Sustainability Report 2019

CENTRIENT™
Pharmaceuticals

Sustainability Report 2019

CENTRIENT™ Pharmaceuticals

Contents

About this report

Our Sustainability Report 2019 provides an overview of Centrient Pharmaceuticals' environmental, social and governance performance. The content of this report reflects the progress we have made across these key focus areas during the calendar years between 1 January 2018 and 31 December 2019, unless otherwise indicated.

There have been no significant changes from previous reporting periods in terms of the scope or measurement methods applied as part of this review. We published our most recent (2017) Sustainability Report in 2018 and intend to continue reporting our sustainability performance on a biennial basis.

Reporting guidelines

We evaluate our approach to economic, environmental and social reporting by referring to the Global Reporting Initiative (GRI), a globally recognised external framework. The Sustainability Report 2019 includes a GRI Reference Table indicating the location within the report of relevant information for the respective 2016 GRI disclosure.

Contact us

For more information, please visit www.centrient.com, or send an email to info@centrient.com

Message from the CEO

A clear vision on sustainability

Sustainability matters a great deal at Centrient Pharmaceuticals, and is at the core of our purpose to "improve lives by being at the centre of sustainable and accessible healthcare". As incoming CEO, I am passionate to find myself leading an organisation that is working hard to make a positive difference for the health of people and for the environment.

2019 was an important milestone, marking 75 years since we began producing antibiotics at an industrial scale. As we enter the third decade of this century, sustainability remains at the heart of what we do. This organisation-wide purpose has been channelled through a well-defined Sustainability Strategy supported by the pillars: combating antimicrobial resistance (AMR), and ensuring a positive environmental and social impact.

I am proud of my colleagues' work in driving sustainability over the past few years, as well as our company promise of Quality, Reliability and Sustainability. These will continue to be at the heart of everything we do. There are many achievements I could mention, such as hitting the vast majority of our environmental targets for 2020. We have also taken great strides to carve out a leadership position in the sustainable production and supply of antibiotics, and in our advocacy work on AMR and its prevention. As a front runner in the journey to deliver responsibly produced antibiotics, we are proud that our semi-synthetic penicillin (SSP) active pharmaceutical ingredients (API) product range meets the stringent Predicted No-Effect Concentration (PNEC) discharge targets set by the AMR Industry Alliance. Our state-of-the-art wastewater treatment facilities and testing methodology ensure we meet these stringent targets and, as such, are unlikely to contribute to the development of AMR.

Our purpose drives us and Sustainability is at the heart of all we do

Meanwhile, we strive to be a good neighbour to our surrounding communities by expanding our CSR approach in the many locations where we operate. These important health and education initiatives are having a positive impact on people's lives across India, Mexico and beyond.

Moving forward with purpose

As detailed in our 2019 Sustainability Report, we are taking steps to strengthen and standardise our approach worldwide. Our recent materiality analysis illustrates our stakeholders' priorities regarding health and the environment. These priority topics will provide the framework for our Sustainability Strategy going forward. So too, the GRI Standards, which are now embedded in our reporting process.

Like everyone at Centrient, I recognise we have further to go to achieve our sustainability ambitions. Some of our 2020 objectives will go unrealised. Undertaking the next stage of our Sustainability Strategy, our Roadmap for 2025 and beyond, will be tougher still. But with issues such as climate change and AMR posing a growing threat to the planet and our way of life, we must work harder than ever to meet our goals.

I have every confidence in our organisation. Looking around, I see people who believe wholeheartedly in our sustainability vision and who live and breathe our mission and purpose. People with a shared passion for sustainability and for making a positive contribution to our planet and its people. Most importantly, I see clear alignment between our regions and teams around the world, and also with our customers, suppliers and other partners.

Through hard work, and with everybody working from the same page, we will be in a strong position to achieve our objectives over the coming decade. I am looking forward to leading Centrient Pharmaceuticals on this journey and invite you to support us in this purpose.

Rex Clements
Chief Executive Officer at
Centrient Pharmaceuticals

Sustainability highlights

75 years

of antibiotics production at industrial scale

Meeting **PNEC** targets for our largest portfolio range of semi-synthetic penicillin APIs, two years ahead of schedule

Received EcoVadis Gold sustainability rating

Among **top 4%** of companies in the "Manufacture of basic pharmaceutical products and pharmaceutical preparations" industry

PureActives® brand included in a customer's product marketing campaign for the first time

PureActives®

Solid progress on our environmental monitoring targets

Compliance of own antibiotics manufacturing sites and antibiotics supplying CMOs to AMR IA framework principles

amr INDUSTRY ALLIANCE

PSCI

PHARMACEUTICAL SUPPLY CHAIN INITIATIVE

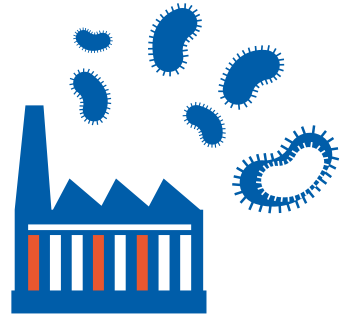
Introduced PSCI principles and PSCI audit programme in own operations and full supply chain

Earth Day celebrated by 1,500 employees

1,500

Appropriate Antibiotic Use project in China rolled out across **70** hospitals

Multi-stakeholder engagement on responsible antibiotic manufacturing and supply chains

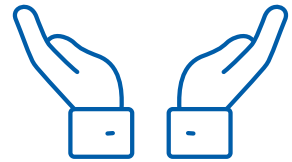


First AMR supplier assessment survey done (will be repeated in two years)

Renewed company **mission** and **vision**, and **new values** introduced

Medical and educational community programmes in Mexico and India

Engagement and health programmes for employees and their families



Driving our Sustainability Strategy

Centrient Pharmaceuticals is a leading pharmaceutical provider at the centre of a fast-evolving healthcare landscape. In undertaking this important role, we are ever-conscious of our responsibilities to our customers and patients, but also to society at large. The past decade, which followed the implementation of our Sustainability Roadmap 2008-2020, has brought growing global awareness – and concern – around health and environmental issues, including climate change and antimicrobial resistance (AMR).

As we respond to these challenges, sustainability has become embedded in the Centrient culture and way of working. It is now at the heart of everything we do. As voiced by our brand promise of Quality, Reliability and Sustainability, we aim to improve the lives of patients today by providing access to high-quality products and services, but equally, to safeguard the health of the planet and of future generations.

Our Roadmap has guided us in improving our environmental impact and maintaining a safe, healthy and responsible workplace, while extending our focus to surrounding communities, including in developing regions such as India and Mexico. At the same time, we are taking a leadership role within the wider pharmaceutical value chain, working with customers, suppliers and other partners to drive industry awareness and action on critical sustainability issues. The different strands of our strategy are underpinned by clear targets and Key Performance

Centrient Sustainability Strategy

Reducing environmental impact	Improving human health and social impact	Combatting further spread of AMR
Reduce impact of operations, specifically: • CO_2 emissions • VOC emissions • COD emissions • Water consumption • Energy consumption • Hazardous waste reduction	Improve human health by increasing access to our medicines	Prevent further rise of AMR through responsible production
Follow stringent guidelines for supplier qualification and sustainable procurement practices	Continue to uphold human rights in our own operations	Assist partners by leveraging Centrient Pharmaceuticals sustainable technologies and know-how
Be recognised for sustainability achievements in selected sustainability rankings	Engage employees on sustainability	Take leadership stance on AMR with specific environmental focus
Integrate sustainability into company processes	Execute local social responsibility activities	Support decision-makers on improving AMR standards and policies

Indicators (KPIs), with which we monitor our environmental, social and governance performance and progress. And they are supported by a growing range of local and regional initiatives around the world.

As we approach the conclusion of our current Roadmap, having largely met – or exceeded – our mid-term targets, we are in the process of developing the next stage of our strategy. Our three-pillar longer-term Sustainability Strategy shapes our response to growing global health and environmental threats, and outlines the steps on our sustainability journey. We link our efforts to the United Nations Sustainable Development Goals (SDGs), with a focus on four areas: goals 3, 6, 12 and 13.

Our Strategy is supported by our recent materiality assessment

Our Strategy is supported by our recent materiality assessment, through which we defined the priorities of Centrient and its stakeholders with regard to sustainability. Along with the GRI Standards, our identified priority topics – Antimicrobial Resistance (AMR), Water and environment, Improving access, Science and Innovation, Climate and energy and Responsible procurement – are the central pillars of this Sustainability Report. As the healthcare and wider environmental landscape continue to evolve, we realise these priorities may also change.

By remaining adaptable, and attentive to the needs and concerns of our customers, employees, communities and other stakeholders, we can continue improving our impact as an organisation over the coming decade and beyond.

About our business

About Centrient Pharmaceuticals

Centrient Pharmaceuticals is the global business-to-business leader in sustainable, enzymatic antibiotics, next-generation statins and anti-fungals. We produce and sell intermediates and active pharmaceutical ingredients (APIs), as well as finished dosage forms (FDFs).

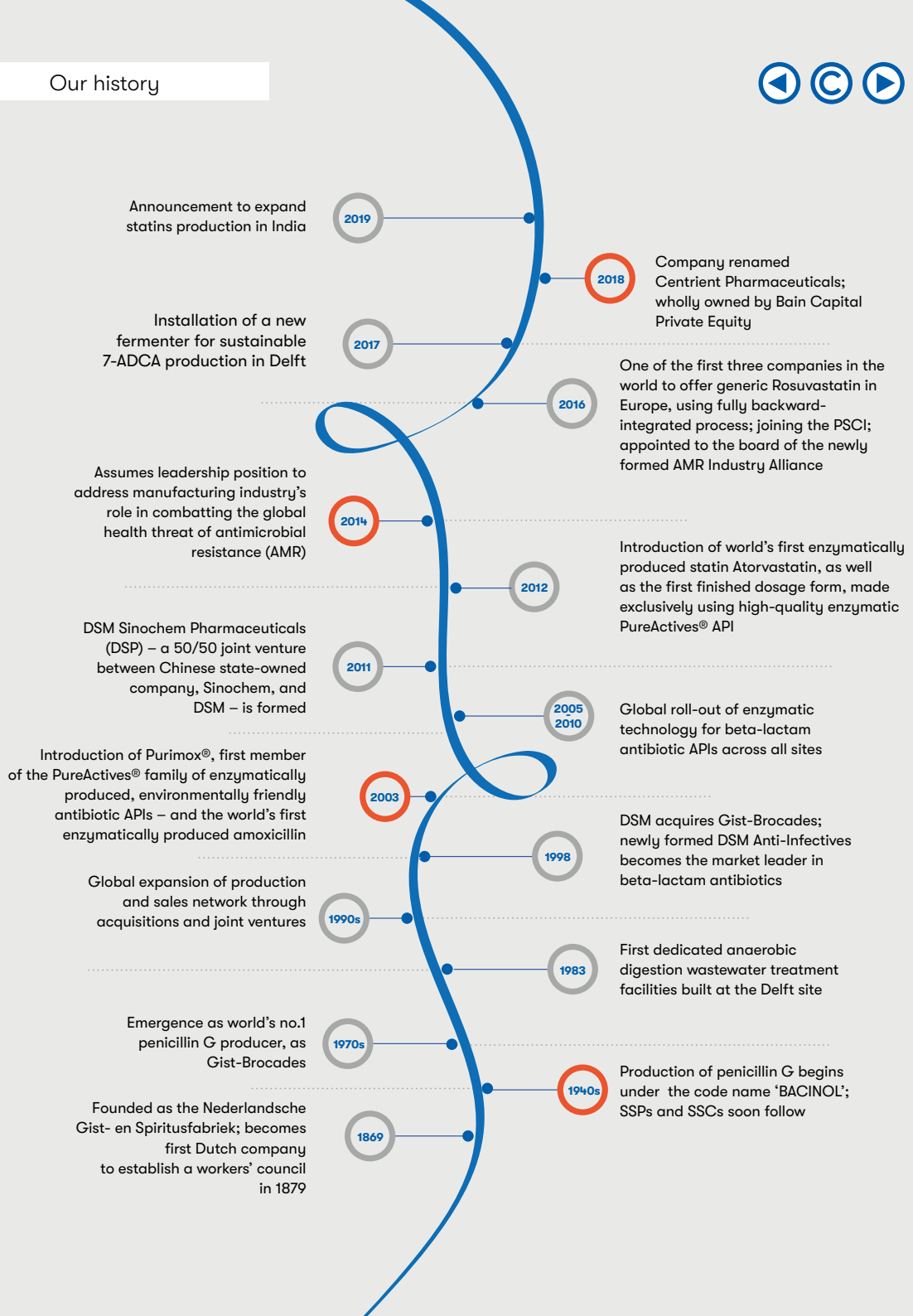
With our commitment to Quality, Reliability and Sustainability at the heart of everything we do, our 2,700 employees work continuously to meet the needs of our customers, the marketers of generic medicines. We work towards a sustainable future in healthcare by actively participating in the fight against antimicrobial resistance.

We aim to expand our position in generic pharmaceuticals by building on our key strengths and continuing our forward integration into finished dosage forms (FDFs). Since 2018, Centrient Pharmaceuticals has been wholly owned by Bain Capital Private Equity, a leading global private investment firm.

Our mission

Our mission is to improve lives by being at the centre of sustainable and accessible healthcare. Every day, we improve and save lives. All while playing a central role in modern healthcare.

Our products are indispensable, even for minor surgery treatments. Not only do we manufacture these in the most environmentally friendly and sustainable way possible, but we also take care that no antimicrobial activity is left behind in wastewater. This makes us a large contributor to



Code name “Bacinol”

At Centrient Pharmaceuticals, one of our core product ranges is the penicillin family of antibiotics. Alexander Fleming’s discovery of penicillin in 1928 paved the way for modern healthcare, making surgery, cancer treatments, organ transplants and other major interventions possible. All this is common knowledge, but it may not be widely known that scientists from Centrient Pharmaceuticals’ previous brand identity were involved in developing the scale-up process of penicillin.

During the Second World War, a group of Dutch scientists working for the Nederlandsche Gist- en Spiritusfabriek (“Netherlands Yeast and Spirit Factory”) worked on creating an industrial fermentative process for making penicillin in large quantities under the code name “Bacinol”. These scientists leveraged the company’s long heritage in fermentation and yeast production to help address the growing demand for penicillin in the post-war period. By 1949, the Nederlandsche Gist- en Spiritusfabriek was one of the largest global producers of penicillin, with exports around the world.

the fight against antimicrobial resistance (AMR), one of the greatest health threats to mankind.

To us, ‘accessibility’ means we strive to make our products available to everyone around the globe, in all countries and all regions. This is hugely important since these medicines improve and save lives, every day. We are the market leader in all our molecules.

Our vision

We want to be the leading, diversified and fully integrated partner to our customers, the marketers of generic medicine. We always strive to take leading positions in our markets with the products we have in our global portfolio. Beyond our current product categories, we want to extend into other therapeutic areas. We are fully integrated, backward from intermediate to active ingredient, but also forward through the production of powder for oral suspension, dispersible tablets, capsules and other finished dosage forms (FDFs).

In being the preferred business-to-business partner to our customers, we strive to be the number one choice for generic and innovative pharmaceutical companies around the globe.

Our strategy

Our strategy outlines our path towards the achievement of our company’s vision. The strategy is based on Centrient maintaining and strengthening its leadership in the core active pharmaceutical ingredients (APIs) and further growing the finished dosage forms (FDFs) business, while also expanding its offering into new molecules by leveraging its existing capabilities and strengths. These strategic goals are supported by the continued upholding of best-in-class operations and technology, and building of a high-performing organisation

Our brand promise of Quality, Reliability and Sustainability

Together, the attributes of Quality, Reliability and Sustainability form our brand and serve as a guiding compass for our business. Closely linked, they impact and enhance each other, and guide us in how we conduct ourselves day after day.

We help secure patient safety by driving quality to the next level. In particular, our world-class, differentiated, active pharmaceutical ingredients (APIs) and finished dosage forms (FDFs) deliver value to our customers - by providing high levels of purity, cost-efficient packaging and favourable storage properties.

We are committed to our focused portfolio and continuously invest in our business. Our technologies are protected by patents, allowing our customers to enjoy the freedom to operate. What’s more, we safeguard the security of supply to our customers. The backward integration of our supply chains provides us with control of and transparency in our manufacturing process. In addition, we work with trusted suppliers with whom we have long-standing relationships. Customers can rest

assured that the origin and traceability of our products are secured. With numerous accredited manufacturing sites around the world meeting the highest local and international standards, customers can source our products from multiple locations, further minimising risks in their supply chain.

