries calculated at monthly rates to figures converted using the exchange rates applicable at the reporting date.

### Group Companies

Consolidated financial statements are presented in euro (EUR), the functional currency of the parent.

Financial statements of foreign subsidiaries in functional currencies other than EUR have been translated at the exchange rates quoted on the reporting date for assets and liabilities. The income statements of foreign subsidiaries have been translated on the basis of monthly exchange rates. The exchange differences arising from the translation are recognised in other comprehensive income.

## Summary of Significant Accounting Policies

### Income Statement

Revenue Recognition

Borealis' main business model is to produce, market and sell various goods (polyolefins, base chemicals) to its customers. Each sale typically includes an obligation to deliver one particular good. No bundling of various goods in one contract currently exists and price is not interdependent with prices in other contracts, delivery of other goods or promises. In case of additional services provided as part of the contract that typically do not meet the requirements of a separate performance obligation in accordance with IFRS 15, no allocation of the transaction price to multiple performance obligations is necessary.

Revenue is recognised when control of the products has been transferred, being when the products are delivered to the customer. All Borealis contracts for delivery of the goods include Incoterms, like DDP, CIF or FCA, which govern change of the control of the goods. This will be the point of revenue recognition by Borealis. Payment is generally due up to 90 days from delivery.

For some contracts, variable considerations are being agreed, typically volume discounts for goods purchased during the particular period, i.e. one year. Borealis estimates the expected discount regularly based on the best available data supported by a large number of similar contracts and historical information.

Generally, Borealis does not expect to have any contracts where the period between the transfer of the promised goods to the customer and payment by the customer exceeds one year. Consequently, Borealis does not adjust the promised amount of consideration for the effects of a significant financing component.

The Group typically provides warranties for general repairs of defects that existed at the time of sale, as required by law. These assurance-type warranties are accounted for under IAS 37 Provisions, Contingent Liabilities and Contingent Assets. No other warranties or rights to return are offered by Borealis.

Net sales comprise revenue from contracts with customers and revenue from other sources arising in the course of the ordinary activities of the Group, excluding value-added tax and after deduction of goods returned, discounts and allowances.

The Group recognises contract liabilities for consideration received in respect of unsatisfied performance obligations. If the Group satisfies a performance obligation before it

receives the consideration, the Group recognises a contract asset or a receivable in its statement of financial position, depending on whether something other than the passage of time is required before the consideration is due.

Research and Development
Research costs are charged to the income statement in the year they have been incurred.

Development costs relating to a definable product or process that is demonstrated to be technically and commercially feasible are recognised as an intangible asset to the extent that such costs are expected to be recovered from future economic benefits. The expenditure capitalised includes the costs of materials, direct labour and an appropriate proportion of direct overheads.

Other development costs not meeting these criteria are recognised in the income statement as an expense when incurred.

Results from Associated Companies and Joint Ventures
The proportionate share of the net profit or loss after or before tax, as appropriate, of these companies is included in the consolidated income statement.

Financial Income/Expenses
Interest income and expenses are included in the income statement using the effective interest rate with the amounts relating to the financial year.

Financial income/expenses also include borrowing costs, costs incurred on finance leases, realised and unrealised gains and losses from exchange and price adjustments of financial instruments, investments and items in foreign currencies.

Taxes on Income
The income tax charged to the income statement comprises expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the reporting date, adjusted for the change in deferred tax assets and liabilities for the year and for any tax payable in respect of previous years. Income tax that relates to items recognised in other comprehensive income is recognised in other comprehensive income as well.

## Balance Sheet

Intangible Assets
Intangible assets are stated at cost, less accumulated amortisation and impairment losses.

Goodwill arising from an acquisition represents the excess of the purchase consideration over the fair value of the net identifiable assets acquired. Goodwill is not amortised but is subject to an annual impairment test.

Licences and patents acquired externally are stated at cost, less accumulated amortisation and impairment losses. Amortisation is calculated according to the straight-line method based on an estimated useful life of 3–10 years.

Capitalised development costs are stated at cost, less accumulated amortisation and impairment losses. Amortisation is charged to the income statement on a straight-line basis over the expected useful life of the asset of 3–10 years. Development costs not yet amortised are subject to an annual impairment test.

Costs to purchase and develop software for internal use are capitalised and amortised on a straight-line basis over 3–7 years.

Emission rights are reported as intangible assets. They are measured at cost, if purchased in the market, or at fair value, if received through government grants. A liability to return emission rights for actual emissions made is recognised as well.

Property, Plant and Equipment
Property, plant and equipment is valued at cost, less accumulated depreciation and impairment losses. Cost comprises purchase price, site preparation and installation. Day-to-day servicing expenses are not included in the cost of the assets. If certain conditions are met, the costs of major inspections and overhauls are recognised in the carrying amount of the property, plant and equipment.

Production plants include land, buildings, related non-movable machinery and equipment. Until 31 December 2018, assets held under leases were also included. Machinery and equipment are recognised at purchase price and any directly attributable costs.

Depreciation is made on a straight-line basis over the expected useful life of the components of the assets. The useful lives of major assets are determined individually, while the lives of other assets are in respect of groups of uniform assets. Land is not depreciated. Buildings are depreciated over 20–40 years, production facilities over 15–20 years, and machinery and equipment over 3–15 years.

Until 31 December 2018, the determination of whether an arrangement was or contained a lease was based on the substance of the arrangement and classified to operating and finance lease in accordance with IAS 17. Assets leased under finance leases were recognised in the balance sheet and depreciated over the shorter of the lease period or useful life. The cost of assets leased under finance leases were stated at the lower of fair value and the present value of the future minimum lease payments at the time of acquisition. From 1 January 2019, the Group assesses whether an arrangement is, or contains, a lease according to IFRS 16. Related right-of-use assets are presented in a separate Balance Sheet line item (see below section "Leases").

The present value of the expected cost for the decommissioning of the asset after its use is included in the cost of the respective asset if the recognition criteria for a provision are met. The estimated future costs of decommissioning are reviewed annually and adjusted as appropriate. Changes in the estimated future costs or in the discount rate applied are added to or deducted from the cost of the asset. Borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset are capitalised as part of the cost of that asset.

Impairment Losses

The carrying amounts of both property, plant and equipment and intangible assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, and for annual impairment tests of goodwill and intangible assets with an indefinite useful life, the asset's recoverable amount is estimated as the greater of net selling price and value in use. An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in the income statement.

Leases

Until the end of the financial year 2018, leases of property, plant and equipment were classified as either finance or operating leases. Payments made under operating leases (net of any incentives received from the lessor) were charged to profit or loss on a straight-line basis over the period of the lease.

From 1 January 2019, leases are recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is split between the liability and finance cost. The finance cost is charged to profit or loss over the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis.

Liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable;
- variable lease payments that are based on an index or a rate;
- amounts expected to be payable by the lessee under residual value guarantees, if any;
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option; and
- payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

Lease payments to be made under reasonably certain extension options are also included in the measurement of the liability.

Moreover, non-lease components are separated from the lease components for measurement of right-of-use assets and lease liabilities.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, which is generally the case for leases in the Group, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

The Group determines its incremental borrowing rate by obtaining interest rates from external financing sources and makes certain adjustments (to reflect the terms of the lease and the credit-worthiness of the Company, amongst others).

Right-of-use assets are initially measured at cost comprising the following:
– the amount of the initial measurement of the lease liability;
– any lease payments made at or before the commencement date, less any lease incentives received;
– any initial direct costs; and
– costs, if any, of restoring the asset at the end of the lease term to the condition required by the terms and conditions of the lease.

After the commencement date, the right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term using a linear method of depreciation. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life.

Payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise office and IT-equipment, textiles or smaller containers.

Non-current Assets Held for Sale and Discontinued Operations
Non-current assets (or disposal groups comprising assets and liabilities) that are expected to be recovered primarily through sale rather than through continuing use are classified as held for sale. Prior to classification as held for sale, the assets (or components of a disposal group) are re-measured in accordance with IFRS 5. Thereafter, generally the assets (or disposal group) are measured at the lower of their carrying amount and fair value, less cost to sell. Any impairment loss on a disposal group is first allocated to goodwill, and then to remaining assets and liabilities on a pro rata basis, no loss is allocated to inventories, financial assets, deferred tax assets and employee benefit assets, which continue to be measured in accordance with the Group's accounting policies. Impairment losses on initial classification as held for sale and subsequent gains or losses on re-measurement are recognised in the income statement. Gains are not recognised in excess of any cumulative impairment loss.

Associated Companies and Joint Ventures
Associated companies and joint ventures are accounted for using the equity method. The consolidated financial statements include the Group's share of the comprehensive income of equity accounted investees.

Cash and Cash Equivalents
Cash and cash equivalents comprise cash in bank and liquid short-term deposits.

Inventories
Raw materials, work in progress and finished goods are stated at the lower of cost and net realisable value. Costs incurred are based on the first in, first out principle (FIFO method), and comprise direct materials, direct labour and an appropriate proportion of variable and fixed overhead expenditure, the latter being allocated on the basis of normal operating capacity. Cost includes the reclassification from equity of any gains or losses on qualifying cash flow hedges relating to purchases of raw material but excludes borrowing costs. Costs are assigned to individual items of inventory on the basis of weighted average costs. Costs of purchased inventory are determined after deducting rebates and discounts. The net realisable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale. Measurement of spare parts is based on the weighted average cost method.

Government Grants
Government grants include grants for research and development as well as investment grants. Investment grants are recognised in the balance sheet as non-current liabilities and recognised as income over the useful life of the asset. Other grants are recognised in the income statement without offsetting the related cost.

Provisions
A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation against

third parties that can be estimated reliably and if it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions reflect the present value of future cash outflows. The cash flows are discounted at a current pre-tax rate that reflects the risks specific to the liability. The unwinding of the discount is expensed as incurred and recognised in the income statement as finance cost.

Deferred Tax

Deferred tax assets and liabilities are computed individually for each company in accordance with the balance sheet liability method, providing for temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for tax purposes. Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously. Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, based on the laws that have been enacted or substantively enacted at the reporting date.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available, against which the temporary differences and unused tax loss carryforwards can be utilised within a period of five years, based on a three year business plan and a long-term projection for further two years. Deferred tax assets are reviewed at each reporting date and are remeasured to the extent that is probable to be realised.

The uncertain tax positions, for example tax disputes, are accounted for by applying the most likely amount. The most likely amount is the single most likely amount in a range of realistically possible options. The Company evaluates the unit of account related to the uncertain tax positions on a case-by-case basis.

Reserves

A reserve has been established under the consolidated equity for unrealised exchange differences related to deferred foreign exchange gains and losses on intercompany loans, hedge loans and the equity of foreign operations. The hedging reserve contains fair value adjustments to financial instruments held for hedging purposes. The reserve for actuarial gains/losses recognised in equity contains the actuarial gains and losses on employee benefit plans.

Employee Benefits

Defined Contribution Plans

Obligations for contributions to defined contribution plans are recognised as an expense in the income statement as incurred.

For defined contribution plans, the Group pays contributions to publicly or privately administered pension insurance plans on a mandatory, contractual or voluntary basis. The Group has no further payment obligations once the contributions have been paid. The contributions are recognised as employee benefit expense when they are due. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

Defined Benefit Plans

The Group's net obligation in respect of defined benefit pension plans and other post-employment benefit plans is calculated separately for each plan by estimating the amount of future benefits that employees have earned in return for their service in the current and prior periods. The benefit is discounted to determine the present value of it, and the fair value of any plan assets is deducted. A qualified actuary, using the projected unit credit method, performed the calculation.

The discount rate used in the actuarial measurements is determined with a reference to long-term yields of AA-rated corporate bonds. In countries where no deep market for such bonds exists, market yield of government bonds is used.

The Group has the following plans in place: defined benefit pension plans, post-employment medical plans, severance plans and other long-term employee benefit plans. Pension plans in place are both funded and unfunded. The plan asset funds are kept predominantly in a form of insurance contracts.

The parameters of the pension promises vary from country to country; there are both plans open and closed to new entrants, contributory as well as non-contributory.

Post-employment medical plans cover the medical expenses mainly of retirees in Belgian companies. They are

non-contributory and closed to new entrants. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans.

Severance plans cover employees of Austrian companies who started their service before 1 January 2003. They are entitled to receive severance payments upon termination of their employment or on reaching their pension age.

Furthermore, the Group operates severance plans in France, Italy and the United Arab Emirates. The benefits depend on the years of service and remuneration level. These plans are non-contributory and unfunded.

Other long-term employee benefits include jubilee schemes and pre-pension benefits. Jubilee schemes entitle the members to benefits in the form of a payment and/or additional paid holiday when reaching a defined time of service. These plans are non-contributory and unfunded. All actuarial gains and losses relating to post-employment benefit plans are recognised in other comprehensive income. Actuarial gains and losses related to other long-term services are recognised in the income statement.

Past-service costs are recognised immediately in the income statement. Net interest expenses resulting from employee benefits are included in the consolidated income statement as part of the operating profit.

Fair Value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability, or in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible to the Group. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest. A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use. The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period. For the purpose of fair value disclosures, the Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained in note 28.

Financial Instruments

Recognition and Derecognition

Financial assets and financial liabilities are recognised on the trade date, when the Group becomes a party to the contractual provisions of the financial instrument. Financial assets are derecognised when the contractual rights to the cash flows from the financial asset expire, or when the financial asset and substantially all the risks and rewards are transferred. A financial liability is derecognised when it is extinguished, discharged, cancelled or expires.

Classification and Initial Measurement of Financial Assets

Financial assets are initially recognised at their fair value, except for those trade receivables that do not contain a significant financing component and are measured at the transaction price in accordance with IFRS 15. For all financial assets which are not subsequently measured at fair value, the fair value at initial recognition is adjusted for transaction costs (where applicable). Financial assets, other than those designated and effective as hedging instruments, are classified into the following categories:
– amortised cost
– fair value through profit or loss (FVPL)
– fair value through other comprehensive income (FVOCI).

In the periods presented, the Group does not have any financial assets categorised as FVOCI.

The classification is determined by both:
– the entity's business model for managing the financial asset;
– the contractual cash flow characteristics of the financial asset.

### Subsequent Measurement of Financial Assets

**Financial Assets at Amortised Cost**

Financial assets are measured at amortised cost if the assets meet the following conditions (and are not designated as FVPL):
– they are held within a business model whose objective is to hold the financial assets and collect their contractual cash flows;
– the contractual terms of the financial assets give rise to cash flows that are solely payments of principal and interest on the principal amount outstanding.

After initial recognition, these are measured at amortised cost using the effective interest rate method. Discounting is omitted where the effect of discounting is immaterial. The Group's cash and cash equivalents, trade receivables (except trade receivables under the factoring programme), part of other receivables fall into this category of financial instruments.

**Financial Assets at Fair Value through Profit or Loss (FVPL)**

Financial assets that are held within a different business model other than 'hold to collect' or 'hold to collect and sell' are categorised at fair value through profit or loss. Further, irrespective of the business model, financial assets whose contractual cash flows are not solely payments of principal and interest are accounted for at FVPL.

Derivative financial instruments for which hedge accounting is not applied fall into this category.

The Group has a pool of specifically designated trade receivables that are all subject to factoring. This pool of receivables represents a hold to sell business model and is measured using FVPL.

The category also contains equity investments. These equity investments consist mainly of fully-owned subsidiaries which are not consolidated on materiality basis. The Group accounts for these investments at FVPL and did not make the irrevocable election to account for the investments at fair value through other comprehensive income (FVOCI).

Certain investments in listed securities in Austria are measured at FVPL. The investments represent puttable shares, which are classified as a debt instrument. As such, puttable shares do not fulfil the solely payment of principal and interest (SPPI) criteria and have to be measured at FVPL.

Assets in this category are measured at fair value with gains or losses recognised in profit or loss. The fair values of financial assets in this category are determined by reference to active market transactions or using a valuation technique where no active market exists.

### Impairment of Financial Assets

The Group has three types of financial assets that are subject to IFRS 9's expected credit loss (ECL) model:
– trade receivables (excluding trade receivables held to sell) and contract assets;
– cash and cash equivalents;
– debt investments carried at amortised cost.

For the measurement of the ECLs a distinction is made between:
– financial instruments for which credit risk has not increased significantly since initial recognition ('Stage 1' – 12-month expected credit losses);
– financial instruments for which credit risk has increased significantly since initial recognition ('Stage 2' – lifetime expected credit losses).

'Stage 3' covers financial assets that have objective evidence of impairment at the reporting date (credit-impaired financial assets).

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Group expects to receive).

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument.

12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 months after the reporting date.

At each reporting date, the Group assesses whether financial assets carried at amortised cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable data:
– significant financial difficulty of the borrower or issuer;
– a breach of contract such as a default or being more than 180 days past due;
– it is probable that the borrower will enter bankruptcy or other financial reorganisation.

A financial asset is written off when there is no reasonable expectation of recovering the contractual cash flows, like bankruptcy.

#### Trade Receivables and Contract Assets

Trade Receivables and contract assets are impaired by using the simplified approach which does not distinguish between 12-month ECL and lifetime ECL but all assets are generally impaired using lifetime ECL. For trade receivables and contract assets, the Group distinguishes between trade receivables past due up to 180 days and trade receivables past due over 180 days. For trade receivables past due up to 180 days, the Group calculates ECLs by using a provision matrix. The provision matrix is based on an entity's historical default rates over the expected life of the trade receivables and is adjusted for forward-looking estimates. For instance, if forecast economic conditions (i.e. gross domestic product) are expected to deteriorate over the next year, which can lead to an increased number of defaults, the historical default rates will be adjusted. To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics (like geography or risk category) and the days past due. The Group uses one provision matrix based on days past due as there are no material differences by considering several provision matrices for diverse credit risk characteristics. Trade receivables overdue for more than 180 days are assessed individually and credit-impaired if necessary. See note 27 for further information on how credit risk is managed.

The identified impairment loss for contract assets was immaterial.

Loss allowances for trade receivables measured at amortised cost are deducted from the gross carrying amount of the assets and recognised in sales and distribution costs in the income statement.

#### Cash and Cash Equivalents

While cash and cash equivalents are also subject to the impairment requirements of IFRS 9, the identified impairment loss (based on the general approach) was immaterial.

#### Debt Investments Carried at Amortised Cost

The Group's debt investments at amortised cost are considered to have low credit risk, and the loss allowance recognised during the period was therefore limited to 12 months expected losses. Debt investments are considered to be low credit risk when they have a low risk of default and the counterparty has a strong capacity to meet its contractual cash flow obligations in the near term. On that basis, the identified impairment loss (ECL based on the general approach) was immaterial. If there is any objective evidence for an impairment, debt investments are impaired individually (credit-impaired). See note 27 for further information.

### Classification and Measurement of Financial Liabilities

Financial liabilities are initially measured at fair value, and, where applicable, adjusted for transaction costs unless the Group designated a financial liability at fair value through profit or loss. Subsequently, financial liabilities are measured at amortised cost using the effective interest method except for derivatives, which are carried at fair value with gains or losses recognised in profit or loss (other than derivative financial instruments that are designated and effective as hedging instruments).

All interest-related charges and, if applicable, changes in an instrument's fair value that are recognised in profit or loss are included within financial expenses or financial income.

The Group's financial liabilities include loans and borrowings, lease liabilities, trade payables and parts of other liabilities and derivative financial instruments.

### Derivatives and Hedging Activities

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured at their fair value at the end of each reporting period.

The accounting for subsequent changes in fair value depends on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged. The Group designates certain derivatives as either:

- hedges of the fair value of recognised assets or liabilities or a firm commitment (fair value hedges),
- hedges of a particular risk associated with the cash flows of recognised assets and liabilities and highly probable forecast transactions (cash flow hedges), or
- hedges of a net investment in a foreign operation (net investment hedges).

In the periods presented, the Group does not have any fair value hedges outstanding and no derivatives are considered as net investment hedges.

At inception of the hedge relationship, the Group documents the hedge relationship between hedging instruments and hedged items including whether changes in the cash flows of the hedging instruments are expected to offset changes in the cash flows of hedged items. The Group documents its risk management objective and strategy for undertaking its hedge transactions. A hedging relationship qualifies for hedge accounting only if all of the following hedge effectiveness requirements are met:

- there is an economic relationship between the hedged item and the hedging instrument;
- the effect of credit risk does not dominate the value changes that result from that economic relationship;
- the hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that the entity actually hedges and the quantity of the hedging instrument that the entity actually uses to hedge that quantity of the hedged item.

#### Cash Flow Hedging

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in OCI and accumulated in the hedging reserve. The effective portion of changes in the fair value of the derivative that is recognised in OCI is limited to the cumulative change in fair value of the hedged item, determined on a present value basis, from inception of the hedge. Any ineffective portion of changes in the fair value of the derivative is recognised immediately in profit or loss. The Group designates the full change in fair value of foreign exchange forward contracts as the hedging instrument in cash flow hedging relationships.

At the reporting date, Borealis has several foreign exchange forward contracts but no outstanding foreign exchange options.

When the hedged forecast transaction subsequently results in the recognition of a non-financial item such as inventory, the amount accumulated in the hedging reserve and the cost of hedging reserve is included directly in the initial cost of the non-financial item when it is recognised.

For all other hedged forecast transactions, the amount accumulated in the hedging reserve and the cost of hedging reserve is reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the hedge no longer meets the criteria for hedge accounting or the hedging instrument is sold, expires, is terminated or is exercised, then hedge accounting is discontinued prospectively. When hedge accounting for cash flow hedges is discontinued, the amount that has been accumulated in the hedging reserve remains in equity until, for a hedge of a transaction resulting in the recognition of a non-financial item, it is included in the non-financial item's cost on its initial recognition or, for other cash flow hedges, it is reclassified to profit or loss in the same period or periods as the hedged expected future cash flows affect profit or loss.

If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve are immediately reclassified to profit or loss.

**Net Investment Hedges**

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges.

Any gain or loss on the hedging instrument relating to the effective portion of the hedge is recognised in OCI and accumulated in the reserve for unrealised exchange gains/losses. The gain or loss relating to the ineffective portion is recognised immediately in profit or loss. Gains and losses accumulated in equity are reclassified to profit or loss when the foreign operation is partially disposed of or sold.

**Derivatives That Do Not Qualify for Hedge Accounting**

Certain derivative instruments do not qualify for hedge accounting. Changes in the fair value of any derivative instrument that does not qualify for hedge accounting are recognised immediately in profit or loss.

### Offsetting of Financial Instruments

Financial assets and financial liabilities can be offset and the net amount is reported in the consolidated balance sheet if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis, or to realise the assets and settle the liabilities simultaneously.

### Cash Flow Statement

The consolidated cash flow statement shows the Group's cash flow provided by/used in operating, investing and financing activities. The cash flow from operating activities is calculated using the direct method. The cash flow from investing activities comprises payments made on the purchase and disposal of operations and the purchase and disposal of property, plant and equipment, intangible assets as well as financial assets. The cash flow from financing activities comprises changes in the Group's share capital, as well as loans, repayments of principals of interest-bearing debt and payment of dividends. Cash and cash equivalents consist of cash and bank deposits.

