AlzChem

UPDATED

ENVIRONMENTAL STATEMENT 2021

for the Trostberg, Schalchen, Hart and Waldkraiburg sites

INHALT

FOREWORD

Dear Reader,

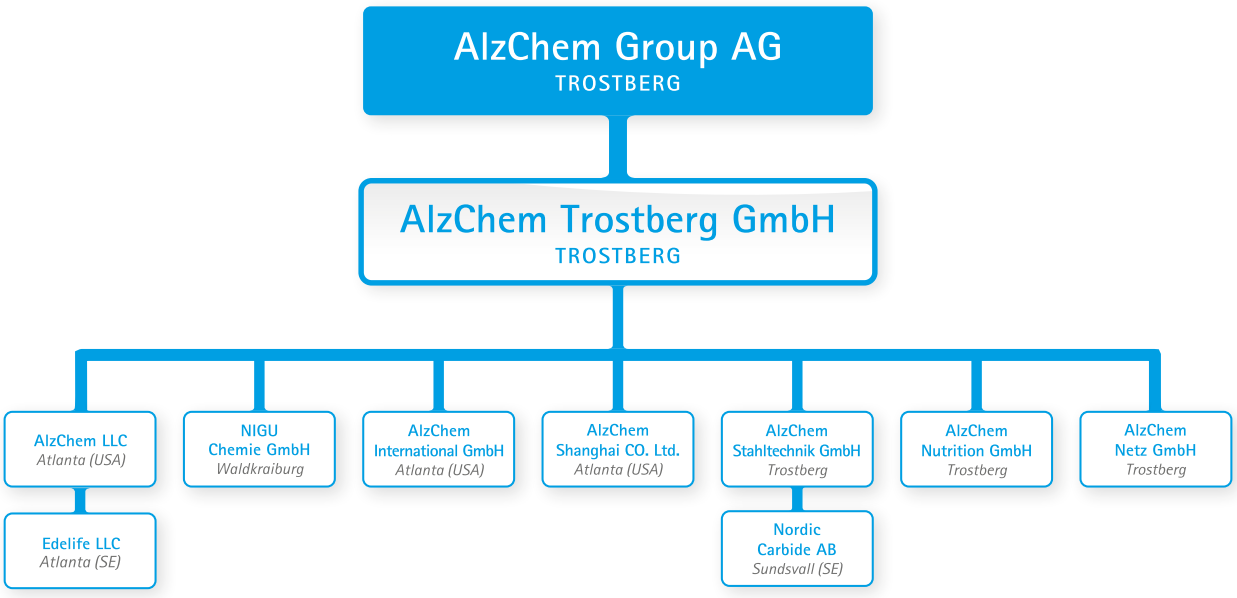
AlzChem is a global specialty chemicals company that is predominantly among the market leaders in its fields of activity. AlzChem benefits in particular from the three very different global megatrends of sustainability, population growth and healthy aging. AlzChem products offer attractive solutions in a wide range of applications.

The company sees interesting growth prospects for itself above all in the fields of human and animal nutrition, pharmaceuticals, agriculture, fine chemicals, metallurgy and renewable energies. The broad product range includes, for example, nutritional supplements, plant growth regulators and precursors for corona tests.

The company employs around 1,630 people at four production sites in Germany and Sweden and at two sales companies in the USA and China. In 2020, AlzChem generated consolidated sales of around EUR 379 million and EBITDA of around EUR 53.8 million.

One focus of AlzChem is NCN chemistry, which stands for products with typical nitrogen-carbon nitrogen bonding. A whole series of these products was developed in Trostberg.

THE ALZCHEM GROUP:



OUR VISION

With innovative, sustainable chemistry based on our integrated production network, we supply customer-oriented applications to selected markets.
Environmental protection and especially our CO_2 footprint are a permanent topic for AlzChem - not just since today, because we have been active here for many years and very emphatically. Our medium-term goal is to make our company CO_2-neutral. Many fields for more sustainability and environmental protection have already been identified and installed.

For us, sustainability is part of our corporate strategy. It serves us as a guidepost for a successful future. Our manufacturing processes are environmentally friendly and we focus on sustainable production. When it comes to safety, we pursue a zero-tolerance philosophy.
With our products, we want to participate in sustainable future development. We have defined population growth, healthy aging and energy efficiency as sustainable growth drivers to which we want to contribute through our products.

We have been EMAS-registered since 1997 and produce an annual environmental statement.

In the updated 2021 Environmental Statement now available, AlzChem will publish its key figures for the Trostberg, Schalchen, Hart and Waldkraiburg sites and present the current „Integrated Management Program".

Your Executive Board of AlzChem Group AG

Andreas Niedermaier, CFO Klaus Englmaier, COO Dr. Georg Weichselbaumer, CSO

v. l. n. r.:
Dr. Georg Weichselbaumer (CSO)
Andreas Niedermaier (CEO)
Klaus Englmaier (COO)

SUSTAINABILITY AT ALZCHEM

ENVIRONMENTAL PROTECTION

Our main goals in environmental protection are the reduction of energy consumption, the reduction and avoidance of waste, the protection of water as well as immission and noise protection. Our current environmental program with clearly defined targets and measures can be found in the annual Environmental Statement, which is also available on our website at www.alzchem.com in the „Quality & Environment" section. Concrete CO targets we will develop in 2020 as part of a project.

EMPLOYEE MATTERS

Our employees are the key to our sustainable success. That's why we are particularly keen to offer them a stable and interesting environment: through flexible working hours, attractive compensation, job security, health management with the „gesund punkten..." campaign, ideas management and a company pension scheme.

SOCIAL BENEFITS

As a company with regional roots, we assume responsibility, especially in the immediate vicinity of our sites. We sponsor children's and youth projects, support school projects and are a member of the non-profit association for the promotion of education and entrepreneurship in Germany, the Wissensfabrik. In this way, we make our contribution to social coexistence.

COMPLIANCE

The integrity of all our actions is an essential prerequisite for sustainable business success. It is therefore our declared goal to ensure that our business activities comply with all social guidelines and core values. In addition to environmental regulations, these include in particular compliance with human rights and the fight against corruption and bribery.

SECURITY

We want to be not only economically successful, but also a good partner, employer, trainer and neighbor. Based on this self-image, we also assume responsibility for the safety and protection of our environment. Plant and occupational safety, information security, IT compliance and legal conformity are elementary components of our responsible corporate actions.

DELIVERY CHAIN

Corporate social responsibility is also a high priority in our supply chain. For this reason, we have undergone an independent CSR rating by the global assessment platform EcoVadis. In addition, in the area of purchasing/supplier approval, we ensure that company-wide standards are met in the procurement of our raw materials.

THE ALZCHEM SITES

TROSTBERG SITE

AlzChem Trostberg GmbH is the operator of the Trostberg Chemical Park and professionally and competently provides the necessary infrastructure also for the companies BASF Construction Additives GmbH, BASF Construction Solutions GmbH, Master Builders Solution Deutschland GmbH, Firmenich Trostberg GmbH as well as ARAMARK (company restaurant), VIACTIV (health insurance) and Degussa Bank.

The Trostberg Chemical Park is located in the south of the town of Trostberg in the immediate vicinity of the River Alz and the Alz Canal. To the north, the chemical park borders a residential area and a school center. To the south and east are wooded areas, among others.

The chemical park is located on the Traunstein - Garching an der Alz rail line and has a connection to the public rail network.

ENVIRONMENTALLY RELEVANT FACILITIES AND ACTIVITIES

In 15 production facilities, AlzChem manufactures chemical products for a wide range of applications such as agriculture (fertilizers and crop protection products), the pharmaceutical industry, food supplements, metallurgy and automotive.

In addition to the production facilities, AlzChem maintains important infrastructure facilities in Trostberg , such as the air separation plant for the extraction of nitrogen and oxygen, the utility plant with boiler plant and drinking and service water wells, the plant railroad, the central wastewater treatment plant (ZABA), the retention basin and the waste incineration plant.

Various raw material and product warehouses, as well as a logistics center, enable efficient and environmentally friendly raw material supply and product removal. Various workshops ensure the maintenance of the plants and the factory premises.

AlzChem Trostberg GmbH is also a public network operator. Among other things, it operates the three 110kV high-voltage lines from Töging to Hart, from Neuötting to Hart and from Hart to Trostberg.

The chemical park is also home to the administrative departments and the Innovation Management department with analytical and research laboratories and pilot plants. AlzChem also operates the Benetsham landfill site, which is located about 4 km southeast of the chemical park and where production-specific waste can be deposited.

KEY FIGURES ON ENVIRONMENTAL PERFORMANCE

The change in the environmental indicators is mainly due to shifts in the production mix.

