

An aerial photograph of a wind farm. In the foreground, a large white wind turbine tower dominates the frame, leading up to a nacelle where two workers in high-visibility vests and hard hats are visible. The background shows a vast landscape of green trees under a blue sky with light clouds. Other wind turbines are scattered across the horizon.

# Use Wind Intelligently Live Sustainability

SUSTAINABILITY REPORT 2018





#### GLOBAL PRESENCE

The Nordex Group's  
key markets –  
read more on  
**PAGE 06**

## We Are Nordex

➤ GRI 102-2

For over three decades the development, manufacturing, project execution and servicing of onshore wind power systems have been the core competencies and the passion that drive the Nordex Group and our approximately 5,600 employees around the world. Under the brand names Acciona Windpower and Nordex, the Company provides highly profitable, cost-efficient wind turbines that enable the long-term, economically viable generation of electricity from wind power in all geographical and climatic conditions.

By the end of 2018 we had installed over 25 GW of generating capacity in a total of more than 40 countries. Our manufacturing network includes facilities in Germany, Spain, Brazil and India. New production plants in Mexico and Argentina will commence operations in 2019.

Nordex not only focuses on sustainable economic growth but also on taking responsibility and countering the challenges posed by climate change. Our Sustainability Strategy, entitled 'Use wind intelligently – live sustainability' forms the foundation for our actions. In this Sustainability Report we present a detailed account of our economic, environmental and societal commitment.

# 2,459.1

**SALES REVENUES 2018**  
in EUR million, 2017: EUR 3,077.8 million

# 2,522

**INSTALLED CAPACITY 2018**  
in MW, 2017: 2,699 MW

# 5,676

**EMPLOYEES 2018** at the reporting date,  
2017: 5,260 employees

# 27,519

**ENERGY CONSUMPTION PER INSTALLED  
CAPACITY 2018** in kWh/MW, 2017: 29,306 kWh/MW

# 3,166

**WASTE PER INSTALLED CAPACITY 2018**  
in kg/MW, 2017: 2,775 kg/MW

# USE WIND INTELLIGENTLY LIVE SUSTAINABILITY

Nordex's highly efficient wind power systems are already making a major contribution to climate-friendly energy generation today. We will continue this sustainable approach through our new Sustainability Strategy 2019 to 2021.



## CONTENTS

### ORIENTATION FOR FAST READERS



**Reference** to section in the report or to other Nordex publications



**Link** to external internet sources



**Further information** on key Nordex topics

**Information on components of the Non-financial Group Report (NFR)** is indicated by a gray line next to the text section.

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# The Nordex Group is part of the energy transition.



**JOSÉ LUIS BLANCO**  
Chief Executive Officer (CEO)

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# FOREWORD BY THE MANAGEMENT BOARD

➤ GRI 102-14

## Dear Readers,

Implementing a sustainable, climate-friendly energy policy implies a massive change process for the global community. For many countries this means restructuring their energy and transport sectors as well as their industry. New, strongly differentiated regional business models need to be worked out to achieve the successful transition of energy sourcing from crude oil, coal and natural gas to a sustainable energy generation model.

As a manufacturer of wind power systems with over 30 years' experience, our highly efficient products are playing a key role in creating the new energy landscape. Thanks to specially adapted technical solutions we are now consistently in a position to provide our customers worldwide with exactly the right product – also in regions with extreme climates.

Nordex is part of the energy transition.

Even though our systems are extremely efficient and the technological standard is already very

high, we are not satisfied with this. The success of our Company and therefore the expansion of a climate-friendly energy policy depends on many further essential factors; individually these can only be realized successfully if the entire complex system of interdependencies itself succeeds.

At Nordex we are very much aware of these interdependencies, and they are reflected in our Sustainability Strategy 2019 to 2021. The title of our strategy, 'Use wind intelligently – live sustainability' remains unchanged and continues to summarize the holistic approach to sustainability that we at Nordex pursue. In defining the most material topics that form the core focus areas of our Sustainability Strategy we also integrated our stakeholders through a comprehensive stakeholder survey. Beyond this we are engaged in a daily exchange with our customers, suppliers, investors, local communities and further key interest groups. Their opinions, wishes and expectations guide our actions, just as much as those of our employees. You will find detailed information on



### INFORMATION

You will find detailed information on the process we applied to working out our new Sustainability Strategy from **PAGE 12.**


**INFORMATION**

For detailed information on how we achieved the targets of the Sustainability Strategy 2015 to 2018 see

**PAGE 10f.**

the process we applied to working out our new Sustainability Strategy in the chapter on Sustainability Management.

Our new Strategy is the logical continuation of our first Sustainability Strategy 2015 to 2018. We set ourselves ambitious objectives on the road to becoming a sustainable company in all areas and have already made considerable progress, as a critical analysis of our achievements so far shows.

We and our stakeholders share the opinion that we should continue the journey we began with our first Sustainability Strategy. If you compare this initial Strategy with its successor, there are no major differences resulting from the materiality analysis. We believe this is a positive result: It shows that the journey we began in 2015 focused on the right areas and is definitely worth pursuing with just as much vigor and commitment.

We remain deeply convinced that a sustainable mindset and sustainable business activity are vital to ensure the future viability of the Nordex Group.

You, dear readers and stakeholders, through your massive participation in the stakeholder survey and the many valuable proposals you submitted, have clearly signaled your keen interest in the comprehensive sustainable development of the Nordex Group. We on the Management Board thank you warmly for this, also on behalf of all Nordex employees, and ask you to continue to accompany us as such committed partners.

**Sincerely yours,  
The Management Board**

**Hamburg, March 2019**

**JOSÉ LUIS BLANCO**  
Chief Executive Officer (CEO)

**CHRISTOPH BURKHARD**  
Chief Financial Officer (CFO)

**PATXI LANDA**  
Chief Sales Officer (CSO)





**CHRISTOPH BURKHARD**  
Chief Financial Officer (CFO)

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Sustainable thinking and action is inseparably linked to the future viability of the Nordex Group.

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**PATXI LANDA**  
Chief Sales Officer (CSO)

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We and our stakeholders share the opinion that we should continue the journey we began with our first Sustainability Strategy.

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# ABOUT THE NORDEX GROUP

➤ GRI 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-8, 201/103

The Nordex Group develops, produces, sells and installs onshore multi-megawatt wind turbines for use in heavy, moderate and light wind locations worldwide. In addition, we offer a complete spectrum of services over the entire operating life of the wind turbines. As a wind power pioneer, our Company has driven the development of the sector with innovative products since it was founded in 1985.

With its Delta4000 series the Nordex Group is currently one of the first providers of high-efficiency 4 MW wind power systems. The Group has already installed combined generating capacity of over 25 GW across a total of 40 countries. At the end of 2018 the Nordex Group's Service organization supported over 7,500 wind power systems worldwide with a combined nominal generating capacity of 18.5 GW.

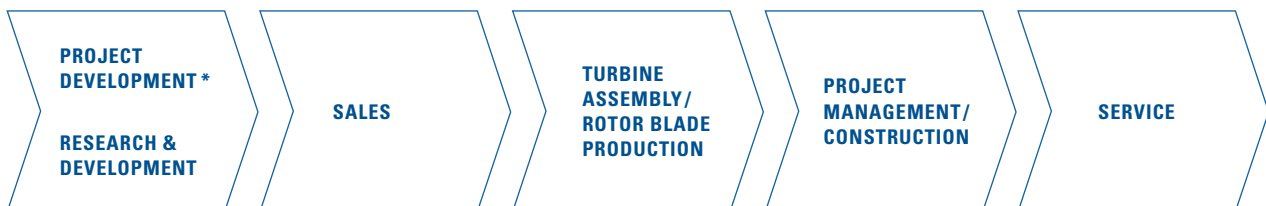
We focus on the development, production and installation of complete wind power systems, including control software and key components. At our facilities we assemble nacelles and hubs for wind power systems in particular. The rotor blades are developed by the Nordex Group in-house, and a significant number of the required blades are manufactured in our own facilities. The remainder are manufactured by contractors according to Nordex specifications. Components such as gearboxes, generators and inverters are supplied by partner companies, most of whom are long-term partners.

Towers are produced as steel and steel-concrete hybrid towers by various suppliers. The Nordex Group also uses its own concrete tower technology, which enables the production of precast concrete towers close to the project sites. These production sites are operated partly by Nordex itself and partly by contractors.



For more details on the basis of the Nordex Group, see the Nordex Group Annual Report 2018 **PAGE 27ff.**

## THE VALUE-ADDING STRUCTURE OF THE NORDEX GROUP AT A GLANCE



\* Activities in selected markets.





Rotor blade production in Rostock, Germany

We serve our customers in all focus markets through our own sales organization. The Nordex Group offers installation of the supplied wind power systems and subsequent servicing of the wind turbines over their whole operating life. Our close customer support is provided as part of usually long-term, comprehensive maintenance contracts. Services such as the supply of spare parts and customer training are also offered separately. In selected markets, especially France, the Nordex Group is also a project developer for wind farms and therefore also has experience in the upstream value chain.

The publicly listed holding Nordex SE has its registered office in Rostock, Germany. The majority of Nordex SE shares are in free float. However, since the acquisition of Acciona Windpower by Nordex in 2016, the Spanish company Acciona S.A., which is stock-exchange listed, has been a strategic anchor investor. Acciona Windpower's former parent group, Acciona S.A., acquired a 29.9% stake in Nordex SE through the issue of new share capital in the form of a capital contribution and the purchase of further shares.

Our Company's main administration office is based in Hamburg, where our corporate functions are located, along with sections of our Development, Global Sourcing, Project Management and Service Departments, as well as Sales Germany. The German facilities for nacelle assembly and rotor blade manufacture are based in Rostock. Other production sites are located in Spain, Brazil and India. In the reporting period, the Group operated Sales and Service offices in around 30 countries, mainly in Europe, North and South America, and in other selected markets such as India, Pakistan, South Africa, and Australia.

Nordex customers are primarily developers and operators of wind farms. These include large and medium-sized, often internationally active, energy supply companies and Independent Power Producers (IPP) on the one hand, but also further customer groups such as medium-sized project developers, municipal utilities and public wind farms or energy cooperatives on the other. In addition, customers include an increasing number of industrial producers and financial investors such as insurance companies and pension funds.



These groups invest in the construction and/or acquisition of wind farms in order to cover their electricity requirements (industry, commerce) or to generate an economic return on their installations (financial investors).



#### INFORMATION

The key financial figures are provided in detail in the current Nordex Group Annual Report. The key figures provided in the following fulfill International Financial Reporting Standards (IFRS) requirements for the full period 2016–2018.

The 2016–2018 Annual Reports were audited by the auditing company PwC.

### FINANCIAL DATA OF THE NORDEX GROUP

in EUR million	2018	2017	2016
Sales	2,459.1	3,077.8	3,395.0
Total revenues	2,364.2	3,127.4	3,395.4
Earnings before interest and taxes (EBIT)	–54.2	43.4	168.6
Free cashflow	44.0	–54.7	–254.8
Investments	112.9	144.3	102.4
Consolidated net profit/loss	–83.9	0.3	95.4
Cost of materials	1,710.2	2,294.9	2,559.4
Personnel expenses	325.9	359.2	289.9

Figures are based on the Group's consolidated income statement in the relevant Nordex Group Annual Report.

➔ GRI 201-1

### ECONOMIC PERFORMANCE OF THE NORDEX GROUP

in EUR million	2018	2017	2016
Direct economic value generated	2,460.0	3,078.4	3,395.4
Economic value distributed			
of which operating costs	2,092.6	2,724.8	2,936.9
of which employee wages and benefits	325.9	359.2	289.9
Payments to providers of capital	43.2	33.7	34.7
Payments to the government	31.5	38.1	49.9
Community investments	n/a	n/a	n/a
Economic value retained	–33.1	–77.5	84.0

Figures are based on the Group's consolidated income statement in the relevant Nordex Group Annual Report.

➔ GRI 201-1



The key financial figures are provided in detail in the current Nordex Group Annual Report: [www.nordex-online.com](http://www.nordex-online.com)

In financial year 2018 the Nordex Group generated sales of EUR 2,459.1 million. The Projects segment accounted for around 86% of sales, with the Service segment generating approximately 14%. Consolidated profit after tax was EUR –83.9 million in the reporting year. As at the reporting date of 31 December 2018 the Company employed 5,676 staff. In 2018 the Nordex Group

installed 828 wind power systems in 17 countries, with a total generating capacity of 2.5 GW. The largest single markets by installed capacity were the USA, France, Turkey, Germany and Argentina.

As at the financial reporting date of 31 December 2018, the Group's total assets stood at EUR 3,058.5 million, of which EUR 697.3 million, or



22.8%, represented equity. Longer-term borrowing mainly comprises a promissory note loan and a corporate bond. As a company with sustainable business practices, Nordex achieved certification of this financing instrument as a green bond in accordance with the criteria of the Climate Bonds Initiative's Climate Bonds Standard Board. Furthermore, the Company received third-party financing in the form of an investment loan from the European Investment Bank (EIB) as well as a flexible consortium credit line.

## CORPORATE GOVERNANCE

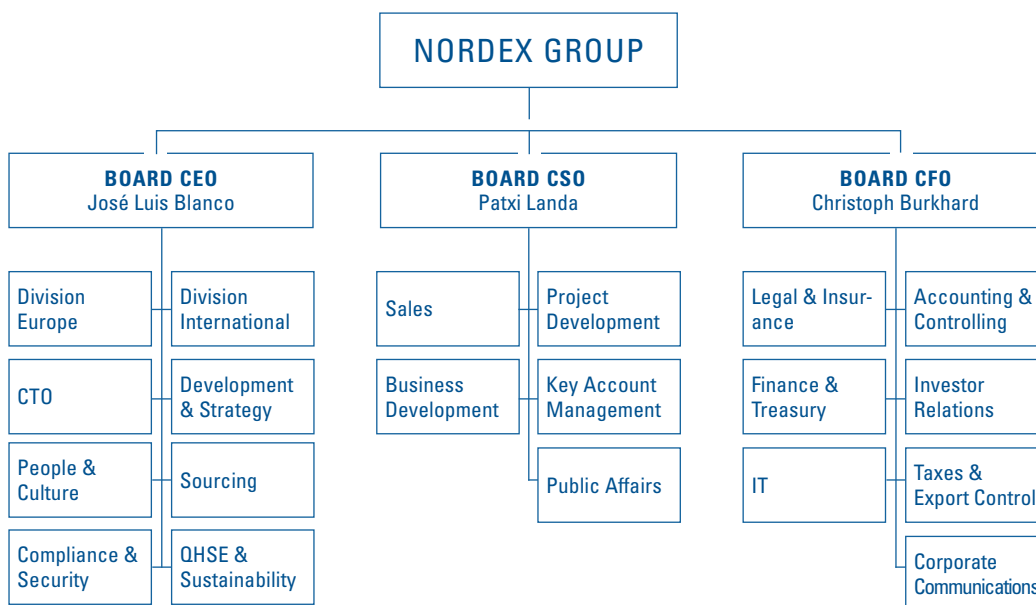
➤ GRI 102-18

Within a dual management system consisting of Management and Supervisory Boards, the Nordex SE Management Board manages the group of companies at its sole discretion, with the aim of achieving sustained increases in enterprise value

and attaining the established long-term Company targets. It also coordinates and controls all significant activities and conducts the Company's business in accordance with statutory provisions.

In compliance with its statutory obligations, the Supervisory Board advises and monitors the Management Board in matters relating to the Company's governance. It is also directly involved in all decisions of fundamental importance to the Company. The Management Board maintains ongoing contact with the Supervisory Board, briefing it comprehensively on the current status and performance of the Nordex Group as well as on all material business transactions. In financial year 2018 the Supervisory Board formed three committees: Besides the Executive Committee, which acts as the Personnel and Nomination Committee, these were the Audit Committee and the Strategy and Technology Committee.

### ORGANIZATIONAL STRUCTURE OF THE NORDEX GROUP







# SUSTAINABILITY MANAGEMENT

In 2015 we established our Sustainability Management organizational unit to coordinate sustainability measures in a target-oriented way and meet our stakeholders' growing information requirements. Sustainability Management is assigned to the central QHSE (Quality, Health, Safety & Environment) organizational unit, which in turn reports directly to the Executive Board. The Department is responsible for the strategic development of sustainability topics and is in constant contact with all areas of the Company. Its responsibilities include the management and communication of internal and external processes, coordinating different departments, and engaging in dialog with various stakeholder groups. Group-wide controlling of environmental indicators and sustainability reporting are also anchored here. The objective of Sustainability Management is to implement the Nordex Sustainability Strategy efficiently.

## Sustainability Strategy 2015 to 2018

The Nordex Group's first Sustainability Strategy, developed in 2015, comes to a close with the 2018 reporting year. The targets defined in this Strategy related to the Nordex Group prior to the merger with Acciona Windpower and no adjustments were made. The scope of the objectives set must therefore be taken into account in the final assessment of the degree of achievement. The table on the next page summarizes the objectives and the degree to which they have been achieved. Further information can be found in the individual chapters of this report.

## ➤ Targets and attainment in the Sustainability Strategy 2015 to 2018

The Nordex Group achieved its targets by 2018. Nordex will work to continue this positive trend with a new Strategy spanning the next three years.



**TARGETS AND ATTAINMENT IN THE SUSTAINABILITY STRATEGY 2015 TO 2018**

Main topic	Target		Explanation
<ul style="list-style-type: none"> <li>Health and safety</li> </ul>	<ul style="list-style-type: none"> <li>LTIF &lt; 5</li> </ul>	✓	For Division Europe, the LTIF rate was successfully lowered from 8.2 in 2015 to 4.4 by the end of 2018, reaching the target set within the original scope of the strategy. On the Group level this rate was 5.6 at the end of 2018.
<ul style="list-style-type: none"> <li>Cost of energy</li> </ul>	<ul style="list-style-type: none"> <li>-18%</li> </ul>	✓	The Nordex Group exceeded its target of lowering cost of energy in the reporting period. We will continue to work on reducing it further.
<ul style="list-style-type: none"> <li>Supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Integration of sustainability requirements in the sourcing process</li> </ul>	✓	Based on the values and standards in the Nordex Supplier Code of Conduct, additional sustainability aspects were included in the audits.
<ul style="list-style-type: none"> <li>Sustainable product development</li> </ul>	<ul style="list-style-type: none"> <li>Market-specific product development for Nordex target markets</li> </ul>	✓	With the Nordex platform we have concentrated particularly on the (further) development of technical solutions, e.g. for better mitigation of weather-related icing losses in European markets. At the same time, with the AW3000 platform we have continued to focus on optimization for markets outside Europe. This includes larger rotors while maintaining the rated power, which leads to a higher overall capacity factor.
<ul style="list-style-type: none"> <li>Environmental footprint</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of the environmental balance of wind turbines</li> </ul>		Many individual environmental measures were implemented to minimize negative impacts. These topics remain a key element of the new strategy.
	<ul style="list-style-type: none"> <li>Reducing energy consumption and waste per wind power system produced</li> </ul>	(✓)	
<ul style="list-style-type: none"> <li>Dismantling and recycling</li> </ul>	<ul style="list-style-type: none"> <li>85% recyclability of wind power systems</li> </ul>	✓	An analysis in the Engineering area showed a recyclability rate between 86% and 98%, depending on the tower height and the inclusion of the foundation in the calculation.
<ul style="list-style-type: none"> <li>Environmental behavior</li> </ul>	<ul style="list-style-type: none"> <li>100% of external electricity we consume is from renewables</li> </ul>	✓	For Division Europe, 100% of purchased electricity is sourced from renewable energies, reaching the target regarding the original scope of the strategy. In the Division International, some locations were converted so that 88.1% was achieved Group-wide at the end of 2018.
<ul style="list-style-type: none"> <li>Corporate culture</li> </ul>	<ul style="list-style-type: none"> <li>High employer attractiveness</li> </ul>	✓	Nordex received multiple awards in the last three years and is one of 'Germany's Top 100 Employers'.
	<ul style="list-style-type: none"> <li>Engagement with at least one social project in each focus market</li> </ul>	(✓)	A Donations Guideline was developed for the Group and initiatives were supported at various locations, particularly in the area of education.



## Sustainability Strategy 2019 to 2021

### APPROACH

In the reporting year we prepared the new Sustainability Strategy 2019 to 2021 in order to strategically develop the sustainability topic area within the Group for the years to come. The Strategy forms the framework for responsible action in all areas of the Company; we see it as a consistent continuation of our pursuit of sustainability topics and goals throughout the Group.

