

Transparency and measurability – for results that count



Sustainable progress is also expressed in figures. They make our successes visible and show us where we need to do even better in the future. That is why we have been tracking sustainability-relevant values for many years, from resource use and energy efficiency to social indicators. We want to continue to improve our performance in the future.

Nordzucker has recently implemented new systems as part of the “Sustainability in Numbers” project. These systems improve the collection and analysis of our data, thereby increasing the quality of our sustainability figures. As part of the project, we have also revised older sustainability data up to 2018, which is essential to track our sustainability development in recent years. However, we have also identified the need to adjust the way how we define some of our figures, especially to meet the growing complexity of some reporting schemes, such as the Carbon Disclosure Project (CDP). As a result of this change, figures from 2017 and earlier are no longer directly comparable with the revised figures (2018 and later). For this reason, we focus on presenting the newer figures as they have been thoroughly revised. However, in order to maintain a transparent approach, data older than 2017 can still be found at the end of the document.

We present selected sustainability figures in absolute and intensity terms. Absolute values represent the sum of a given figure. For example, the absolute value of our greenhouse gas (GHG) emissions represents the total sum of the climate-related gaseous emissions across our operations. The intensity figures show a ratio between our absolute value and the amount of sugar we produced. For example, the intensity of our GHG emissions shows how much we emit per tonne (1,000 kg) of sugar we produce. To calculate our intensity figures, we combine the sum of beet sugar produced in our European operations with the cane sugar from Mackay Sugar Ltd., Nordzucker’s Australian subsidiary. The combination of our Australian and European operations forms the Nordzucker Group.

In case you have any doubts or would like to make a further inquiry about the sustainability figures or approach, please send an email with your question to sustainability@nordzucker.com.

1. Emissions to air

All emission to air figures apply to the Nordzucker Group, which includes the European and Australian operations. Although Nordzucker acquired Mackay Sugar Ltd. in 2019, the Australian data is included for all years to maintain a consistent timeline.

1.1. Scope 1 GHG emissions

Scope 1 emissions are GHG emissions from sources directly controlled by the company. These are emissions from the combustion of fuels, such as natural gas, which is necessary for the operation of our factories. These emissions are reported in absolute and intensity figures for the Nordzucker Group.

	2018	2019	2020	2021	2022
Absolute (t CO ₂)	1,171,305	1,131,967	1,126,244	1,120,805	1,095,561
Intensity (t CO ₂ /t sugar)	0.366	0.354	0.329	0.326	0.348

1.1. Scope 2 GHG emissions (market-based approach)

Scope 2 emissions are the GHG emissions from indirect energy sources, such as purchased electricity and steam. These emissions include both, the electricity used in offices and within our factories. These emissions are reported in absolute and intensity figures for the Nordzucker Group.

	2018	2019	2020	2021	2022
Absolute (t CO ₂)	78,433	64,260	57,535	45,874	60,828
Intensity (t CO ₂ /t sugar)	0.025	0.020	0.017	0.013	0.019

1.2. Other emissions

In addition to GHG emissions, we track the release of sulfur dioxide (SO₂), nitrogen oxides (NO_x) and dust. These are released during the normal operation of our factories.

	2018*	2019	2020	2021	2022
SO ₂ (t)	1,755	1,518	1,705	1,438	1,529
NO _x (t)	993	997	2,277	2,177	2,173
Dust (t)	257	347	1,025	986	990

*Data from Mackay Sugar Ltd is not included.

2. Energy consumption

All energy consumption figures reported are for the Nordzucker Group, which includes the European and Australian operations. Although Nordzucker acquired Mackay Sugar Ltd. in 2019, Australian data is included for all years to maintain a consistent timeline.

2.1. Total energy consumption

Total energy consumption is the sum of energy consumed that is produced on site and energy purchased from external providers. Energy produced onsite is generated from fuels used in our direct operations, for instance, the combustion of gas for boilers. Purchased energy is the sum of electricity, heat and steam purchased from the grid. Fossil and renewable energy sources are included. These only represent the energy requirements of the factories. The figures for the Nordzucker Group are presented in absolute and intensity figures.

	2018	2019	2020	2021	2022
Absolute (MWh)	9,267,673	8,587,130	8,257,746	8,299,514	8,384,778
Intensity (MWh/t sugar)	2.897	2.683	2.413	2.411	2.663

2.2. Total renewable energy consumption

Total consumption of renewable energy is the sum of energy from renewable sources produced on site and energy purchased from external providers. Examples of renewable energy used on site are the bagasse from sugar cane utilized in our Australian subsidiary or the biogas utilized in our European operations. The figures relate only to the factories and are presented for the Nordzucker Group in absolute terms and as a share of total energy consumption.

