

With integrated Environmental Statement for the Sandoz GmbH Kundl and Schafftenau sites

Data updated as of 2021

# Sustainability Report 2022 for Novartis Austria

The photographs in this Sustainability Report display Novartis associates. They are the people who live our mission and values every day.



### Sustainable Development Goals (SDG's)

The Sustainable Development Goals are the blueprint for a better and more sustainable future for all. They address the global challenges we face, including issues related to poverty, inequality, climate, environmental devastation and prosperity as well as peace and justice. The goals are closely interrelated. Altogether, they are a plea to all countries to promote prosperity, protect the planet, and take action on climate change and environmental protection.



# Contents

<b>Novartis in Österreich</b>	<b>6</b>
Locations	9
Context of our organization	10
<b>Pharmaceuticals made in Austria</b>	<b>11</b>
Generics	11
Antibiotics	12
Biopharmaceuticals and biosimilars	12
Nucleic acids (plasmids)	12
Social benefits of pharmaceuticals	13
<b>Social responsibility</b>	<b>14</b>
Doing the right thing: ethics and transparency	14
Culture, values and behaviors	16
Working at Novartis	16
Social commitment	17
<b>Our understanding of sustainability</b>	<b>18</b>
Sustainability management	20
Our contribution	24
What we have aimed to do in 2022	35
<b>Value creation and impact</b>	<b>42</b>
Economic footprint	43
Importance for Austria as a business location	43
Austrian clinical research champion	43
<b>Facts &amp; figures</b>	<b>44</b>
Environment and resources	44
HSE key indicators Vienna location	58
<b>Declaration of the environmental auditor on auditing and validation activities</b>	<b>59</b>

## Imprint

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## Certifications and awards

The Kundl and Schaftenau research, development and production locations are certified according to ISO 14001, ISO 45001 and ISO 50001. Recertification was carried out by TÜV Austria CERT GmbH in July 2021 and is valid until May 2024. Besides the ISO certifications, both locations, Kundl and Schaftenau, are also certified according to EMAS and Responsible Care.



Selected sustainability awards from recent years:

**2010:** Novartis Energy Excellence Award 2011: TRIGOS Award for Sustainable Companies

**2012:** Klima:aktiv award for an energy-saving project in pharmaceutical production

**2015:** Novartis HSE &BC Award category “Energy” for the “Fluid Filtration Phenoxy Acetate” project

**2017:** ÖBB Green Events Award for the most diligent CO<sub>2</sub> savers

## Editorial

Dear Reader,

This Sustainability Report provides an insight into our activities in Austria in 2021. It covers our research, development and production locations in Tyrol, where we manufacture for Novartis and Sandoz, as well as our sales office in Vienna.

Sustainable behavior is a strategic priority for us. Not only does it respect the environment, but it also underscores our core objective: to improve and extend people's lives. The lives of all people. We therefore fulfill our responsibility to society in the areas of environment, social affairs and governance. As a company, we thus have an environmental, social and economic footprint. This is the first time we have compiled a summary of our activities in all three areas.

As a manufacturing industrial company, environmental compatibility is a top priority for us in this context, and that is the reason we are emphasizing it in this report. We are very proud that we were able to further reduce our environmental footprint in 2021 in all three areas – climate, waste and water. We also succeeded as an “Employer of Choice” for our more than 5,000 associates.

Furthermore, a study shows that the economic effects of our actions go far beyond our actual business activities and that we are an important driver for the labor market and the business location. Sustainability covers a wide range of topics and we do our best to meet the high requirements in all areas as a good corporate citizen.



Michael Kocher



Mario Riesner



Wolfgang Bonitz

A handwritten signature in black ink, appearing to read 'Michael Kocher'.

**Michael Kocher**  
Country President Novartis Austria

A handwritten signature in black ink, appearing to read 'Mario Riesner'.

**Mario Riesner**  
CEO Sandoz GmbH

A handwritten signature in black ink, appearing to read 'W. Bonitz'.

**Wolfgang Bonitz**  
Head Corporate Social Responsibility



# Novartis in Austria

The Novartis Group companies in Austria are part of Novartis AG, a multinational Swiss pharmaceutical group based in Basel. In Austria, the Novartis Group is the leading pharmaceutical company and the largest private employer in Tyrol. Here we operate – as part of one of the world’s largest healthcare companies – in two divisions: Innovative Medicines (Novartis) and Generics (Sandoz, 1A and Hexal).

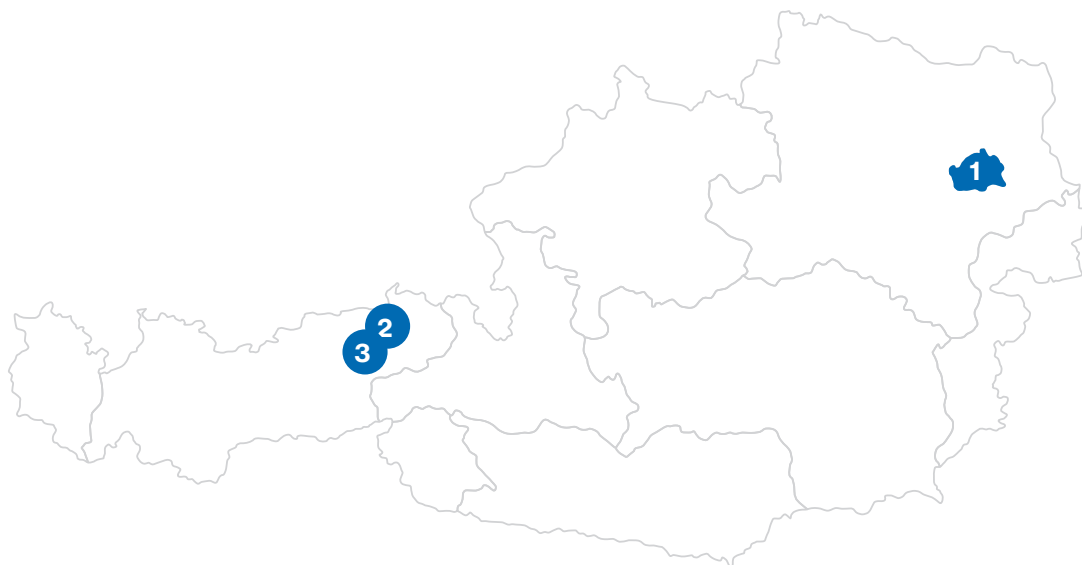
Novartis focuses on innovative, patient-centric pharmaceuticals with the mission of finding new ways to improve and extend people’s lives. As a leading

global pharmaceutical company, we leverage scientific innovation and digital technologies to develop breakthrough therapies in fields with high unmet medical need.

Sandoz, our division specializing in generics and biosimilars, is a global leader in this field and pursues the goal of finding new ways to improve people’s access to high-quality medicine and enhance patients’ quality of life. Sandoz GmbH is a majority-owned subsidiary of Novartis Austria GmbH (Novartis Country Holding Austria) and comprises the Kundl and Schafftenau locations

as well as the marketing and sales office in Vienna, responsible for sales activities for the Austrian market.

Our operations in Austria comprise the research, development and production facilities in Kundl and Schafftenau, where products are manufactured for Novartis and Sandoz, as well as for a large number of renowned partner companies around the world. Taken together, the two Tyrolean locations represent the largest production hub within the global Novartis Group.



### Novartis locations in Austria

With around 5,000 employees, Novartis is Austria's leading pharmaceutical company. In Tyrol, Novartis is the largest private employer.



1

#### Vienna

Registered office of Novartis in Austria with business units and sales offices

2

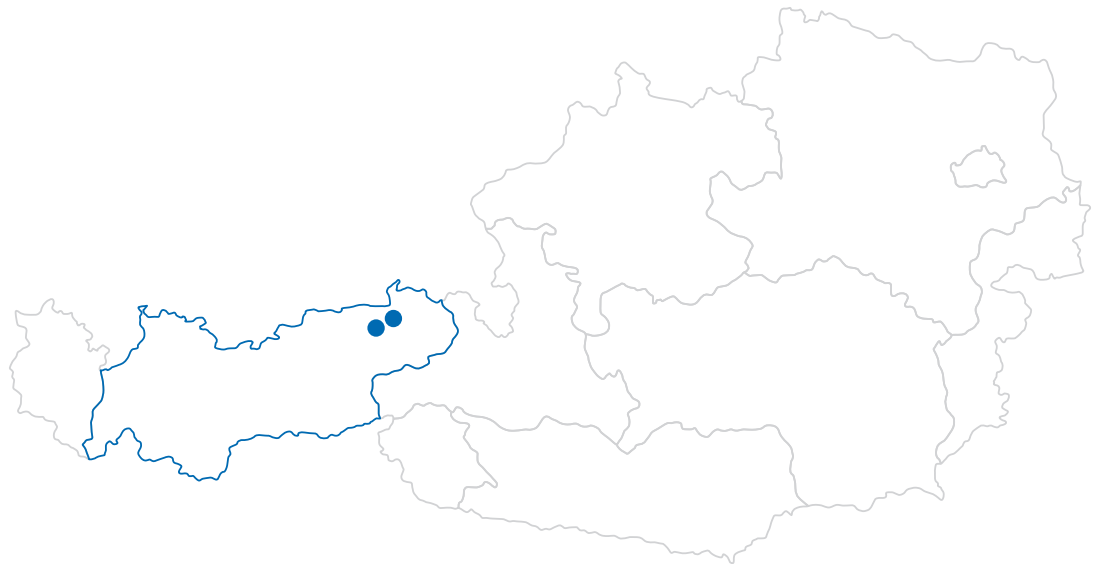
#### Schaftenau

Competence center for state-of-the-art cell culture technology, specializing in the development and production of innovative biologics and biosimilars. Production of thyroid hormones, growth hormones and growth inhibitors.

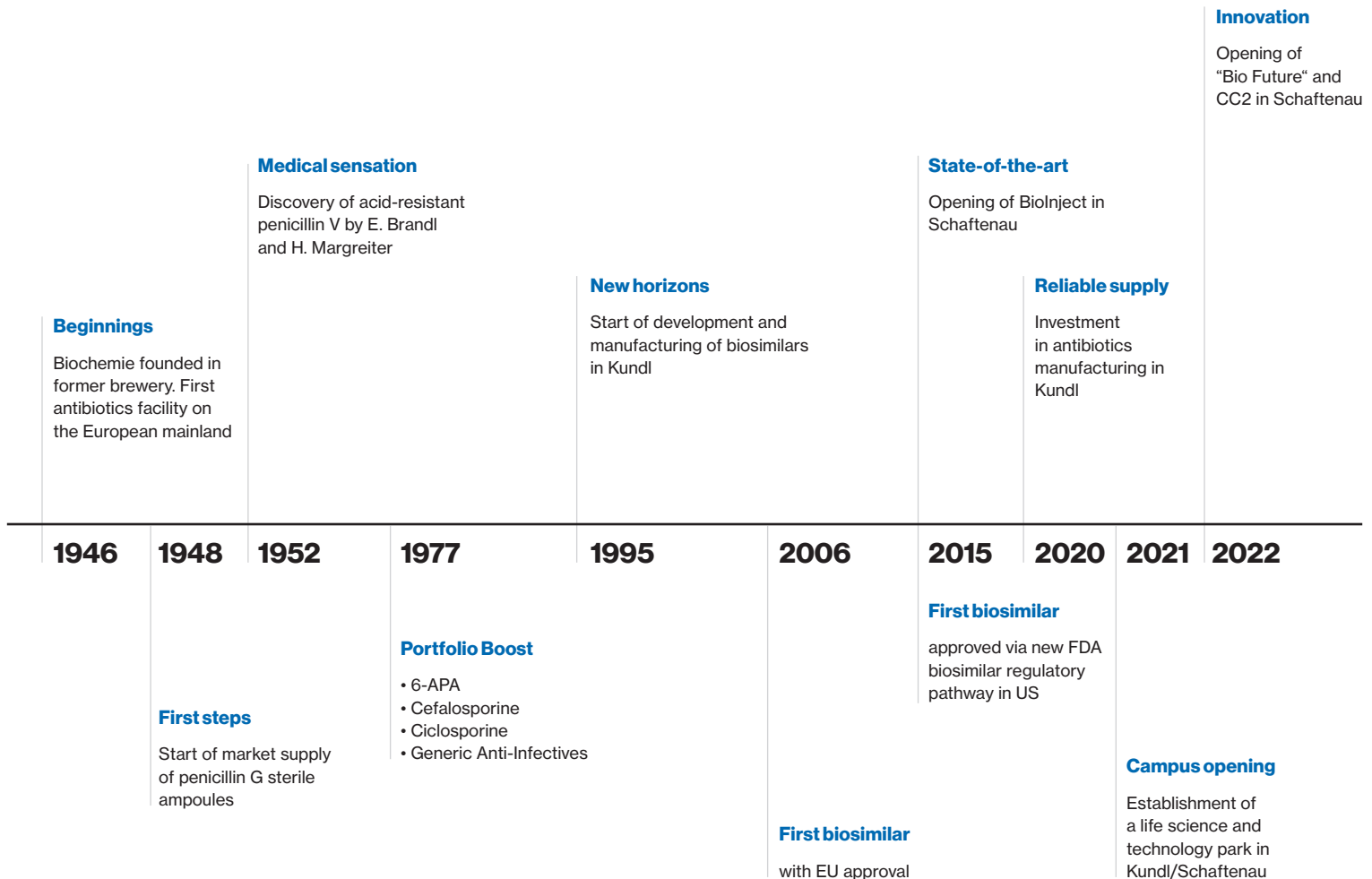
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#### Kundl

Central development and production site specializing in biotechnologically manufactured pharmaceuticals – covering the entire process from research and development to production.



## Biotechnological innovations are part of our history in Kundl/Schafftenau





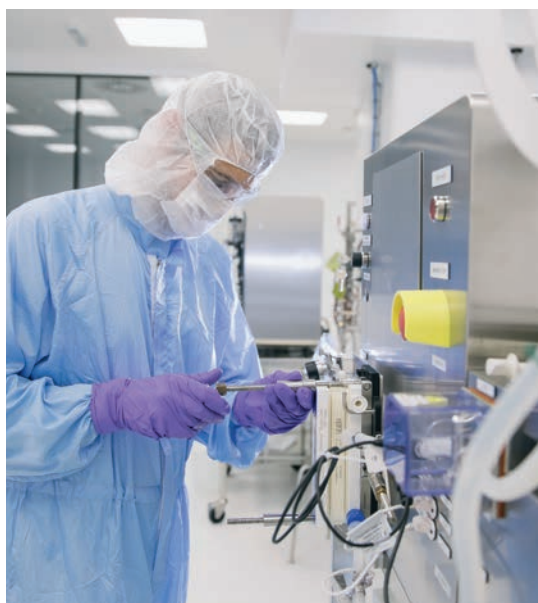
# Locations



In Schafftenau, we manufacture, for instance, highly complex biopharmaceutical substances and active ingredients, thyroid hormones (thyronine), growth hormones and growth inhibitors.

## Kundl

Our facility in the market town of Kundl was created in 1946 out of a closed-down beer brewery. Today, the premises cover around 26.8 hectares and have good transport connections thanks to its favorable proximity to the Inntal freeway and the on-site rail connection. Kundl is the headquarters of Sandoz GmbH and (in conjunction with Schafftenau) a production hub for biotechnologically manufactured pharmaceuticals such as antibiotics and highly complex biologics. Here we produce antibiotics from the active ingredient to the finished form, as well as biologics or biosimilars and nucleic acids for cell and gene therapies. Logistics, engineering, registration, quality assurance and a range of administrative functions as well as research and development are also located here.



Our facility in the market town of Kundl was created in 1946 out of a closed-down beer brewery.

## Schafftenau

Just 20 kilometers to the east, in Schafftenau (municipality of Langkampfen), you can find our second Tyrolean location. The premises were acquired in 1958 and cover around 21.3 hectares. Here we manufacture, for instance, highly complex biopharmaceutical substances and active ingredients, thyroid hormones (thyronine), growth hormones and growth inhibitors.

The location covers the entire value chain for biopharmaceuticals – from the active ingredient all the way to the finished pharmaceutical – and therefore plays a vital role in the global Novartis manufacturing network.

BioFuture, the world's most modern manufacturing facility for biopharmaceuticals, was officially opened in May 2022. A second new manufacturing facility, Cell Culture 2 (CC2), will ensure additional capacity growth and consolidate Schafftenau's role as a Novartis center of excellence for modern cell culture technology. The total investment volume amounted to € 300 million, and the two new facilities created a total of approximately 180 additional jobs. This investment makes Schafftenau the largest and most innovative location for the manufacturing of biopharmaceuticals in Austria and for Novartis worldwide. In conjunction with Kundl, we refer to the two locations as Kundl/Schafftenau Campus.

## Vienna

Our sales office for the Austrian market is located in Vienna-Leopoldstadt. It includes Novartis Pharma, Sandoz Commercial Operations (ComOps) as well as Hexal and 1A Pharma. Clinical research for Austria as well as drug safety and regulatory affairs, order processing and delivery for all Austrian wholesalers, pharmacies and hospitals - along with support for physicians provided by the pharmaceutical sales force – are also based there



Our sales office for the Austrian market is located in Vienna-Leopoldstadt.