In a systematic process, we conducted an extensive materiality review in the reporting year. It was found that the focal points of sustainability management have changed little compared with the first materiality analysis prepared in 2015.

### Objectives of the materiality analysis

The objectives of the analysis, carried out in the period May to October 2018, are as follows:

- Identification of topics in the context of sustainability

- Identification of trends and developments
- Measurement of externally perceived Nordex performance in the context of sustainability
- Meeting external requirements as set out by the CSR Directive Implementation Act (CSR-RUG, German Commercial Code, §§ 289a-298e, § 315 HGB), and the GRI Standards.

### CRITERIA FOR THE SELECTION OF STAKEHOLDER GROUPS

➤ GRI 102-42

Nordex applied the following criteria to the selection of stakeholder groups:

- Proximity to the core business
- Vulnerability to possible impacts of Nordex business operations
- Significance in the context of public opinion-forming processes
- Reputation
- Media competence
- Degree of networking
- Conflict potential.

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### STAKEHOLDER SURVEY AND ANALYSIS PROCESS







## STAKEHOLDER GROUPS CONSIDERED AND ANALYTICAL TOOLS USED

➤ GRI 102-40, 102-43

### Stakeholders

Among our most important stakeholders are government agencies and policy-makers, employees, customers, suppliers and service providers, shareholders and investors, non-governmental organizations, the media and general public, local communities, competitors, grid operators, trade associations, and scientific institutions. In agree-

ment between the Sustainability Management Department and other specialist departments, the following stakeholder groups (see table below) were identified as relevant for the materiality analysis. These analytical tools were used to record and identify stakeholder concerns:

- Desktop analysis
- Online survey
- Telephone survey
- Internal workshops.

The following table gives an overview of the analysis tools for each stakeholder group.

### STAKEHOLDER SURVEY

Stakeholder Group	Analysis Tools
Shareholders/investors/analysts	<ul style="list-style-type: none"> <li>➤ Online survey</li> <li>➤ Telephone survey</li> </ul>
Journalists	<ul style="list-style-type: none"> <li>➤ Desktop analysis</li> </ul>
Customers	<ul style="list-style-type: none"> <li>➤ Online survey</li> <li>➤ Telephone survey</li> </ul>
Suppliers	<ul style="list-style-type: none"> <li>➤ Online survey</li> <li>➤ Telephone survey</li> </ul>
Non-governmental organizations	<ul style="list-style-type: none"> <li>➤ Online survey</li> <li>➤ Desktop analysis</li> </ul>
Nordex employees	<ul style="list-style-type: none"> <li>➤ Online survey</li> </ul>
Nordex management	<ul style="list-style-type: none"> <li>➤ Online survey</li> <li>➤ Telephone survey</li> <li>➤ Workshops</li> </ul>
Government agencies and policy-makers	<ul style="list-style-type: none"> <li>➤ Desktop analysis</li> </ul>
Science/research	<ul style="list-style-type: none"> <li>➤ Online survey</li> </ul>
Associations	<ul style="list-style-type: none"> <li>➤ Online survey</li> <li>➤ Telephone survey</li> </ul>
Certifiers	<ul style="list-style-type: none"> <li>➤ Online survey</li> <li>➤ Telephone survey</li> </ul>



## TOPIC IDENTIFICATION

➤ GRI 102-44

In order to define and specify relevant non-financial topics for the stakeholder surveys, we referred to the topics identified in 2015 as part of a materiality analysis and to the evaluation of current competitor activities. In addition we conducted a media analysis of international reports on Nordex, the wind industry and renewable energy in general on sustainability issues; the objective was to collect information on the economic, social and environmental impact of Nordex's business activities on the basis of freely accessible information.

## IMPACT AND RISK ANALYSIS

The effects of the Nordex Group's business activities on the economy, the environment and society were examined in terms of their extent, probability, and whether they could be influenced.

As an internationally active company, Nordex is exposed to various risks in the course of its business operations. For this reason, Nordex has implemented a comprehensive risk management system aimed at identifying potential negative deviations (risks) at an early stage. This enables us to take appropriate countermeasures to avert imminent damage to Nordex and avoid any threat to its continued existence. Further information on the objectives, organization and effectiveness of the Nordex Group's risk management system can be found in the 2018 Annual Report.

Questions on corporate risks are integrated into both the online survey and the telephone survey of external stakeholders and Nordex management. Detailed information on risks and opportunities for each field of action can be found in the individual chapters.

## TOPIC PRIORITIZATION

On the basis of the results of the stakeholder surveys and desktop analyses, we drew up a prioritization proposal for the topics listed below. This proposal was discussed, adapted and ultimately confirmed in workshops for top management. The working group we formed for this purpose consisted of representatives of various Company areas.

All highly relevant topics are part of the new Sustainability Strategy, and are underpinned by specific objectives.



**INFORMATION**  
on risk management is provided in the Nordex Annual Report 2018 on **PAGE 51ff.**



**TOPIC PRIORITIZATION**

Topic	Overall assessment of relevance	Key topic in Sustainability Strategy 2019 to 2021
Environmental behavior of the Group	high	Divided into the topics waste, hazardous substances, energy and greenhouse gas emissions
Environmental footprint of wind power systems	high	Environmental lifecycle assessment
Health and safety	high	Occupational safety
Corporate culture	high	Leadership culture
Values and standards in the supply chain	high	Standards in cooperation
Cost of energy	high	Cost of energy
Customer satisfaction	high	Customer satisfaction
Impacts of wind turbines on biodiversity	medium	
Company values and standards	medium	
Employee development	medium	
Employee diversity	medium	
Energy supply security	low	
Social engagement	low	

➤ GRI 102-47

> 1,300

**STAKEHOLDERS PARTICIPATED IN THE ONLINE SURVEY**  
on material topics – around 1,000 of them employees.





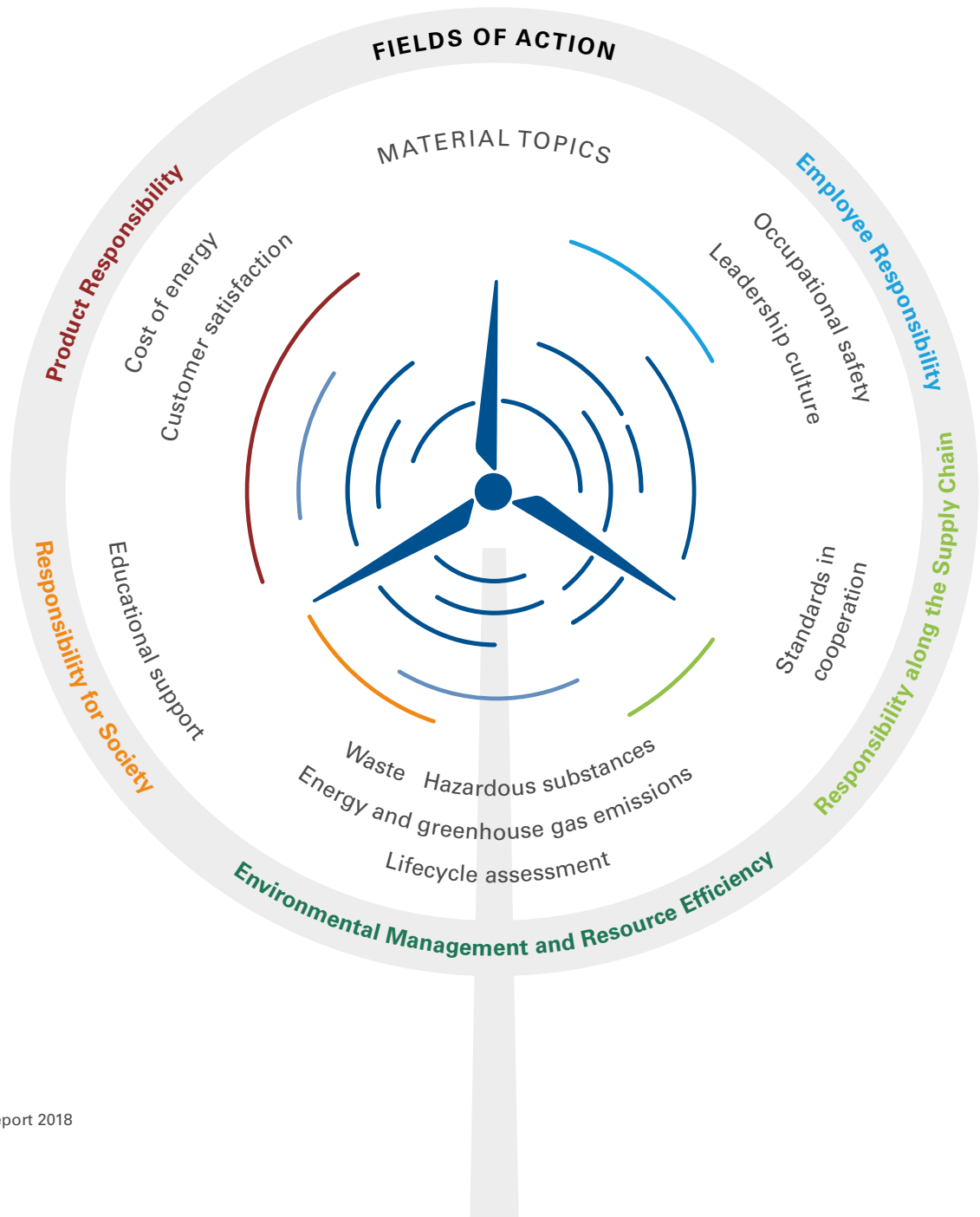
## Our Sustainability Strategy

➤ GRI 102-47

### Making progress together in efficient and sustainable energy generation.

Our new Sustainability Strategy 2019 to 2021 builds on our first Strategy and continues our sustainability approach under the banner of 'Use wind intelligently – live sustainability'.

It comprises the main strategic fields of action and the sustainability topics for the next three years derived from these. We have set specific objectives for our focus topics in order to launch the next stage of the consistent implementation of sustainable development in our Company.





SUSTAINABILITY OBJECTIVES		
Fields of Action	Material topics	Goals
 <b>Product Responsibility</b>	<ul style="list-style-type: none"> <li>➤ Cost of energy</li> <li>➤ Customer satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduce cost of energy continuously</li> <li>➤ Achieve a high recommendation rate</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Occupational safety</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduce accidents to a lost time injury frequency (LTIF) of less than 5 per 1 million working hours</li> </ul>
 <b>Employee Responsibility</b>	<ul style="list-style-type: none"> <li>➤ Leadership culture</li> </ul>	<ul style="list-style-type: none"> <li>➤ Further strengthen leadership culture and values</li> <li>➤ Continue established programs and processes for employee development</li> <li>➤ Promote diversity in the Company</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Standards in cooperation</li> </ul>	<ul style="list-style-type: none"> <li>➤ Optimize the supplier due diligence process</li> </ul>
 <b>Environmental Management &amp; Resource Efficiency</b>	<ul style="list-style-type: none"> <li>➤ Waste</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid and reduce waste by 10%</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Hazardous substances</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduce hazardous substances and minimize their hazard potential</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Energy and greenhouse gas emissions</li> </ul>	<ul style="list-style-type: none"> <li>➤ Procure 100% of the electricity we consume from renewable energy sources</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Lifecycle assessment</li> </ul>	<ul style="list-style-type: none"> <li>➤ Improve the environmental balance of wind turbines</li> </ul>
 <b>Responsibility for Society</b>	<ul style="list-style-type: none"> <li>➤ Educational support</li> </ul>	<ul style="list-style-type: none"> <li>➤ Support education initiatives in the region of our sites</li> </ul>

In the following chapters we present the sustainability topics grouped into five fields of action, which represent the overarching challenges we constantly work to meet.

### Product Responsibility

Our goal at Nordex is always to be customers' first choice for new projects and their execution. Right from the development and construction of our wind power systems, alongside technological further development we prioritize environmental and societal aspects that include recyclability, serviceability, use of materials, noise emissions, and health aspects. To ensure wind power remains competitive it will be essential to continually reduce our cost of energy. This is therefore a material business KPI for Nordex.



### Employee Responsibility

Nordex's success is based on a corporate culture that focuses on recruitment, retention and further training as well as the satisfaction, health, safety and diversity of our workforce.

### Responsibility in the Supply Chain

A significant share of Nordex's added value is created in the pre-production phases. This makes it vital to push through compliance with social and environmental standards in the supply chain too.

### Environmental Management & Resource Efficiency

As a manufacturer of wind power systems we act in the interests of our customers and the environment. Through the considerate use of resources we aim to continually reduce our environmental footprint.

### Responsibility for Society

As a dynamic global company, engaging for the benefit of society at a local level is part of the way we see and understand ourselves.



Nacelle production  
in Barásoain, Spain



## NORDEX AND THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

At the heart of its Agenda 2030, the United Nations General Assembly adopted 17 global Sustainable Development Goals (SDGs) in 2015. The Nordex Group has also integrated these objectives into its sustainability approach. We see our potential for influence particularly in the three SDGs 'Affordable and Clean Energy' (7), 'Decent Work and Economic Growth' (8), and 'Climate Action' (13), as our business activities can make a significant contribution to their implementation:



### 7 | Affordable and Clean Energy

As a supplier of innovative onshore wind turbines we make a sustainable contribution to steadily increasing the share of renewable energies in the global energy mix. The turbines already installed by the Nordex Group with a combined rated output of 25 GW also ensure a reliable and future-oriented power supply in over 40 countries worldwide, which is being expanded year after year. The successes in reducing electricity generation costs in recent years have enabled wind energy to prevail over conventional generation capacities in economic competition. As part of our new Sustainability Strategy 2019 to 2021, we will consistently pursue an ongoing reduction in electricity production costs.

### 8 | Decent Work and Economic Growth

Through our sites in South Africa, India and Brazil we create jobs for the local population in emerging markets. Further, we require full compliance with ethical guidelines such as the principles of the UN Global Compact, the OECD Guidelines for Multinational Enterprises, and the UN Universal Declaration of Human Rights – not only internally but also externally through our Code of Conduct for Suppliers. Nordex is also committed to corporate diversity and gender-independent pay lev-

els. Safety culture also plays a special role at the Nordex Group, where in order to promote safety awareness and develop the qualifications of our employees we offer corresponding programs and training courses at all locations. In addition, we are committed to establishing a safety culture in the wind industry by participating in industry-specific initiatives.

### 13 | Climate Action

Through our product portfolio we contribute to the transformation of energy systems on a global level. Through constant technical innovations in the field of wind turbines, also to improve their environmental scorecard, we are able to make an important contribution to the implementation of this development goal. Climate protection is also a top priority within the Company: In 2018 we already purchased 88.1% of our electricity from renewable energy sources. Our new Sustainability Strategy also includes long-term goals to counteract climate change and its effects. For example, we aim to completely switch our electricity procurement to renewable energy sources and reduce our waste generation by 10% by 2021.

[www.](https://sustainable-development.un.org)

<https://sustainable-development.un.org>

## Sustainable Development Goals

The Nordex Group is committed to the goal of sustainable development and actively contributes to the SDGs.





# MANAGEMENT AND CORPORATE COMPLIANCE

## VALUES AND GUIDELINES

➤ GRI 102-12, 102-16, 419-103

### Management Approach

Our Company is committed to handling resources in full awareness of our environmental and economic responsibilities. We treat the people employed by the Nordex Group with a clear sense of social responsibility. Respect characterizes our collaboration with customers, suppliers, service providers and shareholders, as well as with our neighbors and local communities.

Our corporate culture is based on our core Company values of Integrity, Respect, Collegiality and Ownership, as well as on the principles and standards of conduct set out in the Company guidelines, leadership principles, and in particular our Codes of Conduct for employees and suppliers.

Integrity is one of our core Company values and thus a cornerstone of our corporate culture. Acting with integrity, along with compliance with legal requirements, forms the basis of the good reputation we enjoy. The trust of our customers, shareholders, business partners and the public is built on this important foundation. As a uniform guideline for behavior, the Code of Conduct describes our principles for legally compliant and responsible actions. This Code of Conduct supplements our corporate guidelines and applies to all Nordex Group employees worldwide.

The Code of Conduct for Nordex employees comprises five core principles: Compliance with applicable law; Avoiding conflicts of interest; Protecting Company property; Upholding the Code

of Conduct; Aspiration towards ethical standards. The Code is binding for all employees of the Nordex Group. In the Code of Conduct for subcontractors and suppliers, we adhere to the principles of integrity and ethical, lawful conduct throughout the entire duration of the business relationship.

The ethical guidelines of the UN Global Compact and the Organisation for Economic Co-operation and Development (OECD) provide fundamental guidance for all our business activities, in accordance with our Codes of Conduct.

Every Nordex Group employee is required to implement these values and guidelines in their daily work. Managers have a special responsibility here as role models, supporters and representatives of Company management.

People & Culture staff support employees and managers through training courses and on a case-by-case basis; the Department also reviews and updates the values and guidelines together with management as well as the Corporate Compliance and Occupational Safety Departments.

## CORPORATE COMPLIANCE

The Corporate Compliance Department supports the specialist departments, managers and employees in acting in alignment with their duties and guidelines. The core task of Corporate Compliance is to implement an effective Compliance Management system that successfully promotes risk awareness and integrity, as well as to identify, stop and permanently prevent potential legal violations. Besides this specialist department there is also an interdisciplinary Compliance Team.

[www.nordex-online.com](http://www.nordex-online.com)  
 Nordex Code of Conduct:  
[www.nordex-online.com](http://www.nordex-online.com)





## CHALLENGES, RISKS AND OPPORTUNITIES

➤ GRI 205/103

Integrity is a core value for trusting, ethical and legally compliant cooperation – among employees, with our customers, suppliers and with all other business partners and the public.

Against the backdrop of ever more extensive regulatory frameworks and in view of the global nature of today's business activities, legally compliant conduct to prevent corruption and infringements of competition law remains vitally important.

Unlawful behavior and misconduct by employees and third parties acting on behalf of the Nordex Group can cause considerable damage, both economically and to the Company's reputation.

Both the Corporate Compliance Department and the Compliance Team inform employees and management about general and current compliance issues, such as tackling corruption and preventing anti-trust law infringements. They support them in fulfilling compliance obligations and are available to employees, managers and contractual partners for any questions about compliance. The focus in both units is on promoting risk awareness and integrity, with the aim of strengthening a compliance culture in which there is zero tolerance for violations of the law.

### 2018 PROJECTS

The orientation and activity focus of the Compliance Management system will be updated in 2019, based on an evaluation of the system launched in 2018. In addition, a Compliance Program will be defined for activities in 2019 and 2020. These activities include updating the Codes of Conduct both for employees and for subcontractors and suppliers, introducing an e-learning course on competition issues, conducting a risk analysis on corruption and competition risks, and further developing business partner reviews.

## COMPETITION

➤ GRI 206/103, 206-1

### Management Approach

The Nordex Group conducts its business activities with integrity and in full compliance with the law. This means that we avoid any form of infringement of competition law and comply with all applicable competition regulations. This applies equally to our employees and our business partners, in particular to our suppliers and other third parties acting on our behalf.

### Challenges, Risks and Opportunities

Violations of competition law can result in substantial sanctions for companies and thus significantly jeopardize our current and future activities. We therefore identify and evaluate potential competition-relevant aspects before launching any business activity. We apply a high degree of sensitivity both in contractual agreements and in our dealings with our business partners. We do not permit agreements or actions that inhibit free trade or restrict competition. To ensure this we train and commit our employees within the framework of the Code of Conduct and require our subcontractors and suppliers to sign our Supplier Code of Conduct.

In 2018 there were no cases of anti-competitive behavior, nor were there any criminal proceedings against the Company owing to violations of relevant law or regulations.

### OUTLOOK 2019

In 2019 we plan to carry out a risk analysis with regard to corruption and competition risks in order to examine and further increase the effectiveness of the measures we have taken to date. In addition, we are planning to introduce an e-learning program on anti-trust issues and risks for employees in risk-prone areas of activity.



Supplier Code of Conduct:  
[www.nordex-online.com](http://www.nordex-online.com)



## PREVENTING CORRUPTION

➤ GRI 205/103, 205-1, 205-2, 205-3

### Management Approach

The effective prevention of corruption is the responsibility of every Nordex Group employee. We require the same of our business partners.

In this context, the Corporate Compliance Department provides support in the form of training, guidelines, assistance and risk assessments.

