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Sustainability Report 2012/2013



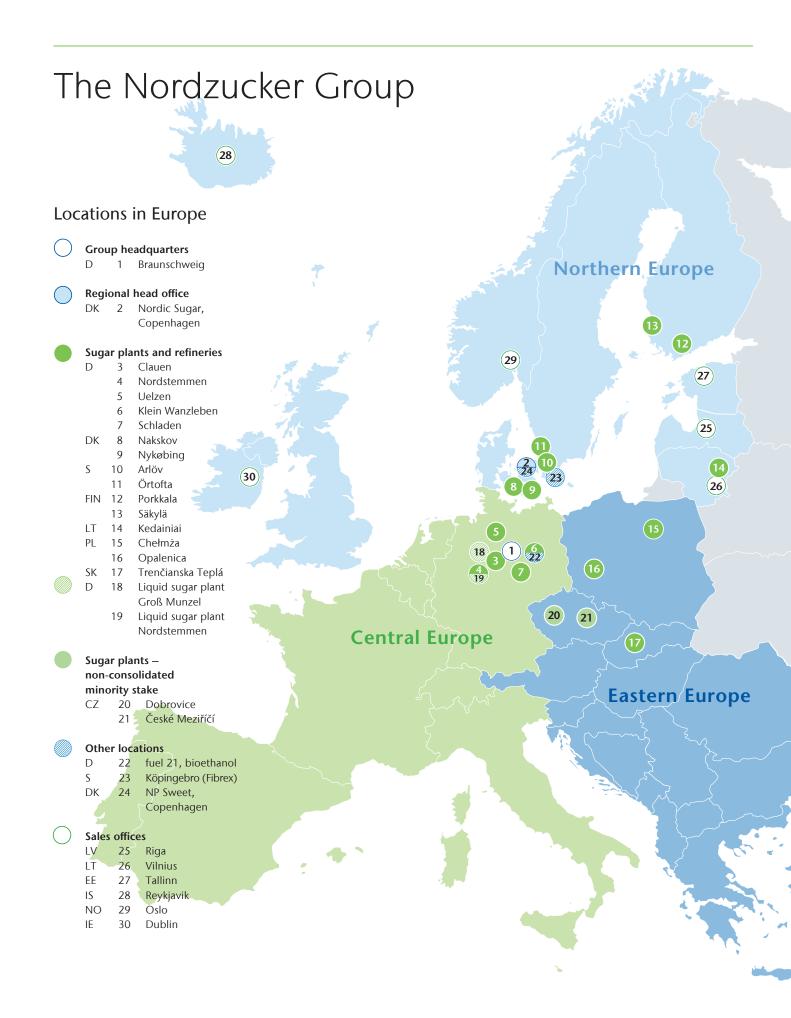
01 This report

This report covers all the companies in which Nordzucker holds a majority share and includes data for the financial years 2008/2009 to 2011/2012 (March – February). Most of the environmental data, however, follows the calendar years from 2009 to 2011. The report does not include environmental data for Nordzucker's fuel 21 subsidiary.

The focus is our full value chain, covering the supply chain, production, products, customers, employees and our community. In preparing the report, we have used those indicators from the *Global Reporting Initiative (GRI) G3.1* Guidelines that we consider most relevant to our business.

Sustainability timeline

April 2013	Third Nordzucker Sustainability Report		
August 2012	Health and safety strategy		
August 2012	Energy and climate strategy		
July 2012	Sustainability strategy		
June 2012	Joined UN "Global Compact"		
June 2012	Nordzucker Code of Conduct developed		
2009	Nordzucker acquired Nordic Sugar		
	(now organised as Region Northern Europe)		
2008	Second Nordzucker Sustainability Report		
2004/2005	First Nordzucker Sustainability Report		
1998-2003	Nordzucker environmental reports		
since 1995	Annual EMAS reports for every sugar factory		
	in Germany		
1994	Nordzucker environmental guidelines and		
	product safety regulations		



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Key figures



Sustainability focus areas

Energy and environment

We minimise our use of resources and reduce our energy and climate impacts.

Health and safety

We want everybody at Nordzucker to be healthy and safe.











Product quality and customer satisfaction

We focus on high quality products and strive to be proactive, effective and innovative in all relations with customers.

Product safety

We deliver safe products and have efficient food and feed safety systems in place.

Business integrity and social responsibility

We believe that we have a responsibility for the sustainability performance of our products in sourcing as well as in use.

02 Our company

Nordzucker is the second largest sugar producer in the EU with a market share of 15 per cent. In 2011/2012, we produced around 2.9 million tonnes of sugar from 17.9 million tonnes of sugar beet. More than 15,000 farmers across Europe deliver the sugar beet to our 13 sugar factories, located in seven countries.

We also produce white sugar at three refineries and liquid sugar at several plants.

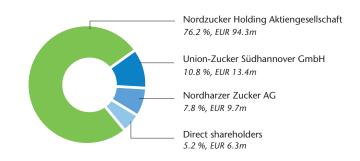
We primarily serve customers within the food industry, including leading manufacturers of bakery, confectionery and dairy products, jams, beverages and ice cream. Around 20 per cent of the sugar we produce is sold directly to consumers via retailers, mainly under our *SweetFamily* and *Dansukker* brand names. From our sugar production, we also produce dried pulp pellets and processed pulp for animal feed and *molasses* for the yeast and alcohol industries.

In 2011/2012, our company had on average 3,280 employees, divided among three regions: Central, Eastern and Northern Europe.

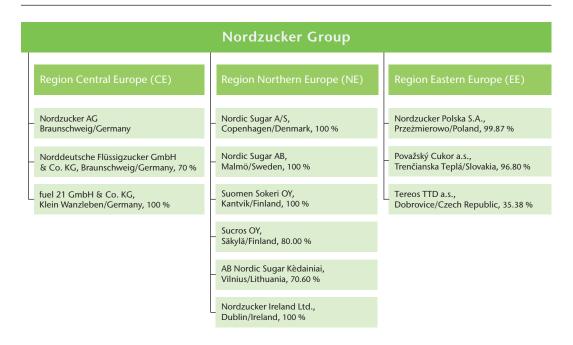
Group structure

The Executive Board of Nordzucker reports to the Supervisory Board, which comprises 14 shareholder representatives and seven employee representatives. Farmers hold a substantial part of shares in Nordzucker AG via three German holding companies: Nordzucker Holding AG (76.2 per cent), Union-Zucker Südhannover GmbH (10.8 per cent) and Nordharzer Zucker AG (7.8 per cent). The remaining 5.2 per cent of capital is held by other shareholders

Shareholder structure Nordzucker AG EUR 123.7m share capital



Corporate structure of Nordzucker Group



Sustainability is our bottom line

Dear Readers,

The 2012/2013 Nordzucker Sustainability Report is the first since our acquisition of Nordic Sugar in 2009. As such, it marks a milestone for our combined company. First and foremost it demonstrates our ongoing commitment to the principles of sustainable development throughout our organisation and supply chain.

Over the past year, we have taken the time to review our sustainability strategy in order to match our approach to the company we have grown into today. At the same time, we want to secure continued progress in integrating sustainability in all our activities.

We believe that targeting an even stronger sustainability performance is a way to enhance and ensure the future of our business. We are inspired by the opportunities it offers by adding value to our stakeholders as well as to our business.

A deep-rooted approach

Our focus on sustainability builds on a long-standing tradition in our company and is a natural priority for us. As a business dependent on nature's resources and stable climates, our environmental and climate consciousness is deeply rooted. Our ongoing commitment to reducing the footprint of our activities has helped us make significant progress over the years. By introducing increasingly sophisticated technology to our processes, for example, we have cut our energy consumption and CO₂ emissions considerably. Today, energy optimisation and measures to reduce our dependence on fossil fuels remain a primary action area. Lower resource consumption not only improves our sustainability profile. It also makes financial sense, with an immediate positive impact on our bottom line.

As a sugar and feed producer, we are aware of the demands that go with supplying an ingredient used in human and animal diets and with the role we play in the commercial success of our customers worldwide. Our response is a systematic, proactive approach to ensuring the integrity of our supply chain through setting high standards, working to identify and deal with potential risks, and nurturing the strong quality-conscious spirit of our team.

Nordzucker employs around 3,300 people in several countries. Their competences and desire to excel shape our success, including in the sustainability area. To maintain that high level of commitment, the provision of safe and inspiring work conditions is a core priority. We are currently focused on ensuring that Nordzucker remains attractive to the diverse group of employees we are privileged to have in our company today – and to the new talents we will need in the future.

Good business sense

At Nordzucker, we have made continuous improvements to our sustainability performance over the years, constantly raising the bar for our work. In determining our priorities, we seek to take our stakeholders' views and concerns into greatest possible account. We believe in sharing our experience and are glad that we have been able to support several of our supply chain partners in making progress with their sustainability efforts, too.



We are aware that there remain challenges to be tackled – and that new ones will arise, particularly as we expand our business internationally. However, there is no doubt that an ambitious approach to sustainability boosts our competitive power and is the best strategy for our company and stakeholders. Backed by a strong culture for improvement and the know-how of our team, we are committed to leading the sustainable development within sugar and comparable industries.

An increasing number of customers and other partners show an interest in our sustainability performance. We see this as a welcome opportunity to maintain a dialogue about our initiatives and priorities. This report is an important tool in that communication.

Nordzucker AG The Executive Board

Hartwig Fuchs

Axel Aumüller

Mats Liljestam

Dr Michael Noth

Dr Niels Pörksen

03 Our approach to sustainability

Managing sustainability issues – our integrated approach

New sustainability strategy

Materiality process

Sustainability is integral to our long-term business model.

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Managing sustainability issues – our integrated approach

Sustainability is integral to our long-term business model.

Sustainability issues identified as key to our business and our stakeholders are managed through an integrated approach. Sustainability is a line responsibility and integrated into the way Nordzucker conducts business.

The Corporate Sustainable Development department works closely with a network of regional staff and local factory coordinators as well as all functions in the company.

Sustainability is a business-wide responsibility

Meeting our sustainability goals and objectives requires the collaboration of all our employees. At board level, responsibility rests with the Chief Operating Officer (COO), who chairs the Sustainability Forum. Meeting at least three times a year, the forum members discuss and evaluate the sustainability strategy, action plans and related risks and opportunities. Recommendations from the forum provide the basis for strategic decision-making on sustainability issues by Nordzucker's Executive Board.

The forum comprises three Executive Board members and seven senior executives from sales, production, agriculture, communication and sustainable development. The Vice President of Corporate Sustainable Development reports directly to the COO.