Sustainability is at the heart of everything we do. With our leading technology and product stewardship approach, we minimise environmental impact, create positive social impact and actively combat antimicrobial resistance (AMR). This part of our brand promise will be addressed in this report to greater detail.

Our customers

Our customers include the world's major pharmaceutical companies, as well as leading regional pharmaceutical companies on all continents. Seamless collaboration between all our regional units means we can serve customers wherever they are located.

All our customers can rely on our ability to provide our products constantly upholding our value proposition of Quality, Reliability and Sustainability throughout our value chain.

Our markets

Thanks to our global presence, manufacturing footprint and regulatory coverage, we serve markets in all parts of the world. As a leading global pharma-house, we serve customers globally, while focusing on highly regulated markets in Europe, the USA, Canada, Asia and South Africa, as well as growth markets in Asia, Mexico, Latin America and the Middle East.

Our portfolio

Centrient Pharmaceuticals produces and sells intermediates, active pharmaceutical ingredients (APIs) and finished dosage forms (FDFs). This makes us a business-to-business (B2B) partner to generics marketers in our industry.

Our APIs range from Penicillin G, the beta-lactam intermediates 6-APA and 7-ADCA, semi-synthetic penicillins, isoxazoles, semi-synthetic cephalosporins, statins to anti-fungals.

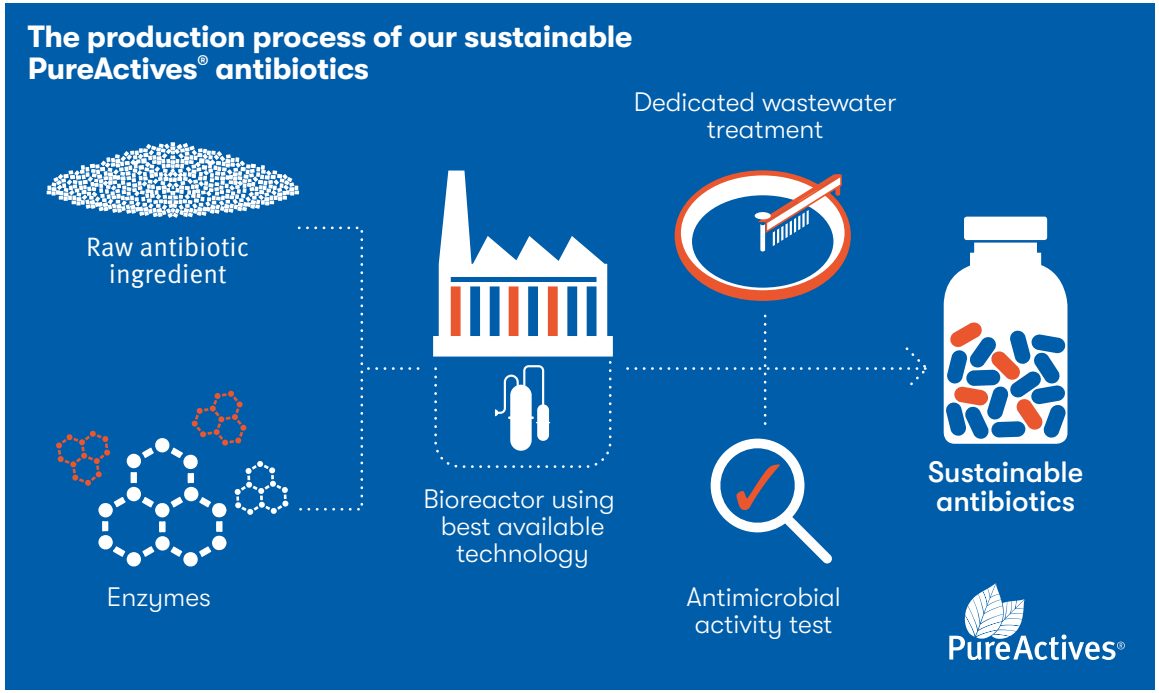
We are a market leader in enzymatic beta-lactam APIs, with 500 individual national patented innovations in this field.

PureActives® – the enzymatic difference

The active pharmaceutical ingredients (APIs) and finished dosage forms (FDFs) we manufacture using our green, enzymatic technology are marketed under the name PureActives®. Our proprietary enzymatic platform replaces the traditional 13-step production process for our antibiotics with more efficient, natural processes, eliminating the use of solvents and other chemicals.

The key enzymatic step in our statin production process further reduces our dependency on solvents and chemicals. We collectively market the APIs and FDFs we manufacture using this green technology under the name PureActives®.

All PureActives® contribute to our brand promise of Quality, Reliability and Sustainability, and a Life Cycle Assessment (LCA) has confirmed their superior green credentials

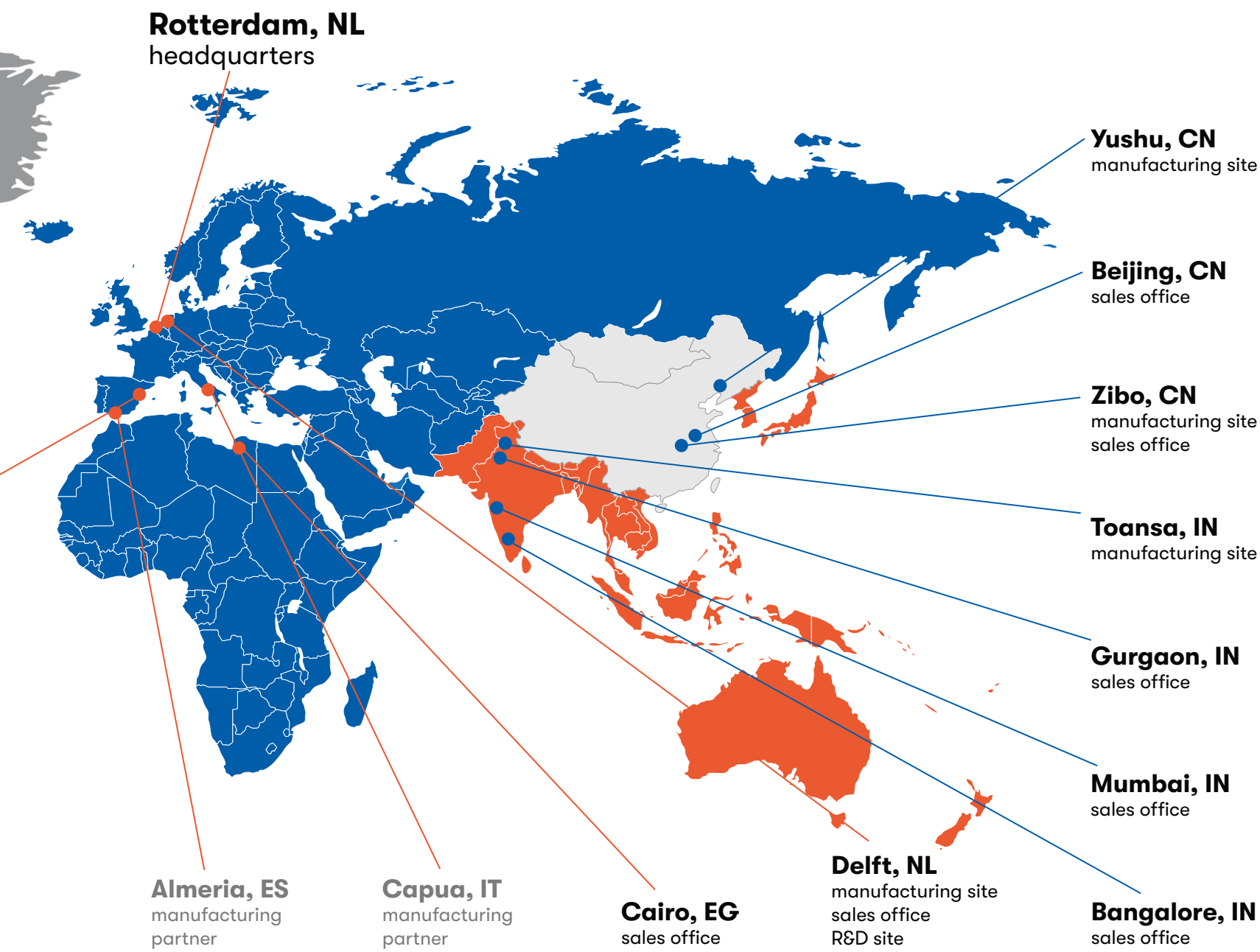


compared with chemical production. As well as consuming fewer natural resources and using less energy, they deliver increased yield and efficiencies in raw materials. Thanks to their high effectiveness, our PureActives® have enabled us to reduce our carbon footprint by up to 65% compared with the traditional chemical process. Strict quality control and a transparent backward-integrated value chain guarantee their quality, effectiveness and traceability.

Where we are

Our global corporate staff provide our strong regional units with the support they need. This set-up allows us to act in a coordinated way on a global level while maintaining a bird's eye perspective that helps us constantly improve our products and services.

Six regional units and one global unit for finished dosage forms (FDFs) are the cornerstones of our customer and supplier relationships. Together, they span the entire globe. Individually, they are close to our valued partners.


Rotterdam, NL
headquarters
Yushu, CN
manufacturing site
Beijing, CN
sales office
Zibo, CN
manufacturing site
sales office
Toansa, IN
manufacturing site
Gurgaon, IN
sales office
Mumbai, IN
sales office
Bangalore, IN
sales office
Delft, NL
manufacturing site
sales office
R&D site
Cairo, EG
sales office
Capua, IT
manufacturing
partner
Almeria, ES
manufacturing
partner

Materiality topics

In 2019, we partnered with consulting firm SustainAbility to conduct our first materiality assessment. This process is considered best practice for defining sustainability strategies and identifying the most important, and potentially impactful, environmental, social and governance (ESG) topics for a company and its stakeholders.

We began this exercise by developing a long list of sustainability issues that might be material to Centrient, namely those that present risks or opportunities for the business and/or are of most interest to stakeholders. The list of issues was identified through desk research, which involved reviewing and analysing internal documents, publicly available information, and sustainability trends and standards.

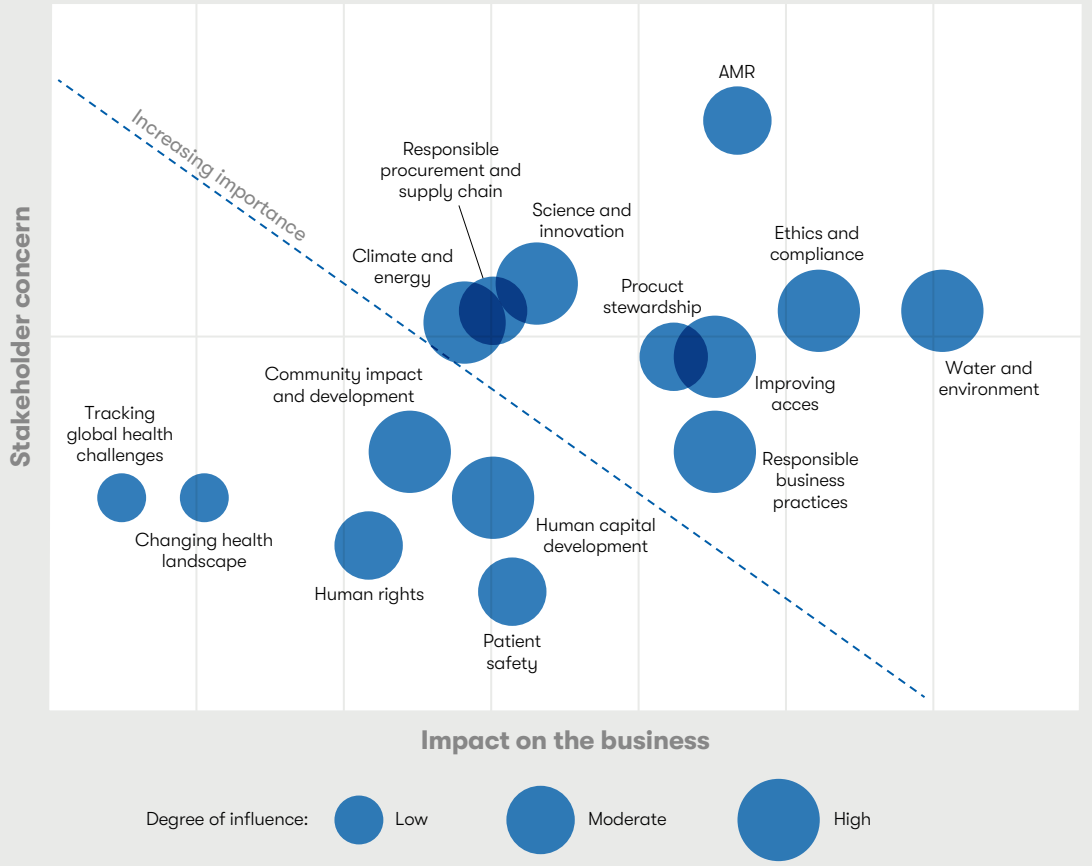
Our recent materiality assessment supports our Strategy

A series of interviews were conducted with internal and external stakeholders to gather views on the most relevant sustainability topics for the business. This engagement returned a range of perspectives on these issues, particularly around their impact on the business (in terms of commercial, reputational and operational risks and opportunities), the company's degree of influence over the issues, and the company's impact on the issues themselves. By undertaking this process, we ensure that we not only respond to our stakeholders' expectations around sustainability and ESG, but we also maximise our positive impact on the environment and society.

The findings of the materiality exercise have since been reviewed and validated by our senior leadership team.

The priority topics of **Antimicrobial Resistance (AMR), Water and environment, Improving access, Science and Innovation, Climate and energy** and **Responsible procurement** are explored in detail in the 2019 Sustainability Report. This analysis can be found in the four core sections of the report.

Materiality results



Stakeholder engagement

Our collaborations and partners

At Centrient Pharmaceuticals, we believe in working closely with industry partners and customers to drive progress and create solutions that have a strong and positive impact on the world.

"Identifying the expectations and demands of our stakeholders and integrating these into our Strategy is a powerful driver of responsible business success."

– Alba Tiley, Global Director Sustainable Antibiotics Programme

We collaborate with a range of organisations that share our mission and values, and our commitment to creating innovative and sustainable solutions. At a global level, these include the AMR Industry Alliance, the Pharmaceutical Supply Chain Initiative (PSCI), and One Young World. At a regional level, we partner with the European Chemical Industry Council (CEFIC), Reducing AMR Through Sustainable Antibiotic Manufacturing project (RATSAM), and the China Association of Health Promotion and Education (CAHPE). In Mexico, we are a member of the National Transformation Industry Association, the National Pharma Chemical Association and the Ramos Arizpe Industrial Association. We are also a member of the NAP Process Industry Network and the China Pharmaceutical Industry Association.

Stakeholder	Modes of Engagement	Frequency
Shareholders & investors	Board meetings Investor calls	Quarterly
Suppliers	PSCI Supplier Capability Conference AMR Survey through Self-Assessment Questionnaire (SAQ) and audits	Annually Every three years
Customers	Site visits Tradeshows STEM workshops	Occasionally Annually Annually
Employees	Employee Engagement Survey Department-specific meetings Townhalls Intranet/newsletters	Bi-annually Continuously Continuously Continuously
Community & civil society	Joint advocacy events Public-private partnerships Joint community development projects	Continuous engagement
Government & regulatory authority	Product registrations Compliance to laws	Continuous engagement/ Consultative Processes
Media	Press briefings Interviews	As and when basis
Industry platforms	AMR Industry Alliance Board events and working groups PSCI events and working groups	Continuous engagement

Stakeholder groups

We make a concerted effort to engage and collaborate with diverse stakeholder groups to better understand the material issues that affect them, and create and share value for more people. The above table provides an overview of our key stakeholder groups and how we engage with them.

Stakeholder engagement on this report

Internal stakeholders from across Centrient's various functions and regions provided input for this Sustainability Report. The final content has been reviewed by the members of the Executive Committee.

Improving health

As a pharmaceutical manufacturer, Centrient Pharmaceuticals is dedicated to improving the health of patients worldwide. With our extensive production capacity, we make antibiotics that support about 30% of all penicillin-based antibiotic treatments worldwide.

As we forward-integrate our business and become closer to the end-user of our products, this requires us to develop a closer understanding of patients' needs.

Access to medicines

Improving quality of life means ensuring vital medicines are available and accessible for those who need them. With a growing number of patients in need of treatment worldwide, ensuring access is an increasing challenge, and we have identified Improving Access as a priority topic during our recent materiality assessment.

As a business-to-business player, Centrient Pharmaceuticals relies on its customers to deliver the final product to patients. Yet, we still play an important role in ensuring the reliable manufacturing of these critical products, and their delivery to patients. Assuring the supply of critical active pharmaceutical ingredients (APIs) is a significant contribution towards increasing access to medicines.