When joining the Company, all new employees are verifiably informed in detail about our Code of Conduct and the anti-corruption guidelines it contains. We formally require their compliance with the Code. Employees in risk-relevant functions and country organizations take part in a mandatory e-learning course. In addition, we inform employees with a particular focus on compliance topics in their daily work and organizational areas about current issues as required.

We commit our subcontractors and suppliers to ethical and lawful conduct through our Supplier Code of Conduct.

In order to set up the internal audit plan 2018, Nordex rated 100% of our Group entities according to a risk-based ranking with reference to the following factors:

- Corruption Perceptions Index (CPI)
- Employee fluctuation
- Assessment by specialist departments and the Compliance Team
- Economic development (EBIT/revenue).

The corruption risks are distributed according to the CPI within the Nordex Group. No significant risks were identified.

The e-learning course on corruption prevention introduced in 2016 was again carried out for the entire Nordex Group in 2018. In accordance with

### NUMBER OF EMPLOYEES TRAINED IN THE PREVENTION OF CORRUPTION

Region	Staff trained*		Of whom: Managers trained*	
	2018	2017	2018	2017
Africa	20	9	6	4
Asia (incl. Australia)	25	52	10	9
Europe (excluding Germany and Spain)	154	153	89	46
Germany	681	1,184	245	211
North America	33	27	24	5
South America	49	52	21	14
Spain	143	295	80	67
<b>Total</b>	<b>1,105</b>	<b>1,772</b>	<b>475</b>	<b>356</b>

\* by risk-based target groups



the updated risk-based target groups, all members of the Management Board and 1,105 (70%) employees in risk-relevant areas of activity and regions had taken the required e-learning course by the end of 2018 (see table on p.22).

In the 2018 reporting year there were no confirmed instances of corruption, nor was any resulting legal action taken.

## HUMAN RIGHTS

➤ GRI 412/103, 412-2, 412-3

### Management Approach

Our business decisions and activities are subject to upholding human rights globally; this includes all our investment commitments. The principles of the UN Global Compact, the OECD Guidelines for Multinational Enterprises, and the UN Universal Declaration of Human Rights that stipulates zero tolerance for child labor, forced labor, discrimination and retaliatory measures, serve as our guiding principles. These fundamental principles are also reflected in our core corporate values of Integrity, Respect, Collegiality and Ownership. We place the same demands on our business partners.

We continuously train new employees and suppliers as part of communicating our Codes of Conduct and secure their commitment to our guidelines and principles. Our Supplier Code of Conduct applies to our security service providers as well as all other subcontractors and suppliers. Within this we explain our labor and human rights requirements and explicitly require our business partners to comply with them. We will continue our corresponding communication measures on this in 2019.

## MEMBERSHIPS AND COLLABORATIONS

➤ GRI 102-13

Nordex is a member of various international and sector-specific associations. As members of management or steering committees we play an active role in the following organizations:

- VDMA PS (Specialist Power Systems Association of the Mechanical Engineering Industry Association),
- WindEurope,
- GWEC (Global Wind Energy Council),
- FEE (France Energie Eolienne),
- SAWEA (South African Wind Energy) and
- CEA (Cámara Eólica Argentina).

The following associations and technical bodies are also particularly relevant to us:

- FGW (Federation of German Windpower and other Renewable Energies),
- ABEEólica (Associação Brasileira de Energia Eólica),
- AEE (Asociación Empresarial Eólica),
- AWEA (American Wind Energy Association),
- TUREB (Turkish Wind Energy Association),
- ANEV (Associazione Nazionale Energia del Vento),
- PSEW (Polish Wind Energy Association) and
- AMDEE (Asociación Mexicana de Energía Eólica).

## FINANCIAL ASSISTANCE

➤ GRI 201-4

As an important actor in the wind power industry, energy-market policy decisions in particular greatly affect our business activities and projects. Nordex itself receives no subsidies for its products. The electricity we generate using renewables and



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**DIFFERENT NATIONALITIES**  
were represented at **NORDEX** in the reporting year.

which is fed into the consumer power grid is remunerated depending on the particular state's subsidy programs.

In 2014 Nordex received an investment grant for the expansion of the Rostock production site. The subsidized assets must remain at the subsidized site until the end of the five-year restricted period, that commences on completion of the investment activity. Furthermore, during the restricted period a yearly average of 1,126 jobs must be maintained. The investment subsidy and contractual conditions are to be adjusted as part of the '45-by-18' cost reduction program initiated in 2017. In the 2018 reporting year no investment subsidy was received (2017: EUR 1,735 thousand).

In the research and development (R&D) area, Nordex projects received subsidies of EUR 822 thousand (2017: EUR 1,322 thousand). These relate to joint projects in experimental, industrial and fundamental research that we are implementing as part of German federal state specialist programs.

Our customers make regular use of export credit agency (ECA) financing instruments. As an exporter affected by this system, we support these guarantees by providing the necessary information and binding declarations; in doing so we are also directly involved in the financial guarantees. In individual cases we also apply for our own supplier and production coverage to safeguard against specific risks associated with customers' wind farm projects. In the reporting period, the Nordex Group concluded new business worth EUR 729.4 million (2017: EUR 126.7 million) that was partly or wholly covered by ECAs.

In the reporting year Nordex received EUR 107 thousand in tax relief for 2016 in Germany under the German Electricity and Energy Tax Act. In 2018 the Company applied for tax relief for the 2017 financial year totaling EUR 112 thousand. At the reporting deadline this tax relief had not yet been received.

Nordex received no awards or any other benefits that included forms of financial support. Furthermore, no governments held stakes in Nordex SE in the reporting period.

## RISKS AND OPPORTUNITIES FROM CLIMATE CHANGE

➔ GRI 102-11, 201-2

Climate change is already having a global impact today and is a major driver of far-reaching changes in nature, societies and economies. These result in both risks and opportunities for Nordex and its business development. The climate-change mitigation measures adopted by the international community are aimed primarily at reducing climate-damaging emissions, for example in electricity production. The Nordex Group can make an important contribution to this with innovative wind power solutions.

For many years now, renewable energies have been gaining importance not only in industrialized countries but also in developing and emerging countries. This trend could accelerate further as a result of the potential consequences of climate change and the resulting pressure to act, which will very probably lead to a further increase in the demand for wind energy technologies. At the same time, changes in the weather present manufacturers with challenges, since the availability and suitability of wind farm sites are determined in the first instance by the prevailing wind conditions. For several years now, the Nordex Group has been reacting to these new requirements by developing systems for areas of particularly light or strong winds, as well as project and site-specific solutions.

Nevertheless, rapidly changing conditions may negatively influence the efficiency of existing wind farms and cause a shift in suitable locations. In addition, climate change also harbors general risks for Nordex as a production and plant construction company. This includes, for example, risks to our own production sites and the supply chain, as well as adverse effects on logistics chains and in the construction of wind farms due to extreme weather events.

We are actively meeting the challenges described and see these as an incentive for optimizing our wind power systems with increasingly effective and innovative technologies and ideas. For further explanations of our product strategy and development, please see the section on Product Responsibility in this report.



Transporting a 73 m rotor blade for a Delta4000 system is a challenge



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With our products and services we want to make our contribution to sustainable power generation and thus help mitigate climate change.

— We assume our responsibility to our customers through our products. Our customers deserve to use efficient, safe, high-quality wind power systems.

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Nordex service technician at the N131/3000 Tyrinselkä wind farm in Finland

# PRODUCT RESPONSIBILITY



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## Sustainable Product Development

➤ GRI 413/103, 413-1

### MANAGEMENT APPROACH

Renewables, particularly wind power, have gained in importance globally. 'Green' electricity generated from these sources helps reduce emissions of the greenhouse gas carbon dioxide (CO<sub>2</sub>) from conventional electricity generation, which contributes significantly to global warming. High-performance wind power systems play a key role in this positive development; we aim to increase our customers' satisfaction with our products and services through the continued development of our wind power systems to the highest safety and quality standards.

Once connected to the grid, our wind power systems generate electricity for at least 20 years, thus making a major contribution to the eco-friendly supply of electricity as part of the overall transformation of the energy industry. A single Nordex large wind turbine with installed generating capacity of 4 MW can meet the average electricity requirements of around 3,000 four-person

households. Globally, Nordex and Acciona Windpower have many thousands of wind turbines installed, with a combined nominal power capacity of over 25 gigawatts. These systems provide clean, safe electricity in more than 40 countries around the globe. To support the transformation of the energy sector with our partners we are also active in cross-regional project initiatives such as Norddeutsche EnergieWende 4.0 (North German Region Energy Transition 4.0).

### CHALLENGES, RISKS AND OPPORTUNITIES

Sustainability aspects play a very significant role in all lifecycle phases of our wind turbines – from the development phase, through sourcing, production and operation, to dismantling and recycling. Taking these into account comprehensively in the process is a challenge, but also an opportunity for us. With our Sustainability Strategy we have therefore set ourselves the goal of continually reducing our cost of energy generation as well as improving both our environmental footprint and the recyclability of our systems.



**INFORMATION**  
Find out more about NEW 4.0 at **PAGE 77f.**



## SUSTAINABILITY STRATEGY 2019 TO 2021

The high priority of sustainability in the development and manufacture of our wind power systems is why we regularly review our core processes and use of materials for areas of optimization potential. A central strategic aim of product development at Nordex is an annual reduction in cost of energy generation by a high single-digit percentage. We have once again committed to this in our Sustainability Strategy 2019 to 2021. The electricity generation costs are calculated based on the total sum of all a wind farm's project costs over its entire lifetime, divided by the revenue the wind farm generates after commissioning. Cost of energy can be reduced in two ways: Firstly, through cost reduction ('cost-down') measures, and secondly through increasing our wind farms' productivity ('value-up' measures).

## TARGET REACHED: SUSTAINABILITY STRATEGY 2015 TO 2018

The Nordex Group once again exceeded its target of lowering electricity generation costs in the 2018 reporting period. We will continue to work on reducing these further.

## PRODUCT DEVELOPMENT

As a manufacturer of reliable and cost-effective wind power plants, we strive to contribute to meeting the world's growing energy demand with renewable, environmentally friendly electricity and thus contribute to the success of the transformation of the energy industry. In times of intensifying competition, also in other forms of energy generation, the development of ever more powerful and profitable systems for the inexpensive generation of electrical energy has been the driving force and focus of product development in 2018. A key milestone in achieving this goal was the launch of our new Delta4000 product line. This new product line started with two models, N149/4.0-4.5 for medium to light-wind sites and N133/4.8 for strong-wind sites. In addition, with the AW140/3000 on the AW3000 platform we succeeded in bringing a product to market within a very short timeframe for areas with light wind and little turbulence.

## Gains in Material Use and Efficiency through New Product Series

In the new Delta4000 product series we have moved the location of the converter and transformer from the tower foot to the nacelle. This not only leads to a reduction in cable used within the tower, but also means lower electricity losses and therefore higher plant efficiency. In addition, this step reduces the installation time on the wind farm and achieves faster system start-up.

In the design of the new N149 wind turbine we paid particular attention to furnishing the systems with a high degree of flexibility. The core of the concept is the system's variable output design, which lies between 4.0 and 4.5 MW. Thanks to this flexible concept, the system can be optimally adjusted via the software at any location within a wind farm, so that it achieves the maximum energy output within its design parameters. This allows the full potential of the turbines to be utilized, especially for larger wind farms whose market share is increasing. Another advantage of this approach is that in most cases only one type of turbine is used on the wind farm. This in turn allows an improvement in spare parts management, for example by reducing the amounts of spare parts that need to be stocked.

## Reduction in Cost of Energy over the Whole Wind Power System Lifecycle

In 2018 we once again reduced the complexity and costs of our wind power systems over the whole product development process and lifecycle. For example, transport and storage concepts for blades were optimized, and rotor components were redesigned to reduce component complexity and production costs. With the launch of the Predict to Prevent program in Service, for installed systems we can now analyze which components will fail in future. Based on these data on component status we carry out proactive repairs and can therefore reduce downtimes and repair costs.

In order to optimize not only the turbines themselves but also the exact local placement and configuration of the turbines, thus leveraging the full potential of the turbines at each location, we

continued to invest in the digitalization of our wind farm planning systems in 2018. We expect that digital modification of the planning process will deliver additional low single-digit percentage increases in production with the same use of resources.

In addition, we are working on further adapting our algorithm as part of the integrated layout process: This takes into account and balances the topographical conditions of a wind farm site with all relevant influencing variables for optimal site configuration and the necessary development and installation costs. Thanks to our 'Balance of Plant Cost Optimizer', we were able to achieve significant increases in energy yields at the level of wind farms. In the case studies carried out we were able to demonstrate a reduction of energy production costs in the wind farm.

**Progressive Further Development of the AW3000 Platform**

In the 2018 reporting period our developers focused on further reducing the costs of electricity generation on the very successful AW3000 platform by implementing technical innovations, in parallel with the Delta4000 product series. In the course of the cooperation between Nordex and AWP development teams, it was possible to transfer technological and methodological findings and incorporate them into the further development of the successful AW3000 platform.

In addition to increasing the power output of the AW132 to 3300 kW with an almost unchanged design, a new turbine was also brought to market in the AW140/3000 that optimally meets the special requirements of low-wind areas with low turbulence and low noise requirements. For the AW140/3000 rotor blades, we use the existing AW132 blade molds in production. An extension to these means that they can also be used for the new AW140. This process makes it possible to use the blade molds already produced for the AW125 and AW132 bestsellers for this system as well. We thus not only save costs but also reduce



AW3000 Platform  
in Bruening's Breeze,  
USA

the materials and emissions for new blade molds that arise during production, transport and installation.

In some parts of the world the AW140 system will use the proven full concrete tower technology. This type of tower is usually made locally in the immediate vicinity of the wind farm, contributing to adding value locally and minimizing the emissions transporting them would have caused.



### Expanded Utilization Range of Nordex Systems Worldwide

In order to enable operations at sites with particularly strict conditions, Nordex offers a wide range of operating modes and equipment modules, such as demand-driven flight beacons, the shadowing module, and special modules for species protection. These can be controlled according to the local prevalence of protected species and their behavior, approaching flying objects, local wind direction, sunshine intensity, outdoor temperature, time of day, or the local holiday calendar. This minimizes environmentally damaging light and noise emissions, and meets construction regulations.

Our Delta systems, which are especially popular in places such as Scandinavia, can continue to operate at sites with average temperatures as low as  $-20^{\circ}$  Celsius. The tried and tested Nordex Cold Climate Package also helps to develop profitable cold sites. In the cold-climate variant (CCV) the system has an extended operating range and is

ready for operation at exterior ambient temperatures down to  $-30^{\circ}$  Celsius: It therefore makes a contribution to the sustainable safeguarding of planned annual energy yields in cold periods, bearing in mind global climate change and the investment horizon of wind turbines, which usually extends over several decades.

Our effective anti-icing system, which we continued to develop in 2018, heats the most aerodynamically important surfaces of the rotor blades as required and reduces ice build-up in an energy-efficient way. This technical development leads to higher energy yields at sites with frequent ice formation.

### SERVICE DEVELOPMENT

#### Rotor Blade Inspection by Drone in Future

In 2018 the Nordex Group and Lufthansa Aerial Services signed a framework agreement for the implementation of drone-based inspection services for installed wind power systems. Drones will be used for rotor blade inspection in particular. Lufthansa Aerial Services will provide this service for the Nordex Group worldwide.

As the result of two years of intensive collaboration in developing and testing the system, a service standard has now been defined that meets Nordex's high requirements in damage identification, quantification, localization and reporting. Since May 2018 a highly automated drone has been used for this purpose: The process is now three to four times faster than traditional inspection methods and enables the highest possible degree of precision, repetition and data consistency.

Under this agreement Nordex and Lufthansa Aerial Services are continuing their successful collaboration that began as a technology partnership and is now prepared for worldwide operations.

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#### WIND POWER PLANTS

with a nominal performance of 2,522 MW were installed by **NORDEX** Group in 2018





Rotor blade inspection with the aid of drones

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We are benefiting from reduced turbine downtime, lower operating costs, and lower safety risks during inspections as an immediate result of the use of this high-end technology from Lufthansa Aerial Services.

**CHRISTIAN BUSDIECKER**, Head of Service Europe, Nordex Group

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## OUTLOOK 2019

### Further Development of Global Rotor Blade Quality Standards

In order to continue to play a leading role in the global competition for the best product and maximum energy production, we will continue to focus strongly on quality.

Our production network, which consists of our own and third-party rotor blade plants in Germany, Spain, India, Brazil and China, will be expanded with a new plant in Mexico in 2019. As part of its international orientation, Nordex is working to further develop its global quality standards in rotor blade production. This way we will continue to meet the increasing quality requirements of our customers and at the same time ensure the sustainability of our products over the long term.



## PRODUCT SAFETY AND HEALTH

➤ GRI 416/103, 416-1

Safe products always have the highest priority for Nordex. To guarantee the health and safety of all people in or near a wind power system we constantly monitor markets and identify the statutory and normative requirements in the relevant target markets.

It is extremely important for us to make our wind power systems safe places to work: Well planned emergency escape and rescue routes, easily accessible systems, an on-board crane for exchanging components with a weight of up to one tonne, as well as rapid, weather-protected access to the rotor hub to reduce any maintenance-related downtime of our Delta-series turbines are all measures that increase workplace safety.

Nordex develops wind power systems in accordance with the requirements of the European Union Machinery Directive and all applicable national regulations, such as the German Equipment and Product Safety Act. This generally also includes an analysis of:

- **Environmental risks** relating to fuels, hazardous substances, noise emissions, bird migration, bat protection, ice cast-off, electromagnetic radiation, and subsonic noise
- **Stability risks** relating to the wind power system identified through foundation surveys, design of the foundation and load-bearing structure, as well as onsite geological and wind conditions
- **Risks to personnel** during manufacturing, transportation, warehousing and storage, installation and finalization, as well as during commissioning, operation, maintenance, repair work and system dismantling
- **Functional risks** which could affect technical or power availability.

The necessary standards in terms of health and safety requirements are ensured through processes that support product development.

In the reporting period all material Nordex products and services were assessed on health and safety aspects. To implement the measures resulting from these checks, Nordex has specialized and qualified functional departments that monitor and perform the Company's own construction, manufacturing, management, installation supervision and functional commissioning, as well as wind power system servicing and maintenance activities.

Nordex works with specialist companies such as crane providers and assembly companies for installation activities and special tasks involving the lifting of modules. We train these suppliers on the special requirements of the Nordex Group and our customers. In the development of the Delta4000 system the design changes were assessed on personnel and plant safety. A risk assessment was carried out to ensure human safety. As new potential hazards to people were identified, adjustments were evaluated by teams from the Engineering, Service, and HSE Departments. Where required, suitable measures were implemented during the construction process to mitigate and wherever possible prevent any risks.

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**TURBINES OF THE NEW PLANT TYPE N149/4.0–4.5**  
 were already sold in 2018.

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It is impressive to follow the realization of this unique project from the current development phase through to construction. Good cooperation between the Nordex team and our own team was an important success factor and enabled us to use the latest technology with the N149.

**KATJA BARTSCH-WÜNSCHEL**, Director Onshore Wind Europe, E.ON Climate & Renewables

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To guarantee the structural integrity of our systems, constant functional hazard analyses are planned in the construction process. Based on analysis results, safety functions are integrated and adapted to the new system types to take new operating parameters into account.

In the reporting period, the packaging concept for nacelles during transport, storage and set-up of Nordex turbines was also revised. This is an important contribution to the reduction of packaging material.

## Customer Satisfaction

### MANAGEMENT APPROACH

Our customers' satisfaction is decisive for our business success. Integrating our customers' perspectives, understanding their needs and continually adjusting our range of products and services to meet them is therefore fundamentally important to us.

### SUSTAINABILITY STRATEGY 2019 TO 2021

As part of our Sustainability Strategy 2019 to 2021 Nordex has set itself the goal of achieving a high recommendation rate. To achieve this we will conduct regular customer surveys in order to identify optimization potential and derive required action. Through high customer satisfaction, we want to strengthen customer loyalty for the long term.

### SURVEY OF CUSTOMER SATISFACTION IN SALES AND SERVICE

We carry out customer surveys regularly to measure the satisfaction level of our customers, and enable us to optimize Nordex Group products and services correspondingly. Surveys are important tools for us in identifying potential for optimization and deriving the actions required.

Measuring customer satisfaction also helps to identify reasons for and trends in customer emigration at an early stage and to take appropriate countermeasures.