### Segment Reporting

A segment is a distinguishable component of the Group that is engaged in business activities from which it may earn revenues and incur expenses, whose operating results are regularly reviewed by the Executive Board (chief operating decision maker) and are taken to make decisions about resources to be allocated to the segment and assess its performance and for which separate financial information is available (reportable segment).

Moreover, a geographical segment is based on risks and rewards of a particular economic environment (geographic region). The Executive Board concluded to also show the net sales by geographical segment next to the reportable segment.

The Executive Board has identified three reportable segments:

Polyolefins – this part of the business manufactures and markets polyolefin products. Although the Automotive, Energy, Consumer Products, Pipe, Advanced Products, New Business Development and Circular Economy Solutions operating segments provide separate reports on their performance, they have been aggregated into one reportable segment, as they have similar long-term growth rates and raw material economics, as well as demonstrate similarities in other aspects required by the Standard.

Base Chemicals – Borealis produces and markets a wide range of base chemicals, such as phenol, acetone, ethylene, propylene and similar. These activities are organisationally covered by the business unit Hydrocarbons & Energy.

Borealis NITRO – Borealis is also engaged in the production and marketing of fertilizers, technical nitrogen and melamine. These activities are carried out by two business units – Fertilizers and Melamine. Fertilizers and Melamine provide separate reports on their performance, but based on their similar economic characteristics, as well as the size of Melamine being below required thresholds, they have been aggregated into one reporting segment.

All other segments – Corporate, Middle East and Asia and Research & Development are not reportable segments, as they are either not included separately in the reports provided to the Executive Board or contain only results of the associated companies. The results of these operations are included in the Non-Allocated column (see note 1).

### New Accounting Standards

New and Amended Standards/Interpretations Adopted by Borealis

In 2019, the following new and amended standards and interpretations became effective and have been adopted by Borealis, whereas effective means effective for annual periods beginning on or after that date (as endorsed by the EU):

| Standards/Interpretations | | IASB effective date | EU effective date |
|---|---|---|---|
| **New Standards and Interpretations** | | | |
| IFRS 16 | Leases | 1 January 2019 | 1 January 2019 |
| IFRIC 23 | Uncertainty over Income Tax Treatments | 1 January 2019 | 1 January 2019 |
| **Amended Standards** | | | |
| IFRS 9 | Prepayment Features with Negative Compensation | 1 January 2019 | 1 January 2019 |
| IAS 28 | Long-term Interests in Associates and Joint Ventures | 1 January 2019 | 1 January 2019 |
| Misc. | Annual Improvements to IFRS Standards 2015-2017 Cycle | 1 January 2019 | 1 January 2019 |
| IAS 19 | Plan Amendment, Curtailment or Settlement | 1 January 2019 | 1 January 2019 |

### IFRS 16 Leases

Borealis has adopted IFRS 16 Leases from 1 January 2019 using the modified retrospective approach. The Company has not restated comparative information for the 2018 reporting period and used certain simplifications, as permitted by the specific transitional provisions of the Standard. The reclassifications and adjustments arising from the new Standard for Leases are recognised in the opening balance sheet on 1 January 2019.

#### Adjustments Recognised on Adoption of IFRS 16

On adoption of IFRS 16, the Group recognised lease liabilities in relation to leases which had previously been classified as 'operating leases' under IAS 17 Leases. These liabilities were measured at the present value of the remaining lease payments, discounted using the lessee's incremental borrowing rate as of 1 January 2019. The weighted average lessee's incremental borrowing rate applied to the lease liabilities was 2.2% p.a. on 1 January 2019.

For leases previously classified as finance leases, the entity recognised the carrying amount of the lease asset (EUR 742 thousand) and lease liability (EUR 381 thousand) as the carrying amount of the right-of-use asset and the lease liability immediately before the transition at the date of initial application of IFRS 16 on 1 January 2019. The measurement principles of IFRS 16 are only applied after that date.

The following table reconciles lease commitments for non-cancellable operating leases at 31 December 2018 to the lease liability on 1 January 2019:

| EUR thousand | |
|---|---|
| **Operating lease commitments disclosed as at 31 December 2018** | **258,158** |
| Less: short-term leases recognised as expense on a straight-line basis | -5,415 |
| Less: low-value leases recognised as expense on a straight-line basis | -171 |
| Effect of discounting at the lessee's incremental borrowing rate at the date of initial application of IFRS 16 | -43,964 |
| Add: finance lease liabilities recognised as at 31 December 2018 | 381 |
| Other | 1,925 |
| **Lease liability recognised as at 1 January 2019** | **210,914** |
| Of which are: | |
| Current lease liabilities | 33,596 |
| Non-current lease liabilities | 177,318 |

The associated right-of-use assets were measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognised in the balance sheet as at 31 December 2018.

There were no onerous lease contracts that would have required an adjustment to the right-of-use assets at the date of initial application.

The change in accounting policy affected the following items in the balance sheet on 1 January 2019:

| Consolidated Balance Sheet<br>EUR thousand | 31.12.2018 | Changes due to initial application of IFRS 16 | 1.1.2019 |
|---|---|---|---|
| **Assets** | | | |
| Production plants | 2,596,705 | -742 | 2,595,963 |
| Right-of-use assets | 0 | 212,864 | 212,864 |
| **Total non-current assets** | **7,290,160** | **212,122** | **7,502,282** |
| Other receivables and other assets | 552,903 | -1,589 | 551,314 |
| **Total current assets** | **2,658,496** | **-1,589** | **2,656,907** |
| **Total assets** | **9,948,656** | **210,533** | **10,159,189** |
| **Liabilities** | | | |
| Loans and borrowings | 726,478 | -246 | 726,232 |
| Lease liabilities | 0 | 177,318 | 177,318 |
| **Non-current liabilities** | **1,489,650** | **177,072** | **1,666,722** |
| Loans and borrowings | 651,145 | -135 | 651,010 |
| Lease liabilities | 0 | 33,596 | 33,596 |
| **Current liabilities** | **2,022,898** | **33,461** | **2,056,359** |
| **Total liabilities** | **3,512,548** | **210,533** | **3,723,081** |
| **Total equity and liabilities** | **9,948,656** | **210,533** | **10,159,189** |

**Practical Expedients Applied**

In applying IFRS 16 for the first time, Borealis has used the following practical expedients or simplifications permitted by the Standard:

- the accounting for operating leases with a remaining lease term of less than 12 months as at 1 January 2019 as short-term leases, similarly to operating leases under IAS 17;
- the accounting for certain leases of assets of low value similar to operating leases under IAS 17;
- the exclusion of initial direct costs for the measurement of the right-of-use asset at the date of initial application; and
- the use of hindsight in determining the lease term where the contract contains options to extend or terminate the lease

The Group has also elected not to reassess whether a contract is or contains a lease at the date of initial application. Instead, for contracts entered into before the transition date the Group relied on its assessment made applying IAS 17 and IFRIC 4 Determining whether an Arrangement contains a Lease.

### IFRIC 23 Uncertainty about Income Tax Treatment

The adoption of this interpretation is included in the financial statements. This did not have an impact on the financial position or performance of the Group, as Borealis already followed the principles of this interpretation in the past.

### Other Amended Standards

The adoption of the other amended standards stated above is included in the financial statements. This did not have a material impact on the financial position or performance of the Group.

### New and Amended Standards Not Yet Effective

A number of new standards and amendments to standards have been issued but are not yet effective (as adopted by the EU). Borealis will adopt the standards on the effective date. Effective means effective for annual periods beginning on or after that date (as endorsed by the EU). Borealis does not expect a material impact of these amendments on the consolidated financial statements.

| Standards | | IASB effective date | EU effective date |
|---|---|---|---|
| **New Standards** | | | |
| IFRS 17 | Insurance Contracts | 1 January 2021 | |
| **Amended Standards** | | | |
| Conceptual Framework | References to the Conceptual Framework in IFRS Standards | 1 January 2020 | 1 January 2020 |
| IAS 1 and IAS 8 | Definition of Material | 1 January 2020 | 1 January 2020 |
| IFRS 9, IAS 39 and IFRS 7 | Interest Rate Benchmark Reform | 1 January 2020 | 1 January 2020 |
| IFRS 3 | Definition of a Business | 1 January 2020 | |
| IAS 1 | Classification of Liabilities as Current or Non-current | 1 January 2022 | |

### IFRS 9, IAS 39 and IFRS 7 Interest Rate Benchmark Reform

Following the financial crisis, the replacement of benchmark interest rates such as LIBOR and other interbank offered rates ('IBORs') has become a priority for global regulators. The IASB has embarked on a two-phase project to consider what, if any, reliefs to give from the effects of the IBOR reform. The IASB has issued amendments to IFRS 9, IAS 39 and IFRS 7 in September 2019 with an effective date for annual periods beginning on or after 1 January 2020.

The amendments bring reliefs enabling not to discontinue hedge accounting for hedges exposed to uncertainties arising from the reform. Borealis continuously monitors the latest developments in the IBOR reform. For details refer to note 24 which provides related disclosures for Borealis.

### Amounts

All amounts are in EUR thousand unless otherwise stated. The amounts in parentheses relate to the preceding year.

## 1. Segment Reporting

| EUR thousand | Polyolefins | | Base Chemicals [1] | |
|---|---|---|---|---|
| | 2019 | 2018 | 2019 | 2018 |
| **Net sales by segment** | | | | |
| Total segment sales | 5,143,609 | 5,435,861 | 4,459,667 | 4,816,428 |
| Inter-segment sales | 0 | 0 | -2,971,936 | -3,264,181 |
| | **5,143,609** | **5,435,861** | **1,487,731** | **1,552,247** |

Prices for Group inter-segment sales are mainly based on monthly market prices for ethylene and propylene contracts.

| | | | | |
|---|---|---|---|---|
| **Segment result** | | | | |
| Operating profit | 213,639 | 345,336 | 414,496 | 393,095 |
| Net results of associated companies and joint ventures after tax | 8,726 | 15,684 | 370 | 294 |
| Financial income/expenses | | | | |
| Taxes on income | | | | |
| Non-controlling interest | | | | |
| **Net profit for the year attributable to equity holders of the parent** | | | | |
| **Net sales by geographic segment (by delivery destination)** | | | | |
| EU countries | 3,641,573 | 3,905,191 | 1,222,815 | 1,224,306 |
| thereof Austria | 151,885 | 152,939 | 14,412 | 18,950 |
| Non-EU countries in Europe | 494,953 | 504,531 | 222,247 | 243,910 |
| USA | 205,500 | 208,378 | 7,522 | 18,261 |
| Middle East and Asia | 292,554 | 281,327 | 31,767 | 26,143 |
| Other regions | 509,029 | 536,434 | 3,380 | 39,627 |
| | **5,143,609** | **5,435,861** | **1,487,731** | **1,552,247** |

| EUR thousand | 31.12.2019 | 31.12.2018 | 31.12.2019 | 31.12.2018 |
|---|---|---|---|---|
| **Other information** | | | | |
| Segment assets | 3,597,069 | 3,405,691 | 1,561,886 | 1,585,030 |
| thereof Austria | 2,191,334 | 2,092,975 | 625,076 | 756,669 |
| Segment liabilities | 0 | 0 | 0 | 0 |
| Investments in property, plant and equipment | 145,699 | 108,287 | 95,287 | 70,534 |
| Depreciation, amortisation and impairment | 167,352 | 149,107 | 110,182 | 86,269 |

Over 90% of the above relate to segment EU countries.

1) A reorganisation of the Borealis Base Chemicals business was carried out in 2018. The Fertilizers, Melamine and Technical Nitrogen Products business unit (Borealis NITRO) became effective as of 1 January 2019. Comparatives for 2018 have been restated in the segment reporting.

| | Borealis NITRO [1] | | Non-Allocated | | Consolidated | |
|---|---|---|---|---|---|---|
| | 2019 | 2018 | 2019 | 2018 | 2019 | 2018 |
| | | | | | | |
| | 1,261,875 | 1,165,556 | 209,657 | 183,463 | 11,074,808 | 11,601,308 |
| | 0 | 0 | 0 | 0 | -2,971,936 | -3,264,181 |
| | **1,261,875** | **1,165,556** | **209,657** | **183,463** | **8,102,872** | **8,337,127** |
| | | | | | | |
| | 76,516 | -169,124 | -100,119 | -73,379 | 604,532 | 495,928 |
| | -3,746 | -9,615 | 380,398 | 599,397 | 385,748 | 605,760 |
| | | | -36,436 | -31,469 | -36,436 | -31,469 |
| | | | -81,845 | -164,034 | -81,845 | -164,034 |
| | | | 1,419 | 1,233 | 1,419 | 1,233 |
| | | | | | **873,418** | **907,418** |
| | | | | | | |
| | 1,062,812 | 969,041 | 97,475 | 54,812 | 6,024,675 | 6,153,350 |
| | 130,926 | 129,388 | 59,335 | 30,213 | 356,558 | 331,490 |
| | 69,858 | 51,154 | 0 | 422 | 787,058 | 800,017 |
| | 10,633 | 12,789 | 3,160 | 751 | 226,815 | 240,179 |
| | 54,752 | 61,735 | 109,022 | 127,478 | 488,095 | 496,683 |
| | 63,820 | 70,837 | 0 | 0 | 576,229 | 646,898 |
| | **1,261,875** | **1,165,556** | **209,657** | **183,463** | **8,102,872** | **8,337,127** |

| | 31.12.2019 | 31.12.2018 | 31.12.2019 | 31.12.2018 | 31.12.2019 | 31.12.2018 |
|---|---|---|---|---|---|---|
| | | | | | | |
| | 950,228 | 1,063,610 | 4,009,104 | 3,894,325 | 10,118,287 | 9,948,656 |
| | 505,990 | 601,151 | 3,771,641 | 3,658,258 | 7,094,041 | 7,109,053 |
| | 0 | 0 | 3,660,535 | 3,512,548 | 3,660,535 | 3,512,548 |
| | 79,334 | 128,893 | 55,434 | 18,583 | 375,754 | 326,297 |
| | 80,872 | 161,214 | 69,022 | 60,074 | 427,428 | 456,664 |

## 2. Revenue from Contracts with Customers

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Revenue from contracts with customers | 7,998,331 | 8,273,987 |
| Revenue from other sources | 104,541 | 63,140 |
| **Net sales** | **8,102,872** | **8,337,127** |

Revenue from other sources mainly includes amortisation of government and investment grants. Gains/losses for realised cash flow hedges on net sales from foreign exchange forwards are included as well (see also note 19).

In the following table revenue from contracts with customers is disaggregated by segment and geographical market. The table also includes a reconciliation of the disaggregated revenue with the Group's reportable segments (see note 1).

| EUR thousand | 2019 | | | | |
|---|---|---|---|---|---|
| | Polyolefins | Base Chemicals [1] | Borealis NITRO [1] | Non-Allocated | Consolidated |
| EU countries | 3,630,002 | 1,221,036 | 1,050,724 | 6,338 | 5,908,100 |
| Non-EU countries in Europe | 494,971 | 222,247 | 69,747 | 0 | 786,965 |
| USA | 207,482 | 7,522 | 10,633 | 3,160 | 228,797 |
| Middle East and Asia | 301,966 | 31,767 | 54,752 | 106,706 | 495,191 |
| Other regions | 512,078 | 3,380 | 63,820 | 0 | 579,278 |
| **Revenue from contracts with customers** | **5,146,499** | **1,485,952** | **1,249,676** | **116,204** | **7,998,331** |
| Revenue from other sources | -2,890 | 1,779 | 12,199 | 93,453 | 104,541 |
| **Net sales (as reported in note 1)** | **5,143,609** | **1,487,731** | **1,261,875** | **209,657** | **8,102,872** |

1) For details on the reorganisation of the Borealis Base Chemicals business see note 1.

| EUR thousand | 2018 | | | | |
|---|---|---|---|---|---|
| | Polyolefins | Base Chemicals [1] | Borealis NITRO [1] | Non-Allocated | Consolidated |
| EU countries | 3,897,725 | 1,224,922 | 964,697 | 2,923 | 6,090,267 |
| Non-EU countries in Europe | 504,531 | 243,910 | 51,154 | 422 | 800,017 |
| USA | 208,378 | 18,261 | 12,789 | 751 | 240,179 |
| Middle East and Asia | 281,327 | 26,143 | 61,735 | 127,478 | 496,683 |
| Other regions | 536,377 | 39,627 | 70,837 | 0 | 646,841 |
| **Revenue from contracts with customers** | **5,428,338** | **1,552,863** | **1,161,212** | **131,574** | **8,273,987** |
| Revenue from other sources | 7,523 | -616 | 4,344 | 51,889 | 63,140 |
| **Net sales (as reported in note 1)** | **5,435,861** | **1,552,247** | **1,165,556** | **183,463** | **8,337,127** |

1) For details on the reorganisation of the Borealis Base Chemicals business see note 1.

The following table provides information about receivables, contract assets and contract liabilities from contracts with customers.

| EUR thousand | 31.12.2019 | 31.12.2018 |
|---|---|---|
| Receivables | 749,888 | 768,256 |
| Contract assets | 9,272 | 6,537 |
| Contract liabilities | 41,789 | 41,485 |

Contract assets are included in other receivables and other assets, thereof EUR 1,882 thousand (EUR 0 thousand) current and EUR 7,390 thousand (EUR 6,537 thousand) non-current.

The Group applies the practical expedient in IFRS 15.121 and does not disclose information about remaining performance obligations that have original expected durations of one year or less.

For impairment recognised on receivables and contract assets, please see note 27 Credit risk.

The non-current contract assets relate to an agreement where Borealis already satisfied the performance obligations and has not yet received the consideration as it is linked to timing settlement conditions.

The contract liabilities include mainly advance consideration received from customers and expected volume discounts payable to customers in relation to sales made.

## 3. Research and Development

At the end of the year, 527 FTEs were engaged in research and development (507 FTEs in 2018). The total cost of these activities including impairments costs amounted to EUR 144,616 thousand compared to EUR 127,699 thousand in 2018 (see note 7). Internal development costs amounting to EUR 24,035 thousand (EUR 27,304 thousand) were capitalised as intangible assets.

## 4. Intangible Assets

| | Goodwill | | Development costs | | Capitalised software | | Others | |
|---|---|---|---|---|---|---|---|---|
| **EUR thousand** | **2019** | **2018** | **2019** | **2018** | **2019** | **2018** | **2019** | **2018** |
| **Cost** | | | | | | | | |
| As of 1 January | 159,034 | 142,037 | 396,394 | 359,767 | 74,356 | 60,771 | 242,791 | 185,626 |
| Exchange adjustments | -80 | -71 | 0 | 0 | -9 | -38 | -552 | -1,064 |
| Additions | 0 | 0 | 52,525 | 36,627 | 17,645 | 6,897 | 117,061 | 134,353 |
| Changes in consolidation scope | 0 | 17,068 | 0 | 0 | 0 | 8 | 0 | 3,922 |
| Disposals | 0 | 0 | 0 | 0 | -110 | -206 | -56,593 | -80,406 |
| Transfers | 0 | 0 | -8,273 | 0 | 10,203 | 6,924 | 8,320 | 360 |
| | **158,954** | **159,034** | **440,646** | **396,394** | **102,085** | **74,356** | **311,027** | **242,791** |
| **Accumulated amortisation** | | | | | | | | |
| As of 1 January | 47,375 | 0 | 220,000 | 202,523 | 44,965 | 32,477 | 141,921 | 126,832 |
| Exchange adjustments | 0 | 0 | 0 | 0 | -7 | -22 | -273 | -534 |
| Disposals | 0 | 0 | 0 | 0 | -110 | -119 | -17,265 | -641 |
| Amortisation | 0 | 0 | 20,113 | 14,371 | 14,239 | 12,629 | 17,907 | 16,264 |
| Impairment | 0 | 47,375 | 1,639 | 4,156 | 0 | 0 | 0 | 0 |
| Reversal of impairment | 0 | 0 | 0 | -1,050 | 0 | 0 | 0 | 0 |
| | **47,375** | **47,375** | **241,752** | **220,000** | **59,087** | **44,965** | **142,290** | **141,921** |
| **Carrying amount as of 31 December** | **111,579** | **111,659** | **198,894** | **176,394** | **42,998** | **29,391** | **168,737** | **100,870** |

Other intangible assets contain mainly patents and licences as well as emission rights.

Additions arising from internal development amounted to EUR 24,035 thousand (EUR 27,304 thousand). Intangible assets received by way of government grant as allowances for emissions (EU Emissions Trading System) amounted to EUR 94,141 thousand (EUR 52,191 thousand), representing an increase compared to 2018 which was mainly driven by the price increase. Emission rights purchased from external parties amounted to EUR 4,917 thousand (EUR 33,764 thousand) and received back certificates which were borrowed to external parties amounted to EUR 8,364 thousand (EUR 39,178 thousand). An equivalent of EUR 26,348 thousand (EUR 55,726 thousand) was returned to the respective EU ETS regulatory authorities for the emitted emissions in 2018. This decrease compared to the previous year was driven by the fact that emission rights from previous years were returned which were allocated at a lower market price.

The Group tests on an annual basis whether any impairment of goodwill is required. The recoverable amount of a cash-generating unit (CGU) is determined based on value in use calculations which require the use of assumptions. The calculations use cash flow projections based on financial budgets covering a five-year period. Key assumptions of the forecasted cash flows are volumes sold and underlying industry margins. These are estimated based on industry reports issued by highly regarded business intelligence providers and management's experience. Cash flows beyond the five-year period are extrapolated using the estimated growth rates stated below. These growth rates

are consistent with forecasts included in industry reports specific to the industry in which each CGU operates. For all impairment tests performed, the recoverable amount was based on the value in use.

In 2018 significant deviations of the development of the cash-generating unit Fertilizer & Melamine against the financial budget which was valid for 2018 had been observed qualifying as a triggering event for an impairment test of this CGU. The main reasons were declining sales volumes together with increased variable production costs due to higher natural gas prices. The performance of this impairment test resulted in a recoverable amount based on the value in use, which was EUR 83,910 thousand lower than the carrying amount of this cash generating unit. Therefore, the full related goodwill of EUR 47,375 thousand and additional property, plant and equipment of EUR 36,535 thousand have been impaired in 2018.

During 2019, the CGU Fertilizer & Melamine managed to turn to profitability due to increasing production and sales volumes, an internal improvement programme and lower gas prices. The significant positive deviation to the financial budget of the year as well as to the prior year was recognised as an indication that the impairment loss may no longer exist or may have decreased. The re-performance of this impairment test resulted in a recoverable amount based on the value in use, which corresponded to the carrying amount of the cash generating unit. As a result, no reversal of the impairment loss from the prior period was recognised.