Operational responsibility rests with line managers, supported by the Corporate Sustainable Development team, which works directly with factories and functions in the headquarters in cooperation with regional support staff. The team also collaborates with cross-regional workgroups, regional support functions and local coordinators at the factories. Specific sustainability policies are implemented through action plans aimed at meeting set targets.

Corporate *key performance indicators (KPIs)* measure our progress towards sustainability goals. To ensure the implementation of improvements in all parts of the organisation, annual targets are broken down to factory level and supported by the organisational planning and target-setting processes. Progress is reported internally every quarter. An integrated management system, relevant certification processes and a robust internal audit programme support our continuous improvement culture.

WE SUPPORT

UN Global Compact

Nordzucker became a signatory of the *UN Global Compact* in June 2012. The compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, the environment and anti-corruption. With over 7,000 corporate and 3,000 non-business participants from over 130 countries, it is the largest voluntary corporate responsibility initiative in the world.

Our work at Nordzucker is already very much aligned with the *UN Global Compact*. Now, as a signatory, we will prepare an annual progress report, detailing our performance against the Compact's ten principles.

Our approach



- Sustainability strategies, evaluation of risks and opportunities
- Strategy, targets and action plans for all areas, corporate KPIs.
 Quarterly review/reports
- Regional KPIs and actions, follow-up and reporting
- Local KPIs and actions, follow-up and reporting

New sustainability strategy

To support the continued harmonisation of sustainability efforts across the Group and gear our approach to the growing international scope of our business, we developed a new sustainability strategy in 2012. Building on the substantial progress already made, the aim of the strategy is to enhance our long-term competitive ability and reduce negative impacts on our surroundings, delivering benefits to our stakeholders.

Our goal ...

is to create an enduring, international organisation by fully integrating sustainability in the core of our business.

We will pursue this by continuing to:

- strengthen the integration of sustainability in our business processes
- maintain high quality and safety standards for food and feed
- improve the environmental performance of our production plants
- improve our health and safety performance
- embed sustainability in the supply chain
- improve sustainability communication and collaboration with key stakeholders, including customers

Code of Conduct

In response to new international challenges we have developed a code of conduct to be launched early 2013. The code of conduct sets out the basic principles that all of us at Nordzucker must observe. The code covers human and labour rights, energy use and environmental protection, supplier requirements, quality, food/feed safety and customer relations.

The *code of conduct* will be rolled out across the organisation in consultation with the works councils.

Materiality process

Through our sustainability reporting, we aim to give stakeholders a clear picture of our performance, the challenges we face, and actions to address those challenges. We define our key stakeholders as customers, consumers, employees, shareholders, sugar beet and cane sugar growers, other key suppliers, neighbours, the authorities and the local community. Our intention is to report on information defined as material by the materiality matrix.

Principle of the AA1000 Assurance Standard

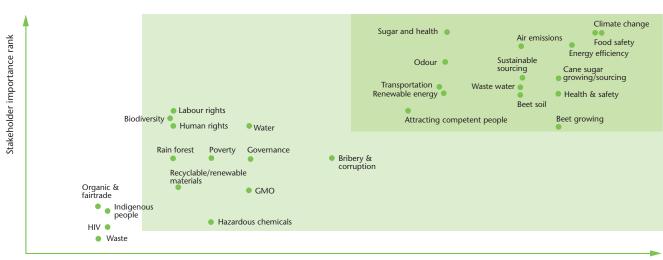
Information on our social, environmental and economic performance is considered material if required by our stakeholders in order to make informed judgements and decisions and take appropriate actions. The Materiality Principle of the *AA1000 AS* focuses on information of importance to stakeholders and its accuracy.

Materiality matrix

The issues shaded dark green in the matrix are considered to be the most material for our stakeholders and to the success of our business.

We report on the areas which have the highest influence on our business and, at the same time, are of most concern to our stakeholders.

Stakeholder importance rank/risk and opportunities for Nordzucker rank*



Nordzucker significance rank

^{*}Detailed calculation method see page 56.

04 Sugar beet farming and sourcing

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Cane sugar sourcing 17

Increasing sugar yields while using the same amount of resources enables us to increase productivity and, at the same time, reduce environmental impact.





Sugar beet is an environmentally friendly crop

At Nordzucker, we have always worked in partnership with beet growers to optimise cultivation methods. These improved methods, combined with plant breeding research and development, have over time helped raise the sugar concentration in the beet from 5 per cent up to 20 per cent, while yield per hectare has increased tenfold.

Sugar beet is an environmentally friendly crop. It has a very deep root system that is good for soil structure and efficient water uptake. Growing into the autumn, when other crops are already harvested, the beet continues to absorb nitrogen from the soil, reducing the risk of nitrogen leakage.

The sustainability of the beet crop remains a high priority, for the sake of both the environment and our business. For this reason, we have taken a number of initiatives to support farmers in making further production improvements.

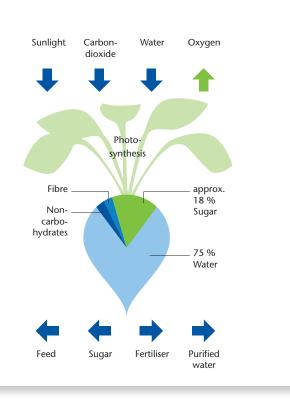


100 per cent of the sugar beet is utilised

Through the process of photosynthesis, sugar beet uses the energy in sunlight, along with carbon dioxide from the air and water from the soil, for plant growth and in the process releases oxygen to the air.

One hectare of sugar beet typically produces 15 million litres of oxygen and 10,000 kilos of sugar.

All of the sugar beet is used in our production. The fibres become high quality animal feed; the *non-carbohydrates* provide a combined liming and fertilising product used for soil improvement, thus recirculating the nutrients to the beet fields. The water contained in the sugar beet is used in the sugar production process, making the sugar factory almost self-sufficient with water.



Farming in balance with nature



Torsten Thuresson, farmer in Ystad, Sweden

"A well-planned crop rotation will increase soil fertility and reduce plant pests and diseases."

Interview with Torsten Thuresson

What is the secret of successful farming?

Holistic thinking is important. To create a balanced, sustainable farming system, you have to start with the natural conditions on your farm and make sure that all parts of production work together and support each other. For example, well-planned crop rotation will increase soil fertility and reduce problems such as plant pests and diseases. Sugar beet is a valuable element in crop rotation due to its relatively low water requirement and efficient use of nitrogen.

Nordzucker's $20 \cdot 20 \cdot 20$ initiative to increase sugar beet yields shows that they understand the importance of high yields to crop sustainability. High yields mean you have succeeded in optimising and balancing growing parameters along with utilising resources effectively.

How do you consider the environment?

I have many small fields, with country roads and houses among them. The area is very popular with tourists and locals. That is why I try to consider my surroundings by reducing pesticide spraying to an absolute minimum and keeping strips of grassland along fields and waterways for safety. Detection and warning systems also help me keep pesticide use to a minimum.

How do you take care of the soil?

For many years, I have tried to make the best possible use of natural manure. The key words are timing and precision, that is using the right amount at the right time. This means I have reduced the need for commercial fertilisers on the farm considerably – which is, of course, both good for my finances and for the environment. New technology, such as GPS, now provides great possibilities for increasing precision and, through that, sustainability in farming.







Taking beet growing to new levels

Increasing sugar yields per hectare while using the same amount of resources enables us to increase productivity and, at the same time, reduce environmental impact.

In 2011, we launched our $20 \cdot 20 \cdot 20$ efficiency initiative. This provides a clear vision for where we want to be in 2020, when 20 per cent of our top-performing farmers should have a 20-tonne sugar yield per hectare. That is an ambitious target, but we are confident it can be achieved.

The $20 \cdot 20 \cdot 20$ initiative focuses on five areas: breeding, cultivation methods, harvest, storage and cultivation structure. Working in close collaboration with our farmers and network partners, we are examining the entire process chain from the preparation of the seedbed through to the construction of the beet clamp.

Learning from the best

Many factors can influence beet production, including climate and soil. Nevertheless, regardless of the prevailing conditions,

there are some farmers who regularly produce superior yields compared to others.

To understand and share this expertise, we have established regional competence teams across seven countries, consisting of Nordzucker cultivation advisers and interested farmers. The teams focus on developing practical solutions and are very hands on, with meetings often taking place in the beet fields. In this way, valuable lessons learned about cultivation techniques can be passed on to improve the yields of all Nordzucker farmers.

Encouraging results

One new approach to yield optimisation is combined drilling, which involves applying fertiliser when the seed is sown. Apart from saving on fertiliser, time, fuel and carbon dioxide, this method ensures optimal beet nourishment and promotes the even development of the crop.



The plan is to expand the use of combined drilling, particularly on sandy soils where it is most effective.

This $20 \cdot 20 \cdot 20$ initiative is already delivering results. In 2011/2012, the top 20 per cent of farms achieved an average sugar yield of 15.9 tonnes per hectare.

Our farmers have long treated the soil carefully, using only as much fertiliser and crop protection materials as the beet needs. Through their practices, the use of nitrogen fertiliser has been significantly reduced. Today an average 110 kg of nitrogen are used per hectare, compared with over 200 kg 30 years ago. Over the same period, yields have almost doubled. Similarly the use of pelleted seed has helped reduce the use of insecticide from 3 litres to 60 grams per hectare at the time of sowing. These are all results that show how sustainability and high yields are mutually compatible.

Beet cultivation area and sugar production, Nordzucker Group

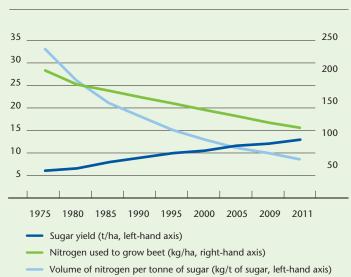


2002/03 03/04 04/05 05/06 06/07 07/08 08/09 09/10 10/11 11/12

Beet cultivation area (2002/2003 = 100)

Sugar production (2002/2003 = 100)

Changes in nitrogen efficiency, Nordzucker Germany





Monitoring suppliers

In order to underpin our focus on sustainability, we communicate our requirements and expectations in this area to our suppliers and traders as an integral part of our contractual agreements.

In this way, we indicate clearly the level of performance we require. At the same time, we are actively engaged in raising awareness of sustainability issues and promoting continuous improvements in our supply chain by sharing our experience and expertise. We cooperate with suppliers of sugar beet, ingredients, packaging materials, processing aids and raw cane sugar and check their performance through a risk-based audit approach.

The growing internationalisation of our supply chain brings new sustainability challenges as we are sourcing from countries with different traditions and levels of sustainable development. This makes our dialogue with suppliers increasingly important. We make continuing efforts to improve our approach.

Supplier Code of Conduct

The development of a *supplier code* of *conduct* is a new step in ensuring high sustainability performance throughout the value chain. This is a particularly helpful tool in managing the increased level of sourcing from global markets.