Location key figures Trostberg		**2018**	**2019 *)**	**2020**
Production output	1000 t	276	272	258
Environmental indicators				
Raw material input	t/t product	0.94	0.82	0.88
Fuel consumption	MWh/t product	0.39	0.38	0.45
Power consumption	MWh/t product	0.32	0.33	0.35
thereof renewable energies		0.005	0.005	- ***)
Water consumption **)	m³/t product	53.4	53.3	61.7
Waste generation (product-specific)	kg/t product	83.3	69.7	83.5
thereof dangerous	kg/t product	81.0	68.1	80.6
Ammonia emissions	kg/t product	0.027	0.032	0.037
Dust emissions	kg/t product	0.002	0.002	0.003
CO_2-emissions	t/t product	0.12	0.13	0.14
NO_x-emissions	kg/t product	0.08	0.10	0.11

*) Site key figures 2019 had to be adjusted due to an incorrect reference in their calculation and have changed slightly as a result.

**) Water consumption now refers to the quantities used by AlzChem (excl. other companies located at the site).

***) Value for 2020 not yet available, as according to the Energy Industry Act, electricity labeling does not have to be carried out until November 1 for the previous calendar year.

PRODUCTS

Reporting year (product in t)	2018	2019	2020
Main products	187,148	175,279	174,860
other by-products	88,738	96,726	83,204

In 2020, the volume of main products produced is at the same level as in the previous year. By contrast, the volume of by-products produced decreased significantly due to the lower volumes of black lime and special lime.

RAW MATERIALS, CONSUMABLES AND SUPPLIES

Reporting year (material in t)	2018	2019	2020
Raw materials	259,198	221,714	226,373

AlzChem Trostberg GmbH used a good 226,000 t of raw materials for production purposes at the Trostberg site in 2020. Around 80% of these raw materials are supplied by the neighboring AlzChem sites in Hart and Schalchen.
In terms of quantity, carbide and carbide furnace gas from the Hart plant as well as nitrogen represent the most important raw materials.

ENERGY

The Trostberg site required a good 200 GWh (gigawatt hours) of energy in 2020.
The most important energy sources are carbide furnace gas (approx. 63.000 MWh = megawatt-hours) purchased from the neighboring Hart site, which is used in Trostberg as a raw material and for power generation, as well as natural gas and electrical energy.

ENERGY CONSUMPTION

Reporting year (energy in MWh)	2018	2019	2020
Electrical energy	89,508	89,754	90,645
thereof renewable energies	1,253	1,436	- *)
Carbide furnace gas	62,646	67,277	63,139
Natural gas	38,293	33,276	46,815
Heating oil	5,981	3,102	5,054
Fuels	890	764	764
Heat recovery	16,841	17,072	17,387

*) Value for 2020 is not yet available, as according to the Energy Industry Act, electricity labeling does not have to take place until November 1 for the previous calendar year.

At 90 GWh, electricity demand in 2020 was within the annual fluctuation range and depends on the production volume or the amounts of energy required for various production processes.
A good 10 GWh of this was used to generate 37.579 million m³ of compressed air (instrument and operating air) in 2020.
The site covers approx. 40% of its fuel requirements with natural gas, approx. 4 % with heating oil and 55 % with carbide furnace gas, which is generated as a by-product during carbide production at the Hart site and is also used for production purposes. Fuels account for less than approx. 1 % of the energy requirement.
Chemical processes, such as the production of calcium cyanamide, generate a considerable amount of reaction heat. The reaction heat is used to heat buildings (including the logistics center) and to heat water. It accounts for a good 8.4 % of total energy consumption.

WATER/WASTEWATER

WATER

Reporting year (water in m^3)	2018	2019	2020
Industrial water (AlzChem)	14,656,131	14,386,109	15,836,517
Drinking water (AlzChem)	87,381	119,660	82,255

The water input quantities stated have been significantly reduced compared to the previous environmental statements, since for the first time only the quantities consumed internally at AlzChem were taken into account.
AlzChem Trostberg GmbH produces all the industrial and drinking water it requires in Trostberg from its own groundwater wells. Drinking water is supplied from two drinking water wells east of the Trostberg site. A corresponding drinking water protection area has been designated.
To achieve a redundant supply possibility, there is a connection to the municipal drinking water network in Trostberg, so that a water supply in both directions can be realized at short notice if required.
The service water supply serves to supply the plants with cooling water and to provide water as a feedstock of various kinds (used, among other things, for steam generation, waste gas purification or as process water for reactions, washing processes, etc.). The industrial water produced is fed from the eight wells into a ring main from which the consumers draw the necessary quantities. Technical measures ensure that water is not pumped unnecessarily (and then discharged unused).

WASTEWATER

Reportin year (wastewater in m^3)	2018	2019	2020
Not requiring treatment (cooling water) only AlzChem	14,656,131	14,386,109	15,836,517
Precipitation water	154,488	201,248	203,714
Operational wastewater	54,368	44,709	47,358
Sanitary wastewater (via municipal wastewater treatment plant) only AlzChem	86,550	118,107	66,657

The water output quantities stated have been significantly reduced compared to the previous environmental statements, since for the first time only the quantities consumed internally at AlzChem were taken into account.
Sanitary wastewater is fed to the Trostberg municipal wastewater treatment plant for treatment. Its composition largely corresponds to the usual wastewater from private households, which is why it is not discussed further here. Of the approx. 15.8 million m^3 of process water used in the 2020 operating year from the company's own service well network, approx. 99% is used as pure flow-through cooling water and thus discharged unchanged into the Alz except for a temperature increase. In addition, 203,714 m^3 of precipitation water from roofs and sealed surfaces was discharged into the Alz in 2020.
The cooling water and rainwater are discharged in total via a separate sewer system, which is subject to online monitoring at prominent points so that the cause can be traced and remedied in the event of irregularities. In addition, the entire water flow is routed via a retention basin into the Alz, where the wastewater is also constantly monitored by online measurements and automatically retained if contamination is detected (retention volume 2020: a good 4,500 m^3).
Additional safety is provided by regular sampling for various physico-chemical laboratory analyses. This allows ingredients to be detected if online analytics would not detect them.

CENTRAL WASTEWATER TREATMENT PLANT (ZABA)

The use of process water in the various manufacturing processes necessarily leads to the generation of contaminated process wastewater. Contaminated process wastewater was and is either recycled internally instead of fresh water (if this is possible without harming quality or the environment) or disposed of externally as waste, or the wastewater is treated in the company's own central wastewater treatment plant (ZABA). From this plant, 42,770 m³ were discharged directly into the Alz Canal.
ZABA consists of anaerobic (under exclusion of oxygen) pretreatment. In addition, ammonification (= conversion of nitrogen components into ammonium, which is degraded to atmospheric nitrogen in the subsequent nitrification/denitrification) of various nitrogen compounds, mainly dicyandiamide, takes place. The final purification of the wastewater pretreated in the anaerobic stage takes place in an aerobic biological treatment stage with nitrification/denitrification.
The ZABA operates with elimination rates well above 95 % for the parameters BOD5 (biochemical oxygen demand) and TNb (total bound nitrogen). The high elimination rates of the on-site wastewater treatment plant enable the operator to stay well below the limit values. As part of the self-monitoring ordinance, an annual report is submitted to the Traunstein Water Management Office. In 2020, no limit values were exceeded by the technical water inspectorate.
Some of the pollutant loads are completely eliminated and converted into harmless components (e.g. conversion of nitrogen from chemical compounds into atmospheric nitrogen), while others are separated and disposed of harmlessly as waste in comparatively concentrated (small in volume/mass) residues. Therefore, the pollutant load leaving the plant is relatively small.

Reporting year (pollutant loads in wastewater in kg (via ZABA))	**2018**	**2019**	**2020**
CSB	4,702	3,225	2,158
BSB	129	70	70
AOX	1	0.5	0.5
Phosphorus	23	22	19
Nitrogen anorg.	481	373	209
Mercury	< 0.023	< 0.019	< 0.002
Cadmium	< 0.046	< 0.039	< 0.043
Chrome	< 0.46	< 0.39	< 0.43
Lead	< 0.46	< 0.39	< 0.43
Copper	< 0.59	< 0.61	< 0.43
Nickel	1.24	1.53	< 1.75
Zinc	< 9.3	< 7.3	1.0

Indications with „<" if the results were below the limit of quantification.

EMISSIONS

EMISSIONS TO AIR

Reporting year (Emissionen in t (to air))	**2018**	**2019**	**2020**
Dust	0.43	0.48	0.72
Nitrogen oxides (NO_x)	21.71	27.88	28.55
Sulfur oxides (SO_x)	6.72	6.90	5.84
Ammonia (NH_3)	7.50	8.70	9.46
Carbon monoxide (CO)	6.84	7.39	8.04
Organic substances (org. C)	2.19	1.56	1.60
Carbon dioxide(CO_2) *)	32,123	35,963	35,469

*) CO_2 emissions at the site - without external sources!

The main emissions to air at the Trostberg site are dust, nitrogen oxides (NO_x), sulfur oxides (SOx), ammonia (NH_3), carbon monoxide (CO), organic matter (org. C), and carbon dioxide (CO_2).
The changes in emissions of dust, nitrogen oxides (NO_x), sulfur oxides (SOx), ammonia (NH_3), and carbon monoxide (CO) are mainly due to emission measurements carried out in 2020, which form the data basis for the calculations of the annual catchments, and the production mix.
Flue gases containing CO_2 from power generation are not emitted for the most part, but are reused in production processes. The majority of the polluted flue gases were fed into the waste incineration plant or a thermal post-combustion plant.