Our long-term commitment to patients

In the 1940s, Centrient Pharmaceuticals became one of the first large-scale producers of antibiotics. More than 75 years later, we remain committed to providing the highest-quality active pharmaceutical ingredients (APIs) and finished dosage forms (FDFs). Worldwide, countless patients rely on our antibiotic and statin formulations, as well as the FDFs prepared from the APIs we supply, to prevent infections and facilitate other medical treatments. We pledge to continue producing our portfolio of life-saving antibiotics and statins.

Drug shortages: a barrier to access for generic medicines

According to the World Health Organization, the shortage of essential medicines is a global issue affecting high-, middle- and low-income countries alike. Antibiotic shortages, in particular, are the result of a fragile supply chain, increasingly characterised by few competitors at each stage of the chain, including raw materials and key intermediates. In this scenario, a failure involving a single factory or manufacturer can lead to a potential gap in supply. Steep price competition in the sector can influence business decisions and result in the prioritisation of other products at the expense of antibiotics. At Centrient, we engage with stakeholders from all sectors to raise awareness of the vulnerability of the supply chain.

Ensuring security of supply of medicines

Centrient Pharmaceuticals' core promise to customers is Quality, Reliability and Sustainability. Our multi-supplier strategy ensures we are not dependent on a single source for our raw materials and intermediates.

Our production is largely backward-integrated, which ensures efficiencies in production and greater control over our supply chain along with our ability to produce and deliver our active pharmaceutical ingredients (APIs) from multiple production sites. Centrient remains one of the last remaining manufacturers of certain compounds such as base Penicillin G in the western hemisphere. We continue to invest in the growth of our antibiotics manufacturing, most recently with increased capacity at our landmark 7-ADCA antibiotic intermediate facility in Delft, the Netherlands. With this investment, we aim to meet the growing demand for sustainably produced 7-ADCA, the key intermediate for cephalosporin APIs.

Expanding access to our products around the world

We aim to enhance our supply footprint and ensure our pharmaceutical products are registered to reach patients around the globe. Our active pharmaceutical ingredients (API) business' long-standing regulatory coverage enables us to sell in virtually any market worldwide, and we continue to scale our regulatory reach for our newer business, the finished dosage forms (FDFs).

Continuing to launch and register new products

We continue to gain new approvals for registrations of our finished dosage forms (FDFs). Below, we detail the number of new product/market approvals for FDFs we received in 2018 and 2019, as well as our total FDF portfolio figures:

New product/market registrations for FDFs

2018: **91** 2019: **80**

The number of countries with our total of product/market registrations (as of end 2019)

Amoxicillin formulations	**15**
Amoxicillin/Clavulanic acid formulations	**27**
Atorvastatin film-coated tablets	**10**
Rosuvastatin film-coated tablets	**18**
Caspofungin powder for solution for injection	**14**

An evolving healthcare landscape

Like the wider healthcare sector, the pharmaceutical industry finds itself having to adapt to a fast-evolving socio-economic landscape as well as rapid technological progress. 2018 and 2019 were critical years in the industry's development with regard to sustainability, health and the environment, bringing increased awareness – and scrutiny – to issues such as antimicrobial resistance (AMR).

Demographic shifts and societal changes are putting increased pressure on health systems around the world. As life expectancies increase, ageing populations drive demand for healthcare, in both emerging and developed nations. According to the United Nations, the global population will grow by an additional billion people between now and 2025. 1.3 billion of the planet's projected 8.2 billion inhabitants will be aged 65 or older, with additional healthcare resources needed to ensure their long-term care.

At the same time, developing countries are experiencing significant growth in incomes and living standards. The Brookings Institute estimates 65% of people will be middle class by 2030. These changes will further fuel healthcare demand, as urbanisation and access to middle-class comforts promote sedentary lifestyle changes that inevitably lead to increased incidence of obesity, diabetes and other costly health conditions.

Strong links between health and the environment

There is growing concern around how society's increasing healthcare needs are impacting the environment. The past few years have seen pharmaceutical producers

come under intense public and governmental scrutiny, particularly in countries with high levels of production, leading to more stringent regulatory procedures and standards.

In China, environmental regulation is being reinforced and expanded nationwide. In June 2018, the Chinese government launched a three-year action plan dubbed "The Blue Sky Defence Battle" to increase the number of clean air days and explicitly covers the impact of companies working in the chemical and pharmaceutical industry. India, too, is taking a firmer stance against pharmaceutical producers and is contemplating introducing strict regulations to protect the environment.

Meanwhile, buyers of pharmaceutical products are demanding greater accountability over how products are made. Sweden and Norway are leading in the sustainable procurement arena, including sustainability-related criteria in their tender processes aimed at increasing supplier standards. In the Netherlands, a multi-stakeholder platform of organisations led by CSR Netherlands has been created to pilot a similar initiative.

PureActives® brand in customer product marketing campaigns

In 2012, Centrient developed its own brand. PureActives® is a revolutionary enzymatic platform, which replaces the traditional 13-step production process for our antibiotics (and similarly, our statins too) with more efficient, natural processes. The resulting product requires less energy and water, and avoids the use of harmful solvents and other chemicals.

Our customers can leverage the PureActives® sustainability value and brand to lower the environmental footprint of their final products. These are then marketed using the inherent sustainability benefits of our solution, as well as the PureActives® logo and storyline.

In 2019, the PureActives® brand was included in a customer's product marketing campaign for the first time. Run in partnership with a Centrient customer, and aimed at doctors and prescribers, the campaign gave buyers and prescribers of pharmaceutical products the choice of selecting a more sustainable alternative to their normal product. The partnership is now expanding to four leading pharmaceutical companies in four key European markets.

Tackling global health challenges: AMR and non-communicable diseases

Growing awareness and action on AMR

Antimicrobial resistance (AMR) is one of the biggest health threats of our lifetime. This naturally occurring phenomenon is accelerated by human conduct, including the overuse and misuse of antibiotics, poor sanitation infrastructure, insufficient measures to prevent and control infection, pharmaceutical pollution at the point of manufacturing, and certain food production practices.

Without urgent action against AMR now, we may face a future in which antibiotics no longer work for the patients who need them. Conservative estimates contained in the Review on AMR (2014) already put the global number of deaths due to AMR at 700,000 per year, with a staggering 10 million people projected to die annually by 2050 unless drastic measures are taken.

We work with partners in China to promote the appropriate use of antibiotics

AMR is a priority topic for our stakeholders, and as an organisation, we are committed to preventing the growth of this global threat. Since 2014, we have been advocating for the responsible manufacturing and use of antibiotics through our Sustainable Antibiotics programme.

Increased stakeholder scrutiny

The threat of antimicrobial resistance (AMR) from antibiotic pollution associated with manufacturing is top of mind for industry stakeholders worldwide. The Access to Medicine Foundation's Benchmark 2018 and that year's AMR Industry Alliance's AMR Progress Report exemplify the pharmaceutical industry's increasing concern over the dangers of AMR, and highlight their actions to improve current practices worldwide.

These concerns extend to other industries, including the financial services sector. HSBC highlights that antibiotic use in meat production has increased by 90% per capita globally over the past 50 years, making AMR-laced meats a potentially grave threat to humanity.

Governments are increasingly taking note and introducing stricter measures for antibiotic production and consumption. In 2016, India introduced its National Action Plan on AMR based on the World Health Organization (WHO) guidance and provided a template guiding states to develop State Action Plans for the Containment of AMR (SAPACR). The state of Kerala subsequently launched its

Project Appropriate Use in China

Working with our local partners in China, we are tackling antimicrobial resistance (AMR) from the ground up – by promoting the appropriate use of antibiotics.

As the world's second-largest antibiotics consumer, China is ground zero in the global battle against AMR. Here, the misuse of antibiotics is a key driver of this growing health problem, with doctors sometimes directly prescribing newer-generation antibiotics to patients outside of the recommended national guidelines.

At Centrient Pharmaceuticals, we are addressing this important issue head-on. A key weapon in our fight against AMR is education: by teaching doctors and patients about the importance of appropriate antibiotics use, we are helping to drive behavioural change throughout China's healthcare system. In particular, the programme seeks to reduce the unnecessary use of higher-generation antibiotics when first-generation antibiotics are the recommended treatment.

Thanks to our partners, the China Association of Health Promotion and Education, this extensive nation-wide campaign is making a positive impact in 70 hospitals throughout 15 provinces and cities across the country, addressing one of the root causes of antibiotics misuse and AMR.

own AMR strategic plan in partnership with WHO India and National Centre for Disease Control (NCDC) in 2018. As of the end of 2019, three more Indian states have prepared their own State Action Plans on AMR, with more to follow.

We've proudly reached the AMR Industry Alliance's Common Manufacturing Framework discharge target for SSPs

Nevertheless, there remains a wide range of approaches to ensuring responsible antibiotic consumption around the world. Moreover, WHO data underlines that many low- and middle-income countries still do not effectively track antibiotic usage, making comprehensive, global policies to tackle the misuse of antibiotics and, ultimately, AMR much more difficult. Meanwhile, many countries continue to struggle to provide access to these medicines.

Rising external standards on antibiotic production

In 2018, the first Common Antibiotic Manufacturing Framework was established by the AMR Industry Alliance, giving pharmaceutical producers a clear methodology and a set of minimum requirements for conducting site risk evaluations to ensure sustainable manufacturing.

The member companies of the Alliance and their supply chains have been informed of the expectations placed on them, and are being supported in following responsible, effective waste management practices. The Pharmaceutical Supply Chain Initiative (PSCI) included an AMR assessment into its sustainability Self-Assessment Questionnaire (SAQ).

Centrient achieves PNEC compliance for SSPs

Through its company-wide Sustainable Antibiotics programme, Centrient Pharmaceuticals has developed an innovative way of detecting antibiotic activity levels in treated wastewater as low as 50 parts per billion (equivalent to 50 mg per 1,000 litres). This rigorous method has been in place at our sites worldwide since 2016.

Building on this record, Centrient recently launched Project PNEC, designed to achieve full compliance with the safe discharge targets developed and adopted by the AMR Industry Alliance. The Predicted No-Effect Concentration (PNEC) refers to the concentration of antibiotics in water at which there are unlikely to be adverse environmental effects or risks of antimicrobial resistance developing. To this end, we have developed and validated a method of analysis at a third party.

We are well on track to reach our 2021 objective of meeting the PNEC target values for all wastewater streams, including at our supplier sites. Indeed, Centrient's largest portfolio, the semi-synthetic penicillin (SSP) active pharmaceutical ingredients (APIs) range, already meets the PNEC targets two years ahead of schedule. Additionally, our contract manufacturing organisation (CMO) network of manufacturing finished dosage form (FDF) sustainable products and suppliers network has been audited by the PSCI with positive output. 87% of FDF sustainable manufacturing has so far been assessed, and this production is compliant with PNEC values.

In addition, the Alliance has developed science-based liquid discharge targets (also known as Predicted No-Effect Concentrations, or PNEC) for antibiotics discharged from manufacturing operations. In 2019, various companies, including Centrient, began implementing the new standards across their supply chains.

Non-communicable diseases

High cholesterol increases the risks of heart disease and stroke and is responsible for one-third of ischemic heart disease cases worldwide. It causes an estimated 2.6 million deaths (4.5% of total) each year and 29.7 million disability-adjusted life years (DALYs; 2.0% of total), making it a major disease burden in the developed and developing world. With incidence of cardiovascular disease growing especially quickly in low- and middle-income countries (LMICs), the global access agenda is increasingly looking at non-communicable diseases in LMICs.

Our portfolio includes statins which work to decrease cholesterol levels in patients. Our Rosuvastatin and Atorvastatin products are forward-integrated with finished formulations in all strength making statins a strategic product for Centrient. To meet the growing need, in 2019, we announced the expansion of our statins production capacity at our Toansa facility.

Community impact

Centrient's Sustainability Strategy explicitly mentions our local communities as a key stakeholder and outlines the many ways we can contribute positively to society. In 2018 and 2019, Centrient initiated and executed Corporate Social Responsibility (CSR) programmes, with a focus on India and Mexico. Our colleagues in both regions were given a clear organisational approach to run local CSR programmes, working in close partnership with local government, schools, Gram Panchayats (Village Councils in India) and aid organisations such as the Red Cross.

Our CSR initiatives are clustered within three major areas, reflecting in large part the priorities of our Sustainability Strategy:

1. Improving health
2. Taking care of the environment
3. Enhancing the quality of education.

Enhancing education in India

Education is the backbone of a successful society and a key agent of change. We believe strongly in the positive impact of access to good schooling on society. We are therefore partnering with local governments to help improve the educational infrastructure in the region around our Indian manufacturing sites.

> "It's very motivating to see the impact we build together to strengthen our community."
>
> **– Shiv Charan, Head Site Compliance and CSR, India**

In 2018 and 2019, Centrient provided financial support to four government schools to help improve their facilities, including buildings, classrooms and playgrounds. We also provided funding for two new teachers, as well as new uniforms and classroom equipment.

These schools have also been transformed into smart schools with the installation of LED screens, desktop computers, printers and inverters for power backup. Our CSR team is working to help enhance the education level of 600 students from disadvantaged backgrounds. Centrient India also runs an education sponsorship programme. As part of the scheme, we provide

scholarships to 52 deserving students each year, who are selected from among the children of our employees.

Joining hands with society in India for the environment

Environmental degradation affects the quality of life of people everywhere. In collaboration with local pollution control boards, village panchayats, NGOs and schools, Centrient leads a number of programmes in India to drive environmental protection and awareness within the community.

One such project saw a Centrient team in India link up with local welfare authorities to install 70 solar-powered street lamps in four villages. The new lights replaced the previous coal-powered lamps, reducing carbon footprints and energy costs for the villages, and improving the lives of more than 3,000 people. We also planted 200 trees around the community and protected these with tree guards.


CENTRIENT™
Pharmaceuticals
SANSUI

CSR initiatives in Mexico

To raise awareness of breast cancer in Mexico, each year Centrient teams up with the Pink Cross initiative, which supports women undergoing chemotherapy treatment. In 2018, we donated personal hygiene and body care items to the cause.

In 2018 and 2019, our colleagues celebrated the Christmas festivities with local police officials and firefighters as a gesture of appreciation for their service to society – an ongoing tradition going back more than 15 years.

Earth Day global celebrations at Centrient sites

On 22 April each year, Centrient celebrates Earth Day across its many manufacturing sites and offices worldwide.

In 2018 and 2019, more than 1,500 employees were engaged and pledged commitments to improve their environmental footprint. Employee-driven activities included art competitions, recycling and photo contests, awareness sessions, museum visits and tree-planting drives.

Employees also engaged with local schools to develop sustainability awareness among students and to encourage them to contribute positively to the environment. Activities included interactive quizzes, distribution of prizes and tree-planting.

In a tradition going back more than 15 years, our colleagues in Mexico celebrated the Christmas festivities with local police officials and firefighters as a gesture of appreciation for their service.

Improving the health of surrounding communities

In recent years, Centrient has been supporting the Indian government's Swachh Bharat (Clean India) campaign, which aims to improve sanitation and human health. Our contribution includes a free weekly outdoor clinic, which we operate in two villages near our manufacturing facilities. Over 2018 and 2019, some 3,400 patients visited the Centrient clinic for check-ups and treatment, and to receive medicines administered by our own doctor free of charge. With the nearest state hospital about 12 kilometres away, the clinic has made a positive difference to the villagers' lives, particularly women living in the villages, who now enjoy regular access to a female doctor.

At Centrient, we also run awareness and consultation sessions on personal hygiene and nutrition for our Indian employees and our surrounding communities.

In September 2019, we organised a nutrition week in the village of Toansa. An awareness session held at the local school focused on the importance of a healthy and balanced diet. We also operate a free, fully equipped gymnasium in the village under the guidance of a trained coach.

We provide clean drinking water to villages comprising approximately 600 homes located near our Indian manufacturing site. Centrient operates and maintains the water tube well and distribution pipe network. In 2018 and 2019, we also installed reverse osmosis machines and water coolers in ten government schools.

Caring for people

With the launch of its new name and identity, 2018 and 2019 were game changers for Centrient Pharmaceuticals and its people. This process helped bring clarity to our strategic direction and align our organisational structure and way of working. We now have a solid foundation for our ongoing drive to create a high-performing organisation.

In 2019, our people strategy focused on creating value for the organisation by building an industry-leading employee experience and developing our organisational capabilities, enriched through a diverse team, balanced representation and robust talent management practices.

Creating our culture: Our mission, vision and values

In 2019, we unveiled the Centrient Pharmaceuticals organisational mission, vision and values. These play a critical role in shaping our organisational culture and were developed in-house based on inputs from stakeholders across the entire organisation.