All suppliers will be required to comply with the code. To monitor compliance, we will use our risk-based audit approach, which includes:

- A standard supplier evaluation
- A detailed questionnaire
- Audits based on evaluations, questionnaires, country risks, experience, criticality and food safety aspects
- Audit follow-up and remedial action plans

Cane sugar sourcing

The EU is dependent on imported sugar to meet demand in the European market. At present, imported cane sugar accounts for about 15 per cent of EU consumption. We are committed to being an active player in this market, ensuring that supply chain conditions – including cultivation, processing, loading and transportation – live up to our expectations.

Audit procedure

Most of the cane sugar we source on the global market originates from South America and Africa. We import mainly raw cane sugar for refining into white sugar. A small part of the cane sugar we import is for direct consumption. For this type of sugar, which is delivered in bags, we audit both the supplying sugar mill and the farms where the sugar cane is grown.

The raw cane sugar we purchase for bulk delivery is exported from large shipping terminals that mix supplies from a number of sugar mills. This means that the sugar is not traceable to individual mills. In this case we audit a random selection of the sugar mills that we have been buying from as well as the relevant shipping terminal.

We only purchase cane sugar if we are allowed to audit the supplying sugar mills. As a general rule, we audit suppliers from a new region where we intend to do recurring business.

Ensuring our high standards are met

Our supplier audits cover food safety and quality, social responsibility, health and safety and the environment. In cases of non-compliance, we either stop further deliveries or suggest improvements, depending on the extent to which our requirements are not being met. Where we suggest that a supplier takes remedial action, we follow up to ensure the appropriate standard is reached.

Over the past two years, we have audited ten sugar cane mills in South America and Africa, a joint venture partner in Asia, and six harbour terminals. In the few cases of non-compliance, we have agreed remedial action plans.



05 Our production

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Our production processes are designed for high levels of reuse and recycling of heat, steam and water.





Driving sustainability through process efficiencies

In line with our commitment to operational excellence, we work to make the extraction of sugar from beet increasingly efficient and sustainable. This includes optimising our use of raw materials and reducing energy consumption.

Our production processes are designed for high levels of reuse and recycling of heat, steam and water. Raw materials left over from sugar production are turned into valuable products, such as animal feed and biogas.

Equipped with their own highly efficient power plants, our factories produce most of the steam and electricity required for the sugar manufacturing process, in some cases delivering surplus electricity to the local grid. Almost all of our factories also have their own wastewater treatment plants. Two exceptions are our factories in Arlöv, Sweden, and Säkylä, Finland, which make use of a municipal and private wastewater treatment plant, respectively.

Our environmental track record

Our efforts to reduce the environmental impact of our activities focus on improving efficiency and investing in energy-saving projects, steps that also boost our profitability. Continuous improvement with a long-term perspective is central to our approach.

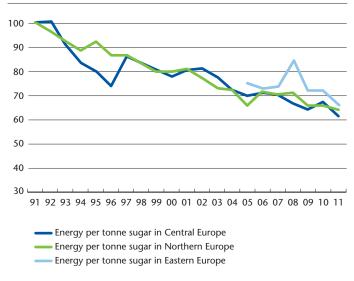
Reducing energy consumption remains key to our business

Sugar production is an energy-intensive process so energy optimisation is an area where we can make the greatest difference. Energy efficiencies not only reduce our environmental and climate impact but also our energy costs, which have a major impact on our bottom line. The vast majority of our environmental investments are earmarked for energy-saving projects.

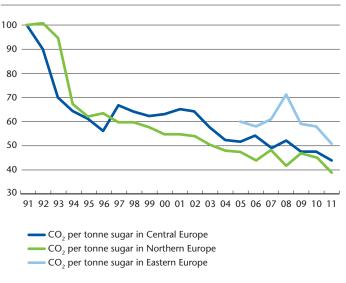
On the back of our long-standing commitment to this area, we have successfully cut our energy consumption by 40 per cent and $\rm CO_2$ emissions by close to 60 per cent since 1990. Efficiency measures have helped us achieve this, for example the switch to gas and more effective use of biogas produced in our wastewater treatment plants.

The two graphs below track our energy and CO_2 performance in Central, Northern and Eastern Europe from 1991 to 2011. Although the same data for 1991 until 2004 is not available for our plants in Eastern Europe, the data we have shows that this region accounts for about 10 per cent of total energy consumption and CO_2 emissions. This data is included in the overview of new Group energy consumption and CO_2 emissions (see graph on page 23).

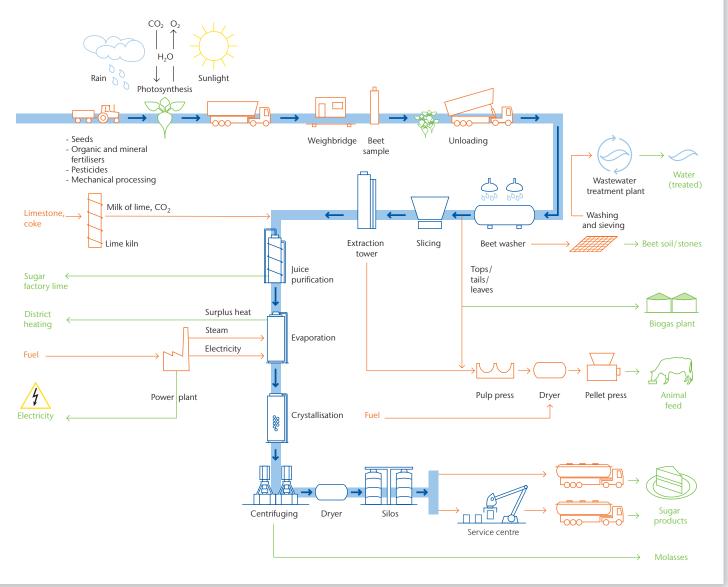
Energy consumption in Central Europe, Northern Europe, Eastern Europe per tonne of sugar / indexed, 1991=100%



CO₂ emissions in Central Europe, Northern Europe, Eastern Europe per tonne of sugar / indexed, 1991=100%



Sugar extraction – step by step



New energy and climate strategy

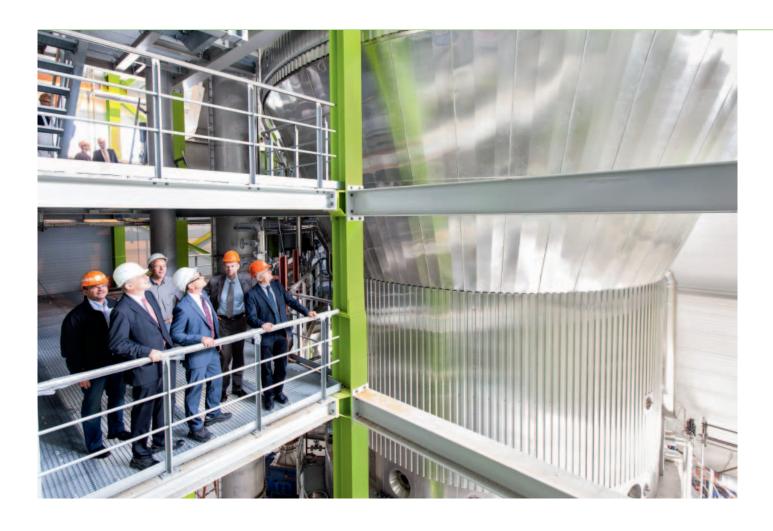
To drive further improvements in our energy performance, we adopted the first Nordzucker Energy and Climate Strategy in 2012. It is designed to bring us still closer to our vision: to continue developing an economically and environmentally sound energy platform and to play an active role towards a more biomass-based economy.

The strategy sets objectives and actions for achieving further energy efficiencies and CO_2 reductions. As it is rolled out across the business, each factory sets local targets in line with Group goals.

Our 2020 energy target is to reduce the amount of energy we use to produce one tonne of sugar by 45 per cent, using 1990 as our baseline: 2020 target: 1,700 kWh/t sugar¹.

Although, over the past 20 years, we have significantly reduced our energy usage and are close to achieving our target, the last few steps to attaining our goal will be the most challenging. Further reduction initiatives require more sophisticated solutions and investments.

¹ Due to the natural variation in sugar content, which influences the amount of energy required for extraction, we have normalised our energy consumption target by assuming a sugar content of 17.5 per cent for all the beet grown in the three Nordzucker regions.



Energy reduction initiatives

The energy resources we use are mainly fossil fuels, primarily natural gas, coal and heavy heating oil. Smaller amounts of anthracite and coke are used in the lime kiln. In addition, we employ renewable energy sources such as biogas from our wastewater treatment plant.

Our major energy reduction initiatives over the last three years have included the installation of more effective beet pulp presses and heat exchangers, with more effective cleaning of the heat exchangers to optimise their performance. Additional heating surfaces, for utilising residual heat, and boiler economisers are also in place.

Effective use of the biogas generated in our *anaerobic wastewater* treatment plants is another priority. This biogas is burned in our boilers and dryers, reducing the use of fossil fuels.

Many of our optimisation activities regarding use of biogas are ongoing, for example:

- installation of biogas burners in existing boilers
- installation of anaerobic digesters in plants that previously did not have anaerobic treatment
- drying of biogas before transportation to the boiler house, avoiding condensation in the pipes

Using the biogas generated in our wastewater treatment plants, we have the opportunity to reduce fossil fuel consumption by up to 5 per cent.

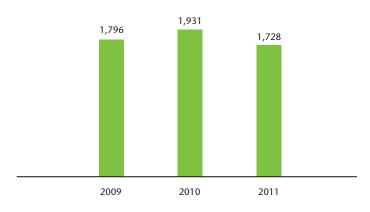
Investing for the future

Since 2010/2011, we have increased our investments in projects to reduce our energy consumption from EUR 3 million to EUR 10 million in 2011/2012 and EUR 20 million in 2012/2013.

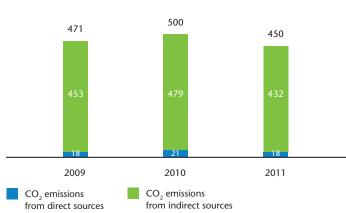
The installation of new steam dryers at our factories in Uelzen, Germany, and Nakskov, Denmark, represents our most significant energy-saving project so far, enabling the factories to save up to 25 per cent of their total energy consumption. Representing an investment of close to EUR 20 million, the steam dryer in Nakskov, for example, reduces energy consumption by 130 gigawatt hours a year, equivalent to the annual heat consumption of around 7,000 households. This also means an annual reduction in CO_2 emissions of 50,000 tonnes.

Plans are going ahead to invest in a steam dryer in Örtofta, Sweden, and in the reconstruction of a boiler at our Nykøbing factory in Denmark.