Carbon dioxide (CO_2) emissions decreased by - 1.4 % compared to the previous year and are thus at the previous year's level. The majority of CO_2 emissions are caused by energy generation (steam). Other sources are drying processes, facilities for thermal waste gas/waste incineration, and chemical (multi-purpose plants) and biological (ZABA) reactions. Also in 2020, various measurements were carried out at the emission sources of the production facilities. During these emission measurements, individual exceedances of the officially approved limit values were detected. In these cases, the responsible authority was informed immediately and possible countermeasures were discussed and implemented together (e.g. by integrating them into an existing waste gas purification system). The effectiveness of these measures was confirmed by additional emission measurements.
The emission data from our waste incineration plant (AGV) are published annually and are made available to the public on the AlzChem homepage (www.alzchem.com).

COMPLAINTS FROM NEIGHBORS

No complaints were made to AlzChem in the 2020 reporting year.

WASTE

Reporting year (waste in t)	2018	2019	2020
Production specific waste	22,923	18,952	21,542
waste not specific to production	10,192	4,672	5,037
Total waste production-specific/non-production-specific	33,115	23,624	26,578
Share of hazardous waste in total waste	22,484	18,724	20,925
Percentage of total waste recycled	12,029	5,023	8,103

The total volume of waste at the Trostberg site increased by a good 12% compared with the previous year.
Production-specific waste is mainly generated in organic chemical processes, but will also represent a major source of energy in 2020.
21,542 t represent the largest share of waste and have increased compared to the previous year due to the broad production spectrum and the associated fluctuating waste volumes.
Specifically, the manufacture of various products generates, for example, aqueous and organic washing liquids/mutual lyes, solvents, and reaction and distillation residues. The volume of non-production-specific waste, resulting for example from construction/demolition activities or municipal waste, also increased compared with the previous year to
5,037 t increased slightly.
Where possible, production-specific waste is recycled internally in the production processes. Environmental goals in the area of waste help to avoid waste or to reduce the amount of waste.

TRAFFIC AND TRANSPORT

GOODS TRANSPORT

Reporting year (transport volume in t)	2018	2019	2020
Total volume	566,923	559,980	497,805
Street	223,281	222,370	208,960
Rail	307,196	310,130	262,794
Combind	36,446	27,480	26,051

The incoming and outgoing transport at the Trostberg site - 497.805 t in 2020 - decreased by approx. 11% compared to the previous year. The decrease in transport volume is mainly attributable to the lower production output.

PASSENGER TRANSPORT

Reporting year (passenger trafic (in km)) Trostberg, Schalchen, Hart, Waldkraiburg	**2018**	**2019**	**2020**
Total distance	2,993,869	3,515,906	962,246
Airplane	1,941,505	2,463,157	164,478
Car	900,000	875,000	750,000
Railroad	87,683	109,118	36,108
Cab	64,681	68,631	11,660

The total business travel of the AlzChem Group (all sites) decreased drastically compared to previous years. This significant reduction in the number of kilometers traveled is mainly attributable to the COVID19 pandemic and the associated restrictions on travel.
These figures refer to all four sites covered in this environmental statement, as the data collection is not divided into sites.

LAND CONSUMPTION

Land consumption in m^2	**2018**	**2019**	**2020**
undeveloped areas (gravel area, lawn, green area, agricultural area, forest area, ...)	379,406	378.304	378.031
thereof near-natural areas	n. b. *)	n. b. *)	10,370
sealed surfaces	107,367	107,700	107,775
built-up areas	112,160	112,929	113,127
Total area location	598,933	598,933	598,933

*) the near-natural areas were defined for the first time in 2020, assigned measures and considered separately.

Information on land consumption at the Trostberg site will be included for the first time in the 2020 reporting year, and separately designated near-natural areas will also be reported.
The near-natural areas are essentially meadows, which, for example, offer a more diverse habitat for various animals through targeted mowing.

ENVIRONMENTAL PROTECTION COSTS

In 2020, environmentally relevant investments amounting to approx. € 4,6 million were made at the Trostberg site. Total environmental protection operating costs in 2020 amounted to approximately €14,22 million.

THE ALZCHEM SITES

SCHALCHEN SITE

The Schalchen site of AlzChem Trostberg GmbH is located in the municipality of Tacherting in the district of Traunstein. The site has the size of about 7,8 hectares, of which 48% is undeveloped area and green space. The site is crossed by the Alz Canal.

Three production facilities are operated on the plant site. The plant infrastructure includes a utility plant to provide the required process energies, laboratories, warehouses and workshops. AlzChem Trostberg GmbH operates wells at the site for the supply of cooling or process water. AlzChem Trostberg GmbH is the site operator.

ENVIRONMENTALLY RELEVANT FACILITIES AND ACTIVITIES

As a manufacturer of high-quality intermediates used primarily in the life science sector, AlzChem Trostberg GmbH is an important partner to the pharmaceutical and agricultural industries.

AlzChem ideally combines its business in standardized fine chemicals with that in exclusive custom syntheses. Standard products here at the Schalchen site include dicyandiamide (DCD) and mixtures made from it, as well as guanidine nitrate, guanidine hydrochloride and other guanidine salts.

In the DCD plant, approx. 30,000 t of CO_2 from energy generation are used in production each year and thus do not occur as CO_2 emissions (CO_2 sink) .

The production of DCD produces lime (so-called special lime), which is used in the cement industry and in agriculture.

KEY FIGURES ON ENVIRONMENTAL PERFORMANCE

Location key figures Schalchen		2018	2019 *)	2020
Production output	1000 t	147	121	122
Environmental indicators				
Raw material input	t/t product	0.80	0.87	0.84
Fuel consumption	MWh/t product	0.56	0.65	0.63
Power consumption	MWh/t product	0.17	0.19	0.18
thereof renewable energies		0.01	0.01	- **)
Water consumption	m³/t product	56.1	64.3	60.3
Waste generation	kg/t product	33.7	41.5	33.8
thereof dangerous	kg/t product	33.7	41.5	33.8
Dust emissions	kg/t product	0.004	0.005	0.005
CO_2 emissions	t/t product	0.17	0.15	0.13
NO_x emissions	kg/t product	0.08	0.06	0.06

*) The key location figures for 2019 had to be adjusted due to an incorrect reference in their calculation and have changed slightly as a result.
**) Value for 2020 not yet available, as according to the Energy Industry Act, electricity labeling only has to take place from November 1 for the previouscalendar year.

PRODUCTS

Reporting year (products in t)	2018	2019	2020
Total products	147,120	120,674	122,294
Main products	27,001	25,682	24,955

The volume of main products produced was 24,955 t, a decrease of 2.8%. By contrast, the volume of by-products increased slightly to 97,339 t, up 1.3 % on the previous year (mainly special lime).

RAW MATERIALS, CONSUMABLES AND SUPPLIES

Reporting year (material in t)	2018	2019	2020
Raw materials	117,471	105,094	102,970

The quantities of raw materials used also fell by 2 % year-on-year due to the lower production volume. AlzChem Trostberg GmbH used around 102,000 tons of raw materials for production purposes at the Schalchen site in 2020. A good half of this is calcium cyanamide, which is sourced from the neighboring AlzChem Trostberg site. A good 25% of the raw materials represents carbide furnace gas, which is supplied via a long-distance gas pipeline from the Hart site. The remainder corresponds to purchased raw materials.

ENERGY

ENERGY CONSUMPTION

Reporting year (energy in MWh)	2018	2019	2020
Electrical energy	24,869	23,071	21,705
thereof renewable energies	746	807	- *)
Carbide furnace gas	75,527	71,464	69,674
Heating oil	6,952	6,241	7,376
Fuels (diesel/gasoline)	247	149	100

*) Value for 2020 is not yet available, as according to the Energy Industry Act, electricity labeling does not have to take place until November 1 for the previous calendar year.

Total energy consumption at the Schalchen site amounted to 98,855 MWh in 2020.
The most important energy sources are the carbide furnace gas purchased from the Hart site (approx. 70%), which is used in Schalchen as a raw material and for energy generation, electrical energy (approx. 22 %) and heating oil with a share of approx. 7.5%. 4659 MWh of the electrical energy was required for the generation of 15.4 million m³ of compressed air.

