amprion
connects

CHANGE?

FOR SURE!

SUSTAINABILITY REPORT 2020

STATEMENT

The energy transition in Germany and Europe is in full swing and climate neutrality is its goal. Amprion is helping to shape this transformation: we are preparing the way for a sustainable energy system that is climate-neutral, but also safe and efficient. And we are combining this with our mandate and mission to ensure the highest level of system security possible so that people are guaranteed a reliable power supply. At the same time, Amprion itself is becoming more sustainable as a company. We set ourselves clear goals and milestones – and track their implementation. Because change is the only way to a more sustainable future. For sure!

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CHANGE? FOR SURE!

Amprion is paving the way for a climate-neutral, secure and efficient energy system, but is also changing as a company and striving for sustainability. What this means is explained by the company's managing directors Dr Hans-Jürgen Brick (CEO), Dr Hendrik Neumann (CTO) and Peter Rüth (CFO).

SUSTAINABILITY IS THE BIG ISSUE OF OUR TIME. WHAT DOES THIS MEAN FOR YOU?

DR HANS-JÜRGEN BRICK If we want to achieve the climate targets set, it is absolutely essential that we build a sustainable energy system. And that is what we are doing at Amprion. For us, sustainability means paving the way for a climate-neutral energy system …

DR HENDRIK NEUMANN … and to coordinate it safely and efficiently so that the lights never go out. At Amprion, we're always looking to serve society's general interests: we are playing our part towards ensuring the highest level of system security possible so that people are guaranteed a totally reliable power supply. That is our mandate and mission.

PETER RÜTH At the same time, our company is changing: Amprion itself is becoming more sustainable – and high speed. All areas of the company are involved in and affected by this transformation process. And this report bears witness to that.

AMONG OTHER THINGS, YOU ARE INCORPORATING SUSTAINABILITY INTO YOUR MANAGEMENT SYSTEM. WHAT DOES THAT MEAN IN CONCRETE TERMS?

RÜTH In future, we will be reviewing all processes within the company to see whether they really take ecological and social aspects into account. In this way, we will incorporate sustainability into our corporate management.

BRICK It is equally important to embed sustainability in our corporate culture. We need to recognise that sustainability is not just a catchword, an empty cliché, but a corporate goal to which we all should and can contribute.

“In future, we will be reviewing all processes within the company to see whether they really take ecological and social aspects into account. In this way, we will incorporate sustainability into our corporate management.”

PETER RÜTH

RÜTH Our workforce is open to this. We have an incredible number of new, young employees. They expect their employer to adopt a sustainable approach to its business, and are working day in, day out to integrate renewable energies into the energy system. This is one of our core tasks.

YOU WANT TO CONTRIBUTE TO A SUSTAINABLE ENERGY SYSTEM. WHAT’S IT ALL ABOUT, IN YOUR VIEW?

RÜTH We are convinced that electricity will play a key role in the energy system of tomorrow. Decarbonisation, electromobility, digitalisation – wherever you are, the economy and society are totally dependent on electricity.

NEUMANN But electricity is just one part of the system. We need to view the energy system in its entirety: the energy sources (electricity, gas and hydrogen) – but also the sectors (industry, mobility and heating). Because everything is connected to everything else.

BRICK We are developing solutions that maximise the benefits to the economy and society in respect of climate protection and economic aspects.

NEUMANN We are already working to bring this about today, for example, by following the NOVA principle in our grid expansion work: grid optimisation first, upgrading second, then expansion. This means that existing power lines are optimised first, before we consider other, more extensive measures.

RÜTH In addition, we believe in robust planning: Even under rapidly changing conditions, everything we decide and implement now must be viable in the long term.

“We need to recognise that sustainability is not just a catchword, an empty cliché, but a corporate goal to which we all should and can contribute.”

DR HANS-JÜRGEN BRICK

NEUMANN And last but not least, it's important to develop and upgrade the System Operation and Control Centre. By means of innovative and powerful technologies, we have made our control centre in Brauweiler fit for the future. It can play a key role in coordinating the climate-neutral energy system of tomorrow.

HOW DO YOU DEAL WITH THE FACT THAT GRID EXPANSION PROJECTS ARE MET WITH PROTESTS?

RÜTH Our business model is based on political and social consensus. We need to maintain this, otherwise we will have no chance of pushing ahead with grid expansion. This is why we are so keen to communicate with the citizens affected.

NEUMANN We want to explain to people why our projects are so essential to building a sustainable, climate-neutral energy system. And we explain to them how we reconcile the interests of people and the environment as well as other licensing issues in relation to route planning. We will never be able to accommodate everyone, but we do our best.

"We want to explain to people why our projects are so essential to building a sustainable, climate-neutral energy system."

DR HENDRIK NEUMANN

SUSTAINABILITY HAS BECOME A KEY VALUE DRIVER. WHY?

BRICK Sustainability is part of Amprion's DNA. We feel solidarity with mankind, the environment and the economy. It is out of this solidarity that we do what we do.

RÜTH No company today can afford to ignore the environmental and social dimensions of its actions. At the same time, more and more investors are looking for companies that operate in accordance with the principles of sustainability. These interests find each other in the equity market. We want to exploit this opportunity to shoulder the enormous investments required to build the energy system of tomorrow.

WHERE CAN AMPRION BECOME EVEN MORE SUSTAINABLE?

RÜTH We're already doing a lot, but a review has also highlighted some gaps that we want to close. Therefore we'll further reduce our emissions. This is also the case in the new project centre we are currently building in Dortmund. Its heat and power supply systems are based on geothermal energy and photovoltaics. Furthermore, we're looking for solutions to compensate grid losses in a climate-neutral manner.

BRICK We have our work cut out for us. But we will get there – driven by our desire to make a significant contribution to a sustainable energy system and our own future viability.

AN ENORMOUS TRANSFORMATION EFFORT

Dr Rainer Quitzow

is a research team leader at the Institute for Advanced Sustainability Studies (IASS) in Potsdam. Since 2014, he has been conducting research there into sustainable innovation and industrial policy and governance of the energy transition.

The EU wants to become climate-neutral by 2050. Can this be achieved – and what is the role of politics? Of course this can be achieved – even if it ultimately means having to compensate for remaining greenhouse gas emissions such as those from agriculture. The most important task for politicians will be to apportion the costs and benefits of the transition in such a way that socially viable solutions emerge. If they succeed, the population will accept the transformation. After all, this is the greatest hurdle, too.

What does a climate-neutral energy system in 2050 look like to you? The crux of a sustainable energy sector is a fully decarbonised power sector. This is the basis for reducing carbon emissions in other sectors – such as transport – through sector coupling and the production of hydrogen. It is particularly important here that additional business models are developed within the framework of this transition that contribute to the creation of a flexible energy system.

What role do transmission system operators like Amprion play in this? Of course, a decarbonised power sector will only come about if the transmission system operators push ahead with grid expansion. However, they should also be active beyond their legal mandate, because they have a creative role – a mandate to shape the future. And they should use it to help shape the political framework. The main focus here is on social and political innovations – particularly in view of the resistance to grid expansion from some quarters. By this I mean, for example, developing participation formats in which all those affected really do have the opportunity to get involved.

Carbon-neutral by 2050 – the European Union has set itself a tremendously ambitious goal. We spoke with energy expert Dr Rainer Quitzow and MEP Prof Dr Angelika Niebler about the challenges and success factors surrounding Europe's energy transition – and what role the transmission system operators will play in it.

What is the current status of the energy transition in the European Union? Particularly in respect of climate protection, it is important that we in Europe take the lead – because this will cause other nations and regions to become more ambitious. The European Green Deal has set the course for this – and the funds being made available through the Next Generation EU (NGEU) recovery package are also largely linked to climate policy measures. With the emissions trading system, which is now to be extended to the transport and building sectors, we also already have at our disposal a market-based instrument that has been effective for years and that encourages us to keep reducing our emissions.

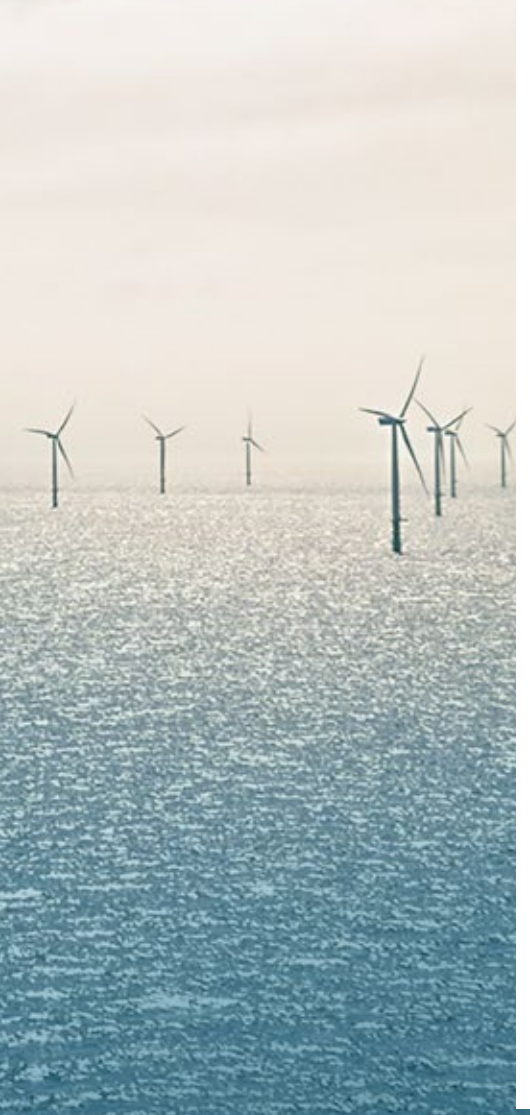
What factors will be key to the success of the energy transition? For Europe, the energy transition means a massive restructuring of the energy system and demands an enormous transformation offensive in all areas. That is why, first and foremost, collaboration is crucial to the whole project – collaboration between business, science and politics, right down to the municipal level. This is the only way to further strengthen the European electricity market, for example. The electricity market is of central importance on the path to a climate-neutral Europe – also in view of the enormously increasing demand for electricity. This can be achieved primarily by expanding and stabilising the grid infrastructure and integrating smart solutions into the grid.