The allocated goodwill for each CGU as well as parameters influencing the calculation of the value in use can be seen in the following table:

**Impairment test parameters 2019**

| **Segment** | **Polyolefins** | | | | **Borealis NITRO** |
|---|---|---|---|---|---|
| **Cash generating unit** | Polyethylene | Polypropylene | Recyclates | Brazil | Fertilizer & Melamine |
| Allocated goodwill in EUR thousand | 50,687 | 22,000 | 33,695 | 5,197 | 0 |
| Post tax discount rate | 7.3% | 7.3% | 7.0% | 9.0% | 9.9% |
| Growth rate | 1.3% | 1.5% | 2.0% | 2.4% | 1.2% |

**Impairment test parameters 2018**

| **Segment** | **Polyolefins** | | | | **Borealis NITRO** |
|---|---|---|---|---|---|
| **Cash generating unit** | Polyethylene | Polypropylene | Recyclates | Brazil | Fertilizer & Melamine |
| Allocated goodwill in EUR thousand | 50,687 | 22,000 | 33,695 | 5,277 | 0 |
| Post tax discount rate | 7.8% | 7.8% | 7.2% | 10.0% | 10.1% |
| Growth rate | 1.3% | 1.4% | 2.0% | 3.1% | 1.2% |

Post tax discount rates (weighted average cost of capital) reflect specific risks relating to the relevant segments and the countries in which they operate.

The long-term growth rate is the weighted average growth rate used to extrapolate cash flows beyond the budget period. The rates are consistent with forecasts included in industry reports.

In addition to the parameters above, sensitivities regarding discount rates, oil prices (for the CGUs Polyethylene and Polypropylene) and natural gas prices (for the CGU Fertilizer & Melamine) are taken into consideration. For the CGU Fertilizer & Melamine, an increase of the discount rate by 0.5 percentage points would increase the accumulated impairment by EUR 52,101 thousand (EUR 52,112 thousand). An increase of the natural gas price by EUR 2 per MWh would increase the accumulated impairment by EUR 104,164 thousand (EUR 94,163 thousand). A decrease of the discount rate by 0.5 percentage points or a decrease of the natural gas price by EUR 2 per MWh would result in a complete reversal of the CGU's accumulated impairment loss on property, plant and equipment from the prior period.

For the other CGUs none of the calculated cases showed any need for an impairment.

## 5. Property, Plant and Equipment

| | Production plants | | Machinery and equipment | | Construction in progress | |
|---|---|---|---|---|---|---|
| **EUR thousand** | **2019** | **2018** | **2019** | **2018** | **2019** | **2018** |
| **Cost** | | | | | | |
| As of 1 January | 6,946,213 | 6,757,911 | 126,708 | 132,712 | 256,790 | 236,518 |
| Exchange adjustments | -44,753 | -82,036 | -284 | -598 | 499 | -3,209 |
| Additions | 119,664 | 212,266 | 4,351 | 3,800 | 290,296 | 147,722 |
| Changes in consolidation scope | 0 | 6,835 | 0 | 283 | 0 | 1,871 |
| Disposals | -36,180 | -62,593 | -2,279 | -14,487 | 0 | 0 |
| Transfers | 139,758 | 113,830 | 5,792 | 4,998 | -156,328 | -126,112 |
| | **7,124,702** | **6,946,213** | **134,288** | **126,708** | **391,257** | **256,790** |
| **Accumulated depreciation** | | | | | | |
| As of 1 January | 4,349,508 | 4,106,500 | 93,650 | 101,208 | 0 | 0 |
| Exchange adjustments | -29,141 | -53,267 | -276 | -498 | 0 | 0 |
| Disposals | -34,478 | -59,292 | -2,250 | -14,412 | 0 | 0 |
| Depreciation | 321,908 | 319,172 | 8,422 | 7,212 | 0 | 0 |
| Impairment | 1,474 | 36,395 | 0 | 140 | 0 | 0 |
| | **4,609,271** | **4,349,508** | **99,546** | **93,650** | **0** | **0** |
| **Carrying amount as of 31 December** | **2,515,431** | **2,596,705** | **34,742** | **33,058** | **391,257** | **256,790** |

In 2019, borrowing costs amounting to EUR 2,915 thousand (EUR 1,866 thousand) have been capitalised, using an average interest rate of 2.1% (2.3%). Additions to property, plant and equipment that were not paid at the end of the reporting period amounted to EUR 28,219 thousand (EUR 21,757 thousand).

Additions comprise major projects advanced in 2019, which are the new, world-scale propane dehydrogenation (PDH) plant at the existing production site in Kallo, Belgium, the upgrade and revamp of four cracker furnaces in Stenungsund, Sweden, the debottlenecking of a PP-plant in Kallo, Belgium, and the new Naphtha cavern in Porvoo, Finland.

The line Transfers include EUR 10,249 thousand (EUR 7,284 thousand) of transfers to intangible assets and EUR 528 thousand of transfers to right-of-use assets according IFRS 16.

At 31 December 2019, Borealis' contractual commitments amounted to EUR 343,637 thousand (EUR 131,763 thousand) for the acquisition of property, plant and equipment (see note 21). The main increase results from the planned investments in the new dehydrogenation plant in Kallo, Belgium, with capital commitments of EUR 187,916 thousand as per 31 December 2019.

### Assets Pledged

Assets pledged amounted to EUR 12,101 thousand (EUR 12,389 thousand) and relate to property, plant and equipment. The liabilities covered by the above assets amounted to EUR 2,668 thousand (EUR 3,462 thousand) at the end of the year.

## 6. Leases

The recognised right-of-use assets relate to the following types of assets.

| EUR thousand | 31.12.2019 | 1.1.2019 |
|---|---|---|
| Production plants | 122,577 | 116,613 |
| Machinery and equipment | 87,445 | 96,251 |
| **Carrying amount** | **210,022** | **212,864** |

Additions to the right-of-use assets, including the effect of reassessed contracts, amounted to EUR 39,488 thousand in 2019.

Leased production plants include land, building space, non-movable equipment and logistics facilities such as storage tanks, warehouse, ports and pipelines. Leased machinery and equipment include company cars, material handling equipment such as forklifts, railcars and an ethane marine carrier. The majority of leases by number relates to company cars with a typical term of four years and to material handling equipment with a typical term of six years. In general, leases for company cars and material handling equipment do not contain extension options but usually a new contract for a replacement asset is put in place after the lease has ended.

Lease liabilities are presented in the balance sheet as follows.

| EUR thousand | 31.12.2019 | 1.1.2019 |
|---|---|---|
| Current lease liabilities | 38,513 | 33,596 |
| Non-current lease liabilities | 172,371 | 177,318 |
| **Carrying amount** | **210,884** | **210,914** |

The lease liabilities are mainly driven by two material contracts which together represent 44% of the carrying amount at the reporting date: a lease of an ethane carrier and a lease of land in Belgium. The minimum lease term for the vessel lease ends in 2026, for the land in 2049. Both contracts contain extension options.

The following amounts relating to leases were included in the income statement.

| EUR thousand | 2019 |
|---|---|
| **Included in production costs, sales and distribution costs, administration costs and R&D costs** | |
| Depreciation charge of right-of-use assets | 41,726 |
| Production plants | 21,307 |
| Machinery and equipment | 20,419 |
| Expense relating to short-term leases | 6,707 |
| Expense relating to leases of low value assets that are not shown above as short-term leases | 696 |
| Expense relating to variable lease payments not included in lease liabilities | 145 |
| **Included in financial expenses** | |
| Interest expense | 5,037 |

The total cash outflow for leases was EUR 51,288 thousand in 2019.

### Variable Lease Payments

Uncertainty arises from variable lease payments that depend on an index or a rate. Such variable lease payments are usually included in contracts for rented land, building space, pipelines or storage and aim to compensate the lessor for price inflation during the contract period. The rates relate to baskets of industry-specific price indices or to single consumer price indices of countries mainly in the euro zone. Borealis does not expect any material increases of the Group's lease liability resulting from chances in those indices.

### Extension and Termination Options

Extension and termination options are included in a number of leases across the Group. These terms are used to maximise operational flexibility in terms of managing contracts. The majority of extension and termination options held are exercisable only by the Group and not by the respective lessor.

In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option, or not to exercise a termination option. Extension options (or periods covered by termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated). Potential undiscounted future cash outflows of EUR 216,027 thousand have not been included in the lease liability because it is not reasonably certain that the leases will be extended (or not terminated). This mainly relates to the vessel and the Belgium land lease.

The assessment of reasonable certainty is only reviewed if a significant event or a significant change in circumstances occurs which affects this assessment and is within the control of the lessee. During the current financial year, the financial effect of revising lease terms to reflect the effect of exercising extension and termination options was an increase in recognised lease liabilities and right-of-use assets of EUR 16,737 thousand.

## 7. Depreciation, Amortisation and Impairment

Depreciation, amortisation and impairment are allocated as follows in the income statement.

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Production costs** | | |
| Depreciation and Amortisation | 322,382 | 296,812 |
| Impairment | 0 | 83,910 |
| **Sales and distribution costs** | | |
| Depreciation and Amortisation | 26,941 | 11,976 |
| **Administration costs** | | |
| Depreciation and Amortisation | 26,527 | 22,192 |
| **Research & development costs** | | |
| Depreciation and Amortisation | 48,465 | 38,668 |
| Impairment/Reversal of impairment | 3,113 | 3,106 |
| **Total** | **427,428** | **456,664** |

In 2018, the production costs included an impairment of EUR 83,910 thousand for the impairment of the intangible assets and property, plant and equipment within the Borealis NITRO segment (see note 4).

In the current year the research & development costs include an impairment of EUR 3,113 thousand (EUR 4,156 thousand) of intangible assets for which the carrying amount exceeds the present value of future cash flows, and a reversal of impairment of EUR 0 thousand (EUR 1,050 thousand). Like last year, the impairment of the intangible assets within the research & development costs are relating to the non-allocated segment.

## 8. Investments in Associated Companies, Joint Ventures and Subsidiaries

| | Shares in associated companies and joint ventures | |
|---|---|---|
| **EUR thousand** | **2019** | **2018** |
| **Cost** | | |
| As of 1 January | 534,505 | 356,241 |
| Investments and acquisitions | 80,734 | 178,264 |
| Disposals | -13,714 | 0 |
| As of 31 December | 601,525 | 534,505 |
| **Adjustments** | | |
| As of 1 January | 3,220,666 | 3,042,100 |
| Exchange adjustments | 74,226 | 145,879 |
| Dividends received | -651,104 | -573,073 |
| Net results of associated companies and joint ventures after tax | 385,748 | 605,760 |
| As of 31 December | 3,029,536 | 3,220,666 |
| **Carrying amount as of 31 December** | **3,631,061** | **3,755,171** |

In 2019, net results of associated companies and joint ventures after tax, included an impairment of the shares in Neochim AD amounting to EUR 2,892 thousand (EUR 7,862 thousand). The impairment was triggered by the share price at the closing date. The recoverable amount of Borealis' share in Neochim AD at 31 December 2019 amounted to EUR 4,711 thousand and represents the fair value less cost of disposal. The fair value is based on quoted prices at the measurement date (level 1 inputs).

Disposals amounting to EUR 13,714 thousand relate to the sale of the 50% share in the joint venture GCA Holdings LLC on 9 July 2019. The investment was sold for EUR 21,529 thousand, the related income is included in other financial income.

The Group presents the investments in associated companies and joint ventures as follows:

| **EUR thousand** | **2019** | **2018** |
|---|---|---|
| Material associated company (Abu Dhabi Polymers Company Limited (Borouge)) | 3,258,607 | 3,459,898 |
| Non-material associated companies | 90,860 | 92,808 |
| Material joint venture (Novealis Holdings LLC (Novealis)) | 270,469 | 180,505 |
| Non-material joint ventures | 11,125 | 21,960 |
| **Carrying amount as of 31 December** | **3,631,061** | **3,755,171** |

Investments in material joint ventures contain Borealis' share in Novealis Holdings LLC (Novealis) amounting to EUR 270,469 thousand (EUR 180,505 thousand). Formed in 2018, Novealis is the joint venture between Borealis and NOVA, which subsequently formed Baystar™, a 50/50 joint venture with Total Petrochemicals & Refining USA, Inc. Baystar is currently building a new Borstar® PE plant in Pasadena, Texas, with an anticipated start-up date in 2021 and an capacity of 625,000 metric tonnes per year (t/y). In Port Arthur, Texas, Baystar is building a new 1 million t/y ethane steam cracker. The investment in Novealis became material for the Group in the current year due to additional capital injections.

Investment in Neochim AD is part of the Borealis NITRO segment whereas Kilpilahti Power Plant LTD is part of the Base Chemicals segment. The share in Novealis is included in the Polyolefins segment. All other investments in associated companies and joint ventures are part of the non-allocated segment.

## Associated Companies

The Group has the following investments in associated companies:

| | | Ownership in % | |
|---|---|---|---|
| **Associated companies** | **Country** | **2019** | **2018** |
| Abu Dhabi Polymers Company Limited (Borouge) | United Arab Emirates | 40.00 | 40.00 |
| Borouge Pte. Ltd. | Singapore | 50.00 | 50.00 |
| Neochim AD | Bulgaria | 20.30 | 20.30 |
| Kilpilahti Power Plant LTD [1] | Finland | 20.00 | 20.00 |
| Chemiepark Linz Betriebsfeuerwehr GmbH [1] | Austria | 47.50 | 47.50 |
| AZOLOR S.A.S. [1] | France | 34.00 | 34.00 |
| Société d'Intérêt Collectif Agricole par Actions Semplifiée de Gouaix (SICA de Gouaix) [1] | France | 25.00 | 25.00 |
| Société Industrielle Commerciale et Agricole de Maiziéres La Grande Paroisse S.A.S. (SICAM) [2] | France | – | 33.99 |
| Société d'Intérêt Collectif Agricole Laignes Agrifluides (SICA Laignes Agrifluides) [1] | France | 49.90 | 49.90 |
| Franciade Agrifluides S.A.S. (FASA) [1] | France | 49.98 | 49.98 |

1) Excluded from consolidation at equity due to immateriality // 2) Sold on 4 November 2019

Abu Dhabi Polymers Company Limited (Borouge) is a leading provider of innovative, value creating plastic solutions for infrastructure, automotive and advanced packaging applications.

The following table illustrates the summarised full financial information of Abu Dhabi Polymers Company Limited (Borouge):

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Current assets | 1,507,997 | 1,874,564 |
| Non-current assets | 7,217,220 | 7,206,571 |
| Current liabilities | -495,907 | -369,995 |
| Non-current liabilities | -69,759 | -56,341 |
| **Equity** | **8,159,551** | **8,654,799** |
| Share of Borealis | 40% | 40% |
| Share of net assets | 3,263,820 | 3,461,920 |
| Adjustments | -5,213 | -2,022 |
| **Carrying amount as of 31 December** | **3,258,607** | **3,459,898** |
| Net sales | 3,720,214 | 3,610,354 |
| Net profit for the year | 928,958 | 1,475,070 |
| Other comprehensive income | 0 | 0 |
| Total comprehensive income | 928,958 | 1,475,070 |
| Dividends received by Borealis from Borouge | 639,959 | 565,002 |

Summary of financial information for non-material associated companies, adjusted for the ownership by the Group:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Net profit for the year | 11,134 | 10,491 |
| Other comprehensive income | -596 | -1,528 |
| Total comprehensive income | 10,538 | 8,963 |

## Joint Ventures

The Group has the following investments in joint ventures:

| | | Ownership in % | |
|---|---|---|---|
| **Joint ventures** | **Country** | **2019** | **2018** |
| PetroPort Holding AB | Sweden | 50.00 | 50.00 |
| Novealis Holdings LLC | US | 50.00 | 50.00 |
| GCA Holdings LLC [1] | US | – | 50.00 |
| BTF Industriepark Schwechat GmbH [2] | Austria | 50.00 | 50.00 |
| Silleno Limited Liability Partnership [2] | Kazakhstan | 50.10 | 50.10 |

1) Sold on 9 July 2019 // 2) Excluded from consolidation at equity due to immateriality

The following table illustrates the summarised financial information of Novealis:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Current assets | 1,219 | 175,825 |
| Non-current assets | 562,575 | 381,504 |
| Current liabilities | 0 | -173,400 |
| Non-current liabilities | 0 | 0 |
| **Equity** | **563,794** | **383,929** |
| Share of Borealis | 50% | 50% |
| Share of net assets | 281,897 | 191,965 |
| Adjustments | -11,428 | -11,460 |
| **Carrying amount as of 31 December** | **270,469** | **180,505** |
| Net sales | 0 | 0 |
| Net profit for the year | 17,451 | 30,108 |
| Other comprehensive income | 0 | 0 |
| Total comprehensive income | 17,451 | 30,108 |
| Acquisitions / capital contributions by Borealis to Novealis | 77,119 | 173,122 |

On 23 December 2019, Borealis reached an agreement with NOVA Chemicals Corporation (NOVA) for Borealis to buy, through its Star Bridge Holdings LLC, NOVA's 50% ownership interest in Novealis. Closing of the acquisition is subject to customary regulatory approvals and other conditions but is not subject to any financing condition. The parties expect the transaction to close in the first half of 2020.

At the reporting date, the Group (via Borealis BoNo Holdings LLC) has a contractual obligation for additional capital contributions into Novealis amounting to EUR 77,989 thousand (EUR 152,805 thousand). Thereof, EUR 0 thousand (EUR 76,402 thousand) are due during 6 months or less whereas another EUR 77,989 thousand (EUR 76,403 thousand) are due within 6-12 months (1-2 years).

Summary of financial information for non-material joint ventures, adjusted for the ownership by the Group:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Net profit for the year | 370 | 291 |
| Other comprehensive income | 0 | 0 |
| Total comprehensive income | 370 | 291 |

### Subsidiaries

For a full listing of all subsidiaries please refer to note 33.

In the following, the changes of the legal structure in 2019 are summarised.

Borealis Funding Company Ltd, Isle of Man, Ramsey, was dissolved on 18 February 2019. Furthermore, four 100%-owned subsidiaries were established in 2019. Borealis Mexico S.A. de C.V. was incorporated on 18 July 2019, Borealis L.A.T Polska Sp. z o.o. on 16 October 2019, Borealis L.A.T Belgium BV on 15 November 2019, and Star Bridge Holdings LLC on 6 December 2019. These are not consolidated into the annual accounts due to immateriality.

## 9. Other Investments and Other Non-current Assets

Other investments mainly include interests in infrastructure companies in Germany and subsidiaries which are not consolidated on materiality basis. The non-consolidated companies are mainly distribution and blending entities in France and Eastern Europe (see note 28).

The other non-current receivables and other non-current assets mainly include shareholder loans with Baystar amounting to EUR 242,160 thousand (EUR 85,738 thousand; before the amendment of the member loan agreement in January 2019 Novealis Holdings LLC was the borrower) and with Kilpilahti Power Plant LTD amounting to EUR 14,910 thousand (EUR 9,387 thousand). The remainder consists of non-current derivative financial instruments (see note 22), listed securities in Austria (long-term deposits for statutory and tax requirements) and government grant receivables in Belgium.

## 10. Taxation

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Taxes** | | |
| Income tax payable | 146,853 | 142,769 |
| Change in deferred tax | -2,253 | 44,972 |
| Adjustment to prior years' tax charge | -62,755 | -23,707 |
| **Taxes on income** | **81,845** | **164,034** |

Calculation from tax expense at statutory rates to accounting tax expense at the effective group tax rate.

| EUR thousand | 2019 | | 2018 | |
|---|---|---|---|---|
| **Tax expense at statutory rates (weighted average tax rate of the Group)** | **23%** | **220,807** | **24%** | **258,455** |
| Tax effect of result in associated companies | -10% | -92,711 | -14% | -152,102 |
| Tax effect of permanent differences | 2% | 19,115 | 2% | 19,214 |
| Adjustment of valuation allowance/re-assessment of unrecognised tax assets | 0% | -2,646 | 5% | 49,521 |
| Change due to changes in tax rates | 0% | 0 | -1% | -9,820 |
| Prior years' adjustments and other | -6% | -62,720 | 0% | -1,234 |
| **Taxes on income** | **9%** | **81,845** | **15%** | **164,034** |

The prior years' adjustments and other effects in 2019 relate, to a large extent, to the effects of the agreement reached between the Finnish and Austrian tax authorities on two cases regarding the taxation of Borealis' Finnish subsidiaries, Borealis Technology Oy and Borealis Polymers Oy. The dispute was resolved through a Mutual Agreement Procedure between Finland and Austria with the ruling terms below the level of the corresponding risk provisions.

| | Balance sheet | | Income statement | |
|---|---|---|---|---|
| **EUR thousand** | **2019** | **2018** | **2019** | **2018** |
| **Deferred tax assets** | | | | |
| Property, plant and equipment | 12,452 | 12,096 | 356 | 1,828 |
| Intangible assets | 2,617 | 5,066 | -2,449 | 528 |
| **Adjusted depreciation for tax purposes** | **15,069** | **17,162** | | |
| Revaluation of cash flow hedges | 2,324 | 2,997 | -673 | 2,950 |
| Net gain on hedge of a net investment | 30,600 | 29,305 | 0 | 0 |
| Valuation of inventories for tax purposes | 22,534 | 18,650 | 3,852 | 3,248 |
| **Fair values compared to tax values** | **55,458** | **50,952** | | |
| Interest bearing liabilities | 46,667 | 0 | 46,667 | 0 |
| Employee benefits | 94,796 | 79,358 | 1,346 | 490 |
| Other provisions | 8,637 | 9,614 | -977 | 1,434 |
| Other assets and liabilities | 2,061 | 7,305 | -5,244 | 5,548 |
| **Other timing differences** | **152,161** | **96,277** | | |
| **Losses available for offsetting against future taxable income** | **32,146** | **30,284** | 1,869 | -30,684 |
| **Netting with deferred tax liabilities** | **-195,457** | **-147,938** | | |
| **Deferred tax assets** | **59,377** | **46,737** | **44,747** | **-14,658** |

| | Balance sheet | | Income statement | |
|---|---|---|---|---|
| **EUR thousand** | **2019** | **2018** | **2019** | **2018** |
| **Deferred tax liabilities** | | | | |
| Property, plant and equipment | -269,959 | -222,631 | -49,708 | -2,268 |
| Intangible assets | -52,981 | -49,081 | -3,900 | -1,534 |
| **Accelerated/adjusted depreciation for tax purposes** | **-322,940** | **-271,712** | | |
| Revaluation of cash flow hedges | -4,119 | -62,783 | 44,830 | -47,177 |
| Valuation of inventories for tax purposes | -17,587 | -17,417 | -440 | -842 |
| **Fair values compared to tax values** | **-21,706** | **-80,200** | | |
| Interest bearing liabilities | -4,882 | 0 | -4,889 | 0 |
| Employee benefits | -5,631 | -5,080 | -551 | -3,392 |
| Other provisions | -20,874 | -13,655 | -7,219 | 2,756 |
| Other assets and liabilities | -35,972 | -15,384 | -20,616 | 22,143 |
| **Other timing differences** | **-67,359** | **-34,119** | | |
| **Netting with deferred tax assets** | **195,457** | **147,938** | | |
| **Deferred tax liabilities** | **-216,548** | **-238,093** | **-42,493** | **-30,314** |
| **Net tax asset/liability** | **-157,171** | **-191,356** | **2,254** | **-44,972** |

The deferred tax assets of EUR 59,377 thousand (EUR 46,737 thousand) include an amount of EUR 19,514 thousand (EUR 23,663 thousand), which most likely will be utilised within one year. The deferred tax liabilities of EUR 216,548 thousand (EUR 238,093 thousand) include an amount of EUR 62,510 thousand (EUR 73,964 thousand), which most likely will be utilised within one year.