Our mission, vision and values are a true reflection of our aspirations as an organisation and what we stand for. They represent our collective beliefs and are the guiding force behind our actions and decisions.

In Phase 1 of the launch, we unveiled multiple campaigns dedicated to introducing our organisational values. Information sessions and workshops were organised across all our locations to present our values, their essence and meaning among the employees. These sessions were intended to create a common belief system and culture within the organisation regardless of its broad geographical spread and diversity. Through activities, experiential learning, visual reinforcements and reminders, we remind our employees to live out our values in their day-to-day actions.

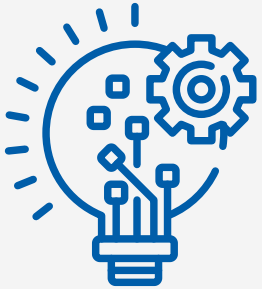
Our employee values underpin everything we say and do

The second phase of the launch, scheduled for 2020, will focus on integrating our values with our people processes and systems, making it an inseparable part of the Centrient way of working.

Passion
We are driven

Accountability
We take ownership

Collaboration
We achive together



Innovation
We embrace and drive change

Caring
We care, consiously

Human capital development

A snapshot: Our people

At the end of 2019, Centrient Pharmaceuticals employed 1,863 permanent employees. Including third-party employees, the company has 2,700 employees around the world. The Group has a diverse multinational workforce operating from sites and offices around the world. About 20% of our employees are women. We do not employ workers under the age of 18.

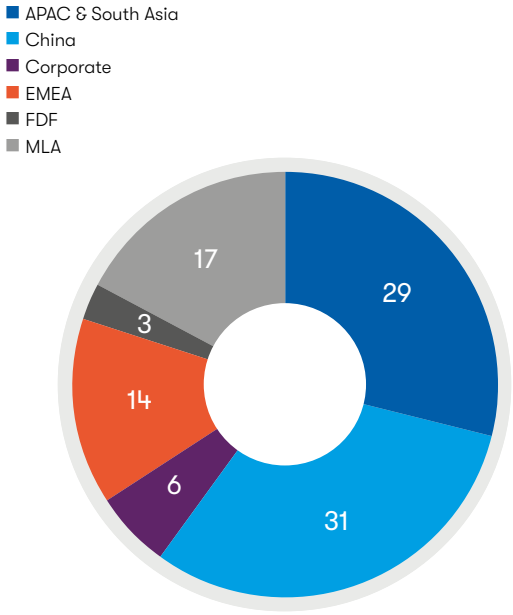
In 2019, we adopted a capability-based staffing approach along with the introduction of global job boards and an applicant tracking system, which helped improve the overall efficiency of the hiring process.

Employee development

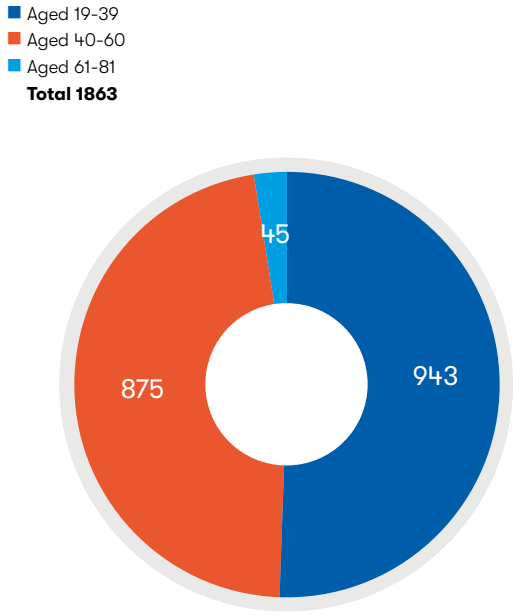
As an organisation, we believe in development with a purpose. Our learning philosophy is focused on building leadership and business capabilities that deliver high-performance results and enable our employees to be the best they can be at work.

In 2019, Centrient Pharmaceuticals focused on introducing differentiated development solutions for all functions (primarily through digital means). There were more than 1,000 trainings scheduled for our employees in our internal training tool 'Training Connect'. Our employees also took part in several classroom training programmes covering various aspects of capability-building, including Safety, Health and Environment, Quality, and behavioural skills. Centrient employees also took part in internal and external training programmes. These ranged from management development programmes organised by leading management schools such as the Indian Institute of Management Ahmedabad for Leadership, as well as October's One Young World Conference in London.

Distribution of employees across regions in %



Age distribution (2019):



During the year, we also launched a pilot for a digital social learning platform for more than 400 employees, based on the principles of collaborative learning. The aim was to provide contemporary employee learning solutions that are not limited by the classroom training option and are accessible on demand. Going forward, our classroom training programmes will be supplemented by our social learning platform, which will include a self-learning and blended learning approach.

We believe in an internal talent-first philosophy. Following the deployment of the new organisation in June 2019, we have provided opportunities for job rotations and international assignments to qualified and deserving talent, which are in line with our short-term and long-term international assignment policy. While we have continued to hire talent externally, we leverage Centrient's internal talent pipeline for key positions within the company wherever possible.

Engaging our employees

Open and transparent communication remains embedded in the Centrient DNA. In 2019, our leadership teams took part in several open discussion sessions. Centrient's

Executive Committee also engaged with employees via townhalls, management team meets and other platforms. These sessions were an opportunity for our leaders to share important information and updates about the business while facilitating open communication with management regarding working conditions without threat or inhibition.

Particular focus was given to creating a consistent 'Centrient experience' for all employees, irrespective of where they work. We launched a revised set of global employee policies, covering different aspects of the employee lifecycle and people processes. Applying a global standard to our people policies will build a consistent employee experience across all regions and drive clarity, transparency and equity.

Our people policies effectively balance the interests of employees with the organisation's needs. Our parental leave policies, flexible working arrangement facilities and employee engagement practices are on par with the best in the industry. We also launched an on-site creche for employees at the Toansa plant in India, to help them take care of their children while at work.

We have a robust performance management process, as a part of which career goals and aspirations are openly discussed with employees. About 90% of our employees receive regular performance and career development reviews. These are used to action development for all employees.

Our rewards philosophy is based on the pay-for-performance philosophy, which aims to ensure meritocracy. We do not differentiate on compensation due to gender. We have a global rewards framework and we partner with external experts to guarantee the internal parity and external (market) competitiveness of our compensation programme. In 2019, the average salary increases across different locations were in line with local market practices, taking into account the rate of inflation in the respective countries.

Creating a great workplace

In 2018 and 2019, we extended our efforts to build a happy workplace experience for our employees. From engaging with their families through events such as the Family Day, in which we invited the children of our employees to the office for a day of fun and games, to hosting movie screenings, we explored new and creative ways to create fun moments for our people at work.

We also celebrated regional festivals, including the mid-autumn festival in China, the Elotada party in Mexico, Diwali celebrations in India and several other local festivals at our offices and manufacturing sites.

To help our employees take care of their health, we launched several fitness-driven initiatives. We hosted regular health check-up camps, set up fitness bikes in one of our offices in the Netherlands, and organised fitness dance sessions in India as well as a yoga day. We also launched the Happy Garden initiative at our China site, providing employees with access to fresh, organic and healthy food.

Compensation scheme for older employees

At Centrient Pharmaceuticals, we strive for an inclusive work culture, which includes creating an employee experience that meets the individual needs and life stage requirements of all employees. To help our older employees transition towards retirement and improve their work-life balance, we launched the TOR scheme for employees in the Netherlands aged 58 and above. Under the scheme, employees can take additional time off as TOR hours on a weekly or fortnightly basis. The additional hours are adjusted against their agreed contracted hours, and no overtime hours are done by employees involved in the scheme. We also give our employees the option of a part-time employment agreement, maintaining the same number of reduced work hours as the TOR scheme.

This scheme has helped achieve a seamless balance between the interests of our employees and those of the organisation.

Young Professionals Network

Centrient employs more than 450 young professionals, including Millennials and Generation Zers. In 2019, we launched a global platform for these workers: the Centrient Young Professionals Network. The programme aims to foster an environment in which our young talents gain a sense of belonging and can thrive professionally and personally. As a part of this platform, our young talent group is working on a range of projects under the umbrella of Environment, Health and Sustainability. These initiatives include office trash collection programmes, the removal of disposable coffee cups and single-use plastic bottles, as well as social and health awareness sessions for local communities. The platform also aims to develop our young talent for future leadership roles through capability building and mentorship programmes.

Building careers with Mexico's refugees

In Mexico, Centrient has launched a recruitment campaign in close alignment with the United Nations High Commission for Refugees (UNHCR) focused on refugees who have recently arrived in the country and are looking for work.

We began the project by reaching out to the refugee community to encourage people to apply for open options at our various Mexico and Latin America (MLA) facilities. Strong applications were received, with several candidates progressing to the interview stage. The best candidates were offered positions and are now working at Centrient in a variety of roles.

With a recruitment campaign, we supported refugee integration and strengthened our workforce

The project has played a significant role in integrating refugees living in the region into society and allowing them to rebuild their lives after being displaced. Not only that; we have also been able to strengthen our MLA team by adding good candidates with the right skillsets.

Our people practices: Human and labour rights

As an EcoVadis Gold-rated organisation, Centrient Pharmaceuticals is committed to ensuring the highest standards of employee experience facilitated by best-in-class people processes. All our people policies are built on the framework of the Pharmaceutical Supply Chain Initiatives (PSCI) labour principles:

- We respect the right of our employees to associate freely, to join or not join labour unions, seek representation and join workers' councils. All our people policies are fully compliant with the laws of the land.
- We avoid, and condemn, any form of forced or involuntary prison labour.
- All our wages, benefits and working conditions are compliant with the laws of the land.
- No individuals under 18 years of age are employed by any unit of Centrient Pharmaceuticals.
- An inclusive organisation: we are an equal opportunity employer and treat all our employees fairly and with respect, and on an equal and inclusive basis. We do not tolerate any kind of harassment, unreasonable or offensive behaviour, or discrimination of any kind. This includes any form of sexual harassment. Any behaviour that negatively affects the dignity of any individual at work, is not acceptable at Centrient Pharmaceuticals. All our people processes and policies, including our Centrient Code of Business Conduct (CoBC) and Recruitment Policy, are defined to reflect this stance.
- No incidents of human rights violation were reported in Centrient Pharmaceuticals in 2018 and 2019.

EcoVadis Gold rating

EcoVadis is the world's most trusted provider of business sustainability ratings. It delivers a globally recognised scorecard with benchmarks, feedback on strengths and weaknesses, and tools to improve. In 2018, we received a Silver sustainability rating and in 2019 we scored our first ever gold sustainability rating.

Centrient is in the top 4% of companies assessed by EcoVadis in the "Manufacture of basic pharmaceutical products and pharmaceutical preparations" industry. Overall, Centrient ranks among the best 8% of companies evaluated by EcoVadis. Our highest score is on the topic of Environment, where we scored "Advanced".


KARAM

Managing our business responsibly

Our business practices are guided by our mission to improve lives by being at the centre of sustainable and accessible healthcare.

Our actions are motivated by Centrient's brand promise of Quality, Reliability and Sustainability.

Our commitment to customers, suppliers, communities and employees, as well as the environment, steer our decision-making processes and shape our way of doing business responsibly.

Doing business responsibly

At Centrient, our business practices are guided by our mission statement "Improving lives by being at the centre of sustainable and accessible healthcare". Our actions are motivated by our brand promise of Quality, Reliability and Sustainability. Our mission and vision outline our responsibility to deliver on this promise. Our commitment to our customers, suppliers, communities and employees, as well as to the environment, steer our decision-making processes and shape our way of working.

As a market leader in life-saving antibiotics, Centrient Pharmaceuticals is committed to a high standard of transparency and professional ethics. Our work is delivered via a framework of sound governance and responsible practices supported by a responsive hierarchy of processes, documentation and values. This process enables us to have a positive impact on our customers by delivering products of higher quality and with a smaller environmental footprint at competitive prices – contributing to the lives of patients and communities.

Centrient Pharmaceuticals adheres to governmental regulations and quality and environmental accreditations, as well as industry platform guidelines such as the Pharmaceutical Supply Chain Initiative (PSCI). To remain up to date with our responsibilities, we constantly monitor contemporary global issues, while working to mitigate antimicrobial resistance (AMR), climate change and other important industry concerns.

Our key accomplishments in 2018 and 2019 include:

- Achieving a Silver rating in EcoVadis assessment in 2018 (Responsible Procurement and Supply Chain).
- Achieving a Gold Rating in EcoVadis assessment in 2019.
- Developing a Sustainability Assessment Tool (SAT) in 2018.
- Implementing Sustainability Assessment through the Self-Assessment Questionnaire (SAQ).
- Ensuring our semi-synthetic penicillin (SSP) active pharmaceutical ingredients (APIs) product range meets the stringent Predicted No-Effect Concentration (PNEC) discharge targets set by the AMR Industry Alliance.
- Developing environmental KPIs for 2021-2025.

Key initiatives undertaken in 2018 and 2019 include:

- Fostering public-private partnerships for combating AMR.
- Conducting Global Safety, Health and Environment professional Summit in June 2019.
- Organising Red Tag, a 48-hour employee-led initiative to identify unsafe workplace situations.
- Assessing our antibiotic supply chain through common antibiotic manufacturing framework guidelines published by AMR Industry Alliance.
- Hosting Sustainability Through Manufacturing Excellence (STEM) workshops for our customers.

Product stewardship

With our market-leading technology and our product stewardship approach, we minimise environmental

impact, create positive social impact and actively combat antimicrobial resistance (AMR).

Our approach encompasses the complete lifecycle of a product, from its development to material sourcing, manufacturing and, finally, the distribution of the product to our customers. We have developed a robust product stewardship model which outlines our policies and practices for minimising negative environmental impacts associated with a product lifecycle.

Product stewardship is an integral part of our Safety, Health and Environment (SHE) requirements. It includes environmental stewardship, human safety, safety data sheets, wastewater treatment, AMR, quality management system and sustainable procurement.

Environmental stewardship

At Centrient, environmental stewardship is a key area in our Project Management Process (PMP). Environmental impact, and how to mitigate this, is discussed in-depth from ideation to the regular business phase of PMP. In 2018, Centrient developed the Sustainability Assessment Tool (SAT) to assess the sustainability from phase 2 to phase 5 of the PMP. The SAT is based on the 'six capital' principle of the International Integrated Reporting Council and will be merged with PMP after successful trials.

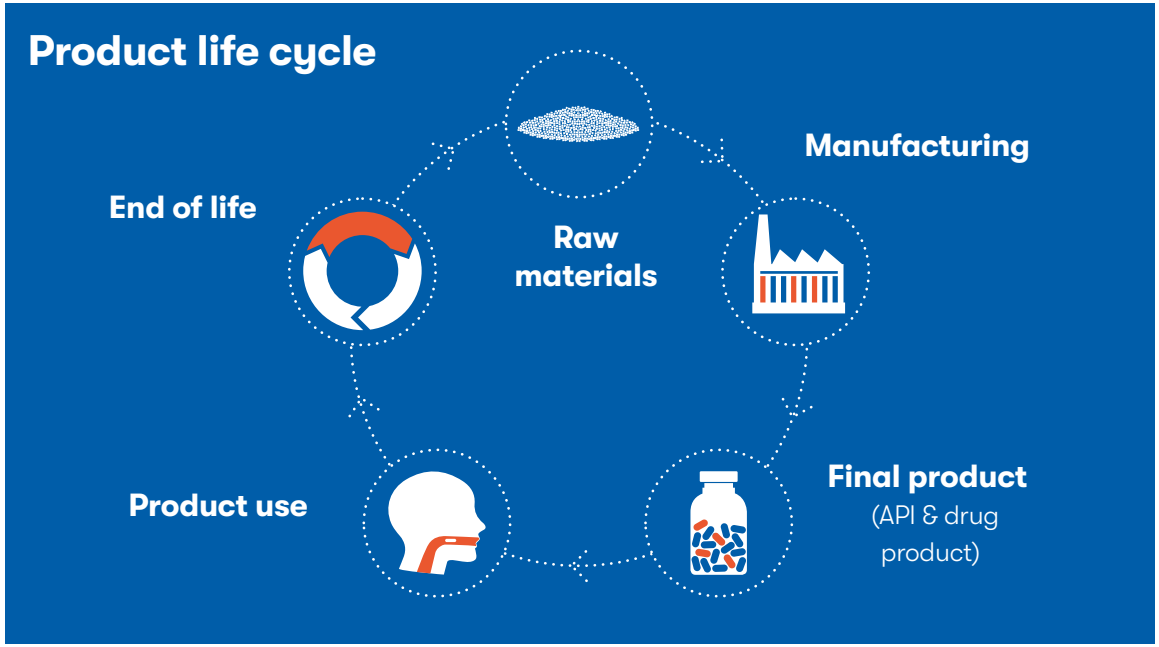
All our sites are ISO 14001-accredited, except China, where accreditation is scheduled for 2020. To monitor our environmental performance, we have set KPIs for all manufacturing sites, and their performance is monitored regularly.