You have brought up the issue of grid expansion. What do you think is necessary in order for it to progress faster? In order to advance grid expansion, the planning process must be speeded up and streamlined – especially in Germany. To this end, the European Union, and specifically the EU Commission, needs to make somewhat bolder proposals. After all, faster grid expansion will also ensure that the energy transition succeeds in a socially responsible manner – and electricity remains affordable.

Prof Dr Angelika Niebler (CSU)

has been a Member of the European Parliament since 1999. Since then, she has been campaigning for a European electricity market in the Committee on Industry, Research and Energy, among other places.

INTERCONNECTED EUROPE – AT SEA AND ON LAND



The energy landscape in Europe is changing rapidly. That's because the continent is to become climate-neutral by 2050 at the latest. As a result, the importance of offshore wind energy is growing – for Amprion, too. In future, we will be bringing electricity from the North Sea to the mainland. We are also working together with international partners on European offshore networking.

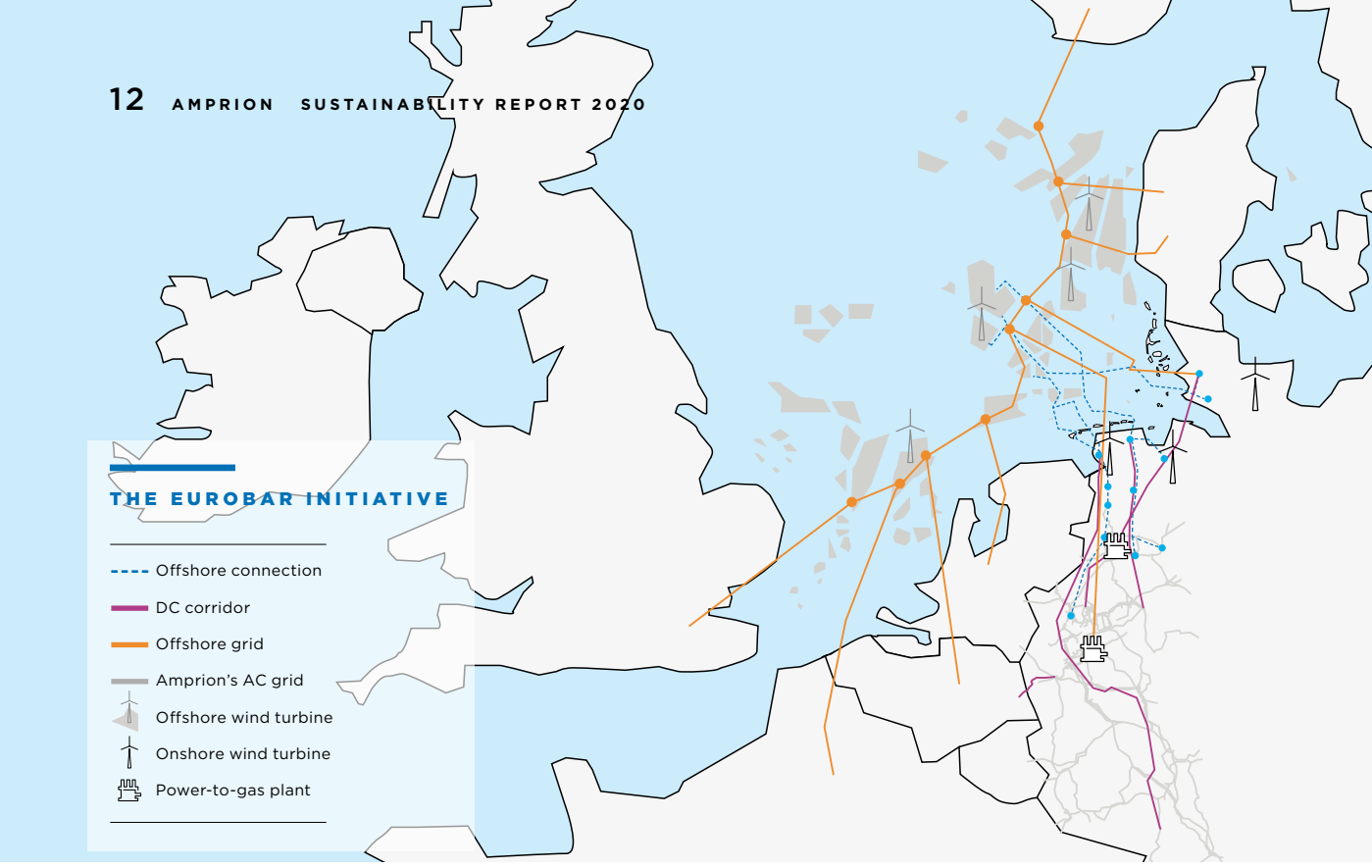
The European electricity grid is closely meshed and cross-border in nature. It ensures that around 500 million people on the continent are reliably supplied with electricity every day. At the same time, it enables renewable energy to be delivered to consumers across the whole of the European grid – which is absolutely essential if Europe is to become climate-neutral.

Against this background, the importance of offshore wind energy is growing enormously. After all, every single wind farm contributes to making the European electricity mix more climate-friendly. Offshore wind power is also a reliable, efficient and capable source of energy. One reason for this is that the wind conditions out at sea are not only more constant, but also much stronger than on land.

The potential of offshore wind energy is huge: by 2050, the EU wants to expand the generating capacity for offshore wind energy in Europe to 300 GW. Offshore wind energy is consequently a key component in the continent's future power supply and the plan is for wind to cover around 30 per cent of Europe's electricity needs by the middle of this century.

Offshore energy on the up at Amprion

Amprion is driving the energy transition out to sea. Over the next few years, we will be connecting several offshore wind farms located in the North Sea to our transmission grid. However, in order to collect the wind energy generated across these



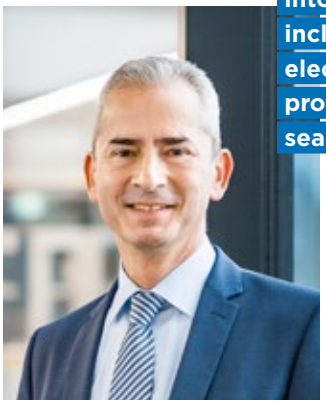
"The European energy system will only function when everyone works hand in hand. 'Eurobar' provides the necessary stimuli for this and is at the same time a platform in which all transmission system operators can participate as equals. Because only if we all work together will we move the European energy transition forwards – offshore and onshore."

GERALD KAENDLER
Head of Asset Management at Amprion

farms and make it available to the whole of Europe, we need to do more than just build new point-to-point connections to the respective national grids. It would also make sense to interconnect the wind farms already out at sea. This would make it possible to exchange electricity between countries without having to take a detour via the mainland first. Interconnecting national platforms at sea would also ease the load on our national transmission grid and make the system more resistant to outages. This would also make the joint use of offshore wind energy even more efficient and secure, both nationally and internationally.

Eurobar: basis for future offshore networking

This is where the Eurobar initiative comes in, which Amprion has launched together with six other European transmission system operators. The basic idea behind this initiative is to take the concept of the interconnected onshore grid and apply it to the offshore scenario. In concrete terms, this means that future generations of offshore platforms should already be planned in such a way that they can be interconnected. Experts refer to this as "offshore-grid-ready". The objective of Eurobar, then, is to integrate offshore wind energy into the European power grid efficiently and securely – starting from current regulation and projects already underway and moving towards a meshed offshore system. This joint initiative should pave the way for this.



“In order to efficiently integrate offshore wind energy into the energy system, we need holistic solutions. This includes bringing offshore wind energy on shore, making electricity that cannot be integrated usable for the production of hydrogen, and networking wind farms out at sea. This is precisely what we are working on at Amprion.”

PETER BARTH
Managing Director of Amprion Offshore GmbH

This requires common technical standards and cooperation between all transmission system operators. In this way, the offshore connection platforms can be interconnected step by step, first nationally and then internationally. The technical solution should be applicable to all European offshore farms. The wind power can then be collected over a large area and transported to where it is needed.

The principles: modular, systemic, integrative

The concept underlying the Eurobar initiative is characterised first and foremost by its integrative character. Thanks to its modular design, the system can be expanded in stages. Each transmission system operator can plan and build the connections independently and decide themselves on the timing. The concept provides scope both for the differing speeds at which the countries want to proceed with the energy transition and the different regional parameters – such as different soil conditions, depths of water and regional flora and fauna – in project implementation.

With its systemic and partnership-based approach, Eurobar is a truly European project. Its success depends on everyone playing their part and shaping the continent’s energy future together and on an equal footing.