WATER/WASTE WATER

WATER

Reporting year (water in m³)	**2018**	**2019**	**2020**
Service water	8,257,737	7,761,046	7,375,104
Drinking water	2,941	3,535	1,655

AlzChem Trostberg GmbH operates six of its own wells at the site to supply service water. Drinking water is obtained from the public water supplier.
Due to the lower production output, the industrial water demand in 2020 has also decreased.
The significantly lower drinking water volumes can be attributed to the fact that one company has discontinued its laboratory activities at the Schalchen site

WASTE WATER

Reporting year (waste water in m³)	**2018**	**2019**	**2020**
Not requiring treatment (direct discharge into Alz canal)	8,191,734	7,703,756	7,318,097
Precipitation water (direct discharge into Alz canal)	31,629	39,858	39,897
Sanitary wastewater (indirect discharge to the municipal wastewater treatment plant))	3,023	3,765	1,731

Sanitary wastewater from the site (approx. 1,731 m³ in 2020) is fed to the municipal wastewater treatment plant of the municipality of Tacherting and shows a significant decrease, analogous to the drinking water input.
The majority of the extracted water (approx. 7.3 million m³ in 2020) is used as flow water for cooling purposes and discharged into the Alz Canal as wastewater not requiring treatment (incl. precipitation water). Operational wastewater is recycled internally.

Berichtsjahr (Schadstofffrachten im Abwasser in kg)	**2018**	**2019**	**2020**
CSB	32,767	31,064	< 29,272
AOX	410	385	230
Phosphorus	104	83	76
Nitrogen anorg. (incl. preload)	21,892	24,144	17,416
Mercury	< 4	< 4	< 4
Cadmium	< 8	< 8	< 8
Chrome	< 82	< 77	< 74
Lead	< 82	< 77	< 74
Copper	< 82	< 77	< 74
Nickel	< 82	< 77	< 74

Indications with „<" if the results were below the limit of quantification.

In order to prove that the limit values are complied with, the water discharged into the Alz canal is regularly tested. The measured values were mostly even below the determination limits and were estimated in the above table con- servatively with these values and the emitted water quantities.
The inorganic nitrogen load of the discharged water corresponds almost entirely to the nitrate preload of the groundwater.

EMISSIONS

EMISSIONEN TO AIR

Reporting year (emissions in t (to air))	**2018**	**2019**	**2020**
Dust	0,60	0,55	0,56
Nitrogen oxides (NO_x)	11,05	7,74	7,28
Sulfur oxides (SO_2)	4,72	4,05	4,02
Ammonia (NH_3)	1,23	1,12	0,98
Carbon monoxide (CO)	3,72	3,49	3,53
Carbon dioxide (CO_2) *)	24.529	17.697	15.882

*) CO_2 emissions at the site - without external sources!

In addition to the emission of carbon dioxide (CO_2), other substances were released into the air. Of particular environmental relevance are dust, nitrogen oxides (NO_x), sulfur oxides (SOx), ammonia (NH_3) and carbon monoxide (CO).
The changes in emissions are mainly due to longer/shorter emission periods. Flue gases from power generation are largely not emitted but reused in production processes. The majority of the polluted flue gases are fed into a thermal afterburning plant.

COMPLAINS FROM NEIGHBORS

In 2020, AlzChem did not receive any complaints from the neighborhood.

WASTE

Reporting year (waste in t)	**2018**	**2019**	**2020**
Production specific waste	5,061	5,012	4,131
Waste not specific to production	498	2,632	2,441
Total waste (production-specific/non-production-specific)	5,559	7,643	6,572
Share of hazardous waste in total waste	5,062	5,017	5,044
Percentage of total waste recycled	3,831	5,603	4,974

Production-specific waste is mainly generated in organic chemical processes, but will also represent a major source of energy in 2020.
4,131 t represented the largest share of waste and decreased slightly compared to the previous year.
In concrete terms, aqueous scrubbing liquids/ mother liquors or reaction and distillation residues are produced during the manufacture of various products.
The volume of non-production-specific waste, resulting for example from construction/demolition activities or municipal waste, is slightly lower than in the previous year at 2,441 tons.
76% of the waste generated at the site could be recycled. About 76.7% of the total amount of waste is classified as hazardous waste.

TRAFFIC AND TRANSPORT

GOODS TRANSPORT

Reporting year (tansport volume (in t))	**2018**	**2019**	**2020**
Total volume	233,838	190,978	199,872
Street	34,243	38,076	31,039
Rail	192,598	146,747	161,556
Combined	6,997	6,155	7,277

The incoming and outgoing traffic at the Schalchen site - 199,872 t in 2020 - increased by almost 5% compared to the previous year.

LAND CONSUMPTION

Land consumption in m^2	**2018**	**2019**	**2020**
undeveloped areas (gravel area, lawn, green area, agricultural area, forest area, ...)	36,036	35,342	35,342
thereof near-natural areas	n. b. *)	n. b. *)	2,930
sealed surfaces	18,696	19,390	19,390
built-up areas	20,500	20,500	20,500
Total area location	75,232	75,232	75,232

*) the near-natural areas were defined for the first time in 2020, assigned measures and considered separately.

Information on land use at the Schalchen site will be included for the first time in the 2020 reporting year, and separate near-natural areas will also be reported .
The nearnatural areas are essentially a meadow with fruit trees, which, for example, offer a more diverse habitat for various animals through targeted maintenance, and an old tree population.

ENVIRONMENTAL PROTECTION COSTS

In 2020, environmentally relevant investments amounting to approx. € 29k were made at the Schalchen site. Total environmental protection operating costs in 2020 amounted to approximately € 1.28 million.

THE ALZCHEM SITES

HART SITE

The Hart site is located in the south of the municipality of Unterneukirchen in the district of Altötting.
The plant site has an area of approx. 25.4 ha. Forest areas, the landfill site and the well site occupy a further approx. 24 ha.

To the west, the plant borders directly on the residential area of the Hart district of the municipality of Garching a. d. Alz. There are also woods and agricultural areas in the vicinity of the plant site.
The River Alz and the Alzbach run to the south of the plant. AlzChem Trostberg GmbH operates its own wells in the Alzau south of the site to supply industrial and drinking water.

In addition to AlzChem Trostberg GmbH, the Hart site is also home to ASK Chemicals Metallurgy GmbH. As the site operator, AlzChem Trostberg GmbH provides services for both production plants and ensures the supply of energy and media.

ENVIRONMENTALLY RELEVANT FACILITIES AND ACTIVITIES

AlzChem Trostberg GmbH produces calcium carbide at its Hart site. In two closed low-shaft furnaces, coal or coke and quicklime react to form calcium carbide and carbide furnace gas, which is further processed as a by-product. This is a very energy-intensive process.

The annual production of carbide is transported mainly by rail to the Trostberg site, where it is processed into a variety of specialty products in the NCN chain and hot metal desulfurization agents.

The carbide furnace gas produced during the manufacturing process is purified in several complex stages, then sealed and transported via a long-distance gas pipeline to the Trostberg and Schalchen sites, where it is used as heating and synthesis gas. The filter dusts produced in the carbide furnace process are treated, granulated and can therefore be marketed as a by-product (KO- KA granules). This has significantly reduced the amount of waste to be landfilled in recent years.

The production site also includes a compressor station, a landfill, utility operations and rail operations. In 2017, an electrostatic precipitator was commissioned in the compressor station area to remove interfering hydrocarbons from the carbide furnace gas stream prior to compression and subsequent gas cleaning. The resulting higher availability of clean carbide furnace gas further increased the recycling of carbide furnace gas at the Schalchen and Trostberg sites and reduced the use of fossil fuels and additional carbon dioxide (CO_2) emissions.

KEY FIGURES ON ENVIRONMENTAL PERFORMANCE

Location key figures Hart		2018 *)	2019 *)	2020
Production output	1000 t	132	128	124
Environmental indicators				
Raw material input	t/t Produkt	1.43	1.58	1.48
Fuel consumption	MWh/t Produkt	0.017	0.012	0.014
Power consumption	MWh/t Produkt	3.30	3.40	3.35
thereof renewable energies	Mwh/t Produkt	0.03	0.04	-**)
Water consumption	m³/t Produkt	87.5	79.3	77.0
Waste generation	kg/t Produkt	6.82	1.20	1.91
thereof dangerous	kg/t Produkt	2.41	1.20	1.91
Dust emissions	kg/t Produkt	0.100	0.056	0.027
CO_2 emissions (total)	kg/t Produkt	0.153	0.171	0.152
Heavy metals	kg/t Produkt	0.0011	0.0015	0.0013

*) The 2018 & 2019 location figures had to be adjusted due to an incorrect reference in their calculation and have thus changed slightly
**) Value for 2020 not yet available, as pursuant to the Energy Industry Act, electricity labeling does not have to take place until November 1 for the previous calendar year.

PRODUCTS

Reporting year (products in t)	2018	2019	2020
Main product (carbide)	131,787	128,164	123,810
By-product (carbide furnace gas))	60,301	60,502	57,525

The main product at the Hart site is calcium carbide. The production volume declined slightly in 2020 and is overall at the level of previous years. A by-product of the Hart site is carbide furnace gas, which is produced during carbide production. Some of it is used as fuel in Hart, while the majority is used as fuel or recycled at the Trostberg and Schalchen sites and at another company in the Alztal valley. In addition, the filter dusts produced are granulated and then marketed (KOKA granules).