In 2018 we already conducted individual customer satisfaction surveys in the sales process following events such as customer workshops, contract negotiations or incoming orders. We evaluated feedback from customers from a wide range of segments regarding cooperation in the sales phase. Based on this we initially developed a series of measures to optimize projects together with our customers. Last year we set up our own Project Optimization Department. For example, we worked with our customers to optimize the layout of their wind farms and maximize their annual energy yields, as well as reduce costs for access roads and wind farm cabling. This led to positive customer feedback in 2018.

In 2018, the Service Department chose a range of survey methods to assess overall customer

satisfaction and individual performance, services and upgrades. Based on the analysis of these results, optimization measures were developed and implemented at both Group level and specifically for each country. In Service, for example, we developed new smart concepts to reduce equipment failures and downtimes. These include the self-erecting crane, which can significantly reduce the time required for mobilization in the event of a fault, and the Predict to Prevent program for proactive and condition-oriented repair. Furthermore, a digital customer portal was developed that makes communication and documentation processes simpler, more efficient and paperless.

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**We are very satisfied with our long-standing cooperation with Nordex on joint projects totaling 500 MW. This is another reason why we have decided to use the latest Nordex technology for repowering our 'Wennerstorf II' wind farm, as well as making it available for complete, independent surveying.**

**JOACHIM BOCK**, ABO Head of Planning Department, Lower Saxony and Schleswig-Holstein

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Service Team at  
the Wind Farm  
in Tyrinselkä, Finland

## OUTLOOK 2019

Starting in 2019 we will continue to systematically expand our customer satisfaction survey. A comprehensive approach, consisting of event and feature-oriented measurement methods, is aimed at providing a holistic picture of our customers and their expectations.

The event-based survey will take place promptly after points of contact with customers, for example after contract negotiations or providing services, while customer contact with the Nordex Group is still fresh. As a result, we expect more comprehensive feedback from which we can derive even more specific measures. This way we gain a better understanding of our strengths and potential for improvement.

In addition to the event-based survey, a standardized survey for measuring and comparing customer groups is to be carried out at regular intervals by the Service Department.

For both methods, the most important indicator for us is the Net Promoter Score (NPS). This directly quantifies whether and to what extent a customer would recommend the Nordex Group to others. At the same time, the NPS gives us an indirect indication of how satisfied a customer is with our services. Besides this the NPS also contains a strategic component. Every decision should therefore lead to an increase in the Net Promoter Score throughout the Company in the long term.



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We promote a culture in which employees identify with our Company and its goals.

— This is based on our leadership guidelines and our leadership culture. Every employee is required to assume responsibility.

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Occupational safety takes top priority



# EMPLOYEE RESPONSIBILITY



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## Employee Development

### MANAGEMENT APPROACH

➤ GRI 401/103

Achieving the Nordex Group's goals depends largely on the commitment, experience and passion of its employees. The People & Culture Department therefore manages and takes responsibility for activities and initiatives to promote the satisfaction and motivation of our more than 5,600 employees worldwide.

As a global company in which a variety of people with different backgrounds and cultures work, our corporate values of Integrity, Respect, Collegiality, and Ownership are the foundation for cooperation between all employees. These values describe the principles of our work ethic and for our interaction with one another; alongside our internal rules and guidelines they provide all our employees worldwide with orientation for their behavior. We have set out the corporate values in detail in the form of the ten Nordex Leadership Guidelines, in which our managers are instructed in training courses worldwide.

Besides continuing to develop a holistic view of people, an understanding of leadership within our Company, and promoting diversity, the People & Culture Department also focuses on professional personnel management through all phases of working together. Starting with recruitment, through systematic integration and individual professional development, to a fair arrangement of exit scenarios, the Department continually accompanies our employees and managers.

### CHALLENGES, RISKS AND OPPORTUNITIES

The Nordex Group continues to face the challenge of responding to the fierce competition and far-reaching changes in the wind power industry, including in its personnel management. In particular, in Europe we had to implement a program to lower staffing costs to significantly reduce structural costs. Every day we are confronted with highly dynamic markets and enormous pressure to change. At the same time, we try our hardest to offer Nordex Group employees an appropriate work-life balance through modern and flexible working time models. As pioneers in the renewable energy sector, in this regard we rely more than ever on further initiatives towards developing a holistic Company and leadership culture.


**INFORMATION**

You can find out more about employee development on **PAGE 43.**

## SUSTAINABILITY STRATEGY 2019 TO 2021

➔ GRI 102-16, 102-18

As a major component of our Sustainability Strategy 2019 to 2021 we will continue to anchor our corporate values and strengthen our leadership culture.

### Corporate Values

Presenting our corporate values is already part of our Welcome Days, introductory seminars held quarterly for new employees in the Division Europe. To anchor the corporate values more deeply over the coming years we will strengthen our communication of them by training multipliers and supporting them in transmitting these values throughout the Company. Furthermore we will integrate the presentation of the values in 2019 within our globally established Trust. Listen. Lead. training program.

### Leadership Culture

Our Nordex management guidelines are transmitted through the globally uniform Trust. Listen. Lead. training program. At present, 60% of our managers have attended the course. The goal is for every manager in the primary Nordex markets to have participated in this program within their first year in a leadership role.

A further focus area of the Sustainability Strategy 2019 to 2021 is employee development: Here we will continue the established, successful programs and processes. In addition, we intend to promote diversity in the Company. You will find further information in the sections on Employee Development, Management Development and Employee Diversity.

## SUSTAINABILITY STRATEGY 2015 TO 2018

The Sustainability Strategy 2015 to 2018 focused on the continuous improvement of our attractiveness as an employer. At a time of demographic change, finding suitable employees and securing their long-term loyalty to our Company is more important to us than ever. This is a challenge we continue to face. Overall, we view the last three years as positive – despite the increasingly difficult market environment, with a corresponding decrease in job vacancies in Germany and Europe and an increase in employee fluctuation.

Our commitment has received multiple awards over the last three years: The Nordex Group is one of 'Germany's Top 100 Employers' and is recognized as a 'TOP National Employer' as well as a 'Fair Company'. We also received the 'Top Career Opportunities for German University Graduates' and 'Hamburg's Best Employer Brands' awards. Furthermore, the high quality of our training was confirmed by the 'Top Training Organization' quality seal in Germany.

## ➤ Nordex Leadership Guidelines

1. Recognize yourself
2. Communicate appreciatively and transparently
3. Delegation & granting trust
4. Be able to endure difficult situations
5. Initiate, design and implement changes sustainably
6. Create clarity and transparency – give orientation
7. Make decisions reflectively
8. Assume responsibility
9. Treat people positively and like them
10. Be a role model!

### Employee Recruitment in the Reporting Period

In the reporting period, acquiring new employees in Germany was not the focus. Rather, as a result of the necessary strategic decisions we had to cut a significant number of jobs. Nevertheless, we achieved a further increase in applications from the Young Professionals target group, and received positive feedback regarding employee retention in a survey of German employees. The restructuring of our supply chain meant we hired new employees in Mexico and Brazil.

### 2018 PROJECTS

#### Employee Involvement

In 2018 we conducted a stress analysis in Germany via an employee survey. The aim of this subject-specific employee survey was to identify possible sources of stress in order to improve working conditions within the Nordex Group and further secure the basis for healthy working practices.

Based on the results of the employee survey we will derive a centrally coordinated series of measures. As a particular strength in the area of healthy working practices, collaboration in the team and collaboration with managers was viewed as very positive. This strength will be supported by an initiative on expanding feedback culture, which is to be implemented worldwide. There were more critical opinions regarding location-specific topics in the immediate operational working environment; these are now being resolved locally.

We are also working decentrally with these results. For example, a number of workshops and discussion rounds took place at team level that generated corresponding measures; a digitally distributed toolkit of methods provided managers and employees with inspiration in working with the results. Some managers received support from external coaches for communicating and deriving related measures.



EMPLOYER AWARDS


#### Salary Grouping and Bonuses

As important steps in harmonizing Group-wide People & Culture processes following the merger of Nordex and Acciona Windpower, the following two projects are highlighted from the reporting period:

We carried out a grading project at an international level, with the aim of systematizing and assessing all management positions worldwide.

In addition, we redesigned and harmonized the variable remuneration system during the reporting period. At the core of the new regulation is the conversion of individual targets into sustainable business goals. All employees worldwide are now measured against the same targets.



  
**INFORMATION**  
 on the program  
 'Upwind' on  
**PAGE 41f.**

## EMPLOYEE FEEDBACK AND DEVELOPMENT

➔ GRI 404/103, 404-3

We are certain that our employees want to learn new things every day and share the responsibility for their own development. We support them in fulfilling these goals in various ways. As part of the Sustainability Strategy 2019 to 2021 we intend to continue and optimize the established employee development programs and processes.

### Compass Process

The core process in the area of employee development is the Compass Process. This consists of three steps:

1. During the Compass Dialog that takes place between January and March each year, our employees receive specific feedback on their performance over the preceding year. Together with their line manager they then define a realistic personal development plan that meets the needs of the employee and the Company.
2. During the second quarter the results of the Compass Dialogs are gathered in development meetings, referred to as Compass Conferences,

and discussed there in the management teams. This provides us with a cross-departmental overview of the talents and high-potential employees in the Nordex Group. Nominations for participation in the Upwind Management Trainee Program are also made during the Compass Conferences.

3. In 2018 we introduced the Compass Review Talk for the first time. These discussions take place in the third quarter, offering employees and managers an opportunity to check development plans together and ensure that they are on the right track with the measures defined.

The introduction of the Compass Review Talk is part of the complete overhaul of the Compass Process in 2018. The goal of the relaunch was to simplify the process and refocus more on human resources development, as well as improving overall user friendliness. In the reporting period we also rolled out the Compass Process in Brazil and India. Compass Dialogs are mandatory Group-wide. Compass Conferences and Compass Review Talks are mandatory for white-collar employees and take place on a needs basis for blue-collar workers.

The People & Culture Department tracks the completion of Compass Talks and supports employees and managers in the process. With this structured process we ensure that the wishes and expectations of our employees are taken into account and the requirements of the Company are met.

In the reporting year, 83% (2017: 77%) of all possible **Compass Dialogs** took place, with managers holding discussions with a total of over 3,500 employees (2017: 3,329). In addition, the People & Culture Department facilitated a total of 33 Compass Conferences in the reporting period (2017: 30).

# 83%

**OF EMPLOYEES TOOK PART**  
in a Compass Dialogue in 2018.



The age structure of employees participating in the Compass Dialogs largely reflects that of the Nordex Group, with 75% of the employees in the 30 to 50 age group, 12% under 30, and 13% over 50. Measured by gender distribution in the Company, there were no significant differences between the participation of women (2018: 16%, 2017: 18%) and men (2018: 84%, 2017: 82%).

### Further Training

➤ GRI 404-1, 404-2

#### Technical Training Center

The Technical Training Center (previously the Nordex Academy) was created from the divisional structure of the Nordex Group in 2017. It is available both to the Group's own employees in the Division Europe and to customers and subcontractors, with all its technical training courses on Nordex technologies. Besides test rigs, various large components are available for technology, service and safety training to develop our employees' practical expertise, and deepen knowledge and further reinforce the high quality standards of the Nordex Group.

In 2018 around 4,000 participants (2017: 3,606) attended Technical Training Center courses, completing an average of 15 training hours (2017: 15). The majority of participants came from the Service Department in the Division Europe.

In 2019 we will carry out seven new training courses in our Technical Training Center on the new generation of wind power systems.

#### Digital Learning Formats

One focus area in the reporting year was the expansion of e-learning courses on the platform introduced in 2017. The courses are aimed at all employees worldwide and are available in multiple languages. We will continue this initiative in 2019, focusing on the in-house development of e-learning courses.



Working model of a hub for training Service technicians at the Technical Training Center, Hamburg, Germany

#### Management Development

Trust. Listen. Lead. – Nordex Leadership Training

In 2018 we held 14 Trust. Listen. Lead. seminars (2017: 17) in German and English. For 2019 Nordex aims to increase the training rate to 80% for new managers. As well as the regularly scheduled courses that take place in Germany, further local training units will be offered in Brazil, France and at the production sites in Rostock.

Upwind – Nordex Management Trainee Program

The Upwind international Management Trainee Program targets the sustainable promotion of talents from the Company's own ranks, and increasing the proportion of internally appointed managers. The nominated participants first undergo an



in-depth analysis of their potential, with further modules that focus on developing their management capabilities. We are continuing this successful program to promote young talent in 2019.

#### Mentoring – Nordex Development Program for Middle Management

Our Mentoring Program was launched as a pilot project in Germany in 2018. The objective of this program is to retain talent within the Company, for talents to gain important insights and experience in the Company, to encourage cooperation across departments, and to further develop our managers. The mentors were recruited from the first management level, and the mentees are currently in the middle management levels. In regular meetings over the nine-month program these tandems worked together on individual topics. The pilot project in Germany has been completed successfully and the approved procedure can now be implemented in other Nordex Group countries as required.

## EMPLOYEE DIVERSITY

➤ GRI 401-3, 405/103, 405-1, 405-2, 406/103, 406-1

We understand the diversity of our workforce as one of our Company's own assets. Men and

women of different ages with diverse cultural backgrounds, different attitudes and lifestyles enrich our Company and contribute to the Nordex Group's success.

In the reporting period no instances of discrimination were confirmed by the respective committees.

We have not yet reached our objectives with respect to gender equality. On the one hand a restructuring program was carried out that entailed a reduction in the workforce, also in the management structure. On the other, all management positions are now graded according to a new method. This has led to an increase in the overall number of management positions, as well as to a reduction in the percentage of women in management. As a result, in the reporting period the share of women on the two highest management levels in the German companies was 10% (2017: 12%). To achieve improvements in this area, we pay particular attention to including women in our managerial promotion programs. In addition, external recruitment consultants are obliged to also put forward suitable female candidates for each vacancy. We will be increasing our efforts to gain more qualified female managers in future.

## MANAGEMENT DIVERSITY

	2018	2017	2016
<b>Management Board total</b>	<b>3</b>	<b>3</b>	<b>4</b>
of whom female	0	0	0
of whom aged under 30	0	0	0
of whom aged 30–50	2	2	3
of whom aged over 50	1	1	1
<b>Supervisory Board total</b>	<b>6</b>	<b>6</b>	<b>4</b>
of whom female	1	1	1
of whom aged under 30	0	0	0
of whom aged 30–50	0	0	1
of whom aged over 50	6	6	3

➤ GRI 401-1

In the reporting period a separate diversity concept was produced for the Executive and Supervisory Boards: Details are provided in Section 5 of the Corporate Governance Report, along with the Declaration of Conformity of Nordex SE.

The basic salary for men and women was at a relatively similar level across all the salary groups considered. In some salary groups, the basic salary for women was higher than that for men, and

vice versa. These differences are not systematic, which means that there is no connection between position level and salary difference with regard to gender.

#### Inclusion

In the reporting period, Nordex employed 46 severely disabled people in Germany (2017: 55) who had indicated their severely disabled status to their employer.



**INFORMATION**  
on the diversity concept approved by the Executive and Supervisory Boards is provided in the Corporate Governance Report, Section 5 in the 2018 Annual Report on **PAGE 73**.

#### EMPLOYEES WITH DISABILITIES IN GERMANY

	2018	2017	2016*
Employees with disabilities	46	55	52
of whom Administration employees	5	10	8
of whom Engineering employees	3	5	3
of whom Blade Production and Sourcing employees	19	21	18
of whom Nacelle and Tower Production and Sourcing employees	14	13	16
of whom Project Management employees	1	3	2
of whom Service employees	4	3	5

➤ GRI 401-1

#### Family and Work

The Nordex Group attaches great importance to reconciling professional and private life. In addition to standard parental leave models, we offer our

employees flexible working time models and the option of mobile working. In the reporting period 147 (2017: 138) employees in Germany took parental leave.

#### EMPLOYEES ON PARENTAL LEAVE (GERMANY)

	2018	2017	2016*
<b>Employees total</b>	<b>147</b>	<b>138</b>	<b>141</b>
of whom male	105	91	91
of whom female	42	47	50

➤ GRI 401-3



## EMPLOYEE REPRESENTATION

➤ GRI 102-41, 402/103, 402-1, 407/103, 407-1

The Nordex Group attaches great importance to safeguarding the interests of its employees and working in a spirit of trust together with employee representatives. We take a constructive approach to discussions with employee representatives in all countries and promote collaboration based on mutual trust. In Germany, employee interests are protected by collective bargaining agreements that usually involve Group-wide or local works agreements. In Germany approximately 98% of employees are covered by co-determination law; however, this does not cover Company executives. In the rest of Europe all employees are represented by the European Works Council (known as the SE Forum). In individual countries such as France, Sweden and Finland, local Works Council committees are also formed with respective works agreements as the result of joint decisions taken with local employee representatives.

Co-determination topics are managed by the People & Culture Department, together with the managers responsible. Compliance with co-determination law is an integral part of many processes within the Department.

**Germany:** The Works Council in Germany has information, consultation and co-determination rights in social, human resources and economic matters, and otherwise represents the general interests of the workforce. Both the Works Councils and the employees are comprehensively informed about any significant operational changes by senior management and/or local management.

Communication takes place in particular through Company meetings, via the intranet and via telephone conferences.

If employees in Germany feel their salary scale grading is incorrect they can lodge an appeal with an Arbitration Board that will check their grading and their complaint. The Arbitration Board comprises two employer's representatives and two members of the local Works Council. In 2018 seven complaints about salary scale grading were submitted via the formal procedure (2017: 243 complaints). The high number of complaints in 2017 is explained by the introduction of a new remuneration system in 2016, as a result of which all employees in Germany were regrouped. All these complaints were resolved in 2017.

In the case of additional conflict issues, the Works Council in Germany and the People & Culture Department have recourse to Conflict Resolution Officers as points of contact and mediators within our organization. There were no cases of discrimination in the reporting period.

**Worldwide:** We explicitly support the rights of our employees at all sites around the world, and provide all the representatives of country sites in Europe with the opportunity to exchange views and engage with senior management at least twice a year through the European Works Council.

In the reporting period there were no known cases of employees' rights of association or collective bargaining being breached or endangered at any Nordex Group business sites.

## OUTLOOK 2019

To further professionalize our human resources work and offer employees a uniform service throughout their time with the Nordex Group, we intend to revise and anchor our human resources processes in the coming years, from hiring through to employee development. We will start with the Division Europe and Corporate Functions in 2019, and will then review a rollout to the Division International.

## EMPLOYEES BY AREA AND AGE STRUCTURE

	2018	2017	2016
<b>Total number of employees</b>	<b>5,676</b>	<b>5,260</b>	<b>5,129</b>
of whom female	16%	17%	18%
of whom aged under 30	20%	29%	21%
of whom aged 30–50	69%	61%	66%
of whom aged over 50	11%	10%	13%
Administration employees	648	855	617
of whom female	45%	36%	45%
of whom aged under 30	15%	13%	15%
of whom aged 30–50	73%	73%	71%
of whom aged over 50	11%	14%	13%
Engineering employees	599	578	625
of whom female	18%	19%	18%
of whom aged under 30	11%	9%	12%
of whom aged 30–50	76%	78%	77%
of whom aged over 50	13%	12%	11%
Blade Production and Sourcing employees	910	974	805
of whom female	16%	15%	16%
of whom aged under 30	16%	17%	19%
of whom aged 30–50	64%	60%	60%
of whom aged over 50	20%	22%	21%
Nacelle and Tower Production and Sourcing employees	1,309	952	1,121
of whom female	12%	17%	15%
of whom aged under 30	21%	14%	23%
of whom aged 30–50	68%	69%	62%
of whom aged over 50	11%	17%	15%
Project Management employees	280	292	427
of whom female	12%	13%	19%
of whom aged under 30	12%	13%	19%
of whom aged 30–50	72%	73%	69%
of whom aged over 50	16%	14%	11%
Service employees	1,693	1,449	1,430
of whom female	7%	7%	8%
of whom aged under 30	28%	30%	28%
of whom aged 30–50	67%	64%	65%
of whom aged over 50	5%	6%	7%
Sales employees	237	160	104
of whom female	25%	29%	23%
of whom aged under 30	26%	23%	14%
of whom aged 30–50	69%	68%	73%
of whom aged over 50	5%	9%	13%

➔ GRI 405-1





### EMPLOYEES BY EMPLOYMENT CONTRACT

	2018	2017	2016
Employees with temporary contracts	660	543	620
of whom male	497	418	473
of whom female	163	125	147
Employees with permanent contracts	5,016	4,717	4,509
of whom male	4,265	3,939	3,756
of whom female	751	778	753
Temporary employees*	182	165	462
of whom male	163	134	383
of whom female	19	31	79

\* Technical temporary employees outside of our production facilities are not included.  
 Further temporary employees at all sites globally have been included.