OUR PLAN FOR THE ENERGY TRANSITION AT SEA

Upgrading the transmission grid
Amprion is expanding its transmission grid into the North Sea with its DolWin4 and BorWin4 connection systems. These systems will go into operation in 2028 and 2029, respectively, and subsequently transport offshore wind power from the sea to the southern Emsland region. Further connection systems will follow.

Integrating power-to-gas
Hydrogen will become an important energy source and raw material of the future, for example, to decarbonise the steel industry. Against this background, the electricity and gas infrastructures should be planned as an integrated system so that energy can be transported efficiently and cost-effectively in future. By doing so, green hydrogen will be able to be produced at locations where renewable energy that cannot be integrated into the electricity system, i. e. “excess” energy, is available.

Networking European offshore wind platforms
Together with six other European transmission system operators, Amprion signed a letter of intent in April 2021 for the launch of Eurobar, an initiative to interconnect European offshore wind platforms.

COMMITMENT TO THE COMMON GOOD

At Amprion, people put themselves at the service of the cause. Our employees make their own personal contribution to ensuring the lights don't go out – whether in hospitals, in industrial plants, on the streets or in homes. They are ready to do this day and night – even in challenging times like last year.

At the same time, our employees prove every day that our task is more than just a legal mandate. For the purpose of the energy transition, we are working together to reconcile the interests of people, the environment and technology. To achieve this, Amprion brings together people with a wide range of skills, professional experience and backgrounds.

As varied as their tasks may be, they are united in the cause. Because together they create value added for society and the environment: they keep the grid stable and secure, take care of nature conservation along the power lines and are in close contact with the local people during construction projects. In this way, Amprion contributes to the common good from a variety of angles.

"The energy transition is a collaborative project. As such, it needs the acceptance of the public. By engaging in dialogue at a very early stage with the people affected by grid expansion, we are creating the conditions to gain this acceptance."

MARIELLA RAULF
Project Communication

Grid expansion is a complex issue and affects people's homes and property directly. This is why we see ourselves as mediators between the plans for the necessary grid expansion and the concerns of local people. We involve, inform and engage in dialogue with the locals. In this way, we involve the public and all relevant external stakeholders in projects from an early stage and on an ongoing basis, and promote the qualified forming of opinions throughout all phases. Appreciation and respect are the principles that guide us. This also includes taking time for people and their own individual issues.

Our System Operation and Control Centre in Brauweiler ensures that the lights never go out – 365 days a year and around the clock. The control centre keeps countless areas of daily life up and running – from large industrial plants to every single household. We are meeting the future challenges of a rapidly changing energy world with the aid of high-tech: our new, highly innovative grid control system, the optimisation of feed-in forecasts for renewable energies and the weather-dependent adjustment of the transmission capacity of our lines are just a few examples of such high-tech solutions. In this way, we are creating the basis for a sustainable electricity supply throughout Europe.

"For the sake of a stable grid, we are working on new ideas for building a sustainable, decarbonised energy system."

DR FRANK REYER
Head of System Operation & Control Grids Brauweiler

"After more than 20 years of continuous commitment in the field of ecological route management, we are today one of the leading lights in nature and wildlife conservation."

CLAUDIA JAEHRLING
Project Manager Power Line Permits

We like to see our power lines as the company's business card – and as the lifelines of the national economy. At the same time, we do not forget that the routes along which they run likewise represent lifelines. After all, they are home to countless plants and animals. Taking this diversity into account and preserving and promoting it is Amprion's responsibility and part of our job when it comes to grid projects. Our commitment to nature conservation extends from the planning and construction of new power lines and the upgrading of existing ones to the operation of both. Collaboration with our stakeholders is particularly important in order to find solutions that fit the regional specifics at an early stage in the approval process.

SUSTAINABILITY MANAGEMENT

SUSTAINABILITY AT AMPRION

SUSTAINABILITY AT AMPRION

Acting responsibly requires goal-oriented planning. This applies not only to the safe operation, expansion and upgrading of the grid, but also to our commitment to people, the environment and the climate. Amprion is therefore pursuing a sustainability strategy that has clear objectives and comprises five fields of action. It also sets the framework for our first Sustainability Report. In this report, we make our commitment visible and establish the basis for dialogue with our stakeholders.

AMPRION – A BRIEF OVERVIEW

Amprion GmbH, headquartered in Dortmund, is an important transmission grid operator not only within Germany but in Europe, too. Our 11,000-kilometre extra-high-voltage grid transports electricity across an area that extends from Lower Saxony to the Alps. Around a third of Germany's economic output is generated in this region. Our power lines are lifelines of society: they secure jobs and quality of life for 29 million people. More than 2,000 employees in Dortmund and at more than 30 other sites help make sure the lights never go out.

The core remit of Amprion's activities is to operate the transmission grid in its control area safely and reliably and to expand it in line with requirements. This means that we bear an enormous responsibility for the German economy and the people who live and work in the area covered by our grid. The security, safety and stability of our grid are and will always remain the guiding principles of our actions. To continue in future to meet the growing demands regarding transmission capacity and flexibility, we are working intensively to integrate innovative technologies into our network. We are also preparing the way for a climate-neutral energy system: we are extending our network so that power from wind and the sun can get safely and reliably to where it is needed. We also perform overarching operations for integrated grid systems in Germany and Europe.

THE AMPRION GRID

11,000

kilometres is the length of our transmission grid. It transports electricity across an area that extends from Lower Saxony to the Alps.

29

million people live in our grid area. Around a third of Germany's economic output is generated in this region.

24

billion euros is the amount we will be investing in upgrading and expanding our grid over the next ten years.

2,000

employees help keep the lights from going out. They work in Dortmund and more than 30 other sites throughout the grid area.

15,504

million euros – our sales in 2020.

SUSTAINABILITY MANAGEMENT

AMPRION'S SUSTAINABILITY STRATEGY

Amprion wants to make a significant contribution towards building a sustainable energy system. In dialogue with policymakers and partners, we are developing long-term solutions aimed at uniting climate protection with grid stability – and to facilitate decarbonisation of the energy system at the same time. In this way, Amprion is creating value added for society and acting to the benefit of present and future generations. This contribution shapes our understanding of sustainability.

Sustainability is an integral part of Amprion's strategy and is being driven forward by the Management Board. Embodying and promoting responsibility, shaping the energy system of tomorrow: this is the key objective we are pursuing with our sustainability strategy. All company departments have participated in developing this strategy. The basis for this was provided by a comprehensive analysis of the in-house and external requirements of the business environment. In particular, the expectations of the relevant stakeholder groups were taken into account. The result was a comprehensive charting of the sustainability context and of the issues of relevance to Amprion: 16 key sustainability issues, which we have divided into five fields of action. These issues and the sustainability goals are anchored in the goals of the departments. Their implementation is being pursued throughout the company.

For each field of action in our sustainability strategy, we have formulated measurable key goals and sub-goals that we intend to achieve successively or have already achieved. The various chapters of this Sustainability Report describe the progress we have made to date. We orientate our activities and performance in line with suitable indicators. We identified these for each field of action in 2020 in collaboration with all of our specialist departments. On this basis, we have set up processes to continuously collect and review this data.

OUR FIELDS OF ACTION

CORPORATE GOVERNANCE

1. Procurement
2. Compliance

SECURE POWER SYSTEM

3. European framework requirements
4. Cooperation
5. Grid expansion and upgrade
6. Grid and systems development
7. System security

SOCIETY AND CUSTOMERS

8. Society
9. Customers
10. Regional commitment

ENVIRONMENT

11. Species protection
12. Nature conservation
13. Resource conservation and climate protection

EMPLOYEES

14. Active personnel development
15. Occupational health and safety
16. Corporate culture


POLITICIANS & AUTHORITIES
SOCIETY & CUSTOMERS
EQUITY MARKET
EMPLOYEES
EUROPEAN INSTITUTIONS
FEDERAL & STATE POLITICS
MUNICIPALITIES & AUTHORITIES
NGOS & NATURE CONSERVATION ASSOCIATIONS
TRADE ASSOCIATIONS/INDUSTRY BODIES
BUSINESS PARTNERS
CUSTOMERS
CIVIL SOCIETY
POPULATION IN PROJECT AREAS
MEDIA, MULTIPLIERS & TRADE JOURNALISTS
SHAREHOLDERS
INVESTORS, BANKS & RATING AGENCIES
EXECUTIVES
EMPLOYEES
LABOUR MARKET
STAKEHOLDERS IN THE AREA OF SUSTAINABILITY

IN DIALOGUE WITH OUR STAKEHOLDERS

Amprion is operating in a truly diverse field of interest. That's why maintaining a continuous dialogue with our stakeholders is so important. Stakeholder dialogue also plays a central role in sustainability management. To begin with, it first involves listening. This is something we already did while defining the key issues and we took the opinions of our stakeholders into account.

In order to better understand our environment, in 2020 we identified and classified our sustainability stakeholders into groups. The analysis revealed that dialogue with four specific groups is key to our sustainability management programme: civil society and customers, politicians and authorities, our employees, and players in the equity markets.

We attach particular importance to exchanges with citizens, NGOs, environmental associations and other representatives of civil society. Against the backdrop of grid expansion, it is important to generate broad acceptance for our projects (see also the section on Society and Customers starting on page 60). At the same time, we take into account our customers' needs. For example, we support industry in its efforts to decarbonise its production processes. We also involve our employees in our sustainability management activities in order to achieve our goals. As a regulated company, we attach great importance not least to dialogue with politicians and authorities at EU, federal and state level.