We conduct Life Cycle Assessment (LCA) studies for our manufacturing processes at a defined frequency and benchmark these against current competing manufacturing processes. LCA studies provide crucial feedback and offer opportunities to enhance the environmental performance of our technologies. Our PureActives® have undergone an LCA, confirming their superior green credentials compared with chemical products. These assessments show that our enzymatically produced products are associated with lower natural resource and energy consumption compared with chemically produced alternatives. The enzyme-based process provides higher yield, lower energy consumption and greater raw materials efficiency. Also, our environmentally friendly enzymatic processes eliminate hazardous chemicals and reduce the number of synthesis steps.

These factors benefit society, as they consider global challenges such as climate change, resource scarcity, human health and the quality of the ecosystem in their production.

Human safety

Centrient has established global Safety, Health and Environment (SHE) requirements which are the basis



of the health and safety management system. The SHE requirements include, but are not limited to, risk assessments, health and safety trainings, operational controls, emergency response and planning.

We have established strong operational control systems to protect our workers from occupational health hazards and exposures, based on risk assessments and defined standard operating procedures (SOPs).

Safety data sheets

To help customers manage occupational health and safety hazards and ensure safe transportation and delivery of products, safety data sheets (SDS) are sent with each shipment, along with a Transport Emergency (TREM) card containing safety and emergency measures.

To help customers manage occupational health and safety hazards and ensure safe transportation and delivery of products, safety data sheets (SDS) are sent with each shipment, along with a Transport Emergency (TREM) card containing safety and emergency measures.

Wastewater treatment

All our facilities are equipped with state-of-the-art on-site wastewater treatment plants (WWTPs), which run 24/7, 365 days a year. Solid waste is handled according to local regulations and the wastewater treatment processes of each plant are consistently monitored, documented and reviewed.

Antimicrobial resistance

Centrient has a well-managed programme in place to prevent antimicrobial resistance (AMR), consisting of preventative measures at our manufacturing operations, as well as awareness communication, analytical measurement and reporting. Centrient also undertakes advocacy in relation to AMR in collaboration with state authorities and industrial platforms.

We conduct regular workshops with customers on Sustainability Through Excellence in Manufacturing (STEM) to encourage responsible antibiotic production.

Sustainable procurement

Centrient is equipped with a sustainable procurement programme based on the Pharmaceutical Supply Chain Initiative (PSCI) principles. Sustainable procurement is enabled by our quality management system, Safety, Health and Environment (SHE) and sustainability function, and supported by international standard operating procedures (SOPs), audit procedures, tools such as the Self-Assessment Questionnaire (SAQ), and the evaluation procedure. All suppliers are approved following a formal vetting process. The programme is steered by an experienced sourcing team, together with a team of internal and external auditors.

Quality management

Quality is a key driver of our company's continued success and the starting point for our brand promise of Quality, Reliability and Sustainability.

At Centrient, offering high-quality products and services is an overall guiding principle. We define this as the degree to which our products and services transfer value to customers, fulfil our requirements and care for patients sustainably. Our belief is underpinned by a proactive quality excellence culture, which is in place throughout our operations worldwide.

Our focus on quality begins with our CEO and Executive Committee, and is led by the Chief Quality Technical and Operations Officer Corporate and the Global Quality Director with the support of our on-site quality managers and their teams. Quality is also supported by the Corporate Quality Group

Quality standards and policies

Centrient operates in a highly regulated business environment. In light of this, we employ a Quality Management System based on the ICH Quality Guidelines and current Good Manufacturing Practices (cGMP). The system consists of a Quality Manual, covering all cGMP topics, company-wide SOPs and forms which apply to the whole Centrient organisation. The site-level Quality Management System includes local SOPs, work instructions and other documents specific to individual manufacturing sites and business regions.

The related quality documents and records are written in such a way that the whole product life cycle is reflected. The objectives of our Quality Management System are to 1) achieve the required product quality, 2) establish and maintain a state of control, and 3) facilitate continuous improvement.

Quality implementation, monitoring, review and improvement

We implement – and achieve – the above-mentioned objectives through two important pillars: Knowledge Management and Quality Risk Management. In addition to our implementation processes, we strive to maintain quality through a continual process of monitoring, reviewing and improving. This process is supported by the following four elements: 1) our process performance and product quality

monitoring system, 2) the corrective action and preventive action (CAPA) system, 3) our change management system, and 4) the management review of process performance and product quality.

The system for evaluating process performance and product quality is based on a series of KPIs, which we monitor on a weekly, monthly and quarterly basis. The Quality Group reviews performance and facts, and works to maintain the process and quality within the predefined specifications.

Reviewing process improvement, process performance and product quality is an ongoing activity. The yearly Product Quality Reviews (PQR) allow us to detect trends, evaluate the effectiveness of CAPAs and changes, monitor the completion of defined actions and gain a comprehensive picture of our quality performance on a global level.

Quality compliance monitoring

As a pharmaceuticals manufacturer, maintaining full compliance with the principles and guidelines of global and regional authorities is a fundamental requirement for our business. The excellent quality of our manufacturing facilities and equipment is evidenced by written approvals and good manufacturing practice (GMP) certificates, while regular regulatory inspections and observations by health authorities form an important part of our compliance monitoring activities.

Our annual Global Quality Assurance of Good Manufacturing Practices (GMP) Audit Plan helps prepare our sites for continuous scrutiny by health authorities. These assessments are supplemented by regular customer audits and visits to our facilities, which take place throughout the year.

We also perform regular site-based quality assessments, to ensure complete, consistent adherence to internal and external quality regulations and policies. Our internal monitoring system includes periodic self-inspections of our sites and contract manufacturing organisations (CMOs), which are performed by the Quality Group.

Regulatory authorities, customers and corporate Quality Assurance (QA) performed 118 audits in 2018 and 123 audits in 2019 on our sites and CMOs. The breakdown is provided in the following table.

	2018	2019
Regulatory inspections	12	4
Customer audits	94	106
Corporate audits	12	13

Customer complaints and product recalls

Assuring high-quality products and services is an overall guiding principle at Centrient. Part of this process involves responding faster to resolve customer complaints; to

address this, we have Standard Operations Procedures (SOPs) in place, written in line with international guidelines, which are globally applied throughout all our sites.

Supporting our focus on the whole lifecycle of products, Centrient Pharmaceuticals has SOPs in place to perform a product recall, in case that recall is needed to support the customers involved, and make sure there is no risk to patient safety.

Regulatory Affairs: securing safe and compliant drugs

A key element of operating sustainably is ensuring global compliance with product and manufacturing regulations. Our Regulatory Affairs team ensures all our products are approved for global sales by relevant regulatory authorities and consequently comply with the highest quality standards. In addition, the Centrient Regulatory Affairs team plays an important part in helping to maintain and improve the quality of medicines around the world.

Raising quality standards through regulation

Before our active pharmaceutical ingredients (APIs) or finished dosage forms (FDFs) can be used in Europe, they require regulatory approval.

For FDFs, this is performed by the National Competent Authority. After approval, a Marketing Authorisation is issued to the Marketing Authorisation Holder.

For APIs, regulatory approval can be granted in three ways:

i. by the European Directorate for the Quality of Medicines (EDQM) via a direct application by Centrient: approval results in a Certificate of Suitability (CEP),

ii. directly to a local Competent Authority: approval results in a registration file and number being issued, and
iii. as part of an FDF application by the customer.

Setting the standard

We have contributed to many reference standards in the world's two leading pharmacopeias: the European Pharmacopeia (Ph.Eur.) and the U.S. Pharmacopeia (USP). Many of our drug substances are now accepted as the official reference standards in these pharmacopeias.

Raising standards through expert groups, industry organisations and regulatory intelligence

Centrient adheres to the highest standards of quality and compliance. Through our active involvement in expert groups and industry associations, we use our expertise to help set and maintain the standards within the pharmaceutical industry. Our Director of Regulatory Affairs is a member of the expert group for antibiotics at the European Pharmacopeia, which establishes the minimum quality criteria required for an antibiotic before it can be distributed within the European market.

We also provide industry associations with advice and feedback. For instance, we work closely with the Active Pharmaceutical Ingredients Committee (APIC), one of the sector groups of Cefic, which represents the European bulk pharmaceutical industry. We have Centrient employees sitting on the APIC Executive Committee and actively representing Centrient in numerous task forces overseeing the following topics: emerging countries, China registration, elemental impurities, starting materials, and Active Substance Master File (ASMF). Quality Managers at Centrient are present in task forces dealing with data integrity and good distribution practices. APIC often meets with regulatory authorities to discuss new draft guidelines on the quality of pharmaceuticals.

APIC is also represented in some of the working groups of the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH). ICH's mission is to achieve greater harmonisation worldwide, to ensure that safe, effective and high-quality medicines are developed and registered in the most resource-efficient manner. To this end, the group is drawing up new global quality guidelines. Centrient Pharmaceuticals contributes to the preparation of these guidelines through its work in various APIC task forces.

Marketing authorisations

In 2019, the number of new marketing authorisations was further expanded across the territories. More than 80 new marketing authorisations have been granted in 23 countries, mainly in the EU, but also in Africa and South America. Moreover, in 2019, Centrient could reap the benefits of the climatic zone IVb studies, set up in 2018, by obtaining the first marketing authorisations of Amoxicillin/Clavulanic acid and Atorvastatin formulations in some African countries, such as Namibia and Ethiopia. Further investment in more protective packaging material has been set up to be able to run successful zone IVb stability programmes for the more challenging formulations in order to give access to these life-saving medicines in emerging markets where antibiotic treatments are needed.

Ensuring continuity of supply of medicinal products is a priority for public health. Hence, Centrient strengthens supply security by adding more than one active pharmaceutical ingredients (API) supplier or finished dosage form (FDF) manufacturer. Moreover, manufacturing sites of the FDFs located in Europe are mainly registered in the FDF dossiers.

Commercial launch of new finished dosage forms

During 2018 and 2019, We successfully launched new finished dosage forms (FDFs) containing our active pharmaceutical ingredients (APIs), and thus backward-integrated, for many customers. In particular, the Rosuvastatin launch in January 2018 was a major success, enabling us to introduce this generic medicine to several European markets right on time, at the expiration of the innovator product's patent.

In addition, Centrient's Atorvastatin film-coated tablets were launched in June 2018, including two new strengths, 15mg and 30mg, that had previously been unavailable in several markets. Finally, our newest product, Caspofungin, was added to the anti-fungal portfolio and introduced to hospitals in several countries.

In 2019, we launched 45 medicinal products in the European Union and Switzerland. In that year, we added FDF supply in six additional countries above the existing 24 countries. For example, Amoxicillin powder for oral suspension was introduced to the Scandinavian market.

Since these product launches in 2018 and 2019, we have been able to offer FDFs in statins, anti-fungals and antibiotics across our global network, in which we act as a full-service generics pharmaceutical company.

The department also strengthens security by adding more than one API supplier or manufacturer and facilitates expansion across new countries and markets. Our Regulatory Affairs department offers customers additional services, such as assistance with their regulatory affairs strategy, as well as operational support in case changes need to be made.

Some important new developments:

A nitrosamine impurity-free API portfolio

In September 2019, the European Medicines Agency requested marketing authorisation holders for human medicines containing chemically synthesised active substances to review their medicines for the possible presence of nitrosamines and test all products at risk. At Centrient, we take all risks to the public seriously and have initiated a thorough and robust risk analysis of all of our products. We are ahead of the curve in our projected timelines for finalising all our risk assessments and remain on track to report full and satisfactory conclusions for all our active pharmaceutical ingredients (APIs).

Serialisation

Another set of guidelines concerns serialisation, which regards the ability to track and trace a product throughout the supply chain, from manufacturer to patient. The purpose of these guidelines is to combat the falsifying (or counterfeiting) of drugs. Product packaging needs to be tamper-proof and barcoded with all unique details per saleable unit. In 2018, we conducted and managed multiple tests to assemble the systems of the manufacturing sites with our customers, so we got the mandatory 2D data matrix code ready for European suppliers by the implementation date of 9 February 2019.

Pharmacovigilance

When providing access to pharmaceutical products, next to quality, patient safety is always given the highest priority. For this reason, Centrient has a pharmacovigilance system in place. We teach our

Ethics and compliance

employees about the basics of pharmacovigilance to ensure safer usage for those who use our medicines.

We provide the latest drug information by implementing Good Pharmacovigilance Practices (GPP), as issued by the European Medicines Agency, and by immediately adapting to new releases when necessary. This enables us to determine any potential safety issues that may arise from literature screening, clinical studies or other market reports. Any relevant findings will be included in patient leaflets we produce.

Labelling

All Centrient Pharmaceuticals finished dosage forms (FDFs) are labelled in accordance with regulatory requirements, including the guideline on Summary of Product Characteristics (SmPC) and the latest Quality Review of Documents (QRD) templates. We also follow the Globally Harmonized System (GHS) and Regulations for Classification, Labelling and Packaging (CLP).

Material Safety Data Sheets

We provide Material Safety Data Sheets (MSDS) for all drug substances as required, and have systems in place to keep these MSDS and our labels up to date with all changes in regulations and substance properties. In addition, we regularly screen the communication from relevant authorities to remain up to date on new guidelines or regulations that could have an impact on the labelling of our products.

The evaluation of these sources may result in the potential addition or amendment of a label warning to ensure all our customers are properly informed. If updated safety information is required, we will proactively inform our customers.

We believe being a market leader also means being a reliable partner who conducts business according to high ethical standards. We feel a strong sense of responsibility to all our stakeholders – our employees, customers and suppliers, shareholders and society at large.

Compliance Governance Framework

Centrient Pharmaceuticals has a robust Compliance Governance Framework in place to manage business responsibly. Our compliance programme is strongly and visibly supported by our executive team and Board, who oversee the implementation and effectiveness of the programme. Compliance is overseen by Centrient's Global Risk and Compliance department on a day-to-day basis. Their role is also to ensure the programme is as efficient and effective as possible, taking into account Centrient's unique characteristics.

Centrient Alert procedure

We strive for total transparency and integrity at all times. Employees can report concerns or questions in relation to the Code of Business Conduct (CoBC) via multiple open channels of communication. With the help of the Centrient Alert procedure, in place since 2013, they can also report any potential concerns around misconduct in the strictest confidence. Reports are investigated promptly, scrupulously and confidentially under a robust whistleblower system, with appropriate disciplinary actions taken if and when reports are substantiated.

In 2019, Centrient adopted the Guidelines for Disciplinary Sanctions that apply to all regions. The purpose of the document is to provide guidelines for disciplinary actions when Centrient Group's general rules of conduct – including the CoBC, as well as manuals, policies, Safety, Health and Environment (SHE) requirements and process requirements – have been violated, and to ensure a consistent approach throughout the company.

We believe an effective reporting system will help us foster a culture of integrity and high ethical standards. With this in mind, Centrient will implement a platform for the hotline and web-based reporting, which is hosted by a third-party provider, Navex Global. From 2020, Centrient employees and third parties will be able to file a report on a confidential and anonymised basis via telephone or internet.

Centrient's compliance training programme

Continuous training is a key component of our compliance programme. We provide dedicated, mandatory training on

Embarking on a journey to renew our Code of Business Conduct

Centrient Pharmaceuticals will introduce a new Centrient Code of Conduct in 2020. The new Code reflects our new organisational mission and will help us put our updated values into practice. It will be rolled out via e-learning and additional classroom trainings.

The current Code of Business Conduct (CoBC) reflects our high ethical standards and lays out a clear set of principles and expectations for our employees and contractors to follow. With the endorsement of Centrient's senior leadership, these principles help us shape a robust, company-wide philosophy to be responsible for people, planet and profit simultaneously. Key subjects overseen by the Code include trade control compliance, competition law compliance, anti-bribery and corruption (ABC), data privacy compliance, the Code of Conduct for Information Security and Centrient's Safety, Health and Environment (SHE) Policy.

Detailed guidance on specific principles in the CoBC is provided in the form of corporate policies, requirements and directives. In addition, employees receive communication on specific principles in the CoBC to give further guidance, if needed.

All Centrient employees are obliged to know and follow the principles of the CoBC. They are regularly required to confirm they have read the Code and that they understand their resulting responsibilities. Centrient suppliers are required to conduct their business in accordance with the Supplier Code of Conduct, which defines how we choose to do business and how we interact with our business partners.

various compliance-related topics such as anti-bribery and corruption (ABC), competition law, trade controls policy and privacy.