In addition to the tax assets capitalised, the Group has unrecognised tax losses amounting to EUR 488,357 thousand (EUR 473,038 thousand) and unrecognised temporary differences amounting to EUR 31,023 thousand (EUR 36,534 thousand), where current forecasts indicate insufficient future profits in the foreseeable future, thus resulting in unrecognised tax assets of EUR 132,487 thousand (EUR 131,540 thousand).

| **EUR thousand** | **2019** | **2018** |
|---|---|---|
| Deductible temporary differences | 7,756 | 9,435 |
| Tax losses carried forward | 124,731 | 122,105 |
| **Total unrecognised net tax assets** | **132,487** | **131,540** |

The tax losses carried forward have no expiry date.

The recognised deferred tax assets are expected to be utilised against future profits based on internal projections in the relevant jurisdictions. The benefit arising from previously unrecognised tax losses, tax credits or temporary differences of prior periods amounts to EUR 7,400 thousand (EUR 3,898 thousand). Deferred tax expenses as a result of changes in estimates of deferred tax assets due to forecasts indicating insufficient future profits amount to EUR 2,971 thousand (EUR 7,200 thousand). Dividend payment to Borealis AG by its subsidiaries has no tax effect for Borealis AG. The temporary differences related to subsidiaries amount to EUR 148,259 thousand (EUR 140,841 thousand) for which no deferred tax liability has been recognised in accordance with IAS 12.39 Income Taxes.

### Tax Contingencies

On 7 June 2019, the Finnish and Austrian Tax Authorities reached an agreement on two cases regarding the taxation of Borealis Technology Oy and Borealis Polymers Oy. The dispute was resolved through a Mutual Agreement Procedure (MAP) between Finland and Austria. Borealis welcomes the agreement, which finally eliminates double taxation.

The disputes emerged during the years 2014–2015, after Borealis Technology Oy and Borealis Polymers Oy had received re-assessment decisions from the Finnish Tax Authority regarding the intercompany license agreements in place. The Finnish Tax Authority held the view that the Finnish companies had not actually licensed their intangible assets, but had instead sold them to their Austrian parent company Borealis AG.

In both cases, the MAP agreement has confirmed the nature of the intercompany license agreements, albeit with an increase of the applicable license fees. Subsequent reversal of provisions associated with the expected additional charges positively impacts the effective tax rate of the Group in 2019.

The purpose of the MAP is to avoid double taxation of the same income in Finland and Austria. The MAP is based on the Double Taxation Convention between Austria and Finland, as well as on the EU Arbitration Convention Procedure.

Several other Borealis Group companies are currently subject to tax audits performed by their respective tax authorities. In some of the audits, specific emphasis is put on business restructuring and transfer pricing. Management's opinion is that the Company is in compliance with all applicable regulations.

## 11. Inventories

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Finished products | 844,226 | 917,016 |
| Raw materials and consumables | 265,212 | 281,346 |
| **Total** | **1,109,438** | **1,198,362** |

The costs for the consumption of inventories recognised during the period in the income statement amounted to EUR 5,269,696 thousand (EUR 5,623,679 thousand), including impairment cost of EUR 32,835 thousand (EUR 35,131 thousand).

## 12. Share Capital and Contributions by Shareholders

| | Share capital | | Contributions by shareholders | |
|---|---|---|---|---|
| **EUR thousand** | **2019** | **2018** | **2019** | **2018** |
| Balance as of 1 January | 300 | 300 | 1,599,097 | 1,599,097 |
| Capital increase (decrease) | 0 | 0 | 0 | 0 |
| **Balance as of 31 December** | **300** | **300** | **1,599,097** | **1,599,097** |

The share capital of Borealis AG (parent company) amounts to EUR 300,000.00 (EUR 300,000.00) and is divided into 300,000 (300,000) fully paid shares with par value of EUR 1.00, none of which have special voting rights.

The contributions by shareholders amounted to EUR 1,599,097 thousand (EUR 1,599,097 thousand).

Borealis AG is owned 61% by IPIC Beta Holdings GmbH, Wagramer Strasse 17–19, 1220 Vienna, Austria, 3% by Mubadala Petroleum and Petrochemicals Holding Company LLC, P.O. Box 45005, Al Mamoura A, Muroor Road, 15th Street, Abu Dhabi, United Arab Emirates, 33% by OMV Refining & Marketing GmbH, Trabrennstrasse 6–8, 1020 Vienna, Austria, and 3% by OMV Aktiengesellschaft, Trabrennstrasse 6–8, 1020 Vienna, Austria. The 3% share of Mubadala Petroleum and Petrochemicals Holding Company LLC was transferred from International Petroleum Investment Company, IPIC Square, Muroor (4th) Road, PO Box 7528, Abu Dhabi, United Arab Emirates, on 7 February 2019. The ultimate controlling party is Mubadala Investment Company PJSC, Abu Dhabi, United Arab Emirates. None of the shares have special rights. Distribution of dividends to its shareholders does not have any tax effect for Borealis AG.

The Group's objectives are to safeguard the entity's ability to continue as a going concern and to provide an adequate return to its shareholders. The Group monitors capital on the basis of the gearing ratio. This gearing ratio is calculated as net interest-bearing debt divided by total equity. The Group's target is to keep the gearing ratio within a range of 40%-60% to meet the business needs of the Group. As per year-end, the gearing stands at 24% (20%), significantly below the target range due to the strong performance of the Group.

## 13. Personnel

| **EUR thousand** | **2019** | **2018** |
|---|---|---|
| **Costs** | | |
| Salaries and wages | 528,246 | 501,204 |
| Costs of defined contribution plans | 30,615 | 31,281 |
| Costs of defined benefit plans and other long-term employee benefits | 25,913 | 19,397 |
| Social security costs | 130,287 | 130,848 |
| Other personnel expenses | 24,785 | 21,127 |
| **Total** | **739,846** | **703,857** |

Costs of defined benefit plans and other long-term employee benefits are recognised in the production costs with EUR 15,441 thousand (EUR 11,443 thousand), sales and distribution costs with EUR 4,397 thousand (EUR 3,328 thousand), costs of administration with EUR 4,088 thousand (EUR 3,115 thousand) and research & development costs with EUR 1,987 thousand (EUR 1,511 thousand).

| Number of employees (FTEs) by country as of 31 December | 2019 | 2018 |
|---|---|---|
| Austria | 1,903 | 1,864 |
| Belgium | 1,193 | 1,148 |
| Finland | 902 | 912 |
| France | 848 | 895 |
| Sweden | 923 | 927 |
| Other Europe | 770 | 774 |
| Non-Europe | 330 | 314 |
| **Total** | **6,869** | **6,834** |

The remuneration of former and current management is shown in the table below:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Salaries and wages management (Executive Board) | 9,870 | 11,879 |
| Pension and severance costs management (Executive Board) | 546 | 1,777 |
| Salaries and wages other key management | 1,492 | 1,547 |
| Pension and severance costs other key management | 106 | 102 |
| **Total** | **12,014** | **15,305** |

From the salaries and wages of the Executive Board of EUR 9,870 thousand (EUR 11,879 thousand), EUR 2,859 thousand (EUR 1,393 thousand) were paid to former members of the Executive Board.

From the pension and severance costs of the Executive Board of EUR 546 thousand (EUR 1,777 thousand), EUR 0 thousand (EUR 1,034 thousand) were paid to former members of the Executive Board.

No loans were granted to current or former members of the Executive Board. The remuneration paid to members of the Supervisory Board amounted to EUR 856 thousand (EUR 856 thousand).

## 14. Employee Benefits

Most Group companies operate post-employment and other long-term benefit plans. The forms and benefits vary with conditions and practices in the countries concerned. The plans include both defined contribution plans and plans that provide defined benefits based on employees' years of service and estimated salary at retirement. A summary is shown below.

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Pensions and other post-employment benefit plans** | | |
| Present value of funded defined benefit pension plans | 307,388 | 360,917 |
| Fair value of plan assets | -166,488 | -230,679 |
| Deficit of funded defined benefit pension plans | 140,900 | 130,238 |
| Present value of unfunded defined benefit pension plans | 212,160 | 181,647 |
| Effect of asset ceiling (according IAS 19.64) | 2,783 | 2,516 |
| Total deficit of defined benefit pension plans | 355,843 | 314,401 |
| Medical plans | 17,373 | 14,054 |
| Severance plans | 67,140 | 65,178 |
| **Pensions and other post-employment benefit plans** | **440,356** | **393,633** |
| Other long-term employee benefits | 34,420 | 32,771 |
| **Net liability recognised in the balance sheet** | **474,776** | **426,404** |

The Group operates defined post-employment benefit plans in the EU, Norway and the United Arab Emirates under broadly similar regulatory frameworks. These comprise pension plans, severance plans as well as post-retirement medical plans.

### Defined Benefit Pension Plans

The pension plans typically are final salary pension plans which provide benefits to members in the form of a guaranteed level of pension payable for life. The level of benefits provided depends on members' length of service and their salary in the final years leading up to retirement. The pensions in payment are generally updated in line with the retail price or a similar index. The benefit payments related to funded plans are from insurance funds, however, there are also a number of unfunded plans where the Company meets the benefit payment obligation as it falls due. The movement in the benefit pension obligation over the year is as follows:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Defined benefit obligation as of 1 January** | **545,080** | **551,018** |
| Net current service cost | 18,519 | 20,024 |
| Interest cost on defined benefit obligation | 8,709 | 9,235 |
| Past service cost | 725 | -15,282 |
| Gains (-)/losses due to settlements | -85,764 | -694 |
| Total amount recognised in profit or loss | -57,811 | 13,283 |
| Gains (-)/losses due to changes in demographic assumptions | 0 | 5,027 |
| Gains (-)/losses due to changes in financial assumptions | 53,048 | -3,673 |
| Change in unrecognised assets due to asset ceiling | 222 | 2,516 |
| Experience gains (-)/losses | -1,937 | 2,179 |
| Exchange rate gains (-)/losses | -1,178 | -1,737 |
| Total amount recognised in other comprehensive income | 50,155 | 4,312 |
| Actual benefits paid directly from the plan assets | -9,612 | -15,694 |
| Actual benefits paid directly by employer | -5,340 | -4,723 |
| Actual plan participants' contributions | 1,172 | 1,128 |
| Actual expenses/taxes and premiums paid | -1,644 | -1,587 |
| Other changes | 1,815 | 0 |
| Exchange rate gains (-)/losses | -1,484 | -2,657 |
| **Defined benefit obligation as of 31 December** | **522,331** | **545,080** |
| **Fair value of plan assets as of 1 January** | **230,679** | **221,796** |
| Interest income on plan assets | 2,927 | 3,417 |
| Gains/losses (-) due to settlements | -77,605 | -361 |
| Actual admin expenses paid | -328 | -342 |
| Total amount recognised in profit or loss | -75,006 | 2,714 |
| Return on plan assets excluding amounts included in interest income | 1,728 | 5,139 |
| Total amount recognised in other comprehensive income | 1,728 | 5,139 |
| Actual benefits paid directly from the plan assets | -9,612 | -15,694 |
| Actual plan participants' contributions | 1,172 | 1,128 |
| Actual employer contributions | 17,337 | 17,181 |
| Actual taxes paid | -1,644 | -1,587 |
| Other changes | 1,815 | 0 |
| Exchange rate gains/losses (-) | 19 | 2 |
| **Fair value of plan assets as of 31 December** | **166,488** | **230,679** |

The plan assets in 2019 and 2018 consist mainly of insurance contracts.

In 2019, gains due to settlement of defined benefit obligations amounting to EUR 85,764 thousand, as well as losses due to settlement of plan assets amounting to EUR 77,605 thousand relate to the closure of a partially funded pension plan in Borealis Polymers Oy. The pension promise to former plan members was converted into a defined contribution pension scheme.

### Medical Plans

Medical plans reimburse certain medical costs for retired employees mainly in Belgium. The movement in the medical obligation over the year is as follows:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Defined benefit obligation as of 1 January** | **14,054** | **14,908** |
| Net current service cost | 641 | 695 |
| Interest cost on defined benefit obligation | 245 | 222 |
| Total amount recognised in profit or loss | 886 | 917 |
| Gains (-)/losses due to changes in financial assumptions | 2,697 | -821 |
| Experience gains (-)/losses | -76 | -804 |
| Total amount recognised in other comprehensive income | 2,621 | -1,625 |
| Actual benefits paid directly by employer | -188 | -146 |
| **Defined benefit obligation as of 31 December** | **17,373** | **14,054** |

### Severance Plans

Severance plans are operated in the Austrian Group companies and cover employees who started their service before 1 January 2003. Furthermore, the Group operates severance plans in France, Italy, and the United Arab Emirates. The movement in the severance obligation over the year is as follows:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Defined benefit obligation as of 1 January** | **65,178** | **68,499** |
| Net current service cost | 1,841 | 1,839 |
| Interest cost on defined benefit obligation | 1,140 | 1,026 |
| Past service cost | -388 | 0 |
| Total amount recognised in profit or loss | 2,593 | 2,865 |
| Gains (-)/losses due to changes in demographic assumptions | 25 | 1,034 |
| Gains (-)/losses due to changes in financial assumptions | 5,685 | -1,891 |
| Experience gains (-)/losses | -698 | 25 |
| Total amount recognised in other comprehensive income | 5,012 | -832 |
| Actual benefits paid directly by employer | -5,661 | -5,371 |
| Exchange rate gains (-)/losses | 18 | 17 |
| **Defined benefit obligation as of 31 December** | **67,140** | **65,178** |

## Other Long-term Employee Benefits

Other long-term employee benefits provided by the Group companies include items such as jubilee payments and pre-pension benefits. The movement in the other long-term benefit obligation over the year is as follows:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Defined benefit obligation as of 1 January** | **32,771** | **31,830** |
| Net current service cost | 1,786 | 1,642 |
| Interest cost on defined benefit obligation | 501 | 417 |
| Past service cost | 159 | 2,450 |
| Gains (-)/losses due to changes in demographic assumptions | 1 | 1,788 |
| Gains (-)/losses due to changes in financial assumptions | 2,363 | -731 |
| Experience gains (-)/losses | 429 | -520 |
| Total amount recognised in profit or loss | 5,239 | 5,046 |
| Actual benefits paid directly by employer | -3,590 | -4,105 |
| **Defined benefit obligation as of 31 December** | **34,420** | **32,771** |

Discount rates, projected future salary, pension increases and expected rates of return on plan assets vary for the different defined benefit plans, as they are determined in light of local conditions. Assumptions regarding future mortality are based on published statistics and mortality tables. The principal assumptions used were as follows (expressed as weighted averages):

| Percent | 2019 | 2018 |
|---|---|---|
| Discount rate | 1.1% | 1.9% |
| Projected future salary growth | 3.2% | 3.2% |
| Expected pension increase | 1.7% | 1.9% |

The sensitivity of the defined benefit obligation for pensions and other post-employment benefit plans to changes in the principal assumptions is:

| | | Impact on defined benefit obligation | |
|---|---|---|---|
| | Change in assumption | Increase in assumption | Decrease in assumption |
| Discount rate | 0.5% | Decrease by 7.2% | Increase by 8.0% |
| Projected future salary growth | 0.5% | Increase by 5.0% | Decrease by 4.7% |
| Expected pension increase | 0.5% | Increase by 4.8% | Decrease by 4.4% |

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions, the same method (present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period) has been applied as when calculating the pension liability recognised within the statement of financial position.

Expected contributions to post-employment benefit plans for the year 2020 are EUR 25,429 thousand (EUR 35,915 thousand). The weighted average duration of the defined benefit obligation is 14.6 years (13.8 years). The defined benefit plans expose the Group to actuarial risks, mainly the longevity risk, interest rate and market (investment) risk.

## 15. Provisions

| EUR thousand | 2019 | | | | | |
|---|---|---|---|---|---|---|
| | Restructuring | Decommissioning | Legal | Environmental | Other | Total |
| As of 1 January | 1,036 | 43,445 | 5,474 | 2,625 | 19,196 | **71,776** |
| Additions | 18 | 0 | 256 | 3,710 | 8,049 | **12,033** |
| Utilised | -224 | 0 | -431 | -157 | -1,602 | **-2,414** |
| Reversed | 0 | -3,531 | -292 | -400 | -3,648 | **-7,871** |
| Reclassifications | 0 | 0 | 0 | 0 | -8,849 | **-8,849** |
| Interest expense | 0 | 70 | 0 | 0 | 0 | **70** |
| Exchange adjustments | 3 | 0 | -31 | 0 | -14 | **-42** |
| **Balance as of 31 December** | **833** | **39,984** | **4,976** | **5,778** | **13,132** | **64,703** |
| Other provisions current | 737 | 0 | 2,360 | 0 | 384 | **3,481** |
| Other provisions non-current | 96 | 39,984 | 2,616 | 5,778 | 12,748 | **61,222** |
| **Balance as of 31 December** | **833** | **39,984** | **4,976** | **5,778** | **13,132** | **64,703** |

| EUR thousand | 2018 | | | | | |
|---|---|---|---|---|---|---|
| | Restructuring | Decommissioning | Legal | Environmental | Other | Total |
| As of 1 January | 802 | 36,669 | 5,184 | 3,959 | 22,423 | **69,037** |
| Additions | 291 | 6,572 | 998 | 0 | 11,953 | **19,814** |
| Changes in consolidation scope | 0 | 0 | 0 | 0 | 472 | **472** |
| Utilised | -55 | 0 | -335 | -1,334 | -1,323 | **-3,047** |
| Reversed | 0 | 0 | -333 | 0 | -166 | **-499** |
| Reclassifications | 0 | 0 | 100 | 0 | -14,127 | **-14,027** |
| Interest expense | 0 | 204 | 0 | 0 | 0 | **204** |
| Exchange adjustments | -2 | 0 | -140 | 0 | -36 | **-178** |
| **Balance as of 31 December** | **1,036** | **43,445** | **5,474** | **2,625** | **19,196** | **71,776** |
| Other provisions current | 830 | 0 | 2,188 | 0 | 1,105 | **4,123** |
| Other provisions non-current | 206 | 43,445 | 3,286 | 2,625 | 18,091 | **67,653** |
| **Balance as of 31 December** | **1,036** | **43,445** | **5,474** | **2,625** | **19,196** | **71,776** |

### Restructuring
Provisions for restructuring cover estimated costs for the ongoing restructuring programmes mainly in Norway and Germany.

### Decommissioning
Provisions for decommissioning cover the expected clean-up and dismantling costs for plants situated on rented land in Germany and Belgium. It is expected that EUR 11,482 thousand will be used until 2024, EUR 5,083 thousand until 2027 and EUR 23,419 thousand until 2049.

### Legal
Legal provisions represent litigation provisions in various business areas.

### Environmental
Environmental provisions cover several environmental exposures in the Group.

### Other
Other provisions cover numerous types of long-term obligations, including long-term incentive plans. The reclassifications are items, that do not fulfil the definition of a provision anymore and are therefore reclassified to the balance sheet item current other liabilities.

The provisions are generally based on past events and commitments arising thereon. The timing of the cash outflows cannot be determined with certainty for all provisions.

## 16. Government Grants
Government grants received from the EU Emissions Trading System amounted to EUR 94,141 thousand in respect of the year 2019 (EUR 52,191 thousand for the year 2018). The increase compared to the previous year was mainly driven by the market price increase. The carrying amount as per 31 December 2019 of the grant relating to these certificates is EUR 566 thousand (EUR 0 thousand).

The non-current government grants are grants received for investments in production plants and for research and development. In 2019, no significant new grants have been received. During the year, EUR 7,425 thousand (EUR 4,746 thousand) were recognised in the income statement.

## 17. Financial Risk Management
The Group is exposed through its operations to the following financial risks:
– Foreign currency risk (note 23)
– Interest rate risk (note 24)
– Liquidity risk (note 21)
– Commodity risk (note 25)
– Credit risk (note 27)

The objective of financial risk management is to support the core businesses of Borealis. Financial risk management is centralised in the Treasury and Funding department and operates within policies approved by the board of directors. The Group provides written principles for overall risk management, as well as policies covering specific areas, such as foreign exchange risk, interest rate risk, credit risk, price risk or use of derivative financial instruments. Borealis aims to minimise effects related to foreign exchange, interest rate, liquidity, credit, commodity price and refinancing risks.

The use of any financial instrument is based on actual or forecasted underlying commercial or financial cash flows or identified risks as defined in the policy. When certain conditions are met, hedge accounting is applied to remove the accounting mismatch between the hedging instrument and the hedged item.

Note 22 provides an overview of the financial instruments used by Borealis to manage risk. For further details on the hedging instruments see note 22 Derivative financial instruments, note 23 Foreign currency risk, note 24 Interest rate risk and note 25 Commodity risk. The risk management process in general is described in the Group Management Report.

## 18. Financial Income/Expenses

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Interest income from | | |
| Cash and loans granted | 9,404 | 3,021 |
| Derivatives | 3,853 | 3,046 |
| Interest expenses to | | |
| Finance institutions | -35,363 | -35,694 |
| Derivatives | -4,081 | -3,258 |
| Capitalised interest | 2,915 | 1,866 |
| Exchange adjustments, net | -4,678 | 6,843 |
| Interest expenses for lease liabilities | -5,037 | 0 |
| Other financial income | 12,085 | 3,305 |
| Other financial expenses | -15,534 | -10,598 |
| **Financial income/expenses** | **-36,436** | **-31,469** |

## 19. Gains and Losses from Financial Instruments

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Recognised in profit or loss** | | |
| Change in fair value of commodity derivative contracts | -27,780 | 31,221 |
| Change in fair value of cross currency interest rate swaps | 1,189 | -399 |
| Change in fair value of foreign exchange swaps | -1,227 | 253 |
| Change in fair value other investments and listed securities | 980 | 1,186 |
| Realised result on commodity derivative contracts | -723 | -18,688 |
| Realised result on cross currency interest rate swaps | -45 | 223 |
| Realised result on foreign exchange swaps | -253 | 100 |
| Realised result other investments and listed securities | 965 | 590 |
| **Financial assets and liabilities at fair value through profit or loss** | **-26,894** | **14,486** |
| Amounts recognised in profit or loss for realised cash flow hedges | | |
| Commodity derivative contracts | 13,329 | 49,246 |
| Interest rate swaps | -182 | -437 |
| Foreign exchange forwards | -11,318 | -9,921 |
| **Hedging instruments** | **1,829** | **38,888** |
| Interest income on cash and loans granted | 9,404 | 3,021 |
| Foreign exchange effects on cash and deposits | -20,472 | -14,888 |
| Foreign exchange effects on receivables | 4,857 | 14,117 |
| Expenses for factoring of trade receivables | -2,464 | -3,658 |
| Impairment losses on receivables | -1,566 | -654 |
| Impairment losses on loans granted | -2,500 | 0 |
| **Financial assets at amortised cost** | **-12,741** | **-2,062** |
| Interest expenses and other expenses on financial liabilities | -39,420 | -41,103 |
| Foreign exchange effects on financial liabilities | 11,228 | 7,660 |
| Interest expenses for lease liabilities | -5,037 | 0 |
| **Financial liabilities at amortised cost** | **-33,229** | **-33,443** |

The amounts recognised in the income statement for the commodity derivative contracts and foreign exchange forwards are booked as a correction to the net sales or mainly production costs that are being hedged. The amounts recognised in the income statement for interest rate derivatives, foreign exchange swaps and the foreign exchange effects on non-derivative financial assets and liabilities are reported as part of the financial income and expenses. Impairment losses on receivables are reported in sales and distribution costs, impairment losses on loans granted are included in financial expenses.