# The context of our organization

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The need for quality healthcare has never been higher. People around the world are living longer, increasing the incidence of chronic diseases and putting pressure on healthcare systems to contain spending growth. In parallel, digital technologies and a deeper understanding of the root causes of disease are accelerating medical innovation and opening up new opportunities to improve patients' lives.



The pharmaceutical industry, like many other sectors, is facing fierce international competition, in which cost efficiency is a key asset. Competition exists not only with other companies, but also with other locations within the Novartis network, particularly with regard to medium- and long-term investment decisions.



Manufacturing in Kundl and Schaftenu, especially the production of bulk goods (active ingredients and intermediates), is resource-intensive, which entails, for instance, high energy use, raw material consumption and transport volumes, as well as larger quantities of wastewater and waste. Resource efficiency and sustainability are therefore of utmost importance. We are constantly striving to make our production as resource-efficient as possible.



Highly qualified associates are one of our key success factors. We currently employ more than 5,000 people in Austria, more than 4,500 in Kundl and Schaftenu. Attracting and retaining well-qualified personnel on a long-term basis is a challenge we face with an interesting, professionally appealing, and future-oriented working environment.



The health and safety of our associates is a top priority, and for this reason our activities in this area are included in this report.



A stakeholder analysis was carried out to improve communication with our stakeholders, and a communication plan was implemented defining and structuring all relevant processes in the area of occupational health management and environmental issues.



# Pharmaceuticals made in Austria

The patient is at the very heart of our work. It is therefore our responsibility to improve the quality of life and life expectancy of patients with innovative and affordable medicines. With our products we make a significant contribution to the security of supply "Made in Austria".

## Generics

Generics are successors to pharmaceuticals whose patent protection has expired. The generics manufacturers must be able to prove that their drugs are just as effective as and therefore therapeutically interchangeable with the original. Clinical comparative studies must guarantee in this context that:

- The generic has
- an identical active ingredient
  - identical dosage

- an identical effect
- an identical patient tolerance as the original

Every step of the production process complies with the highest quality standards. This begins with production of the active ingredients, involves ongoing quality controls throughout the production process and ends with analysis of the final product. Only when all requirements are met will the authorities approve the generic for sale.

Years of comprehensive development work are required for generic drugs, though basic research does not have to be repeated. This makes it possible to offer generics at a lower price than the original drugs and plays a key role in ensuring that healthcare systems are sustainable in the long term.

## Antibiotics

Antibiotics are defined as active pharmaceutical ingredients that hamper bacterial metabolism or kill bacteria. They can thus support the human body's own immune system by eliminating other microorganisms (bactericidal antibiotics) or inhibiting their growth (bacteriostatic antibiotics).

Antibiotics have been manufactured in Kundl for over 75 years.

Our production covers the entire process from the development and production of biotechnological active ingredients to the manufacturing of the finished form. We cover the entire production chain with our expertise – from the basic molecule to the finished drug.

A conscientious approach is crucial to prevent antibiotic resistance. Misuse or

excessive use is one of the main drivers of their rise.

As a manufacturing location, we can help prevent antibiotics from entering the environment by ensuring that our wastewater streams are carefully treated as well as properly disposed in order to minimize the leakage of antibiotics.

## Biopharmaceuticals and biosimilars

Biopharmaceuticals and their post-patent successors, the so-called biosimilars, have revolutionized modern medicine. As therapeutic proteins, biopharmaceuticals act very specifically in the body. They replace, supplement or block messenger substances and proteins. In this way, they stop pathological processes or activate the immune system against a specific disease.

Biopharmaceuticals come to the rescue where traditional medicines reach their limits. They are often the only treatment option for life-threatening diseases such as cancer, autoimmune diseases or multiple sclerosis.

Biopharmaceutical active ingredients are produced in living cells, which respond very sensitively. Even the smallest deviation in the manufacturing process can affect the efficacy or safety of the pharmaceutical. This makes the manufacturing of biologics more complex and expensive than the production of classical medicines. It requires not only decades of expertise in the field of biotechnology, but also state-of-the-art equipment and personnel. In Kundl and Schafftenau, we both manufacture innovative biopharmaceuticals and biosimilars. With this, our Tyrolean locations are playing a vital role in ensuring that, on the one hand, more people have

access to these modern medicines and, on the other, that previously unmet medical needs are covered with highly innovative medicines.

Schafftenau covers the entire value chain for biopharmaceuticals – from the active ingredient to the finished drug. In 2022, BioFuture, the world's most modern production facility for biopharmaceuticals, went into operation. The parallel launch of Cell Culture 2 (CC2) has also significantly expanded the site's manufacturing capacities. This makes Schafftenau the largest and most innovative location for the manufacturing of biopharmaceuticals in Austria and for Novartis worldwide.

## Nucleic acids (plasmids)

Plasmids are ring-shaped DNA molecules essential for cell and gene therapies. They are a key component of all innovative cell and gene therapies from the Novartis Group. In order to

expand the manufacturing of nucleic acids for commercial therapies to include various development projects, Kundl was recently upgraded to a center of excellence. Plasmids

for the study medication of gene therapy pipeline programs as well as for commercial supply and for mRNA vaccines have already been manufactured here since 2019.

# Social benefits of pharmaceuticals<sup>1)</sup>

Our business approach is to use innovative science and technology to address some of society's most challenging health problems. We believe that access to medicines is the factor that allows us to make the greatest impact. We systematically integrate access strategies for all our new medicines in order to reach underserved patients, regardless of where they live.

Novartis was the first healthcare company ever to issue a sustainability-linked bond of € 1.85 billion. This bond is aligned to social goals Novartis is committed to, particularly improving access to essential and innovative medicines in low-income regions of the world. If Novartis fails to meet the targets aligned to the bond, the company will have to pay higher interest rates to investors.<sup>2)</sup>

Therapeutic innovations not only benefit health, they also have positive

socioeconomic impacts. Quality of life, for example, is improved, follow-up treatment costs can be avoided, and working years increased. They also help patients to participate in social life.

In a so-called social impact analysis, the interplay of health and socioeconomic effects was exemplarily evaluated for 121 Novartis pharmaceuticals; their health and socioeconomic footprint in Austria was determined.

A particularly interesting aspect is the interconnection between health and value added processes: By supplying the Austrian population with innovative and generic drugs, we generate almost 60,000 additional healthy life years.<sup>3)</sup> These, in turn, feed into the national value added process as additional labor productivity, thus strengthening the Austrian economy. This corresponds to an additional annual value added of appr. € 3 billion.

In 2021 alone, we were able to generate added value of € 1.9 billion for the Austrian economy (gross value added). This contribution to gross domestic product (GDP) is based on different aspects:

- **Direct effects:** ongoing work processes, production, etc. – € 1.9 billion
- **Indirect effects:** purchase of goods and services from Austrian suppliers – € 348.3 million
- **Induced effects:** consumption of goods and services by Novartis employees or suppliers in Austria – € 350.5 million

Out of the total Novartis GDP contribution in Austria, R&D activities account for 12%.



In total, almost six million patients – seven out of ten Austrians – are treated with Novartis pharmaceuticals every year.

1) In 2021, the WifOR Institute performed a study on the impact of Novartis Austria on the domestic economy.

2) <https://www.novartis.com/news/media-releases/novartis-reinforces-commitment-patient-access-pricing-eur-185-billion-sustainability-linked-bond>

3) The Social Impact of Novartis Medicines in Austria in 2020. Prof. Dr. Dennis A. Ostwald. WifOR Institute Darmstadt (Germany), May 2021.



# Social responsibility

We reimagine medicine in order to improve and extend people's lives. We use innovative science and technology to address some of society's most challenging healthcare issues. We discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible.

## Doing the right thing: ethics and transparency

Our Code of Conduct outlines who we are, what we stand for and which principles we are committed to. Simply put, it declares our dedication to doing

the right thing and helps us make good decisions. While our purpose – reimagine medicine to improve and extend people's life – drives our values

and defines our culture, our Code of Conduct guides us in our daily decisions and ensures we act with integrity. It consists of four principles of

## Our ethical principles

### Being open-minded

- Do I actively listen to ideas or concerns?
- Do I question the impact of my decisions?
- Do I value the perspective of others?

### Being honest

- Do I clarify my intentions?
- Do I avoid harm?
- Do I speak up when necessary?

### Being courageous

- Do I stand up for what I believe in?
- Do I put patients first?
- Do I make a positive difference?

### Being responsible

- Do I take responsibility for my decisions?
- Do I treat others the way I want to be treated?
- Do I prioritize the team over myself?



action and 22 commitments guiding our actions.

High ethical standards are thus an essential part of our corporate culture and based on the aspiration of integrity through mutual trust and respect as well as lawful conduct of all employees.

Ethical behavior is focused both internally and externally: Internally, we strive to reinforce our ideals and values of integrity and compliance as well as put business ethics into practice. Externally, our corporate standards are reflected, for example, in our

commitment to maximum transparency. In Austria, for example, we have been publishing payments to health care partners since 2015, preferably in individual or aggregated form,<sup>4)</sup> if this is mandatory for legal reasons.

Our Patient Engagement Team is the internal and external point of contact for all patient-related projects. In collaboration with healthcare professionals, medical institutions and patient organizations, needs-oriented support programs are developed to enhance the quality of life of chronically ill patients, with the aim of improving

and prolonging their lives. The initiative is driven by associates who are committed to sustainability – the goal is to develop comprehensive support concepts, with all services offered independently of Novartis or Sandoz medical products.<sup>5)</sup>

4) <https://www.novartis.at/ueber-uns/verantwortung/transparenz-ueber-zahlungen-angehoerige-der-fachkreise>.

5) Our commitment: <https://www.novartis.at/ueber-uns/verantwortung/das-versprechen-von-novartis-patienten-und-betreuungspersonen>.

# Culture, values and behaviors

Our culture is the way we interact and conduct business. In this, we strive for an inspired, curious and unbiased culture that allows us to unleash the potential of our associates in the best possible way. We want to foster an environment where people value different perspectives and strive to give their best every day. We believe we can drive innovation, performance and reputation – and enhance our people's work experience – by transforming our culture to be more Inspired, Curious and Unbossed.

## Inspired

We need inspired employees to reimagine medicine. We want people to see the great impact of their work, to empower them to fulfill their potential every day and to achieve their personal and professional goals.

## Curious

To fulfill our purpose, we need curious minds with a constant desire to learn and a passion to discover and act on new and better ways of doing things. We build on a culture that inspires curiosity, encourages meaningful risk-taking, and provides opportunities for our employees to learn.

## Unbossed

Our employees are most creative and productive when they are empowered to co-create their work environment and pursue their ideas. We rely on leaders who put their teams' success above their own, set clear goals, overcome obstacles, and trust their teams.

## Integrity

In all of this, our employees are to stand out for their honesty and courage to do the right thing.

# Working at Novartis

Our employees, their diversity, energy and creativity, are our greatest strength and a prerequisite for our success. They play a major role in the responsibility we have towards our patients. We therefore give top priority to a healthy working environment.

Safety in the workplace with the clear objective of minimizing risks to the safety and health of our employees is a basic requirement. In addition to ensuring the technical safety of the facilities and safe process management by trained personnel, aspects such as continuing training and instruction of employees also have an impact.

This is complemented by workplace evaluations, regular safety inspections and a living safety culture.

We are committed to driving diversity and inclusion and to establishing an inclusive culture in which different perspectives are valued and appreciated. Studies show that diverse teams, i.e. work groups consisting of employees with different perspectives and views, deliver better results.

The better diversity and inclusion are practiced, the better and faster we accelerate creativity, innovation and growth, and respond to patient needs.

Topics we are particularly focused on in this context are:

- Generation management
- Integration of people with disabilities
- Support for international employees
- Work-life balance measures
- Childcare (Minis@Novartis offers 120 childcare options at our Tyrolean locations).

We also promote the establishment of so-called Employee Resource Groups (ERGs), voluntary networks connecting employees with similar interests, experiences and perspectives.





# Social commitment

In Austria, we support selected non-profit organizations:

Verein Roll-On (supports people with disabilities and creates more public awareness)

Caritas – employee donation campaign

Donation of laboratory equipment to local schools and universities (e.g. HTL Kramsach (glass and chemistry) or MCI Management Center Innsbruck)

Oro Verde (nature conservation organization reforesting rainforests)

“It’s in our blood“ (annual blood donation campaign). With more than 120 liters of donated blood, we contribute to replenishing the blood reserves in Austrian hospitals.



## Our ERGs

- PRIDE Network**
- Working Parents Connection**
- EWIN – Empowering Women to Impact Now**
- Creative Community**
- Tierfreunde@Novartis (Animal Lovers)**
- Green Team**
- Werksmusik (Company Band)**
- Diversability Network**
- “Internationals“ ERG**
- Men Community Novartis**



# **Our understanding of sustainability**



In 1987, the United Nations World Commission on Environment and Development defined sustainable development for the first time in the so-called Brundtland Report (original title: “Our Common Future”):

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.“

Sustainable behavior therefore means reconciling economic and social developments with environmental

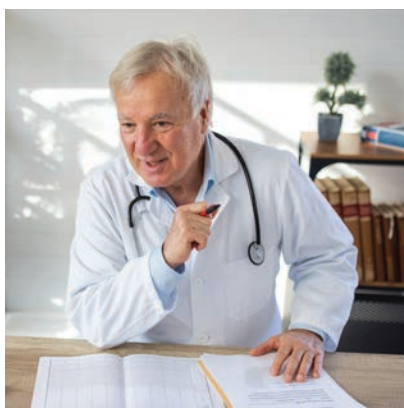
protection and social interests. Satisfying the needs of the present generation must not be at the expense of future generations.

As a global company, we bear a great responsibility in creating positive social change. We are able to contribute to complex challenges, such as the Covid-19 pandemic or climate change, by assuming social responsibility.

Sustainable behavior therefore means reconciling economic and social developments with environmental protection and social interests.

Satisfying the needs of the present generation must not be at the expense of future generations. We want to strengthen society’s trust in us and incorporate environmental, social and governance (ESG) aspects into the core of our business strategy and operations.<sup>7)</sup>

A company can only act sustainably if it succeeds in taking long-term and responsible action in the three areas of social, environmental and economic sustainability in a way that complements each other synergistically along the entire value chain.



### Social sustainability

Social sustainability includes Novartis’ responsibility towards employees, patients and society, including the objective of improving access to medicines worldwide.

### Ecological sustainability

Protection and conservation of natural resources are at the very heart of ecological sustainability. We pursue our climate targets along the entire value chain.

### Economic sustainability

Economic sustainability encompasses the long-term business success from which benefit economy, labor market and public revenues as well as supply.

6) <https://www.reporting.novartis.com/2021/novartis-in-society.html>

# Sustainability management



Health, Safety and Environment (HSE) Management Systems at Sandoz GmbH  
Energy Management (SIEM)  
HSE Management Vienna

21  
23  
23

We are committed to the fundamental idea of sustainable development and the chemical industry's "Responsible Care" program. This is reflected in our health, safety and environmental policy. Health, safety and environmental protection (HSE) is therefore part of our business strategy in the interest of increasing the value of the company, controlling risks and consolidating the good reputation of Novartis and Sandoz, respectively.

For us, sustainability means ensuring the high quality of our pharmaceuticals in line with the highest standards in the interest of patient and employee safety as well as the environment with every step of our actions and through sophisticated management systems, from planning to material

procurement and production to final inspection. Quality, risk and knowledge management are integral parts of our management system. In doing so, our quality management follows the internationally applicable GMP (Good Manufacturing Practice) guidelines for quality assurance of the manufacturing processes and environment in the production of active ingredients and pharmaceuticals.

In aligning our production processes and environment, we also comply with the guidelines of relevant health authorities, including the U.S. Food and Drug Administration (FDA), the European Medicines Agency (EMA) and the Austrian Health Authority (AGES). Closely linked to our quality management is health, safety and

environment (HSE) management, which plans, tracks and monitors key aspects of work processes and is itself directly related to energy management, which focuses on energy as a resource.

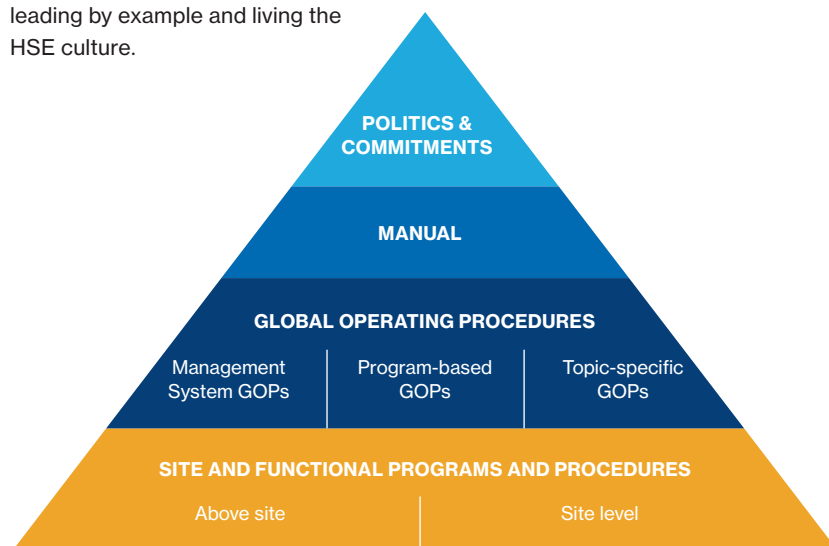
In addition to the two manufacturing locations in Kundl and Schafftenau, our Sustainability Report 2022 also covers our sales location in Vienna. The GMP quality management system mentioned in this report is primarily relevant to the production processes in Kundl and Schafftenau. So far, the HSE management system for the environment, employee protection and energy management described below has equally only been implemented for Kundl and Schafftenau.