In order to establish transparency and consistency in the stakeholder dialogue, we have defined clear responsibilities for communication with the respective stakeholder groups and laid down company-wide principles for dealing with them. We are currently developing an in-house "Stakeholder Management Guideline" that all involved employees will be able to use when they require guidance. The purpose of this is to ensure that cooperation within the group is as consistent and effective as possible.

DEPENDABLE. FAIR. HONEST.

"We walk the talk. This reliability is the foundation on which we build connections with our partners. … We communicate openly and honestly. And we work together with others to find the best solution."

Amprion's brand manifesto

EVALUATION OF KEY SUSTAINABILITY ISSUES

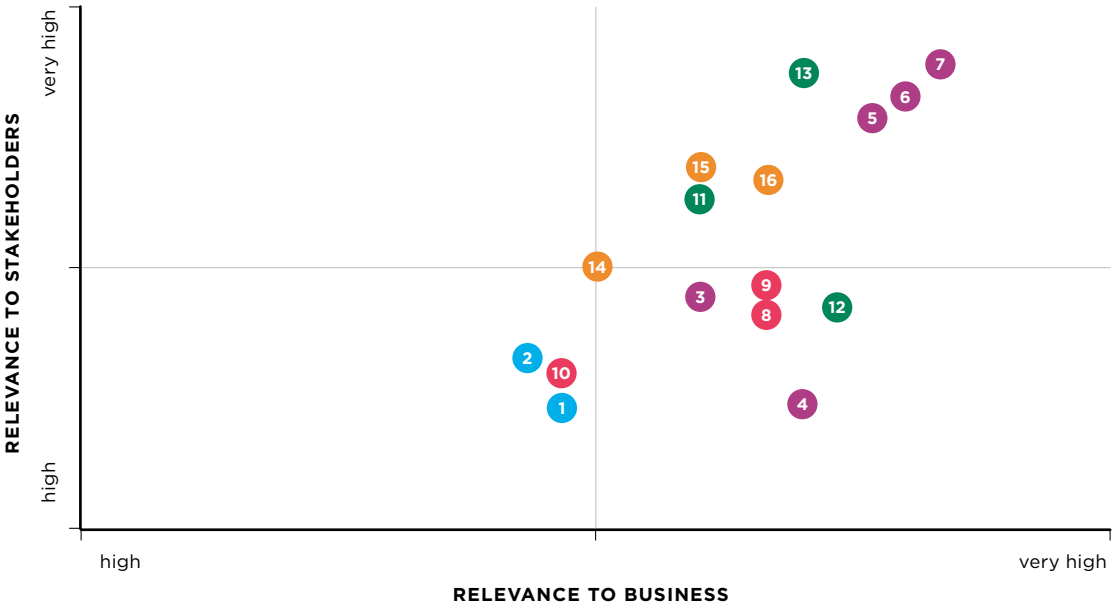
To realise systematic sustainability management and compile a meaningful Sustainability Report, it is essential to identify and evaluate the issues that are material to the company. We laid the foundation for this in 2019 with our sustainability strategy. A total of 16 separate issues were discussed in the process, which we divided into five fields of action. All of these issues are highly or very highly relevant to our business. They are still considered the basis of our sustainability management programme today.

For this, our first, Sustainability Report we have evaluated and prioritised each of the 16 issues individually. In doing so, we followed the requirements of the German Sustainability Code (DNK) and looked at each issue from two different perspectives. First, we asked various stakeholder groups to assess the impact Amprion has on people, the environment and society depending on the issue (see y-axis in graph opposite). To this end, we conducted a company-wide employee survey in which over 600 employees participated. We also conducted interviews with a total of ten experts from the fields of politics, NGOs, science, customers and business partners.

Subsequently, the Sustainability Steering Committee, which is made up of the heads of department at Amprion, held a workshop to assess the extent to which the 16 issues affect Amprion's business success (see x-axis). By combining these two perspectives, we obtained a differentiated picture of which issues are especially relevant. The results are presented in the form of a matrix.

Both from a stakeholder perspective and an in-house perspective, the issues concerning the field of action we refer to as the "Secure power system" are of the utmost importance. This shows how directly our core business is linked to sustainable development. The fact that environmental issues were in some cases rated similarly highly reflects the expectation that we will shape tomorrow's energy system in a way that is compatible with the climate and the environment and avoids adverse effects on nature. In the knowledge that the development of future-oriented solutions requires above all motivated employees, the range of topics relating to the world of work was assessed as being of medium to high relevance. The topics in the field of action titled "Society and Customers" were given a somewhat lower priority, as many see us as being on the right track here. It goes without saying that compliance, i. e. adherence to laws and rules, is at the core of all our activities, as a regulated company; this is also revealed by the survey.

OUR MATERIALITY ANALYSIS



CORPORATE GOVERNANCE

- 1 Procurement
- 2 Compliance

SOCIETY AND CUSTOMERS

- 8 Society
- 9 Customers
- 10 Regional commitment

EMPLOYEES

- 14 Active personnel development
- 15 Occupational health and safety
- 16 Corporate culture

SECURE POWER SYSTEM

- 3 European framework requirements
- 4 Cooperation
- 5 Grid expansion and upgrade
- 6 Grid and systems development
- 7 System security

ENVIRONMENT

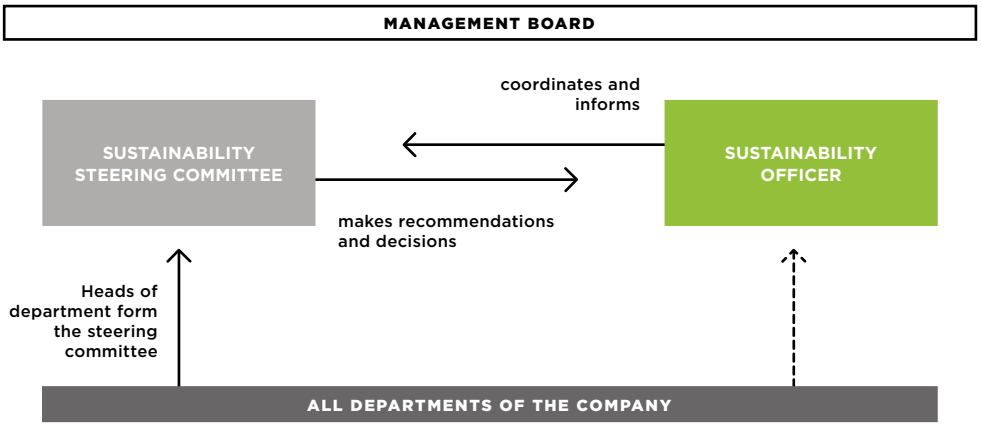
- 11 Species protection
- 12 Nature conservation
- 13 Resource conservation and climate protection

ORGANISATION OF SUSTAINABILITY AT AMPRION

In order to anchor sustainability firmly into our corporate identity, Amprion relies on a system of clear responsibilities and a permanent and lively exchange between the departments. In 2018, Amprion appointed a Sustainability Officer who coordinates sustainability management and encourages communication between the departments. She reports directly to the Management Board. The Sustainability Officer is assigned to the "European Affairs/Sustainability Management" department, since Europe-related decisions – for example on climate protection, but also on the financing of sustainable growth – are increasingly shaping our business.

Her tasks include drawing up the sustainability strategy, coordinating internal activities, reporting and therefore tracking the achievement of goals set. To this end, she works closely with all specialist departments, frames the dialogue with stakeholders and is responsible for communicating sustainability activities. In addition, she coordinates and informs the Sustainability Steering Committee, which defines strategic decisions on the subject of sustainability and ensures a company-wide dialogue.

ORGANISATIONAL STRUCTURE OF OUR SUSTAINABILITY MANAGEMENT SYSTEM



ANGELA HAHLBROCK
Sustainability Officer at Amprion

OUR ASSIGNMENT …

… is more than just a statutory mandate. We feel solidarity with mankind, the environment and the economy. This feeling of solidarity shapes our understanding of sustainability and is expressed in our first Sustainability Report. In this report, we describe what we have already achieved in our five fields of action and outline our plan for the future. Specifically, this means: we are helping to shape the transformation of the energy system, to keep the electricity system stable, to protect mankind and the environment and to tackle social issues – always in dialogue with our stakeholders.

OUR CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS

In autumn 2015, the United Nations (UN) adopted the 2030 Agenda for Sustainable Development. States, citizens and the private sector were all called upon to work to implement it. Specifically, there are 17 Sustainable Development Goals (SDGs) with a total of 169 targets to be achieved by 2030. These include combatting climate change, ending poverty and hunger, ensuring healthy lives along with inclusive and equitable quality education, and achieving gender equality – in short, providing a good life for everyone.

Amprion is also committed to these global goals. And so, in 2020, we reviewed how our business activities can contribute to achieving them by boosting positive impacts and reducing adverse ones. To do this, we analysed all targets and concluded that we have such an impact in relation to five of the SDGs.

WHAT WE STRIVE FOR

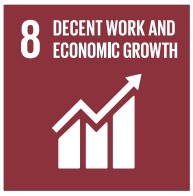
OUR CONTRIBUTION TO THE UN SUSTAINABLE DEVELOPMENT GOALS

AFFORDABLE AND CLEAN ENERGY

- **Ensure universal access to modern energy services**
- **Increase substantially the share of renewable energy in the global energy mix**
- **Facilitate access to research and technology and promote investment in renewable energies**

With the expansion and upgrade of grids and the ongoing development of the energy system, we are ensuring reliable access to electricity. At the same time, we are enabling the increasing infeed of renewable energies. To this end, Amprion is entering into EU-wide collaborations (for example, with companies, associations and science) and is promoting the energy transition at various political levels.