	2018	2019	2020	2021	2022
Absolute (MWh)	4,731,147	4,309,048	3,760,292	3,845,310	4,156,576
Share of total (%)	51.05	50.18	45.54	46.33	49.58

2.3. Purchased energy

Figures on total purchased energy, which represent the sum of electricity, steam and heat from the grid, are presented for the factories and offices of the Nordzucker Group. These figures are presented in absolute and intensity figures. Total purchased electricity is also shown for the Nordzucker Group.

	2018	2019	2020	2021	2022
Energy – absolute (MWh)	219,824	214,158	210,451	196,061	271,406
Energy – intensity (MWh/t sugar)	0.069	0.067	0.061	0.057	0.086
Electricity (MWh)	180,006	177,718	184,905	169,264	195,294

3. Water

All water consumption figures reported are for the Nordzucker Group, which includes the European and Australian operations. Although Nordzucker acquired Mackay Sugar Ltd. in 2019, the Australian data is included for all years to maintain a consistent timeline.

3.1. Water consumption

Water consumption represents is the total amount of water withdrawn from various sources, such as rivers and wells. The water is used in our factories. These figures are presented for the Nordzucker Group in absolute and intensity figures.

	2018*	2019	2020	2021	2022
Absolute (m ³)	3,414,191	5,748,908	5,400,774	5,330,331	5,356,609
Intensity (m ³ /t sugar)	1.067	1.796	1.578	1.549	1.701

*Data from Mackay Sugar Ltd is not included.

3.2. Water withdrawal by source

Water is withdrawn from three main sources: municipal water, from own well (groundwater), and from surface sources such as rivers and lakes. Water from these sources is used for our operations and sanitation, but not for cooling.

	2018*	2019	2020	2021	2022
Municipal water (m ³)	1,258,875	1,270,889	1,162,484	1,098,453	992,676
Water own well (m ³)	675,181	1,321,846	1,244,694	1,253,861	1,106,947
Surface water (m ³)	1,480,135	3,156,173	2,993,596	2,978,017	3,256,986

*Data from Mackay Sugar Ltd is not included.

3.3. Water discharge

We discharge wastewater into surface waters or provide it to growers for irrigation. This water is treated in our factories before being discharged. Water used for cooling purposes is not included here. These figures presented for the Nordzucker Group in absolute and intensity figures.

	2018*	2019	2020	2021	2022
Absolute (m ³)	8,472,978	7,925,334	11,611,996	11,332,779	11,255,500
Intensity (m ³ /t sugar)	2.649	2.476	3.393	3.292	3.575

*Data from Mackay Sugar Ltd is not included.

4. Product Carbon Footprint

A product carbon footprint (PCF) represents the GHG emissions released by a product during the different stages of its life cycle. We calculate the emissions released from our beet sugar and its byproducts. The emissions considered are from the sowing of the sugar beet to the finished product at our factory gate. Weather conditions have an impact on agricultural production, which also affects yields and emissions from beet cultivation. We calculate our PCF in collaboration with RISE (Research Institute of Sweden). Our PCF is ISO 14067 certified and updated annually. We are currently collecting data to finalize our update for 2023.

We use two different allocation methods. The economic allocation is based on the prices of sugar and its by-products and is the preferred allocation method of our customers. The lower heating value allocation is recommended by the sugar industry, as it focuses on the energy density of the products.

	2017	2018	2019	2020	2021	2022
Economic allocation (kg CO ₂ /kg sugar)	0.71	0.65	0.70	0.64	0.69	0.68
Lower heating value (kg CO ₂ /kg sugar)	0.60	0.58	0.62	0.58	0.62	0.63

5. Sugar beet yield

The supply of sugar beet is key to our operations as it is the main raw material we use. However, the supply is strongly influenced by the yearly variability in weather conditions, among other factors. We track the total sugar beet yield in tons per hectare in every European country where Nordzucker operates.

Countries	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Germany	59.4	71.2	69.1	63.0	80.6	74.4	76.2	78.9	64.3	70.9	74.4	79.7	70.1
Poland	57.1	64.1	72.1	66.6	68.1	56.0	72.6	71.4	59.1	61.5	61.8	63.4	63.9
Slovakia	61.0	63.5	47.8	58.3	79.1	59.9	74.7	53.8	59.5	58.4	62.1	63.2	57.1
Denmark	58.0	73.3	68.2	69.0	82.6	71.3	71.7	71.4	61.7	80.6	77.1	77.5	72.9
Sweden	52.0	62.9	59.3	64.2	73.5	60.8	64.9	63.2	55.2	73.6	68.0	71.5	64.7
Lithuania	46.2	51.2	62.9	61.9	67.3	54.1	67.3	58.6	53.7	61.2	61.8	50.9	55.4
Finland	37.1	48.0	34.8	40.2	45.8	32.5	37.4	36.3	34.7	47.2	37.3	35.8	43.1

6. Sustainable Agriculture Initiative (SAI) Platform

Since 2015, all our sugar beet growers participate in the Farm Sustainability Assessment (FSA) created by the Sustainable Agriculture Initiative (SAI) Platform. These scores are verified by a third party to ensure transparency and consistency.