## Health, Safety and Environment (HSE) Management Systems at Sandoz GmbH

Protecting the health and safety of associates, neighbors and other stakeholders affected by our business activities, as well as protecting the environment, are core values of Novartis. To ensure consistent standards at all Novartis locations, around 50 global guidelines, known as HSE Global Operating Procedures (GOPs), specify minimum requirements and performance expectations for the HSE management systems Sandoz GmbH implements at its locations and especially in Kundl and Schafftenau, alongside international standards such as ISO 14001:2015 (Environmental Management System), ISO 45001:2018 (Occupational Health and Safety Management System) and ISO 50001:2018 (Energy Management System).

Health, safety and the environment are the responsibility of all Novartis

associates. Accordingly, all employees are expected to share this commitment by taking care of themselves and others, as well as protecting the environment for future generations. Managers play a crucial role by leading by example and living the HSE culture.



The central campus HSE department is particularly important in this context, as are the site HSE departments in the individual production areas, responsible for the local coordination or monitoring of HSE activities and for elaborating site-specific Standard Operating Procedures (SOPs) in the HSE field. Our HSE management systems are guided by the following principles:

**We comply with local laws and regulations and meet internal requirements**

Regular audits, reviews and self-inspections are conducted to ensure compliance with applicable local laws and regulations as well as Group policies. The commitment to compliance with internal and external requirements is part of our culture and is strengthened through communication and accountability, as well as frequent interaction with authorities. By participating in various working groups, current legal developments are monitored in full and implemented within the company. The register of legal sources and legal obligations is updated annually. In addition, the existing systems are periodically checked for conformity with official notices in accordance with §82b of the Austrian Trade Regulation Act (Gewerbeordnung, GeWO).

**We are committed to HSE resilience**

Our Leadership Team is accountable for implementing and maintaining health, safety and environmental practices in addition to leading by example.

**We care about the health and safety of our associates**

We promote and support the implementation of programs to maintain and improve the physical and mental health and well-being of our associates and contractors. We provide safe working conditions for our employees and strive to protect them from potential health hazards and injuries. A risk assessment

is carried out prior to potentially hazardous activities. Where necessary, appropriate protective measures are taken to ensure that the work can be done safely. Associates must familiarize themselves with and comply with local safety regulations. A Speak Up Office is our best way of ensuring that any misconduct is documented and that appropriate processes are adapted on a sustainable basis.

**We are environmentally conscious**

We implement and maintain processes and procedures ensuring compliance with relevant environmental regulations and compliance obligations. We also take steps to minimize the environmental impact of our activities. We support initiatives to reduce carbon footprint, waste generation and water consumption in our business activities. All legally required emission measurements are implemented and the results are checked for compliance with legally defined limits. We also ensure compliance with international requirements and recommendations through additional voluntary analyses and measurements.

**We consider HSE impacts when developing products, processes and technologies**

Our employees participate in HSE hazard assessment and risk analysis activities, which are coordinated by the HSE departments. Potential risks are systematically identified according to our specifications. This ensures that HSE considerations are integrated at an early stage into product and process development, procurement, manufacturing and investment projects. Potential risks from new production processes have been systematically investigated for many years using the process risk analysis (PRORA) method. The results may, for example, trigger process optimization or supplementary safety equipment in the facilities. The protection of the environment is of particular importance in process risk analysis: the resource-saving use of raw materials and energy, along with

the minimization of wastewater and waste. We differentiate between health risks, safety risks, environmental risks and business continuity risks.

Business continuity management (BCM) is applied throughout the company to ensure security of supply for patients and to avert economic risks for the organization in the event of a business interruption (e.g., fire in a production facility or warehouse, but also interruption of the raw material or energy supply chain). BCM focuses on precautions aimed at safeguarding the supply chain even in the event of an unforeseeable interruption of operations. This is designed to ensure the supply of important medicines to patients, even in exceptional situations.

The most important of these risks, where active management involvement is required to eliminate or control them, have been listed in the Group-wide HSE platform "HSE Net" since 2020.

We participate in scientific advice and consider HSE, as well as the business benefits and risks of innovation, in a structured, scientific and transparent way.

**We have a responsible supplier network**

Suppliers are expected to comply with the HSE requirements specified in the Novartis Third-Party Code and our Third-Party Risk Management (TPRM) Policy. We promote good HSE management practices among our partners throughout the supply chain and collaborate with them in the best way possible. Procurement promotes environmentally responsible suppliers, goods and services. This includes working with suppliers who go beyond legal compliance and actively minimize the environmental impact of their activities. Suppliers that drive the reduction of environmental impacts are given priority consideration.

Sustainability is considered in supplier selection criteria. We conduct audits of suppliers on a risk basis to ensure

compliance with TPRM and good industry practice.

**We drive continuous improvement of our HSE management systems and performance**

Following any recommendations for improvement from internal and external HSE audits, and based on Novartis initiatives and targets, objectives are defined and new programs are established each year through the HSE Plan; deadlines and responsibilities are set to ensure continuous improvement of systems. Management supports the

annual HSE objectives and targets and regularly evaluates HSE performance based on these objectives and targets. In the event of deviations, measures are taken at an early stage. Actions are derived from incidents and events to prevent recurrence, including, where appropriate, incidents and events outside Novartis. HSE competence is ensured through appropriate training.

**We communicate transparently**

HSE results are shared openly, through both internal and external communications. Engagement with

internal and external stakeholders, including the local community, is proactively established and their concerns on HSE issues are addressed.

## Energy Management (SIEM)



The purpose of energy management is to secure the energy supply for the Kundl and Schafftenau locations through agreements with reliable energy suppliers at the best possible conditions. The use of renewable energy sources is being promoted. In all production processes, we are striving for a gradual reduction in energy consumption. Despite the further expansion of our production facilities, we thus aim to achieve a reduction in overall energy consumption and sustainably reduce our carbon footprint.

The following tasks are also in focus:

- Promote and strengthen awareness of energy efficiency within the company – by providing information, communication and motivation along with training and usage of the internal employee idea system Th!nk Novartis which constantly generates ideas
- Check existing processes and production facilities for their energy efficiency and optimizing them in line with the latest technology

- Construct new buildings and plants in compliance with high energy efficiency standards

Energy management for the Kundl and Schafftenau locations is specified in a dedicated manual. It is a supplement to the current HSE manual and also serves as a reference for the energy management system according to ISO 50001.

## HSE Management Vienna

At our sales office in Vienna, HSE activities are also managed by the Country HSE Manager, with the activities to be carried out having a different focus than at our research,

development and production sites due to the purely office-based nature of the operations. In Vienna, the focus is on ergonomic workplace design, employee health, compliance with legal

regulations, as well as the sustainable energy and environmental management of our office buildings.

# Our contribution



Measures for our associates	25
Measures for the safety of our employees	26
Measures for the environment	26
What we have aimed to do in 2022	35



## Measures for our associates



### Energized for Life

This initiative has been in place since 2011 (when it was called „Be Healthy“), offering employees the opportunity to take part in programs and activities aimed at promoting a healthy and conscious lifestyle. In Austria, this initiative is supported by Corporate Health Management, ensuring that health is institutionalized as a corporate priority.

### Choice with responsibility

We are also rethinking how, where and when we work – offering maximum potential flexibility to our employees. Even beyond the pandemic, they can decide on a permanent basis whether they want to work from their home office or “from somewhere” or from the company. In doing so, they have the respon-

sibility to coordinate within their teams and define how collaboration works best. We believe this working model gives us the opportunity to enhance our well-being while effectively contributing to business success.

### Paid parental part-time leave

Since 2021, we have offered every mother and father who is employed by us the opportunity to take a maximum of 14 weeks of paid parental part-time leave in the first twelve months after the birth, adoption or foster care of a child. In detail, this means that following the eight-week maternity leave period after birth, Novartis continues to pay mothers their salary for six weeks during their parental leave. Fathers are paid for 14 weeks of their parental leave.

### Social benefits

We grant our associates a significant

number of additional company benefits. In 2021, around € 15 million were invested in the following benefits:

- Own company pension, together with occupational disability and widow's/widower's/orphan's pension, including additional inheritance and endowment insurance
- 24-hour accident insurance for occupational and leisure accidents
- Company restaurants
- Free company buses or travel allowances
- Voluntary commuter allowances

We also ensure that the pension fund covering our pension obligations invests the majority of its assets in sustainable products.

We are proud that our efforts are regularly recognized with the “Employer of Choice” award.

### OUR STRENGTH IS THE DIVERSITY AND CREATIVITY OF OUR EMPLOYEES

67  
nationalities

37 %  
women in management positions

50 %  
of associates are female

50 %  
female managers in the Innovative Medicines Business Unit



“Top Employer Austria” 3 years in a row (Novartis Pharma GmbH, Sandoz ComOps)<sup>7)</sup>  
Top Employer Europe 2021<sup>7)</sup>  
Top Employer Global 2021<sup>7)</sup>

<sup>7)</sup> Auszeichnung durch <https://www.top-employers.com/de/>

## Measures for the safety of our associates

### Kundl and Schafftenau



The safety of our associates is our top priority. Starting with the safe handling of microorganisms (topic: Biological Safety),

this extends to the systematic review of production processes by means of process risk analysis (PRORA) and ends with ensuring the technical safety of all facilities and equipment. Numerous initiatives help us to keep the number of accidents sustainably low with the ultimate goal of preventing them altogether.

We rely not only on technical and organizational measures, but also on a tested and successful safety culture model called “Behaviour Based Safety“ which is based on behavioral science. With appropriate resources and clear communication, we promote safe behavior – including the desirable side effect of transferring this behavior to the private life. The convincing and authentic behavior („leadership“) of managers is part of our leadership approach.

The centerpiece of our safety management is regular safety inspections. All

production buildings are periodically checked by trained safety specialists. Another element of our safety management is accident analysis. Occupational accidents resulting in sick leave, as well as significant accidents and incidents with hazard potential, are analyzed and documented, using a dedicated methodology (Root Cause Investigation, RCI), and follow-up activities and measures are derived.

The „Smarter with Safety“ campaign is designed to raise employees' safety awareness on a continuous basis by way of weekly mailings, presentations on screens, and safety discussions.

Equally important is safety while working with microorganisms. A classification into four groups posing different risks has become established worldwide for handling genetically modified microorganisms. In both development and production, we work with genetically modified organisms in risk group 1, a group that presents the lowest risk. We nevertheless operate as far as possible in closed systems to safely prevent releases. Activities relating to new organisms are reviewed in the Biosafety Committee on a periodic basis and subsequently approved.



## Measures for the environment



### Careful use of resources and environmental protection

The manufacturing of active ingredients and

intermediates requires a high input of resources such as solvents, water and energy. Wastewater, exhaust air and waste are also generated during production, and these must be minimized or treated as effectively as possible. The recovery of usable by-products as well as recovery and recycling both

play an important role here. By specially designing production and remanufacturing processes, we obtain high-quality by-products as valuable materials. Fertilizer is one example for this.

### Waste, recyclables and recycling



Our top priority is to avoid waste altogether or reduce it as far as possible. Waste not avoidable is recycled externally where

this is ecologically sensible. If this is not possible, it is disposed of appropriately, for example by incineration in modern waste incineration plants. More and more economically and ecologically viable recycling options are now available, even for hazardous waste. These include the external redistillation of solvent waste.

Non-hazardous materials such as paper, cardboard, plastics, styrofoam, scrap metals, waste glass and biogenic waste are collected separately and fed

into the various recycling channels by our waste disposal partners, thus keeping the volume of commercial waste comparable to household waste to be disposed of externally (thermally) as low as possible. All waste generated in Kundl and Schafftenau is not treated by the company itself, but is handed over to authorized waste collectors and waste processors. Most of these are EMAS-certified and are regularly audited in compliance with our guidelines.

Annual evaluations of the volume of hazardous and non-hazardous waste from Kundl and Schafftenau reveal the processes and areas in which waste is generated. A few processes have a decisive influence on the amount of waste.

In Kundl, the “Central Waste Collection Point (Zentrale Abfallsammelstelle, ZASS)” was established in 1991 as the most important tertiary collection point and hub of waste logistics. A new location for the ZASS is currently being evaluated in order to further improve waste logistics and align it with the development of the Kundl location. In Schafftenau, the dynamic site development was taken into account at the end of 2013 with the commissioning of the ZASS Schafftenau.

In 2021, waste logistics were handed over to an external company. This company does not act as a collector or handler, however, but supports Sandoz GmbH in internal and external logistics as well as in various improvement and optimization processes.

In 2021, Kundl was significantly shaped by extensive transformations. In this context, some production facilities and buildings were dismantled or completely removed to support future site development. Significant quantities of waste were generated during these activities. The majority (82%) could be recycled. Waste generation for these activities totaled 7,150 tons in 2021. As this waste is not generated as a standard part of

normal operational activities, it is not represented with the data at the end of the report. Doing so is appropriate in order to provide a more transparent representation of waste trends over the years. Below follows a breakdown of the fractions into hazardous and non-hazardous waste generated by transformation projects.

Since 2020, we have been focusing on plastic waste. A survey was performed to determine the areas where the largest quantities of plastic waste are generated and where relevant quantities of plastic are used at the site for future reduction measures. Activities as part of the “Single Use Plastic Initiative” (replacement of plastic from everyday goods consumed at the sites) were successfully implemented in 2021.

Other waste reduction measures in recent years:

- Delivery of raw materials in tanks in order to save empty containers
- Use of larger containers
- Recycling process for the reuse of IBC containers
- Increasing the concentration of substances (reducing the number of empty containers)
- Ongoing monitoring of disposal containers on site for any improper disposal and retraining of employees and external contractors if necessary.

The solvent recovery processes and technologies for obtaining by-products such as Biosol® and Biosol forte® significantly contribute to avoiding large quantities of waste every year.

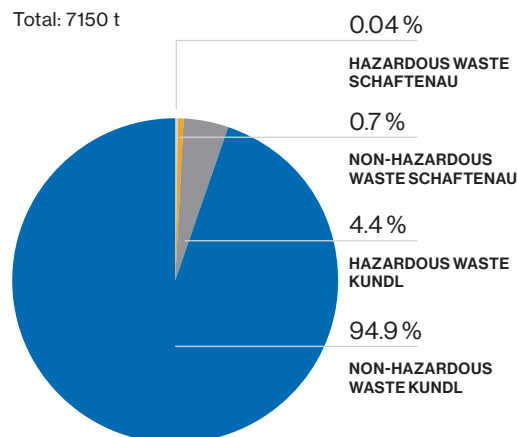
#### **Biosol® and Biosol Forte® – organic fertilizers**

The recycling of the fungal mycelium produced during penicillin production yields an effective fertilizer. Fungal mycelium is biomass that is cultivated during penicillin fermentation and excretes penicillin as a metabolic product. After separation of the active ingredi-

#### **WASTE GENERATED FROM CONSTRUCTION AND DEMOLITION ACTIVITIES 2021**

Kundl and Schafftenau

Total: 7150 t



ents, the remaining biomass is processed by drying and inactivation to obtain Biosol®, a high-value fertilizer.

Biosol Forte®, which is obtained by processing biomass from the company’s own wastewater treatment plant, is approved as a fertilizer for integrated agricultural production – Biosol® is also approved for organic farming, which is monitored and certified annually by the Austrian Certification Agency (Austria Bio Garantie).

Biosol® and Biosol Forte® increase the humus content of soils due to their high organic content, contribute to optimal plant nutrition and activation of soil life, and are marketed worldwide. In 2021, more than 12,000 tons of fertilizer were produced for sustainable agriculture.

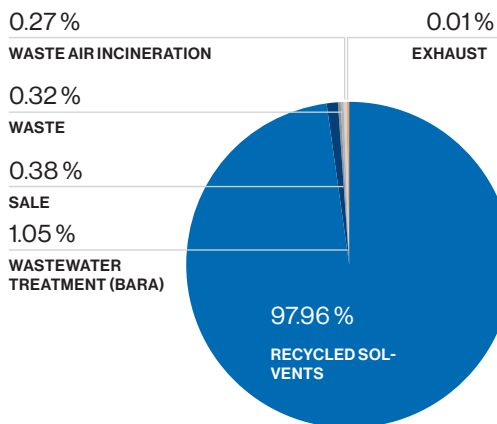
#### **Solvent recycling**

Solvents are volatile organic compounds capable of dissolving substances without chemically altering them. We use solvents, for instance, to extract active ingredients after fermentation. The most important solvents are butyl acetate, isopropanol, ethanol and acetonitrile. Since the 1960s, as part of our processes at our Tyrolian locations, we have been using solvents that allow

### SOLVENT USE AND WASTE IN 2021

Kundl and Schafotenau

Total: 161,439 t



multiple uses. Well-designed, closed systems, special distillation plants for used solvent mixtures, and extensive recirculation systems now ensure a recycling rate of 8%. This allows us to use solvents around 50 times on average before they are broken down in our in-house biological wastewater treatment plant (BARA), combusted in the exhaust air incinerators or passed on to external disposal or recycling companies. In total, the use of solvents amounted to around 161,000 tons in 2021.