Anti-bribery and corruption

One of the CoBC's principles is that Centrient employees refrain from any form of bribery or corruption when conducting business. Furthermore, we do not give or accept gifts that could compromise the decisions made by ourselves or partners. To ensure everyone lives up to this principle, we provide continuous training to a specific group of Centrient employees (the ABC target group). Every year, these employees complete an e-learning course, which includes a knowledge test. The ABC target group also receives regular classroom training tailored to the specifics of the Centrient business. In 2018 and 2019, about 200 members of the ABC Target Group around the world received face-to-face training on ABC topics.

The ABC Target Group is also required to sign a declaration on an annual basis to confirm they have not participated in any actions constituting a violation of any anti-bribery and corruption law.

Competition law training

Free and fair competition is one of our essential business principles. Compliance with competition law is integral to Centrient's success and reputation and, according to Centrient's strict Competition Law Compliance Policy, management undertakes every reasonable effort to ensure the applicable rules are strictly complied with. To ensure this, a training programme has been set up for a selected group of employees (the Competition Law Target Group), who are regularly trained in a classroom setting and via online training.

Trade Controls training

At Centrient, we conduct import and export transactions each day and must ensure strict compliance with all trade controls applicable to our business. We follow our own strict rules and procedures, with regular training used to ensure this. In 2019, relevant teams in our EMEA operations were trained on Trade Controls specifics in a classroom setting. In 2020, classroom training will be extended to our other locations.

Privacy

We respect the privacy of our employees, customers and business partners, following relevant laws and our privacy rules and handling personal information with great care. When the General Data Protection Regulation (GDPR) came into force in mid-2018, all Centrient employees received online training. Face-to-face training on Centrient's strict privacy policy was also given to all relevant Centrient teams in Europe, including Management, HR and Purchasing.

Patient safety

Clinical trials for drugs

To ensure their effectiveness, our active pharmaceutical ingredients (APIs) need to be manufactured in a current Good Manufacturing Practices (cGMP)-controlled environment and undergo thorough testing before being made available for human or animal use.

Our enzymatic molecules used in the production of our APIs undergo extensive testing and clinical studies before being integrated into our products. We sponsor clinical trials, such as bioequivalence studies, and always adhere to the highest global standards, even when local requirements are less stringent.

We ensure that all facilities and contract research organisations (CROs) involved in conducting clinical studies meet the necessary qualifications. They, in turn, are responsible for verifying study protocols and coordinating the required licences from ethical committees or relevant authorities. We retain an active monitoring and coordinating role throughout the clinical trial trajectory.

Regarding patient privacy and the security norms of patient data generated from clinical trials, we fully respect and comply with the Declaration of Helsinki, the Good Pharmacovigilance Practice, Good Clinical Practices (GCPs) stipulated by the ICH, along with other applicable regulatory requirements. As a clinical study sponsor, we work only with CROs that are GCP-qualified and regularly audited by our Quality Assurance team. The confidentiality of patient data during and after a clinical trial is clearly stipulated in the study protocol of each clinical trial.

Patient safety and privacy are safeguarded by strict processes for product manufacturing and testing and for clinical trials.

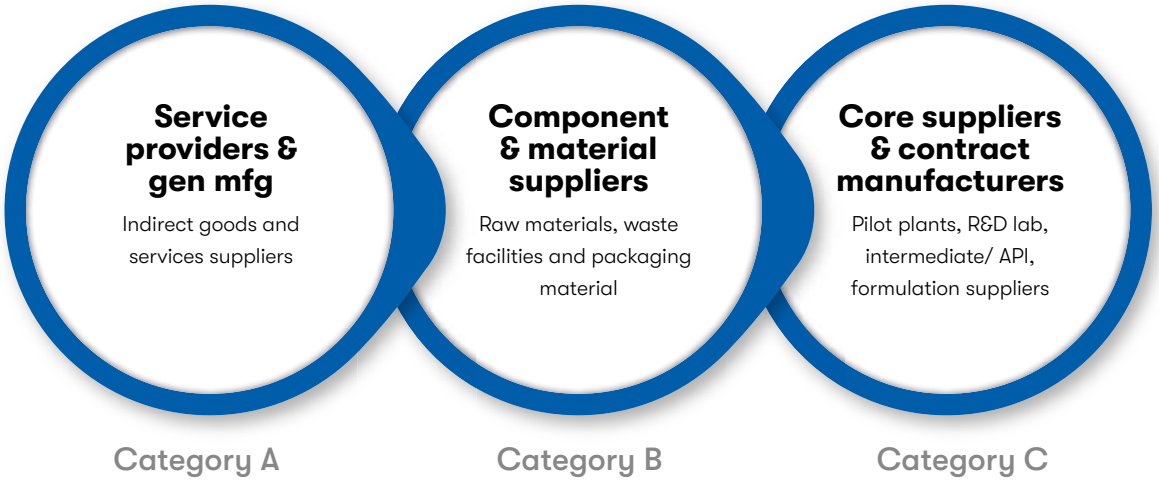
Responsible procurement and supply chain

Centrient Pharmaceuticals' globally located manufacturing sites are supported by more than 2,500 suppliers and contract manufacturing organisations (CMOs). To ensure a responsible supply chain, we set defined targets and actively monitor our progress, while demanding the same commitment from our suppliers and partners. This approach aligns with our recent materiality assessment, which identified Responsible Procurement as a priority topic for us and our stakeholders.

Our suppliers and CMOs are organised into three broad classifications as defined under Pharmaceutical Supply Chain Initiative (PSCI) classification principles for suppliers. The supplier classification as managed by our global procurement teams is defined as follows:

- **Category A** suppliers, including indirect goods and services providers.
- **Category B** suppliers, including common raw materials suppliers, waste facilities and packaging components providers.
- **Category C** suppliers, including critical vendors such as for intermediates and side chains, CMOs and formulation suppliers.

Our approach to making our supply chain more sustainable is led by our core value of Collaboration, which we demonstrate by engaging with our suppliers through regular assessments, audits and feedback sessions. Our primary focus is on the key suppliers of intermediates and active pharmaceutical ingredients (APIs), and CMOs.



Our priority is to complete sustainability assessments of Category C, existing suppliers of intermediates and APIs, and CMOs by 2022. We aim to complete sustainability assessments for our Category B existing suppliers by 2024, followed by limited assessments of Category A suppliers.

Centrient has defined programmes, procedures and policies for the approval of all new Categories B and C suppliers and assessments of existing suppliers in each category. More than 75% of our Categories B and C suppliers have signed the Supplier Code of Conduct as a part of our contract management policy. We have a corporate approach and guidelines in place in line with the PSCI principles covering five pillars of sustainability: Ethics, Human Rights and Labour, Health and Safety, Environment and Management Systems.

The outcome of the audits is followed up with suppliers and CMOs to ensure adequate corrective and preventive measures are taken to ensure compliance with set sustainability principles.

Centrient's key programmes

Supplier approval based on Quality and Safety, Health and Environment

Before May 2019, the Centrient supplier evaluation process was based on the standard operating procedure which had predominantly quality parameters based on current Good Manufacturing Practices (cGMP) with some parameters from Safety, Health and Environment (SHE).

In 2019, Centrient developed a sustainability Self-Assessment Questionnaire (SAQ) based on the PSCI principles for the assessment of new suppliers. The SAQ has been incorporated into the International Supplier Qualification and Approval Operating Procedure (iSOP). All our new suppliers of Categories B and C are assessed based on the SAQ. During 2018 and 2019, 73 audits were conducted, including periodic audits, and 71 suppliers were approved. In 2019, about 40% of the Categories B and C new suppliers have been assessed for sustainability.

Pharmaceutical Supply Chain Initiative (PSCI) audits

Centrient has been a member of the Pharmaceutical Supply Chain Initiative (PSCI) since 2017 and is committed to complying with PSCI audit requirements. We currently maintain a position in the Board of the PSCI.

Centrient has developed a multi-year audit plan in which key existing contract manufacturing organisations (CMOs) and suppliers are identified for PSCI audits on an annual basis. Audits are jointly conducted by professional PSCI-approved audit firms and Centrient auditors. Centrient plans to train internal auditors to be able to conduct PSCI audits by 2022.

In 2019, Centrient conducted six supplier Sustainability audits, with three supplier sites audited for sustainability in 2018. Centrient also assists suppliers in making improvements through implementing a corrective and preventive action (CAPA) plan for their key findings after the audits.

Additionally, suppliers get training on PSCI principles. Centrient helps suppliers and CMOs to attend PSCI capability building conferences, particularly those taking place in China and India.

Centrient is also audited regularly as per PSCI audit protocols by PSCI member companies.

Combating AMR in our supply chain

As a founding member of the AMR Industry Alliance (AMR IA), Centrient is committed to combating the spread of antimicrobial resistance (AMR). To help ensure a sustainable manufacturing process that does not contribute to AMR, we developed an internal AMR survey for assessing our antibiotic supply chain on AMR risks. The survey is conducted every three years and covers 100% of our supply chain related to antimicrobial activities.

The first survey, conducted in 2018, focused on waste-water management, solid waste management, compliance, training, awareness of AMR and the impact of pharmaceuticals on the environment. The outcome of the survey was shared with the suppliers.

In 2019, Centrient also assessed its supply chain on common antibiotic manufacturing framework guidelines published by AMR IA.

Centrient is committed to having a fully Predicted No-Effect Concentration (PNEC)-compliant supply chain by 2021.

Safety and health

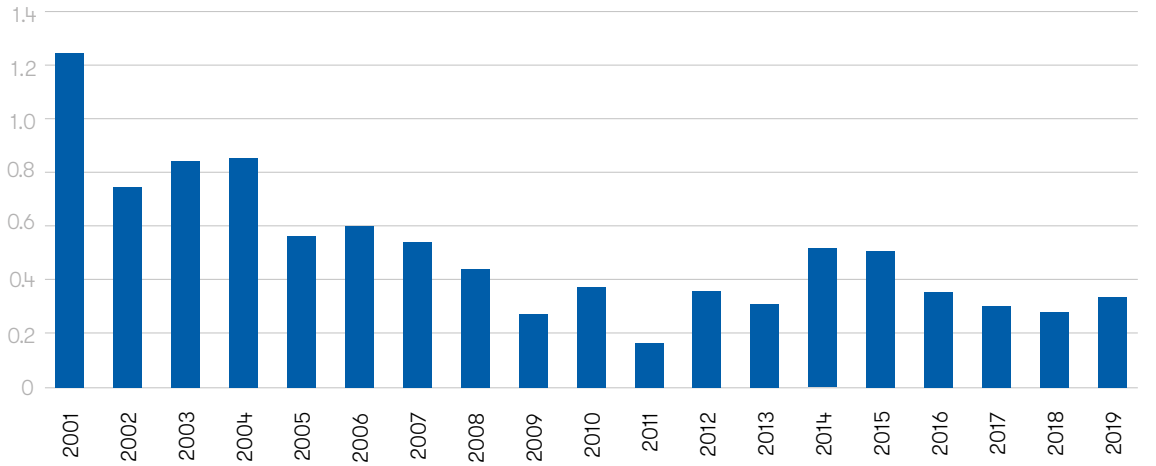
Safety, Health and Environment (SHE) are key focus points at Centrient Pharmaceuticals. Worldwide, we are working hard to achieve an injury-free work environment through a range of different programmes and our continuous efforts to influence employee behaviour.

Our SHE requirements, best practices and policies are implemented globally across all our operations at both a regional and site level.

Creating an injury-free environment

Ensuring the highest safety standards are in place throughout our organisation has always been a top priority. We maintain and strengthen our safety culture and behaviour through various projects, grouped under a single management programme based on three pillars: Process Safety, Life-Saving Rules, and Behaviour. The programme's slogan is "Together, we make Centrient injury-free!"

TRI rate with regard to our employees and contractors



Life-Saving Rules

Centrient's 12 Life-Saving Rules have become part of the daily work routine for our people, with employees and contractors expected to follow the regulations at all times. The rules are reinforced through regular training.

Under the programme, learnings from incidents and near-misses are shared internally across all sites. We also monitor best practices outside our company. In this way, we have fostered a culture around safety awareness, with a continuous focus on improvement.

Performance in 2019

As of 2001, we monitor all recordable injuries as one of our key safety indicators. Our safety performance in 2019 fell below expectations: nine recordable incidents involving injuries occurred during the year, compared with eight recordable injuries in 2018. The Total Recordable Injury (TRI) index was 0.33, a slight increase compared with 2018 (0.29).

As shown below, our best safety performance was in 2011, when six people were injured at work, compared with 47 in the first year of the safety programme, 2001. We are taking steps to improve our performance. Having seen a solid improvement in our TRI rate since 2014, we will continue working hard to surpass our 2011 benchmark score.

Although total incidents in 2019 exceeded those of 2018, our performance improved in the second quarter of 2019 thanks to special efforts made during the beginning of the year, and was the best equivalent period of the past four years. In 2019, our site in Spain remained injury-free.

Behaviour remained a key root cause of injuries in 2019. In response, we introduced various initiatives to address employee behaviour, including holding dedicated sessions on the shop floor, starting shifts with a Safety, Health and Environment (SHE) talk and performing weekly management rounds at sites. A special two-day 'Red Tag' event was also organised at all Centrient sites and offices for our people to alert to potentially unsafe situations around them.

In 2019, site and operational managers and SHE managers from all sites came together at a SHE summit to review SHE performance and work on future focus areas. Given the above initiatives and reinforced management commitment, we expect to see improved performance in the coming years.

Learning from each other

We distribute flyers detailing recordable injuries and high-potential near-misses to employees across all sites. The flyers help us learn together, enhancing awareness and preventing similar incidents.

In line with a successful initiative initiated in 2018, an awareness flyer was issued on a Management of Change basis to address gaps identified during internal evaluations and audits conducted across various sites. This has become an instrument for us to learn from each other and serves as a tool for raising awareness.

QESH 2.0

Since its launch in 2017, Quality, Environment, Safety and Health (QESH) 2.0 has been a key part of our health and safety drive across our production sites in Europe and Mexico.

The QESH 2.0 programme has two basic strands. The first is to observe operators' and contractors' awareness of QESH issues during their work. The observation team consists of the operators themselves, as well as a management team representative and a Safety, Health and Environment (SHE) professional. The team evaluates all procedures and risk analyses relating to the task while it is being performed. In particular, the team challenges the operators on safety, health, the quality of our product,

@48h Red Tag event

In December 2019, our Chief Quality & Technical Operations Officer launched a special company-wide drive to make Centrient a safer place to work. The 48-hour Red Tag event asked Centrient employees to undertake key safety-focused tasks and behaviours: Be accountable, Be a hazard spotter, Stop, think and be safe and Talk about Safety.

On day one of the event, employees and contractors were asked to go on a 'walkabout' around their work areas to 'Red Tag' potential hazards and identify situations requiring improvement with regard to SHE. Day two saw the management team accompany employees around the factory floor to review and evaluate the identified situations and discuss ideas to improve safety.

Directly after the event, SHE teams, along with line managers, began evaluating the listed items to draw improvement plans and close the loop in the first quarter of 2020. The Red Tag event was a clear success. A high level of engagement led several sites to decide to repeat the event in the coming year.

and respect for the environment. The execution of the task is discussed through questions such as, "Do you always use the prescribed safety precautions?" and "Do you always use the manual or correct procedure?" Following the observation, the best practice for the task is defined.

The second part of the programme sees a colleague nominated for outstanding performance in one of the QESH areas each quarter. The assessment criteria include proactive measures, inspiration and exemplary behaviour. Nominees are selected by the operations, maintenance, logistics and office teams, prompting discussion on desired behaviour within the various teams.

Process safety

In 2018 and 2019, we continued to improve our process safety across all our manufacturing facilities. Our global process safety expert supported Centrient's production sites with awareness training and process safety evaluations and helped the site to prioritise their approach by identifying the top-five process safety actions.

In 2019, a special four-day Process Safety Life Cycle (PSLC) training event was organised at our Mexican site, following a similar training delivered at our Delft site in 2017. We plan to organise special trainings at other sites over the coming years.

24 cases of loss of primary containment (LOPC) were recorded in 2019, 25% fewer than in 2018. The Delft and Mexico sites remain the focus of our improvement plans, as the majority of the cases happened at these two sites. Special programmes will remain in place to address the root causes, principally related to operational controls and mechanical failures.

Health

Our approach to health and wellness is primarily developed on a regional basis and carried out at the site level. In this way, individual regions are encouraged to design local programmes according to their specific needs as well as local habits and cultures. The programmes typically address specific workplace issues affecting employees' physical well-being, and may also include lifestyle improvement monitoring and healthy living promotional activities. Example initiatives include increasing the availability of healthy food options in canteens and conducting exercise programmes to help employees improve their fitness levels.