DECENT WORK AND ECONOMIC GROWTH



- **Diversify, innovate and upgrade to achieve higher levels of economic productivity**
- **Achieve full employment and decent work for all women and men and equal pay for work of equal value**
- **Protect labour rights and promote safe and secure working environments**

Amprion transports electricity for millions of people and thousands of companies. By modernising the energy system and making energy use more efficient, we will continue to secure the quality of life and jobs in the future. As an employer, we are committed to protecting labour rights, ensuring a safe working environment, implementing equal rights and providing decent work for employees and service providers alike.

INDUSTRY, INNOVATION AND INFRASTRUCTURE

- **Develop sustainable, resilient and inclusive infrastructure**
- **Promote sustainable industrialisation and infrastructure**
- **Enhance scientific research and upgrade industrial technology**

With its system infrastructure, Amprion ensures an uninterrupted and cross-border supply of electricity in Europe. To this end, we provide all market participants with non-discriminatory access to our grid infrastructure. At the same time, we are driving forward the integration of renewable energies with the aim of achieving Europe-wide supply. For example, we support research projects by providing technical consultancy services and actively integrate innovative technologies in both our system operation and control operations and our grid operations.

CLIMATE ACTION

- **Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters**
- **Integrate climate change measures into strategies and planning**
- **Improve education/awareness and capacity to tackle climate change**

Amprion stands for a resilient electricity system that will continue to secure Europe's power supply in the future. By integrating renewable energies, we are helping to combat climate change. We have built climate protection measures into our corporate strategy and are lobbying politicians to align further development of the energy system with the targets of the Paris Agreement on climate change.

LIFE ON LAND

- **Conserve and restore terrestrial and inland freshwater ecosystems**
- **Halt biodiversity loss and protect natural habitats**

We are aware that we have an impact on natural ecosystems. This is why we landscape the areas around our routes according to ecological criteria. Through our effective biotope management along our power lines, the planting of wildflower strips and the designation of ecological compensation areas, we are helping to conserve habitats and species.

SUSTAINABILITY PROGRAMME

In 2019, we defined overarching targets and operational areas in which we want to implement measures targeted directly at the fields of action covered by our sustainability strategy. The following section describes the progress we have made so far.

You can read up on more of Amprion's targets at:
https://www.amprion.net/Dokumente/Nachhaltigkeit/Amprion-Nachhaltigkeitsziele_2020.pdf
(German only)

Corporate governance

We stand for law-abiding and ethical conduct. We respect human rights in our own operations as well as in the supply chain. To ensure compliance with environmental and social standards, we will work towards installing greater transparency. Our focus is therefore on:

- Procurement
- Compliance

Secure power system

We are acting in the interest of the European energy transition and working to ensure system security while integrating renewable energy sources. To this end, we drive forward innovation and actively participate in industry collaborations. We are working to promote:

- European framework requirements
- Cooperation
- Grid expansion and upgrade
- Grid and systems development
- System security

Employees

We look out for the health of our employees and their safety at work. Our corporate culture is characterised by mutual respect and appreciation. As such, we live for diversity and equal opportunity. To achieve this, we invest in:

- Active personnel development
- Occupational health and safety
- Corporate culture

Environment

We are striving for climate neutrality for our own operations, making wise use of resources and actively conserving nature and protecting species by making them integral parts of our projects. We are working to promote:

- Species protection
- Nature conservation
- Resource conservation and climate protection

Society and customers

We stand for a broad dialogue and create value added in the region through our activities and commitment. For our customers we are a dependable and equal partner. We trust in:

- Added value for society
- Customer orientation
- Regional commitment

OUR PRINCIPLES?

TRANSPARENCY AND RELIABILITY.

FIELD OF ACTION
CORPORATE GOVERNANCE

Through its core business, Amprion is contributing to building a climate-neutral, safe and efficient energy system that is helping to secure the quality of life and jobs of millions of people. In turn, this reveals that bearing responsibility for society and the environment is a key characteristic of Amprion as a company – and shapes our corporate actions, which are guided by clear principles. They are transparent, dependable and founded on partnership. We demand the same from our business partners, too – together with a commitment to uphold human rights and protect the environment.

CORPORATE GOVERNANCE

Transmission system operators are subject to a legal mandate to transmit electricity reliably and ensure the security of the transmission system. Amprion fulfils this mandate in one of the most densely populated regions of Europe. In doing so, we contribute to the provision of public services for the 29 million people who live and work in our own grid area and beyond. The responsibility that arises from this is reflected in our actions.

For Amprion, as a regulated company, it is a matter of course that we comply with the legal requirements. Our actions are characterised by a sense of direct responsibility, sincerity and integrity, and respect for our fellow human beings and the environment. We act responsibly and dependably by guaranteeing the safe and secure transmission of electricity and non-discriminatory access to our grid for all market participants. Amprion informs the public continuously and transparently about its business activities. In this context, we are further expanding our reporting on our non-financial services and performance. Taking responsibility for people and the environment is also a feature of our collaboration with suppliers, with the protection of human rights and environmental aspects increasingly in the spotlight.

COMPLIANCE

As a transmission system operator, Amprion operates in a legally regulated environment. Our business is therefore impacted by a wide range of regulations and laws imposed by the regulatory authorities in Germany (Federal Network Agency) and Europe (ACER – Agency for the Cooperation of Energy Regulators).

Core business defined by parliament
Amprion's role as a transmission system operator is laid down in the Energy Industry Act (EnWG), according to which our mission is to efficiently operate, optimize, strengthen and expand a safe, reliable and capable transmission network in line with demand. It is clear from this that our business serves the general interests of society.

A wide range of tasks Amprion must perform derive from the statutory regulations. Among other things, these include guaranteeing system security, driving grid expansion, coordinating electricity flows, handling electricity trading and integrating renewable energy sources. Furthermore, Amprion is obliged to operate its grid in a non-discriminatory manner. This means that the company must facilitate fair competition by providing open access to the grid. This is monitored by the Federal Network Agency, which is also responsible for approving the grid development measures planned by Germany's four transmission system operators. In order to ensure non-discrimination of market participants, Amprion, as an independent transmission system operator and in accordance with the Energy Industry Act, has appointed a Non-discrimination Officer. This officer is entitled to attend all meetings of the Management Board and Supervisory Board as well as the shareholders' meeting.

Responsible corporate governance

As a regulated company, Amprion is subject to special legal requirements. The Management Board manages the company accordingly and is itself monitored and supervised by the Supervisory Board. Moreover, we follow basic principles that guide us in our actions and are laid down in guidelines (see page 37 opposite). This is also the basis on which we shape our cooperation with our external and internal stakeholders.

We ensure good corporate governance through our management and supervisory bodies. Amprion's Management Board is monitored and supervised by a Supervisory Board. In 2020, Amprion's workforce surpassed the 2,000 mark, necessarily leading to us switching to a Supervisory Board with equal representation: the monitoring body now consists of 16 members, half of whom represent the employees and half the shareholders.

For Amprion, reliability also means keeping the public continuously informed about its business activities. We use our Annual Report to disclose all relevant financial and energy industry-related data. Furthermore, by expanding the scope of its sustainability reporting, Amprion is going beyond the statutory disclosure requirements. We use environmental and social indicators to show how our business activities impact society and the environment.

Sustainable finance

Amprion is investing billions of euros in restructuring the energy system. We are combining the long-term planning necessary to achieve this with a conservative financing strategy. We are avoiding unnecessary risks and focusing on solid and secure financing.

GUIDING PRINCIPLES

BASIC PRINCIPLES OF OUR CORPORATE GOVERNANCE

Profitability, efficiency and sustainability

Amprion guarantees an efficient transmission system that supports the energy policy goals with a view to 2030/2050.

System security and reliable grid operation

Amprion ensures system security and establishes the conditions necessary to configure the grid to meet demands, manage it efficiently and operate it safely.

Environmental protection

Amprion meets high environmental protection standards in its planning, construction and operation of the grid.

Innovation, knowledge and skills

Amprion manages the grid with the aid of a qualified workforce.

Collaborations

Amprion cooperates with other grid operators and maintains respectful dealings with authorities and organisations.

Sustainability aspects are also becoming increasingly important in the context of financing. The EU taxonomy plays a significant role here. It defines concrete guidelines at European level as to when business activities are deemed ecologically sustainable – and thus contribute to six environmental goals. In this way, investors are provided with a tool that helps them decide which ecologically sustainable enterprises to invest in. In this context, companies will in future have to assess and disclose the extent to which a business activity contributes to achieving their environmental goals without significantly affecting any of their other goals. Amprion is aligning itself accordingly. This clearly shows that by enabling the integration of renewable energies and the decarbonisation of energy systems, transmission system operators such as Amprion are making a substantial contribution to the EU's goals regarding climate protection and adapting to climate change. Amprion minimises potential negative impacts on other goals, such as biodiversity, by taking appropriate measures.