Total energy consumption in kWh/t sugar



CO_2 emissions from direct and indirect sources in kg/t sugar



Other more minor energy optimisation investments at our plants include cooling equipment, new heat exchangers, frequency converters and waste heat recovery.

CO₂ emissions reduction target

One of the targets of our energy and climate strategy is to reduce CO_2 emissions from sugar production to 380 kg CO_2 /t sugar by 2020 – 65 per cent less than our 1990 baseline.

Total CO_2 emissions declined in 2009–2011 due to a series of energy efficiency measures. These include replacing oil with gas at our factories in Kedainiai, Lithuania, and Klein Wanzleben, Germany – a fuel change that has cut CO_2 emissions by up to



27 per cent at both factories. On a smaller scale, the effective reuse of biogas generated in our *anaerobic wastewater treatment plants* has also had a positive impact on performance.

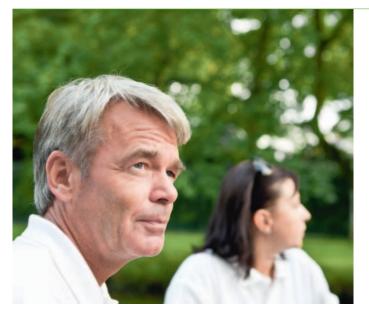
The power plants at all our German factories are equipped with bivalent operating systems that make it possible to switch between fuel sources. Where feasible, we use natural gas, which emits less CO_2 compared to other fuel sources. Our plan is to install bivalent operating systems in other regions when existing boilers need to be reconstructed or new boilers are installed. Optimisation of the biogas production of our wastewater treatment plants will reduce CO_2 emissions further.

Carbon footprint of sugar

The carbon footprint of sugar has become increasingly important to our stakeholders. Many of our customers want to work with suppliers who take steps to reduce their emissions of CO_2 and other *greenhouse gases* and can provide robust supporting data. However, the lack of a common methodology for measuring carbon footprint within the beet sugar industry remains a challenge.

European study

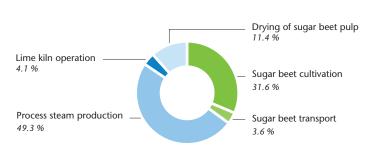
In 2012, The Comité Européen des Fabricants de Sucre (CEFS) published a European carbon footprint study of EU beet sugar. One of the key findings is that the carbon footprint of EU beet sugar varies widely depending on the carbon accounting methodology used. Even with the same data set, different methodologies may give results ranging from 241 kg to 771 kg CO₂ per tonne of sugar produced.



The carbon footprint of sugar cultivation and production has become increasingly important to our stakeholders.

Nonetheless the CEFS study assists our CO_2 reduction efforts by showing how each step in the value chain contributes to the total carbon footprint. About 32 per cent of emissions originate from sugar beet cultivation, 4 per cent from sugar beet transportation, 49 per cent from process steam production, 4 per cent from lime kiln operations and 11 per cent from the drying of sugar beet pulp.

The results of the CEFS carbon footprint study



Source: "The Product Carbon Footprint of EU Beet Sugar", CEFS, March – April, 2012

Support for our sustainability strategy

The study's results confirm the focus of our sustainability initiatives. As the majority of emissions (64 per cent) emanate from production processes, this underlines the importance of driving energy efficiency measures. That 32 per cent of emissions originate from cultivation supports our efforts to help beet growers reduce their emissions.

Our carbon footprint

In an effort to understand our carbon emissions profile and respond to customer requests, Nordzucker assessed the carbon footprint of the sugar produced at the 13 beet sugar factories. Several methodologies were used. Consistent with the *CEFS* findings, the results varied depending on which methodology was used.

The unit of measurement for our carbon footprint study was one tonne of sugar as it leaves the factory. For our calculation, we used data covering 12 months of production at all 13 sugar factories, including the 2009 beet campaign. The study was performed in accordance with the *ISO 14040* and *ISO 14044* international standards for life cycle analysis.²

Our carbon footprint strategy

We found that the average CO_2 emissions of all our sugar beet factories is 580 kg $\mathrm{CO}_2\mathrm{e}/\mathrm{tonne}$ sugar. This is well within the range of the *CEFS* study. As with all lifecycle analyses, our result is unique and cannot be compared directly with other studies. The result indicates that sugar has a smaller carbon footprint than most other processed foods, for example meat or milk.

In addition to helping us respond to customer requests, the study shows which inputs and processes contribute most to our carbon footprint. This will assist us in planning further initiatives to reduce our carbon footprint.

² Substitution (system expansion) was used for co-products to avoid allocation.



Reducing CO₂ emissions in the supply chain

Our energy and climate strategy not only focuses on reducing the ${\rm CO}_2$ emissions of our own operations. It also includes plans for working with our partners to reduce the carbon footprint of the supply chain.

In cooperation with beet growers, we will continue to improve the efficiency of beet cultivation and transportation, for example, through our $20 \cdot 20 \cdot 20$ initiative. Other projects include reducing soil tare by pre-cleaning beet in the fields.

Other emissions to air

Sulphur dioxide (SO_2) and nitrogen oxide (NO_x) emissions and dust are mainly produced by combustion processes. The amounts emitted depend on the type and quality of fuel used in our boilers and pulp driers. For example, while coal and oil contain 1–4 per cent sulphur, the sulphur content of natural gas is negligible. The fuel mix used by our factories depends on the type of equipment at each site and the availability of fuel types.

Our progress

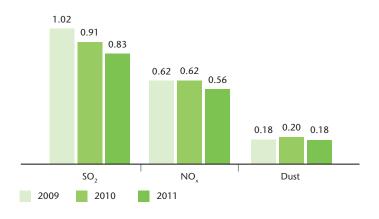
Over the last three years, our total SO_2 emissions per tonne of sugar produced have fallen almost 20 per cent. Initiatives that have contributed to this improvement include the replacement of oil with natural gas at some plants; the installation of flue gas scrubbers at German sites; and the use of fuel with a lower sulphur content.

Multi-cyclones, scrubbers, new types of filter and filter cloths are further reducing dust levels in our factories.

Projects to reduce also NO_x emissions include the reconstruction of the boiler in Nykøbing, Denmark, the replacement and reconstruction of boiler in Porkkala, Finland investment in a low NO_x gas turbine in Klein Wanzleben, Germany, and the installation of NO_x reduction systems in a number of other factories.

All these investments will ensure our compliance with the *EU Industrial Emissions Directive* that will come into effect on 1 January 2016.

SO₂, NO_x and dust produced in kg per tonne of sugar



Conserving water

Water plays a critical role in our production processes. So managing our water consumption responsibly is a natural priority for us. All the water employed in production is initially reused, then cleaned and returned to source.

Sugar beet contains approximately 75 per cent water. This is evaporated during processing, condensed and used for processing steps such as beet fluming, washing, extraction and crystallisation. We recycle water approximately 20 times before using it to transport soil to the settling ponds. In this way, we meet 90 per cent of our water requirements through water evaporated out of the beet, keeping our municipal water usage to an absolute minimum.

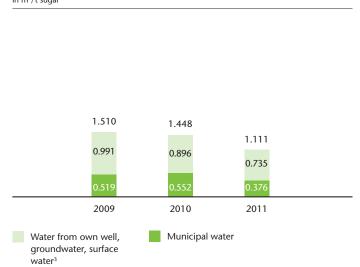
Our progress

By continually optimising our water reuse and raising awareness of water consumption, we have successfully reduced our total water consumption by 28 per cent over the past three years. The low consumption in 2011 was achieved by optimising our internal water cycles, assisted by favourable weather conditions. The good weather with low soil content enabled the factories to run more evenly with good capacity utilisation and water management.

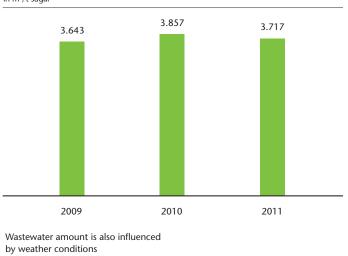
Given our healthy performance in this area, further improvements will be mainly incremental. In line with our overall *key performance indicators*, consumption will continue to be assessed and local targets defined in all factories.



Water consumption and source in m³/t sugar



Wastewater discharge after cleaning in own wastewater treatment plant³ in m³/t sugar



³ About 4.5 m3 water/t of sugar comes into the factory with the beet. That is why the amount of cleaned wastewater discharge is much higher than the "consumed" water from other sources.



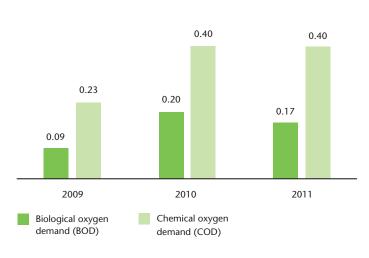
Managing our wastewater

While the efficiency of our wastewater treatment is generally high, we are still working to improve capacity and cleaning performance. New, modern treatment facilities at Kedainiai in Lithuania, Opalenica in Poland and Klein Wanzleben in Germany were taken into use for the 2012 campaign. In the future, we will optimise some of our existing treatment facilities, for example, at our Nykøbing and Nakskov plants in Denmark where production capacity has increased.

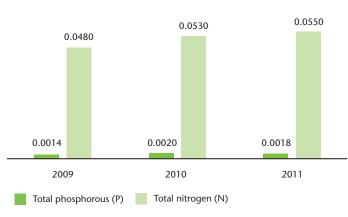
Our progress

Our technologies enable us to operate well below the official limit for the discharge of wastewater into surface water channels. As the figures show, the amount of wastewater is quite stable. The low levels of *BOD*, *COD*, phosphorus and nitrogen in the discharge indicate that our wastewater treatment plants are performing well. In addition more than 1 million cubic metres of cleaned water are stored and used for irrigation.

Biological oxygen demand (BOD)/Chemical oxygen demand (COD) in kg/t sugar



Total phosphorous (P)/total nitrogen (N) in kg/t sugar

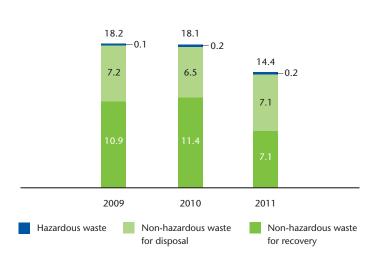




Reducing waste

Our manufacturing process turns almost the entire sugar beet into valuable products for the food and non-food sectors. The waste generated is approximately 14–19 kg per tonne of sugar produced, a level so low that further reduction is difficult. Less than 0.4 per cent of our total waste is classified as hazardous and is produced on those occasions when we undertake special maintenance and building work or need to clean our heavy oil tank. All waste is handled according to relevant national and local regulations.