➤ GRI 102-8

### EMPLOYEES BY EMPLOYMENT TYPE

	2018	2017	2016
<b>Total no. of employees</b>	<b>5,676</b>	<b>5,260</b>	<b>5,129</b>
of whom male	4,762	4,357	4,229
of whom female	914	903	900
Full-time employees	5,366	4,969	4,867
of whom male	4,629	4,243	4,135
of whom female	737	726	732
Part-time employees	310	291	262
of whom male	133	114	94
of whom female	177	177	168

➤ GRI 102-8

## EMPLOYEES BY REGION

	2018	2017	2016
<b>Total number of employees</b>	<b>5,676</b>	<b>5,260</b>	<b>5,129</b>
of whom male	4,762	4,357	4,229
of whom female	914	903	900
Africa	53	53	57
of whom male	41	43	44
of whom female	12	10	13
Asia	137	133	172
of whom male	121	114	142
of whom female	16	19	30
Australia	4	4	0
of whom male	3	3	0
of whom female	1	1	0
Europe (excluding Germany and Spain)	1,040	1,025	907
of whom male	921	901	791
of whom female	119	124	116
Germany	2,244	2,456	2,468
of whom male	1,841	1,992	1,997
of whom female	403	464	471
North America	298	242	186
of whom male	271	215	166
of whom female	27	27	20
South America	736	307	452
of whom male	652	258	382
of whom female	84	49	70
Spain	1,164	1,044	887
of whom male	912	834	707
of whom female	252	210	180

➤ GRI 102-8

## NEW EMPLOYEES BY AGE STRUCTURE

	2018	2017	2016*
<b>Total</b>	<b>1,246</b>	<b>1,165</b>	<b>578</b>
Employees aged under 30	45%	34%	32%
Employees aged 30–50	51%	57%	62%
Employees aged over 50	5%	9%	6%

\* The values for 2016 apply to the Nordex Group excluding Acciona Windpower (AWP).

➤ GRI 401-1



## NEW EMPLOYEES BY REGION AND GENDER

	2018	2017	2016*
<b>Overall total</b>	<b>1,246</b>	<b>1,165</b>	<b>578</b>
Africa	8	16	10
of whom male	4	14	7
of whom female	4	2	3
Asia	19	28	33
of whom male	19	23	28
of whom female	0	5	5
Australia	0	4	0
of whom male	0	3	0
of whom female	0	1	0
Europe (excluding Germany and Spain)	161	271	196
of whom male	139	228	171
of whom female	22	43	25
Germany	257	321	317
of whom male	190	248	258
of whom female	67	73	59
North America	91	109	15
of whom male	84	96	15
of whom female	7	13	0
South America	476	71	7
of whom male	430	55	6
of whom female	46	16	1
Spain	234	349	0
of whom male	179	283	0
of whom female	55	66	0

\* The values for 2016 apply to the Nordex Group excluding Acciona Windpower (AWP).

➤ GRI 401-1

## NEW EMPLOYEES AND EMPLOYEE FLUCTUATION\*

	2018	2017	2016**
New employee hires	1,246	1,165	578
Ratio of newly recruited employees (in %)	23	22	16
Employees leaving	867	1,035	330
Fluctuation rate (in %)	16	20	9

\* 'Employees leaving' refers to employees who have left the Company, excluding interns, students, temporary staff and trainees.

\*\* The values for 2016 refer to the Nordex Group without Acciona Windpower (AWP).

➤ GRI 401-1

## Occupational Health and Safety

### MANAGEMENT APPROACH

➤ GRI 403/103, 403-1, 403-2

Our employees' health and safety in the workplace is of critical importance to us. Both these areas are key elements of our Sustainability Strategy. As part of a continuous and systematic process we work constantly on further developing the safety culture that we live and breathe, and on making our work environment safer. This is a process that includes all our own employees as well as those of business partners, subcontractors and suppliers.

We provide programs and training courses worldwide that advance participants' awareness of safety and their level of qualification. Our occupational health and safety organization supports management by providing professional advice on strategic topics in our business areas; it also assists the operational implementation at our sites and in specific projects. With the aim of establishing a culture of health and safety in the wind power industry, our involvement extends beyond the confines of our own Company to include industry-specific initiatives such as the international Working Group Wind Industry Safety Culture.

### CHALLENGES, RISKS AND OPPORTUNITIES

Notwithstanding the improvements achieved and the Company's high performance in occupational health and safety we intend to further reduce the level of incidents significantly. A key point in this area remains the harmonization of the Occupational Safety Departments of Nordex and Acciona Windpower.

Our customers too are focusing more and more on the topic of occupational safety, while public interest groups are taking an increasingly critical view of the damage to wind power systems and its consequences. The safety of our employees and business partners as well as our products will therefore continue to take top priority for Nordex.



Rotor blade production in Lumbier, Spain

### SUSTAINABILITY STRATEGY 2019 TO 2021

The Nordex Group has set itself the long-term target of Zero Occupational Accidents. With the new Sustainability Strategy 2019 to 2021 the Nordex Group has defined an interim target for the entire Group: To achieve a further reduction in occupational accidents and an LTIF below 5 per million hours worked by 2021. To realize this, Nordex Group processes will be further standardized worldwide and programs will be established to raise awareness of occupational accidents. In the area of health protection we will continue our successful Health Days approach and roll this out to further sites. Furthermore, cross-divisional collaboration will also increasingly shape the work of the Health, Safety and Environment Department.



Safety First!  
Service  
technicians  
inspecting  
rotor blades



## SIGNIFICANT OCCUPATIONAL ACCIDENTS\*

Region	Employees			Service providers		
	2018	2017	2016	2018	2017	2016
<b>Overall result</b>	<b>0</b>	<b>1</b>	<b>13</b>	<b>3</b>	<b>7</b>	<b>8</b>
Africa	0	0	1	0	0	0
Asia	0	0	2	0	0	0
Europe (excluding Germany)	0	0	6	3	1	0
Germany	0	1	0	0	3	1
North America	0	0	0	0	0	2
South America	0	0	4	0	3	5

\* 'Significant Accidents' refers to all accidents with SR 3 or 4.

The recorded accidents are rated by means of a classification system. We differentiate between four rates of severity (SR):

- SR 1: No injury, or slight injury or health impact
- SR 2: Moderate injury or health impact
- SR 3: Severe injury or health impact
- SR 4: Fatal injury or extreme health impact

➔ GRI 403-2

### TARGET ACHIEVEMENT: SUSTAINABILITY STRATEGY 2015 TO 2018

We regularly measure our performance against a range of parameters to continually document and review the effectiveness of the measures taken to improve our safety culture. Besides indicators that provide clear statements on accident prevention, one of the most important parameters is the number of occupational accidents per million working hours: The LTIF (Lost Time Incident Frequency) rate. This key figure includes all the work accidents that result in one or more days lost. An objective of our Sustainability Strategy 2015 to 2018, which was developed for Nordex SE before the merger with AWP, was to achieve an LTIF rate below 5 by 2018.

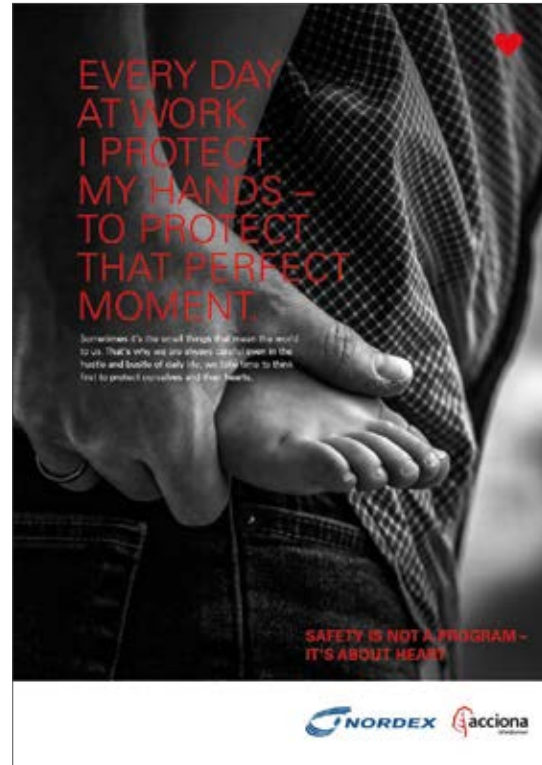
Thanks to the support and efforts of our employees and business partners we were able to reduce our LTIF\* from 8.2 in 2015, 6.6 in 2016 and 6.5 in 2017 to 5.6 in the reporting period for the overall Group. Since 2016 this figure has comprised the entire Company following the merger with AWP.

In the Division Europe, which to a great extent comprises the pre-merger Nordex Group, an LTIF of 4.4 in the reporting period means we achieved the Sustainability Strategy 2015 to 2018 target. The Division International, which mainly comprises the former Acciona Windpower, has also achieved a significant LTIF improvement over recent years, with the current figure at 7.5.

In 2017 we introduced a new IT-based incident database. This was positively received by our employees and has clearly lowered the psychological threshold for reporting incidents. Accident-related events are now clearly identifiable and it is easier to derive the corresponding key figures. Furthermore, the progress of accident investigations is now easier to track and the measures derived are transparent and well-founded.

Organizations in each country organize safety committees in accordance with currently applicable laws. In Germany, for example, there are the Occupational Health and Safety Committees

\* Previous reporting years' figures are not within the scope of the audit by PwC.



Nordex Group HSE  
 poster campaign

that work at the main sites in Hamburg and at the two production facilities in Rostock. These committees are chaired by the General Managers of each site; regular participants include the Works Doctor, the Occupational Safety specialist, safety administrators, and also representatives of the Works Council, the management and the workforce as required.

### 2018 PROJECTS

To improve our service performance in plant maintenance we launched a project in 2018 that also integrates a work safety improvement module. This project also enabled us to standardize a range of different tools and processes Company-wide. The project results are not only benefiting our Service organization but all Company areas of the Division Europe.

In April 2018 we rolled out the GEORG Compliance Manager Software, to ensure a fully compliant organization, as planned. This enables managers and work supervisors to document compliance with the statutory regulations governing the duties entrusted to them. For the first time GEORG also centrally logs and provides a clear status overview of duties carried out in the past. GEORG is used for the office and production sites in Rostock and Hamburg. All users received training on the software and support from local administrators. To promote employees' use of the system further, in 2019 we will carry out corresponding informational campaigns. It is planned to roll out the software platform to further sites Group-wide.

## OUTLOOK 2019

In 2019 improving the safety and health of our employees will remain our core goal. To further strengthen the daily commitment of our employees we are planning a corresponding campaign that centers on generating positive associations with the topic. In line with the guiding principle of 'strengthen strengths to eliminate weaknesses', employees will be actively encouraged to maintain and further expand their personal efforts to ensure a safe working environment.

The Nordex Group will continue to standardize its processes worldwide and establish programs that highlight the issue of occupational accidents, raise appropriate awareness in employees and thus help to avoid these risks. In the area of health protection we will continue the successful concept of the Health Days and expand it to further locations. In addition, cross-divisional cooperation will also include the Health, Safety and Environment Department.

# Corporate Security

## MANAGEMENT APPROACH

It is fundamentally important to us at Nordex to protect our employees, the plant and assets with which they are entrusted, and the expert knowledge and reputation of our Company. The Corporate Security Department coordinates all activities for protection against criminality, terrorism and the effects of political disturbances and natural disasters with the support of a worldwide security and crisis management organization. This includes identifying and avoiding any security risks when fulfilling orders, and protecting people and property at our sites throughout the world, as well as on trips abroad. Awareness and prevention are key elements of our risk-based and cross-disciplinary security systems; these systems also integrate a raft of prepared measures and contact people for support in emergencies and crisis management.

## CHALLENGES, RISKS AND OPPORTUNITIES

The dynamics of geopolitical and local security developments require a continuous assessment of possible risks and the adjustment of security measures for our sites, project management and the worldwide travel activities of our employees. We constantly review and adapt our security measures to the changing security environment of our various activities through basic protection measures, as well as through our local and central security officers.

## 2018 PROJECTS

In the past year we intensified the security-relevant support for our business activities by building up our internal security organization and integrating it more deeply within our value-adding processes. A special focus here was on the security of our growing business activities in Central and South America. In addition, we further strengthened the awareness of employees and managers for their respective safety risks and necessary mitigation measures.

## OUTLOOK 2019

In 2019, we plan to further expand our internal security organization and embed security management even more deeply within our business processes.



## Successful Actions for Greater Sustainability

### Health Day and Fun at the Nordex Forum Hamburg

Healthy employees are vital to the success of the Nordex Group. In 2016 we held the first Health Day at our Rostock Nacelle Assembly plant. As this event received a warm welcome from our employees we decided to offer Health Days at further sites. Alongside various health-related events at the Rostock sites, in 2018 we held a large-scale Health Day at our Hamburg site for the first time. With 'Live a balanced life – keeping stress and relaxation in proportion' as the event motto, we offered a colorfully diverse program of sports, fun and short presentations on health topics.

In 17 different events we presented our employees practical tips on how to organize their working day at the office in a healthy and varied way. In particular there were offers on back training and exercises, as well as offers focusing on stress management. The Icarus Flight simulator was a real magnet for visitors and helped train their motor skills and concentration. The Eye and Vision Training sessions were booked out: Here, attendees were trained in individual exercises guided by short demonstrations and were able to deepen their knowledge through presentations by specialists. Most exercises were designed so that attendees could do them on their own after training. To encourage our employees to exercise more we also highlighted the numerous sports initiatives launched by Nordex staff: They presented their activities as part of the Health Day and actively encouraged their colleagues to join in.



Health Day 2018  
in Hamburg,  
Germany: On the  
flight simulator,  
employees were  
able to test their  
coordination skills



Our award-winners in Hamburg took Silver in the category 'Most Active Company Cycle Team' and 'Company Cycle Team with the Most Members'

### City Cycling Campaign

In the STADTRADELN ('city cycling') campaign 56 Nordex colleagues from Rostock and 107 from Hamburg took part. The campaign was a great success, further motivating our employees to get on their bikes more often and set an example for sustainable mobility. The team from Rostock cycled 12,221 kilometers, thus saving around 1,740 kg of CO<sub>2</sub>. They took 5th Place in a total of 130 teams. The team from Hamburg pedaled 21,886 km, saved around 3,100 kg CO<sub>2</sub> and took 2nd Place in the category 'Most Active Company Cycle Team'. Overall the Nordex team took 3rd Place in a total of 175 Hamburg-based teams.

Our employees pedaled hard for 21 days to clock up as many kilometers as possible, both on their commute to work and privately. STADTRADELN is a Europe-wide campaign launched by the Climate Alliance: This campaign aims to raise greater awareness among politicians and decision-makers for sustainable mobility. Alongside environmental protection aspects and lowering CO<sub>2</sub> emissions, the focus is firmly on having fun on two wheels.

[www.stadtradeln.de](http://www.stadtradeln.de)

For more information about the city cycling see: [www.stadtradeln.de](http://www.stadtradeln.de)

[www.climatealliance.org](http://www.climatealliance.org)

For more information about Climate Alliance see: [www.climatealliance.org](http://www.climatealliance.org)



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We make sure our  
suppliers and partners  
meet our own high  
standards.

— This is not only a contractual requirement but is also  
regularly checked through our onsite visits and ongoing dialog  
with suppliers.

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Seaborne  
transportation of  
rotor blades



# RESPONSIBILITY ALONG THE SUPPLY CHAIN



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## The Nordex Supply Chain

➤ GRI 102-9, 204/103

### MANAGEMENT APPROACH

As a manufacturer of wind power systems we source products and services from numerous suppliers based in a wide range of countries, and generate a significant share of value in our upstream production stages. Our Global Sourcing Department ensures that the required products and services are sourced in the right quality, at the right time and at the right cost. At Nordex we are fully committed to the principle of sustainability: We therefore see it as vital to ensure that our own environmental and social standards are also maintained throughout our supply chain. The Nordex Group Code of Conduct for suppliers and subcontractors (the Suppliers' Code of Conduct) forms the basis for this, and we expect and require all our subcontractors and suppliers to comply with it. Furthermore, the Principles of the UN Global Compact on Human Rights, Labor, Environment, and Anti-Corruption provide fundamental guidance for our business activities. Given the Nordex Group's extensive supplier base, upholding our environmental and

social standards in our overall sourcing process as well as in our supplier management is a core objective.

The key materials, products and services purchased by the Nordex Group:

- Direct materials: Nacelle components, steel tower sets, concrete tower raw materials, blade sets, and blade raw materials
- Indirect materials: Tools, equipment, ancillaries
- Services: Transportation, cranes, and installation

### CHALLENGES, RISKS AND OPPORTUNITIES

The main challenge for the Global Sourcing Department is to secure material procurement for the timely production and construction of wind turbines by Nordex – at planned cost, and at all sites. The production and delivery reliability of our suppliers is a particular challenge here. In addition, fluctuating raw material prices pose a risk for our suppliers and for the Nordex Group, which we counteract through hedging. Another major challenge is the development of new production capabilities in India, Argentina, Mexico, Brazil and China. Our Risk Management Department moni-



tors all material risks throughout the Group. Cost of energy management is fundamental to overcome these challenges; at the same time it represents an opportunity to remain competitive in the demanding wind power market.

### **SUSTAINABILITY STRATEGY 2019 TO 2021**

In view of our extensive supplier base we regularly review our supplier due diligence processes for optimization potential. As a result we have identified setting standards for collaboration with our suppliers as a key component of our Sustainability Strategy 2019 to 2021. Our objective is to further optimize the supplier review process by 2021.

### **TARGET ACHIEVEMENT: SUSTAINABILITY STRATEGY 2015 TO 2018**

The Nordex Group successfully achieved its objective of anchoring sustainability requirements in the procurement process for the Division Europe. We will continue to work on further extending sustainability throughout our supply chain for the Division International.

### **2018 PROJECTS**

In 2018 the Nordex Group launched several new developments on the market, including the Delta4000 platform in all versions, as well as larger versions of the AW series with rotor diameters of 140 to 148 meters. There were no major changes in our supplier base for major components compared to 2017. In Division International we are working with new generator suppliers and in parallel driving our Smart Logistics project: This aims to produce sub-assemblies in the most cost-efficient sourcing regions and ship them directly to project sites for final installation, thus lowering logistics costs and reducing outbound logistics emissions. The first low-speed shafts for the Division International were produced in China in 2018. From 2019 onwards, Division Europe will also be supplied from China. We also added suppliers in India and China to our supplier network, who manufacture rotor blades for Nordex.



Transportation of nacelles and tower segments by rail to the construction site

## THE NORDEX SUPPLY CHAIN

➤ GRI 204-1

In the 2018 reporting year, the Nordex Group worked with around 5,700 suppliers (5,700 in 2017). 67% (82% in 2017) of our purchase volume, at around EUR 2,437 million (EUR 2,323 million in 2017), was provided by suppliers with their

head office or production sites in Europe. In this region 26% (43% in 2017) of the total purchasing budget was spent on products and services from German suppliers and 19% (15% in 2017) was spent on Spanish suppliers (see graphic below). The decrease in the share of European suppliers is mainly due to an increase of the proportion of international projects compared to the previous year.

### SUPPLIER COUNTRIES OF ORIGIN IN %

	2018	2017	2016
Germany	26.1	42.6	52.0
Europe (excluding Germany and Spain)	22.3	24.3	18.0
Spain	18.9	15.2	9.0
North and South America (excluding Brazil)	12.3	6.3	4.0
Asia (excluding China)	8.2	2.7	2.0
China	7.4	3.4	4.0
Brazil	4.7	5.5	4.0
Turkey	0.0	0.1	6.0
Africa	0.0	0.0	1.0

Regarding the products and services the Nordex Group procures from suppliers, our sourcing activities were distributed as shown in the table across the following areas:

### SOURCING ACTIVITY BY AREA IN %

	2018	2017	2016
Nacelle	43	38	36
Tower	16	18	21
Services *	12	31	28
Rotor blades	12	14	15
Site services	9	n/a	n/a
Others	8	n/a	n/a

\* Services include Indirect Spend.