The trend in recent years towards biologically produced active ingredients, intermediates and raw materials has led to a significant reduction in solvent and chemical requirements. For example, fresh solvent use in 2021 decreased to about one-third compared to 2011. The amount of fresh solvent used in 2021 totaled 3,287 tons. In 2011 (historic high), 9,637 tons of fresh solvent were required. Compared to Kundl, the Schafotenau facilities play a secondary role in the use of solvents.

### Protection of soil and groundwater

Our production buildings and supply facilities are connected by a dense network of pipelines. For soil and groundwater protection, we have consistently avoided the storage or transport of hazardous media in buried tanks or pipelines.

Hazardous media, such as acids, alkalis and solvents, are transported for safety in pipelines located above ground on so-called pipe bridges, allowing leaks to be detected immediately. Pipelines for process wastewater run underground in the energy line tunnel (ELT) or also via pipe bridges. In general, only pipes for drinking and process water, sewers for rainwater and individual sections of sanitary wastewater pipes are buried underground. With our own monitoring system, combined with a long-term maintenance plan, we ensure that there is no unnoticed leakage of possibly contaminated wastewater into the subsoil.

Traffic areas of the premises and all areas where operating materials or waste are handled are surface-sealed, so that efficient protection of the soil and groundwater is guaranteed here as well. Chlorinated hydrocarbons have no longer been used in Kundl for manufacturing processes since April 2021. The final soil gas tests provided evidence that the subsurface of all affected areas is free of pollutants. Small quantities of dichloromethane are still used in Schafotenau. Here, regular analyses of soil gas samples will continue to be carried out to prove that the area is free of pollutants. Due to legal requirements, we have compiled reports on the initial condition of the soil and groundwater (requirement of the Industrial Emissions Directive) in recent years and submitted them to the authorities.

The initial status reports for the two locations are updated on a regular basis

to adequately cover new production facilities or modified processes. The current results of the periodic groundwater monitoring embedded in the initial status reports are also included in the reports. In Schafotenau, small-scale contamination of the soil exists due to the activities of a company previously located at the site, which is being consistently remediated in collaboration with the authorities. Otherwise, similar precautions for soil and groundwater protection apply in Schafotenau and Kundl. In contrast to Kundl, sewers for less contaminated production wastewater (WAW) are underground in Schafotenau in addition to sanitary wastewater pipes (WAS), since there is no energy transmission tunnel similar to the one in Kundl. The sewers for WAS and WAW are periodically inspected by camera, and damaged sewer lines are subsequently refurbished.

### Water – a limited resource

We also take great care in our use of water – both in supply and disposal. For the manufacturing of active ingredients in Kundl, we require large quantities of cooling water, the majority of which is pumped from our own wells located near the Inn River. This allows us to extract mainly bank filtrate and thus conserve groundwater. The drinking water required for production and sanitary facilities is supplied by our own deep wells.

Measures to reduce consumption, such as the re-use of cooling water, have been established in Kundl for many years. Mainly as a result of changes in the production portfolio, water consumption in Kundl decreased by approximately 8% in 2021 compared to 2020.

In Schafotenau, we use drinking water required for manufacturing processes from the municipal drinking water network. The demand for cooling water and water for thermal use in highly energy-efficient chillers or heat

pumps for building heating and air conditioning is covered by the plant's own groundwater wells. Despite the dynamic growth of the Schaftenu location, a reduction in total water consumption of around 14% was achieved in 2021.

### Wastewater and protection of the aquatic environment



In Kundl, five separate sewer systems provide water disposal: for precipitation water, cooling wastewater, heavily polluted process wastewater, slightly polluted wastewater from the production plants and for sanitary wastewater. We ensure the targeted treatment and purification of all wastewater by consistently separating all wastewater streams.



**Rainwater** is collected in a separate sewer system and normally discharged directly into the Inn River. In the unlikely event of contamination, a 2.4 million liter retention basin is in place which retains potentially contaminated water for subsequent targeted supply to the plant's own wastewater treatment plant or for external disposal. Appropriate detection systems in the retention basin reliably detect leaks on the plant site, e.g. in the area of the pipeline routes. A discharge into the Inn River can thus be reliably prevented.

The infiltration of rainwater at the Kundl and Schaftenu locations in non-critical buildings and facility areas, such as infrastructure buildings or parking areas, has gained significantly in importance over the past few years. As a result, infiltration of rainwater is preferred in the case of modifications, if possible in terms of safety, in order to minimize overloading of the receiving watercourse during heavy rains.

**Cooling wastewater** is also discharged directly into the Inn River, with a maximum temperature of 35° C. This results in a warming of the river by less than 0.1° C. The cooling water is periodically monitored for hydrocarbons to detect potential leaks at heat exchangers.

**Process wastewater and slightly contaminated wastewater** from the production facilities in Kundl are treated biologically in a two-stage wastewater treatment plant (Betriebs-eigene Abwasser-Reinigungs-Anlage, BARA). Process wastewater from Schaftenu is also transferred to this wastewater treatment plant for purification. Several years ago, the second treatment stage was partially supplemented by a membrane activation plant.

Due to the establishment of an industrial park at the Kundl location and the expected increase in wastewater volume in conjunction with stricter effluent limits, BARA is currently being completely converted to membrane filtration. The modular expansion option of the new plant components allows a rapid response to changing demand.

The daily checks of BARA in Kundl confirm the excellent cleaning performance for 2021 as well. The effective annual average value of the degradation performance is about 99 % (biological oxygen demand) and about 95 % (chemical oxygen demand). For nitrogen, a purification performance of over 90 % could be achieved in 2021. These parameters confirm that the organic contaminants in the production wastewater are almost completely eliminated in the company's own wastewater treatment plant.

**Wastewater from sanitary facilities** is treated separately from production wastewater and disposed of via the public sewer system.

Schaftenu also disposes of the various wastewaters in compliance with the requirements. Depending on

In total, water consumption has been reduced by more than 20% over the last ten years.

where it occurs, rainwater is infiltrated or discharged into the Gießenbach creek. Schaftenu also operates a retention basin that, in the event of an incident (for example, a fire or transport accident at the premises), prevents any contaminated surface water from flowing into the ground or the Inn River.

More heavily polluted production wastewater is collected in tanks and trucked to Kundl, where it is fed into the on-site wastewater treatment plant. This not only relieves the municipal wastewater treatment plant in Schaftenu, but also supports the denitrification process in the on-site wastewater treatment plant in Kundl.

Less heavily contaminated production wastewater and sanitary wastewater are discharged into the municipal sewer system. Cooling wastewater is collected separately and, in compliance with strict regulations, fed into the local Giessenbach creek and directly into the Inn River via a newly constructed canal.

**Preventing the release of active ingredients** into the aquatic environment has been an important pillar of our HSE activities at the Kundl and Schaftenu locations for many years. This is necessary, on the one hand, to counteract the global problem of antibiotic resistance and, on the other hand, to protect the aquatic environment from harmful influences. As a major producer of antibiotics, Sandoz GmbH assumes its responsibility by implementing appropriate risk management, periodic measurements and raising awareness with training programs. When establishing new pro-

The volume of wastewater at the Kundl site has been reduced by over 35% since 2011.

cesses or adapting existing production processes, preventing active ingredients in wastewater is a key element of the process risk analysis (PRORA). The periodic monitoring of the BARA effluent for relevant active ingredients, implemented a few years ago, confirms that these are also almost completely degraded in the BARA and that the internationally applicable limits for active ingredients in wastewater systems and the restrictive Novartis specifications are more than significantly undercut.

With our participation in the PSCI program (Pharmaceutical Supply Chain Initiative), we are committed to sustainability in the fields of social affairs, health, safety and environmental protection. PIE (Pharmaceuticals In Environment) is a vital part of this initiative.

Since fall 2016, the infrastructure facilities (mainly water supply, wastewater disposal, fertilizer production and steam boiler plants or central exhaust air purification plants) have been operated by an external partner company, with the facilities themselves remaining the property of Novartis. The Novartis operating personnel were taken over by the partner company as part of this transition.

#### Exhaust air – avoidance of emissions into the atmosphere



The use of solvents and the wastewater treatment system in Kundl generate exhaust air streams

that are contaminated with odors and solvents. For many years, the exhaust air in Kundl and Schafotenau has been processed using closed systems and facility-wide exhaust air networks. The exhaust gas streams are mainly processed thermally, reducing emissions to a minimum. Purification processes such as activated carbon adsorption, cryocondensation or scrubber systems are also applied, especially when secondary emissions (e.g. NO<sub>x</sub>) would be generated during incineration.

Since halogenated hydrocarbons are no longer used for production processes at the Kundl location, the associated plant for incinerating the highly polluted process waste gases was completely dismantled in 2021.

A production process in Schafotenau still requires the use of a small amount of dichloromethane as a halogenated hydrocarbon. The outdated exhaust air purification system for the exhaust air from this process was replaced in 2021 by a state-of-the-art modern exhaust air purification system. A technically mature combination of cryocondensation and activated carbon adsorption allows the current limits to be easily complied with.

#### Odor

The mainly biological processes in Kundl also generate highly odorous waste gas streams. In the past, this has led to corresponding complaints from neighbors. A sustainable improvement has been achieved through a large number of optimization measures. The most heavily odorous exhaust air from the Kundl wastewater treatment plant is completely contained through closed systems and enclosures and is incinerated in a regenerative post-oxidation plant (RNO). Exhaust air from fertilizer production (Biosol® and Biosol forte®) is also incinerated in this RNO or in the boiler house.

As a result of the incineration of these highly odorous waste gas streams, odor complaints from the neighborhood are now at a consistently low level. However, despite the very good present situation, any complaints will be vigorously pursued in the interest of a sustainable quality of life in the community. The issue of odor continues to receive a great deal of attention.

#### Noise

The noise level in Kundl is within the range of the base level in the Inn valley caused by the railroad, the highway and by adjacent facilities. This has been achieved through a series of measures in recent years, including the installation of silencers in exhaust air ducts or sound-insulating facades. New facilities are subject to correspondingly strict construction regulations.

In Schafotenau, the situation is less sensitive due to its location in a purely commercial area; nevertheless, equally strict regulations apply.

#### Sustainable energy use



#### Energy sources

Natural gas and electrical energy – the latter exclusively from renewable sources – are our main energy resources. Since 2014, the electricity from our electricity supplier originates from renewable

energy sources, predominantly from hydropower (approximately 85%), and is therefore almost CO<sub>2</sub>-neutral. By consuming electricity predominantly from hydropower, the Tyrolean locations support the Novartis objective of significantly reducing CO<sub>2</sub> emissions. In addition, diesel is used to operate emergency generators. The major electricity consumers are compressors and

electric motors, a large proportion of which is used for agitators and compressed air supply, especially in the fermentation facilities.



### Energy consumption

While total energy consumption increased continuously until 2003, a significant reduction in en-

ergy consumption has been achieved to date by switching to energy-saving manufacturing processes and implementing energy-saving measures. Today, energy consumption (natural gas and electricity) amounts to about 1900 TJ/year. Since 2009, savings from energy-saving projects have been monitored separately. The measures as documented now amount to more than 500 TJ/year. This energy quantity could cover the energy demand of approximately 10,000 households.

In Schafftenau, energy consumption had increased significantly since 2012 due to the dynamic growth of the location. In 2016, consumption was lower than in 2015 due to the modernization of two facilities and the resulting disruption in production. In 2017, the two above-mentioned facilities went back into full operation, which led to a renewed increase in energy consumption lasting since 2017. The commissioning of additional production facilities is planned for 2022, which will further increase energy consumption in Schafftenau.

### District heating for Kundl

Operational waste heat is used both internally and externally as district heating. The primary sources of waste heat are the drying plants for the Biosol® and Biosol Forte® fertilizers as well as the compressed air compressors, mainly used to supply the fermentation process with compressed air. A community-owned district heating company was founded in 1996 to exploit waste heat as district heating. Today,

As a result of adaptations, but also due to the high availability of the exhaust air purification systems, the solvent emissions of Sandoz GmbH have more than been halved compared to 2020.

more than 70 % of Kundl's households use this environmentally friendly heating source. At present, approximately 29 million kilowatt hours of energy are provided by us each year. Internally, operational waste heat in Kundl is fed into a separate hot water network with a temperature level of 90° C- serving both to heat buildings and for production - wherever heat supply can be utilized at a reduced temperature level.

### Efficient process steam production

In Kundl and Schafftenau, we use low-emission natural gas to produce process steam, focusing on high efficiency and minimizing energy losses during steam generation. Several boilers are equipped with economizers, designed to extract residual heat from the exhaust gas. The consistent recirculation of steam condensate further increases the efficiency of the entire steam process. The residual heat is used to preheat boiler feed water, alternatively heat is extracted into the internal hot water networks (WW90 and W55).

### Individual projects – energy saving measures

Our energy management aims to gain a deeper understanding of which processes contribute to overall consumption and to what extent, and to identify energy efficiency measures on that basis. We succeed in this by recording and measuring as well as analyzing key energy consumers and evaluating possible measures from an economic point of view. The potential and projects are

recorded in an energy-saving project list kept up to date. By implementing numerous measures, 1–1.5% of the location's energy requirements can be saved each year. In 2021, more than 40 energy-saving projects were successfully implemented at the Kundl and Schafftenau locations.

The following are the two largest projects in energy-saving activities in 2021:

1. By optimizing the stirrer configuration in the penicillin fermentation, a reduction in stirring energy of up to 15 % was obtained on a pilot scale. Subsequently, a large-scale fermenter was equipped with the corresponding stirrer setup, and stirring energy savings of as much as 25 % were subsequently achieved. As a result of this major success, a further three large-scale fermenters were equipped with this new agitator configuration (installation of new axial agitators) in 2021. By 2022, we are planning to upgrade all ten large-scale digesters. On completion, we expect to save electrical energy equivalent to the requirements of 1,135 average households (average household consumption 4.5 MWh/year).
2. The installation of a large-scale heat pump system, which is currently ongoing, will enable us to reduce natural gas requirements for hot water generation by around 11,000 MWh/year in the future. Commissioning of the system is planned for the second quarter of 2022. The expected savings are equivalent to the heating energy require-

ments of an average of 500 single-family homes.

For 2022, the focus in the area of sustainability is on the further development and implementation of the next steps in the decarbonization strategy for the Kundl and Schafteu locations. Following the successful elimination of CO<sub>2</sub> emissions from electricity, the objective is to further reduce and ultimately eliminate CO<sub>2</sub> emissions from the combustion of natural gas as a fossil fuel.

Long-term technical measures such as the complete conversion of the fertilizer drying process from steam to a low-temperature line, as well as the company's own biogas production from wastewater and the possibilities of using biomass for steam generation, are currently being examined for this purpose. There is also further potential in terms of optimizing production processes (e.g. vacuum distillation), all of which have an important contribution to make as part of the overall strategy.

### Transportation, logistics and traffic

Warehousing and logistics play an important role as a result of the large demand for raw materials and are subject to strict internal guidelines with a clear classification of the goods to be stored by category, as well as the requirement for separate storage and safety measures aligned with the storage category. These guidelines are consistently implemented in daily practice. Our highly qualified external logistics partners also commit themselves to complying with all relevant Sandoz/Novartis regulations and are audited accordingly on a regular basis.

Bulk goods are largely delivered by rail. The Kundl location operates its own rail siding for this purpose.

With our own company transport system, we offer our employees living in

the region the opportunity to leave their cars at home and travel comfortably to and from work by bus. A shuttle bus service was set up in 2016 for business commutes between Kundl and Schafteu.

### Fire protection and plant fire department

Every year, we respond to around 250 emergency calls at our Kundl and Schafteu locations. Most of these are false and deceptive alarms from the fire alarm systems, as well as first-aid calls for our first-aid group. There have hardly been any serious incidents in recent years, which is also due to the existing early fire detection and alarm systems. Our production and warehouse buildings are equipped with approximately 16,000 fire and gas detectors. In addition, regular fire protection training courses are offered to employees.

The company's own fire departments represent a key pillar of our safety system. They are integrated into the state control center to deal with major incidents and also receive support from external fire departments as required. Of the 74 volunteer members of the Kundl plant fire department and the 56 volunteer members of the Schafteu plant fire department, the majority are trained to use heavy respiratory equipment and can be deployed in the event of an emergency after passing the mandatory annual medical examinations.

Our on-site fire departments, as chemical fire departments, are also part of the Transport Accident Information System (Transport-Unfall-Informationssystem, TUIS). This enables us to support the voluntary regional fire departments during operations in the event of major fires and transport accidents outside the company premises by providing advice via our chemical experts or with special equipment.



### Indirect environmental aspects

While direct environmental aspects are subject to our direct

operational control, indirect environmental aspects are subject to our interface management with partners and stakeholders. Examples of indirect environmental aspects we consider in our actions and decisions include quality-related, commercial, health and safety, as well as environmental procurement criteria.

In addition, Novartis is a member of the Pharmaceutical Supply Chain Initiative (PSCI) and supports the principles for responsible supply chain management in the areas of ethics, labor, health and safety, environment.

One example in this context is the purchase of electricity. Since 2014, the electrical energy consumed in Kundl and Schafteu has been exclusively from renewable energy sources.