To accompany the local programmes, a select number of health-related regulations and requirements are implemented on a company-wide basis. December 2019 saw the launch of the "Boosting your Health and Wellbeing" event, with colleagues sharing personal stories and lifestyle tips for the autumn and winter seasons. These inspiring stories were published internally to help motivate others in their health and wellness goals.

Implementing health risk assessments is mandatory for all our working units. These assessments provide a crucial basis for controlling a wide range of possible exposure situations.

Protecting our environment

As an agile, globally connected and responsible corporate citizen, Centrient is responding to climate change in a concerted and structured manner.

Day by day, we are working to reduce energy use, greenhouse gas emissions and production waste across our facilities. Many of our innovation efforts focus on minimising our environmental impact through new solutions.

We are equally committed to supporting our supply chain partners in their efforts to reduce their own footprints.

Reducing our environmental impact

Society is increasingly worried about environmental degradation, with climate change, pollution, and water and natural resource scarcity among a growing number of global concerns. With the negative impact of human activity ever more visible, recent reports by the Intergovernmental Panel for Climate Change (IPCC) stress the need for urgent action to prevent the potentially catastrophic destruction of our planet. The world is starting to take notice, triggering action by governments and citizens around the globe.

As an agile, globally connected and responsible corporate citizen, Centrient is responding to this global threat in a concerted and structured manner. Day by day, we are working to reduce energy use, greenhouse gas emissions and production waste at our facilities. Much of our innovation efforts are directed towards minimising our environmental impact through new solutions. We are equally committed to supporting our supply chain partners in their efforts to reduce their footprints.

We also believe sustainability, in its broadest sense, has the potential to be an important growth driver. By producing sustainably, we safeguard not only the quality and reliability of our products, business and brand, but also build the well-being of the planet and all those who live on it.

Monitoring progress on our Sustainability Roadmap 2020

Our efforts to offset our environmental impact have been established in Centrient Pharmaceuticals' Sustainability Roadmap 2020. The Roadmap, which covers the 2008-2020 period, includes targets for KPIs. We are working towards these by implementing sustainability projects and initiatives across four key areas: 1) energy efficiency and reducing harmful emissions, 2) water efficiency and smarter water usage, 3) antimicrobial activity testing and control in our waste streams, and 4) product stewardship. We monitor progress on these areas through frequent Environment Network Review, Corporate Sustainability Core Group and Executive Committee meetings.

Our Sustainability Roadmap also forms the basis for our sustainability commitments and KPIs for 2025, which are currently under development. One of the high-priority pillars of the Strategy is reducing the impact of our activities on the environment.

The enzymatic difference

Our new projects and initiatives are based largely on the implementation of new technologies. Since the 1990s, we have been consistently innovating – with great success – to replace chemical processes with enzymatic approaches for the production of our intermediates and active pharmaceutical ingredients (APIs). One such long-running project involves replacing chemical synthesis, wherever possible, with enzymatic bio-catalysis processes, which are entirely water-based. These green products are branded as PureActives®.

A Life Cycle Assessment (LCA) has confirmed that the environmental performance of our enzymatic products is superior to that of chemical products: specifically, upgrading to enzymatic processes reduces the carbon footprint of these products by an average of almost 30% - and in some cases up to 65%.

Site classification for environmental performance monitoring

Centrient Pharmaceuticals operates production sites in multiple locations around the world. We classify our sites into two types, based on the maturity and optimisation of these operations.

Type I: Well-established, mature sites with regular production cycles. These sites are monitored against our Sustainability Roadmap 2020 targets, and their performance is summarised in this report.

Type II: New (or relatively new) sites under stabilisation. These are monitored separately from Type I sites, as they cannot yet be reasonably expected to perform to the level specified in the plant design specifications (mainly capacity utilisation).

We strive to produce the most environmentally friendly products on the market

In 2019, all our sites were categorised as Type I. These are:

- Delft, the Netherlands
- Barcelona, Spain
- Ramos Arizpe, Mexico
- Toansa, India
- Zibo South, China
- Zibo North, China
- Yushu, China
- Toansa-Taraang 1, India

Reclassification of Toansa-Taraang 1

As of 2019, Centrient's last-remaining Type II site, the Toansa-Taraang 1 plant, is now considered a Type I facility. The plant, which is a multi-product plant, has been undergoing optimisation and standardisation, and was able to demonstrate regular production performance at an optimised trend for at least one full year, resulting in the reclassification. As such, the performance of all our manufacturing sites is now included within our overall KPI performance.

The impact of Toansa-Taraang 1's performance on our overall eco-footprint KPI efficiencies will be more visible at the end of 2020. As this site has a small output size, its impact on overall footprint performance targets 2020 is foreseen to be minimal.

Our environmental targets and performance

Our Sustainability Roadmap 2020 defines key targets for Type I sites. The Roadmap and the progress made against the supporting targets are reviewed each year. For 2020, the main objectives are to reduce total energy and water usage.

Using the insights provided by the Sustainability Roadmap, we are in a transition phase of defining our new environmental parameters and targets for 2025. Until the release of these new targets, we will continue to monitor against our 2020 targets.

Eco-efficiency, introduced as a concept in 1992 by the World Business Council for Sustainable Development (WBCSD), refers to increasing production of goods and services while using fewer resources and creating less waste and pollution throughout their entire life cycle. Regarding Centrient's environmental KPI targets, eco-efficiency relates specifically to the reduction of emissions as well as energy and water consumption, relative to the production volumes of Centrient's plants. We monitor our performance against these targets with regard to efficiency improvement.

Water and environment

Water pollution and increased water scarcity are growing issues around the world. As indicated by our materiality analysis, Water and the Environment is a priority topic for us and our stakeholders. By using water responsibly during production and our wider day-to-day operations, we aim to minimise our impact on the planet. We note that the enzymatic bio-catalysis technology used in making our products is water-based. Nevertheless, we are continuously looking for ways to reduce water consumption wherever possible.

Our water management is based on the following key priorities:

- Reporting publicly on our performance and progress.
- Complying with wastewater discharge requirements and local regulations.
- Reducing water demand and increasing water reuse across our operations where possible.
- Prioritising water management and conservation actions using a risk-based approach at our sites globally.

Water use and management

In 2019, our water efficiency performance decreased by 4%. This was primarily due to lower-than-predicted overall production volumes. Other contributing factors were additional water consumption at the Yushu, Mexico and Zibo sites for cooling down the carrousel system, increased cleaning and leakages detected in Reverse Osmosis (RO) systems. These losses were partly offset by improvements at other sites.

Following the 2019 result, we set up a task force to explore new ways to conserve and save water use across our operations as we work towards our challenging 2020 water efficiency targets. A water balance assessment is planned for each of our sites to identify further opportunities for water recycling and reuse. Water efficiency improvement is depicted in Table 1.

Recycling and reusing water

In 2018, we launched a water recycling project at our Toansa site in India. The project repurposes treated water from our on-site waste management facility for use in gardening and other horticultural activities, providing a sustainable alternative to well or drinkable water. Over 36,000 cubic metres of water is recycled and reused annually through the initiative. In 2019, 27,695 kilolitres of water was also recycled for reuse in cooling towers. At our other sites, water is also partially reused for other processes within the loop during the manufacturing process where possible.

Water withdrawn by source

Our manufacturing sites are located in areas that are designated as industrial parks by the government, away from biodiversity-sensitive or protected areas. Water is an important input for synthesis and allied operations and is drawn from wells and municipal corporations. We strictly follow the local governmental legislation for the usage and conservation of water resources and comply with local regulations regarding the withdrawal of water from wells. Where possible, we conduct water risk assessments, particularly in regions

Table 1: Water efficiency

KPIs	2015	2016	2017	2018	2019	Target 2020 (Base year 2008)
Water efficiency improvement vs 2008	24%	23%	28%	27%	23%	33%
Water use in absolute terms (1,000m³/year)	3,127	3,640	3,519	3,660	3,638	-

Table 2: Water withdrawal by source

Water withdrawal by source (1,000m³/year)	2015	2016	2017	2018	2019
Municipal water	1,298	1,370	1,367	1,324	1,269
Well water	1,829	2,269	2,152	2,336	2,369
Total	3,127	3,640	3,519	3,660	3,638

where water scarcity and high-risk zones are prominent, to draw water conservation plans and roadmaps.

Water discharge by quality and destination

Our global production sites follow stringent standards when discharging their wastewater. Treated wastewater is discharged in full compliance with local legislation. Centrient Pharmaceuticals treats wastewater at dedicated wastewater treatment plants (WWTPs). We test the treated waste at the fixed frequency, ensuring it meets local legislation and Predicted No-Effect Concentration (PNEC) target values.

Emission to water

Chemical oxygen demand and nitrogen emissions

Chemical oxygen demand (COD) is an indirect measure of the quantity of organic compounds in water. We remain committed to reducing our COD emissions.

Since 2015, we have consistently achieved our 2020 objective of a 60% COD efficiency improvement relative to 2010 levels. In 2019, we exceeded this target by 3%, achieving an efficiency level of 63% across our operations worldwide.

Going forward, we aim to continue meeting – and exceeding – our COD efficiency targets by way of COD reduction projects and our ongoing transition from chemical to enzymatic technology during production. Although targets have not been defined, we also closely monitor our nitrogen emissions in effluent from our wastewater treatment plants (WWTPs). In 2018, our nitrogen emissions (in water) dramatically increased due to disruptions at our Mexico site. Immediate action was taken to resolve the situation, which is now under control. The efficiency figure improved significantly in 2019.

Table 3: Water discharge destinations

Water discharge destinations in our manufacturing sites around the globe	Quality
Discharge to sea through regional water board.	Controlled quality after processing wastewater in water treatment plants and compliant with local applicable regulations.
Municipal WWTP	Controlled quality and compliant with local applicable regulations.
Recycling of treated waste water.	Treated water is recycled internally after processing wastewater in a water treatment plant and compliant with norms as per local applicable regulations.

Table 4: COD and nitrogen emissions

KPIs	2015	2016	2017	2018	2019	Target 2020 (Base year 2008)
COD emissions efficiency Improvement vs 2010	63%	66%	68%	65%	63%	60%
COD emissions (tonnes/year)	878	940	928	1010	1010	-
Nitrogen improvement vs 2010	80%	87%	81%	67%	81%	-
Nitrogen improvement (tonnes/year)	162	128	190	331	174	-

Solid waste

At Centrient, we also monitor the hazardous and non-hazardous waste generated through our activities. In recent years, our waste has increased in proportion to the growth in production volumes and new construction processes. Part of this waste is recycled and recovered for other uses, either internally or externally. Alongside our recycling effort, we are continuously looking for ways to reduce the amount of waste we produce and manage the discharge in the most sustainable way possible.

Wastewater treatment and discharge

Water is an essential raw material that is required in large quantities for the production of antibiotics. To discharge the resulting effluent water without harming the environment, the streams have to be thoroughly cleaned.

Pioneering wastewater treatment

In the 1980s, we were one of the first antibiotics producers to invest in our own state-of-the-art water treatment plant, in Delft, the Netherlands. We have continued to invest in similar facilities in other countries in the decades since. Today, all our production sites have their own dedicated treatment facilities that effectively treat our wastewater. All wastewater (which makes up at least 80% of the waste) undergoes carefully executed pre-treatment, biological treatment and post-treatment before it leaves the site.

Know your waste

"All our wastewater treatment plants are custom-designed to suit the production process in question and the products being made while taking into account the location and effluent requirement of the factory," says Laura Blasco, Centrient Pharmaceuticals Corporate Technology & Manufacturing Adviser.

"This precision approach reflects our professional R&D background as a company and is based on the principle of 'know your waste' and on mastery of the skills required to operate continuously. In this way, we ensure we remain compliant with the most stringent regulations and guidelines at all times. Around the globe, treated wastewater from our facilities is discharged in full compliance with local legislation."

Removing organic compounds

The quality of our wastewater is also measured in terms of chemical oxygen demand (COD), an indirect method of determining the remaining concentration of organic matter in the water. Since 2010, our COD figure has fallen by 63% globally, leading us to exceed our emissions target by 3% in 2019.

Wastewater free of any antibiotic activity

Centrient Pharmaceuticals treats wastewater in dedicated wastewater treatment plants (WWTPs) before it leaves the site, making sure the treated water is free of any antibiotic activity. However, this is not always the case across the wider antibiotics production industry. The common practice is to send untreated wastewater streams to municipal or other common treatment facilities, where it is mixed with other industrial and household waste in a combined pool of pollutants. Poorly treated wastewater may contribute to the emergence and spread of antibiotic resistance.

Testing for antimicrobial activity

As part of our Sustainable Antibiotics Programme, we have introduced methodologies to detect remaining antibiotic activity in our wastewater. In this way, we make sure none of our operations add to the growing threat of antimicrobial resistance (AMR). These methodologies include an easy-to-use wastewater treatment and discharge test (the Delvo test) to detect the presence of antimicrobial activity in effluent. We have carried out this test at all our sites since September 2016.

In 2018, Centrient collaborated with a third party in Europe, and developed and validated an analytical method based on UPLC MS/MS. This method meets the requirements to measure the concentration of residual antibiotics as per the Predicted No-Effect Concentration (PNEC) target values. We are testing our treated waste-water samples with this validated method on a defined frequency to monitor compliance with PNEC target values.

Climate and energy

As identified through our recent materiality assessment, Climate and Energy is a priority topic for us and our stakeholders. By taking steps to become more energy- and carbon-efficient, we are steadily improving our impact on the planet. At the same time, it is important for our customers that we maintain a cost-effective manufacturing and supply operation.

A major long-term project at Centrient involves replacing chemical synthesis with enzymatic bio-catalysis processes wherever possible. As they are entirely water-based, enzymatic processes reduce the carbon footprint of these products by an average of almost 30% – and up to 65% in some cases. This is reflected in our carbon emissions efficiency improvements since 2008.

Through renewable electricity procurement and on-site renewable energy production, we are working to increase the share of renewable energy in our global energy mix.

Table 5: Energy and CO_2 emission efficiencies

KPIs	2015	2016	2017	2018	2019	Target 2020 (Base year 2008)
Energy efficiency improvement vs base year 2008	41%	42%	44%	41%	42%	43%
Energy consumption in TJ (TeraJoule/year)	3,919	4,411	4,379	4,761	4,461	
CO_2 efficiency improvement vs 2008 (Scope 1 & 2)	39%	41%	45%	41%	43%	49%
CO_2 emissions in absolute terms (Scope 1 & 2) (Tonnes/year)	301,045	332,759	326,579	357,408	328,742	

Table 6: Biofuel and renewable energy use

KPIs	2015	2016	2017	2018	2019
Total biogas produced In TJ/year	65	62	65	84	71
Total solar energy (ETC) produced in TJ/year	1.5	1.5	1.5	1.5	1.5
Renewable energy supplied (power purchase tariff) in TJ/per year	9.0	9.0	9.4	14.7	14.4

Energy consumption

Increasing the energy efficiency of our production processes and wider operations is crucial to our organisation's efforts to reduce environmental impact. Across our global sites, we are working hard to reduce energy consumption relative to production levels, with a view to achieving a 43% overall energy efficiency improvement, compared with 2008 levels, by end-2020. Types of energy included in the energy intensity (efficiency) figure are electricity, natural gas, steam, fuel oil and coal.

Our energy efficiency improved by 1% compared with 2018 (see Table 5). This was due to a reduction in fuel consumption, which resulted from the more efficient handling of the biomass-drying process at our Yushu facility. Stable performance was maintained across our other sites.

With the full impact of a biomass-drying project coupled with other enhancements to our wider operations, we anticipate an improvement in fuel consumption in 2020, putting us on track to meet our 43% energy efficiency improvement target by the end of 2020.

Emissions to air

CO_2 emissions

We are committed to improving our carbon dioxide (CO_2) efficiency levels by reducing the amount of direct and indirect air-bound CO_2 emissions (Scope 1 & 2, as defined by the Greenhouse Gas Protocol standards) relative to production. By the end of 2020, we aim to realise a 49% CO_2 efficiency improvement compared with the level achieved in 2008.

The 2018 GSK Environmental Sustainability Suppliers Award goes to Centrient Pharmaceuticals!

Centrient Pharmaceuticals won the 2018 GSK Environmental Sustainability Suppliers Award in the large enterprise category with the nomination of the Biogas Project at Centrient's site in Toansa, India. The project involved generating biogas from the sludge generated from our wastewater treatment plant instead of incinerating it on-site, which uses a large amount of energy and generates a significant carbon footprint. Through this innovative process, we have been able to prevent more than 900 tonnes of carbon dioxide emissions every year.