Differences to totals may arise owing to rounding off.



## GLOBAL SOURCING

➤ GRI 308/103, 308-1, 308-2, 414/103, 414-1, 414-2

We organize our Sourcing Department by three main areas of activity:

### **Components and Services:**

Nordex has specialized teams for different components and services.

### **Centralised and Decentralised Sourcing:**

Nordex sources components and services from globally active suppliers, where the collaboration is partially regulated through framework agreements. Over 90% of the Company's annual sourcing activities are focused on two global Sourcing Centers in Germany and Spain, as well as two regional Sourcing Centers in the USA and Brazil.

### **Strategic and Operational Responsibility:**

The Strategic Sourcing Department is responsible for supplier and material-group management as well as for concluding framework agreements. The Operational Sourcing Department handles day-to-day business such as placing purchase orders.

Moreover, the Sourcing Department is involved in our cross-functional project to reduce the cost of energy and works closely with suppliers to achieve the goals of this project. All cost of energy initiatives are analyzed for their compliance with occupational health and safety aspects as well as with the applicable environmental regulations before being implemented.

### **Compliance with Values and Standards**

It is very important to us that our suppliers comply with the values and standards set out in the Group's Code of Conduct for the entire duration of their business relationship with Nordex. Upholding human rights is especially significant: We strictly prohibit any kind of child labor, forced labor, discrimination, harassment, or retaliation. On the other hand we actively promote equal opportunities for and equal treatment of employees, as well

as full compliance with laws and regulations on freedom of association and collective bargaining. We require the same attitude and action from our business partners and suppliers. To ensure this, we subject our suppliers to a regular assessment program involving visits and audits. Alongside regular audits we perform special event-driven audits in cases of noticeable quality issues, relocations or process changes, for example. The core aspects we review as part of each audit include the upholding of human rights, statutory occupational health and safety standards, as well as the quality of products and processes. Our Finance Department also continually monitors our main suppliers for credit risk, based on their supply volume and criticality to Nordex. The Finance and Sourcing Departments may decide to take preventive measures against any potential negative impacts on the Nordex Group's business activities.

We audit new suppliers before we engage in a business relationship with them. This audit result is then used to classify each supplier based on clearly defined indicators that also define the frequency of regular audits. If a potential supplier does not meet especially critical requirements – particularly in the event of human rights violations such as child labor, forced or compulsory labor, or serious shortfalls in occupational health and safety – we refrain entirely from working with the supplier concerned.

Overall in 2018 we conducted 182 audits of component suppliers as well as construction and service-related suppliers (2017: 250). In the reporting period we audited 100% of new suppliers regarding their working practices, upholding of human rights, impact on society, and environmental aspects. As in the previous year we are pleased to report that we registered no incidents that were subject to disclosure requirements. We received no formal complaints in relation to the Nordex supply chain, nor did we terminate any business relationships owing to human rights violations, corruption, unacceptable work practices, or negative impacts on society or the environment. The



Transportation of rotor blades

aspects of compliance, environmental protection and supply-chain responsibility are an integral part of the audits carried out.


In many instances our main suppliers have specific expertise and long-standing experience, which is why we cooperate with them in many areas such as product development and process design. We also communicate regularly with our suppliers at annual international congresses.

## OUTLOOK

The Nordex Group has set itself the goal of further reducing the cost of energy. Optimizing the existing supply chain and establishing a competitive supplier network in the regions relevant to the Nordex Group play a key role in achieving this

goal. Our Global Sourcing Department is therefore working to further standardize purchasing. 2018 was an important year in terms of orders booked, with Nordex winning projects in excess of 4.75 GW. In consequence, 2019 will be mainly an execution year and will include the ramp-up of blade production capabilities in Mexico, the development of India as a global sourcing region, and the further expansion of our Smart Logistics project in China. Alongside these activities, we will optimize and harmonize our supplier due diligence processes as set out in the new Sustainability Strategy 2019 to 2021.





We work constantly to make the production of our wind power systems even more efficient and environmentally friendly.

— In this we benefit from our experienced employees who contribute their ideas and initiative at our sites around the globe.

Installing a  
Delta turbine near  
Hamburg, Germany



# ENVIRONMENTAL MANAGEMENT AND RESOURCE EFFICIENCY



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## The Nordex Environmental Management System

### MANAGEMENT APPROACH

[↗](#) GRI 301/103, 302/103, 303/103, 304/103, 305/103, 306/103, 307/103

As a manufacturer of wind power systems, the Nordex Group's business activities are focused on generating electricity from the wind in an efficient, environmentally friendly way. In doing so, we attach great importance to comprehensive environmental protection aspects in all lifecycle

phases of our systems – from development, through sourcing, production and operation, to dismantling and recycling. Our overarching aim for the years to come is to further improve our wind power systems' environmental footprint and reduce our consumption values.

Our Quality, Health, Safety and Environment (QHSE) Department is responsible for operational environmental protection. Nordex has implemented an integrated quality, occupational safety, health protection and environmental management system and had it certified to the ISO 14001 standard. This system supports the Nordex Group in raising our environmental protection performance and ensuring we meet compliance requirements



## > Definition: Environmental Aspect

AS AN ENVIRONMENTAL ASPECT we understand any part of our business activities that affects the environment – such as the consumption of natural resources and raw materials, and the emission of greenhouse gases (GHG). We always actively identify each aspect in detail, document it transparently, and develop specific and appropriate solutions to prevent negative environmental impacts as far as possible.

as well as our environmental objectives. Through regular internal audits, processes are reviewed and optimized as part of an ongoing improvement process. In addition to this, our Occupational Health and Safety Committees regularly address the environmental KPIs at each location and derive measures for improvement as required.

### CHALLENGES, OPPORTUNITIES AND RISKS

The Nordex Group collects and assesses information on environmental aspects on a regular basis. This analysis captures all of the Company's global activities, services and products which may have a negative environmental impact. The areas covered in the audit include production locations, our Project Management and Service Departments, as well as service and administration sites.

The analysis results provide us with the basis for the continual improvement of our environmental protection measures. In the reporting period, 15 countries (2017: 22) took part in the audit. At

Nordex identifying environmental aspects and impacts is a continual process, so with a view to the future we intend to audit additional sites in further countries as part of our regular process of collecting and analyzing information on environmental aspects. Initial results reveal that the transportation, storage, use and disposal of hazardous materials at our production sites during exceptional operating conditions or in emergencies are among the most critical environmental aspects. Thanks to effective preventative measures, well-trained and well-educated employees as well as a diverse set of protection systems, we continually reduce the resulting risks through a continuous improvement process.

### SUSTAINABILITY STRATEGY 2019 TO 2021

We have identified waste, hazardous materials, energy and greenhouse gas emissions, as well as lifecycle assessments as material topics of our Sustainability Strategy 2019 to 2021. By 2021 we aim to reduce waste per installed capacity by 10% compared with the 2018 reporting year. In particular, we want to avoid hazardous materials wherever possible and minimize their hazard potential. Another goal is to obtain 100% of the electricity for our own consumption from renewable energy sources and to further improve the overall environmental footprint of our wind turbines.

### SUSTAINABILITY STRATEGY 2015 TO 2018

Nordex achieved the environmental targets set for the scope of its Sustainability Strategy 2015 to 2018. This includes continuous improvements in the systems' environmental footprint and a reduction of waste per system produced. Furthermore, we had set ourselves the goal of achieving 85% recyclability of our systems and obtaining 100% of externally purchased electricity from renewable energy sources. For details on how we attained these goals, please see pages 10–11 and the further information given in this chapter.

## REPORTING PERIOD AND SCOPE

➤ GRI 102-49

As in the previous year's report, the consumption key figures relate to the Nordex Group's active production sites in Germany, Spain, Brazil and India, as well as to all office sites with 50 or more employees. In accordance with the materiality principle we therefore report on all sites which, due to their size and business activities, have a significant influence on the reporting data. Compared to the last report, the following changes occurred in the scope of the report: A mobile tower production site in Santa Vitória do Palmar, Brazil, was closed in 2017. In 2018 a tower production was built for a project in Lagoa do Barro, Brazil. The offices in the United Kingdom and Turkey, where the number of employees in 2018 was slightly below 50, were not included in the reporting year. Where information and data in the report relate to Group sites other than those stated above, this is highlighted accordingly.

## ENERGY

➤ GRI 302-1, 302-3, 302-4, 302-5

Using energy efficiently and sensibly, both in environmental and economic terms, is a core goal of the Nordex Group. We are committed to continually increasing our energy efficiency through a continual improvement process, which is why our German production sites and office buildings have been ISO 50001-certified since 2014. The launch of our Energy Management System also enables us to document our contribution to environmental and climate protection activities.

Overall energy consumption for the Nordex Group decreased by 12% to around 69,400 MWh compared to the previous year (2017: 79,097 MWh). This development is attributable on the one hand to lower production volume at our German and Spanish facilities. On the other hand, the consumption of Company and commercial vehicles at eight locations was also reduced, resulting in lower fuel consumption overall. By contrast, the

## SCOPE OF 2018 REPORT IN RELATION TO CONSUMPTION VALUES

	Production sites			
	Nacelle	Rotor blade	Tower	Offices
Brazil	■		■	■
Denmark		■*		
France				■
Germany	■	■		■ ■
India	■			
Spain	■ ■	■		■ ■
USA				■

\* Rotor Blade Technology Center.

➤ GRI 102-46

In addition to the Company's own production sites, there are also suppliers' production sites where Nordex Group employees are assigned to guide quality and production. In 2018 this included a blade production site in India, a rotor hub production site in China, and two tower production sites in Spain and Chile. These sites are outside of the scope of this report.



The first NR74.5 rotor blade is finished at the production plant in Rostock, Germany

increase in production in Brazil and India led to a slight increase in absolute energy consumption there, while relative consumption fell due to high capacity utilization of the facilities (multi-shift system), among other factors. Energy consumption in relation to installed capacity also fell Group-wide by 6% to 27,519 kWh/MW (2017: 29,306 kWh/MW).

In the reporting year, the installation of a complete production line for what is currently the Nordex Group's largest generation of blades was completed. Our rotor blade plant in Rostock was completely refitted and adapted for this purpose. Ensuring a sustainable energy supply was a key factor as early as the development of blade production planned for the Delta4000 series. As a result, all new production molds can be heated with green electricity. Two production lines of an older blade generation, which were still heated with hot water and therefore natural gas, were taken out of operation as part of the process changeover.

At this site in Rostock we operate two combined heat and power (CHP) plants with a power generation capacity of 387 kW and 70 kW respectively. This provides the process heat required for rotor blade production in an efficient, eco-friendly way. Our natural gas-fueled CHP plant provides heat and electricity for production and uses the thermal discharge from the power plant to heat the production halls.

In 2018, the adaptation of the lighting systems was further extended to additional locations. The production halls and offices of the Spanish blade production plant in Lumbier and the nacelle production plant in Barasoain as well as the offices in West Branch, USA, are now equipped with energy-efficient LED lamps. These measures have led to a significant reduction in energy consumption. The optimization of air compressors required for production and, in some cases, their replacement in Lumbier and another Spanish site, Vall d'Uixó, saved around 282 MWh.

<b>ENERGY CONSUMPTION IN MWH</b>			
	2018	2017 *	2016 *
<b>Total energy consumption (direct and indirect energy consumption)</b>	<b>69,399.1</b>	<b>79,097.4</b>	<b>59,836.9</b>
Total direct energy consumption	44,904.8	54,865.5	42,411.2
Gas	23,342.6	29,357.0	24,504.8
Heating oil	1,788.6	1,575.0	1,276.3
Diesel	19,773.6	23,933.5	16,630.1
Total indirect energy consumption	24,494.3	24,231.9	17,425.7
Electricity	22,302.4	22,064.2	15,196.1
District heating	2,191.9	2,167.7	2,229.6
Total energy sold	0.0	9.0	0.0
Electricity sold	0.0	9.0	0.0

\* Previous reporting years' figures are not within the scope of the audit by PwC.

[↗ GRI 302-1](#)

<b>ENERGY CONSUMPTION BY INSTALLED CAPACITY</b>	
	kWh/MW
<b>2018</b>	<b>27,519</b>
2017	29,306
2016	22,819

[↗ GRI 302-3, 302-5](#)

### **Purchased electricity**

In our new Sustainability Strategy 2019 to 2021 we have set ourselves the target of obtaining all of our purchased electricity from renewables. Our status analysis of purchased electricity carried out in 2016 revealed that 66.8% of the overall amount of electricity we purchased from third-party suppliers came from renewables. The Nordex Group was able to increase the share of renewable energy sources to 88.1% by the end of 2018 as a result of switching contracts for the three Spanish production sites and for a building at our Spanish headquarters. The calculation was usually based on the specific electricity mix of the energy supplier. For sites where this information

was not available, the share of renewable energies in the country-specific electricity mix was used. At some of our leased sites where electricity consumption is included in the leasing contract, or at sites where local conditions restrict the availability of renewables, we are analyzing other options to attain our goal.



# 88.1%

**OF THE ELECTRICITY WE PURCHASED IN 2018**  
 was from renewable energy sources (2017: 87.3%).

## EMISSIONS

↗ GRI 305-1, 305-2, 305-3, 305-4, 305-5

The major advantage of wind-generated electricity over fossil fuel-generated electricity in conventional power plants is that only a negligible amount of environmentally harmful CO<sub>2</sub> emissions is produced. Through our wind power systems we thus contribute to the elimination of several million tonnes of GHG emissions year after year. According to sector calculations, the energy scorecard of a wind power system is balanced after an operating period of just five to twelve months. This calculation includes the use of energy during the wind power system's overall product lifecycle, from production, through the operational phase, to recycling. Despite this, producing and transporting wind power systems generates considerable emissions.

Through our holistic approach to environmental protection, in alignment with the Nordex Sustainability Strategy, we make regular organizational and technical improvements to continually reduce environmentally harmful emissions. The Nordex Group's GHG emissions are classified into three scopes:

- **SCOPE 1** emissions are caused by Nordex directly. We calculate these based on the fuel consumption of trucks and commercial vehicles as well as the direct consumption of oil, gas and diesel fuel to generate energy, taking into account the standard factors published by the UK Department for Environment, Food & Rural Affairs (DEFRA). In working out Scope 1 emissions, besides CO<sub>2</sub> we include the other greenhouse gases as CO<sub>2</sub> equivalents in the calculation (CO<sub>2</sub>e).
- **SCOPE 2** covers emissions produced by the consumption of purchased electricity. These indirect emissions were calculated based on consumption data for electricity and district heating. To calculate the emissions resulting from electricity purchases, we have taken into account the specific emission factors of the energy suppliers. In a few cases where this information is not available, country-specific information was used. Nordex only procures district heating at one production location and the associated warehouse in Rostock. The district heating utility, Stadtwerke Rostock, has provided us with the specific emissions factor.
- **SCOPE 3** includes emissions produced by third parties during the provision of services. Scope 3 disclosures made in this report relate exclusively to business travel (hire cars, rail and air travel) and are based on information supplied by our service providers. While the 2016 report only included business travel for employees of Nordex Germany, the calculations for the 2017 and 2018 reporting years comprise travel for all employees, in accordance with the reporting scope.



### GREENHOUSE GAS EMISSIONS IN T

	2018	2017*	2016*
Scope 1 (CO <sub>2</sub> e)	9,672	11,429	8,940
Scope 2 (CO <sub>2</sub> )	1,908	2,022	1,931
Scope 3 (CO <sub>2</sub> )	4,465	4,318	2,341

\* Previous reporting years' figures are not within the scope of the audit by PwC.

➤ GRI 305-1, 305-2, 305-3

### GREENHOUSE GAS EMISSIONS BY INSTALLED CAPACITY

Emissions (Scope 1+2)/ installed capacity	Kg CO <sub>2</sub> /MW
<b>2018</b>	<b>4,591</b>
2017	4,984
2016	4,146

➤ GRI 305-4

The conversion of the production line at the rotor blade plant in Rostock and the associated conversion of the heating of the blade molds from natural gas to electricity, described in the Energy section, enabled Scope 1 emissions to be significantly reduced. Due in particular to the resulting sharp drop in gas consumption, Scope 1 emissions across the Group fell by around 17% year-on-year to 9,672 t in 2018 (2017: 11,429 t).

The increase in electricity consumption at the Rostock location resulting from this process adjustment was almost fully offset at Group level by consumption reductions at other sites. As the Rostock sites purchase 100% green electricity, the higher electricity consumption did not lead to an increase in Scope 2 emissions. Overall, indirect Scope 2 emissions were reduced by 6% year-on-year in the reporting year. Scope 1 and Scope 2 emissions in relation to installed capacity decreased by approx. 8% to 4,591 kg CO<sub>2</sub>/MW (2017: 4,984 kg CO<sub>2</sub>/MW).

As a result of increased travel activities due to necessary organizational adjustments within the Group, Scope 3 emissions by third parties rose by a total of 3% year-on-year to 4,465 t CO<sub>2</sub> (2017: 4,318 t) in the reporting period.

### WASTE

➤ GRI 306-2

In terms of our environmental footprint, the relevance of how much waste we produce depends mainly on the volume and type of waste, as well as the disposal methods we employ. We differentiate mainly between hazardous and non-hazardous waste, and our target by 2021 is to reduce waste relative to installed capacity by 10% compared to 2018. To achieve this goal we are carrying out numerous measures: At our rotor blade production facility in Rostock, for instance, these include modifying punch cutters for glass and carbon fiber fabrics, optimizing the selection of materials for films, lacquers and bonding agents, and recycling process materials.



**INFORMATION**  
on the reconstruction of the production line on **PAGE 66**.



As early as 2017 we implemented a program at the nacelle production facility in Chennai, India, to strengthen environmental awareness among our employees over the long term. During the reporting period, the impact of plastic waste on the environment and ways of reducing this waste were discussed. As part of a Topic Day held annually on World Environment Day, local employees participated in plastic waste-prevention training and attended video demonstrations on pollution in general.

Overall, however, the volume of waste in the reporting period increased by 7% to around 7,980 t (2017: 7,490 t) versus the previous year. The main reason for this increase was the commissioning of the Brazilian tower production site at Lagoa do

Barro, where there was a high volume of waste concrete during the production test and ramp-up phase. A major portion of the concrete waste was subsequently crushed by an external company and used as concrete aggregate. In addition, higher production figures in Brazilian and Indian nacelle production led to higher waste volumes. Therefore, the amount of waste generated by installed capacity (per MW) rose by approximately 14% to 3,166 kg/MW (2017: 2,775 kg/MW). However, the volume of hazardous waste fell by around 10% year-on-year to 751 t (2017: 832 t): This positive development is due, among other factors, to training our employees in the responsible handling of waste as well as targeted programs and measures to substitute hazardous waste materials.

<b>WASTE PRODUCTION IN T</b>			
	2018	2017*	2016*
Total waste	7,983.2	7,489.2	6,835.4
Hazardous waste	751.3	832.2	731.7
Non-hazardous waste	7,231.9	6,657.0	6,103.7

\* Previous reporting years' figures are not within the scope of the audit by PwC.

➔ GRI 306-2

<b>WASTE PRODUCTION BY INSTALLED CAPACITY</b>	
Waste/installed capacity	Kg/MW
<b>2018</b>	<b>3,166</b>
2017	2,775
2016	2,607

## WIND POWER SYSTEM DISMANTLING AND RECYCLING

While progress in wind power technology is enabling ever more efficient electricity generation and higher yields, the dismantling of first-generation wind power systems will also become increasingly important over the coming years. This gives rise to the need for eco-friendly, economically rational solutions for dismantling and recycling these systems. Here, the primary challenge lies in the dismantling and separation of the individual components and materials. The customer, typically the owner of the wind power system, is usually responsible for this; nevertheless, at Nordex we consider ourselves responsible for playing an active part here. As part of the Sustainability Strategy 2015 to 2018, Nordex set a target of achieving a wind power system recyclability ratio of 85% by 2018.

To achieve this target we performed an initial analysis to identify the recyclability ratio of our best-selling N117/2400 system in 2016, which uses three different towers: Two steel towers of 91 meters and 120 meters respectively, and one 141-meter hybrid tower. As part of our analysis we investigated the rotor blades, rotor hub, nacelle, the tower and the foundation, as well as relevant operating fluids to determine the composition of materials.