We inform our patients about the appropriate, environmentally friendly disposal of waste medications through package inserts. Commercial customers receive all necessary information via safety data sheets.

### Measures for the environment at the Vienna location

At our Vienna location, we keep our environmental footprint low by implementing sustainability initiatives. Here are some examples:

**Think small:** By using the office we moved into in 2020 more effectively, we were able to reduce the floor space by 50%. This also results in savings on electricity, heating costs and all other consumables.

**Regional and Fairtrade:** We focus on sustainability when catering for our



employees. Fruit baskets are stocked regionally and seasonally, and only Fair-trade coffee is provided.

**Avoiding waste and plastics:** We do not use PET bottles, disposable cups and other disposable tableware in our offices.

**Waste separation:** Is mandatory at all sites and is supported by the appropriate infrastructure.

**Electric and hybrid cars:** Novartis is committed to becoming CO<sub>2</sub>-neutral globally by 2025. We are supporting this objective by gradually converting our fleet in Austria to zero-emission or hybrid vehicles.

**What we are particularly proud of in the environmental area in 2021**

The opening of the site and the associated establishment of external companies as part of the newly implemented Technology and Life Science Park will

further develop the existing research, development and production locations in Kundl and Schafsteden; this will also result in increased capacity requirements for infrastructure facilities. To ensure the wastewater from the Technology Campus meets purity requirements at all times, the company's wastewater treatment plant (BARA) is currently undergoing long-term expansion and upgrading to state-of-the-art technology. In future, 100% of the wastewater produced will be membrane-filtered at one of the largest industrial wastewater treatment plants in Austria.

As a result of implemented energy saving projects, a total energy saving of 6,500 MWh could be achieved in 2021. This is a CO<sub>2</sub> saving of 974 tons per year, or eight million kilometers not driven by an average compact-class passenger car.

The installation of a large-scale heat pump system, which is currently in

progress, will enable us to reduce the demand for natural gas at the Kundl location by 11,300 MWh/year in future. Commissioning of the plant is planned for the second quarter of 2022. The expected savings correspond to the heating energy requirements of an average of 500 single-family homes.

Drying the bacterial biomass produced by the wastewater treatment plant and the fungal mycelium from the fermentation process is a very energy-intensive process. Experiments have shown a basic way to manage this process with low-temperature energy. Although some obstacles still have to be overcome, this measure could sustainably reduce the energy requirements of the Kundl location. A total decrease of the energy demand of the Kundl location of 20-25 % seems to be feasible. This would be a first milestone towards CO<sub>2</sub>-neutral production in Kundl and Schafsteden in future.



The protection of soil and groundwater is one of the essential aspects of a sustainable environmental policy. Extensive soil analyses were carried out as part of the Kundl restructuring projects in 2021. No relevant contaminants were found in the soil during any of the analyses. Accompanying groundwater analyses for potential contamination confirmed these results. The sustainable protection of soil and groundwater at the Kundl and Schafteuau locations is exemplary throughout the Novartis Group. Decades of consistent implementation of primary and secondary protective measures for groundwater and soil are paying off.

Solvent consumption for our production processes in Kundl and Schafteuau once again decreased significantly. Thanks to efficient distillation and reprocessing of the solvents used, a historic high of 98% recycling rate was achieved in 2021. Every kilogram of solvent used is recycled an average of 50 times.

In mid-2021, the groundbreaking ceremony for a modern penicillin reprocessing plant was held, partly thanks to investment funding from the Federal Government. The new enzymatic process replaces a current chemical synthesis process. The

new process completely eliminates the need for solvents. It has a very positive impact on the CO<sub>2</sub> footprint, requires significantly less electricity and natural gas due to the elimination of solvent regeneration, and generates a significant reduction in wastewater compared to the existing process. The fully integrated production facility at the Kundl location completely eliminates transports of intermediates within Europe. The new production plant will be commissioned in early 2023. This investment measure will offset the increasing shift in the pharmaceutical product manufacturing to the Asian region.

Thanks to efficient distillation and reprocessing of the solvents used, a historic high of 98% recycling rate was achieved in 2021.



## What we have aimed to do in 2022



Objectives 2021	36
Results 2021	36
Objective achievement in percent	36
Plan 2022	36
Deadlines and responsibilities	36

## HSE Management/Kundl and Schaftenau

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
-	-	-	Strengthening the HSE culture at the location	Deadline: 12/31/2022
-	-	-	Develop HSE communication plan involving all relevant HSE stakeholders	Responsibility: Campus & Site HSE
-	-	-	Revision of the HSE manual	
-	-	-	Management of all HSE-relevant duties and tasks and implementation of a legal compliance workshop	

## Employees/Health/All locations

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
The Energized for Life (EfL) initiative - adapted to the requirements of the respective location and employee needs - will be further developed. A major focus is the design and implementation of an action plan 2021 around the four pillars of Energized for Life.	The EfL initiative was adapted to "Health Management goes digital" in 2021 and implemented according to the pandemic management requirement: topic days, webinars as well as individual coaching around focus topics within the global initiative were well booked. The active participation showed the great interest of employees in the Energized for Life programs.	100 %	<b>EfL initiative:</b> Continuous culture development through EfL activities with the focus topics of awareness raising, prevention and support for specific target groups at the sites.	Deadline: 12/31/2022  Responsibility: Occupational Health Management
Development of nutrition programs at our campuses: Nutrition app at the Kundl/Schaftenau campus.	In cooperation with CBRE and Eurest, the rollout of the app was implemented providing the functionalities feedback, utilization display and pre-ordering of individual nutritional offers. The app is continuously screened and further developed.	100 %	<b>Nutrition:</b> Alignment of food service options to "Choice with Responsibility" initiative.	
Movement & Mobility: rolling out a bike program, digital movement programs (home office: active break).	Bike program has been placed "on hold" but is still under discussion. The movement programs are fully booked. A special offer for movement and ergonomics in the home office has been developed.	75 %	<b>Movement &amp; Mobility:</b> Balanced training program with onsite and online training and focus on stabilization exercises, trunk stability, ergonomics and cardiovascular (prevention)	
Culture & Communications: Storytelling at our sites, awareness campaigns in several languages, training and workshops for managers and associates	Very successful collaboration with Communications at our locations in Austria. Communications materials are adapted to the various target groups. Successfully implemented: print, digital (new intranet presence, so-called business card, was launched), launch of podcasts as well as implementation of a film for training purposes (ergonomics)	100 %	<b>Culture &amp; Communication:</b> Storytelling at our locations, awareness campaigns in several languages, trainings and workshops for managers and associates	

8) Objective achievement in percent

## Employees/Health/All locations

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Collaboration with other departments (HSE, ERG: Sustainability)	Close collaboration with ERGs (weekly Jour Fixes) as well as the so-called Culture Activators (meetings once per quarter) was successfully maintained.	85 %	<b>Stakeholder Management:</b> Intensification of cross- departmental collaboration and coordination with the Occupational Health team	Deadline: 12/31/2022  Responsibility: Occupational Health Management
Presentations, individual coaching, EAP (Employee Assistance Program)	All webinars and expert presentations were fully booked. This underlines the high level of interest among employees in awareness-raising measures.	100 %	<b>Mental Health Prevention:</b> Continuation of the Mental Health Prevention program	
Ergonomics concepts: in the office and home office	In addition to digital advice for employees from ergonomics experts on the perfect setup of the home office workplace, special payments were made for certain items to equip the home office workplace. These measures were supplemented by onsite consulting for employees at the location in cooperation with the occupational medicine department.	100 %	<b>Ergonomics:</b> Continuation of ergonomics counseling for employees at the locations and in the home office. Establishment of so-called ergonomic zones (standing workplaces) at the locations.	

## Employees/Occupational safety/Kundl and Schafftenau

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
-	-	-	Implementation of the updated Novartis HSE specifications (GOP) at the location in compliance with the implementation plan.	Deadline: 12/31/2022  Responsibility: All departments
A management walkthrough rate of 15 (based on 200,000 work hours) is targeted again in 2021.	With a management walk-through rate of 30 for the entire campus, the target was exceeded. CQF/SDC (13) fell just short of the required rate. This was primarily due to low attendance at the location due to Corona. Site Development (8) was also unable to meet the rate. This was due to the transformation and the resulting change from Site Engineering to Site Development. No target was set for Global HQ Kundl.	100 %	<b>Management walkthrough rate</b> of 15 (based on 200,000 working hours)	
Consistent reporting of unsafe conditions. In this context, the "Near Miss & Good Catch Rate" should be exceed a value of 70 in 2021 (based on 200,000 working hours).	With a "Near Miss & Good Catch Rate" of 132 for the entire campus, the target was surpassed. Only Site Development (19) was unable to meet the required rate. This was due to the transformation and resulting change of Site Engineering to Site Development.	100 %	Investigation of all <b>psIF events</b> (potential Serious Injury Fatality) and relevant <b>LTI cases</b> (Lost Time Injury) including derivation of corrective actions and exchange in the Novartis network.	

## Employees/Occupational safety/Vienna

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Continuation of driver safety training sessions	A total of 15 training sessions were completed.	100 %	Continuation of <b>driver safety training</b> for all new company car drivers.	Deadline: 12/31/2022  Responsibility: car users, Fleet Mgmt.
Safe and medically supervised reopening of the office after the current lockdown	The office was re-opened. The access restrictions were adapted to the further COVID waves and changing legal requirements in collaboration with the company medical department and the legal department.	100 %	Safe and medically supervised use of the offices in accordance with the current pandemic situation. Avoidance of clusters in the office	Deadline: 12/31/2022  Responsibility: NEM team, Occupational Health Service
No occupational accidents in 2021	No occupational accidents were reported.	100 %	<b>No occupational accidents in 2022</b>	Deadline: 12/31/2022  Responsibility: All functions

## Employees/Diversity & Inclusion (D&I)/Kundland Schafftenau

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Final approval for expansion of Minis@Novartis Schafftenau and implementation.  Establishment of further Employee Resource Groups (ERGs).  Diversability: Implementation of the first barrier-free production site in Schafftenau.	Due to the pandemic, the expansion of Minis@Novartis Schafftenau 2021 was stopped. The focus was instead on safe and ongoing care for children in the existing setup. In 2021, additional ERGs were established, including Animal Friends@Novartis, Men Community, and Active Community. With regard to diversity, the implementation of the first barrier-free site DS Schafftenau is progressing as planned.	70 %	<b>Accessibility:</b> Further implementation of accessibility in DS Schafftenau	Deadline: ongoing Responsibility: P&O Country Head, P&O Site Heads
-	-	-	<b>ERGs:</b> Creation of the ERG "Caring for Ukraine": Integration and assistance for Ukrainian refugees working at the Kundl/Schafftenau location	Deadline: ongoing  Responsibility: P&O Country Head, P&O Site Heads

## Employees/Diversity & Inclusion (D&I)/Vienna

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Ongoing trainings at the new location	The trainings were held.	100 %	Continuation of training in the office and virtually, in accordance with the pandemic situation.	Deadline: ongoing  Responsibility: D&I Champion

8) Objective achievement in percent

## Employees/Training and Continuing Education/Kundl and Schafftenau

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Perception of the Training Center inside and outside Novartis "as a positive experience"	The positive feedback from internal and external apprentices as well as module course participants in the 2 <sup>nd</sup> educational pathway described the Training Center as a "positive experience". Participants and the company consider it a valuable partner in employee development.	100 %	Revision and adaptation of <b>HSE training SOP-8008885</b> (training matrix)	Deadline: 12/31/2022  Responsibility: Campus & Site HSE
Focus on employee health and well-being in the workplace	In collaboration with trainers and BGM, special attention was given to the mental health of young people.	100 %	Rollout of the new <b>Novartis safety database (HazCom)</b> for the management of safety data sheets and substance information.	
Elaboration of a transparent training program for the customers of the Training Center	The training program was enhanced with the modular laboratory technology training. Additionally, the modular courses were promoted more intensely.	100 %	The <b>education and training program</b> for Novartis employees and other companies planning to join the Campus is to be enhanced and improved in 2022. To this end, a spin-off to the Academy for Excellence in Life Sciences (Axils GmbH) is planned and a smooth transition of agendas is expected.	Deadline: ongoing  Responsibility: Site Development
Digitalization: 360° feedback	The 360° feedback of the employees of the Training Center was to a large extent implemented in 2021.	80 %		
	The surveys (feedbacks) implemented digitally. Assessments were also conducted on digital platforms.	100 %		
Training courses for trainers offered on two dates	The trainer courses were held in person in January and online in November.	100 %		
Intensification of technical training for employees with a focus on automation and digitalization.	A module course in electrical engineering/automation was offered. The implementation of the automation and digitalization content is still being developed (in collaboration with the professional associations) for all apprenticeships.	50 %		
Continuation and optimization of online trainings	The existing online trainings were upgraded with a hybrid version (on-site and online). In addition, touch screens were used on the equipment to make it easier to follow the trainer's explanations.	100 %		

## Employees/Training and Continuing Education/Vienna

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Regular training of all employees in compliance with Group standards (own learning system, external courses, job shadowing, international assignments).	Continuing education and training courses have taken place. They were documented electronically.	100 %	<b>Regular training</b> of all employees in compliance with specified standards via the Group's own learning system, external courses, job shadowing, and international assignments.	Deadline: ongoing  Responsibility: Employees, line managers, P&O

## Environment/Kundl and Schafteuau

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Commissioning of the new exhaust air treatment plant for B511	The exhaust air treatment plant was successfully commissioned.	100 %	Switch to <b>environmentally friendly/sustainable hygiene products</b> in areas of social responsibility.	Deadline: 12/31/2022  Responsibility: CBRE
Reduction of waste for disposal by 3% due to implemented projects	A significant waste reduction (>3%) was achieved as a result of implemented projects. The recycling rate increased by 5%.	100 %	<b>Reduction of waste for disposal</b> by additional 4% due to implemented projects.	Deadline: 12/31/2022 Responsibility: NTS, Veolia, Site Engineering, Production Operations
Plastic Initiative, especially replacement of single-use PET beverage bottles with alternative solutions (e.g., reusable deposit bottles)	The Single Use Plastic Initiative was successfully completed in 2021.	100 %	Finalization of planning activities incl. start of construction of the new <b>waste collection point</b> in Kundl.	Deadline: 12/31/2022 Responsibility: NTS, Veolia, HSE
Reduction of wastewater volume for treatment by 3% due to implemented projects	The amount of wastewater was reduced by more than 7%. However, due to the opening of the site to external companies, an increase in wastewater is expected in the years to come.	100 %	Development of a new <b>waste logistics strategy</b> for the Biologics Business Unit in Kundl	Deadline: 12/31/2022 Responsibility: Operations, Veolia, HSE
Monitoring of the effluent of the operational ARA Kundl for relevant trace substances	The monitoring was continued. All relevant trace substances remained again below the detection limit.	100 %	Continuation of the support of the Federal Environmental Agency within the <b>ALSAG</b> (Altlastensanierungsgesetz, Law on the Remediation of Contaminated Sites)	Deadline: 12/31/2022 Responsibility: HSE
Initiative to replace a number of lawns at the Kundl/Schafteuau campus with wildflower meadows in order to improve ecological diversity.	Due to the extensive construction activities at the Schafteuau location and the transformation activities in Kundl, the project could only be carried out to some extent. Vacant areas had to be used as construction site set-up areas.	25 %	Continued implementation of the <b>Green Team initiative</b> to replace numerous lawns at the Kundl/Schafteuau campus after finalization of the investment projects.	Deadline: 12/31/2022 Responsibility: Green Team KUSCH, NBS REFS, CBRE
Wastewater certificate for Schafteuau	The submission took place in 2021. Due to the Covid-19 situation, the hearing date will not be until the second quarter of 2022.	50 %	Final obtaining of the <b>waste- water certificate</b> for the Schafteuau location	Deadline: 12/31/2022 Responsibility: NTS, HSE, Veolia
-	-	-	Implementation of <b>BARA extension</b> on schedule	Deadline: 12/31/2022 Responsibility: NTS, Veolia
-	-	-	<b>Reduction of wastewater volume</b> fed to BARA Kundl by 4%	Deadline: 12/31/2022 Responsibility: Operations, Veolia, HSE

8) Objective achievement in percent



## Environment/Vienna

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
By year-end, a fleet policy is to be in effect requiring new company vehicles to be equipped only with all-electric or hybrid drive systems. Associates will additionally be offered incentives to completely dispense with a company vehicle and use other means of transportation to or from the workplace.	The relevant process could not yet be activated due to technical difficulties with the fleet management operator. However, most of the preparations have been made and the rollout will take place in Q1 2022.	80 %	Approval of the plan by Management Novartis Austria (Country Leadership Team, CLT), communication and training for drivers, rollout of the first phase of the changeover.	Deadline: 12/31/2022  Responsibility: Country Head P&O, Country Head CSR

## Energy/Kundl and Schafftenau

OBJECTIVES 2021	RESULTS 2021	OA [%] <sup>8)</sup>	PLAN 2022	WHO & WHEN
Reduction of energy consumption (electricity & gas) by 3% due to implemented projects.	Energy-saving projects amounting to 3,614 MWh were implemented at the Kundl location in 2021. This corresponds to 1% of the energy demand (baseline 2020).	33 %	Further <b>reduction of energy consumption</b> (electricity & gas) by 4% due to implemented projects.	Deadline: 12/31/2022  Responsibility: NTS, Site Engineering, Production Operations, HSE
	Energy-saving projects totaling 2,922 MWh were implemented at the Schafftenau location in 2021. This corresponds to 3% of the energy demand (baseline 2020).	100 %	Start of planning activities and development of a detailed implementation plan for the <b>decarbonization initiative</b> in Kundl and Schafftenau.	
Use of photovoltaics for own power production in Kundl and Schafftenau	The potential for roof-mounted and ground-mounted systems was evaluated together with an external company. A detailed technical analysis will be conducted in 2022 as part of a bachelor's thesis.	100 %	Start of implementation of an initial <b>photovoltaic system</b> at the Kundl/Schafftenau location.	Deadline: 12/31/2022  Responsibility: NTS, Site Development, HSE
Evaluation of the use of solar thermal energy for hot water production and space heating at the Schafftenau location.	A study for large-scale solar thermal systems was performed in collaboration with SOLID and successfully completed. A decision on potential implementation will be made in 2022.	100 %	Evaluation of additional <b>energy-saving projects</b> in the penicillin reprocessing facility	Deadline: 12/31/2022  Responsibility: NTS, Veolia, Site Engineering, production facilities



# Value creation and impact

## Economic footprint

As a leading global research-based healthcare company, we are one of the key innovators in the Austrian healthcare industry and a strategic pillar of medical care, reaching around six million patients per year. Between 2015-2021, we invested € 1.2 billion in Austria.