RAW MATERIALS, CONSUMABLES AND SUPPLIES

RAW MATERIALS

Reporting year (material in t)	2018	2019	2020
Raw materials	188,126	202,119	183,205

The main product at the Hart site is calcium carbide. The production volume declined slightly in 2020 and is overall at the level of previous years. A by-product of the Hart site is carbide furnace gas, which is produced during carbide production.
Some of it is used as fuel in Hart, while the majority is used as fuel or recycled at the Trostberg and Schalchen sites and at another company in the Alztal valley. In addition, the filter dusts produced are granulated and then marketed (KOKA granules).

ENERGY

Reporting year (energy in MWh)	2018	2019	2020
Electrical energy	434,672	435,460	414,909
thereof renewable energies	3,912	4,790	- *)
Heating oil	1,478	919	1,129
Fuel (diesel)	707	670	639
Carbide furnace gas (quantity used in the steam boiler)	19,615	19,879	20,408

*) Value for 2020 not yet available, as according to the Energy Industry Act, electricity labeling does not have to take place until November 1 for the previous calendar year

Carbide production is a very energy-intensive process. High amounts of electrical energy are required to operate the electron shaft furnaces. In Hart, 95 % of the energy used is electrical. The fossil fuel requirement is comparatively very low at less than 5%. Electricity consumption has fallen by approx. 20,000 MWh in 2020.
The operation of the production furnaces has been improved in recent years to the extent that excess carbide furnace gas is largely avoided and energy efficiency for production has been optimized.
In Hart, a good 7.9 million m³ of compressed air was generated for AlzChem Trostberg GmbH in 2020, for which 787 MWh of electrical energy was used. Hot water for the plant's own bathhouse and a large part of the building and hall heating is mainly generated using carbide furnace gas. This saves considerable amounts of fossil fuels.

WATER/WASTE WATER

WATER SUPPLY

Reporting year (water in m³)	**2018**	**2019**	**2020**
Total quantity *	11,075,439	10,158,531	9,529,494
Industrial water (AlzChem)	8,392,695	7,529,618	6,916,407
Drinking water (AlzChem)	2,682,744	2,628,913	2,613,087
Rainwater	96,489	111,077	110,835

*) The total quantity refers to the quantities of industrial and drinking water consumed directly by AlzChem.

AlzChem Trostberg GmbH operates ten of its own wells in the Alzau region south of the plant. The majority of the industrial and drinking water extracted - around 9.1 million m³ in 2020 - was used as flow-through cooling water. Water is of particular importance for the production plant operated at the Hart site. In carbide production, which takes place at very high temperatures, water is needed to cool the low-shaft furnaces. Three main water lines, supplied from several wells, feed a ring main system, which is additionally supported by elevated tanks, so that an emergency supply for furnace cooling is guaranteed even in the event of a power failure. Water consumption is in the range of previous years.
The plant's drinking water supply comes from its own well and pipeline system. For reasons of security of supply, there is an interconnection of the drinking water network with the municipality of Garching, so that mutual supply is possible in an emergency.

WASTE WATER

Reporting year (waste water in m³)	**2018**	**2019**	**2020**
Total (AlzChem)	11,141,952	10,240,228	9,615,429
Continuous cooling water (direct discharge into the Alz incl. rainwater)	11,130,386	10,227,963	9,602,802
Sanitary wastewater (indirect discharge via municipal wastewater treatment plant Garching/Alz)	4,949	5,052	4,887
Landfill leachate (indirect discharge via municipal wastewater treatment plant Garching/Alz)	6,617	7,213	7,740

The Hart site discharged a total of around 11.7 million m³ of wastewater into the Alzbach in 2020. This figure also includes the quantities discharged by ASK Chemicals Metallurgy GmbH, which is located at the site. This involved cooling water and low-pressure water. The pollution is so low that no wastewater treatment is required.
The limit values specified in the permit at the discharge point into the Alzbach were reliably complied with in 2020. The quality of the discharged water is monitored by daily visual inspections, regular laboratory tests and a continuously operating oil trace warning device. The measured values were mostly even below the determination limits and were conservatively estimated in the following table using these values and the emitted water quantities.
The sanitary wastewater of the plant with approx. 9,217 m³ and the landfill leachate with 7,740 m³ were discharged to the municipal wastewater treatment plant in Garching. The wastewater treated there is discharged into the Alz River.

TOTAL POLLUTANT LOADS FROM DIRECT DISCHARGE OF COOLING WATER INTO ALZ:

Reporting year (pollutant loads in wastewater in kg)	**2018**	**2019**	**2020**
Filterable substances	40,801	41,505	48,705
CSB	< 54,401	< 50,309	< 46,386
Phosphorus	< 136	< 126	< 116
Nitrogen anorg. (incl. preload)	95,202	88,041	75,376
Mercury	< 7	< 6	< 6
Cadmium	< 7	< 6	< 6
Chrome	< 68	< 79	< 58
Lead	< 54	< 50	< 46
Copper	< 136	< 126	< 116
Nickel	< 136	< 126	< 116
Zinc	< 136	< 126	< 116

Indications with „<" if the results of the water analyses were below the limit of quantification.

EMISSIONS

EMISSIONEN TO AIR

Reporting year (emissions (to air))	**2018**	**2019**	**2020**
Dust in t	13.12	7.22	3.38
CO_2 in t	20,172	21,859	18,759
Heavy metals in kg	0.34	0.19	0.16

*) CO_2 emissions at the site - without external sources!

In the production of calcium carbide, the generation of dust emissions resulting from the high-temperature processes and the handling of raw materials is unavoidable. The dust is collected by means of extraction systems and fed to highly effective filter systems, in which the dust-laden air is freed from solids. Dust emissions have been significantly reduced in recent years by combining and modernizing the dust collection systems in the carbide production area and by generally more stable operation in carbide production, with, among other things, significantly reduced downtimes for gas cleaning. In order to be able to permanently monitor compliance with the limit values, continuous dust measurements have been installed in some cases. In addition, the emission values are regularly checked by discontinuous measurements. In the year under review, the continuously monitored dust limit was exceeded in five half-hourly average values. Appropriate countermeasures (filter replacement) were immediately initiated as soon as they became known. However, all daily mean values were complied with in the 2020 reporting year.

More continuous operation of the carbide furnaces and coordination of the gas consumers significantly reduced flare loss and, consequently, CO_2 emissions.

In 2020, external emission measurements at the steam boiler revealed that the SOx limit was exceeded. The further procedure regarding this exceedance is currently being coordinated with the responsible authority.

COMPLAINTS FROM THE NEIGHBORHOOD

No environmental complaints were made to AlzChem from the immediate neighborhood this year.

WASTE

Reporting year (waste in t)	2018	2019	2020
Production specific waste	898	154	236
Waste not specific to production	688	1,909	2,867
Total waste (production-specific/non-production-specific)	1,586	2,063	3,103
Share of hazardous waste in total waste	359	213	318
Percentage of total waste recycled	651	1,015	2,612

The increase in production-specific waste for 2020 can essentially be attributed to aqueous scrubbing liquids from organic chemical processes and the disposal of waste from the cleaning of the long-distance gas pipeline (carbide furnace gas). Since the filter dusts generated in the carbide furnace process are treated and granulated, they can largely be marketed as a by-product (KOKA granules). Therefore, the production-specific waste volumes are at a very low level overall. The volume of non-production-specific waste, resulting for example from construction/demolition activities in the form of track ballast or municipal waste, increased significantly compared with the previous year to 2,867 tons.

TRAFFIC AND TRANSPORT

Reporting year (transport volume (t))	2018	2019	2020
Total volume	356,423	353,531	364,114
Street	54,362	56,429	56,649
Rail	302,061	297,102	307,465

The volume of goods transported (incoming and outgoing deliveries at the site) in the year under review was at the same level as in previous years. The majority of shipments are made by rail, with only around 16% of the material being transported by road.

LAND CONSUMPTION

Land consumption in m2	2018	2019	2020
undeveloped areas (gravel areas, lawn, green area,...)	59,713	59,713	59,713
near-natural areas	n. b. *)	n. b. *)	50,150
sealed surfaces	62,643	62,643	62,643
built-up areas	81,801	81,801	81,846

Information on land use at the Hart site will be included for the first time in the 2020 reporting year, and separate near-natural areas will also be reported. The near-natural areas are mainly meadows, which offer a more diverse habitat for various animals, for example through targeted mowing.

ENVIRONMENTAL PROTECTION COSTS

In 2020, environmentally relevant investments amounting to approx. 54 T € were made at the Hart site. Total environmental protection operating costs in 2020 amounted to approximately € 3.22 million.

THE ALZCHEM SITES

WALDKRAIBURG SITES

NIGU Chemie GmbH at the Waldkraiburg site is a wholly owned subsidiary of AlzChem Trostberg GmbH.