Assuming that steel, aluminum, copper and concrete are completely recyclable, and that fluids are up to 72% recyclable, we calculated the recyclability of the N117/2400 system with its three different tower types to be 86.7%, 91.0% and 95.8% respectively. If the foundation is incorporated into the analysis results, these values increase owing to the higher proportion of concrete to 97.1%, 97.9% and 98.3%. The wind power system foundation type depends heavily on the system size and tower construction type. Further influencing factors include the water-table height and whether the soil is sandy or mainly clay. The required foundation mass can vary greatly depending on these factors. The values stated here are based on the average foundation type.

The implementation of a detailed lifecycle assessment of our latest turbine generation, which builds on the findings included in the analysis process already carried out, is a core topic in the new Sustainability Strategy 2019 to 2021.

In light of the increasing amount of waste generated through the dismantling of decommissioned wind power systems, the Nordex Group continued its major component recycling measures in the reporting year. As part of these, used rotor blades are recycled in collaboration with environmental service providers and transferred to the cement industry for the thermal and material recycling of glass fibers and high-calorie synthetic materials.

### RECYCLABILITY IN %

	N117/2400 system		
	91 m steel tower	120 m steel tower	141 m hybrid tower
Recyclability excl. foundation	86.7	91.0	95.8
Recyclability incl. foundation	97.1	97.9	98.3



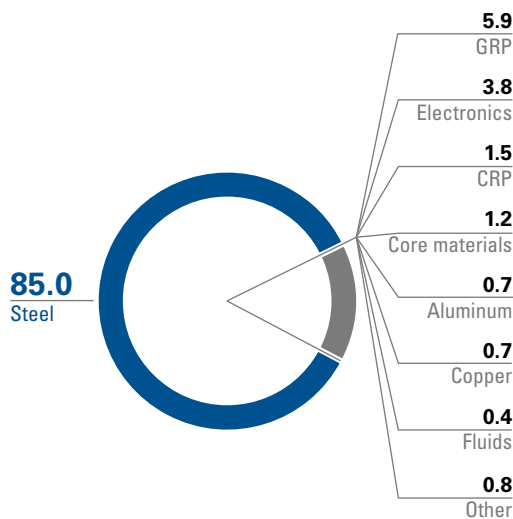
**SUMMARY OF MAIN MATERIALS USED IN THE N117/2400 SYSTEM**

Tower height	91 m	120 m	141 m	91 m	120 m	141 m
Material *	Proportion (in t)			Proportion (in %)		
<b>Total</b>	<b>376.8</b>	<b>556.4</b>	<b>1,193.6</b>	<b>100</b>	<b>100</b>	<b>100</b>
Steel	320.1	499.1	293.6	85.0	89.8	24.6
Glass-Reinforced Plastic (GRP)	22.2	22.2	22.2	5.9	4.0	1.9
Electronics	14.2	14.2	14.2	3.8	2.5	1.2
Carbon-Reinforced Plastic (CRP)	5.6	5.6	5.6	1.5	1.0	0.3
Core materials (balsa wood and PET foam)	4.4	4.4	4.4	1.2	0.8	0.4
Aluminum	2.8	3.2	4.0	0.7	0.5	0.4
Copper	2.6	2.6	2.6	0.7	0.5	0.2
Fluids	1.7	1.7	1.7	0.4	0.3	0.2
Concrete	0.0	0.0	841.5	0.0	0.0	70.5
Other	3.2	3.4	3.8	0.8	0.6	0.3

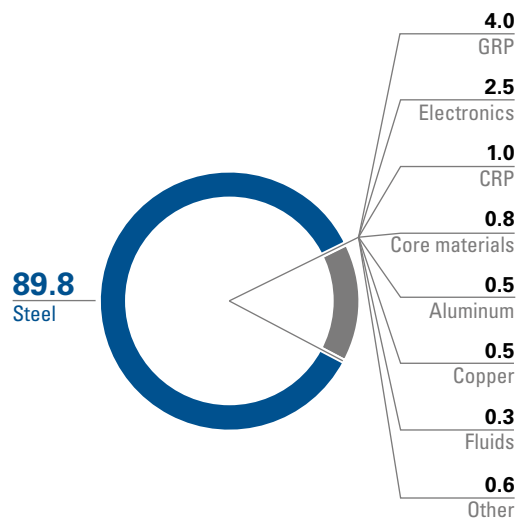
\* Owing to the great variation in foundation types as described above, the detailed material composition breakdown is presented excluding the foundation.

➔ GRI 301-1

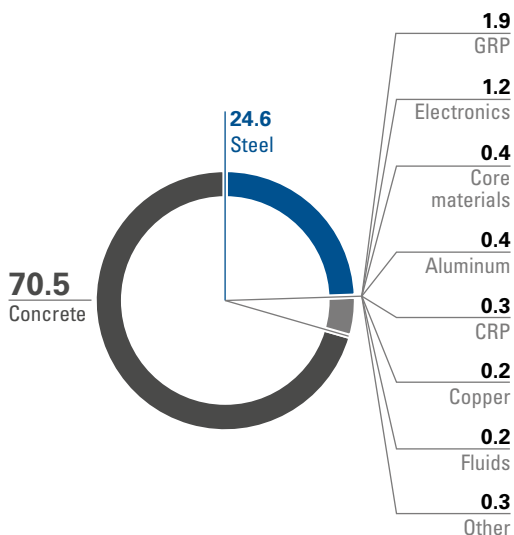
**MATERIAL COMPOSITION IN %, 91 M STEEL TOWER, EXCL. FOUNDATION**



**MATERIAL COMPOSITION IN %, 120 M STEEL TOWER, EXCL. FOUNDATION**



### MATERIAL COMPOSITION IN %, 141 M HYBRID TOWER, EXCL. FOUNDATION



### HAZARDOUS MATERIALS MANAGEMENT

➤ GRI 304-2

Hazardous substances are used in a very wide variety of ways, particularly in the operational departments. Their legally compliant use and logistics must be guaranteed at all times in order to avoid negative impacts on people, the environment and common goods. During the development process of our plants and the associated material specification, we use an evaluation process to check whether the planned hazardous materials are compatible with Company guidelines. With the help of this analysis and approval process, we can identify possible challenges for later use at an early stage and remove critical materials from the value chain in good time. In addition, we are already laying the foundations for safe handling at this stage in order to lower the risk level as far as possible.

Within our Sustainability Strategy we will identify the potential for reducing the number of hazardous materials and their hazard levels and drive the implementation of appropriate measures. A particular focus is on hazardous materials with water

hazard level 3, such as isolated topcoats in sheet production. Under the definition of the Water Resources Act, the water hazard classes describe the hazard potential of the materials in relation to groundwater. They are divided into three classes from 1 (slightly hazardous to water) to 3 (highly hazardous to water). As at the end of 2018, 679 active hazardous materials were listed in our register, 21 of which are assigned to water hazard class 3.

In accordance with legal requirements we regularly check whether substitutions are possible so that the number of necessary protective measures can be reduced. As a result, designing occupational safety, environmental protection and health protection measures as well as logistics processing becomes much simpler. In addition to operating expenditure, administrative work is also simplified.

We take a range of measures at our production locations to protect against hazardous materials. Through special ground seals and collection sumps we reduce the risk of hazardous materials coming into contact with the environment. We also established an emergency system and spill



kits for the safe handling of hazardous liquids at all of our production sites and Service Points.

Besides the environmentally friendly handling of hazardous materials we also pay close attention to the transportation of these materials to project sites and regional Service Points. The importance of training courses on the use, disposal, storage, and transport of hazardous materials continues to rise.

### 2018 PROJECTS

We implemented a Black and Grey List of prohibited substances for the Nordex Group in the reporting year. This guideline helps to make the evaluation and release process more robust and specifies the limits of permitted hazardous materials. Various substitution tests were initiated to this end as well as a comprehensive update of the list of hazardous materials.

### OUTLOOK 2019

We want to further reinforce the process of defining new materials with regard to hazardous materials, clean up our hazardous materials list by means of substitution tests, reduce the total number and volume of the hazardous materials we use and thereby reduce the overall risk level. In 2019 we will also reorganize our hazardous materials logistics in connection with project construction sites.

### WATER

➔ GRI 303-1, 306-1

We use water at our nacelle and rotor blade production sites, as well as in our administration activities, for cleaning and cooling processes amongst other applications. The main share of our cooling water requirement is driven in a circuit through our central cooling water supply system. Related to the overall reporting scope, rainwater covered around 4% (2017: 7%) of our water requirements in the reporting year.

Overall, absolute water consumption in the reporting year increased compared to the previous year by around 32% to approx. 53,000 m<sup>3</sup> (2017: 40,000 m<sup>3</sup>). One reason for this was the commissioning of the tower production site in Lagoa do Barro, Brazil, where a high volume of water was needed to produce the concrete segments. In addition, water consumption for cleaning and production processes in Europe rose sharply due to the hot summer with extremely low rainfall. Furthermore, more water was needed to irrigate the green areas at our sites. These circumstances also mean that water consumption per installed capacity rose by approx. 42% to 21.1 m<sup>3</sup>/MW (2017: 14.9 m<sup>3</sup>/MW) versus the previous year.

In order to reduce water consumption over the long term, jet regulators were installed at the Rostock nacelle production plant in 2018. These aerators reduce the flow rate by mixing air into the water. This means that approx. 200 m<sup>3</sup> of the water requirement can be saved every year – around 55%.

# 10%

**REDUCTION IN HAZARDOUS WASTE**  
in 2018 vs. the previous year



### WATER CONSUMPTION BY SOURCE AND WASTE WATER DISCHARGE IN M<sup>3</sup>

	2018	2017	2016
<b>Water consumption total</b>	<b>53,148</b>	<b>40,150</b>	<b>44,973</b>
Municipal water supply	39,713	32,076	41,973
Rainwater	2,205	2,696	3,045
Groundwater	11,230	5,378	225
<b>Waste water discharge total</b>	<b>39,467</b>	<b>35,731</b>	<b>34,598</b>
Non-hazardous waste water	39,467	35,731	34,598
Hazardous waste water	0	0	0

➔ GRI 303-1, 306-1

### WATER CONSUMPTION BY INSTALLED CAPACITY

Water / installed capacity	m <sup>3</sup> /MW
<b>2018</b>	<b>21.1</b>
2017	14.9
2016	17.2

## ENVIRONMENTAL INCIDENTS

To fulfill its environmental responsibilities the Nordex Group documents all actual and potential environmental incidents. Near-miss incidents are also reported and analyzed in detail, so that we can take preventative measures and minimize environmental risks. We then classify the recorded incidents based on their environmental impact using a classification system.

We differentiate between four rates of severity (SR):

- SR 1: No or low environmental impact
- SR 2: Moderate environmental impact
- SR 3: High environmental impact
- SR 4: Massive environmental impact

In the reporting year the Nordex Group recorded three significant environmental incidents rated SR 3 or 4. All three incidents were severity category 3 and were reported by the French organization. All necessary measures were immediately launched and the incidents were analyzed in detail in order to prevent similar incidents in the future at our sites worldwide.

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We engage for the benefit of society at all our sites and see education as a crucial topic.

— In South Africa, for instance, we support education and vocational training to offer local people prospects in life and create jobs in the region.

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Training students on a working rotor hub model

# RESPONSIBILITY FOR SOCIETY



Our Commitment to Society	77
Projects	78

## Our Commitment to Society

➤ GRI 413/103, 413-1, 415/103

Nordex is a dynamic company that is active in over 40 countries. As such, taking on corporate social responsibility at a local level is part of the way we see and understand ourselves. As an integral part of our Sustainability Strategy we consider CSR as our opportunity to contribute to regional development and engage as a member of society at the sites where we are based.

Besides our Company's economic objectives we are committed to the United Nations 2030 Agenda for Sustainable Development principles of using global resources responsibly, protecting the climate, and ensuring people can enjoy prosperous and fulfilling lives. To achieve these aims, knowledge exchange and transfer are of key importance. This is why at the Nordex Group we focus our social engagement activities on supporting public and private training, on further education institutes that are active in the areas of renewables and climate protection, and on backing social and humanitarian aid projects and institutions. Nordex has established a Group-wide Donations Guideline for the targeted management of such activities.

As part of our projects and at our sites we are active in a range of local initiatives. We provide selected examples of these in the following.

### SUPPORT FOR UNIVERSITIES

We partner with the Hamburg University of Applied Sciences (HAW Hamburg). At the Energy Campus Hamburg run by HAW, the Hamburg Competence Center for Renewable Energies and Energy Efficiency, future issues are researched which may, for instance, eventually be used to optimize wind power systems. To ensure the course delivers hands-on training and that research is conducted under realistic conditions, a wind farm with five Nordex wind power systems was put into operation right next to the Energy Campus in 2017. A lithium-ion battery storage unit in this wind park was set up in the fall of 2018 in the course of the cooperation between Nordex, the HAW and Vattenfall Innovation Europe, as part of the NEW 4.0 (North German Region Energy Transition 4.0) research project.

The Energy Campus is also involved in NEW 4.0: This unique initiative brings together the worlds of business, science and politics, targets a sustainable energy supply in the north German federal states of Hamburg and Schleswig-Holstein, and aims to strengthen the future viability of the entire region. The initiative brings together around



60 regional and international partners, including the Nordex Group, to form a well-networked innovation alliance. This pools the partners' technical expertise on implementing the energy transition and is supported by the governments of both German federal states. The core challenges facing this project are to be countered on the one hand by increasing the export of electricity to other regions by means of an efficient energy infrastructure and innovative grid technologies, and on the other by increasing the energy self-recovery rate. In doing so, NEW 4.0 systematically creates the prerequisites for supplying Hamburg and Schleswig-Holstein with safe and reliable regenerative electricity from 2025 onwards – meeting up to 70% of these states' needs. At the same time, the electricity generated is to be used increasingly to supply heat and for industrial processes which were formerly powered by fossil fuels.

[www.](http://www.new4-0.de)

Find out more  
 about NEW 4.0 at  
[www.new4-0.de](http://www.new4-0.de)

For Nordex the core objective of our involvement in NEW 4.0 is to develop and demonstrate system services that increase the stability of the power grid through decentralized, renewable energy generation. To do this, our attention is also drawn to the future-proof integration of wind parks in the energy markets of the future that can meet the increasing demand for information and data exchange, and consequently for Smart Markets. Furthermore, at Nordex we have set ourselves the goal of becoming a supplier of hybrid power plants as well. To achieve this, the Company is researching and testing the integration of energy storage at wind farms along with potential operational control concepts.

### **SOUTH AFRICA PROJECT**

In South Africa, Nordex accompanied its market entry with its Nordex Education Trust. This foundation has a 20% stake in Nordex Energy South Africa and supports disadvantaged population groups as well as projects in the fields of school education, sports, culture and community work by providing scholarships and grants for study, research and training. In this way we have been able to support numerous non-governmental



Anne Henschel, Country Manager South Africa, with four school pupils from Stellenbosch University's SciMathUS program that promotes science and mathematics

organizations, schools and universities as well as sports and cultural associations over the last few years. The foundation has also entered into strategic partnerships with Stellenbosch University and Nelson Mandela Metropolitan University. Through involvement in various development initiatives promoted by the Nordex Education Trust and by the Nordex Broad Based Black Economic Empowerment (BBBEE) Fund, we are contributing locally both to socio-economic as well as business skills and competencies development in this region.

In 2018 Nordex celebrated its six-year presence in South Africa. Our activities there target the further education of people to improve their chances and thus their life prospects. In this effort, the Nordex Education Trust focuses on supporting individuals from the local communities where Nordex wind power systems are set up.



Aligned with the structure of our social commitment to education, in 2018 Nordex supported 11 students with a scholarship. Moreover, four school pupils took part in Stellenbosch University's SciMathUS program that promotes science and mathematics. Furthermore, eight pupils were selected for the 2019 university program thanks to their excellent final grades.

The Nordex Education Trust has now been active for six years. During this period it has successfully established robust partnerships in all communities where Nordex operates.

In future years we will continue to build on the successes of our support programs and collaborations in South Africa. We intend to make an active contribution to new and existing science educational projects, and provide even greater support to people with disabilities by assisting institutions and special training programs.

## PAKISTAN PROJECT

Since as early as 2011 the Nordex Group has collaborated with the wind farm operator Fauji Fertilizer Company Energy Limited (FFCEL) in setting up a wind park in Pakistan. In the course of the project FFCEL launched a comprehensive Corporate Citizenship program with the goal of providing sustainable support for the local community and its development. The program includes educational, health, environmental protection and local infrastructure creation projects.

Nordex supported FFCEL amongst other aspects in implementing the self-supporting lighthouse project 'FFCEL Technical Training Center' (TTC). Since 2017 young people from the immediate vicinity of the FFCEL site in Jhampir have received technical training and are thus prepared for potential later employment in the wind power industry. 15 young people join the two-year training program every year, gaining specialist knowledge of routine servicing tasks and scheduled as well as unscheduled maintenance measures. Nordex provides technical support here and sets up produc-

tion site visits; the training is partly led personally by qualified Nordex employees. On successful completion of their training this puts these young people in a position to fill job vacancies at FFCEL.

The Training Center is registered with and accredited by the local government authorities. The objective for 2019 is also to obtain accreditation for the project by the Global Wind Organisation (GWO). To achieve this, the Center is striving to implement the Basic Safety Training Standard and Basic Technical Training Standard: Through this it will demonstrate its compliance with globally valid industry standards that will facilitate the award of the GWO Training Certificate to the young student trainees. The Certificate will qualify them to work locally as well as internationally on various wind power system types. Nordex will also support FFCEL in achieving this objective.

Within a wind power project in cooperation with Yunus Energy Limited (YEL), Nordex is supporting the implementation of a further local community development project with EUR 50,000. This project comprises numerous fields of action: For instance, 20 new houses for the local population are planned to be built by mid-2019, as well as a grade school for up to 150 pupils. Thanks to the installation of solar energy systems 150 households will be supplied with electricity. Moreover, the project will ensure access to sufficient clean drinking water by drilling two new wells, amongst other measures. A further part of the sum donated will be dedicated to providing necessary medical equipment. Overall some 5,000 local inhabitants will benefit from this raft of measures.



# ABOUT THIS REPORT

➤ GRI 102-45, 102-46, 102-49, 102-50, 102-52, 102-54

## CONTENT AND STRUCTURE

In our Sustainability Report we provide detailed information on our economic, environmental and societal performance. As well as describing current developments, activities and key figures in the area of sustainability, this year's report closes the Sustainability Strategy 2015 to 2018 with a critical analysis and details our progress towards the targets we set ourselves.

We also present the process and results of the materiality analysis carried out in the reporting period; this was based on a comprehensive stakeholder survey, among other elements, that Nordex carried out in the reporting period in the sustainability area for the first time. The survey results provided the basis for working out the new Sustainability Strategy 2019 to 2021. Further information on the strategy development process as well as the strategic contents and goals are provided in the chapter on Sustainability Management. The contents of the Sustainability Report focus on the topics identified through the materiality analysis, which are summarized into five central fields of action. The structure of this report is aligned with these fields of action and reflects the material economic, environmental and social sustainability topic areas for Nordex.

Together with the Nordex Group Consolidated Annual Report 2018 that is published simultaneously, the Sustainability Report 2018 provides a comprehensive picture of the Company's current situation, detailing the relevant financial and non-financial key figures.

The Sustainability Report 2018 was produced in accordance with the Core option of the Global Reporting Initiative's (GRI) Guidelines.

In line with this approach, the non-financial report is also based on the GRI Standards. This applies in particular to the materiality analysis, management approaches and key figures.

## REPORTING PERIOD AND SCOPE

This Sustainability Report relates to the 2018 financial year, i.e. the reporting period from 01 January to 31 December 2018. This is the third time Nordex has published its sustainability activities in this form. The Company will continue to update and publish its sustainability-related report content and data annually.

The disclosures made in this Sustainability Report generally apply to all Group companies as recorded in the Nordex Group's Consolidated Annual Financial Statements. Further information on the reporting scope of our consumption data is provided in the chapter on Environmental Management & Resource Efficiency.

## REMARKS ON THE NON-FINANCIAL REPORT

The Non-financial Report of the Nordex Group, published in compliance with the statutory requirements of the law strengthening companies' non-financial reporting in their Management and Group Management Reports (the CSR Directive Implementation Act, CSR-RUG in German), is integrated in this Sustainability Report. Legally required statements for the Non-financial Report are unequivocally indicated by a line beside the respective passage.