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Recognised in other comprehensive income** | | |
| Commodity derivative contracts designated as cash flow hedge | -47,336 | 93,180 |
| Interest rate swaps outstanding designated as cash flow hedge | 1,558 | -58 |
| Foreign exchange forwards designated as cash flow hedge | -7,734 | -11,419 |
| Foreign exchange effects on long-term loans part of net investments in foreign operations | -3,398 | -8,210 |
| Foreign exchange effects on loans designated as hedge of investments in foreign operations | -2,735 | -8,079 |
| Amounts reclassified to the income statement | | |
| Commodity derivative contracts | -13,329 | -49,246 |
| Interest rate swaps | 182 | 437 |
| Foreign exchange forwards | 11,318 | 9,921 |
| **Total recognised in other comprehensive income** | **-61,474** | **26,526** |

## 20. Loans and Borrowings and Lease Liabilities

The composition of interest-bearing loans and borrowings and lease liabilities (current and non-current debt) at 31 December 2019 was as follows:

| EUR thousand | | 2019 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Due | | Term loans | Bonds | Utilised uncommitted facilities | Export credits | **Total loans and borrowings** | Unutilised committed facilities | **Lease liabilities** |
| After | 5 years | 335,933 | 296,975 | | | **632,908** | | **82,792** |
| Within | 5 years | 310,893 | | | | **310,893** | 1,000,000 | **13,702** |
| | 4 years | 38,299 | | | | **38,299** | | **18,887** |
| | 3 years | 73,361 | | | | **73,361** | | **26,888** |
| | 2 years | 156,425 | | | | **156,425** | | **30,102** |
| **Total non-current debt** | | 914,911 | **296,975** | **0** | **0** | **1,211,886** | **1,000,000** | **172,371** |
| Total current debt | | 101,633 | 0 | 69,832 | 58,138 [1)] | **229,603** | 107,873 [1)] | **38,513** |
| **Total debt** | | 1,016,544 | **296,975** | **69,832** | **58,138** | **1,441,489** | **1,107,873** | **210,884** |

1) Borealis maintains EUR 166,011 thousand in export credit facilities (these facilities were drawn with EUR 58,138 thousand at 31 December 2019). These facilities are economically evergreen in nature, but include a one year notice for cancellation.

The composition of interest-bearing loans and borrowings (current and non-current debt) at 31 December 2018 was as follows:

| EUR thousand | | 2018 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Due | | Term loans | Bonds | Utilised uncommitted facilities | Export credits | Finance leases | **Total loans and borrowings** | Unutilised committed facilities |
| After | 5 years | 61,615 | 300,000 | | | | **361,615** | |
| Within | 5 years | 37,574 | | | | | **37,574** | |
| | 4 years | 71,536 | | | | 80 | **71,616** | |
| | 3 years | 154,436 | | | | 77 | **154,513** | 1,000,000 |
| | 2 years | 101,071 | | | | 89 | **101,160** | |
| **Total non-current debt** | | **426,232** | **300,000** | **0** | **0** | **246** | **726,478** | **1,000,000** |
| Total current debt | | 300,098 | 125,000 | 59,901 | 166,011 [2)] | 135 | **651,145** | 0 |
| **Total debt** | | **726,330** | **425,000** | **59,901** | **166,011** | **381** | **1,377,623** | **1,000,000** |

2) Borealis maintains EUR 166,011 thousand in export credit facilities (these facilities were fully drawn at 31 December 2018). These facilities are economically evergreen in nature, but include a one year notice for cancellation.

The carrying amounts of the loans and borrowings and lease liabilities developed as follows:

| EUR thousand | 2019 | | | | | |
|---|---|---|---|---|---|---|
| | Term loans | Bonds | Utilised uncommitted facilities | Export credits | **Total loans and borrowings** | **Lease liabilities** |
| As of 1 January | 726,330 | 425,000 | 59,901 | 166,011 | **1,377,242** | **381** |
| Proceeds from loans and borrowings | 765,434 | 0 | 69,832 | 0 | **835,266** | **0** |
| Repayment of loans and borrowings | -476,100 | -125,000 | -59,901 | -107,873 | **-768,874** | **0** |
| Opening adjustment leasing | 0 | 0 | 0 | 0 | **0** | **210,533** |
| New lease liabilities | 0 | 0 | 0 | 0 | **0** | **39,488** |
| Principal elements of lease payments | 0 | 0 | 0 | 0 | **0** | **-38,703** |
| Exchange Adjustments non-cash | 880 | 0 | 0 | 0 | **880** | **-20** |
| Other | 0 | -3,025 | 0 | 0 | **-3,025** | **-795** |
| **Balance as of 31 December** | **1,016,544** | **296,975** | **69,832** | **58,138** | **1,441,489** | **210,884** |

| EUR thousand | 2018 | | | | | |
|---|---|---|---|---|---|---|
| | Term loans | Bonds | Utilised uncommitted facilities | Export credits | Finance leases | **Total loans and borrowings** |
| As of 1 January | 893,397 | 125,000 | 0 | 0 | 767 | **1,019,164** |
| Proceeds from loans and borrowings | 200,627 | 300,000 | 59,901 | 166,011 | 0 | **726,539** |
| Repayment of loans and borrowings | -374,601 | 0 | 0 | 0 | 0 | **-374,601** |
| New lease liabilities | 0 | 0 | 0 | 0 | 0 | **0** |
| Principal elements of lease payments | 0 | 0 | 0 | 0 | -386 | **-386** |
| Exchange Adjustments non-cash | 6,966 | 0 | 0 | 0 | 0 | **6,966** |
| Other | -59 | 0 | 0 | 0 | 0 | **-59** |
| **Balance as of 31 December** | **726,330** | **425,000** | **59,901** | **166,011** | **381** | **1,377,623** |

The Group's financing mainly comprises committed credit lines (largely syndicated), term loans, bonds, private placements and export credits. The loans and borrowings are all measured at amortised cost.

Borealis continues to maintain a strong liquidity position through its EUR 1 billion fully committed revolving credit facility of which EUR 1 billion remained undrawn at the end of December 2019 and by terming out its debt through diverse funding channels. The Syndicated Revolving Credit Facility has been refinanced in December 2019 with a five-year tenor with two one-year extension options at lenders' discretion. The new maturity date is December 2024.

At year-end, the Group had committed credit facilities of EUR 1,166,011 thousand (EUR 1,166,011 thousand). Thereof, the OeKB Export Credit Facilities of EUR 166,011 thousand were drawn in the amount of EUR 58,138 thousand (EUR 166,011 thousand).

In 2019, Borealis increased its debt position by EUR 274,750 thousand. This includes the initial recognition of IFRS 16 Leases as per 1 January 2019. At the reporting date, the lease liabilities amounted to EUR 210,884 thousand. The net debt position which increased by EUR 240,825 thousand resulting in a gearing ratio of 24%.

In May 2019, Borealis successfully placed a Schuldschein (German Private Placement) transaction in EUR and USD. The issue was initially launched with a marketing volume of EUR 150,000 thousand combined EUR and USD, in fixed and variable notes and tenors of 5, 7 and 10 years. The Schuldschein transaction was very well received by investors right from launch date and, consequently, could be priced at the low end of the spread range, underpinning the strong and consistent Borealis credit story. Backed by the strong and very granular order book, Borealis decided to increase the final size to EUR 140,000 thousand and USD 70,000 thousand, respectively.

In July 2012, a 7-year bond was issued with a nominal value of EUR 125,000 thousand and a fixed interest rate of 4.000%. This bond was repaid in July 2019. In December 2018, Borealis issued an inaugural rated corporate 7-year bond with a nominal value of EUR 300,000 thousand and an interest rate of 1.750%. The bond is listed at the Vienna Stock Exchange.

In October 2019, Borealis continued to diversify its financing portfolio and successfully closed its inaugural transaction in the Japanese market in the form of a "Samurai" loan. The issue had final volumes of USD 175,000 thousand and JPY 5,000,000 thousand, which in total amounts to approximately EUR 200,000 thousand. While trading companies use the instrument regularly for shorter tenor funding, Borealis is only the second Western European corporate since 2014 to access the Samurai loan market and the first to issue a dual currency tranche in USD and JPY. With the Samurai loan, Borealis is again a frontrunner in innovative financings.

In December 2019, Borealis successfully closed the latest USPP transaction to diversify further and extend maturities substantially with a further improved and harmonised documentation. Due to attractive terms and conditions, Borealis decided to upsize the transaction to a total of USD 165,000 thousand and EUR 40,000 thousand with the full range of tenors, covering the full band of 10-, 12- and 15-year tenors for USD notes. EUR notes came in both in 10-year and 15-year tenors. Borealis was able to retain existing investors who participated in earlier transactions and attract new names, confirming the consistent and long-term relationship driven Funding and Investor Relations approach executed during the last years.

In 2019, Borealis concluded R&D financing agreements with the Österreichische Forschungsförderungsgesellschaft mbH in Austria with the total amount of EUR 668 thousand (EUR 508 thousand).

Under Borealis' funding strategy, a very diversified financing portfolio was implemented over the last years with the aim to maintain a balanced maturity profile. In addition, Borealis is pursuing a long-term relationship approach with a larger group of international financing institutions that support the company in funding and risk management transactions.

In November 2018, S&P Global Ratings issued a BBB+ rating with stable outlook for Borealis. This constitutes the first public rating for the Company, which has been successfully active in a wide range of financing markets and instruments over the last ten years and has built up a robust and well diversified funding portfolio. While Borealis' long-term banking partners and investors have always appreciated the strong credit quality of the Company, the public rating provides a very good additional evaluation basis for all external stakeholders.

Based on this, combined with a strong balance sheet and the recently obtained strong public rating, Borealis has a wide variety of attractive funding ins truments at hand (such as bonds, German Schuldschein, US Private Placement, foreign investment financings, bank loans and other) to meet the financing needs in 2020 and beyond. Borealis will continue to explore several suitable financial instruments fitting its strategy. With its undrawn EUR 1 billion syndicated revolving credit facility at 31 December 2019, Borealis has a significant committed liquidity headroom at its disposition.

Some loan agreements have financial covenants based on maintaining certain gearing and solvency ratios.

| **Currency Mix EUR thousand** | **2019** | **%** | **2018** | **%** |
|---|---|---|---|---|
| EUR | 1,008,835 | 61% | 1,151,245 | 84% |
| USD | 557,298 | 34% | 187,732 | 14% |
| JPY | 40,976 | 3% | 0 | 0% |
| GBP | 36,034 | 2% | 33,449 | 2% |
| Other | 9,230 | 0% | 5,197 | 0% |
| **Interest bearing total** | **1,652,373** | **100%** | **1,377,623** | **100%** |

## 21. Liquidity Risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting the obligations associated with its financial liabilities. Liquidity is managed on a daily basis to ensure the Group's liquidity requirement and is covered at all times with the lowest possible level of working capital. For further details on loans and borrowings and lease liabilities see note 20 and for derivatives note 22.

The following are the contractual maturities of non-derivative financial liabilities, including forecasted interest payments, and derivative financial liabilities. All carrying amounts exclude the outstanding interest accruals at year-end. Cash outflows are reported with a negative sign.

| EUR thousand | 2019 | | | | | | |
|---|---|---|---|---|---|---|---|
| **Non-derivative financial liabilities** | Carrying amount | **Contractual cash flows** | 6 months or less | 6–12 months | 1–2 years | 2–5 years | More than 5 years |
| EUR floating rate loans | -183,896 | **-186,809** | -13,730 | -75,468 | -27,012 | -43,158 | -27,441 |
| EUR fixed rate loans | -609,085 | **-674,043** | -66,995 | -9,064 | -102,349 | -79,825 | -415,810 |
| USD floating rate loans | -179,678 | **-205,584** | -2,741 | -2,693 | -4,722 | -180,512 | -14,916 |
| USD fixed rate loans | -318,648 | **-427,343** | -7,472 | -10,659 | -13,458 | -153,009 | -242,745 |
| JPY floating rate loans | -40,976 | **-42,131** | -87 | -119 | -168 | -41,757 | 0 |
| GBP fixed rate loans | -35,444 | **-42,108** | -1,666 | -1,666 | -38,776 | 0 | 0 |
| Other floating rate loans | -3,316 | **-3,432** | -890 | -860 | -1,682 | 0 | 0 |
| Other fixed rate loans | -614 | **-625** | -517 | -37 | -71 | 0 | 0 |
| Lease liabilities | -210,884 | **-254,158** | -23,423 | -19,662 | -33,964 | -67,989 | -109,120 |
| Trade payables | -746,527 | **-746,527** | -746,527 | 0 | 0 | 0 | 0 |
| Utilised uncommitted facilities | -69,832 | **-69,833** | -69,833 | 0 | 0 | 0 | 0 |
| **Total** | **-2,398,900** | **-2,652,593** | **-933,881** | **-120,228** | **-222,202** | **-566,250** | **-810,032** |

| EUR thousand | 2018 | | | | | | |
|---|---|---|---|---|---|---|---|
| **Non-derivative financial liabilities** | Carrying amount | **Contractual cash flows** | 6 months or less | 6–12 months | 1–2 years | 2–5 years | More than 5 years |
| EUR floating rate loans | -272,195 | **-274,014** | -13,673 | -17,443 | -30,779 | -46,108 | -166,011 |
| EUR fixed rate loans | -818,768 | **-885,890** | -7,775 | -350,629 | -74,444 | -120,252 | -332,790 |
| EUR financial leases | -381 | **-381** | 0 | -135 | -89 | -157 | 0 |
| USD fixed rate loans | -187,732 | **-227,909** | -5,311 | -61,194 | -10,899 | -100,621 | -49,884 |
| GBP fixed rate loans | -33,449 | **-42,881** | -1,572 | -1,572 | -3,144 | -36,593 | 0 |
| BRL floating rate loans | -4,986 | **-5,381** | -977 | -917 | -1,787 | -1,700 | 0 |
| BRL fixed rate loans | -211 | **-230** | -41 | -40 | -77 | -72 | 0 |
| Trade payables | -852,525 | **-852,525** | -852,525 | 0 | 0 | 0 | 0 |
| Utilised uncommitted facilities | -59,901 | **-59,901** | -59,901 | 0 | 0 | 0 | 0 |
| **Total** | **-2,230,148** | **-2,349,112** | **-941,775** | **-431,930** | **-121,219** | **-305,503** | **-548,685** |

| EUR thousand | 2019 | | | | | | |
|---|---|---|---|---|---|---|---|
| **Derivative financial liabilities/outflow** | Carrying amount | **Contractual cash flows** | 6 months or less | 6–12 months | 1–2 years | 2–5 years | More than 5 years |
| Interest rate swaps | -447 | **-455** | -142 | -102 | -151 | -60 | 0 |
| Cross currency interest rate swaps | -2,456 | **-88,631** | -2,188 | -2,178 | -38,967 | -45,298 | 0 |
| Foreign exchange contracts | -2,130 | **-260,530** | -235,129 | -25,401 | 0 | 0 | 0 |
| Feedstock contracts | -12,188 | **-12,446** | -12,048 | -203 | -195 | 0 | 0 |
| Electricity contracts | -17,424 | **-17,386** | -9,633 | -4,305 | -2,920 | -528 | 0 |
| Natural gas contracts | -826 | **-826** | -826 | 0 | 0 | 0 | 0 |
| **Total** | **-35,471** | **-380,274** | **-259,966** | **-32,189** | **-42,233** | **-45,886** | **0** |

| EUR thousand | 2018 | | | | | | |
|---|---|---|---|---|---|---|---|
| **Derivative financial liabilities/outflow** | Carrying amount | **Contractual cash flows** | 6 months or less | 6–12 months | 1–2 years | 2–5 years | More than 5 years |
| Interest rate swaps | -611 | **-688** | -190 | -131 | -234 | -133 | 0 |
| Cross currency interest rate swaps | -3,645 | **-45,183** | -1,485 | -1,485 | -2,969 | -39,245 | 0 |
| Foreign exchange contracts | -4,704 | **-197,186** | -135,892 | -61,294 | 0 | 0 | 0 |
| Feedstock contracts | -61,021 | **-61,995** | -46,803 | -14,596 | -596 | 0 | 0 |
| Electricity contracts | -15,613 | **-15,596** | -8,161 | -6,871 | -471 | -93 | 0 |
| Natural gas contracts | -1,817 | **-1,815** | -1,475 | -340 | 0 | 0 | 0 |
| **Total** | **-87,411** | **-322,464** | **-194,006** | **-84,717** | **-4,270** | **-39,471** | **0** |

| EUR thousand | 2019 | | | | | |
|---|---|---|---|---|---|---|
| **Off balance sheet liabilities** | **Contractual cash flows** | 6 months or less | 6–12 months | 1–2 years | 2–5 years | More than 5 years |
| Contingencies provided by the entity | **-51,805** | -3,526 | -515 | -906 | -15,685 | -31,173 |
| Short-term and low-value lease payments | **-2,069** | -1,170 | -693 | -153 | -53 | 0 |
| Capital commitments – property, plant and equipment | **-343,637** | -194,478 | -49,375 | -73,290 | -26,494 | 0 |
| Commitments in joint ventures | **-77,989** | 0 | -77,989 | 0 | 0 | 0 |

| EUR thousand | 2018 | | | | | |
|---|---|---|---|---|---|---|
| **Off balance sheet liabilities** | **Contractual cash flows** | 6 months or less | 6–12 months | 1–2 years | 2–5 years | More than 5 years |
| Contingencies provided by the entity | **-56,674** | -19,968 | -1,498 | -314 | -1,150 | -33,744 |
| Operating lease payables | **-258,158** | -22,725 | -19,924 | -35,576 | -70,383 | -109,550 |
| Capital commitments – property, plant and equipment | **-131,763** | -107,662 | -19,373 | -4,105 | -623 | 0 |
| Commitments in joint ventures | **-152,805** | -76,402 | 0 | -76,403 | 0 | 0 |

For details with respect to off balance sheet liabilities, please see note 5, note 8, and note 31.

## 22. Derivative Financial Instruments

The Group is exposed to certain risks relating to its ongoing business operations. The primary risks managed using derivative instruments are foreign currency risk, interest rate risk and commodity price risk.

The Group's risk management strategy and how it is applied to manage risk are explained in note 17 and in the Group Management Report in general and in this note, notes 23, 24, and 25 in detail for the risks mentioned in the prior paragraph.

### Hedge Accounting Policies of the Group

Hedges are generally placed in the legal entities where the underlying exposure exists. When certain conditions are met, Borealis applies IFRS 9 hedge accounting principles in order to recognise the offsetting effects on profit or loss of changes in the fair value of the hedging instrument and the hedged items. Borealis has the following hedge accounting relationships:

- Cash flow hedging – foreign exchange (see notes 22 and 23)
- Cash flow hedging – interest rate (see notes 22 and 24)
- Cash flow hedging – commodity (feedstock, electricity, natural gas – see notes 22 and 25)
- Net investment hedging in a foreign operation (see note 23)

Derivatives are only used for economic hedging purposes and not as speculative investments. However, where derivatives are not designated as hedging instruments, they are classified as fair value through profit or loss (FVPL) for accounting purposes.

The Group is holding the following derivative financial instruments:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Current assets** | | |
| Foreign exchange swaps – FVPL | 52 | 493 |
| Foreign exchange forwards – cash flow hedges | 3,841 | 2,078 |
| Feedstock contracts – FVPL | 1,152 | 27,328 |
| Feedstock contracts – cash flow hedges | 8,191 | 27,377 |
| Electricity contracts – cash flow hedges | 12,382 | 80,452 |
| Natural gas – cash flow hedges | 0 | 796 |
| **Total current derivative financial instrument assets (Other receivables and other assets)** | **25,618** | **138,524** |

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Non-current assets** | | |
| Interest rate swaps – cash flow hedges | 1,576 | 0 |
| Feedstock contracts – cash flow hedges | 1,813 | 0 |
| Electricity contracts – cash flow hedges | 3,271 | 27,686 |
| **Total non-current derivative financial instrument assets (Other receivables and other assets)** | **6,660** | **27,686** |

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Current liabilities** | | |
| Foreign exchange swaps – FVPL | 1,279 | 240 |
| Foreign exchange forwards – cash flow hedges | 851 | 4,464 |
| Feedstock contracts – FVPL | 6,479 | 4,916 |
| Feedstock contracts – cash flow hedges | 5,514 | 55,509 |
| Electricity contracts – cash flow hedges | 13,958 | 15,047 |
| Natural gas – cash flow hedges | 826 | 1,817 |
| **Total current derivative financial instrument liabilities (Other liabilities)** | **28,907** | **81,993** |

| EUR thousand | 2019 | 2018 |
|---|---|---|
| **Non-current liabilities** | | |
| Cross currency interest rate swaps – FVPL | 2,456 | 3,645 |
| Interest rate swaps – cash flow hedges | 447 | 611 |
| Feedstock contracts – cash flow hedges | 195 | 596 |
| Electricity contracts – cash flow hedges | 3,466 | 566 |
| **Total non-current derivative financial instrument liabilities (Other liabilities)** | **6,564** | **5,418** |

## Impact of Hedge Accounting on Equity

The Group's hedging reserve disclosed in the Consolidated Statement of Changes in Equity relates to the following hedging instruments:

| Hedging Reserve EUR thousand | 2019 | | | | | |
|---|---|---|---|---|---|---|
| | Cash flow hedge – foreign currency | Cash flow hedge – interest rate | Cash flow hedge – feedstock | Cash flow hedge – electricity | Cash flow hedge – natural gas | Hedging reserve total |
| As of 1 January | -1,789 | -459 | -21,542 | 69,395 | -766 | **44,839** |
| Change in fair value of hedging instrument recognised in OCI | -7,734 | 1,558 | 33,438 | -74,435 | -6,339 | **-53,512** |
| Reclassifications from OCI to profit or loss | 11,318 | 182 | 0 | -19,862 | 6,533 | **-1,829** |
| Reclassifications to the cost of non-financial items | 1,792 | 0 | -4,442 | 0 | 0 | **-2,650** |
| Deferred tax | -1,344 | -435 | -7,248 | 23,574 | -48 | **14,499** |
| **As of 31 December** | **2,243** | **846** | **206** | **-1,328** | **-620** | **1,347** |

| Hedging Reserve EUR thousand | 2018 | | | | | |
|---|---|---|---|---|---|---|
| | Cash flow hedge – foreign currency | Cash flow hedge – interest rate | Cash flow hedge – feedstock | Cash flow hedge – electricity | Cash flow hedge – natural gas | Hedging reserve total |
| As of 1 January | -666 | -743 | 2,195 | 24,860 | 63 | **25,709** |
| Change in fair value of hedging instrument recognised in OCI | -11,419 | -58 | -14,341 | 107,649 | -128 | **81,703** |
| Reclassifications from OCI to profit or loss | 9,921 | 437 | 0 | -48,269 | -977 | **-38,888** |
| Reclassifications to the cost of non-financial items | 0 | 0 | -17,308 | 0 | 0 | **-17,308** |
| Deferred tax | 375 | -95 | 7,912 | -14,845 | 276 | **-6,377** |
| **As of 31 December** | **-1,789** | **-459** | **-21,542** | **69,395** | **-766** | **44,839** |

| Reserve for unrealised exchange gains/losses<br>EUR thousand | 2019 | 2018 |
|---|---|---|
| As of 1 January | 220,738 | 100,873 |
| Foreign currency revaluation of the USD loans, designated as net investment hedge | -2,735 | -8,079 |
| Foreign currency revaluation of financial statements of foreign operations | 65,891 | 131,226 |
| Foreign currency revaluation of long-term loans to foreign operations | -3,398 | -8,210 |
| Foreign currency revaluation of financial statements of foreign operations – Non-controlling interest | 176 | 852 |
| Deferred tax | 1,532 | 4,076 |
| **As of 31 December** | **282,204** | **220,738** |

At 31 December 2019 and 31 December 2018, the Group held the following cash flow and net investment hedging relationships. The table shows the profile of the timing (maturity) of the nominal amount of the hedging instruments.

| | | 2019 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unit | **Total** | 3 months or less | 3–6 months | 6–12 months | 1–2 years | 2–3 years | 3–4 years | 4–5 years | More than 5 years |
| Foreign exchange forwards | EUR thousand | **283,501** | 69,181 | 65,961 | 148,359 | 0 | 0 | 0 | 0 | 0 |
| USD loans, designated as net investment hedge | USD thousand | **221,000** | 0 | 0 | 5,000 | 0 | 56,000 | 40,000 | 49,000 | 71,000 |
| Interest rate swaps | EUR thousand | **132,654** | 0 | 0 | 0 | 0 | 34,615 | 0 | 98,039 | 0 |
| Feedstock contracts | tonnes | **274,712** | 176,145 | 46,695 | 51,872 | 0 | 0 | 0 | 0 | 0 |
| Electricity contracts | GWh | **5,565** | 712 | 679 | 1,371 | 1,918 | 885 | 0 | 0 | 0 |
| Natural gas contracts | GWh | **228** | 228 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | 2018 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unit | **Total** | 3 months or less | 3–6 months | 6–12 months | 1–2 years | 2–3 years | 3–4 years | 4–5 years | More than 5 years |
| Foreign exchange forwards | EUR thousand | **302,904** | 94,137 | 70,827 | 137,940 | 0 | 0 | 0 | 0 | 0 |
| USD loans, designated as net investment hedge | USD thousand | **215,000** | 0 | 0 | 64,000 | 5,000 | 0 | 56,000 | 40,000 | 50,000 |
| Interest rate swaps | EUR thousand | **46,154** | 0 | 0 | 0 | 0 | 0 | 0 | 46,154 | 0 |
| Feedstock contracts | tonnes | **710,318** | 266,917 | 156,696 | 280,705 | 6,000 | 0 | 0 | 0 | 0 |
| Electricity contracts | GWh | **5,611** | 767 | 716 | 1,416 | 1,853 | 858 | 0 | 0 | 0 |
| Natural gas contracts | GWh | **520** | 520 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

As of 31 December 2019 and 31 December 2018, no fair value hedges existed.