In Germany, we use REDcert certification, for the production of bioethanol in our factory Klein Wanzleben. Verification audits are carried out annually. Successful REDcert verification is equivalent to the SAI's silver level.

	Denmark	Sweden	Lithuania	Poland	Slovakia	Finland
Verified score	93 % Gold 7 % Silver	23 % Gold 77 % Silver	83 % Gold 17 % Silver	78 % Gold 22 % Silver	43 % Gold 57 % Silver	33 % Gold 67 % Silver
Valid until	01,06,2025	01,06,2025	22,02,2026	30,11,2024	30,11,2024	30,11,2024

7. Employees

Nordzucker places great importance on the development of its employees and the recruitment of new ones. The figures on our workforce only cover our European operations.

7.1. Employee information

These figures provide a general description of our workforce on a fiscal year basis.

	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
Number of employees	3,206	3,234	3,233	3,208	3,146	3,114	3,096	3,104
Average age*	47.4	47.6	47.7	47.4	47.3	47.2	47.0	46.6
% of employees covered by collective agreement*	86	86	86	86	86	86	87.4	86.2
% of blue-collar workers*	62	62	62	62	64	64	64	62.3

*Only permanent employees considered

7.2. Female employee representation

Only permanent employees are considered in these figures.

Years	% of female employees	Number of female employees
2015/2016	21,5	633
2016/2017	21,3	623
2017/2018	20,9	605
2018/2019	21,6	619
2019/2020	21,6	607
2020/2021	21,7	612
2021/2022	21,7	607
2022/2023	22,4	638

7.3. Work accidents

Occupational accidents are defined as more than three days' absence from work, related to an accident at work.

Year	Number of work accidents
2009	33
2010	29
2011	35
2012	27
2013	24
2014	23
2015	20
2016	18
2017	40
2018	36
2019	21
2020	28
2021	29
2022	24

Annex

Nordzucker previously published sustainability data for selected indicators up to 2009. However, since the update of our sustainability data as part of the “Sustainability in Numbers” project, the information before and after the update is not directly comparable. However, as Nordzucker is committed to increasing the transparency of its business, older data is presented to increase the traceability of the timeline. The figures shown here are no longer updated and only represent the European sites.

		2009	2010	2011	2012	2013	2014	2015	2016	2017
Scope 1	Absolute (t CO ₂)	1,247,214	1,147,750	1,272,850	1,324,809	1,202,802	1,143,377	1,037,875	1,023,745	1,036,065
Scope 1	Intensity (t CO ₂ /t sugar)	0.444	0.474	0.418	0.429	0.411	0.378	0.407	0.369	0.372
Scope 2	Absolute (t CO ₂)	50,134	50,639	52,678	49,532	65,562	62,229	52,958	57,344	63,956
Scope 2	Intensity (t CO ₂ /t sugar)	0.018	0.021	0.017	0.016	0.022	0.021	0.021	0.021	0.023
SO ₂ (t)	-	2,814	2,187	2,443	2,440	2,096	2,051	1,731	1,696	1,533
NO _x (t)	-	1,694	1,489	1,643	1,465	1,396	1,222	1,175	1,013	1,099
Dust (t)	-	493	478	529	601	532	570	430	289	285
Energy usage	Absolute (MWh)	4,939,793	4,623,753	5,091,741	5,246,409	4,802,765	4,639,171	4,273,128	4,121,913	4,253,148
Energy usage	Intensity (MWh/t sugar)	1,757	1,909	1,673	1,701	1,643	1,534	1,675	1,484	1,528
Renewable energy	Absolute (MWh)	76,817	89,337	83,689	89,240	95,889	95,310	94,824	72,469	109,471
Renewable energy	Share of total (%)	1.6	1.9	1.6	1.7	2.0	2.1	2.2	1.8	2.6
Water consumption	Absolute (m ³)	-	2,983,512	2,743,987	3,165,918	3,435,782	3,396,701	3,245,882	3,153,183	3,162,187
Water consumption	Intensity (m ³ /t sugar)	-	1.232	0.902	1.027	1.175	1.123	1.272	1.135	1.136
Municipal water	Absolute (m ³)	-	1,323,073	1,109,175	1,383,255	1,409,380	1,403,089	1,383,448	1,445,107	1,265,714
Water own well and surface water well	Absolute (m ³)	-	1,660,439	1,634,811	1,782,663	2,026,402	1,993,612	1,862,434	1,708,076	1,896,473
Water discharge	Absolute (m ³)	-	3.814	3.600	3.473	3.575	3.480	3.752	3.136	3.021
Water discharge	Intensity (m ³ /t sugar)	-	9,239,034	10,954,879	10,711,373	10,449,971	10,527,229	9,571,553	8,708,721	8,407,951

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