The award has shone a light on our environmental projects, which have gained extensive recognition within the industry. Two winners were announced from a high number of nominations, including from leading pharmaceutical suppliers. The projects were assessed based on three key criteria of innovation level, environmental performance and impact, and trust (positive social impact in surrounding communities). The Toansa Biogas Project scored highly on innovation and for achieving a substantial reduction in energy usage and carbon footprint.

The amount of CO_2 we emit directly according to Scope 1 & 2 standards is directly linked to the amount of energy we consume across our global operations. Accordingly, in 2019, our overall CO_2 efficiency levels improved by 2% compared with 2018. This was mainly due to a significant reduction in coal consumption at our Yushu site, resulting from an innovative drying solution for biomass.

Being directly related to energy consumption, we expect our fuel consumption to decrease in 2020 as we witness the full impact of the biomass-drying project together with the other steps we are taking globally to meet our 49% efficiency target by 2020.

In 2019, our CO_2 efficiency improved by 2%

Along with monitoring our main environmental KPIs against targets set, we also assess the performance of other relevant emissions to water and air, as well as waste discharged outside of our production boundaries. These include SO_2 and NO_x emissions (air) released into the air by burning fuels. In 2019, in parallel to CO_2 emission efficiency, Centrient's NO_x emission efficiency slightly improved due to lower fuel use at the Yushu site. SO_2 emissions remained stable since the associated fuel oil used was stable in 2019.

Other air emissions

VOC emissions

Our Volatile Organic Compound (VOC) emissions relate to the aerial release of potentially harmful solvent emissions through our production processes. At Centrient, lowering

Table 7: Efficiency improvement of NO_x, SO_2 and VOC

KPIs	2015	2016	2017	2018	2019
NO_x efficiency improvement vs 2010	29%	36%	44%	34%	37%
NO_x emissions (tonnes/year)	191	197	176	206	197
SO_2 efficiency improvement vs 2010	66%	60%	67%	67%	67%
SO_2 emissions (tonnes/year)	125	168	142	147	174
Volatile Organic Compounds (VOC) efficiency improvement vs 2010	23%	20%	14%	23%	42%
Volatile Organic Compounds emissions (tonnes/year)	1,472	1,764	1,980	1,782	1,242*

our VOC emissions is a long-established objective, with set targets in place since the 1990s. These targets were based on five-year plans which ended in 2015 that are distinct from the 2008-2020 targets defined in our Sustainability Roadmap 2020. In fact, we are in the process of defining new VOC targets for 2025 and beyond.

In 2019, our VOC efficiency levels rose by 19% compared with 2018 due to various factors. These included 95% VOC emission reductions at the Zibo facility in China resulting from a Regenerative Thermal Oxidiser (RTO) project aimed at reducing VOC emissions to meet Chinese government requirements. We also introduced optimisations in solvent recovery at the Toansa site and reduced emissions at the Mexico and Latin America (MLA) site due to reduced chemical production.

Together, these projects have enabled us to almost halve our VOC emissions since 2010.

Project Pack Smart for sustainable packaging

Packaging makes a significant contribution to a supply chain's carbon footprint. As a sustainable business leader, we recently began an initiative to minimise the environmental impact associated with our product packaging. In 2017, one of our manufacturing sites initiated a project called Pack Smart to replace the High-Density Polyethylene (HDPE) drums with the corrugated boxes. HDPE drums have a bigger carbon and water footprint than the corrugated boxes (see Table 8).

Corrugated boxes also occupy less storage space, which results in less energy being consumed during cooling and transportation. The project also supports the circular economy, with the boxes made from approximately 70% recycled paper.

Table 8: Footprint reductions through sustainable packaging

	2018	2019
Carbon footprint reduced (tonnes)	395	992
Water consumption reduced (kilolitres)	21,229	53,430

Science and innovation

Innovation as a Centrient value

For nearly 150 years, our scientists have led the way in technological innovation of pharmaceutical and specialty chemical production. In the 1940s, we were one of the first companies worldwide to industrially produce penicillin. Later, in the 1990s, we developed the first large-scale enzymatic process for beta-lactam antibiotics, before creating innovative formulations for generic pharmaceuticals in the 2010s. These vital scientific contributions have helped make the world a better place.

In 2018 and 2019, we remained dedicated as ever to innovative technology and the pursuit of sustainable growth. This commitment is key to our strong strategic position within our industry: we have higher manufacturing efficiencies than other pharmaceutical companies, while full backward integration in all core intermediates of the value chain ensures the security of supply for our customers as well as the high quality of our products.

Today, we apply our biotechnological skills not only to new solutions but also to developing more sustainable ways of producing our existing products. This includes using natural fermentation and enzymatic conversion rather than chemicals, solvents, reducing our use of energy, resources and other raw materials, and minimising our impact on the environment. Our passion for innovation has also led us to develop products with the highest levels of purity.

Ensuring freedom to operate for our customers

Our ambition to continuously improve while also providing value to society has resulted in strong technological innovation. We have a strong intellectual property position, with more than 400 individual patents in close to 80 patent families, underlying the innovative power of our company.

At Centrient Pharmaceuticals, we believe all patents should be respected and, equally, we actively enforce ours. Patent enforcement is important because, by working with us, our customers benefit from the freedom to operate. For example, our customers can be sure of reliable delivery of our products without unexpected customs or import delays due to possible patent infringement. This guarantees they meet their own customers' needs and avoid stock-outs or missed tender obligations, which can be costly.

Using our innovative technologies, we deliver sustainable value for our customers

Through licence agreements, we provide partners with non-exclusive, worldwide licences to certain patents, and grant freedom to operate, develop and commercialise their products. Such an agreement can allow for the production of new enzymes, such as for the sustainable manufacture of antibiotics.

Development underpinned by global R&D

Our R&D team and innovation pipeline remain central to the Centrient vision and strategy, supporting our continued transition from active pharmaceutical ingredients (APIs) manufacturer to a global pharmaceutical generics company. Going forward, our technological capabilities will continue to drive our leadership in quality, cost, reliability, output and product development. These qualities will also help enhance the operational efficiency of our processes, the sustainability of our antibiotic solutions, and the delivery of intellectual property.

At Centrient Pharmaceuticals, innovation is supported by our global scale and multinational presence. Centrient's processes and operations are standardised worldwide, allowing relevant learnings and knowledge to flow smoothly between sites. Best innovation practices in Mexico are shared with teams in India and the Netherlands, for example, and vice versa. Equally, innovation acts as a key facilitator when meeting the demands of local customers and servicing regional market requirements.

Moving forward, this "think-global, act-local" approach will be key to ensuring our continued successful development. Our R&D programmes are translated to a commercial scale through regional Technology Development Labs (TDLs), which develop our processes and support local sites with effective implementation. This structure supports troubleshooting and cost-reduction programmes at specific manufacturing sites. In addition to our in-house R&D team, we maintain successful R&D collaborations with contract research organisations (CROs) and academia, injecting external insight, experience and knowledge into our R&D function.

In 2018, our R&D operation was strengthened with the launch of the Umaang pilot plant in India. Umaang will be instrumental in scaling up new products, accelerating process improvement and shortening the product development and learning curve. In 2019, we opened a new state-of-the-art TDL in Yushu, China, which will speed up and streamline the continuous improvement process.

Expanding our product offering

Taking into account our business strategy blueprint, changing customer demands and a shifting pharmaceutical landscape, we expanded our finished dosage forms (FDF) portfolio through the forward integration of our active pharmaceutical ingredients (APIs). Since 2012, we have developed nine FDFs, which are now commercially available worldwide.

In 2017, we made preparations to commercially launch our Rosuvastatin and Atorvastatin FDFs by using APIs from our API manufacturing facilities in Toansa, India. We also executed stability studies and submitted the registration dossier for cefprozil, which was approved in 2019.

We continue to expand our API product portfolio through our enzymatic platform and the development of several exciting new statin products. These include Pitavastatin, which is believed to have fewer side-effects than other statin products and is particularly effective in increasing "good" cholesterol. Statin products are commonly prescribed to lower "bad" cholesterol and increase "good" cholesterol, and are among the world's top-selling drugs.

Boosting our statins manufacturing capacity

With a dedicated statin production facility in India, Centrient Pharmaceuticals is one of the world's largest commercial statin producers.

As a result of the continued growth of the global atorvastatin and rosuvastatin market and an increased interest in Centrient Pharmaceuticals' uniquely produced statins, we were proud to announce in November 2019 our decision to further expand our active pharmaceutical ingredients (API) statins facility. Having broken ground on 28 November, the factory expansion officially started.

With a doubling of the production capacity forthcoming, we are committed to maintaining our leadership position and to continue to support our customers now and in the future.

Improved efficiencies for current APIs

Our innovation capabilities are also directed at improving the manufacturing efficiencies in our current active pharmaceutical ingredients (API) portfolio. We have already put in place an innovative process technology to maximise our obtainable output – through de-bottlenecking and improving operational efficiency – as well as lowering our energy consumption and environmental impact.

Thanks to the use of innovative compacting technology, Amoxicillin tablets, optionally including Clavulanic acid, can now be made faster and more sustainably using our Purimox® Compacted Directly Compressible (DC)-grade API. A key breakthrough has been removing the need for the energy-intensive drying step. Instead, dry mixing with the excipients takes place, after which the final mixture can be compressed directly into tablets.

In particular, our statin production involves a unique patented biocatalysis step, which enables full backward-integration, thus boosting process efficiencies and eliminating the dependency on external intermediate supplies. Our continued innovation has enabled us to eliminate harmful solvents from the process, making our statins greener and more sustainable than before.

Sustainability is our brand promise

Our R&D community strives to build sustainability into every innovation, process development idea and experiment. Since launching our Sustainability Roadmap in 2008, this approach has helped us decarbonise our

Continuous improvement

manufacturing processes and reduce our water footprints, with our project management process (PMP) tool used to measure our progress.

With antibiotics forming the dominant part of our product portfolio, antimicrobial resistance (AMR) has emerged as a major risk to our business. Since 2016, our R&D community has been equipping our operations to combat this threat and prevent the further spread of AMR. Their contribution includes developing a new testing method and mapping wastewater streams to support our wastewater treatment scheme and plants in degrading residual antibiotics. Our R&D team has also developed a range of chemical- and biocatalysis-based treatment methods to degrade antibiotics below the Predicted No-Effect Concentration (PNEC) target values.

As well as increasing efficiency, our CI approach reduces production costs

Since 2017, Centrient has undergone regular sustainability assessment by EcoVadis, the world's most trusted provider of business sustainability ratings. We have been awarded the highest possible rating, Gold, putting us among the top 4% of basic pharmaceutical products manufacturers and the pharmaceutical preparations industry.

At Centrient, we are committed to further strengthening our leadership position by increasing the efficiency of our workforce through a combination of continuous improvement (CI) methodologies, automation and digitalisation. As well as increasing efficiency, our CI approach aims to reduce production costs across our organisation.

Our CI approach is embedded within our operations worldwide through our CI programme and accelerated through our own set of fundamental principles and tools. In this way, we aim to:

- Reduce process variability.
- Reinforce and embed the use of CI fundamentals, including performance management and standard problem-solving tools.
- Increase the maturity of automation systems and data management to enable improved process control, reduce the impact on the environment and increase quality.

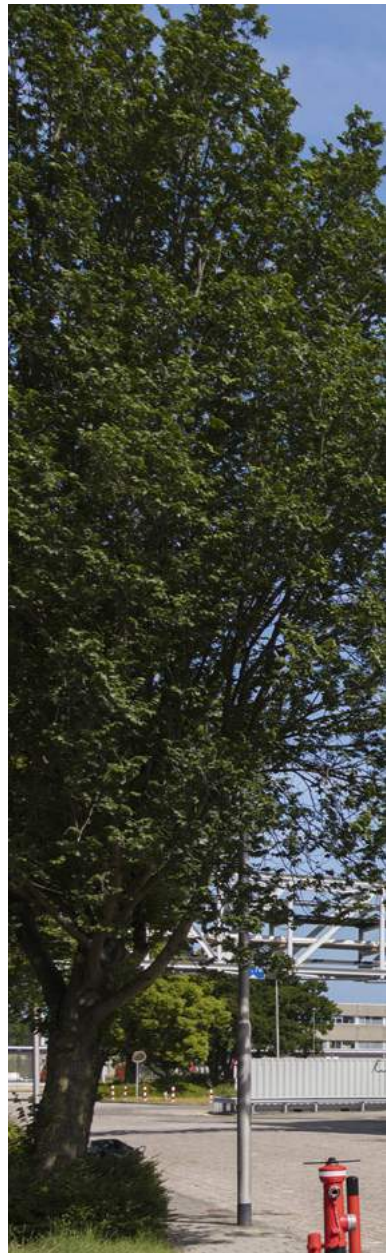
In 2020, we will continue to sharpen the capabilities of our teams by training our CI teams and site leadership on lean manufacturing. We aim to train and certify 80% of our full-time employees as "yellow belt" by 2023. We perform annual on-site maturity assessments, which include dimensions such as 5S, lean leadership, visual management, teamwork, maintaining machines and addressing bottlenecks.

Based on the maturity assessment, a plan is created for each plant to increase its maturity and improve specific areas depending on the needs of the site. To support our processes, we set standards for problem-solving, data analysis and performance management. We are also sharpening our techniques and methodology on visual problem-solving for operations, and data analysis and tracking for more complex projects.

All our global team members are seamlessly connected to support the CI programme. We maintain regular contact between the different plants, enabling them to learn from each other and build synergies.

In the field of sustainability, we executed two key projects in 2019. The first one was the week-long 'Kaizen' CI exercise to improve and streamline waste handling at the Delft plant, leading to sustainable improvement and simplification of the process. Secondly, we optimised production planning at the Zibo site, enabling longer utility stops to save energy.

Our continuous improvement approach is embedded within our operations worldwide through our CI programme and accelerated through our own set of fundamental principles and tools. Based on a maturity assessment, a plan is created for each plant to increase its maturity and improve specific areas depending on the needs of the site.



GRI content index

This sustainability report references GRI 2016 and the content index below provides for the GRI standards and sub-standards which have been reported.

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GRI 102-2	Activities, brands, products, and services	Page 12-14, About our business
GRI 102-3	Location of headquarters	Page 16-17, Where we are
GRI 102-4	Location of operations	Page 16-17, Where we are
GRI 102-5	Ownership and legal form	Page 12, About our business
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Reporting Practice

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GRI 103	Improving access	Page 22, Access to medicines
GRI 103	Water and environment	Page 56-57, Reducing our environmental Impact; Page 58-60. Water and environment
GRI 103	Science and innovation	Page 64-66, Science and Innovation
GRI 103	Responsible procurement and supply chain	Page 49-50, Responsible procurement and supply chain

Economic GRI 200

GRI 203 – Indirect Economic Impacts 2016

GRI 103	Management approach	Page 22, Access to medicines; Page 26-29, Community Impact
GRI 203-1	Infrastructure investments and services supported	Page 22, Access to medicines; Page 26-29, Community impact; Page 24, Project Appropriate Use

GRI 205 – Anti Corruption 2016

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GRI STANDARDS

Disclosure number	Description	Location
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GRI 303-1	Water withdrawal by source	Page 58, Water and environment
GRI 303-2	Water sources significantly affected by withdrawal of water	Page 58-59, Water and environment
GRI 303-3	Water recycled and reused	Page 58, Water and environment
GRI 305 – Emissions 2016		
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GRI 305-1	Direct (Scope 1) GHG emissions	Page 61, Climate and energy
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GRI 308-2	Negative environmental impacts in the supply chain and actions taken	Page 49-50, Responsible procurement and supply chain
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UN Sustainable Development Goals progress index

This sustainability report refers to selected United Nations Sustainable Development Goals (SDGs), and the progress index below provides for the SDGs which have been reported.

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SDG 13 	Climate action	Page 40-42, Doing business responsibly
		Page 61-63, Climate and energy

For its sustainability reporting, Centrient Pharmaceuticals uses an approach inspired by GRI standardised guidelines and performance indicators.

For more information, please visit
www.centrient.com
or email: **info@centrient.com**

Contact information

For questions, feedback or more information, please contact

Alice Beijersbergen, Global Communications
Centrient Pharmaceuticals
Weena 800
3014 DA Rotterdam
The Netherlands
info@centrient.com

Colophon

Produced by Centrient Pharmaceuticals Global Communications

Editor-in-chief and coordinator

Alice Beijersbergen

Editor

Milena Ruszkowska

Copywriting

Narrative Labs

Graphic design

Annette Toeter

Photos:

Centrient Pharmaceuticals Netherlands B.V., iStock and Adobe Stock