## Offsetting

The Group enters in the normal course of business into derivative transactions under International Swaps and Derivatives Association (ISDA) master netting agreements. The ISDA agreements do not meet the criteria for offsetting in the statement of financial position. This is because the Group currently does not have any legally enforceable right to offset recognised amounts.

The following table presents the recognised financial instruments (derivatives) that are subject to enforceable master netting arrangements but not offset. The column 'Net amount' shows the impact on the Group's balance sheet if all set-off rights were exercised.

| **EUR thousand** | **2019** | | |
|---|---|---|---|
| | **Amounts presented in the balance sheet** | **Related amounts not set off in the balance sheet** | **Net amount** |
| **Financial assets** | | | |
| Derivative financial instruments | 32,278 | -22,384 | 9,894 |
| **Financial liabilities** | | | |
| Derivative financial instruments | 35,471 | -22,384 | 13,087 |

| EUR thousand | 2018 | | |
|---|---|---|---|
| | Amounts presented in the balance sheet | Related amounts not set off in the balance sheet | Net amount |
| **Financial assets** | | | |
| Derivative financial instruments | 166,210 | -67,623 | 98,587 |
| **Financial liabilities** | | | |
| Derivative financial instruments | 87,411 | -67,623 | 19,788 |

Borealis has no offsetting of financial assets and financial liabilities in the balance sheet. There is no further netting potential for non-derivative financial instruments.

## 23. Foreign Currency Risk

Foreign exchange risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates.

Borealis incurs foreign currency risk on sales, purchases and borrowings that are denominated in currencies other than EUR. The most significant currencies in terms of hedged amounts are USD and SEK.

The foreign exchange risk related to short-term commercial cash flows are hedged and limits for long-term foreign exchange exposures are established. Based on regular cash flow forecasts, Borealis hedges its foreign exchange exposure coming from forecasted sales and purchases, and from committed investment projects.

Borealis hedges forecasted positions denominated in foreign currencies. At any time, Borealis may also hedge its long-term commercial exposures up to a predefined level and duration. Borealis normally hedges the currency positions using foreign exchange forward contracts. Borealis classifies its foreign exchange forward contracts which hedge a forecasted currency position as cash flow hedges and states them at fair value.

Changes in the fair value of foreign exchange forward contracts that hedge monetary assets and liabilities in foreign currencies and the forward legs of foreign exchange swaps used in liquidity management, for which no hedge accounting is applied, are recognised in the income statement. Both changes in the fair value of the forward contracts and the foreign exchange gains and losses relating to the monetary items are recognised as part of the financial expenses.

There is an economic relationship between the hedged items and the hedging instruments as the critical terms of the foreign exchange forward contracts match the terms of the expected highly probable forecast transactions (i.e., nominal amount, exchange rate and expected payment date). Hence the Group has established a hedge ratio of 1:1. To test the hedge effectiveness, the Group uses the Dollar Offset method and compares the changes in the fair value of the hedging instruments against the changes in fair value of the hedged items attributable to the hedged risks.

Hedge ineffectiveness may arise from:
– differences in the timing of the cash flows of the hedged items and the hedging instruments;
– different indexes (and accordingly different curves) linked to the hedged risk of the hedged items and hedging instruments;
– the counterparties' credit risk differently impacting the fair value movements of the hedging instruments and hedged items;
– changes to the forecasted amount of cash flows of hedged items;
– change in fair value of the cross currency basis spread element of the foreign exchange forward contracts ('ccbs').

Borealis does not recognise any ineffectiveness in profit or loss due to immateriality.

### Net Investment Hedges in Foreign Operations

A foreign currency exposure arises from the Group's long-term net investment in its subsidiaries, associated companies and joint ventures in foreign currencies. Foreign exchange translation differences relating to these net investments are recognised in other comprehensive income. Borealis has hedged part of its investment in an associated company which has USD as its functional currency, by designating certain external loans in USD as hedges of the Group's investments in its foreign operations. The hedged risk in the net investment hedge is the risk of a weakening USD against the EUR that will result in a reduction in the carrying amount of the Group's net investment in the associated company in USD. The EUR/USD impact on the measurement of the loan is recognised in other comprehensive income.

To assess hedge effectiveness, the Group determines the economic relationship between the hedging instrument and the hedged item by comparing changes in the carrying amount of the debt that is attributable to a change in the spot rate with changes in the investment in the foreign operation due to movements in the spot rate (the dollar-offset method). The Group's policy is to hedge the net investment only to the extent of the debt principal.

There is an economic relationship between the hedged item and the hedging instrument as the net investment creates a translation risk that will match the foreign exchange risk on the USD borrowing. The Group has established a hedge ratio of 1:1 as the underlying risk of the hedging instrument is identical to the hedged risk component. Hedge ineffectiveness will arise when the amount of the investment in the foreign associated company becomes lower than the amount of the borrowing.

### Effects of Hedge Accounting on the Financial Position and Performance

The effects of the foreign currency related hedging instruments on the Group's financial position and performance are as follows:

| **Foreign exchange forwards**<br>**EUR thousand** | **2019** | **2018** |
|---|---|---|
| Carrying amount (asset – current) | 3,841 | 2,078 |
| Carrying amount (liability – current) | 851 | 4,464 |
| Line item in the balance sheet where the hedging instrument is included | Other receivables and other assets / Other liabilities | Other receivables and other assets / Other liabilities |
| Total nominal amount | kEUR 283,501 | kEUR 302,904 |
| Hedge ratio | 1:1 | 1:1 |
| Hedged rate for the year | EUR/USD 1.11–1.16<br>EUR/SEK 10.58–10.99 | EUR/USD 1.14–1.26<br>EUR/SEK 10.28–10.67 |
| Change in fair value of the hedging instrument used for measuring ineffectiveness for the period | -7,734 | -11,419 |
| Change in value of the hedged item used for measuring ineffectiveness for the period | 7,734 | 11,419 |
| Hedging reserve (net of deferred taxes) | 2,243 | -1,789 |
| Total hedging gain (+) or loss (-) recognised in OCI | -7,734 | -11,419 |
| Hedge ineffectiveness recognised in profit or loss | 0 | 0 |
| Amount reclassified from hedging reserve to profit or loss | 11,318 | 9,921 |
| Line item in the statement of profit or loss affected by the reclassification | Net sales and Production costs | Net sales and Production costs |
| Amount reclassified from hedging reserve to the cost of non-financial items | 1,792 | 0 |

| **Net investment hedges in foreign operations**<br>**EUR thousand** | **2019** | **2018** |
|---|---|---|
| Carrying amount (liability) | 196,978 | 187,732 |
| Line item in the balance sheet where the hedging instrument is included | Loans and borrowings | Loans and borrowings |
| Total nominal amount | kUSD 221,000 | kUSD 215,000 |
| Hedge ratio | 1:1 | 1:1 |
| Change in fair value of the hedging instrument used for measuring ineffectiveness for the period | -2,735 | -8,079 |
| Change in value of the hedged item used for measuring ineffectiveness for the period | 2,735 | 8,079 |
| Reserve for unrealised exchange gains/losses (net of deferred taxes) | -16,958 | -14,907 |
| Balances remaining in the reserve for unrealised exchange gains/losses from hedging relationships for which hedge accounting is no longer applied | -5,804 | 2,740 |
| Total hedging gain (+) or loss (-) recognised in OCI | -2,735 | -8,079 |
| Hedge ineffectiveness recognised in profit or loss | 0 | 0 |

### Sensitivity Analysis

The Group's exposure to the risk of changes in foreign exchange rates relates primarily to the Group's operating activities, invoicing mainly in EUR and purchasing raw materials mainly in USD, and the Group's net investments in associated companies mainly denominated in USD. The sensitivity analysis has been prepared on the basis that the financial instruments in foreign currencies and all other parameters, apart from changes in foreign exchange rates themselves (foreign exchange rate against EUR), are constant and on the basis of hedge designations in place at 31 December 2019. The Group assumes that the prevailing polyolefin market pricing mechanisms reduce the foreign exchange risk in practice.

As of 31 December 2019, the Group shows a net payable (prior year: net payable) position of USD and a net receivable position (prior year: net payable) of SEK.

| Effect in EUR thousand | Profit for the year | | Equity | |
|---|---|---|---|---|
| | Strenghtening +1% | Weakening -1% | Strenghtening +1% | Weakening -1% |
| **31 December 2019** | | | | |
| USD | 1,281 | -1,048 | -4,735 | 3,874 |
| SEK | -785 | 643 | 1,561 | -1,277 |
| USD – including net investment | 1,281 | -1,048 | 36,896 | -30,188 |
| SEK – including net investment | -785 | 643 | 7,162 | -5,860 |
| **31 December 2018** | | | | |
| USD | -335 | 274 | -3,753 | 3,070 |
| SEK | -700 | 573 | 1,575 | -1,289 |
| USD – including net investment | -335 | 274 | 39,057 | -31,956 |
| SEK – including net investment | -700 | 573 | 7,235 | -5,919 |

## 24. Interest Rate Risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

Borealis adopts a policy of managing its interest rate risk through the modified duration of its loan portfolio. Average modified duration is allowed to deviate within a predefined range. Overall, Borealis' risk management strategy according to its financial procedures is to protect itself against adverse interest rate movements and to obtain predictable interest costs. As of 31 December 2019, Borealis had three outstanding interest rate swaps. Borealis classifies these interest rate swaps as cash flow hedges and states them at fair value. The purpose of these hedges is to fix the cash outflows related to the floating rate loans.

The Group enters into interest rate swaps that have matching critical terms as the hedged item, such as reference rate, reset dates, payment dates, maturities and nominal amount.

The hedge ratios are based on interest rate swaps with a nominal amount in EUR and USD and a receive leg of a rate index. This results in 1:1 hedge ratios (100%). Since loans and hedging instruments are fully aligned and cannot be changed unless termination, the hedge ratios will not change and hence, do not result in any imbalances that would create hedge ineffectiveness.

Hedge effectiveness will be assessed by comparing changes in the fair values of the hedging instruments to changes in the fair values of the respective hypothetical derivatives. The terms of the hypothetical derivative are as such that its fair value changes offset exactly the changes in the fair value of the hedged item. The terms are identical to the

hedging instrument but assuming no counterparty risk. Hence, the hedge is expected to be highly effective.

As a potential source of ineffectiveness, a significant change in the credit risk of either Borealis or the counterparty is identified. Group treasury monitors the Company and the bank's credit risk for significant adverse changes.

Hedge ineffectiveness may arise from:
– differences in the timing of the cash flows of the hedged items and the hedging instruments;
– the counterparties' credit risk impacting the fair value movements of the hedging instruments and hedged items differently.

Borealis considers that it is in principle exposed to uncertainties resulting from the interest rate benchmark reform in respect of its hedges of (6 month) EURIBOR and (3 month) USD LIBOR interest risk, related to the existence of two outstanding USD interest rate swaps with a nominal amount of USD 110 million in total, and one outstanding interest rate swap with a nominal amount of EUR 35 million. Their hedging period reaches beyond 2021 when uncertainties about existence of the USD LIBOR rates arise. Borealis expects that the hedging instrument and the hedged risk of the hedged item will not change as a result of the reform; however, any hedge ineffectiveness would be accounted for in profit or loss.

Borealis has designated two hedges of USD LIBOR interest risk for in total USD 110 million which will expire in 2024, and will implement the required changes in due time if and as needed after 2022, should it be determined that after such date the existing benchmark rate will no longer be available.

Borealis has two cross currency interest rate swaps that are classified as fair value through profit or loss and stated at fair value.

Of loans and borrowings, approximately 72% (80%) have a fixed interest rate, and 28% (20%) are based on a floating interest rate before applying interest rate swaps. After applying interest rate swaps, approximately 81% (83%) have a fixed interest rate and 19% (17%) are based on a floating interest rate. The floating interest rates are set by adding a spread to the reference rates (mainly EURIBOR and LIBOR).

### Effects of Hedge Accounting on the Financial Position and Performance

The effects of the interest rate related to hedging instruments on the Group's financial position and performance are as follows:

| **Interest rate swaps**<br>**EUR thousand** | **2019** | **2018** |
|---|---|---|
| Carrying amount (asset – non-current) | 1,576 | 0 |
| Carrying amount (liability – non-current) | 447 | 611 |
| Line item in the balance sheet where the hedging instrument is included | Other receivables and other assets / Other liabilities | Other receivables and other assets / Other liabilities |
| Total nominal amount | kEUR 132,654 | kEUR 46,154 |
| Hedge ratio | 1:1 | 1:1 |
| Weighted average hedged rate for the year | 1.89% | 0.55% |
| Change in fair value of the hedging instrument used for measuring ineffectiveness for the period | 1,558 | -58 |
| Change in value of the hedged item used for measuring ineffectiveness for the period | -1,558 | 58 |
| Hedging reserve (net of deferred taxes) | 846 | -459 |
| Total hedging gain (+) or loss (-) recognised in OCI | 1,558 | -58 |
| Hedge ineffectiveness recognised in profit or loss | 0 | 0 |
| Amount reclassified from hedging reserve to profit or loss | 182 | 437 |
| Line item in the statement of profit or loss affected by the reclassification | Financial expenses | Financial expenses |

### Sensitivity Analysis

In managing interest rate risks, Borealis aims to reduce the impact of short-term fluctuations on its earnings. Over the long term, permanent changes in interest rates will have an impact on consolidated earnings. The sensitivity analysis has been prepared on the basis of the amount of net debt, floating interest rates of the debt, and the derivatives as per 31 December 2019.

| Effect in EUR thousand | Profit for the year | | Equity | |
|---|---|---|---|---|
| | Strenghtening +1% | Weakening -1% | Strenghtening +1% | Weakening -1% |
| **31 December 2019** | | | | |
| Interest rate | -1,291 | 1,299 | 1,392 | -1,403 |
| **31 December 2018** | | | | |
| Interest rate | -1,739 | 1,753 | 205 | -206 |

## 25. Commodity Risk

Commodity price risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in commodity prices. Borealis states its inventories at the lower of cost and net realisable value, taking into account future price developments. Commodity price risk is managed by the feedstock and energy traders and monitored by Trade Support and Risk Management. The commodity price risk exposure is calculated by a trading software. On a daily basis, Trade Support and Risk Management take a snapshot of all data in the trading system and retrieve the daily position from the system. The position is analysed and compared with the trading limits. Traders use financial derivatives (i.e. financial swaps) in order to stay within the limits.

### Feedstock Contracts

Borealis hedges some of its forecasted feedstock purchases and finished product sales through feedstock swaps. Cash flow hedge accounting is applied to those derivatives, except for the derivatives that are used to limit the price risk on the inventory held for immediate consumption. Part of the contracts has been designated as cash flow hedge for future sales and purchases. Contracts not designated as cash flow hedges are classified as fair value through profit or loss and stated at fair value.

### Electricity Contracts

Borealis hedges its forecasted electricity purchases using electricity swaps. Cash flow hedge accounting has been applied for these contracts.

### Natural Gas Contracts

Borealis hedges its forecasted natural gas purchases using natural gas swaps. Cash flow hedge accounting has been applied for these contracts.

There is an economic relationship between the hedged items and the hedging instruments as the terms of the commodity forward contracts match the terms of the expected highly probable forecast transactions (i.e. nominal amount and expected payment date). The Group has established a hedge ratio of 1:1 for the hedging relationships as the underlying risk of the commodity forward contracts are identical to the hedged risk components. To test the hedge effectiveness, the Group compares the changes in the fair value of the hedging instruments against the changes in fair value of the hedged items attributable to the hedged risks.

The hedge ineffectiveness can arise from:
- Differences in the timing of the cash flows of the hedged items and the hedging instruments
- Changes to the forecasted amount of cash flows of hedged items and hedging instruments

### Effects of Hedge Accounting on the Financial Position and Performance

The effects of the commodity related hedging instruments on the Group's financial position and performance are as follows:

| Feedstock contracts<br>EUR thousand | 2019 | 2018 |
|---|---|---|
| Carrying amount (asset – current) | 8,191 | 27,377 |
| Carrying amount (asset – non-current) | 1,813 | 0 |
| Carrying amount (liability – current) | 5,514 | 55,509 |
| Carrying amount (liability – non-current) | 195 | 596 |
| Line item in the balance sheet where the hedging instrument is included | Other receivables and other assets / Other liabilities | Other receivables and other assets / Other liabilities |
| Total nominal amount | 274,712 tonnes | 710,318 tonnes |
| Hedge ratio | 1:1 | 1:1 |
| Change in fair value of the hedging instrument used for measuring ineffectiveness for the period | 33,438 | -14,341 |
| Change in value of the hedged item used for measuring ineffectiveness for the period | -33,438 | 14,341 |
| Hedging reserve (net of deferred taxes) | 206 | -21,542 |
| Balances remaining in the hedging reserve for hedging instruments that have expired but forecast transaction still has to occur | -4,021 | 0 |
| Total hedging gain (+) or loss (-) recognised in OCI | 33,438 | -14,341 |
| Hedge ineffectiveness recognised in profit or loss | 0 | 0 |
| Amount reclassified from hedging reserve to the cost of non-financial items | -4,442 | -17,308 |

| Electricity contracts<br>EUR thousand | 2019 | 2018 |
|---|---|---|
| Carrying amount (asset – current) | 12,382 | 80,452 |
| Carrying amount (asset – non-current) | 3,271 | 27,686 |
| Carrying amount (liability – current) | 13,958 | 15,047 |
| Carrying amount (liability – non-current) | 3,466 | 566 |
| Line item in the balance sheet where the hedging instrument is included | Other receivables and other assets / Other liabilities | Other receivables and other assets / Other liabilities |
| Total nominal amount | 5,565 GWh | 5,611 GWh |
| Hedge ratio | 1:1 | 1:1 |
| Change in fair value of the hedging instrument used for measuring ineffectiveness for the period | -74,435 | 107,649 |
| Change in value of the hedged item used for measuring ineffectiveness for the period | 74,435 | -107,649 |
| Hedging reserve (net of deferred taxes) | -1,328 | 69,395 |
| Total hedging gain (+) or loss (-) recognised in OCI | -74,435 | 107,649 |
| Hedge ineffectiveness recognised in profit or loss | 0 | 0 |
| Amount reclassified from hedging reserve to profit or loss | -19,862 | -48,269 |
| Line item in the statement of profit or loss affected by the reclassification | Production costs | Production costs |

| Natural gas contracts<br>EUR thousand | 2019 | 2018 |
|---|---|---|
| Carrying amount (asset – current) | 0 | 796 |
| Carrying amount (liability – current) | 826 | 1,817 |
| Line item in the balance sheet where the hedging instrument is included | Other receivables and other assets / Other liabilities | Other receivable and other assets / Other liabilities |
| Total nominal amount | 228 GWh | 520 GWh |
| Hedge ratio | 1:1 | 1:1 |
| Change in fair value of the hedging instrument used for measuring ineffectiveness for the period | -6,339 | -128 |
| Change in value of the hedged item used for measuring ineffectiveness for the period | 6,339 | 128 |
| Hedging reserve (net of deferred taxes) | -620 | -766 |
| Total hedging gain (+) or loss (-) recognised in OCI | -6,339 | -128 |
| Hedge ineffectiveness recognised in profit or loss | 0 | 0 |
| Amount reclassified from hedging reserve to profit or loss | 6,533 | -977 |
| Line item in the statement of profit or loss affected by the reclassification | Production costs | Production costs |

### Sensitivity Analysis

The sensitivity analysis has been prepared for all derivative financial instruments on the basis that the amount of the feedstock held and all other parameters besides commodity prices (in particular sales prices) are constant and on the basis of the hedge designations in place at 31 December 2019. The Group assumes that the prevailing market pricing mechanisms reduce the commodity price risk in practice.

| Effect in EUR thousand | Profit for the year | | Equity | |
|---|---|---|---|---|
| | Strenghtening +1% | Weakening -1% | Strenghtening +1% | Weakening -1% |
| **31 December 2019** | | | | |
| Feedstock - Naphtha | -76 | 76 | 639 | -639 |
| Feedstock - Other | -353 | 353 | -387 | 387 |
| Electricity | 0 | 0 | 2,226 | -2,226 |
| Natural gas | 0 | 0 | 87 | -87 |
| **31 December 2018** | | | | |
| Feedstock - Naphtha | 861 | -861 | -1,451 | 1,451 |
| Feedstock - Other | -38 | 38 | 516 | -516 |
| Electricity | 0 | 0 | 2,805 | -2,805 |
| Natural gas | 0 | 0 | 114 | -114 |

## 26. Factoring

Borealis has a factoring programme under which the Company sells certain trade receivables to external parties. The Group does not retain any major interest in the trade receivables and thus accordingly derecognises the receivables sold. Borealis continues to administer the relationship with debtors and has to transfer all receivables collected and previously sold to the purchaser under this programme. Several reserves are deducted from the nominal value of the sold receivables and will be released upon transfer of the respective collected receivables to the purchaser.