Compliance management system

Amprion has established a compliance management system (CMS) to ensure compliance with regulations and the law. This system applies to the whole of Amprion, including our offshore-line subsidiary. In 2018, the CMS was audited in accordance with Assurance Standard 980 of the Institute of Public Auditors in Germany (IDW PS 980) and certified in respect of areas exposed to a potential risk of corruption.

Three key sets of rules ensure practical implementation of the CMS, the first of these being the Compliance Code. This code sets out key compliance principles the Supervisory Board, the Management Board and all executives and employees are obligated to uphold. All employees receive a copy of the Compliance Code when they are hired and affirm their future compliance with it. The current version can also be viewed in and downloaded from the intranet. In 2021, Amprion expanded the code to include a commitment to human rights and other aspects of sustainability. Furthermore, a compliance guideline informs all employees about basic rules for dealing with compliance risks in their day-to-day work. Finally, all compliance management processes are described in a Compliance Manual.

Amprion's managers are obliged to promote compliant behaviour and are required to act as role models in this respect. In critical compliance situations, employees can approach them for advice. Amprion also has a Compliance Officer who deals with all compliance-related issues. Their tasks also include continuously supervising, monitoring and making improvements to Amprion's CMS. What is more, Amprion has appointed an ombudsman to act as an external point of contact to investigate compliance issues and reports of possible non-compliance. The ombudsman can be contacted not only by all employees, but also by third parties, such as market participants, suppliers or other business partners.

In its Compliance Code, Amprion sets out key principles for conduct that complies with regulations and the law. They apply to the Supervisory Board, the Management Board, executives and employees alike.

In order to sensitise new employees to compliant behaviour, they are given compliance training as part of onboarding events when they first start their jobs. At the same time, Amprion conducts target group-specific training sessions on relevant compliance topics, for instance in the area of purchasing. Over the course of the coronavirus pandemic, we have begun to offer more of our training activities in virtual formats. And we also intend to expand our virtual offering in the future.

Definition and monitoring of compliance requirements

With the help of process-oriented compliance risk analyses conducted at regular intervals, Amprion identifies significant compliance risks and associated goals. These currently include refraining from corrupt activities, avoiding conflicts of interest, data protection and IT security, integrity, fairness and transparency, as well as the documentation of business records. Other goals include compliance with environmental and occupational health and safety regulations, an objective dialogue with representatives of state agencies and political parties, and consistent efforts to avoid the exertion of undue influence. The issues are prioritised according to their impact. On this basis, Amprion identifies compliance risks that are especially severe, defines risk-minimising preventive measures and reviews these on a quarterly basis with the aid of a monitoring process.

The Compliance department regularly reports the results to the Management Board. This process ensures that Amprion monitors and minimises its compliance risks. In the course of this, all executives must also verify that the rules from the Compliance Code have been observed and that no compliance violations have come to light. In the event of possible in-house or external violations, Amprion examines the cases in question, imposes sanctions on them and takes measures to prevent them in the future. As in the two previous years, no fines were imposed on Amprion in 2020 in connection with breaches of the law.

Dialogue with politicians

Amprion operates in a highly regulated environment. Constructive and objective dialogue with representatives of state agencies and political parties is therefore essential. We see our role as that of a technical consultant. Amprion supports legislative processes by providing the specialist knowledge and expertise of a transmission system operator, for example in the context of the Energy Industry Act and EU Regulation on guidelines for trans-European energy infrastructure. We take a transparent approach to this and welcome the introduction of a lobby register for political lobbying in Germany as well. Amprion will naturally follow the register's guidelines as it conducts its business, as has been the case in Brussels for years.

Amprion is also involved on a number of political levels through its membership in various associations. These include the umbrella organisation of European transmission system operators, ENTSO-E.

We want to prevent even the appearance of us enjoying undue influence. For this reason, Amprion has no party-political affiliations and does not donate to political parties. This also applies to organisations or foundations that are closely linked to political parties.

Amprion's association memberships include:

- ENTSO-E
- Renewables Grid Initiative (RGI)
- European Energy Forum
- Cigré (Conseil International des Grands Réseaux Électriques)
- Franco-German Bureau for the Energy Transition
- German Association of Energy and Water Industries (BDEW)
- Forschungsgesellschaft Energie e. V. (FGE, "Research Association Energy")
- German Association for Electrical, Electronic & Information Technologies (VDE)
- Forum Network Technology/ Network Operation (FNN)
- Forum für Zukunftsenergien e. V. ("Forum for Future Energy Sources")
- German Offshore Wind Energy Foundation (Stiftung Offshore-Windenergie)
- Economic Council
- Wirtschaftsforum ("Economic Forum")

PROCUREMENT

In our Compliance Code, we declare our support for and adherence to a set of universally applicable basic principles. Along our value chain, we advocate the recognition, promotion and observance of fundamental values in the fields of human rights, labour standards, environmental protection and fighting corruption. We expect the same from our external partners, too.

Supplier management
Amprion orders a wide range of products and services from its suppliers. First and foremost, these include technical components for the grid infrastructure, such as conductor cables, high-voltage power cables, steel for pylons, high-voltage switchgear and substations, transformers, insulators and measuring, protection and control equipment. In addition, Amprion purchases IT products as well as furniture and office equipment and utilises a very wide range of services. These include civil engineering as well as engineering and personnel services. Most of our suppliers are based in Europe. As such, the majority are subject to the legal provisions of the European Union (EU).

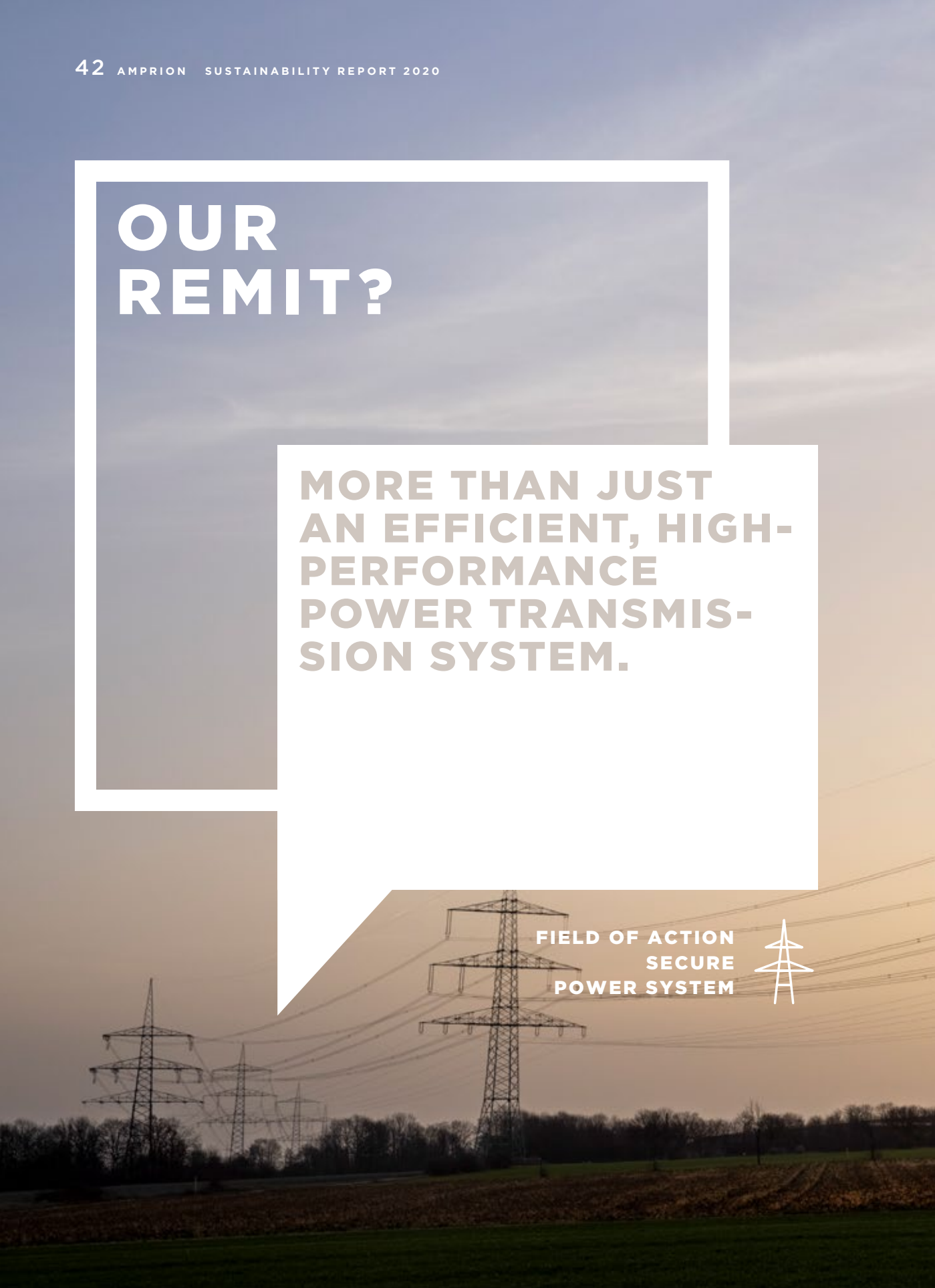
Criteria for responsible procurement
Amprion fosters dependable relationships with its suppliers. In our "General Terms and Conditions of Purchase and Payment" (GTCP), we require our suppliers and service providers to uphold human rights, comply with industrial safety and environmental protection legislation as well as to act in a legally and ethically impeccable manner. A procurement guideline regulates the responsibilities in the purchasing process.