The WifOR economic research institute has evaluated the economic footprint of Novartis for the financial year 2021 on the basis of economic indicators in order to assess the importance of Novartis for the Austrian economy, labor market and research landscape.<sup>9)</sup>

9) Source: Novartis, Austria 2021 SEE Impact Valuation Results, as of May 2021.

# Importance for Austria as a business location



Our economic effects extend far beyond our actual business activities. The awarding of contracts, the purchase of services and the daily consumer spending of our employees, as well as tax and social security contributions, provide important stimuli for the labor market and the economy.

## Contribution to the Austrian economy

**The Austrian economy benefits from orders placed with other companies as well as daily expenditure by our employees.**

€ 1.9 billion

We contribute a total of € 1.9 billion directly and indirectly to the gross domestic product (GDP) nationwide.

12 %

of the total Novartis GDP contribution in Austria is generated from research and development (innovation) activities.

## Jobs for the Austrian labor market

**We make an important contribution to the Austrian labor market – both directly and indirectly.**

5,000 employees

In addition to the approximately 5,000 jobs at our locations in Tyrol and Vienna, we generate approximately 9,000 additional jobs nationwide.

## Additional jobs

The employment of one Novartis associate secures almost two additional jobs.



# Austrian clinical research champion

In 2021, we conducted more clinical trials in Austria than any other company. We invested around € 2.4 million in research and development of clinical trials at Austrian study centers in 2021. This places us as the largest sponsor of clinical trials within the pharmaceutical industry. We provide important innovation impetus in Austria through collaborations.

# Facts & figures

## Environment and resources Kundl and Schafftenau

### Resource utilization and production volumes

In 2020, Sandoz GmbH produced 4,179 tons of active pharmaceutical ingredients and intermediates at the Kundl and Schafftenau facilities. As of the beginning of 2021, operation of the chemical synthesis facilities and the non-betalactam production facilities was finally discontinued. The closure of these resource-intensive production facilities is reflected in almost all relevant key figures for Kundl. Due to the Covid-19 pandemic, the production of finished forms in the penicillin segment was also temporarily disrupted. This fact also affected production and raw material volumes.

Nevertheless, the more significant production facilities for growth inhibitors, thyroids, various biologics and autoinjectors as modern dosage forms for biologics continued to operate as planned.

In addition, over 12,000 tons of fertilizers (Biosol® and Biosol Forte®) were produced. The following list provides an overview of the most important key figures showing the production output and the required utilization of resources.

MATERIAL AND ENERGY QUANTITIES	2015	2016	2017	2018	2019	2020	2021	2020>2021
Production of active ingredients and intermediates Kundl [tons]	5,754	5,687	5,993	5,048	4,992	4,498	4,179	-7.1 %
Production of active ingredients and intermediates Schafftenau [tons]	1,080	1,056	1,050	924	1,056	31	25	-19.4 %
Fertilizer production [tons]	19,246	18,691	17,180	14,344	13,582	13,803	12,266	-11.1 %
Raw material quantities [tons]	114,713	115,982	120,932	101,596	112,219	116,348	101,983	-12.3 %
Electricity consumption [GWh]	316	323	331	294	278	264	239	-9.2 %
Natural gas consumption [GWh]	330	326	353	319	317	309	284	-8.2 %
Diesel for company vehicles [GWh]	12	11	11	10	11	8	4	-55.2 %
Diesel für Firmenfahrzeuge [GWh]	2	2	3	3	2	1	1	0.0 %
Total calorific energy [GWh]	345	339	367	332	330	319	289	-9.3 %
Water utilization [m³]	36.9	37.0	38.1	34.0	34.5	33.2	27.6	-16.9 %

## Raw materials

The main raw materials used are caustic soda, sucrose, glucose syrup, hydrochloric acid, sulfuric acid, organic solvents, lactose permeate, corn steep liquor, and urea.

The following diagram shows the development of raw material consumption from 2015 to 2021 for Sandoz GmbH (annual mass flow of key materials used in compliance with Annex 4 of the EMAS III Regulation).

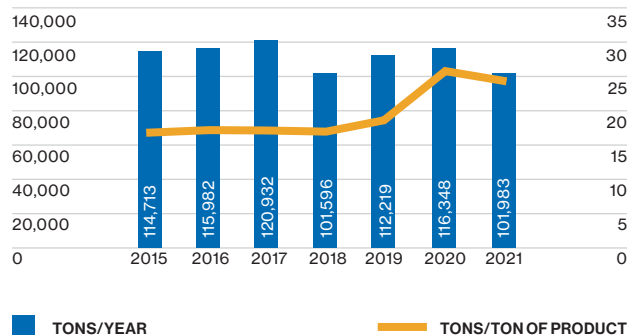
The significant decrease in raw material consumption from 2020 to 2021 - as shown in the diagram, and for the reasons already mentioned - will approach the initial level of 2020 as a result of the expected full capacity utilization in the finished dosage form production facility in Kundl at the end of 2021 and the final start of operation of the cell culture facility in Schafteuau in 2022. With the start-up of the new penicillin production facility in Kundl in 2023, a significant additional rise in raw material demand is expected.

The partly significant increase in relative quantities in 2020 is primarily due to the above-mentioned discontinuation of

the coating facility for veterinary antibiotics, which had led to a high product output with comparably low resource input in Schafteuau until 2019.

### RAW MATERIAL USE

Kundl and Schafteuau



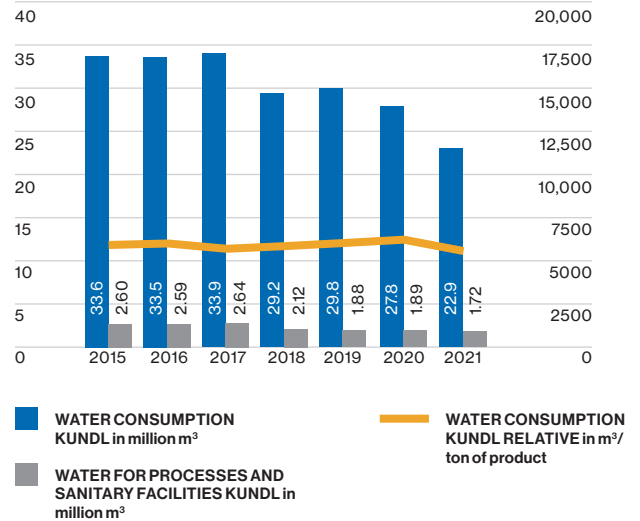
# Water

Water consumption in Kundl and Schafftenau decreased by a total of 17% in 2021 compared to 2020. This is mainly due to the distillation plants for solvents of the synthesis operations and associated refrigeration machines, which were only in operation for a few months in 2021. The water in Kundl originates from eight on-site wells, which are mainly fed from Inn River filtrate, as well as from the deep wells within the company premises. In Kundl, consumption-intensive manufacturing processes were discontinued in late 2017 and late 2019, which led to the significant decrease in water consumption as shown. Sandoz GmbH obtains its water for drinking and industrial purposes on the basis of water permits in compliance with the Austrian Water Act (Wasserrechtsgesetz, WRG).

Schafftenau obtains its drinking water and water for processes from the municipal water network and its process water from five company-owned deep wells; a sixth deep well is currently being planned. The growing demand in Schafftenau, as shown in the diagram, reflects the dynamic development of the site. In 2015, for example, the new Bio-Inject production plant was put into operation, and most recently there has been a significant increase in cell culture production in Schafftenau. In the meantime, two additional production buildings for cell culture production have been constructed in Schafftenau. One of these facilities was commissioned in 2021, and the second facility will become fully operational in 2022. The increase in relative water consumption results from the discontinuation of the very high volume coating plant for veterinary antibiotics in 2020.

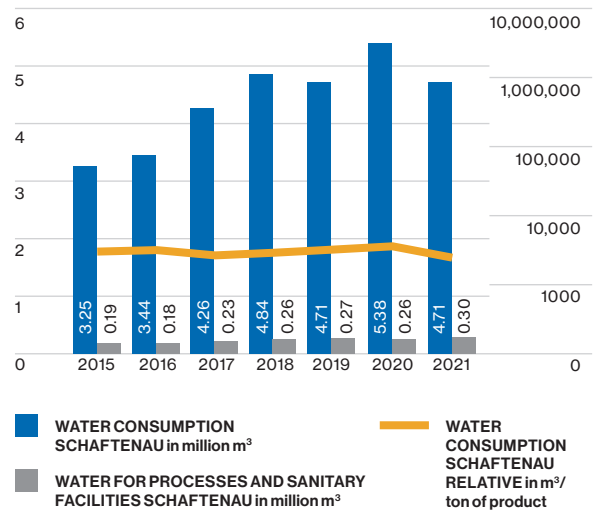
## WATER CONSUMPTION KUNDL

Absolute and relative



## WATER CONSUMPTION SCHAFTENAU

Absolute and relative



## Wastewater

The wastewater volumes and pollutant loads listed below refer to process wastewater generated in Kundl and Schafteuau and the associated pollutant loads into the Inn River after wastewater treatment. Cooling wastewater and precipitation wastewater are not included in the quantities below.

Until 2018, the wastewater volume specified only included wastewater from processes. In 2019, the in-house indicators used were slightly changed, so that since 2019 a basic distinction is made between wastewater to be treated and uncontaminated wastewater to be discharged directly into the environment. Thus, since 2019, the wastewater volume includes sanitary wastewater – but no longer retentate from desalination plants. Although these are process wastewaters, they are mainly discharged directly into the Inn River due to their good quality. This adjustment of the key figures is the main reason for the reduction in the wastewater volume reported in 2019 compared to the wastewater volume in 2018. The reduction in 2021 compared to the same period of the previous year results from the closure of production facilities in Kundl.

The main part of the wastewater shown below (85%) originates from BARA Kundl.

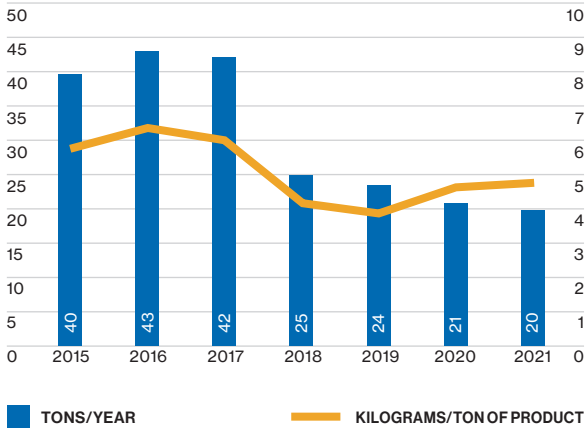
All official permits required for these facilities have been obtained for BARA. The effluent from the BARA is sampled and analyzed on a daily basis; all requirements, in particular the emission limits for the effluent and the specified tolerance range for the pH value (6.5-8.5), are met. BARA Kundl reported excellent performance in 2021; the removal efficiencies were as follows: 95.4% for chemical oxygen demand COD; 90.4% for total nitrogen and more than 99% for biological oxygen demand BOD5. The key figures prove that the organic load of the production wastewater in the Sandoz wastewater treatment plant is almost completely degraded. Since 2017, the effluent pollutant loads have been declining overall, partly due to the process-related lower load of the raw wastewater and partly due to the improvement of the treatment performance of BARA Kundl. The increased effluent load in 2019 and 2020 for the parameter nitrogen is mainly related to a slightly less favorable C/N ratio in the influent to the Kundl wastewater treatment plant. In order to optimize this unfavorable C/N ratio, the C-source project in 2021 provided an opportunity to control this ratio in a target-oriented manner according to the current conditions. As already mentioned, BARA will be converted to a 100% membrane process in 2022.

### EMISSIONS WASTEWATER

Discharge after wastewater treatment	2015	2016	2017	2018	2019	2020	2021	2020>2021
Process wastewater/wastewater to treatment [1000 m <sup>3</sup> /year]	2,720	2,684	2,790	2,293	2,151	2147	2017	-6.1 %
Biochemical oxygen demand BOD5 [tons/year]	40	43	42	25	24	21	20	-4.8 %
Chemical oxygen demand COD [tons/year]	1,289	1,343	1,294	777	709	658	625	-5.0 %
Undissolved solids [tons/year]	121	106	95	44	35	35	38	8.0 %
Total nitrogen [tons/year]	131	133	136	93	106	115	120	4.2 %
Total phosphorus [tons/year]	6.3	6.6	7.6	4.0	3.5	3.0	3.4	14.2 %

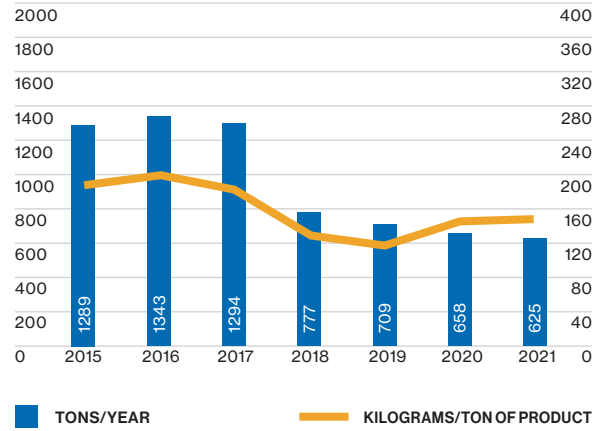
### BIOCHEMICAL OXYGEN DEMAND (BOD5)

Discharge after BARA Kundl



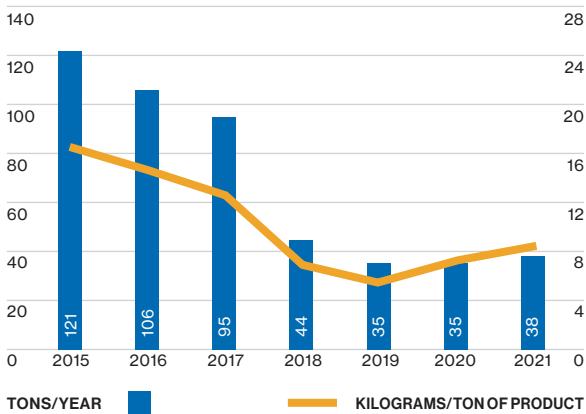
### CHEMICAL OXYGEN DEMAND (COD)

Discharge after BARA Kundl



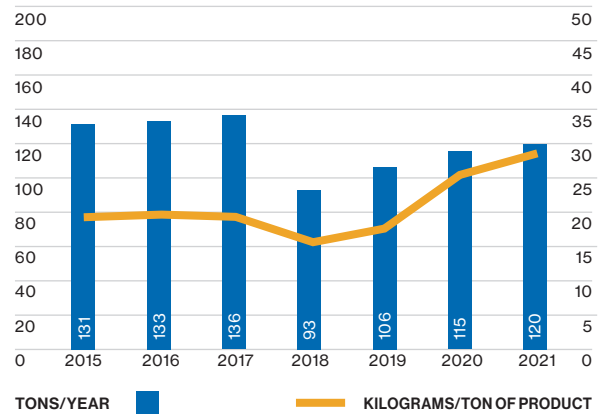
### UNDISSOLVED SOLIDS

Discharge after BARA Kundl



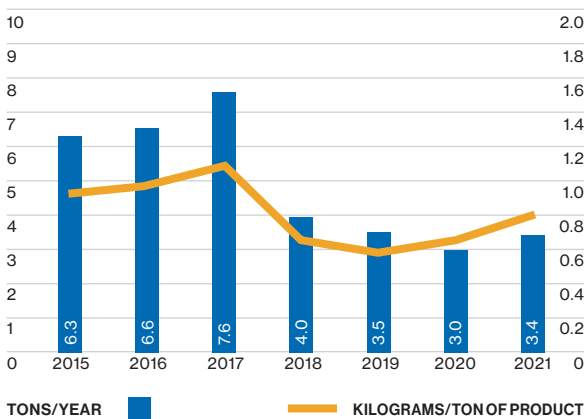
### TOTAL NITROGEN

Discharge after BARA Kundl



### TOTAL PHOSPHORUS

Discharge after BARA Kundl





## Emissions into the atmosphere (exhaust air)

The amount of total direct annual emissions of greenhouse gases (Global Warming Potential, GWP, indicated in CO<sub>2</sub> equivalents) into the atmosphere totaled 58,308 tons in 2021. Compared to 2020, this amount represents a decrease of approximately 10%. Most of this reduction resulted from the discontinuation of energy-intensive processes as of April 2021. During the same period, Schaftenuau saw an increase in gas consumption as a consequence of the continued dynamic development of the location and the production expansion in the biologics sector. However, a slightly higher gas demand in Kundl and Schaftenuau had to be accepted due to the significantly lower solvent load burned in the boiler houses.