The total nominal value sold to the purchaser under the factoring programme in the current year amounted to EUR 3,181,317 thousand (EUR 3,393,056 thousand). As of 31 December 2019, receivables worth EUR 294,911 thousand (EUR 326,441 thousand) were sold to the purchaser under the factoring programme. The reserves deducted from the nominal value of the sold receivables amounted to EUR 25,279 thousand (EUR 26,695 thousand) as of 31 December 2019 and are included in other current receivables. During the year, expenses amounting to EUR 2,464 thousand (EUR 3,658 thousand) were recognised in the income statement for the factoring programme.

## 27. Credit Risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations. The Group is exposed to credit risk from its operating activities (primarily trade receivables) and from its financing activities, including deposits with banks and financial institutions and other financial instruments.

### Trade Receivables Credit Risk

A credit control procedure is in place. Credit risk is monitored on an ongoing basis. Credit risk of a specific counterparty is the sum of all outstanding trade receivables and is compared to the individual credit limit allocated to that counterparty. Credit limit evaluations are performed on a daily basis and all customers are at least reviewed annually. Approval and escalation limits are used to authorise the available credit limits to customers. For some trade receivables, the Group may obtain security in the form of guarantees (bank and parental guarantees), letters of credit or credit insurance, which can be called upon if the counterparty is in default under the terms of the agreement. At the reporting date, Borealis has no large concentrations of credit risks for trade receivables from external parties representing more than 10% of the total outstanding trade receivables. For details on trade receivables from related parties see note 30.
No credit risk is retained in trade receivables sold under the factoring programme (note 26).

The maximum exposure to credit risk for trade receivables at the reporting date by geographic region was:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| EU countries | 412,535 | 444,397 |
| Non-EU in Europe | 96,778 | 103,999 |
| USA | 48,049 | 39,262 |
| Middle East and Asia | 134,688 | 88,711 |
| Other regions | 57,838 | 91,887 |
| **Total** | **749,888** | **768,256** |

The maximum exposure to credit risk for trade receivables at the reporting date by type of segment and group of customers was:

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Polyolefins | 463,388 | 461,036 |
| Base Chemicals | 127,215 | 132,176 |
| Borealis NITRO | 135,014 | 129,046 |
| Non-Allocated | 24,271 | 45,998 |
| **Total** | **749,888** | **768,256** |

All customers are classified in risk categories based on criteria such as their financial strength, ownership, size, payment behaviour, and country of domicile.

The categories include:
- Risk category 1: preferred customers, customers with excellent credit standing and financial strength
- Risk category 2: medium-size customers with good reputations
- Risk category 3: financially sound customers, but with history of slow payments
- Risk category 4: customers with repetitively slow payments or with a weak financial situation
- Risk category 5: customers paying cash in advance
- Risk category 6: customers with secured payment terms (L/C or other)
- Risk category 7: all new customers

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Risk category 1 | 150,861 | 101,277 |
| Risk category 2 | 70,339 | 68,638 |
| Risk category 3 | 137,772 | 158,519 |
| Risk category 4 | 347,930 | 388,249 |
| Risk category 5 | 368 | 1,976 |
| Risk category 6 | 57,167 | 58,613 |
| Risk category 7 | 21 | 4,778 |
| **Total gross carrying amount** | **764,458** | **782,050** |
| Less loss allowance | -14,570 | -13,794 |
| **Total** | **749,888** | **768,256** |

### Other Credit Risk

The Group is also exposed to credit risk relating to other financial assets. The maximum exposure to credit risk at the reporting date is the carrying amount of each class of financial assets disclosed in note 28.

The table below shows the maximum exposure to credit risk (gross carrying amount) for financial assets that are measured at amortised cost and subject to a 12-month expected credit loss.

| | Credit Risk (Gross carring amount) | | Loss allowance recognised | |
|---|---|---|---|---|
| **EUR thousand** | **2019** | **2018** | **2019** | **2018** |
| Cash and cash equivalents | 106,273 | 72,347 | 0 | 0 |
| Debt investments carried at amortised cost | | | | |
| Loans granted | 259,570 | 97,625 | -2,500 | 0 |
| Deposits and other receivables | 96,300 | 88,436 | 0 | 0 |

Borealis' cash balances are deposited with relationship banks or are invested in liquid securities with counterparties that fulfil a certain predefined credit rating threshold. Counterparty credit risks for long-term financial treasury transactions are managed by mandatory credit limits and external credit rating requirements or have undergone a special approval process. A real time treasury system is used to monitor exposures and risk limits. The Executive Board does not expect any counterparty to fail to meet any of its current obligations.

### Impairment of Financial Assets

The Group has three types of financial assets that are subject to the expected credit loss model:

– trade receivables (excluding trade receivables at FVPL) and contract assets
– cash and cash equivalents
– debt investments carried at amortised cost

At each reporting date, the Group assesses whether financial assets carried at amortised cost are credit-impaired. For trade receivables the Group applies the IFRS simplified approach to measuring expected credit losses, which uses a lifetime expected loss allowance. To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics and the days past due.

On that basis, the loss allowance as at 31 December 2019 and 31 December 2018 was determined as follows for trade receivables (excluding trade receivables at FVPL).

| **EUR thousand** | **31 December 2019** | | | |
|---|---|---|---|---|
| | **Weighted average loss rate** | **Gross carrying amount** | **Loss allowance** | **Credit-impaired** |
| Current (not past due) | 0.05% | 624,341 | -315 | No |
| Past due 0–30 days | 0.04% | 81,207 | -33 | No |
| Past due 31–90 days | 1.61% | 9,137 | -147 | No |
| Past due 91–180 days | 0.61% | 13,483 | -82 | No |
| Past due over 180 days | 78.63% | 17,796 | -13,993 | Yes |
| **Total** | | **745,963** | **-14,570** | |

| EUR thousand | 31 December 2018 | | | |
|---|---|---|---|---|
| | Weighted average loss rate | Gross carrying amount | Loss allowance | Credit-impaired |
| Current (not past due) | 0.05% | 650,988 | -314 | No |
| Past due 0–30 days | 0.03% | 72,557 | -23 | No |
| Past due 31–90 days | 2.79% | 4,798 | -134 | No |
| Past due 91–180 days | 16.68% | 1,840 | -307 | No |
| Past due over 180 days | 87.76% | 14,831 | -13,016 | Yes |
| **Total** | | **745,014** | **-13,794** | |

The loss allowance for trade receivables past due over 180 days consists mainly of credit-impaired trade receivables.

The identified impairment loss for contract assets was immaterial.

The movement in the loss allowance in respect of trade receivables during the year was as follows:

| EUR thousand | 2019 | | 2018 | |
|---|---|---|---|---|
| | Lifetime ECL – not credit-impaired | Lifetime ECL – credit-impaired | Lifetime ECL – not credit-impaired | Lifetime ECL – credit-impaired |
| Balance as of 1 January | 777 | 13,017 | 618 | 13,292 |
| Impairment loss recognised | 577 | 2,294 | 777 | 179 |
| Written off | 0 | -810 | 0 | -413 |
| Reversal of impairment | -777 | -528 | -618 | -41 |
| Exchange adjustments | 0 | 20 | 0 | 0 |
| **Balance as of 31 December** | **577** | **13,993** | **777** | **13,017** |

In 2019, the Group did not renegotiate the terms of trade receivables. Generally, trade receivables written off during 2019 are not subject to enforcement activity.

The total guarantees received (bank guarantees and parental guarantees) in respect of the trade receivables amounted to EUR 223,465 thousand (EUR 360,620 thousand).
The Group does not require collateral in respect of trade receivables. The Group does not have trade receivables for which no loss allowance is recognised because of collateral or guarantees received.

While cash and cash equivalents are also subject to the impairment requirements of IFRS 9, the identified impairment loss was immaterial. All of the entity's other debt investments at amortised cost are considered in general to have low credit risk, and the loss allowance recognised during the period is therefore limited to 12 months expected losses. One loan to an external party was fully impaired and amounted to EUR 2,500 thousand in 2019. The loss allowance for all other debt investments was immaterial.

## 28. Fair Values

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy. It does not include fair value information for financial assets and financial liabilities not measured at fair value if the carrying amount is a reasonable approximation of fair value.

| EUR thousand | 31.12.2019 | | | 31.12.2018 | | |
|---|---|---|---|---|---|---|
| **Assets** | **Carrying amount** | **Fair value** | **Fair value hierachy level** | **Carrying amount** | **Fair value** | **Fair value hierachy level** |
| **Other investments** | | | | | | |
| Other investments | 31,692 | 31,692 | 3 | 29,984 | 29,984 | 3 |
| **at fair value through profit or loss** | **31,692** | | | **29,984** | | |
| **Trade receivables** | | | | | | |
| Trade receivables | 749,888 | | | 768,256 | | |
| **thereof at amortised cost** | **731,393** | | | **731,220** | | |
| **thereof at fair value through profit or loss** | **18,495** | | | **37,036** | | |
| **Cash and cash equivalents** | | | | | | |
| Cash | 73,498 | | | 48,876 | | |
| Other current deposits | 32,775 | | | 23,471 | | |
| **at amortised cost** | **106,273** | | | **72,347** | | |
| **Other receivables and other assets (current and non-current)** | | | | | | |
| Listed securities | 11,967 | 11,967 | 1 | 12,058 | 12,058 | 1 |
| **at fair value through profit or loss** | **11,967** | | | **12,058** | | |
| Derivative financial instruments for which hedge accounting is applied | 31,074 | 31,074 | 2 | 138,389 | 138,389 | 2 |
| **Hedging instruments** | **31,074** | | | **138,389** | | |
| Derivative financial instruments for which hedge accounting is not applied | 1,204 | 1,204 | 2 | 27,821 | 27,821 | 2 |
| **at fair value through profit or loss** | **1,204** | | | **27,821** | | |
| Loans granted | 257,070 | 353,020 | 2 | 97,625 | 121,477 | 2 |
| Deposits and other receivables | 96,300 | | | 88,436 | | |
| **at amortised cost** | **353,370** | | | **186,061** | | |
| Other non financial assets | 206,053 | n/a | n/a | 335,438 | n/a | n/a |
| **Total other receivables and other assets (current and non-current)** | **603,668** | | | **699,767** | | |

| EUR thousand | 31.12.2019 | | | 31.12.2018 | | |
|---|---|---|---|---|---|---|
| **Liabilities** | **Carrying amount** | **Fair value** | **Fair value hierachy level** | **Carrying amount** | **Fair value** | **Fair value hierachy level** |
| **Loans and borrowings (current and non-current)** | | | | | | |
| Floating rate loans and borrowings | 407,865 | 423,615 | 2 | 277,182 | 278,705 | 2 |
| Fixed rate loans and borrowings | 1,033,624 | 1,096,027 | 2 | 1,100,441 | 1,149,746 | 2 |
| **at amortised cost** | **1,441,489** | | | **1,377,623** | | |
| **Trade payables** | | | | | | |
| Trade payables | 746,527 | | | 852,525 | | |
| **at amortised cost** | **746,527** | | | **852,525** | | |
| **Other liabilities (current and non-current)** | | | | | | |
| Derivative financial instruments for which hedge accounting is applied | 25,257 | 25,257 | 2 | 78,610 | 78,610 | 2 |
| **Hedging instruments** | **25,257** | | | **78,610** | | |
| Derivative financial instruments for which hedge accounting is not applied | 10,214 | 10,214 | 2 | 8,801 | 8,801 | 2 |
| **at fair value through profit or loss** | **10,214** | | | **8,801** | | |
| Contingent consideration | 0 | | | 2,000 | 2,000 | 3 |
| Interest accruals on loans and borrowings | 8,181 | | | 10,283 | | |
| Other financial liabilities | 98,587 | | | 57,624 | | |
| **at amortised cost** | **106,768** | | | **69,907** | | |
| Other non-financial liabilities | 263,199 | n/a | n/a | 233,979 | n/a | n/a |
| **Total other liabilities (current and non-current)** | **405,438** | | | **391,297** | | |

The Group measures fair values using the following fair value hierarchy that reflects the significance of the inputs used in making the measurements:

Level 1: Quoted market price (unadjusted) in an active market for an identical instrument.

Level 2: Valuation techniques based on observable inputs, either directly or indirectly. This category includes instruments valued using quoted market prices in active markets for similar instruments, quoted prices for identical or similar instruments in less active markets, or other valuation techniques where all significant inputs are directly or indirectly observable from market data.

Level 3: Valuation techniques using significant unobservable inputs. This category includes all instruments where the valuation technique includes inputs not based on observable data and the unobservable inputs have a significant effect on the instruments' valuation. This category includes instruments that are valued based on quoted prices for similar instruments where significant unobservable adjustments or assumptions are required to reflect differences between the instruments.

In 2019, no transfers between the different levels took place.

### Other Investments

For details on other investments see note 9. The equity value of the other investments is assumed to equal other investments' fair value. If the equity decreases (increases), the fair value decreases (increases) accordingly.

The following table presents the changes in other investments (level 3 items):

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Balance as of 1 January | 29,984 | 44,894 |
| Investments and acquisitions | 777 | 50 |
| Other changes [1] | 0 | -16,184 |
| Fair value changes recognised in income statement (Financial income/expenses) | 923 | 1,224 |
| Exchange adjustments | 8 | 0 |
| **Balance at reporting date** | **31,692** | **29,984** |

1) A subsidiary became material for consolidation in 2018.

### Trade and Other Receivables and Assets

The fair value of trade and other receivables and assets is estimated to equal the nominal values less impairments (= carrying amount).

The carrying amount of deposits and other receivables is not materially different from their fair value.

The fair value of loans granted is calculated based on the present value of future principle and interest cash flows discounted at the market rate of interest adjusted for the respective counterparty credit risk at the reporting date.

### Derivatives

The fair value of foreign exchange derivative contracts is estimated by discounting the difference between the contractual forward price and the current forward price for the residual maturity of the contract using market rates at the reporting date.

The fair value of interest rate swaps is estimated by discounting estimated future cash flows based on the terms and maturity of each contract and using market rates for a hypothetical instrument at the reporting date. The credit quality of counterparties did not lead to a significant change in the fair values.

The fair value of commodity derivative contracts is estimated by discounting the difference between current forward price and contractual forward price.

### Other Non-financial Assets and Liabilities

Other non-financial assets and liabilities are shown solely for reconciliation purposes.

### Non-derivative Financial Liabilities

Fair value for non-current and current loans and borrowings is calculated based on the present value of future principal and interest cash flows discounted at the market rate of interest adjusted for Borealis' credit risk at the reporting date. All fair values are excluding the outstanding interest accruals at the reporting date.

The fair value of trade and other payables is estimated to equal the carrying amount.

### Contingent Consideration

The fair value of the contingent consideration for the acquisition of Ecoplast Kunststoffrecycling GmbH (EUR 2,000 thousand) was re-measured in 2019 in the amount of EUR 500 thousand (EUR 0 thousand) and is included in other income in the income statement. The contingent consideration was derecognised after the full payment of EUR 1,500 thousand took place in two instalments in November and December 2019.

## 29. Other Income

In 2019, other income related entirely to the release of the contingent consideration amounting to EUR 500 thousand (see note 28). Other income in 2018 amounted to EUR 23,374 thousand from profits from the sale of emission rights.

## 30. Transactions with Related Parties

| | Transaction values | | Balance outstanding | |
|---|---|---|---|---|
| **EUR thousand** | **2019** | **2018** | **31.12.2019** | **31.12.2018** |
| **Sales of goods and services to** | | | | |
| Associated companies | 414,298 | 357,911 | 123,245 | 75,697 |
| Joint ventures | 72 | 825 | 1 | 1,545 |
| Companies with significant influence | 42,961 | 47,927 | 4,588 | 6,517 |
| Other related parties | 38,375 | 82,057 | 3,939 | 12,762 |
| **Purchases of goods and services from** | | | | |
| Associated companies | 364,438 | 330,711 | 52,140 | 69,523 |
| Joint ventures | 6,347 | 6,394 | 311 | 235 |
| Companies with significant influence | 1,282,297 | 1,433,965 | 124,292 | 142,585 |
| Other related parties | 70,201 | 86,750 | 8,945 | 7,678 |
| **Others** | | | | |
| Loans granted and related interest – Associated companies | 675 | 1,477 | 14,910 | 9,387 |
| Loans granted and related interest – Joint ventures | 0 | 0 | 0 | 85,738 |
| Lease liability and related interest – Companies with significant influence | 406 | 0 | 18,835 | 0 |

The sales to associated companies and joint ventures mainly include sales of finished goods and services. Purchases from associated companies mainly include purchases of finished goods produced in Borouge and sold in Europe. Purchases from companies with significant influence mainly relate to purchases of feedstock and utilities from OMV group companies. Receivables and payables from related parties are included in the trade receivables/payables. Leases from companies with significant influence relate to rented land and infrastructure from OMV in Germany. All transactions with related parties were done on arm's length basis. For details on loans granted see note 9. For further information in respect to associated companies and joint ventures including information related to commitments in joint ventures please refer to note 8. For information related to dividends paid please refer to statement of changes in equity. For details regarding remuneration of key management personnel please see note 13.

## 31. Commitments and Contingent Liabilities

### Legal Claim Contingencies

While the Group has certain lawsuits pending, it is the Executive Board's opinion that these proceedings will not materially affect the Group's financial position.

### Financial Guarantees

The Group has EUR 51,805 thousand (EUR 56,674 thousand) of financial guarantees outstanding by the end of the year. These mainly consist of commercial bank and parental guarantees which serve as assurance that Borealis will make payment to a beneficiary in the event that it fails to fulfil its financial obligation. The guarantees have various maturity dates. The outstanding amount by the end of the year is equal to the maximum credit risk exposure.

Furthermore, the Group is subject to numerous national and local tax laws and regulations concerning its sales and environmental activities. These laws and regulations may require the Group to issue guarantees to respective authorities for the Group's payment obligations. These guarantees have been provided to the extent the authorities have requested them.

The Group has committed several rental guarantees mainly for its own rental agreements. The Group will be responsible if the tenant or Borealis itself fails to pay rent or causes any damages to the property. No material losses are expected to arise from such contingent liabilities.

The tax contingencies related to Finland have been resolved in the meantime (see note 10). Next to the contractual commitments for property, plant and equipment (see note 5) and a contractual obligation for additional capital contributions (see note 8), no further significant risks and uncertainties have been identified compared to year-end 2018.

## 32. Subsequent Events

Borealis has had no significant events after the reporting date.

## 33. Subsidiaries Included in the Consolidated Accounts

| Company name | Country, City | Currency | Issued share capital | Percentage of shares owned |
|---|---|---|---|---|
| **Borealis AG** | | | | |
| ■ Borealis Sverige AB | Sweden, Stenungsund | SEK | 1,063,000 | 100 |
| ■■ Borealis AB | Sweden, Stenungsund | SEK | 65,000,000 | 100 |
| ■■■ Etenförsörjning i Stenungsund AB | Sweden, Stenungsund | SEK | 5,000,000 | 80 |
| ■■■ KB Munkeröd 1:72 [1)] | Sweden, Stenungsund | SEK | 0 | 100 |
| ■■■ Borealis Group Services AS | Norway, Bamble | NOK | 1,000,000 | 100 |
| ■ Borealis Polymers Oy | Finland, Porvoo | EUR | 108,321,644 | 100 |
| ■ Borealis Technology Oy | Finland, Porvoo | EUR | 43,728,860 | 100 |
| ■ Borealis Financial Services N.V. | Belgium, Mechelen | EUR | 99,189,000 | 100 |
| ■ Borealis Polymers N.V. | Belgium, Beringen | EUR | 61,500 | 100 |
| ■■ Borealis Kallo N.V. | Belgium, Kallo | EUR | 40,575,176 | 100 |
| ■■ Borealis Antwerpen N.V. | Belgium, Zwijndrecht | EUR | 11,277,054 | 100 |
| ■ Borealis Plastomers B.V. | The Netherlands, Geleen | EUR | 1 | 100 |
| ■ Rosier S.A. | Belgium, Moustier | EUR | 2,550,000 | 77 |
| ■■ Rosier Netherlands B.V. | The Netherlands, Sas Van Gen | EUR | 11,141,000 | 77 |
| ■■ Rosier France S.A.S. | France, Beaumetz-Les-Loge | EUR | 516,600 | 77 |
| ■ Borealis Brasil S.A. | Brazil, Itatiba | BRL | 94,743,513 | 80 |
| ■ Borealis Poliolefinas da América do Sul Ltda [1)] | Brazil, Itatiba | BRL | 16,000 | 100 |
| ■ Borealis UK Ltd | UK, Manchester | GBP | 15,000 | 100 |
| ■ Borealis Insurance A/S (captive insurance company) | Denmark, Copenhagen | DKK | 52,795,000 | 100 |
| ■ Borealis France S.A.S. | France, Courbevoie | EUR | 269,477,216 | 100 |
| ■■ Borealis Services S.A.S. [1)] | France, Courbevoie | EUR | 5,000 | 100 |
| ■■ Borealis Produits et Engrais Chimiques du Rhin S.A.S. | France, Ottmarsheim | EUR | 20,010,000 | 100 |
| ■■ Borealis L.A.T France S.A.S. | France, Courbevoie | EUR | 752,500 | 100 |
| ■■ Borealis Chimie S.A.S. | France, Courbevoie | EUR | 70,000,000 | 100 |
| ■■■ AGRIPRODUITS S.A.S. [1)] | France, Courbevoie | EUR | 952,000 | 100 |
| ■■■ STOCKAM G.I.E. [1)] | France, Grand-Quevilly | EUR | 0 | 100 |
| ■ Borealis Química España S.A. | Spain, Barcelona | EUR | 60,101 | 100 |
| ■ Borealis Chile SpA [1)] | Chile, Santiago de Chile | CLP | 4,000,000 | 100 |
| ■ Borealis Chimie S.A R.L. [1)] | Morocco, Casablanca | MAD | 219,986 | 100 |
| ■ Borealis Colombia S.A.S. [1)] | Colombia, Bogota | COP | 84,000,000 | 100 |
| ■ Borealis s.r.o. [1)] | Czech Republic, Prague | CZK | 500,000 | 100 |
| ■ Borealis Polska Sp. z o.o. [1)] | Poland, Warsaw | PLN | 50,000 | 100 |
| ■ Borealis Polymere GmbH | Germany, Burghausen | EUR | 18,407,000 | 100 |