The plant site of NIGU Chemie GmbH is located in an industrial area in Waldkraiburg in the district of Mühldorf am Inn. The site covers an area of approx. 1.7 hectares and borders directly on the factory premises of the company SI Group Germany GmbH, which provides infrastructures such as water supply and disposal as well as energies for NIGU Chemie GmbH

ENVIRONMENTALLY RELEVANT FACILITIES AND ACTIVITIES

NIGU Chemie GmbH operates two production plants at its Waldkraiburg site, the NQ plant and the Bioselect® plant. The main product nitroguanidine is produced in the NQ plant. Today, nitroguanidine is a key component in the manufacture of modern and highly effective crop protection products. The use of nitroguanidine as a component for gas kits in technically advanced airbag and seatbelt pretensioner generators rounds off the range of applications for this product.

The Bioselect® plant, which was converted from a pilot plant to a production plant in 2013, is primarily used to manufacture high-purity guanidine salts for use in biotechnology. Guanidine salts are, for example, a component of extraction buffers in nucleic acid diagnostics. This involves the isolation of DNA and RNA fragments from biological samples and subsequent clinical or forensic diagnostics or molecular biological research.

In addition to the production facilities, NIGU Chemie GmbH operates the Bioselect® pilot plant. It is a link between research, development and production in the establishment of new products and processes.
In the reporting year 2020, the COVID19 pandemic had a significant impact on production activities at the Waldkraiburg site. For customer applications in large molecule production and diagnostics, especially for COVID-19 test kits, the Bioselect® product range is used, which grew very strongly last year.

KEY FIGURES ON ENVIRONMENTAL PERFORMANCE

Location key figures Waldkraiburg		2018	2019	2020 *)
Production output dry	1000 t	5.27	5.48	4.65
Environmental indicators				
Raw material input	t/t product	1.24	1.19	1.24
Steam consumption (full 16 bar)	MWh/t product	6.79	7.07	6.46
Power consumption	MWh/t product	1.16	1.13	1.31
thereof renewable energies		0.54	0.53	-**)
Water consumption	m³/t product	46.9	45.89	44.81
Waste generation	kg/t product	31.6	54.89	194.34
thereof dangerous	kg/t product	31.6	41.74	185.96
Dust emissions	kg/t product	0.001	0.015	0.004
CO_2 emissions	t/t product	0.005	0.008	0.011
NO_x emissions	kg/t product	0.003	0.008	0.009

*) The changes in the specific key figures are mainly attributable to the increase in production capacities for high-purity guanidine salts described above.
**) Value for 2020 not yet available, as in accordance with the Energy Industry Act, electricity labeling only from November 1 for the previous calendar year. must be made.

PODUCTS

Reporting year (products in t)	2018	2019	2020
Total products	5,265	5,484	4,648

In the last year, the production focus has changed due to the COVID19 pandemic, as described at the beginning of this report, which is why the total output has declined somewhat.

RAW MATERIALS, CONSUMABLES AND SUPPLIES

Material efficiency, i.e. the consumption of raw materials and supplies in relation to product output, deteriorated somewhat at the Waldkraiburg site in the 2020 reporting period due to the change in production focus and the associated more costly production processes.

RAW MATERIALS

Reporting year (material in t)	2018	2019	2020
Raw materials	6,550	6,501	5,752

AlzChem Trostberg GmbH used around 5,700 t of raw materials for production purposes at the Waldkraiburg site in 2020. Approximately 65% of this was supplied by the AlzChem Schalchen site.

ENERGY

Reporting year (energy in MWh)	2018	2019	2020
Steam	36,895	38,749	30,023
Electrical energy	6,129	6,185	6,076
thereof renewable energies	2,862	2,888	-*)
Fuels (excluding carbide furnace gas)	122	45	70

*) Value for 2020 not yet available, as according to the Energy Industry Act, electricity labeling does not have to take place until November 1 for the previous calendar year

About 83% of the total energy consumption is covered by saturated steam (16 bar). This is generated by the neighboring SI Group and supplied to NIGU Chemie GmbH. Steam consumption depends on the level of production and, like production output, has fallen in 2020.
The administration building is heated with condensate and natural gas is only required during maintenance work on the steam and condensate network. Natural gas consumption increased again in 2020, but is at a low level overall.
Compressed air is used for product conveying in NQ operation, as well as for product separation in the Bioselect® plant. The required instrument air is provided by three dedicated compressors.

WATER/WASTE WATER

WATER

Reporting year (water in m³)	2018	2019	2020
Service water	247,136	251,656	208,259
thereof from own well	90,533	53,449	31,998
Drinking water (administration building only)	189	228	289

Water consumption fell in 2020 in line with the reduction in production output. This also reflects the change in production focus. The majority is used as cooling and process water.
For optimum use of the cooling water, the NIGU site in Waldkraiburg operates cooling towers. Compared to once-through cooling, large quantities of cooling water (approx. 75%) can be saved in this way.
The process water is obtained from the Waldkraiburg public utility company and is largely used as cooling water. The water for steam generation is not taken into account due to the outsourced circulation process.

WASTE WATER

Reporting year (waste water in m³)	2018	2019	2020
not requiring treatment (direct discharge)	193,078	191,154	172,494
Operational wastewater (indirect discharge via municipal wastewater treatment plant)	36,574	35,696	30,296
Sanitary wastewater (indirect discharge via municipal wastewater treatment plant)	1,689	1,728	2,179
Evaporation cooling towers & drying	16,387	23,716	3,972

Analogous to the water input, the volume of wastewater is also declining in 2020, which is also due to the change in production focus. The majority of the wastewater consists of unpolluted cooling water, which is generally discharged directly into the Inn River via the „Muna Canal“.

Reporting year (pollutant loads in wastewater in kg)	2018	2019	2020
Nitroguanidine (organic cargo)	32,075	25,334	20,448
Nitrogen from NO_{3-} and NH_{4-}	8,949	8,950	8,130

The decrease in pollutant loads can also be attributed to the change in production focus.

EMISSIONS

The emissions of the plants are monitored by regular measurements. All measurement results were below the limit values to be complied with.

EMISSIONEN TO AIR

Reporting year (emissions in t (to air))	**2018**	**2019**	**2020**
Dust	0,004	0,082	0,019
Nitrogen oxides (NO_x)	0,014	0,046	0,044
Sulfur oxides (SO_x)	0,001	0,020	0,002
Carbon dioxide (CO_2) *)	28	45	53
Sulfuric acid (H_2SO_4)	0,003	0,008	0,026
Nitric acid e (HNO_3)	0,010	0,015	0,029
Ammonia (NH_3)	0,02	0,01	0,05

*) CO_2 emissions at the site - without external sources!

The CO_2 emission stated arises from chemical processes. Since the steam required at the site is provided by the SI Group, NIGU Chemie GmbH itself does not emit any CO_2 through steam generation. The changes in the annual emission loads can also be attributed to the change in production focus.

COMPLAINTS FROM THE NEIGHBORHOOD

As in previous years, there were no environmental complaints from the neighborhood of NIGU Chemie GmbH in 2020.

WASTE

Reporting year (waste in t)	**2018**	**2019**	**2020**
Production specific waste	166	301	903
Waste not specific to production	132	160	172
Total waste (production-specific/non-production-specific)	299	461	1.075
Share of hazardous waste in total waste	169	229	864
Proportion of total waste recycled	129	160	172

Production-specific waste is mainly generated in organic chemical processes and, at 903 tons, also accounts for the largest share of waste in 2020 and has increased significantly compared with the previous year. The increase in production-specific waste can be attributed to the significant increase in production of high-purity guanidine salts.
The aim for 2021 is to recycle various waste volumes from this area. Specifically, aqueous washing liquids/mother liquors, salt (solutions) or reaction and distillation residues are produced during the manufacture of various products. The volume of non-production-specific waste, which is essentially defined as boiling waste, increased slightly compared with the previous year to 172 tons.

TRAFFIC AND TRANSPORT

GOODS TRANSPORT

Reporting year (transport volume (t))	**2018**	**2019**	**2020**
Total	12,165	12,745	10,587
Street	9,886	10,320	8,425
Rail	240	156	168
Combined	2,039	2,269	1,994

At 10,587 tons in 2020, incoming and outgoing deliveries at the Waldkraiburg site are below the previous year's level and are also due to the adjusted production focus.
In 2020, 80% of freight traffic was handled by truck via road and 2.0% by rail. The share of „combined transport" was a good 18% in 2018.

LAND CONSUMPTION

Reporting year (transport volume (t))	**2018**	**2019**	**2020**
undeveloped areas (gravel areas, lawn, green area)	5,296	5,296	5,296
--> thereof near-natural areas	n. b. *)	n. b. *)	n. b. *)
sealed surfaces	4,988	4,988	4,988
built-up areas	6,844	6,844	6,844
Total area location	17,128	17,128	17,128

*) the near-natural areas at the Waldkraiburg site will be defined, assigned measures and considered separately for the first time in 2021.

Data on land consumption at the Waldkraiburg site will be included for the first time in the 2020 reporting year.

ENVIRONMENTAL PROTECTION COSTS

Total environmental protection operating costs at the Waldkraiburg site in 2020 amounted to approx.
513 T €.