The consistent implementation of energy efficiency projects is being continued.

Emissions of nitrogen oxides (NO<sub>x</sub>) were slightly reduced in 2021, from 40 tons (2020) to around 38 tons (2021). This is due to the decommissioning of the incineration plant for halogenated hydrocarbons.

Combustion gases are produced in the boiler houses during the generation of process steam for manufacturing and in the exhaust air incinerators to reduce solvent and odor emissions. Emissions of CO<sub>2</sub> and NO<sub>x</sub> are largely determined by the total amount of thermal energy required in Kundl and Schaftenuau for the volume of active ingredients and intermediates manufactured. For NO<sub>x</sub>, combustion conditions (e.g., oxygen content, temperature and residence time in the combustion chamber) and the co-combustion of nitrogenous solvents in the production exhaust air are also important factors.

For many years, Sandoz GmbH has relied on relatively low-emission natural gas to generate steam energy. Diesel is used – apart from the operation of vehicles – only for the test operation of the emergency power generators, and fuel oil is used only as a back-up in the event of a disruption to natural gas.

The heavy fuel oil tank in Kundl was cleaned and completely dismantled in 2021. In Schaftenuau, a new gas boiler was commissioned in 2021. This gas boiler may also be operated with EL heating oil in the event of a disruption in the natural gas supply. The heavy fuel oil tank in Schaftenuau was also cleaned and dismantled in 2021.

The boilers and the exhaust-air combustion systems are tested for nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and dust in the exhaust gas at intervals defined by the authorities. Sulfur dioxide (SO<sub>2</sub>) emissions do not occur to any significant extent neither in Kundl nor in Schaftenuau, as natural gas and not heating oil is used in normal operation. SO<sub>2</sub> emissions oc-

cur to a minimal extent during test operation of the emergency power generators. Dust emissions to the atmosphere are negligible due to the use of natural gas and highly efficient dust filters in the production facilities.

CO<sub>2</sub> emissions can be reduced primarily by implementing energy efficiency projects and improving energy efficiency in the boiler houses (e.g. with the aid of economizers).

We are also pleased to report that no significant emissions are caused by electricity consumption, as since 2014 electricity has been purchased which, according to the certificate of origin pursuant to the Electricity Labelling Ordinance, is generated 100% from renewable energy sources and was therefore produced almost CO<sub>2</sub>-neutrally.

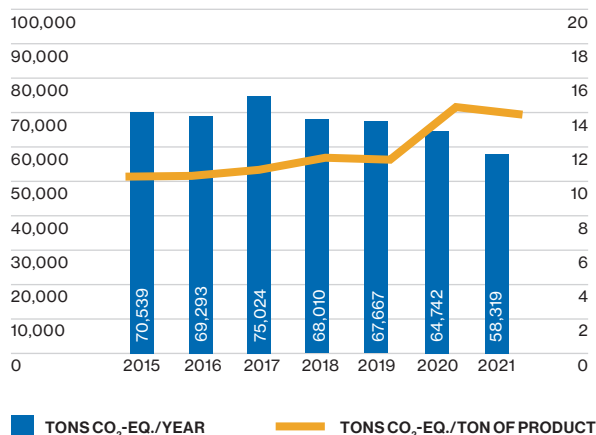
Total annual greenhouse gas emissions (tons of CO<sub>2</sub> equivalents) include emissions of CO<sub>2</sub> and other greenhouse gases in accordance with the Kyoto Protocol<sup>10)</sup>, in particular refrigerants and SF6 (CH4 and N2O not relevant for Sandoz GmbH).

Emission factors used: natural gas: 0.0554 t CO<sub>2</sub>/GJ; heating oil extra light/diesel: 0.0737 t CO<sub>2</sub>/GJ; VOC: stoichiometrically evaluated factor depending on the solvent burned.

Absolute GHG emissions have been decreasing since 2017. The main reason for the reduction in 2021 is the significantly reduced gas consumption in Kundl due to the closure of energy-intensive manufacturing areas.

### TOTAL GREENHOUSE GAS EMISSIONS (CO<sub>2</sub> EQUIVALENT)

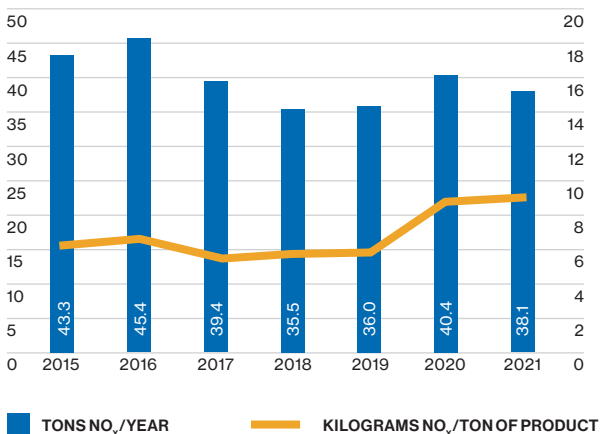
Kundl and Schaftenuau



10) <https://unfccc.int/resource/docs/convkp/kpger.pdf>

## TOTAL ANNUAL EMISSIONS OF NITROGEN OXIDES (NO<sub>x</sub>)

Kundl and Schafteuau



## Land consumption

The Kundl premises cover a total area of 268,061 m<sup>2</sup> and have decreased by 14,227 m<sup>2</sup> compared to 2020 due to land disposals. The Schafteuau location covers 213,333 m<sup>2</sup> and is approximately one-quarter smaller in area than the Kundl location. About 35,000 m<sup>2</sup> of this, amounting to only 16% of the total area, is covered with buildings.

The following table also shows the asphalted areas and the green areas left in their natural state. Due to local conditions, Schafteuau provides more open space overall for future development.

	TOTAL LAND CONSUMPTION [m <sup>2</sup> ]	BUILT-UP AREA [m <sup>2</sup> ]	ASPHALTERED AREA [m <sup>2</sup> ]	TOTAL LAND CONSUMPTION [m <sup>2</sup> ]	TOTAL SEALED AREA [m <sup>2</sup> ]	PERCENTAGE SEALED [%]
Kundl	268,061	73,679	93,261	166,940	101,121	62
Schafteuau	213,333	34,776	63,583	98,359	114,974	46
<b>Total</b>	<b>481,394</b>	<b>108,455</b>	<b>156,844</b>	<b>265,299</b>	<b>216,095</b>	<b>55</b>

# Waste

In the past, the volume of waste generated by Sandoz GmbH was largely determined by a few production processes with comparatively high specific waste volumes. The quantity of these processes has been significantly reduced in 2021, and the variability in annual waste volumes will no longer reach the level of recent years. To a large extent, only year-round manufacturing processes will be operating. The total volume of waste generated by Sandoz GmbH has more than halved year on year from 15,743 tons to 7,103 tons as a result of the transformation projects already repeatedly mentioned. A number of savings projects also contributed to the aforementioned reduction.

Compared to the year 2020, there was a very strong reduction in waste volume of almost 60% in Kundl. The waste-intensive processes (e.g. process with mycelial fungus waste) were largely discontinued at the Kundl location, as already mentioned. The amount of hazardous waste was reduced slightly less, by 55%. This is due to the fact that the residual quantities of solvents from the closed synthesis plants were still being disposed of. As a result, the share of hazardous waste in the total waste volume at Kundl will continue to decline slightly in 2022.

In Schaftenuau, the amount of hazardous waste increased moderately (+9.5%) due to dynamic development of the loca-

tion. Since the amount of non-hazardous waste was simultaneously reduced by about 15% due to various reduction programs, the total amount of waste generated in Schaftenuau in 2020 was somewhat lower.

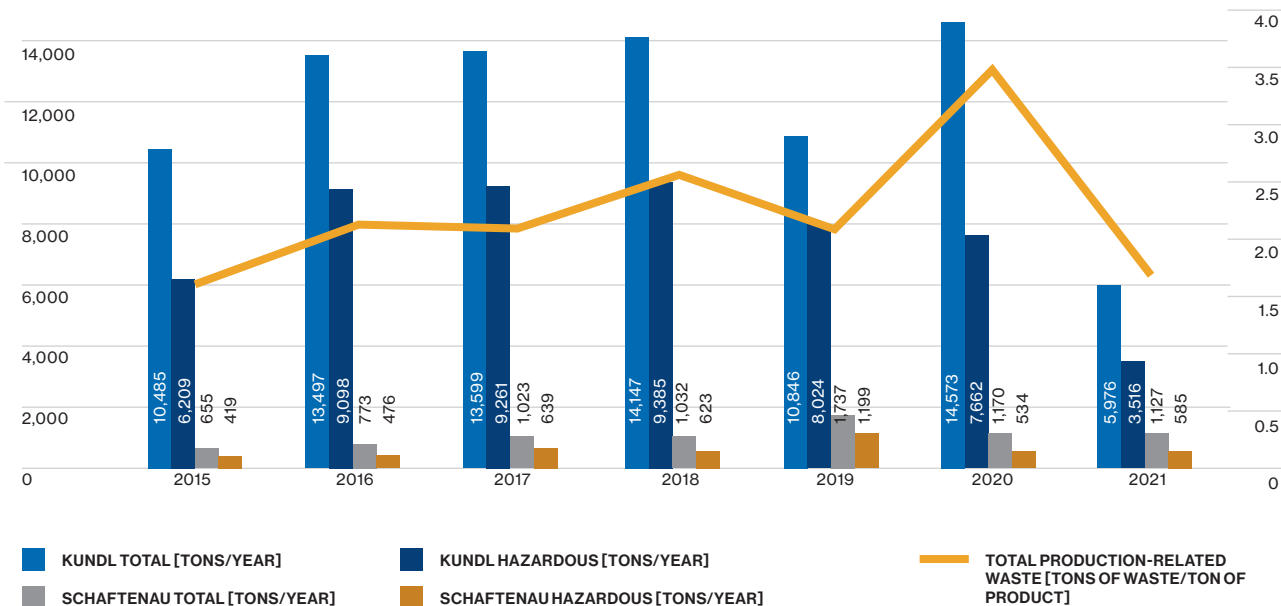
The tables on the following page provide an overview of the generation of the most important types of waste.

The volume of hazardous waste is dominated by solvent waste, pharmaceutical waste, ethanol and “other aqueous concentrates”. Ethanol is the major waste fraction processed in an external redistillation process.

Non-hazardous waste is mainly composed of household-type commercial waste and packaging waste (wood, plastics).

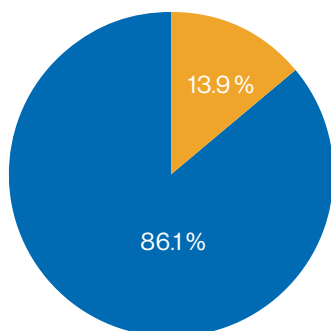
Since 2019, efforts in waste reduction have focused primarily on plastic waste as part of the Novartis “Single Use Plastic Initiative”. The aim of the aforementioned initiative was to eliminate single-use plastic unrelated to manufacturing on Campus by the end of 2021. In 2021, the packaging of food service products sold on Campus was switched to plastic-free alternatives.

**TOTAL WASTE VOLUME KUNDL AND SCHAFTENAU**



### DISPOSAL OF HAZARDOUS WASTE

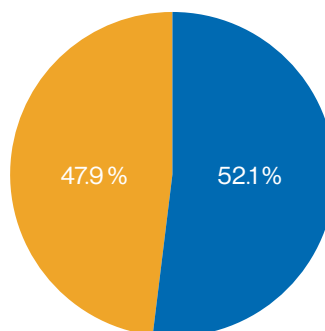
Kundl and Schaftenau 2021  
Total: 4,101 tons



■ COMBUSTION  
■ RECYCLING

### ENTSORGUNG UNGEFÄHRLICHER ABFÄLLE

Kundl and Schaftenau 2021  
Total: 3,002 tons



■ COMBUSTION  
■ RECYCLING

### MOST IMPORTANT HAZARDOUS WASTE FRACTIONS

Kundl and Schaftenau 2021

Key no.	Waste type	Tons
55,374	Solvent-water mixtures halogen-free	1,551
53,510	Pharmaceuticals, hazardous to water	964
55351	Ethanol	474
55370	Solvent mixtures, halogen-free	250
58201	Filter cloths, filter bags	197
53502	Production waste from the pharmaceutical manufacturing process	165
55220	Solvent mixtures, containing halogens	104
Miscellaneous	Other hazardous waste	397

### MOST IMPORTANT NON-HAZARDOUS WASTE FRACTIONS

Kundl and Schaftenau 2021

Key No.	Waste type	Tons
91,206	Construction site waste	1,113
18718	Waste paper	712
57,129	Other hardened plastic waste	277
17,201	Wood waste	237
91,201	Packaging material and cardboard	148
57,118	Plastic packaging	126
35,103	Iron and steel waste	102
Miscellaneous	Other non-hazardous waste	287

# Energy

## Energy consumption

The table on the next page summarizes all major energy sources for the Kundl and Schafftenau locations as of 2025. Heavy heating oil has no longer been used as of 2020. Since the amount of energy consumed for this purpose was negligible in relation to the other energy sources anyway, heating oil heavy is no longer listed in the sustainability report.

Total energy consumption in Kundl has been significantly reduced in recent years through a large number of energy efficiency projects. In addition, the elimination of particularly energy-intensive processes in the course of the Kundl transformation has led to a significant decrease in total energy demand.

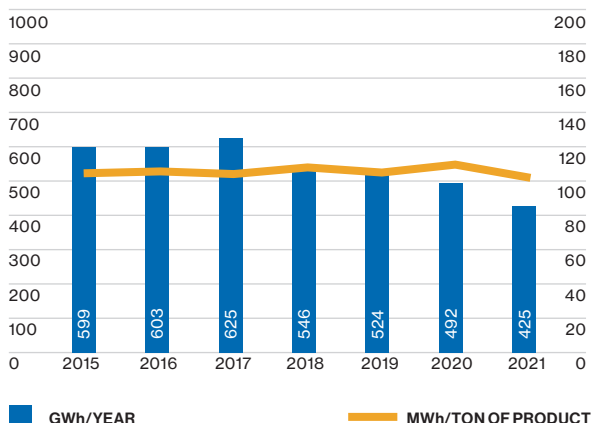
In Schafftenau, the dynamic development of the location – for example, two large cell culture facilities went into operation in recent years – is also reflected in a significant increase in total energy consumption.

Energy-saving measures have always been at the heart of

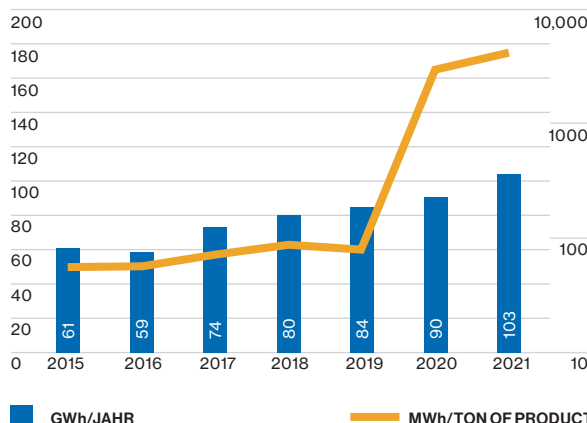
the annual targets. However, low energy prices resulted in very unfavorable economic conditions. Since mid-2021, energy prices have been rising at an above-average rate. For this reason, energy-saving measures that were put on hold in the past due to poor economic factors are being restarted. A strong trend in investments towards energy efficiency measures was thus observed as early as mid-2021. The Group's targets are also significantly more ambitious. It should be emphasized that energy efficiency projects amounting to about one percent of Sandoz GmbH's total energy requirements are being implemented every year in Kundl and in Schafftenau, otherwise energy consumption would develop much less favorably (please refer to the diagram on page 49 below).

The following diagrams show the development of total direct energy consumption in Kundl and Schafftenau since 2015.