1) Excluded from the consolidation due to immateriality (individual and in total) // ■ subsidiary of Borealis AG // ■■ second-tier subsidiary of Borealis AG // ■■■ third-tier subsidiary of Borealis AG

| Company name | Country, City | Currency | Issued share capital | Percentage of shares owned |
|---|---|---|---|---|
| ■ Borealis Polyolefine GmbH | Austria, Schwechat | EUR | 46,783,928 | 100 |
| ■ Borealis Plasticos S.A. de C.V. [1] | Mexico, Mexico City | MXN | 50,000 | 100 |
| ■ Borealis México S.A. de C.V. [1] | Mexico, Mexico City | MXN | 50,000 | 100 |
| ■ Borealis Asia Ltd [1] | Hong Kong, Hong Kong | HKD | 500,000 | 100 |
| ■ Borealis Italia S.p.A. | Italy, Monza | EUR | 7,570,600 | 100 |
| ■ Borealis Compounds Inc. | US, Port Murray | USD | 2,000 | 100 |
| ■■ Borealis US Holdings LLC | US, Port Murray | USD | 0 | 100 |
| ■ Borealis Plastik ve Kimyasal Maddeler Ticaret Limited Sirketi [1] | Turkey, Istanbul | TRL | 10,000 | 100 |
| ■ Borealis RUS LLC [1] | Russia, Moscow | RUB | 3,600,000 | 100 |
| ■Borealis Agrolinz Melamine GmbH | Austria, Linz | EUR | 70,000,000 | 100 |
| ■■ Borealis Agrolinz Melamine Deutschland GmbH | Germany, Wittenberg | EUR | 500,000 | 100 |
| ■ Borealis L.A.T GmbH | Austria, Linz | EUR | 35,000 | 100 |
| ■■ Borealis L.A.T d.o.o. Beograd | Serbia, Belgrade | RSD | 63,282,000 | 100 |
| ■■ Borealis L.A.T Hungary Kft. [1] | Hungary, Budapest | HUF | 500,000,000 | 100 |
| ■■ Borealis L.A.T Bulgaria EOOD [1] | Bulgaria, Sofia | BGN | 10,000 | 100 |
| ■■ Borealis L.A.T Hrvatska d.o.o. [1] | Croatia, Klisa | HRK | 21,200 | 100 |
| ■■ Borealis L.A.T Czech Republic spol. s.r.o. [1] | Czech Republic, Budweis | CZK | 2,000,000 | 100 |
| ■■ Borealis L.A.T Romania s.r.l. [1] | Romania, Bucharest | RON | 18,392,320 | 100 |
| ■■ Borealis L.A.T Slovakia s.r.o. [1] | Slovakia, Chotin | EUR | 497,909 | 100 |
| ■■ Borealis L.A.T Greece Single Member P.C. [1] | Greece, Athens | EUR | 50,000 | 100 |
| ■■ Borealis L.A.T Polska Sp. z o.o. [1] | Poland, Warsaw | PLN | 5,000 | 100 |
| ■■ Borealis L.A.T Belgium BV [1] | Belgium, Beringen | EUR | 120,000 | 100 |
| ■ mtm plastics GmbH | Germany, Niedergebra | EUR | 26,000 | 100 |
| ■ mtm compact GmbH | Germany, Niedergebra | EUR | 26,000 | 100 |
| ■ Feboran EOOD | Bulgaria, Sofia | BGN | 35,203,895 | 100 |
| ■■ Feboran Prim EOOD | Bulgaria, Sofia | BGN | 5,000 | 100 |
| ■ Borealis Chemicals ZA (Pty) Ltd [1] | South Africa, Germiston | ZAR | 750,000 | 100 |
| ■ Borealis USA Inc. | US, Port Murray | USD | 0 | 100 |
| ■■ Borealis BoNo Holdings LLC | US, Wilmington | USD | 0 | 100 |
| ■■ Star Bridge Holdings LLC [1] | US, Wilmington | USD | 0 | 100 |
| ■ Borealis Argentina SRL [1] | Argentina, Buenos Aires | ARS | 100,000 | 100 |
| ■ Borealis Digital Studio BVBA [1] | Belgium, Zaventem | EUR | 20,000 | 100 |
| ■ Ecoplast Kunststoffrecycling GmbH | Austria, Wildon | EUR | 50,000 | 100 |
| ■ Borealis Denmark ApS [1] | Denmark, Copenhagen | DKK | 223,813 | 100 |

1) Excluded from the consolidation due to immateriality (individual and in total) // ■ subsidiary of Borealis AG // ■■ second-tier subsidiary of Borealis AG // ■■■ third-tier subsidiary of Borealis AG

## 34. Auditor's Fees

The following fee information relates to the auditors of the Group (including their related networking firms):

| EUR thousand | 2019 | 2018 |
|---|---|---|
| Audit of Borealis AG's subsidiaries | 1,075 | 1,062 |
| Audit of consolidated and standalone financial statements of Borealis AG | 274 | 297 |
| Other assurance services | 559 | 307 |
| Tax consulting services | 505 | 594 |
| Other services | 27 | 124 |
| **Total** | **2,440** | **2,384** |

The following fees for 2019 relate to the Group auditor, PwC Wirtschaftsprüfung GmbH, Vienna, Austria: audit of Borealis AG's subsidiaries amounting to EUR 222,700 (EUR 226,100), audit of consolidated and standalone financial statements of Borealis AG amounting to EUR 274,000 (EUR 296,600), other assurance services amounting to EUR 180,256 (EUR 265,740), and other services amounting to EUR 0 (EUR 3,000).

## 35. Executive Board and Supervisory Board

Executive Board

Alfred Stern (Chairman), Mark Tonkens, Martijn Arjen van Koten, Philippe Roodhooft, Lucrèce De Ridder (Member since 1 January 2019)

Supervisory Board

Suhail Mohamed Faraj Al Mazrouei (Chairman), Rainer Seele (Vice Chairman), Musabbeh Al Kaabi, Khalifa Al Suwaidi, Manfred Leitner (Member until 1 July 2019), Thomas Gangl (Member since 3 July 2019)

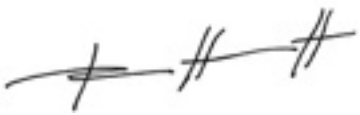
Vienna, 19 February 2020

**Executive Board:**

**Alfred Stern**
Chief Executive

**Mark Tonkens**
Chief Financial Officer

**Martijn Arjen van Koten**



**Philippe Roodhooft**

**Lucrèce De Ridder**

# Statement of the Executive Board according to § 124 (1) Z 3 Vienna Stock Exchange Act

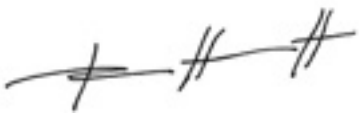
We confirm to the best of our knowledge that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group as required by the applicable accounting standards and that the group management report gives a true and fair view of the development and performance of the business and the position of the Group, together with a description of the principal risks and uncertainties the company faces.

Vienna, 19 February 2020
**Executive Board:**

**Alfred Stern**
Chairman of the Executive Board

**Mark Tonkens**
Member of the Executive Board

**Martijn Arjen van Koten**
Member of the Executive Board



**Philippe Roodhooft**
Member of the Executive Board

**Lucrèce De Ridder**
Member of the Executive Board

# Report of the Supervisory Board of Borealis AG

In the year under review, the Supervisory Board received a comprehensive overview of the activities of the Management of Borealis AG and performed its duties and exercised its powers under the law and the articles of association in five plenary sessions.

The Management informed the Supervisory Board regularly, in a timely fashion and comprehensively, both in writing and verbally, on all the relevant issues of business development as well as on the state and strategy of the company and the important group companies, including risk conditions and risk management.

The Management of Borealis AG submitted the financial statements as of 31 December 2019, including the management report, and the consolidated financial statements as of 31 December 2019, including the group management report, and the consolidated non-financial report to the Supervisory Board and explained it thoroughly.

The financial statements of Borealis AG were drawn up in accordance with the applicable provisions of the Austrian Commercial Code („Unternehmensgesetzbuch"), and PwC Wirtschaftsprüfung GmbH issued the unqualified audit opinion (uneingeschränkter Bestätigungsvermerk) on the financial statements.

Further, the consolidated financial statements of Borealis AG were drawn up in accordance with the International Financial Reporting Standards (IFRS), and PwC Wirtschaftsprüfung GmbH issued the unqualified audit opinion („uneingeschränkter Bestätigungsvermerk") on the consolidated financial statements.

The (consolidated) financial statements documents, the consolidated non-financial report, and the audit reports were submitted to the Audit Committee and the Supervisory Board in due time. After a thorough examination and discussion by the Audit Committee and by the Supervisory Board, the Supervisory Board reached the final agreement that no material objections shall be raised, and the drawn up financial statements, the management report, the proposal for the appropriation of the retained earnings, the proposal for the appointment of the auditor for the Financial Year 2020, the consolidated financial statements, the group management report, and the consolidated non-financial report were approved/acknowledged.

Vienna, 21 February 2020

**Suhail Mohamed Faraj Al Mazrouei**
Chairman of the Supervisory Board

# Annex

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# GRI Content Index

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| **GRI 102: General Disclosures 2016** | **102-1** | Name of the organisation | 20 | ● | |
| | **102-2** | Activities, brands, products, and services | 22, 40-43 | ● | |
| | **102-3** | Location of headquarters | 20 | ● | |
| | **102-4** | Location of operations | 20–21 | ● | |
| | **102-5** | Ownership and legal form | 4, 20 | ● | |
| | **102-6** | Markets served | 20–21, 40–43 | ● | |
| | **102-7** | Scale of the organisation | 5, 9, 20–21, 132–133 | ● | |
| | **102-8** | Information on employees and other workers | 106–107 | ● | GRI 102-8 e) does not apply for Borealis. |
| | **102-9** | Supply chain | 82–87 | ● | |
| | **102-10** | Significant changes to the organisation and its supply chain | 8–11, 16–19 | ● | |
| | **102-11** | Precautionary principle or approach | 94 | ● | |
| | **102-12** | External initiatives | 31, 81 | ● | |
| | **102-13** | Membership of associations | 31, 33 | ● | |
| | **102-14** | Statement from senior decision-maker | 16–19 | ● | |
| | **102-15** | Key impacts, risks, and opportunities | 71-73 | ● | |
| | **102-16** | Values, principles, standards, and norms of behaviour | 15, 68–70, 74–75 | ● | |
| | **102-18** | Governance structure | 68–71 | ● | |
| | **102-40** | List of stakeholder groups | 30–32 | ● | |
| | **102-41** | Collective bargaining agreements | 105 | ● | |
| | **102-42** | Identifying and selecting stakeholders | 30 | ● | |
| | **102-43** | Approach to stakeholder engagement | 25–26, 30–32 | ● | |
| | **102-44** | Key topics and concerns raised | 26–27, 33–36, 94–95 | ● | |
| | **102-45** | Entities included in the consolidated financial statements | 207–208 | ● | |
| | **102-46** | Defining report content and topic boundaries | 25–28 | ● | |
| | **102-47** | List of material topics | 26–27 | ● | |
| | **102-48** | Restatements of information | 24 | ● | |
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| | **102-50** | Reporting period | 24 | ● | |
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| | **102-52** | Reporting cycle | 24 | ● | |
| | **102-53** | Contact point for questions regarding the report | 24 | ● | |
| | **102-54** | Claims of reporting in accordance with the GRI standards | 24 | ● | |
| | **102-55** | GRI content index | 216–222 | ● | |
| | **102-56** | External assurance | 112–114 | ● | |

| GRI Standard | Disclosures | | Page | Reported fully/partially | Note |
|---|---|---|---|---|---|
| **Ethics & Compliance** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 74–77 | ● | |
| | **103-2** | The management approach and its components | 74–77 | ● | |
| | **103-3** | Evaluation of the management approach | 74–77 | ● | |
| **GRI 205: Anti-corruption 2016** | **205-2** | Communication and training about anti-corruption policies and procedures | 75–76 | ● | The Ethics Policy, incl. a chapter on anti-corruption, was communicated to all employees via the ethics-policy newsletter. The Ethics Policy is available in nine languages. Borealis created a special Ethics Policy for external Business Partners. All versions of the Ethics Policy are publicly accessible on Borealis' external website: www.borealisgroup.com/company/compliance-ethics/our-ethics-policy. 100% of the members of the Borealis Executive Board and 100% of the members of the Supervisory Board have received training about anti-corruption policies and procedures. 159 dedicated employees from our Sales, Procurement, Legal and eligible project teams completed a specific e-learning anti-corruption training. In addition to this, 4,259 employees completed the e-learning course CodeOne which also includes a chapter for anti-corruption & bribery. 662 employees of Borealis received an in-person compliance & ethics training which regularly includes training on anti-corruption & bribery. |
| | **205-3** | Confirmed incidents of corruption and actions taken | 74–75 | ● | No confirmed or suspected incidents of corruption. |
| **GRI 206: Anti-competitive Behaviour 2016** | **206-1** | Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices | 75 | ● | |
| **GRI 307: Environmental Compliance 2016** | **307-1** | Non-compliance with environmental laws and regulations | 101 | ● | |
| **GRI 412: Human Rights Assessment 2016** | **412-2** | Employee training on human rights policies or procedures | 75–76 | ● | Approx. 4,300 employees received training on human rights, which corresponds to approx. 60% of our total staff. 662 employees received in-person trainings, which results in a total of 20 hours. |
| **GRI 419: Socioeconomic Compliance 2016** | **419-1** | Non-compliance with laws and regulations in the social and economic area | 75 | ● | |
| **Product Sustainability** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 82–85 | ● | |
| | **103-2** | The management approach and its components | 82–85 | ● | |
| | **103-3** | Evaluation of the management approach | 82–85 | ● | |
| **GRI 301: Materials 2016** | **301-1** | Materials used by weight or volume | 83–85 | ◗ | Due to international standards fertilizer feedstock is reported in GWh. Packaging material is only reported based on 1,000 kg of product sold. For the time being, all materials used are non-renewable. |

| GRI Standard | Disclosures | | Page | Reported fully/partially | Note |
|---|---|---|---|---|---|
| **Energy Management** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 58–60 | ● | |
| | **103-2** | The management approach and its components | 58–60 | ● | |
| | **103-3** | Evaluation of the management approach | 58–63 | ● | |
| **GRI 302: Energy 2016** | **302-1** | Energy consumption within the organisation | 59 | ● | All fuels consumed are of non-renewable sources. The amount of commercial liquid fuels used is insignificant. Fuels and steam consumed are mainly used for processes. Data for cooling consumption is currently not available.<br><br>Renewable power sourcing ambition is expressed in % of the power used in HC and PO business that is from renewable sources such as wind, solar, biomass or hydro, and connected directly to our internal grids or sourced on the European markets through power purchase agreements (PPAs), always covered by guarantees of origin. Borealis intends to reach 50% or more by 2030 and also explores co-ownership of renewable power assets.<br><br>Final energy consumption of Borealis: 3,533 GWh electricity, 1,564 GWh steam, 8,068 GWh fuel gas, and 7,191 GWh natural gas. Energy consumption is converted into primary energy as follows: fuels (including natural gas): 100% conversion to energy, factor 1; steam 90% boiler efficiency, factor 1.11; electricity: 40% efficiency, factor 2.5. |
| | **302-3** | Energy intensity | 59, 61–62 | ● | Energy efficiency is the number of MWh of primary energy divided by total production tonnes [1]. Basis for the energy intensity indicator: production volume of all production plants; energy consumption of the whole organisation, including infrastructure, R&D, offices; includes compensation for production and energy consumption that happens outside Borealis but is necessary to include to have one consistent value chain through the Group and the KPI. This avoids distortion when Borealis has more output from fully integrated sites, for example a site where Borealis does not own the cracker. |
| | **302-4** | Reduction of energy consumption | 59–61 | ● | Energy efficiency improvement is expressed as the sum of the improvement measures of projects that are individually evaluated compared to business as usual. To evaluate the objective, this amount is divided by the absolute energy consumption of 2015 (240 TWh primary energy). |

1) Energy efficiency can be calculated using the formula: $\text{Energy KPI} \left[\frac{\text{MWh}}{\text{t}}\right] = \frac{\text{Fuels (MWh)} + 1.11 \times \text{Steam (MWh)} + 2.5 \times \text{Electricity (MWh)}}{\text{Total plant production (t)}}$

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|---|---|---|---|---|---|
| **Water Management** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 96 | ● | |
| | **103-2** | The management approach and its components | 96–99 | ● | |
| | **103-3** | Evaluation of the management approach | 96–99 | ● | |
| **GRI 303: Water 2016** | **303-1** | Water withdrawal by source | 97–98, 102 | ● | |
| | **303-2** | Water sources significantly affected by withdrawal of water | – | ● | Zero water sources significantly affected. |
| **Climate Change** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 58–59, 96–97 | ● | |
| | **103-2** | The management approach and its components | 58–59, 96–97 | ● | |
| | **103-3** | Evaluation of the management approach | 58–59, 96–97 | ● | |
| **GRI 305: Emissions 2016** | **305-1** | Direct (Scope 1) GHG emissions | 62–63, 102 | ● | There are no biogenic $CO_2$-emissions. The consolidation is based on operational control. The GwP rates are $CO_2$=1 $CO_2$eq, $N_2O$=298 $CO_2$eq. Borealis is reporting the direct $CO_2$ emissions applicable under the EU-ETS legislation. |
| **Air Quality** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 96–97 | ● | |
| | **103-2** | The management approach and its components | 96–97 | ● | |
| | **103-3** | Evaluation of the management approach | 96–97 | ● | |
| **GRI 305: Emissions 2016** | **305-7** | Nitrogen oxides ($NO_x$), sulfur oxides ($SO_x$), and other significant air emissions | 96–97, 102 | ● | POP and HAP are not relevant for Borealis. Emissions to air are calculated based on measurements or calculations based on fuel consumption and emission factors. |
| **Stakeholder Engagement** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 30 | ● | |
| | **103-2** | The management approach and its components | 30–32 | ● | |
| | **103-3** | Evaluation of the management approach | 30–32 | ● | |
| **GRI 415: Public Policy 2016** | **415-1** | Political contributions | 33 | ● | |

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| **Plastic Waste & Management** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 96–97, 99–101 | ● | |
| | **103-2** | The management approach and its components | 96–97, 99–101 | ● | |
| | **103-3** | Evaluation of the management approach | 96–97, 99–101 | ● | |
| **GRI 306: Effluents and Waste 2016** | **306-2** | Waste by type and disposal method | 99–102 | ● | The category "Other Treatment" covers, for example, land treatment, biological treatment, incineration without energy recovery and physico-chemical treatment. |
| | **306-3** | Significant spills | – | ● | Deviations from the norm, hazardous situations and other incidents such as spills are reported, analysed and followed up with corrective actions. No spill occurred that resulted in fines or liabilities. |
| **Emergency Governance** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 78 | ● | |
| | **103-2** | The management approach and its components | 78–81 | ● | |
| | **103-3** | Evaluation of the management approach | 78–81 | ● | |
| **GRI G4: Oil & Gas Sector Supplement** | **OG13** | Number of process safety events, by business activity | 67, 80–81 | ● | |
| **Sustainable Sourcing** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 82 | ● | |
| | **103-2** | The management approach and its components | 86–87 | ● | |
| | **103-3** | Evaluation of the management approach | 86–87 | ● | |
| **GRI 308: Supplier Environmental Assessment 2016** | **308-1** | New suppliers that were screened using environmental criteria | 86–87 | ● | |
| **GRI 414: Supplier Social Assessment 2016** | **414-1** | New suppliers that were screened using social criteria | 86–87 | ● | |

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| **Human Capital Development** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 103–105 | ● | |
| | **103-2** | The management approach and its components | 103–105 | ● | |
| | **103-3** | Evaluation of the management approach | 103–105 | ● | |
| **GRI 401: Employment 2016** | **401-1** | New employee hires and employee turnover | 108 | ● | New hires: employees hired for more than 3 months, excluded: externals, long term absences, trainees, apprentices, summer worker, temporary employees less than 3 months. Employee turnover: employees who left the company voluntarily. Age clusters have been adapted to the GRI definition (<30 years, 30–50 years, >50 years). |
| **GRI 404: Training and Education 2016** | **404-2** | Programme for upgrading employee skills and transition assistance programs | 108–109 | ● | |
| | **404-3** | Percentage of employees receiving regular performance and career development reviews | 109 | ● | |
| **Occupational Health & Safety** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 64–66 | ● | |
| | **103-2** | The management approach and its components | 64–66 | ● | |
| | **103-3** | Evaluation of the management approach | 64–66 | ● | |
| **GRI 403: Occupational Health and Safety 2016** | **403-1** | Workers representation in formal joint management-worker health and safety committees | – | ● | The formal joint management-worker health and safety committee is covered within the Responsible Care® Committee; in addition, there are various information platforms and meetings which ensure that all employees of operational sites are represented. |
| | **403-2** | Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities | 65–67 | ● | Borealis has adapted the risk matrix, which is part of one of the Group Policies, to include occupational illnesses. Lost Day Rate: This rate is so low that it is not significant enough to report. Absentee rate: The sick leave rate is reported. This does not include leave due to occupational injuries. Regional split: This data is not available because the majority of Borealis' locations are in Europe (7,000+ employees versus around only 300 employees in South and North America). Gender split: Borealis also does not track the split of TRI by gender as the number of female operators, technicians and contractors is relatively low, and Borealis cannot observe any major differences in risks posed to each gender.<br><br>Contractors' injuries in general are tracked. They include TRI, EMC (external medical check) and FAC (first aid cases). |

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| **Diversity and Equal Opportunity** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 103, 105 | ● | |
| | **103-2** | The management approach and its components | 105–108 | ● | |
| | **103-3** | Evaluation of the management approach | 105–108 | ● | |
| **GRI 405: Diversity and Equal Opportunity 2016** | **405-1** | Diversity of governance bodies and employees | 107 | ● | At the end of 2019, the Executive Board (EXB) has five members, one female and four males and with an average age of 53.6. At the end of 2019, the Supervisory Board had five members, all males. We have no information about the age of the Supervisory Board members. |
| **Product Stewardship** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 92–93 | ● | |
| | **103-2** | The management approach and its components | 92–93 | ● | |
| | **103-3** | Evaluation of the management approach | 92–93 | ● | |
| **GRI 416: Customer Health and Safety 2016** | **416-1** | Assessment of the health and safety impacts of product and service categories | 93–94 | ● | |
| **GRI 417: Marketing and Labeling 2016** | **417-1** | Requirements for product and service information and labeling | 93–95 | ● | |
| **Digital Transformation** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 50–51 | ● | |
| | **103-2** | The management approach and its components | 50–51 | ● | |
| | **103-3** | Evaluation of the management approach | 50–51 | ● | |
| **Circular Economy** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 52–54 | ● | |
| | **103-2** | The management approach and its components | 52–57 | ● | |
| | **103-3** | Evaluation of the management approach | 52–57 | ● | |
| **Innovation Management** | | | | | |
| **GRI 103: Management Approach 2016** | **103-1** | Explanation of the material topic and its boundary | 45 | ● | |
| | **103-2** | The management approach and its components | 44–48 | ● | |
| | **103-3** | Evaluation of the management approach | 44–48 | ● | |

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