IMS PROGRAM AND ACHIEVEMENT OF OBJECTIVES

In the newly created IMS program 2021-2023, which defines new goals and measures at AlzChem, a total of 62 new goals and the associated measures were defined. The new targets and measures include the topics of environment, energy, quality and safety.
To give you an idea of the extent to which these goals and measures are defined at AlzChem, the following is an excerpt from the new IMS program 2021-2023:

TROSTBERG SITE

Concerns (**)	Target/ Measure	Target and Measures Trostberg	Date
Org	Z	The topic of „sustainability" will become an even greater focus at AlzChem and a sustainability strategy will be developed.	
	M	Implementation of a sustainability check according to Initiative Chemie3 with materiality analysis and definition of sustainability goals	2 Q 2021
Ver	Z	The installation of various car charging stations is intended to create an incentive for electric mobility.	
	M	In 2021, seven charging points for electric cars will be put into operation	1 Q 2021
Ene	Z	Energy savings in the bathhouse area through the installation of a new drinking water pump.	
	M	By installing a more efficient drinking water pump, 1,419 kWh/a can be saved.	1 Q 2021
Ene	Z	Saving energy by optimizing various building heating systems.	
	M	The installation of heat exchangers can save 2,500 kWh/a in building heating.	4 Q 2021
Ene	Z	The diffuse energy consumption in a production plant is to be reduced in the area of the staging hall.	
	M	By installing a lamella curtain (area approx. 16 m2), cold and heat are better shielded and energy in the amount of approx. 5,000 kWh/a is saved.	1 Q 2021
Pro	Z	Increase yield and reduce emissions in a given process step.	
	M	With the help of an implemented SixSigma project (process improvement system), the yield can be increased by 1% and emissions can be reduced by approximately 60%.	1 Q 2021
Ene	Z	Energy savings are to be achieved by optimizing the stirring times in an external tank farm.	
	M	By optimizing the agitation times in an outdoor tank farm (4 storage tanks), the energy demand can be reduced by 56,000 kWh/a.	1 Q 2021
Abf	Z	Reduction of the quantities of raw material BigBags (flexible bulk container) to be disposed of.	
	M	In the future, the empty raw material BigBags will be collected in a production area and sent to a recycler.	1 Q 2021

Abf	Z	By converting a production process, less hydrochloric acid, which previously had to be treated at great expense, is to be produced.	
	M	The corresponding production process is to be adapted so that acid no longer has to be used and the resulting washing water, which was previously acidic, can be recycled in the process. A wastewater reduction of approx. 1 t/m3 product can be achieved.	3 Q 2021

SCHALCHEN SITE

Concerns (**)	Target/ Measure	Target and Measures Schalchen	Date
Ene	Z	Reduction of energy consumption in the compressed air station area.	
	M	The use of energy-efficient screw compressors can save approx. 150,000 kWh/a.	3 Q 2021
Abf	Z	Increased safety through additional monitoring of a liquid waste stream in the area of the guanidine salts plant.	
	M	Additional and better pH and temperature monitoring is intended to improve the monitoring of a waste stream.	1 Q 2021

** ** Biod: Biodiversity | Emi: Emissions | Ene: Energy | Env: Environment | No: Noise | Org: Organization | Pro: Process | Sa: Safety | Tra: Traffic and Transport | Was: Waste | Wat: Water

HART SITE

Concerns (**)	Target/ Measure	Target and Measures Hart	Date
Ene	Z	Significant energy savings can be achieved by replacing two old-fashioned transformers.	
	M	The replacement can save approx. 570,000 kWh/a (control transformer 1) and approx. 450,000 kWh/a (control transformer 2) of energy.	4 Q 2021
Ene	Z	Through the use of a cooling water return an energy saving is to be achieved	
	M	In the case of granulation, the process water used is to be heated via a cooling water return in the future, thus enabling energy savings of approx. 70,000 kWh/a.	4 Q 2021
Lä	Z	Improvement of the noise situation in the area of the filter plant (filter 1-7).	
	M	Installing a silencer on a fan should result in a noise reduction of 2-3 dBA.	4 Q 2021
Ene	Z	The adjustments in the area of the ballast pipes should result in energy savings.	
	M	The energy saving is to be achieved by the adjustments in the area of the ballast pipes (use of gravity instead of intermediate hoppers & rebalancing chutes) and is about 1,200 kWh/a.	1 Q 2021
Ene	Z	In the area of the muffle burners, significant energy savings are possible after coordination with the responsible authority..	
	M	In the future, the muffle burner plant should only be in operation when secondary raw materials rich in hydrocarbons (CFRP, KBK,...) are used. This will enable energy savings of approx. 1.2 GWh/a.	4 Q 2021

WALDKRAIBURG SITE

Concerns (**)	Target/ Measure	Targets and Measures Waldkraiburg	Date
Abf	Z	Reduction of waste quantities by recycling ammonium chloride solution.	
	M	The ammonium chloride solution that currently has to be disposed of can be recycled externally in the future. This should reduce the amount of waste by approx. 1,200 t/a.	1 Q 2021

** Biod: Biodiversity | Emi: Emissions | Ene: Energy | Env: Environment | No: Noise | Org: Organization | Pro: Process | Sa: Safety | Tra: Traffic and Transport | Was: Waste | Wat: Water

VARIOUS TARGETS AND MEASURES WERE WORKED ON AND COMPLETED IN THE 2020 REPORTING YEAR. THE FOLLOWING IS AN EXCERPT FROM THE GOALS AND MEASURES WORKED ON AT ALZCHEM IN 2020:

TROSTBERG SITE

Concerns (**)	Target/ Measure	Targets and Measures Trostberg	Target Date	Original date	Machining status
Abf	Z	Reduction of waste in a production process in the ProTec (=production pilot plant)			
	M	Optimization of the required cleaning steps and thus saving of approx. 1,000 kg waste/campaign	2020 Q4	2020 Q4	done
Emi	Z	Reduction of fugitive emissions during IBC handling			
	M	Use of tanks for buffering e.g. semi-finished products and thus reduction of IBCs.	2020 Q4	2020 Q4	not realized
Ene	Z	Reduction of energy quantities at a raw material trace heating system			
	M	Since the quality of a raw material has improved significantly in recent years, the need for trace heating is to be examined (achieved savings: 65,000 kWh/a).	2020 Q4	2020 Q4	done
Abf	Z	Reducing the amount of wastewater or waste in a production facility..			
	M	By recording the rinse water quantities by means of electronic men- generators, the actual demand can be used in the future (savings potential approx. 10 %).	2020 Q4	2020 Q4	done
Lä	Z	Reduction of noise emissions in the waste incineration plant (AGV).			
	M	The replacement of the splitter silencers should significantly reduce noise emissions by approx. 12 dB(A) in the area of the filter systems.	2021 Q4	2020 Q4	displaced *)
Abf	Z	Marketing of mother liquor from a process.			
	M	Use of a by-product as a nitrification inhibitor in fertilizers.	2020 Q4	2020 Q4	done
Pro	Z	Waste reduction			
	M	Reprocessing of B-quality goods in the nitrile plant.	2020 Q1	2020 Q1	done
Abf	Z	Reduction of the amount of waste in the nitrile analgesic.			
	M	The use of better raw materials or a longer campaign duration is expected to save a total of approximately 115 metric tons of waste in various processes.	2020 Q1	2020 Q1	done
Ene	Z	Reduction of energy consumption in the 2-EW range through the use of new light sources.			
	M	The use of LED illuminants saves 9,782 kWh/a.	2020 Q1	2020 Q1	done
Emi	Z	Reduction of NOx emissions in the waste incineration plant (AGV).			
	M	The reduction should be achieved by stabilizing the combustion process (acting on the temperature, better mixing,...).	2020 Q1	2020 Q1	done

** Abf: Waste | Species: Biodiversity | Emi: Emissions | Ene: Energy | Lä: Noise | Org: Organization | Pro: Process | Si: Safety | U: Environment | Ver: Traffic and transport | Was: Water| Ge: Health| Arb: Occupational safety
*) the measure could not be implemented by the set target date due to changed general conditions (e.g. shift of priority) and was therefore postponed

SCHALCHEN SITE

Subject (**)	Goal/ Measure	Goals and measures Schalchen	Date	Original date	Machining status
Abf	Z	Reduction of waste or wastewater in the production of guanidine salts.			
	M	Recording of water sources and derivation of appropriate measures to reduce wastewater volumes by approx. 400 m3/a (corresponds to approx. 10% of the total volume).	2020 Q4	2020 Q4	done
Type	Z	Increase biodiversity at the site.			
	M	The orchard within the plant is to be managed in a more species-friendly manner.	2020 Q4	2020 Q4	done
Orga	Z	Avoidance of incorrect deliveries and complaints in the logistics of the products produced			
	M	Introduction of Warehouse Management System (SAP/EWM)	2020 Q3	2020 Q3	done
Arb	Z	Improvement of ergonomics during filling			
	M	Installation of a height adjustable filling	2020 Q1	2020 Q1	done