Kg waste* per tonne of sugar



^{*} Waste does not include soil from beet washing and settling ponds.

Our progress

Despite the very low volume of waste generated in production, we still want to improve our performance. For 2012/2013, we have set an overall waste reduction target and local targets in each of our factories where relevant.

Improving transportation efficiency

With over 15,000 sugar beet farmers supplying beet to Nordzucker factories, optimising transportation is very much in focus. Initiatives over the last few years have cut the kilometres travelled, fuel used and carbon dioxide emitted. The high capacity trucks used by professional transport companies have also reduced the frequency of traffic significantly. For example, the use of a 26.5 tonne capacity truck reduces frequency by 40 per cent compared to a vehicle with 16 tonnes of capacity.

New beet harvesting technologies that remove soil or tare also benefit transportation efficiency. If possible, an additional cleaning step is carried out during loading. Cleaning is even more effective when fleece covers are used to keep the beet piles dry during storage. The result is reduced transport weight, saving fuel and reducing emissions. Whenever possible, the vehicles that deliver beet to the factories also transport products back to the farmers, such as sugar factory lime and feed products, like pulp and pellets. Transport distances are reduced by continuous efforts to move sugar beet production closer to factories.

Minimising transportation

In addition to reducing the impact of transporting beet from the fields to the factory, we focus on streamlining warehouse and delivery logistics.

Our goal is to achieve the most efficient tonne-km profile – tonnes of product carried for each kilometre travelled – by minimising transportation at our production and warehousing facilities while continuing to meet customer requirements.

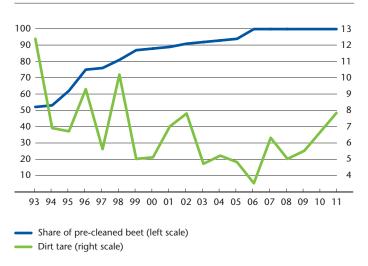
The key to success in this area is precise and detailed logistics. Our approach includes close management of sales forecasts and production plans along with supply chain management.

Other measures involve optimising internal transportation between sites, minimising truck waiting time for loading and unloading, maximising truck capacity, selecting the most fuelefficient transport, and making efficient fuel consumption part of supply agreements.

Economies of scale

Following the acquisition of Nordic Sugar, our combined production and warehousing facilities have improved the opportunities to serve customers in a more environmentally friendly way. Our larger physical presence allows better coordination of transport and brings economies of scale.

Development of pre-cleaning and dirt tare in Central Europe in per cent



Streamlining warehouse capacity also helps to reduce internal transportation. For example, the building of a 60,000-tonne silo at our Nykøbing factory in Denmark has reduced the need for transportation to external storage facilities. The same applies to the 40,000-tonne silo erected at Kedainiai, Lithuania, in 2012.



06 Our products

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Product safety 32
Quality products 34

We are able to trace all sugar beet supplies to individual farms and all other materials to the relevant commercial suppliers. Product deliveries to customers are also fully traceable.



Broad portfolio

We process natural raw materials into high quality food and feed products. During the 2011/2012 campaign, about 17.9 million tonnes of beet were processed in our 13 factories. From this, we produced close to 2.9 million tonnes of sugar, 456,000 tonnes of *molasses*, 685,000 tonnes of animal feed pellets and 253,000 tonnes of hard-pressed beet pulp. Nordzucker markets several hundred varieties of sugar products for a wide range of industry applications and household use.

Supplying products of a consistent quality in line with customer requirements and to meet strict international standards is key to our strategy and business success.

Product safety

Our entire sugar and feed production process is assessed at least once a year using the HACCP (Hazard Analysis Critical Control Point) concept, in acccordance with the requirements in our Groupwide ISO 9001 and FSSC 22000 certificates. In this way, it is possible to detect whether any changes have impacted product safety. A series of processes and measures are in place to minimise and prevent product risks. For example, high temperatures and high pH values during production destroy any microorganisms that may have entered the process via the sugar beet. Furthermore, our strict hygiene rules minimise any risk of subsequent microbial infection.





In production, filtration and sieving steps, magnets and metal detectors are designed to remove potential foreign bodies. All processing aids are required to be free of allergens as well as *kosher* and *halal*. We do not use genetically modified material in any part of our production.



Go to our website for more information on product safety, standards, our statements and certifications: www.nordzucker.com

External assurance

For the past decade, we have employed a programme for systematically sampling all our food and feed products. An external accredited laboratory analyses the samples for the presence of, for example, heavy metals, pesticides and pathogenic microorganisms. The results show that our products are within legal limits on all parameters and that our processes are effective.

Traceability

According to EU Regulation 178/2002, all food and feed products must be traceable in the sense that the immediate supplier of a food product and the immediate subsequent recipient must both be identifiable. This is commonly known as the one step up-one step down system.

At Nordzucker, we are able to trace all sugar beet supplies to individual farms and all other materials to the relevant commercial suppliers. Product deliveries to customers are also fully traceable. Where sugar is stored in large silos, products can be traced to and from the silos.

All palletised products produced by Nordzucker are provided with lot marking and a pallet label. Every unique pallet number is stored electronically. On delivery all pallets are scanned out and connected to the delivery note. The electronic data handling makes it possible to block batches and trace goods delivered.



Quality products

Nordzucker's product spectrum ranges from crystalline to liquid products and a wide variety of sugar specialities.

Granulated sugar

Granulated sugar is our most popular product and the one with the broadest range of applications. According to the requirements of our customers, we supply sugar in different categories with variations in grain size and grain size distribution from one category to another.

Liquid sugars

We produce different types of liquid sugar, used particularly by the beverage industry. Besides liquid sugar, we offer a wide variety of syrups, including invert sugar syrups and fructose syrups.

Specialities

The Nordzucker portfolio includes a large number of specialities for industrial clients and households. These include icing sugars, instant sugar, nib sugar, tea sugar and brown sugars. We develop many of our customised products in close collaboration with our industry customers.

Organic sugar

We offer a variety of organic sugar products in our regions. In Germany, we market organic preserving sugar from sugar cane. In Northern Europe, retail clients can also find organic granulated sugar, icing sugar and syrups under our Dansukker brand name. For the food industry, Nordzucker supplies organic liquid sugar and bio-invert sugar syrup made from organic cane sugar.

We test the quality of the imported sugar to guarantee the organic classification, verifying the sugar's origin, production and traceability of organic ingredients.

Fairtrade sugar

We also market a series of *Fairtrade* certified cane sugar products which are produced in accordance with international *Fairtrade* standards. In future, all cane sugar products sold on the Nordic markets will carry the international *Fairtrade* mark.



Alternative sweetening with stevia

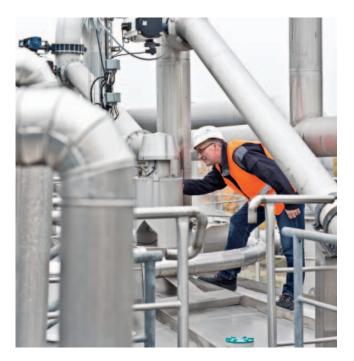
Nordzucker offers a range of stevia and combined sugar and stevia products through a joint venture partnership with PureCircle, the world's leading stevia producer.

Stevia is a sweetener comprising steviol glycosides derived from the leaves of the stevia plant, grown mainly in China. Being calorie-free and having a sweetness potency 200–300 times that of sugar, stevia is an attractive nature-based alternative to artificial sweeteners. Stevia-sugar combinations offer a special potential by combining the benefits of stevia with the many functional properties of sugar.

Nordzucker and PureCircle share a commitment to sustainability in every stage of the stevia supply chain.



For more details, please visit <u>www.purecircle.com</u> <u>www.npsweet.com</u>



Using biomass for fuel

Nordzucker entered the renewable energy market in 2007 on construction of the fuel 21 bioethanol plant. fuel 21 produces almost 400 m³ of bioethanol a day from sugar beet. The sidestream product sugar beet vinasse, is used for animal feed or as a fertiliser. In 2010, fuel 21 achieved sustainability certification according to the EU Renewable Energy Directive (RED), DIN EN 9001 and GMP B2. The plant's energy management system obtained ISO 50001 certification in 2012.



07 Our customers

Customer satisfaction 38

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We regularly conduct surveys to assess the level of customer satisfaction, obtain feedback and identify areas of improvement.



Customer satisfaction

Ensuring a continued high level of customer satisfaction is central to Nordzucker's strategy of building long-term relations with customers. Our standards in the areas of product safety, traceability and quality are essential to achieving that.

We regularly conduct surveys to assess the level of customer satisfaction, obtain feedback and identify areas of improvement. Most recently, we asked for the opinion of industrial customers in eight countries in Northern and Central Europe. The surveys showed that customer perceptions of our company are generally very positive, with for instance 75–80 per cent stating that they would recommend our company as a supplier. Other favourable scores were given for our reputation and image, products and the personal service provided by knowledgeable employees.

While positive satisfaction ratings are always welcome, the prime purpose of these surveys is to identify opportunities for continuous improvement. For instance, recent responses have inspired us to develop and strengthen our communication with customers, primarily on digital platforms. To accommodate the growing interest of several customers, we are also working to provide a more detailed picture of our sustainability performance.

Efficient handling of customer complaints

Our goal is to handle and resolve customer complaints fast and efficiently. Complaints are registered immediately and customers contacted within 24 hours. Each quarter, we conduct a thorough analysis of the complaints received and take steps to prevent recurrence of issues. Over the past fiscal year, we registered only one customer complaint per 1,000 tonnes of delivered sugar. We have set an ambitious target to resolve 80 per cent of complaints within 14 days of their receipt.

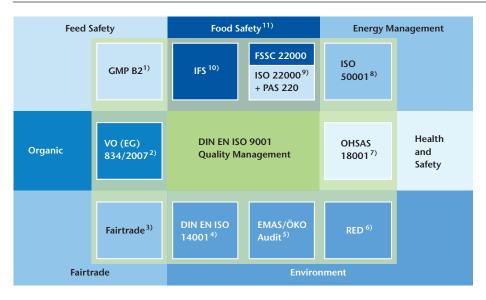
Certified management systems

Our long-standing use of certified management systems sends an important signal to customers and other stakeholders of our ability to meet their requirements and demands. They are also valuable internal tools. By documenting our procedures and processes and monitoring results, we can continuously optimise our business processes. Internal and external audits verify the effectiveness of our management systems, driven by corporate key performance indicators.