Furthermore, at the beginning of 2021, we reviewed how our suppliers manage the issue of human rights. Specifically, we analysed the reports and other public sources compiled by our largest partners. Together they account for 55 per cent of our total volume of orders, and most of them are based in Germany and the EU. As a result, we found that almost all suppliers have installed high standards. With the help of a new concept, we will be reviewing more suppliers in the future, including conducting specific case-by-case reviews. Corresponding analysis of environmental aspects in the procurement process is currently being prepared.

We have also embedded our commitment to human rights in our newly revised 2021 issue of our Compliance Code, which now also obliges our suppliers and service providers to respect human rights. For each new order, suppliers and service providers contractually agree, by default and within the framework of the GTCP, to adhere to the Compliance Code. In implementing our duty of care in respect of human rights, we are guided by the National Action Plan for "Business and Human Rights".

OUR REMIT?

MORE THAN JUST AN EFFICIENT, HIGH-PERFORMANCE POWER TRANSMIS-SION SYSTEM.



FIELD OF ACTION
SECURE
POWER SYSTEM

Amprion combines grid stability with climate protection. To this end, we are optimizing our System Operation and Control Centre, expanding our power grid to meet demand and working on new solutions for a sustainable, integrated energy system. At the same time, we also support options for storing energy and making it available across sectors. By these means, we are driving the energy transition forward – in collaboration with partners in Germany and Europe.

Through our measures in the field of action we refer to as the "Secure Power System", we are contributing directly to fulfilling **SDGs 7 – Affordable and Clean Energy, 9 – Industry, Innovation and Infrastructure** and **13 – Climate Action.**

SECURE POWER SYSTEM

The energy transition is leading to a fundamental change to the generation landscape. The share of renewable energies in the energy mix is increasing. At the same time, the electricity generated has to be transmitted over ever greater distances. This is because wind or solar energy is in many cases not generated where it is mostly needed. This increases the demands on the security and stability of the power grid.

As a transmission system operator, Amprion has a legal mandate to ensure the transport of electricity in the transmission system at all times. At the same time, we have to integrate the increasing volumes of renewables. Driven by these duties and responsibilities, we are working on innovative solutions that will enable the energy world to transform and help advance climate protection in Germany and Europe. We continue to develop our grid infrastructure in order to guarantee a power system that is secure at all times, as a prerequisite for the national and European energy supply. Moreover, we are working to design a sustainable, integrated energy system. Against this backdrop, we are developing ways to harness renewable energies across all sectors – from electricity, heating and mobility to industrial production.

Thanks to the energy transition, our role as a grid operator located at the heart of Europe is also gaining in importance. Today, Amprion – from its System Operation and Control Centre in Brauweiler near Cologne – already coordinates electricity flows far beyond the boundaries of its own control area. With the increased adoption of renewables and the growing electricity trade in Europe, cross-border electricity transports are continuing to grow. Consequently, in addition to the national perspective, the European perspective is also becoming a yardstick for gauging the dimensioning of the electricity system of tomorrow. That is why we are working with numerous partners to create a common, Europe-wide internal market for electricity.

DEVELOPMENT OF THE GRID INFRASTRUCTURE

Amprion's transmission grid is crucial for making sustainably generated electricity available throughout the country – and Europe. However, because the volumes being fed into the grid are increasing, additional grid capacities are essential. Ultimately, the speed with which the energy transition comes about – and the German and European climate protection targets are achieved – depends on how quickly and effectively we can adapt our grid to this future situation.

>3,600

kilometres of transmission grid are being expanded and upgraded by Amprion. In doing so, we are paving the way for a climate-friendly energy system.

Grids for the energy transition

Within the scope of our legal mandate, Amprion is pressing ahead with restructuring the grid. Amprion plans to invest more than 24 billion euros in this over the next ten years. In the course of the energy transition, we will expand our grid – which already extends over some 11,000 kilometres (km) – by adding a further 3,600 km of new lines. This includes almost 1,800 km of projects approved in the Power Grid Expansion Act (EnLAG) and the Federal Requirement Plan Act (BBPlG). Add to these a further 1,800 km confirmed by the Federal Network Agency in the Network Development Plan 2030 (Version 2019). In the first quarter of 2021, approximately 2,550 km of line were in the approval phase, with more than 650 km already completed. A further 150 km or so were under construction, while 250 km were still being planned in-house in preparation for the approval procedures.

In order to provide the required grid capacities quickly, Amprion is focusing on demand-oriented solutions. We are taking into account the local context. In dialogue with the local people and authorities in the regions, we are implementing the most compatible measure for each case (see section on Society and Customers, page 64ff). Amprion makes its decisions in accordance with the NOVA principle laid down by legislators in the Energy Industry Act (EnWG): grid optimisation first, upgrading second, then expansion. Against this background, we are now installing, for example, a new generation of conductor cables known as "high-temperatur low-sag (HTLS) conductors". These are capable of carrying more current than conventional aluminium-steel conductor cables. They allow us to expand grid capacities without the need for any appreciable interventions.

24.3

billion euros is the amount Amprion will be investing in expanding and upgrading the grid over the next ten years.

OUR CONTRIBUTIONS TO A CLIMATE-NEUTRAL ENERGY SYSTEM

WE ...

- ... are connecting renewables to our grid – onshore and offshore
- ... are playing our part in supplying electricity to the consumers in our grid area
- ... are expanding and upgrading our grid so that it can handle renewable energy sources
- ... are transporting more and more electricity from renewable sources safely and reliably around Germany
- ... are integrating renewables into the energy market
- ... are continuing to keep the grid stable in the face of changing conditions
- ... are continuously optimising our system operation and control systems and establishing new forecasting tools for the integration of renewables
- ... are interconnecting energy markets in Germany and Europe
- ... are driving forward sector coupling and integration so that we can plan the grid infrastructure as one complete system ("one system view")
- ... are transporting electricity over long distances from the generation centres to the consumption centres
- ... are integrating renewable energy more and more into system operation and control
- ... are facilitating the coal phase-out and ongoing decarbonisation of the energy system

Efficient DC transmission

Amprion is deploying new technologies such as high-voltage direct-current (HVDC) transmission systems to transport electricity efficiently over longer distances. In view of the longer distances electricity generated from renewable sources often needs to be transmitted, these technologies offer numerous advantages: current flows can be better regulated with HVDC transmission, resulting in lower transmission losses over long distances. This makes this technology the ideal solution for long transmission routes between the North and South of the country and cushions further loads on our grid. Amprion is utilising them, among other things, in the ALEGrO project, the first direct electricity link between Germany and Belgium, and in western Germany's DC link known as Corridor A, which runs from Lower Saxony to North Rhine-Westphalia. This is immediately followed geographically by a grid upgrade as part of the Ultranet grid expansion project between North Rhine-Westphalia and Baden-Württemberg. The special highlight of this project? This is the first time we will be transmitting both direct and alternating current, at a voltage of 380 kilovolts (kV), over the same pylons. Since we are utilising existing routes to do this, there will be no need to appropriate further space.

Following extensive testing, Amprion added plastic-insulated underground DC cables operated at 525 kV to its toolbox in 2019. Among other things, these are being considered in the planning of our A-Nord project. This will enable us to efficiently reinforce our grid and connect renewable wind power from the North Sea with the load centres in western and southern Germany.

Connecting offshore wind power

If we are to successfully decarbonise industry, it is crucial that we bring offshore wind energy on shore and then transport it to centres of consumption. This is why Amprion is also active in the field of offshore grid connections. Amprion is currently planning the DolWin4 and BorWin4 offshore grid connection systems, which will go into operation in 2028 and 2029 respectively. In addition, two further systems will be connected to the grid after 2030. Equally important is the construction of cross-border power lines – under the sea and on land. In this way, we are making the European electricity transmission grid more flexible and efficient across national borders.

HOW THE OFFSHORE CONNECTION WORKS

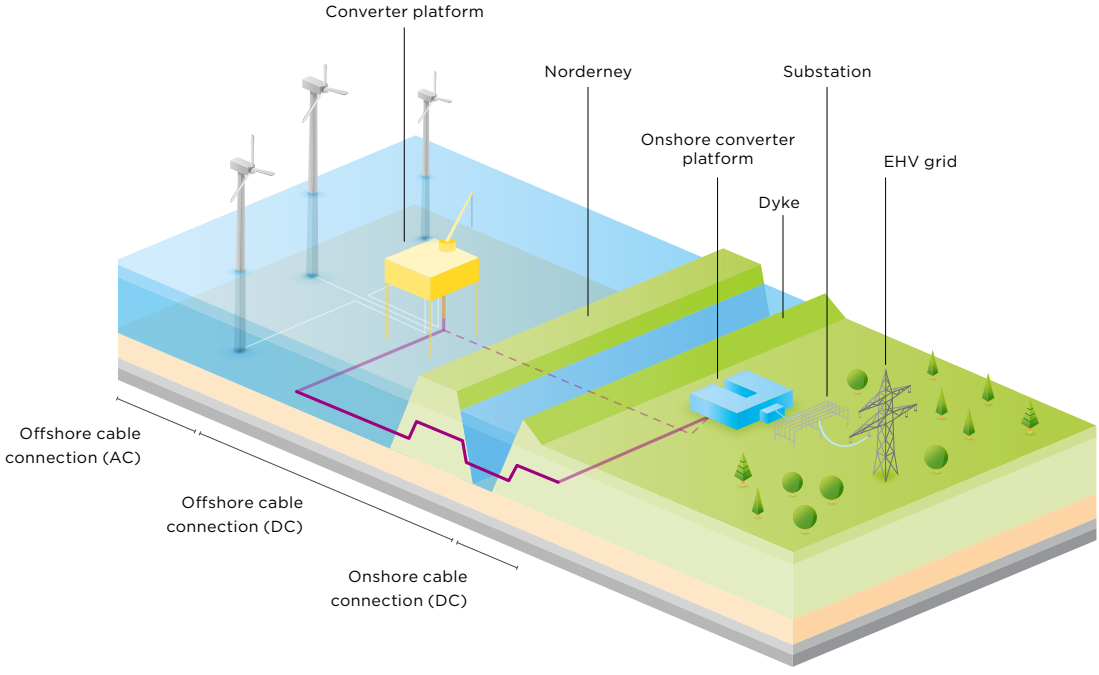


Illustration not to scale;
220-kV standard connection – schematic representation

Offshore wind energy is becoming increasingly important to Europe's energy transition. As of 2028, Amprion will also be bringing offshore wind power from the North Sea to the mainland.