** Abf: Waste | Species: Biodiversity | Emi: Emissions | Ene: Energy | Lä: Noise | Org: Organization | Pro: Process | Si: Safety | U: Environment | Ver: Traffic and transport | Was: Wasser| Ge: Health| Arb: Occupational safety

HART SITE

Subject (**)	Goal/ Measure	Goals and measures Hard	Date	Original date	Machining status
Lä	Z	Reduction of noise emissions in the area of the Conveyor West			
	M	Exchange of two conveyors	2022 Q1	2020 Q4	moved *)
Ene	Z	Reduction of power consumption in utility operation			
	M	Renewal of the compressor stages on one compressor (energy savings achieved: 350,000 kWh/a)	2020 Q3	2020 Q3	done
What	Z	Reduction of filterable substances in a resulting wastewater stream.			
	M	Improvement of the separation efficiency by implementing various measures (e.g. modification of the flocculants).	2021 Q1	2020 Q3	moved *)
Ene	Z	Reduction of electricity consumption on the plant premises.			
	M	Changeover to LED lighting (potential: approx. 48,000 kWh/a)	2021 Q3	2020 Q3	moved *)
Arb	Z	Increasing occupational safety in the tapping area of a carbide furnace			
	M	Enclosure of a control station	2022 Q1	2020 Q1	moved *)
Ene	Z	Increase of the plant availability			
	M	Installation of further in-process measurements	2021 Q2	2020 Q1	moved *)

** Abf: Waste | Species: Biodiversity | Emi: Emissions | Ene: Energy | Lä: Noise | Org: Organization | Pro: Process | Si: Safety | U: Environment | Ver: Traffic and transport | Was: Water| Ge: Health| Arb: Occupational safety

*) the measure could not be implemented by the set target date due to changed framework conditions (e.g. shift of priority) and was therefore postponed".

WALDKRAIBURG SITE

Subject (**)	Goal/ Measure	Goals and measures Waldkraiburg	Date	Original date	Machining status
Ge	Z	Improvement of the ergonometry in the area of a product filling plant			
	M	Acquisition of a filling screw.	2021 Q1	2020 Q3	moved *)
What	Z	Savings in process water for the water ring vacuum pumps			
	M	Decoupling of the sealing water systems of the water ring vacuum pumps from two plant sections (savings potential: 3,960 m3/a).	2020 Q2	2020 Q2	done

*Abf: Waste | Species: Biodiversity | Emi: Emissions | Ene: Energy | Lä: Noise | Org: Organization | Pro: Process | Si: Safety | U: Environment | Ver: Traffic and transport | Was: Water| Ge: Health| Arb: Occupational safety

**) The measure could not be implemented by the set target date due to changes in the general conditions (e.g. shift in priority), and was therefore postponed

EMAS CERTIFICATES


URKUNDE

EMAS
GEPRÜFTES UMWELTMANAGEMENT

AlzChem Trostberg GmbH
Standort Hart

Fabrikstraße 2
84579 Unterneukirchen

Register-Nr.: DE-155-00083

Ersteintragung am
25. Juni 1998

Diese Urkunde ist gültig bis
6. Mai 2022

Diese Organisation wendet zur kontinuierlichen Verbesserung der Umweltleistung ein Umweltmanagementsystem nach der EG-Verordnung Nr. 1221/2009 und EN ISO 14001:2015 (Abschnitt 4 bis 10) an, veröffentlicht regelmäßig eine Umwelterklärung, lässt das Umweltmanagementsystem und die Umwelterklärung von einem zugelassenen, unabhängigen Umweltgutachter begutachten, ist eingetragen im EMAS-Register (www.emas-register.de) und deshalb berechtigt, das EMAS-Logo zu verwenden.

IHK München und Oberbayern

München, den 26. April 2019

Dr. Manfred Gößl
Hauptgeschäftsführer


URKUNDE

EMAS
GEPRÜFTES UMWELTMANAGEMENT

AlzChem Trostberg GmbH
Standorte Trostberg und Schalchen

Dr.-Albert-Frank-Straße 32
83308 Trostberg

Register-Nr.: DE-155-00034

Ersteintragung am
28. Mai 1997

Diese Urkunde ist gültig bis
6. Mai 2022

Diese Organisation wendet zur kontinuierlichen Verbesserung der Umweltleistung ein Umweltmanagementsystem nach der EG-Verordnung Nr. 1221/2009 und EN ISO 14001:2015 (Abschnitt 4 bis 10) an, veröffentlicht regelmäßig eine Umwelterklärung, lässt das Umweltmanagementsystem und die Umwelterklärung von einem zugelassenen, unabhängigen Umweltgutachter begutachten, ist eingetragen im EMAS-Register (www.emas-register.de) und deshalb berechtigt, das EMAS-Logo zu verwenden.

IHK München und Oberbayern

München, den 26. April 2019

Dr. Manfred Gößl
Hauptgeschäftsführer


URKUNDE

EMAS
GEPRÜFTES UMWELTMANAGEMENT

NIGU CHEMIE GmbH

Beuthener Straße 2
84478 Waldkraiburg

Register-Nr.: DE-155-00279

Ersteintragung am
8. Juni 2010

Diese Urkunde ist gültig bis
6. Mai 2022

Diese Organisation wendet zur kontinuierlichen Verbesserung der Umweltleistung ein Umweltmanagementsystem nach der EG-Verordnung Nr. 1221/2009 und EN ISO 14001:2015 (Abschnitt 4 bis 10) an, veröffentlicht regelmäßig eine Umwelterklärung, lässt das Umweltmanagementsystem und die Umwelterklärung von einem zugelassenen, unabhängigen Umweltgutachter begutachten, ist eingetragen im EMAS-Register (www.emas-register.de) und deshalb berechtigt, das EMAS-Logo zu verwenden.

IHK München und Oberbayern

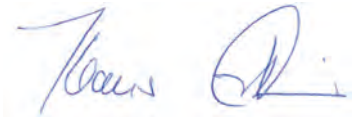
München, den 26. April 2019

Dr. Manfred Gößl
Hauptgeschäftsführer

OUTLOOK

DATE OF THE NEXT ENVIRONMENTAL STATEMENT

The Trostberg site successfully participated in the eco-audit regulation for the first time in 1997.
Parallel to the validation of the Environmental Statement 2020, AlzChem's integrated management system was again audited in accordance with the DIN EN ISO 9001, ISO 14001, ISO 27001, ISO 27019 and ISO 50001 standards.
The validation and audits were carried out by TÜV SÜD Umweltgutachter and Management Service GmbH, respectively. In 2022, AlzChem will prepare a consolidated environmental statement.



Trostberg, April 23, 2021

Klaus Englmaier
Management Production & Technology
Trostberg, Schalchen, Hart, und Waldkraiburg (NIGU Chemie GmbH)

DECLARATION OF THE ENVIRONMENTAL VERIFIER ON THE VERIFICATION AND VALIDATION ACTIVITIES

The undersigned, Dipl.-Ing. Ulrich Wegner, EMAS environmental verifier of TÜV SÜD Umweltgutachter GmbH with the registration number DE-V-0045, accredited for the scope 20.1 (NACE code), confirms to have verified whether the sites are

Trostberg, Dr.-Albert-Frank-Str. 32, 83308 Trostberg

Schalchen, Trostberger Straße 95, 83342 Tacherting

Hart, Fabrikstraße 2, 84579 Unterneukirchen und

NIGU Chemie GmbH, Beuthener Straße 2, 84478 Waldkraiburg

as stated in the updated environmental statement of the organization AlzChem Trostberg GmbH, Dr.-Albert-Frank-Str. 32, 83308 Trostberg with the registration number DE- 155 00034. meet all requirements of Regulation (EC) No. 1221/2009 of the European Parliament and of the Council of 25 November 2009, updated by Regulation (EU) 2017/1505 and Regulation (EU) 2018/2026 on the voluntary participation by organizations in a Community eco-management and audit scheme (EMAS).

BY SIGNING THIS DECLARATION IT IS CONFIRMED THAT

the assessment and validation have been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009, updated by Regulation (EU) 2017/1505 and Regulation (EU) 2018/2026,

the result of the assessment and validation confirms that there is no evidence of non-compliance with the applicable environmental regulations,

the data and information in the updated environmental statement of the Trostberg, Schalchen, Hart and Waldkraiburg sites give a reliable, credible and true picture of all the site's activities within the scope stated in the environmental statement.

This declaration cannot be equated with an EMAS registration. EMAS registration can only be carried out by a Competent Body in accordance with Regulation (EC) No. 1221/2009, updated by Regulation (EU) 2017/1505 and Regulation (EU) 2018/2026. This declaration may not be used as a stand-alone basis for informing the public.

Munich, April 23, 2021

Dipl.-Ing. Ulrich Wegner
Environmental Auditor of the
TÜV SÜD Umweltgutachter GmbH
DE-V-0209

IMPRINT

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Peter Weimer

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COVER PHOTO

REMARK

This version was translated from the German original. In case of doubt, the information in the original German version applies.

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