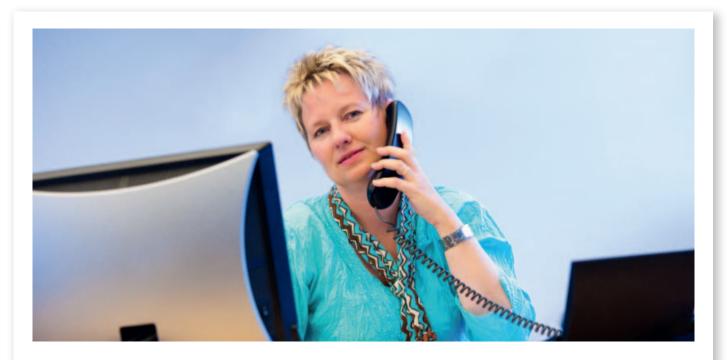
All production sites have ISO 9001 quality management and FSSC 22000 product safety management certification.

Over time, our pursuit of a more integrated approach to certification will give stakeholders a more uniform picture of the company. At the same time, it will help us reduce costs, improve resource allocation and benchmark internally.

Nordzucker's certificates



- Central Europe only, including Q+S participants, excluding liquid sugar plants; Nakskov (GMP only)
- Nordstemmen, Uelzen, liquid sugar Nordstemmen, Nakskov, Nykøbing, Arlöv, Örtofta only
- 3) DK, Fl, S only
- 4) excluding Opalenica, Chelmza
- 5) Central Europe only, excluding liquid sugar plants
- 6) Central Europe only, excluding liquid sugar plants
- 7) Slovakia and Northern Europe only
- Nakskov, Nykøbing, Schladen, liquid sugar Groß Munzel/Nordstemmen, fuel 21; Fl: National Energy Efficiency System
- 9) in Northern Europe also valid for animal feed
- 10) Nordstemmen, Uelzen only
- All locations comply with kosher requirements (except SK); all locations in Central Europe and Northern Europe comply with halal requirements



A transparent business partner

In 2010, Nordzucker joined Sedex, which is a non-profit membership organisation dedicated to promoting ethical and responsible business practices in global supply chains. With over 25,000 members in 23 industry sectors, it is the largest online platform for sharing information on supplier assessments.

Sedex allows members to store, share and report information covering four areas:

- Labour Standards
- Health and Safety
- Environment
- Business Practices

We have completed a self-assessment questionnaire for category B members covering our ethical standards in these areas.



For more information about Sedex go to the website: www.sedexglobal.com

Independent audit findings

Since 2009, a SMETA audit (Sedex Members Ethical Trade Audit) has been conducted at seven Nordzucker factories.

These audits incorporate three elements:

- A common best practice guidance on conducting ethical trade audits
- A common audit report format
- A common corrective action plan format

Conducted by independent external assessors, the initial audits have given positive results, finding only minor deviations in health and safety (documentation, access to protection equipment) and the environment (storage of chemicals, documentation and training). All deviations have been remedied.

Due to the standardised approach of these audits, we are able to share reports with several customers via the *Sedex platform*.

08 Our people

Creating an attractive environment for a diverse team

Competence development

Our health and safety track record

Active employee participation makes a strong safety culture

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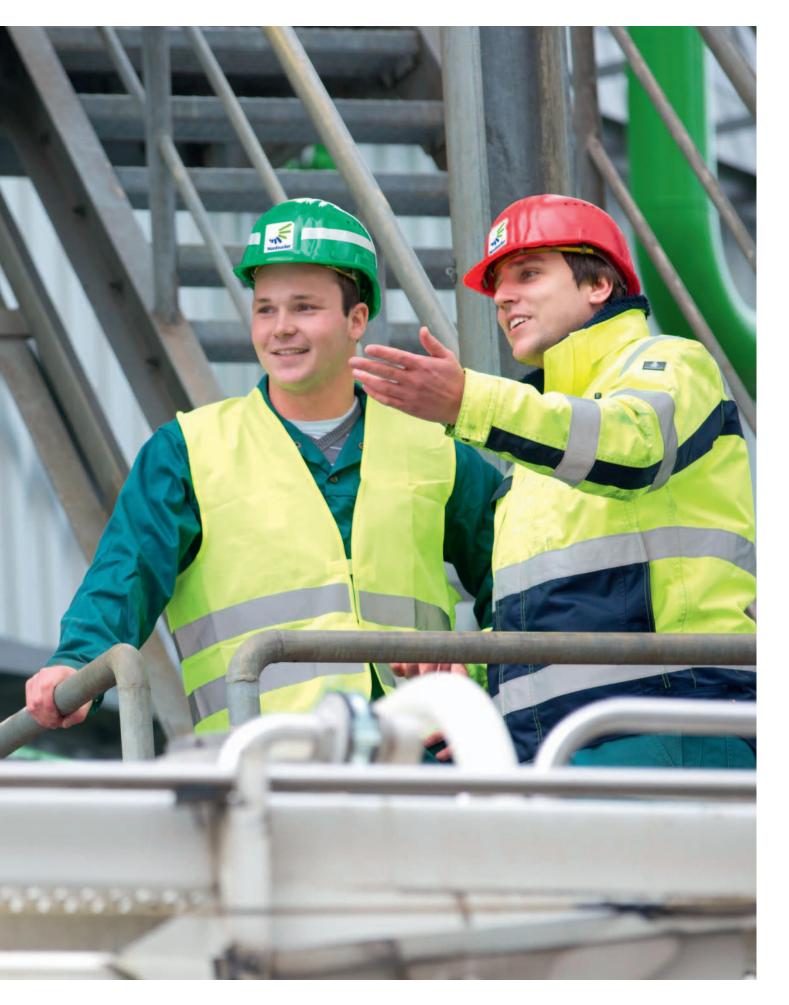
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It is fundamental to our business that Nordzucker remains an attractive employer, recognised for providing a safe and healthy workplace as well as development and career opportunities.





Creating an attractive environment for a diverse team



Inga Dransfeld-Haase, Senior Vice President, Corporate HR

"There is a growing need to anticipate and respond to individual needs and expectations."

Interview with Inga Dransfeld-Haase

What are the focus areas for HR at Nordzucker?

We have around 3,300 employees throughout Europe – a diverse team in terms of age, nationality, experience, training and education. One of our most important tasks is to harness this diversity along with our employees' high level of dedication to create a culture that encourages outstanding performance. Ensuring that Nordzucker remains an attractive place to work is an important priority for us.

What makes Nordzucker an attractive place to work?

Our farm to final product focus means that we span many areas of expertise and many types of job. Due to the current extensive changes inside and outside the company, we are facing many demanding and exciting challenges, which open new opportunities for involvement in projects and processes. Where possible, we seek to recruit internally for the new positions that arise. Our increasingly international business also gives employees the possibility to work with colleagues in other countries, for example in cross-functional and cross-regional working groups and projects.

The fact that we have a concentrated production campaign from mid-September to mid-January, followed by an off-season devoted

to other types of activity, gives us an extra opportunity to vary employee roles during the year. We can also offer our employees time for competence development during the off-season – as well as time off to pursue other interests.

We have launched a series of initiatives to promote work-life-balance. At the moment, we are mapping examples of positive practices for transferral across the Group. Examples include free use of fitness equipment, internal sports events, company participation in public running events, free health checks, free fruit, family room availability and day care services.

What challenges do you expect in the future?

There is a growing need to anticipate and respond to individual needs and expectations. Young people today, for example, have very different expectations of their working life than was the case just a few years or even decades ago. At the same time, we must consider changes in society as a whole, for example demographic change and the potential future shortage of qualified candidates. Here, at Nordzucker, our most immediate challenge is the major generational change we face throughout our organisation over the next few years. It is important that we account for all these factors in our human resource strategy.

Growing together



In 2012, we commenced the roll-out of four new corporate values – Responsibility, Appreciation, Courage and Dedication – which were selected and confirmed in a top-down and bottom-up process, respectively.

Our values support our ambition to become a truly international and sustainable company. We regard them as a promise – to ourselves, with regard to what we can expect of each other, and to our external stakeholders, with regard to what they can expect of us.

Our introductory activities to embed the values across our business have included a series of workshops in all parts of Nordzucker, where we have defined the values in more detail and discussed what they mean in our daily work.

The focus on values is a multi-year project. Several initiatives are being planned to support and inspire the organisation in embedding the values as a Nordzucker hallmark.

Competence development

One of our top HR priorities is to ensure our competence profile matches the constantly changing business challenges we face. In 2010, we set up a new corporate HR development concept called HR Conferences. The core of this concept is to facilitate employee development and succession planning based on business priorities, at group, regional and site level.

Today, the development concept includes in-house and external training programmes focused on key skills, such as language capabilities, sugar-related technical knowledge and various management competences. We have also established several assessment centres, where employees participate in exercises and tests to define their development plan. Some development programmes include multiple modules that run over a longer period. For example, our Sugar Talent Programme for high potential employees

focuses on the development of personal and management skills in international work groups responsible for strategic pilot projects. The first Sugar Talents class completed their course programme in the autumn of 2012.

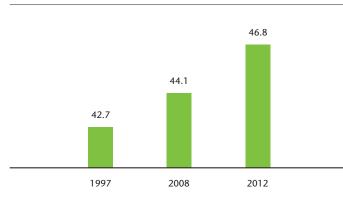
In line with our long-term commitment to talent management, we aim wherever possible to recruit internally for management positions. This secures internal career opportunities for our employees.

A dialogue-based approach

The dialogue between employees and their managers is a cornerstone of our HR approach. This includes an annual appraisal interview, where the employee and manager talk about issues and challenges related to the job, discuss our values and jointly agree on professional and personal development.

Our team in figures

The average age of employees in years*



^{*} The average age of employees is increasing significantly. This will have a high impact in the future when large numbers of qualified staff will retire at the same time.

HR facts 2011	l	2012
Total* 3,366	5	3,138
Blue collar** 69 %	Ď	70%
Women ***		22%
Permanent Of which full time		94 % 96 %
Production		77%
Covered by collective agreement		86%

- * Excluding seasonal employees
- ** All blue collar employees are covered by collective agreements.
- *** The percentage women of working in administration is around 40 per cent and 15 per cent in production.



Our health and safety track record

At Nordzucker health and safety is a core priority. After many years of sustained safety improvements and above average performance, benchmarked by the *German mutual insurance associations*, Nordzucker has recently experienced an increase in the number of serious work accidents. In 2011/2012, accidents involving more than three days of absence (*LTI3*) increased from 29 in 2010/2011 to 37. The number of accidents involving more than one day's absence (*LTI1*) remained virtually unchanged – 63 in 2011/2012 versus 65 in 2010/2011. Reflecting the upward trend in lost time injuries, the health index, which constitutes the ratio of health-related absences, increased slightly to 4.8, compared to 4.5 in 2010/2011.

To reverse this negative trend, we have developed a new health and safety strategy, which includes an updated health and safety policy and an ambitious action plan. Our goal is to be the health and safety leader in the sugar and sugar-related industries.