**TOTAL ENERGY CONSUMPTION SANDOZ KUNDL**



**TOTAL ENERGY CONSUMPTION SANDOZ SCHAFTENAU**



# Energy

Natural gas	[GWh/year]						[%]		[GWh/t Product]
	2015	2016	2017	2018	2019	2020	2021	2020>2021	Relative 2021
Kundl	295	294	311	274	268	256	221	-13.8 %	53
Schaftenau	35	31	42	45	49	53	63	19.6 %	2535
<b>Total</b>	<b>330</b>	<b>326</b>	<b>353</b>	<b>319</b>	<b>317</b>	<b>309</b>	<b>284</b>	<b>-8.1 %</b>	<b>68</b>

## Heating oil for Schaftenau boilers & diesel for emergency generators

Kundl	0.07	0.06	0.06	0.06	0.12	0.09	0.09	-0.6 %	-
Schaftenau	0.04	0.06	0.08	0.42	0.62	0.30	0.05	-83.3 %	-
<b>Total</b>	<b>0.11</b>	<b>0.12</b>	<b>0.15</b>	<b>0.47</b>	<b>0.73</b>	<b>0.39</b>	<b>0.14</b>	<b>-64.2 %</b>	<b>-</b>

## Energy release from combustion of exhaust air containing VOCs

Kundl	11.89	10.70	10.44	8.97	10.45	7.72	3.49	-54.8 %	-
Schaftenau	0.19	0.12	0.24	0.06	0.01	0.01	0.01	-5.3 %	-
<b>Total</b>	<b>12.08</b>	<b>10.82</b>	<b>10.68</b>	<b>9.02</b>	<b>10.46</b>	<b>7.73</b>	<b>3.49</b>	<b>-54.8 %</b>	<b>-</b>

## Diesel (for company cars)

Diesel energy consumption	2.17	2.07	2.85	2.52	1.52	1.13	1.11	-1.6 %	-
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## Electric energy

Kundl	290	296	300	260	244	227	200	-12.0 %	48
Schaftenau	26	27	32	34	35	37	40	9.0 %	1595
<b>Total</b>	<b>316</b>	<b>323</b>	<b>331</b>	<b>294</b>	<b>278</b>	<b>264</b>	<b>240</b>	<b>-9.1 %</b>	<b>57</b>

## Total direct energy consumption

Kundl	599	603	625	546	524	492	425	-13.6 %	102
Schaftenau	61	59	74	80	84	90	103	14.9 %	4132
<b>Total</b>	<b>661</b>	<b>662</b>	<b>698</b>	<b>626</b>	<b>608</b>	<b>582</b>	<b>529</b>	<b>-9.2 %</b>	<b>126</b>

Percentage of electricity from renewable energy sources according to TIWAG [%]	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %		
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Percentage of total consumption from renewable energy sources [%]	48 %	49 %	47 %	47 %	46 %	45 %	45 %		
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### Electricity – supply mix

Electricity consumption in Kundl has been falling significantly for years as a result of multiple energy-saving initiatives. In Schaftenau, electricity consumption has increased significantly in recent years due to the steady expansion of the site; however, a large number of energy-saving measures are also being implemented at our Schaftenau plant.

For several years, the electricity used in Kundl and Schaftenau has come exclusively from renewable energy sources, as reported by the electricity supplier. In 2021, nearly 85% of the electricity was generated from hydropower, with the remainder coming primarily from wind energy and biomass.

In 2021, the percentage of total energy consumption from renewable energy sources (electricity + natural gas + other energy sources) amounted to approximately 45% again.

### SUPPLY MIX DISTRIBUTION 2021

according to Electricity Labelling Act (Stromkennzeichnungsverordnung)

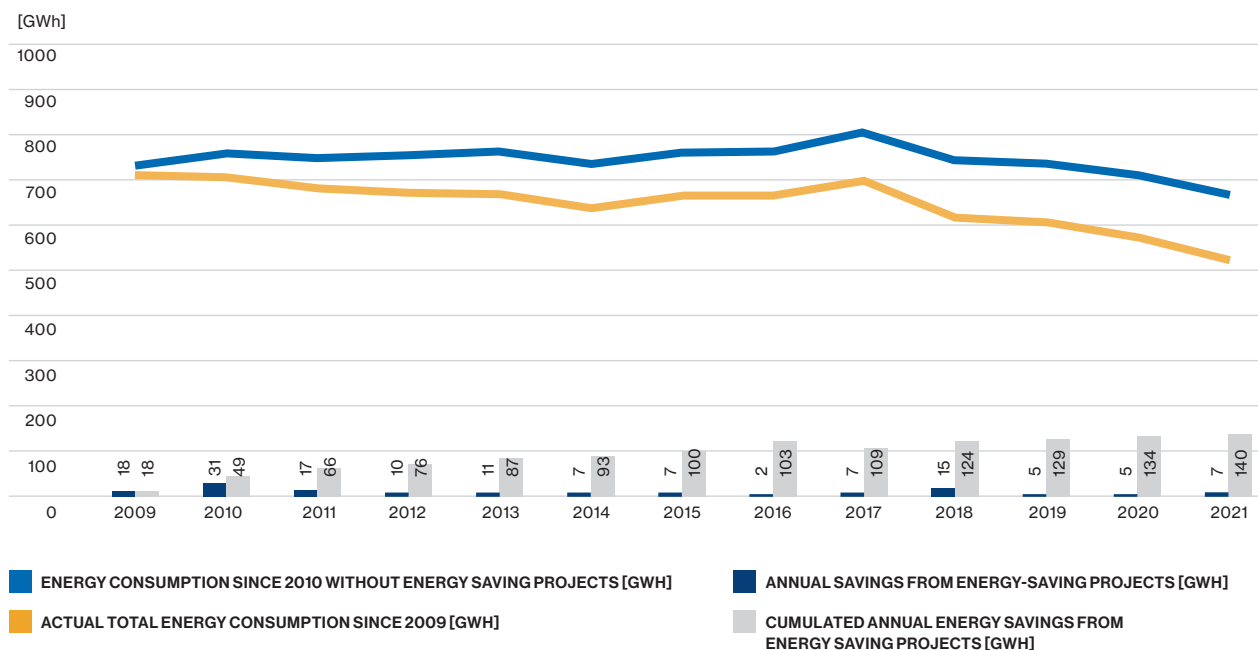
Energy sources	2021
Hydropower	84.90 %
Wind energy	10.37 %
Solid or liquid biomass	2.02 %
Photovoltaics	1.64 %
Biogas	1.05 %
Other eco-energy	0.02 %
<b>Total electricity from renewable energy sources</b>	<b>100 %</b>

### Effectiveness of energy-saving measures

The following figure shows how energy optimization measures have affected the total energy consumption of Sandoz GmbH since 2009. The cumulative energy savings will change significantly in 2022 as a result of planned projects.

### TOTAL ENERGY CONSUMPTION AS OF 2009: KUNDL AND SCHAFTENAU

with and without energy saving projects



## Occupational safety

At Novartis, key data on work-related accidents and illnesses are recorded in the Health Safety Environment Data Management System (HSE-DMS) in the same way as environmentally relevant data. Occupational safety data are recorded for associates of Sandoz GmbH as well as for leased associates and employees of external companies working at the site. Since 2014, the most important key figures have been evaluated as a whole, i.e., including leased employees, as shown in the table below.

As the table and the diagrams for Kundl and Schafteuau illustrate, there was a significant increase in the total number of work-related injuries and thus also in the injury rates (TRCR, LTIR) in 2020. As a result of successive cause research, the taking of specific measures and the simultaneous strengthening of our employees' safety awareness, the injury rates in 2021 were reduced to a level similar to the years before. The increased rate in lost days is due to an occupational accident with a long recovery time. However, it is essential to note that, as has been the case for many years, there were no occupational accidents resulting in fatalities at Sandoz GmbH in 2021.

A look at the 2020 accident statistics for the chemical industry in Austria shows that Sandoz GmbH is at a gratifyingly low level in terms of accident figures. For example, the AUVA statistics for the "manufacture of pharmaceutical products" industry indicate an accident rate of 10.4 per 1,000 employees for 2020.

Explanation of why accident figures increased sharply from 2017 to 2018:

By eliminating the key figures in the area of occupational safety, it was possible to include minor accidents in the statistics; this explains the jump in 2018.

In 2021, Sandoz GmbH recorded an accident rate of only some 3.6 accidents involving lost working hours per 1,000 employees (Full Time Equivalents - FTE) among its own employees and leasing staff. Nevertheless, every single accident at work has to be prevented, and we consider this a mandate to further intensify our efforts in the area of occupational safety.

### OCCUPATIONAL SAFETY INDICATORS FOR ASSOCIATES OF SANDOZ GMBH

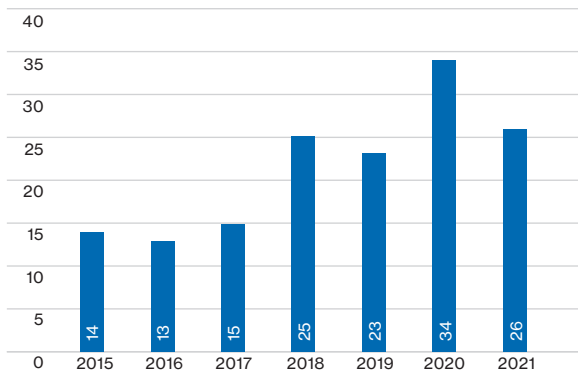
(incl. leasing personnel)

	2015	2016	2017	2018	2019	2020	2021
Total number of work-related injuries [No.]	14	13	15	25	23	34	26
Lost work days due to injury [d]	49	49	31	62	128	99	197
Work-related accidents resulting in death [No.]	0	0	0	0	0	0	0
Hours worked [h]	7,192,849	7,132,937	7,362,940	7,489,758	7,284,889	7,450,509	7,328,469
<b>Injury rate – total recordable case rate (TRCR)</b>	0.39	0.36	0.41	0.67	0.63	0.91	0.71
<b>Lost time injury and illness rate (LTIR)</b>	0.25	0.11	0.24	0.40	0.44	0.59	0.41



## NUMBER OF WORK-RELATED INJURIES FOR SANDOZ GMBH ASSOCIATES

As of 2014, incl. leasing staff



## The most important internal indicators LTIR and TRCR

### Lost time injury and illness rate (LTIR)

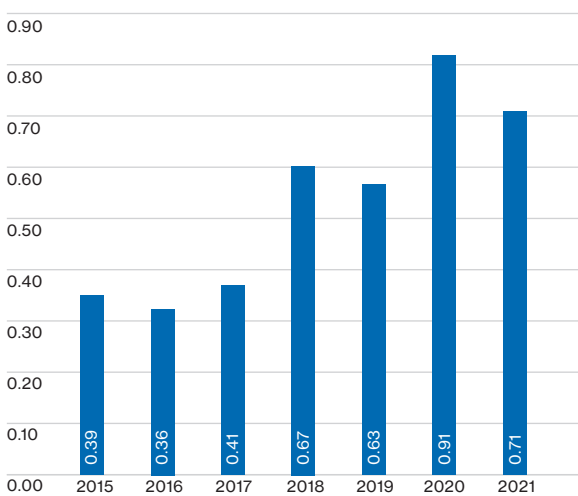
This indicator reflects the number of work-related accidents and illnesses resulting in lost working time in relation to total number of hours worked. The reference figure at Sandoz GmbH is 200,000 working hours. The LTIR value in 2019 was 0.44, which was slightly higher than in recent years. Even though the LTIR value is relatively low (see above), its increase clearly shows that we must once again intensify our focus on the topic of occupational safety.

### Total recordable case rate (TRCR)

The injury rate (TRCR), calculated in analogy to the LTIR value with a reference value of 200,000 working hours, including accidents without loss of working time, was slightly lower in 2019 (0.63) than in 2018 (0.67), but still higher than in previous years. As such, this trend also entails a responsibility on our part.

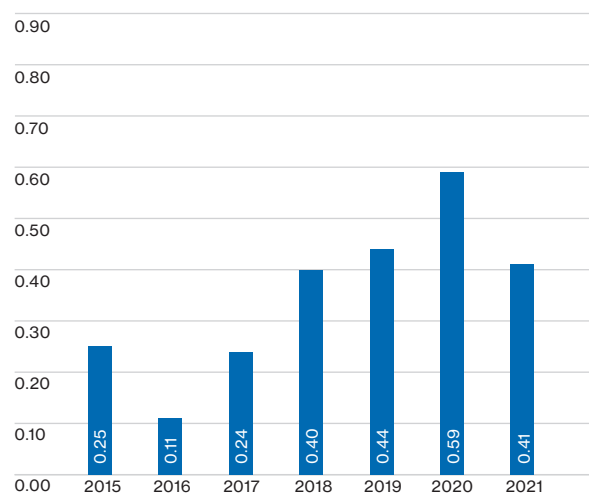
## INJURY RATE FOR SANDOZ GMBH ASSOCIATES

Total recordable case rate (TRCR)



## RATE OF WORK-RELATED INJURIES AND ILLNESS WITH LOST TIME INCIDENTS

Lost time injury and illness rate (LTIR)



# HSE key indicators Vienna location

Since September 2020, the company headquarters in Vienna have been situated in a new office that takes up only 50 percent of the previous space. This significantly reduces the ecological footprint. In the operation of the office, emphasis is placed on avoiding waste and plastic, e.g. by not using PET bottles and disposable cups or disposable ballpoint pens. Coffee and fruit are provided free of charge to employees and come from regional sources or Fairtrade. All electricity

is sourced exclusively from hydropower, and the building is heated by district heating.

All wastewater is discharged into a public sewer, and the only emissions result from the vehicles of company car users. A new fleet policy went into effect in mid-2021, requiring only zero-emission new vehicles to be purchased. As a result, the company fleet is to become CO<sub>2</sub>-neutral by 2025.

## ENVIRONMENTAL AND OCCUPATIONAL SAFETY INDICATORS

INDICATOR	2019	2020	2021
Water consumption [m <sup>3</sup> ]	2,600 m <sup>3</sup>	4,908 m <sup>3</sup>	3396 m <sup>3</sup>
Wastewater discharge canal [m <sup>3</sup> ]	2,600 m <sup>3</sup>	4,908 m <sup>3</sup>	3396 m <sup>3</sup>
Gas consumption [GJ]	0	0	0
Electricity consumption [GJ]	1,440 GJ	3,264 GJ	732 GJ
of which electricity from renewable energy [GJ]	1,440 GJ	3,264 GJ	717 GJ
Greenhouse gas emissions [t CO <sub>2</sub> equivalents]	1,280 tCO <sub>2</sub> e	728 tCO <sub>2</sub> e	1,110 tCO <sub>2</sub> e
of which CO <sub>2</sub> emissions from vehicle fleet [t CO <sub>2</sub> equivalents]	1,280 tCO <sub>2</sub> e	728 tCO <sub>2</sub> e	1,110 tCO <sub>2</sub> e
Hazardous waste <sup>11)</sup>	no data	no data	0
Non-hazardous waste <sup>11)</sup>	no data	no data	28
TRCR Novartis associates & leasing staff	0	0	0
LTIR Employees & leasing staff	0	0	0
Novartis associates (FTE)	478 No.	423 No.	402 No.
Hours worked	722,340 h	790,570 h	807,900 h
Occupational accidents with fatalities [No.]	0	0	0
Number of accidents at work without loss of working hours [No.]	0	0	0
Number of occupational accidents with loss of working hours [No.]	0	0	0
Number of work-related illnesses without lost working hours [No.]	0	0	0
Number of work-related illnesses with loss of working hours [No.]	0	0	0

11) Waste collection by Vienna municipal waste collection service

# Declaration of the environmental auditor on the auditing and validation activities

The undersigned, Dipl.-Ing. Peter Kroiss, Head of the EMAS environmental verification organization TÜV AUSTRIA CERT GMBH, 1230 Vienna, Deutschstrasse 10, with EMAS environmental verifier registration number A-V-0008, accredited for

**Scope “21 Manufacturing of pharmaceutical products”** declares to have verified whether the whole organization as indicated in the updated Environmental Statement of

**Sandoz GmbH, 6250 Kundl, Biochemiestrasse 10, and Sandoz GmbH, 6336 Schaftebau, Biochemiestrasse 10**

with registration number AT-000123 meets all requirements of Regulation (EG) No 1221/2009 of the European Parliament and of the Council of November 25, 2009, in the December 19th, 2018 version (EU-2018/2026) on the voluntary participation by organizations in a Community eco-management and audit scheme (EMAS).

By signing this declaration, I hereby declare that:

- the verification and validation has been conducted in full compliance with the requirements of Regulation (EG) No 1221/2009,
- the outcome of the audit and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,
- the data and information of the updated Environmental Statement of Sandoz GmbH reflect a reliable, credible and correct image of all the organization's activities within the scope mentioned in the Environmental Statement.

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a competent body under Regulation (EG) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

This Sustainability Report goes beyond the requirements of the EMAS Regulation. In particular, it contains information on occupational safety and social responsibility, and additionally, since 2021, information on the sales office in Vienna, which is not included in the certification. Sandoz GmbH is also certified by TÜV Austria in compliance with ISO 45001. The lead auditor for EMAS is a safety expert and lead auditor for safety and health management systems himself. The statements in the Sustainability Report on occupational safety and social responsibility were therefore audited as part of the certification in compliance with ISO 45001.

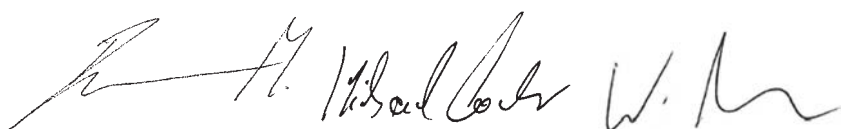
Vienna, 21. 07. 2022



Dipl. Mr. Peter Kroiß, Head Auditor (engineer)

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The next update of this report will be published in summer 2023.



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