An overview of the statements made as part of the Non-financial Report as required by §§315b and 315c in conjunction with 289c to 289e HGB (German Commercial Code), as well as corre-



**INFORMATION**  
 on the strategy  
 development  
 process as well  
 as the strategic  
 contents and  
 goals on  
**PAGE 12ff.**



sponding links to the respective sections in the current Group Sustainability Report, are provided in the table on the following page.

### External audit of the Non-financial Report

The contents of this Group Sustainability Report were examined and approved in accordance with § 171 Para. 1 Stock Corporation Act by the Nordex Supervisory Board. The Non-financial Group Report integrated in this Sustainability Report was additionally audited by PricewaterhouseCoopers (PwC) in accordance with ISAE 3000 (Revised). The auditor's Independent Practitioner's Report is provided on page 91–92.

### Risks subject to disclosure under the CSR Directive Implementation Act (CSR-RUG)

Risks with significance for our business performance, business position and financial result are an integral part of risk reporting in the Nordex Group Management Report, as stipulated by DRS 20. In accordance with the double materiality principle, these risks were analyzed for highly probable, serious impacts on the aspects estab-

lished by CSR-RUG (environmental, social and employee matters, corruption and bribery, and human rights). In our opinion, in view of the available countermeasures there were no material net risks to the Company's business performance, business position or financial result with a very high probability of a major negative impact on the Company's integrity regarding the abovementioned aspects.

### Cross-references

Cross-references to statements beyond the scope of the Group Management Report and/or the Consolidated Financial Statement represent further information and are not an integral part of the Non-financial Report.

### Interrelations with the figures stated in the Annual and/or Consolidated Financial Statements

No interrelations with the figures stated in the Consolidated Financial Statements were identified that require statutory reporting.



**INFORMATION**  
on risk management is provided in the Nordex Annual Report 2018 on **PAGE 51ff.**

## Non-financial Report Index

Statements required under the CSR Directive Implementation Act (CSR-RUG)	Corresponding report sections	Page
Description of the business model	Chapter 'About the Nordex Group' Consolidated financial statements	p. 6
Product responsibility	Chapter on 'Product Responsibility'	p. 26
Environmental matters	Chapter on 'Environmental Management and Resource Efficiency' as well as the chapter on 'Responsibility along the Supply Chain'	p. 63, 57
Employee matters	Chapter on 'Employee Responsibility'	p. 36
Social matters	As a result of the materiality analysis this aspect was not considered material.	cf. p. 12–15, 77
Upholding of human rights	Chapter on 'Management and Corporate Compliance'	p. 23, 60
Prevention of corruption and bribery	Chapter on 'Management and Corporate Compliance'	p. 22



# GRI INDEX

➤ GRI 102-55

GRI Standard	Brief description	Page	Note
<b>GRI 101: Reporting Principles 2016</b>			
<b>GRI 102: General Disclosures 2016</b>			
<b>Organizational profile</b>			
GRI 102-1	Name of the organization	Imprint	Nordex SE
GRI 102-2	Activities, brands, products and services	U2, 6ff.	
GRI 102-3	Location of headquarters	6f., Imprint	Hamburg
GRI 102-4	Location of operations	6f.	
GRI 102-5	Ownership and legal form	7	For further information please see the Nordex Annual Report 2018, p. 12f.
GRI 102-6	Markets served	7	
GRI 102-7	Scale of the organization	8	
GRI 102-8	Information on employees and other workers	9, 46f.	
GRI 102-9	Supply chain	57ff.	
GRI 102-10	Significant changes to the organization and its supply chain	–	There were no material changes in the size, structure or ownership of the Nordex Group nor in the supply chain in the period under review.
GRI 102-11	Precautionary principle or approach	24f.	See also Annual Report 2018, p. 51ff., 'Principles of the risk management system'
GRI 102-12	External initiatives	20	
GRI 102-13	Membership of associations	23	
<b>Strategy</b>			
GRI 102-14	Statement from senior decision-maker	3f.	
<b>Ethics and Integrity</b>			
GRI 102-16	Values, principles, standards, and norms of behavior	20, 38	
GRI 102-18	Governance structure	9, 38	

<b>Stakeholder engagement</b>			
GRI 102-40	List of stakeholder groups	13	
GRI 102-41	Collective bargaining agreements	44	
GRI 102-42	Identifying and selecting stakeholders	12	
GRI 102-43	Approach to stakeholder engagement	13f.	
GRI 102-44	Key topics and concerns raised	14f.	
<b>Reporting practice</b>			
GRI 102-45	Entities included in the consolidated financial statements	65, 80	
GRI 102-46	Defining report content and topic boundaries	65, 80	
GRI 102-47	List of material topics	15ff.	
GRI 102-48	Restatements of information	–	No changes from the previous year.
GRI 102-49	Changes in reporting	65, 80	
GRI 102-50	Reporting period	80	
GRI 102-51	Date of most recent report	–	The last Sustainability Report was published in March 2018 and covered the 2017 financial year.
GRI 102-52	Reporting cycle	80	The Nordex Sustainability Report is published annually.
GRI 102-53	Contact point for questions regarding the report	Imprint	
GRI 102-54	Claims of reporting in accordance with the GRI Standards 'Core'	80	This Sustainability Report was prepared according to the Core option.
GRI 102-55	GRI Content Index	82ff.	
GRI 102-56	External assurance	89f.	
<b>Material topics</b>			
<b>Economic performance</b>			
<b>GRI 201: Economic Performance 2016</b>			
GRI 103: Management approach		6	
GRI 201-1	Direct economic value generated and distributed	8	This indicator is not reported on an individual market basis.
GRI 201-2	Financial implications and other risks and opportunities due to climate change	24f.	
GRI 201-4	Financial assistance received from government	23f.	




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**Procurement Practices**


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**GRI 204: Procurement Practices**


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GRI 103: Management approach	57f.
GRI 204-1 Proportion of spending on local suppliers	59

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**Anti-corruption**


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**GRI 205: Anti-corruption 2016**


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GRI 103: Management approach	21ff.
GRI 205-1 Operations assessed for risks related to corruption	22f.
GRI 205-2 Communication and training about anti-corruption policies and procedures	22f.
GRI 205-3 Confirmed incidents of corruption and actions taken	22f.

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**Anti-competitive Behavior**


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**GRI 206: Anti-competitive Behavior 2016**


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GRI 103: Management approach	21
GRI 206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	22

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**Materials**


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**GRI 301: Materials 2016**


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GRI 103: Management approach	63f.
GRI 301-1 Materials used	72f.

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**Energy**


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**GRI 302: Energy 2016**


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GRI 103: Management approach	63f.
GRI 302-1 Energy consumption within the organization	65ff.
GRI 302-3 Energy intensity	66f.
GRI 302-4 Reduction of energy consumption	65ff.
GRI 302-5 Reduction in energy requirements of products and services	65ff.

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**Water**


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**GRI 303: Water 2016**


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GRI 103: Management approach	63f.
GRI 303-1 Water withdrawal by source	74f.

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## Biodiversity

### GRI 304: Biodiversity 2016

GRI 103: Management approach		63f.
GRI 304-2	Significant impacts of activities, products, and services on biodiversity	73f.

## Emissions

### GRI 305: Emissions 2016

GRI 103: Management approach		63f.
GRI 305-1	Direct (Scope 1) GHG emissions	68f.
GRI 305-2	Energy indirect (Scope 2) GHG emissions	68f.
GRI 305-3	Other indirect (Scope 3) GHG emissions	68f.
GRI 305-4	GHG emissions intensity	68f.
GRI 305-5	Reduction of GHG emissions	68f.

## Effluents and Waste

### GRI 306: Effluents and Waste 2016

GRI 103: Management approach		63f.
GRI 306-1	Water discharge by quality and destination	75
GRI 306-2	Waste by type and disposal method	69f.

## Environmental Compliance

### GRI 307: Environmental Compliance 2016

GRI 103: Management approach		63f.	
GRI 307-1	Non-compliance with environmental laws and regulations	–	Nordex was not aware of any significant fines in the period under review.

## Supplier Environmental Assessment

### GRI 308: Supplier Environmental Assessment 2016

GRI 103: Management approach		60
GRI 308-1	Percentage of new suppliers that were screened using environmental criteria	60
GRI 308-2	Number of suppliers assessed for environmental impacts	60




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**Employment**


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**GRI 401: Employment 2016**


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GRI 103: Management approach		37f.
GRI 401-1	New employee hires and employee turnover	47f.
GRI 401-3	Parental leave	42f.

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**Labor/Management Relations**


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**GRI 402: Labor/Management Relations 2016**


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GRI 103: Management approach		44
GRI 402-1	Minimum notice periods regarding operational changes	44

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**Occupational Health and Safety**


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**GRI 403: Occupational Health and Safety 2016**


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GRI 103: Management approach		49
GRI 403-1	Workers representation in formal joint management-worker health and safety committees	49
GRI 403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	49ff.

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**Training and Education**


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**GRI 404: Training and Education 2016**


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GRI 103: Management approach		40
GRI 404-1	Average hours of training per year per employee	41
GRI 404-2	Programs for upgrading employee skills and transition assistance programs	41
GRI 404-3	Percentage of employees receiving regular performance and career development reviews	40f.

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**Diversity and Equal Opportunity**


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**GRI 405: Diversity and Equal Opportunity 2016**


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GRI 103: Management approach		42
GRI 405-1	Diversity of governance bodies and employees	42ff.
GRI 405-2	Ratio of basic salary and remuneration of women to men	43

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For further information on the controlling bodies please also refer to the Nordex 2018 Annual Report, p.151ff.: 'Nordex SE corporate governance bodies'.



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## Non-discrimination

### GRI 406: Non-discrimination 2016

GRI 103: Management approach	42	
GRI 406-1	Incidents of discrimination and corrective actions taken	42

## Freedom of Association and Collective Bargaining

### GRI 407: Freedom of Association and Collective Bargaining 2016

GRI 103: Management approach	44	
GRI 407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	44

## Child Labor

### GRI 408: Child Labor

GRI 103: Management approach		
GRI 408-1	Operations and suppliers at significant risk for incidents of child labor	–
		Nordex was not aware of any risks relating to child labor in the period under review.

## Forced and Compulsory Labor

### GRI 409: Forced and Compulsory Labor

GRI 103: Management approach		
GRI 409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	–
		Nordex was not aware of any risks relating to forced labor in the period under review.

## Human Rights Assessment

### GRI 412: Human Rights Assessment 2016

GRI 103: Management approach	23	
GRI 412-2	Employee training on human rights policies or procedures	23
GRI 412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	23

## Local Communities

### GRI 413: Local Communities 2016

GRI 103: Management approach	77	
GRI 413-1	Operations with local community engagement, impact assessments, and development programs	77ff.




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**Supplier Social Assessment**


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**GRI 414: Supplier Social Assessment 2016**


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GRI 103: Management approach		60	
GRI 414-1	Percentage of new suppliers that were screened using social criteria	60	
GRI 414-2	Number of suppliers assessed for social impacts	60f.	

**Public Policy**


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**GRI 415: Public Policy 2016**


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GRI 103: Management approach		77	
GRI 415-1	Political contributions	–	The Nordex Group-wide Donations Guideline precludes donations to political parties.

**Customer Health and Safety**


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**GRI 416: Customer Health and Safety 2016**


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GRI 103: Management approach		32f.	
GRI 416-1	Assessment of the health and safety impacts of product and service categories	32	

**Socioeconomic Compliance**


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**GRI 419: Socioeconomic Compliance 2016**


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GRI 103: Management approach		20f.	
GRI 419-1	Non-compliance with laws and regulations in the social and economic area	–	Nordex was not aware of any significant fines in the period under review.

# AUDIT OPINION

➤ GRI 102-56

Independent Practitioner's Report on a Limited Assurance Engagement  
on Non-financial Reporting \*

To Nordex SE, Hamburg

We have performed a limited assurance engagement on the separate non-financial group report pursuant to § (Article) 315b Abs. (paragraph) 3 HGB ("Handelsgesetzbuch": "German Commercial Code") of Nordex SE, Hamburg, (hereinafter the "Company") for the period from 1 January 2018 to 31 December 2018 which comprises the sections marked with a grey line in the Sustainability Report 2018 of the Company (hereinafter the "Non-financial Report").

## RESPONSIBILITIES OF THE EXECUTIVE DIRECTORS

The executive directors of the Company are responsible for the preparation of the Non-financial Report in accordance with §§ 315b and 315c in conjunction with 289c to 289e HGB.

This responsibility of Company's executive directors includes the selection and application of appropriate methods of non-financial reporting as well as making assumptions and estimates related to individual non-financial disclosures which are reasonable in the circumstances. Furthermore, the executive directors are responsible for such internal control as they have considered necessary to enable the preparation of a Non-financial Report that is free from material misstatement whether due to fraud or error.

## INDEPENDENCE AND QUALITY CONTROL OF THE AUDIT FIRM

We have complied with the German professional provisions regarding independence as well as other ethical requirements.

Our audit firm applies the national legal requirements and professional standards – in particular the Professional Code for German Public Auditors and German Chartered Auditors ("Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer": "BS WP/vBP") as well as the Standard on Quality Control 1 published by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany; IDW): Requirements to quality control for audit firms (IDW Qualitätssicherungsstandard 1: Anforderungen an die Qualitätssicherung in der Wirtschaftsprüferpraxis – IDW QS 1) – and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

## PRACTITIONER'S RESPONSIBILITY

Our responsibility is to express a limited assurance conclusion on the Non-financial Report based on the assurance engagement we have performed.

\* PricewaterhouseCoopers GmbH has performed a limited assurance engagement on the German version of the separate non-financial group report and issued an independent assurance report in German language, which is authoritative. The following text is a translation of the independent assurance report.



Within the scope of our engagement, we did not perform an audit on external sources of information or expert opinions, referred to in the Non-financial Report.

We conducted our assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the IAASB. This Standard requires that we plan and perform the assurance engagement to allow us to conclude with limited assurance that nothing has come to our attention that causes us to believe that the Company's Non-financial Report for the period from 1 January 2018 to 31 December 2018 has not been prepared, in all material aspects, in accordance with §§ 315b and 315c in conjunction with 289c to 289e HGB.

In a limited assurance engagement the assurance procedures are less in extent than for a reasonable assurance engagement, and therefore a substantially lower level of assurance is obtained. The assurance procedures selected depend on the practitioner's judgment.

Within the scope of our assurance engagement, we performed amongst others the following assurance procedures and further activities:

- Obtaining an understanding of the structure of the sustainability organization and of the stakeholder engagement
- Inquiries of personnel involved in the preparation of the Non-financial Report regarding the preparation process, the internal control system relating to this process and selected disclosures in the Non-financial Report
- Identification of the likely risks of material misstatement of the Non-financial Report
- Analytical evaluation of selected disclosures in the Non-financial Report
- Comparison of selected disclosures with corresponding data in the consolidated financial statement and in the combined group management report of Nordex SE

- Evaluation of the presentation of the non-financial information.

### **ASSURANCE CONCLUSION**

Based on the assurance procedures performed and assurance evidence obtained, nothing has come to our attention that causes us to believe that the Company's Non-financial Report for the period from 1 January 2018 to 31 December 2018 has not been prepared, in all material aspects, in accordance with §§ 315b and 315c in conjunction with 289c to 289e HGB.

### **INTENDED USE OF THE ASSURANCE REPORT**

We issue this report on the basis of the engagement agreed with the Company. The assurance engagement has been performed for purposes of the Company and the report is solely intended to inform the Company about the results of the limited assurance engagement. The report is not intended for any third parties to base any (financial) decision thereon. Our responsibility lies only with the Company. We do not assume any responsibility towards third parties.

Frankfurt am Main, 22 March 2019

PricewaterhouseCoopers GmbH  
 Wirtschaftsprüfungsgesellschaft

Nicolette Behncke      ppa. Julia Ranke-Filthaut  
**Wirtschaftsprüfer**  
 (German public auditor)



# GLOSSARY

**COE (COST OF ENERGY)** Describes the cost of converting a form of energy (e. g. wind) into electrical energy. It is also referred to as COE.

**E-LEARNING** E-learning denotes online learning formats.

**EMPLOYEES** We define employees as being people employed directly at Nordex, excluding interns, students and apprentices.

**ENGINEERING** Research and Development Company area.

**GEARBOX** The gearbox is located between the slow-rotating rotor shaft and the fast-rotating generator shaft. By using a gearbox, the generator shaft rotates up to one hundred times faster than the rotor shaft.

**GENERATOR** A wind turbine's generator converts mechanical energy into electrical energy.

**HIGH-CALORIE SYNTHETIC MATERIALS** Synthetic materials with a high-calorific value in the waste-to-energy process.

**HYBRID TOWER** Extremely high tower construction made from combined steel and concrete segments.

**INSTALLED CAPACITY** This describes the maximum total output of all power plants (here wind turbines) installed in one area.

**INVERTER** Wind turbines are typically operated using variable rotor rotation speeds. An inverter adjusts the electricity supplied by the generator, with its variable frequencies and voltages, to the network frequency, phase length and voltage required by the electrical network so that constant, grid-compliant electrical energy can be supplied to the network.

**ISO 9001** Internationally recognized quality management standard.

**ISO 14001** Internationally recognized environmental management standard.

**ISO 50001** Internationally recognized energy management standard.

**KILOWATT** Power is defined as energy per time unit and is measured in Watts. One kilowatt (kW) equals 1,000 Watts.

**KILOWATT HOUR** A kilowatt hour (kWh) is the amount of energy measured in kilowatts (kW) that is generated or consumed within one hour.

**LOST TIME INCIDENT FREQUENCY** The Lost Time Incident Frequency (LTIF) indicates the number of occupational accidents per million working hours that cause one or more days' absence from work.

**MEGAWATT** One megawatt (MW) equals 1,000 kilowatts.

**MEGAWATT HOUR** One megawatt hour (MWh) equals 1,000 kilowatt hours.

**NACELLE** The key components to convert wind power into electrical energy (drivetrain, generator, part of the electrical system, backup systems, etc.) are installed in the nacelle. The nacelle is mounted on the tower. The rotor, including the rotor blades, is attached to the rotor shaft in the nacelle.

**OHSAS 18001** Internationally recognized occupational health and safety standard.

**ONSHORE SYSTEMS** Wind power systems installed on land.

**PROJECT MANAGEMENT** Once handed over by Sales, the Project Management Department assumes responsibility for a project until it is handed over to the customer, as well as internally to the Service Department.

**ROTOR** The rotor of a wind turbine comprises the rotor blades and the rotor hub. The rotor is mounted on the main shaft.



**SERVICE** Nordex Service comprises a number of activities – from remote monitoring, preventative maintenance, on-site repairs and retrofitting additions, to the complete modernisation of wind energy systems.

**STAKEHOLDER** Stakeholders are both internal (e.g. employees) and external (e.g. customers, competitors and the community) parties with an interest or concern in our activities and a relationship with our Company.

**WIND FARM** Wind farms comprise multiple, jointly-operated wind turbines.

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## LIST OF ABBREVIATIONS

<b>AktG</b>	Stock Corporation Act	<b>HSE</b>	Health, Safety and Environment
<b>AWP</b>	Acciona Windpower (Corporación Acciona Windpower S.L.)	<b>IPP</b>	Independent Power Producer
<b>CO<sub>2</sub></b>	Carbon dioxide	<b>IT</b>	Information Technology
<b>CO<sub>2</sub>e</b>	Carbon dioxide equivalent	<b>kg</b>	Kilogram
<b>COE</b>	Cost of Energy	<b>kW</b>	Kilowatt
<b>CPI</b>	Corruption Perceptions Index	<b>kWh</b>	Kilowatt hour
<b>CSR</b>	Corporate Social Responsibility	<b>LTIF</b>	Lost Time Incident Frequency
<b>EBIT</b>	Earnings before Interest and Taxes	<b>NEW 4.0</b>	North German Energy Transition 4.0
<b>ECA</b>	Export Credit Agency	<b>Nordex BBBEE</b>	Nordex Broad Based Black Economic Empowerment
<b>EIB</b>	European Investment Bank	<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>FFCEL</b>	Fauji Fertilizer Company Energy Limited	<b>R&amp;D</b>	Research & Development
<b>GRI</b>	Global Reporting Initiative	<b>SDGs</b>	Sustainable Development Goals
<b>GW</b>	Gigawatt	<b>t</b>	1 metric tonne (1,000 kg)
<b>GWO</b>	Global Wind Organisation	<b>TTC</b>	Technical Training Center
<b>HAW</b>	Hamburg University of Applied Sciences		
<b>HGB</b>	German Commercial Law		



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