Revitalising our health and safety work

Our goal is to improve our understanding of the underlying reasons for the accidents that occur. With our new strategy, we have introduced a broad-based approach to revitalising our current health and safety work, placing even more emphasis on employee involvement and accident prevention. We want to make health and safety everyone's business, upgrade our basic training, and strengthen our corporate tools and guidelines for risk assessment, incident reporting and follow-up. More proactive measures are under development for accident prevention and for systematically sharing examples of best practice from inside and outside the

company. We will also further develop our incentive systems and establish local improvement targets. The action plan was launched in September 2012. By the end of 2012, we could already report a dramatic 40 per cent decline in the number of accidents requiring more than three days' absence.

The Nordzucker health and safety mission

- Nordzucker wants all employees to be safe and healthy.
- Nordzucker does not tolerate unsafe work practices or conditions that impair health.

Principles

- We believe in safety first, a zero accidents philosophy and continuous improvement.
- We accept that compliance is a must and that there is a need for a robust health and safety organisation to support and drive our work.
- We expect managers to show the way and all employees to take an active role to promote and live our principles.
- We will train our people and implement our health and safety strategy through robust certified systems and regular audits.

Active employee participation makes a strong safety culture



Rudolf Horský, Health and Safety Manager, Trenčianska Teplá plant, Slovakia

"At the end of the day, safety is in our own hands. Everyone needs to take responsibility."

Interview with Rudolf Horský

What have you done to keep health and safety at the top of the agenda at your site?

Here at our factory health and safety is one of the first points to be discussed by management at production and operational meetings and to be taken into consideration when we make investment plans. We became *OHSAS 18001* certified back in 2007, and I spend about 25 per cent of my working time training employees. In 2011, I trained more than 100 people in how to work safely.

What challenges do you face in your job?

My biggest challenge is to ensure that health and safety is fore-most in everyone's minds. That applies not only to Nordzucker employees but also to the external contractors we have on site. We also strive to ensure consistent compliance with our health and safety requirements. In spite of our best efforts, there will be accidents. My job is to keep accidents to a minimum and ensure that people think of health and safety at all times.

How do you ensure that your colleagues are always aware of health and safety?

At the end of the day, safety is in our own hands. Everyone needs to take responsibility – be proactive and get involved. We try to train people to be "responsible drivers", that is to see accidents and dangers before they happen. To promote this philosophy, we conduct training, perform weekly controls and reward employees who show the best health and safety performance.

What activities are underway?

Our current investments include a reconstruction of the cooling tower at the sewage centre and central sugar dust vacuuming in the service centre. We have also eliminated heavy manual lifting in the packaging area by installing a palletiser.

We take a holistic approach to creating a safety culture that covers all work areas and employees. We have appointed 24 safety representatives to carry out weekly checks of selected work centres. Not only does this ensure objectivity, but it is also a great way to involve employees. No employer can reach a high performance level within health and safety and continuous improvements without active employee participation.

09 Society

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Nordzucker has strong roots in the community as an employer, neighbour and business partner, and we are committed to playing an active role and engaging in open and transparent dialogue.





Relationships with our neighbours



Nordzucker factories are large workplaces that are important to the local economy and many people's daily lives.

However, during the four-month production season, our activities also have an impact on our surroundings, bringing heavy traffic, noise and odours. We are committed to reducing these nuisances to an acceptable level.

Constructive dialogue with our neighbours is the key to achieving mutually satisfactory solutions. When we receive specific complaints, we invite the parties involved to discuss the optimal outcome.

One case in point is the complaint we received from neighbours to our factory in Kedainiai, Lithuania, about the smell from sugar factory lime produced at the site. Following dialogue with neighbours and authorities, it was decided to install lime presses. To enable installation without delay, the authorities agreed to speed up the planning permission process. The problem was then quickly solved to everyone's satisfaction.

Nordzucker is committed to ethical business

Ethical business practice is integral to the way Nordzucker runs its business. In 2004 we signed the CSR Code of the European Sugar Industry (CEFS), and in 2012 we have become a signatory of the UN Global Compact.

We have also developed a new *Code of Conduct* and are in the process of developing a *Supplier Code of Conduct* in our ongoing efforts to improve the way we work with our suppliers.

Engaging in dialogue with local residents on odour concerns



Rudolf Podolsky, Director of the Nordstemmen plant, Germany

"Our neighbours have a legitimate expectation that we should use all available technical means to reduce odours as much as possible."

Interview with Rudolf Podolsky

How do you deal with the concerns of a citizens' group in Nordstemmen about the odours caused by the sugar production process?

We take complaints from our neighbours very seriously. We have an ongoing dialogue with local residents, inviting them on tours.

an ongoing dialogue with local residents, inviting them on tours of our production facilities and answering any questions they may have. Of course our neighbours have a legitimate expectation that we should use all available technical means to reduce odours as much as possible.

What is the source of these odours and how do you deal with them? There are several sources, including the chimney cooling tower and other emissions. But the main issue appears to be the basins or settling ponds, which hold soil sediment and some of the water used for washing the beet. This water contains organic material, such as leaves, roots and a small amount of sugar, which can result in unpleasant, sour smells when the water is stored in the basins.

To reduce the odour, we remove as much organic material as possible from the water and then pass it through very fine filters. We also use special sieving equipment to reduce the amount of organic material entering the sedimentation ponds in the soil and water mixture. Measurements by independent odour pollution experts confirm that these efforts significantly reduce odour intensity. We then use the separated organic material to sell it for animal feed or biogas production. Raw material reuse is one of our most important environmental principles.

But this doesn't solve the problem entirely with soluble organic compounds in the washing water. Do you take any other measures? It isn't really possible to stop the water acidifying, because the remaining sugar and other organic compounds in the water have to be completely broken down into many kinds of organic acids, starting with lactic acid and ending with acetic acid, before entering wastewater treatment.

We have worked with internal and external experts to reduce the time that highly contaminated water resides in the basins. This has resulted in the installation of a pre-acidification tank where the organic compounds can be broken down into acids, but the smell cannot escape. The tank also improves the amount and quality of biogas produced during wastewater treatment.

Thanks to the tank, we now have just one filler basin containing water and soil and one basin from which excess water is transferred to wastewater treatment. Once the filler basin is filled with soil, it is covered with straw until the soil is dug out and returned to farmlands. This means we use far fewer basins at a time and, as a result, reduce the odour-emitting surface area. So here, too, we have a sustainable concept – although I must admit that, in spite of all our efforts, the basins will never be 100 per cent odourless.

Sugar and health

The health debate on sugar has intensified in recent years. As a leading European sugar supplier, we consider it our responsibility to provide information about the nutritional aspects of sugar. In this way, we aim to promote a balanced, knowledge-based debate and enable consumers to make informed choices.

In the media, sugar has often been highlighted as the cause of health problems, particularly obesity. However, we believe scientific evidence proves that sugar can be an important part of a balanced daily diet. Sugar is a fundamental fuel, providing energy to our body and brain, and is a key component of various foods.

In addressing the growing problems of obesity, eating a balanced diet and getting sufficient exercise are key challenges. We believe that solving public health and nutrition problems requires cooperation between different players in society, including the food industry, schools, health professionals and politicians.

Besides playing an active role in the public debate on sugar, nutrition and health, we sponsor scientific research, primarily through the World Sugar Research Organisation. We also participate in a broad range of health forums, publish educational material and support health-promoting activities, such as the *Danish GAM3 project* that encourages young people in disadvantaged neighbourhoods to be physically active.



For more information about sugar and nutrition go to our website: www.nordzucker.com



Fairtrade improves the livelihoods of farmers

Nordzucker offers a range of *Fairtrade* products based on sugar cane grown by smallholder farmers organised in the Kasinthula cooperative in Malawi. The premium price paid for *Fairtrade* products enables such cooperatives to make economic, social and environmental investments in the local community. This has resulted for instance in the construction of a health clinic and provision of bicycle ambulances, which are of vital importance in a country with high infant mortality and limited access to health care.

The cooperative's investment in 15 drinking wells gives access to clean drinking water. In addition, crop yields are increasing due to improved cultivation methods and the development of irrigation systems. With their higher incomes, the farmers have been able to build more modern houses with electricity.



A global standard for sustainable sugar cane growing

Nordzucker has joined *Bonsucro*. The *Bonsucro* vision is to be a leader in driving the market demand for certified sugar cane produced against sustainable standards.

Bonsucro aims to improve the social, environmental and economic sustainability of sugar cane by promoting the use of a global metric standard. By continuously improving sugar cane production and downstream processing, the objective is to contribute to a more sustainable future. Bonsucro was formed in 2005 and now has around 60 members. Currently 2.3 per cent of all grown sugar cane is Bonsucro certified.



Partner for health and nutrition

Childhood is the best time to learn about food and nutrition. That is why Nordzucker supports selected projects that help children and young people to develop their dietary knowledge.

Hardegsen international school farm

Every year nearly 2,500 school children of all ages spend a few days at the Hardegsen international school farm and get a close-up view of where food really comes from. The children are actively involved. Mornings and evenings they take care of the chicken, sheep and pigs. The "curriculum" also includes processing sugar beet and making cheese. The children cook a lot of their own food and learn about a healthy and balanced diet. In order to give a realistic picture of modern agriculture, the school farm works with agribusinesses from the region. When children discover how their food is made, which plants and animals are used in food production, and how much work goes into producing them, their understanding of food and agriculture grows.



Under the name of Phantoms@Future, the Bundesliga basketball team New Yorker Phantoms Braunschweig has launched a wideranging action programme for children and young people.

Nordzucker supports two programme activities: Phantoms@kitchen and Phantoms@school, which draw attention to nutrition and exercise and promote a sense of community and solidarity at the same time. Both represent an exemplary combination of fun and suggestions for a healthy life.

Phantoms@Kitchen gets children and young people into the kitchen and is run by the basketball players who visit children and young people for joint cooking and baking events. Equipped with a diet plan, free tickets for a Phantoms game and the Nordzucker brochure "Fit through the Day", children are ready to start creating their own delicious and healthy meals.

Phantoms@School is a highlight for schools in the Braunschweig region. Since 2007, the professional basketball players from the New Yorker Phantoms have been teaching schoolchildren the basics of this popular sport.

Girls-Baskets-Regio 38 e.V.

Girls-Baskets-Regio 38 e.V. is an association that supports sports clubs and other institutions to establish the framework for a solid basketball education for girls and young women in the Braunschweig region. Among other activities, Girls-Baskets-Regio 38 e.V. offers basketball camps for beginners and semi-professionals. The camps also address nutrition topics, including dietary facts and how to prepare simple but healthy and delicious meals and drinks for



athletes. In addition, basketball professionals from the Wildcats Wolfenbüttel Bundesliga team practise with the girls and show their tricks.

Our work with GAM3

Since 2006, Nordic Sugar has co-sponsored a Danish street sports and integration project, run by the non-profit organisation *GAM3*. A key purpose of the project is to promote physical activity among children and young people in disadvantaged urban environments throughout Denmark. The project combines sport, dance and urban culture in an effort to integrate minority youth in the community.

Activities take place in the summer and include weekly training sessions, events and monthly tournaments. The season ends with the *GAM3* Finals, which include a major street basketball tournament in Copenhagen, featuring professional basketball players as well as break dance battles and music events with renowned DJs and rappers from around the world. The tournament is Scandinavia's largest, with more than 100 participating teams.

In 2011, *GAM3* registered over 13,000 show-ups, compared with 9,000 in 2007. Surveys show that 77 per cent of the children who participate in the programme continue to play street basketball or join local basket clubs afterwards and that the project helps increase their self-esteem.



For more information go to GAM3: http://www.gam3.dk

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Global Reporting Initiative

G3.1 Disclosure	Description	Relevant page in CSR report
1.1	Statement from the most senior decision maker of the organisation (e.g., CEO, chair, or equivalent senior position) about the relevance of sustainability to the organisation and its strategy.	4–5
	Organisational profile	
2.1	Name of the organisation.	3
2.2	Primary brands, products, and/or services.	3, 32–34
2.3	Operational structure of the organisation, including main divisions, operating companies, subsidiaries, and joint ventures	3
2.4	Location of organisation's headquarters.	1
2.5	Number of countries where the organisation operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	1
2.6	Nature of ownership and legal form.	3
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	3
2.8	Scale of the reporting organisation	Cover
2.9	Significant changes during the reporting period regarding size, structure, or ownership.	Cover, 4–5
	Report parameters	
3.1	Reporting period (e.g., fiscal/calendar year)	Cover
3.2	Date of most recent previous report (if any).	Cover
3.5	Process for defining report content, including: • Determining materiality; • Prioritizing topics within the report; • Identifying stakeholders the organisation expects to use the report.	9
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.	Cover
3.7	State any specific limitations on the scope or boundary of the report.	Cover
	Governance, commitments and engagement	
4.1	Governance structure of the organisation, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organisational oversight.	3, 8
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	8–9
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	9, 43, 44, 48
4.9	Procedures of the highest governance body for overseeing the organisation's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	8–9
4.15	Basis for identification and selection of stakeholders with whom to engage.	9

G3.1 Disclosure	Description	Relevant page in CSR report
	Economic performance	
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	Cover
EC2	Financial implications and other risks and opportunities for the organisation's activities due to climate change.	22–23
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	50–53
	Environmental performance	
EN1	Materials used by weight or volume.	3
EN2	Percentage of materials used that are recycled input materials.	12
EN3	Direct energy consumption by primary energy source.	22–23
EN8	Total water withdrawal by source.	26
EN10	Percentage and total volume of water recycled and reused.	26
EN16	Total direct and indirect greenhouse gas emissions by weight.	24
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	25
EN20	NO _x , SO _x , and other significant air emissions by type and weight.	25
EN21	Total water discharge by quality and destination.	26–27
EN22	Total weight of waste by type and disposal method.	28
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	12, 29, 34–35
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organisation's operations, and transporting members of the workforce.	29
	Social performance: labour practices	
LA4	Percentage of employees covered by collective bargaining agreements.	43
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and gender.	44
LA8	Education, training, counseling, prevention, and risk-control programmes in place to assist workforce members, their families, or community members regarding serious diseases.	44–45
LA11	Programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	42–43
LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	43
	Social performance: society	
SO1	Nature, scope, and effectiveness of any programmes and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	48–49
SO9	Operations with significant potential or actual negative impacts on local communities.	48–49
SO5	Public policy positions and participation in public policy development and lobbying.	50
FP4	Nature, scope and effectiveness of any programmes and practices (in-kind contributions, volunteer initiatives, knowledge transfer, partnerships and product development) that promote healthy lifestyles; the prevention of chronic disease; access to healthy, nutritious and affordable food; and improved welfare for communities in need.	50–53

Parametres of materiality process

Information is tested for materiality according to the principles recommended by AccountAbility. This involves considering the following five points:

- A. Direct short-term financial impacts (incl. compliance with legislation)
- B. Own policies as a performance benchmark
- C. Norms established by business peers
- D. Stakeholder behaviour and concerns
- E. Relevant societal norms

We consider parameter C to be indirectly included in the other parameters and do not use it in our materiality assessment.

Our materiality test involves scoring parameters A, B, D and E on a scale of one to five in relation to the following questions:

A. Short-term financial impact

- Are there direct and significant costs or financial benefits linked to the indicator?
- Is the indicator covered by regulation, and is non-compliance a significant risk factor?
- Does the activity linked to the indicator cause significant spending?
- B. Covered by own policies
- Is the indicator directly covered by existing policies, targets or commitments?
- Is the indicator indirectly covered by policies or commitments and is the level of impact non-marginal?
- D. Impact on stakeholder behaviour and concerns
- Is the indicator within the area of interest of an identified stakeholder?
- Is the impact the indicator describes non-marginal?
- Has the stakeholder raised concern or is he/she likely to do so?
- E. Covered by societal norms
- Is this an area where society expects business to report?
- Is the indicator within an area where future legislation is foreseen?

Materiality matrix (see Page 9)

The "Significance" and "Influence on stakeholders" factors are calculated on the basis of parameters A-B and D-E, respectively, using these formulas:

Significance=(A+B)/5*3/2-0.1 Influence on stakeholder=(D+E)/5*3/2-0.1

Level of impact and social interest are then plotted in the materiality matrix, figure 1.

Non-material areas fall within the three white squares in figure 1, where Impact < 2 AND Social Interest < 1 OR Impact < 1 AND Social Interest < 2. Special focus areas fall within the dark green area.

Glossary

AA1000 Assurance Standard

The AA1000 series provides operational guidance on sustainability assurance and stakeholder engagement, as well as organisational strategy, governance and business models.

Anaerobic wastewater treatment

Bacterial water cleaning process carried out in the absence of oxygen.

BOD

Biological Oxygen Demand

Bonsucro

Organisation, which sets a global standard for sustainable sugar cane growing.

COD

Chemical Oxygen Demand

CEFS

Comité Européen des Fabricants de Sucre, the European Committee of Sugar Manufacturers represents all European sugar manufacturers and refiners among the European Institutions (Council of Ministers, European Commission, European Parliament, Economic and Social Committee, etc.) and among different international organisations (FAO,WTO,etc.).

CSR

Corporate Social Responsibility lays the foundations for companies to integrate social and environmental considerations into their business activities and their relationships with stakeholders on a voluntary basis.

Code of Conduct

The Nordzucker Code of Conduct sets out the basic principles that all employees at Nordzucker must observe. The code covers business integrity, human and labour rights, energy use and environmental protection, supplier requirements, quality, food/feed safety and customer and community relations.

DIN EN ISO 9001

An ISO (International Organisation for Standardisation) certifiable standard that sets out the criteria for a quality management system.

DIN EN ISO 14001

An ISO (International Organisation for Standardisation) certifiable standard that sets out the criteria for an environmental management system.

DIN EN ISO 14040/14044

An ISO (International Organisation for Standardisation) certifiable standard that specifies principles and framework (ISO 14040) as well as requirements and guidelines (ISO 14044) for environmental management systems in an organisation to measure and evaluate the environmental effects of products, processes and services to be documented in a life cycle assessment (LCA).

DIN EN ISO 22000

An ISO (International Organisation for Standardisation) certifiable standard that sets out the criteria for a food safety management system.

DIN EN ISO 50001

An ISO (International Organisation for Standardisation) certifiable standard that specifies requirements for establishing, implementing, maintaining and improving an energy management system.

EMAS

The EU Eco-Management and Audit Scheme (EMAS) is a management tool for companies and other organisations to evaluate, report and improve their environmental performance based on the regulation (EC) No 1221/2009.

EU Industrial Emissions Directive

The Directive lays down rules on integrated prevention and control of pollution arising from industrial activities.

EU Renewable Energy Directive (RED)

Sets targets for EU Member States, such that the EU will reach a 20 per cent share of energy from renewable sources by 2020 and a 10 per cent share of renewable energy specifically in the transport sector.

EU Regulation 178/2002

A regulation that lays down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

Fairtrade

The heart of the Fairtrade standard is the payment of a guaranteed minimum price above the level of the world market price that covers the cost of living and production of the producers.

FSSC 22000

Food Safety System Certification determines specific product safety standards pursuant to DIN EN ISO 22000.

GAM3 project

Danish project that encourages young people in disadvantaged neighbourhoods to be physically active (e.g. playing basketball).

German mutual insurance associations

The employers mutual insurance associations are the providers of statutory accident insurance for the German private industry and their employees. The purpose of this insurance is to prevent accidents at work as well as occupational diseases and work-caused health risks.

Global Reporting Initiative (GRI) G3.1

The Global Reporting Initiative (GRI) is a non-profit organisation that promotes economic, environmental and social sustainability. The GRI Guidelines seek to enhance comparability and the quality of reported information through the use of common economic, environmental, and social performance indicators.

GMP B2

Good Manufacturing Practice B2: A certifiable standard for assuring safety and quality for the production of feed ingredients.

Glossary

Greenhouse Gas Protocol

The most widely used international accounting tool for government and business leaders to understand, quantify and manage greenhouse gas emissions.

HACCP

Hazard Analysis Critical Control Point, a tool to assess product hazards and establish control systems that focus on prevention.

Products that have been manufactured in compliance with Islamic food standards.

Kosher

Products that have been manufactured in compliance with Jewish food

Key performance indicators: A set of quantifiable measures that a company uses to measure or compare performance in terms of meeting their strategic and operational goals.

Number of accidents involving more than one day of absence.

Number of accidents involving more than three days of absence.

Syrupy product obtained during the manufacture or refining of sugar from sugar beet or sugar cane.

Non-carbohydrates

The non-carbohydrates of the sugar beet provide a combined liming/ fertilising product used for soil improvement, thus recirculating the nutrients to the beet fields.

Occupational health and safety management system:

A certifiable standard that sets out the criteria for a health and safety management system.

A certifiable standard that outlines requirements for prerequisite programmes to assist in controlling food safety hazards.

Sedex platform

Allows members to store, share and report information covering four areas: labour standards, health and safety, environment and business practices.

Supplier Code of Conduct

Code with which all suppliers will be required to comply.

UN Global Compact

Strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, the environment and anti-corrup-

VO(EG) 834/2007

Commission Regulation of the European Community (EC) on organic/ biological production and the labeling of organic/biological products.

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