GRID AND SYSTEMS DEVELOPMENT

The electricity system has already been undergoing a transformation for more than two decades, characterised by the switch to renewable energy sources. All energy sectors must be included in this development. In order to achieve the climate neutrality we are striving for, Amprion is consequently pursuing a holistic approach.

Energy world of the future

Amprion already transmits large volumes of renewables via its grids. Of a total transmission volume of 65,286 megawatts (MW), 25,449 MW come from renewable sources. This corresponds to about 39 per cent. As in previous years, this share will continue to rise gradually. The energy system is to be climate-neutral by 2050. However, the interrelationships are complex, developments dynamic – and yet we must set the necessary course today. After all, we are talking about enormous investments in infrastructure with long lead times. This is why Amprion relies on robust planning approaches. These include well-founded and comprehensive scenario analyses, which we prepare in addition to the scenarios required by law as part of grid planning. For instance, we are examining what consequences the coal phase-out by 2030 or the locating of power-to-gas plants in Germany would have for the energy system.

39

per cent of the electricity transported by Amprion comes from renewable sources.

SYSTEMVISION 2050

THE VISION FOR THE ENERGY SYSTEM OF THE FUTURE

Europe is to be carbon-neutral by 2050. But how to shape the energy system of 2050 and the transformation necessary to build it and achieve the goal of carbon neutrality is something that is extremely complex and cuts across all sectors. Answering this question demands an intensive, social discourse between all players involved. Amprion offers a platform for this discourse with Systemvision 2050.

The partners to Systemvision 2050 – from business, politics, associations and NGOs – develop their own individual visions of the energy system of 2050. These visions then form the basis for making assumptions and defining parameters. These include installed lines of generating plants, demand levels in and exchange capacities between sectors, and fuel prices. These data are then simulated using the methods developed at Amprion in the ESMA (Energy System Modelling and Analysis) process.

The tools from ESMA are capable of analysing and describing the energy system in Germany and Europe across the sectors. This involves, for example, determining how electricity can be generated at optimum cost and what energy imports and conversion volumes between sectors are necessary to achieve this. ESMA is also used to evaluate how exchange capacities between regions need to be developed in the electricity and hydrogen sectors.

The results of the modelling process are then presented to the partners and discussed with them. The partners then present the results of their own system visions on the project's website, classify the results, put them up for discussion and thus provide policymakers with a technically sound basis for their energy policy decisions. Because all modelling is based on a common scientific methodology, the results produced are comparable. These are subsequently condensed into cross-sectional and meta-studies. This leads to a common vision for a climate-neutral energy system.

Further information can be found at **www.systemvision2050.de (German only)**

“At Amprion, we are paving the way for a climate-neutral energy system and supporting the decarbonisation of industry. For the transformation itself, we offer innovative solutions to transport energy and make it available across sectors.”

MARTIN FINKELMANN
Head of Long-term Grid Planning at Amprion

Cross-sectoral energy system

A systemic approach is required to meet the challenges of the energy transition. What we mean by this is that we need to view the energy system in its entirety: the energy sources (electricity, gas and hydrogen) – but also the sectors (industry, mobility and heating). Because everything is connected to everything else. Amprion is therefore committed to sector integration. This is the only way renewables can be put to optimum use and integrated across sectors.

Interconnecting the electricity and gas infrastructures is also a highly important move, with power-to-gas technologies being the key to achieving this. Appropriate plants convert electricity from renewables that cannot be integrated or only inefficiently integrated into the electricity system into hydrogen. This can in turn be used in other sectors, such as for decarbonising industry. Large parts of today’s gas infrastructure can be converted to transport hydrogen. Similarly, existing natural gas storage facilities can be used to store hydrogen.

We have identified suitable locations in the southern Emsland region for a power-to-gas plant that would benefit the energy system as a whole. This region is where Amprion’s own electricity transmission grid and the gas transmission grid of gas grid operator Open Grid Europe (OGE) coincide. In our collaboration on the “hybridge” project, we have together drawn up a concept for a large-scale power-to-gas plant. This is our contribution to the ramp-up of power-to-gas technology.

Further information can be found at **www.hybridge.net/index-2.html**

Innovation management

Amprion wants to play an active role in shaping the transformation of the energy system and we are working on innovative solutions to help do so. Such solutions help us to meet the growing technical, environmental and licensing requirements head on.

Amprion has been fostering technological innovations for years. This includes, for example, optimising our operating facilities and working independently on new environmental technologies. In our "Technology Office", experts from the various technical departments regularly discuss innovations. It is here that we identify areas that require innovations, initiate pilot projects or implement innovative solutions designed to upgrade our transformers, overhead lines or underground cables. One such technical innovation, for example, is adaptive overhead line operation. This enables us to increase the current-carrying capacity of the overhead lines under favourable weather conditions and to make our grid even more efficient and flexible in the process. Environmental protection and social acceptance also play a role in our innovation management. For example, we are using a new design of pylon in certain projects. By dovetailing topics, holding regular meetings and insisting that innovations should also be sustainable, innovation processes are also part of our sustainability management system.

SECURITY AND GRID STABILITY

System security and grid stability are of a high level in Germany. As the feed-in of renewables into the energy system increases, Amprion champions innovations that guarantee the grid will continue to be secure and flexible in the future too.

Grid operation and the System Operation and Control Centre

Amprion works around the clock to ensure its grids provide the highest possible level of availability. Our employees maintain around 11,000 kilometres of power lines and service the more than 170 transformer stations in the grid area. Our technicians are prepared to do this day and night. In addition, engineers at Amprion's System Operation and Control Centre in Brauweiler near Cologne monitor and control the current flows, voltage and frequency in the transmission grid. Current flows can be controlled by switching measures or interventions in power plant schedules. To stabilize the frequency, power generation and consumption must be in equilibrium at all times. To ensure this, Amprion can deploy balancing energy; that is, instruct power plants to feed more or less electricity into the grid, for example. And we are also increasingly using renewables to achieve this.

The generation of electricity from renewables fluctuates greatly depending on the weather. For this reason, Amprion utilises various forms of artificial intelligence in the operation and control centre to predict the amount of electricity that will be fed into the grid the next day. Self-learning algorithms evaluate weather forecasts from various

sources. The institute that has to date provided the best forecasts in comparable general weather situations is given greater credence and a bigger say in the calculations for the next forecast.

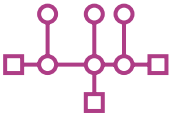
What is more, Amprion is facilitating further growth in national and international electricity trading by building new interconnectors to neighbouring countries. In addition, the System Operation and Control Centre in Brauweiler performs overarching coordinating tasks not only for the four German control areas but also for northern Europe's integrated grid. Through the Cross-Border Intraday (XBID) trading project, for example, we enable European market participants to engage in cross-border intraday electricity trading. We work closely with the European power exchanges and the transmission system operators of northwestern Europe and the Baltic region to bring about continuous optimisation.

100

per cent grid availability was guaranteed by Amprion in its control area.

Continual system operation and control upgrades

The energy transition is also leading to growth in the level of electricity trading in Europe. More and more electricity is flowing through the cross-border grid. However, as generation and consumption levels fluctuate, European congestion and frequency stability management is becoming increasingly important. Only in this way can power infeed and offtake be kept in equilibrium and lines utilised efficiently. This makes the tasks of the System Operation and Control Centre ever more demanding. In order to meet these changing challenges, Amprion is continually developing and upgrading its system operation and control tools.



STATE-OF-THE-ART TECHNOLOGY IN THE NEW CONTROL SYSTEM

Our engineers at the new System Operation and Control Centre in Brauweiler monitor and control the Amprion grid 24/7. They are supported by state-of-the-art technology. This includes, for example, the largest video wall in Europe, on which our engineers monitor continental European grid conditions. Innovative visualizations provide information on frequency fluctuations in the grid or the volumes of electricity being traded across borders. In addition, the new control system is capable of processing a total of 30,000 switching states and 35,000 measured values every three seconds. Special displays for the infeed of offshore wind also warn of potential extreme situations in the grid. Thanks to these innovations, our control engineers can keep the power system running even more safely and stably.

Supported by state-of-the-art technologies, our engineers at the System Operation and Control Centre in Brauweiler keep an eagle eye on the power grid – day and night.

EUROPEAN FRAMEWORK REQUIREMENTS

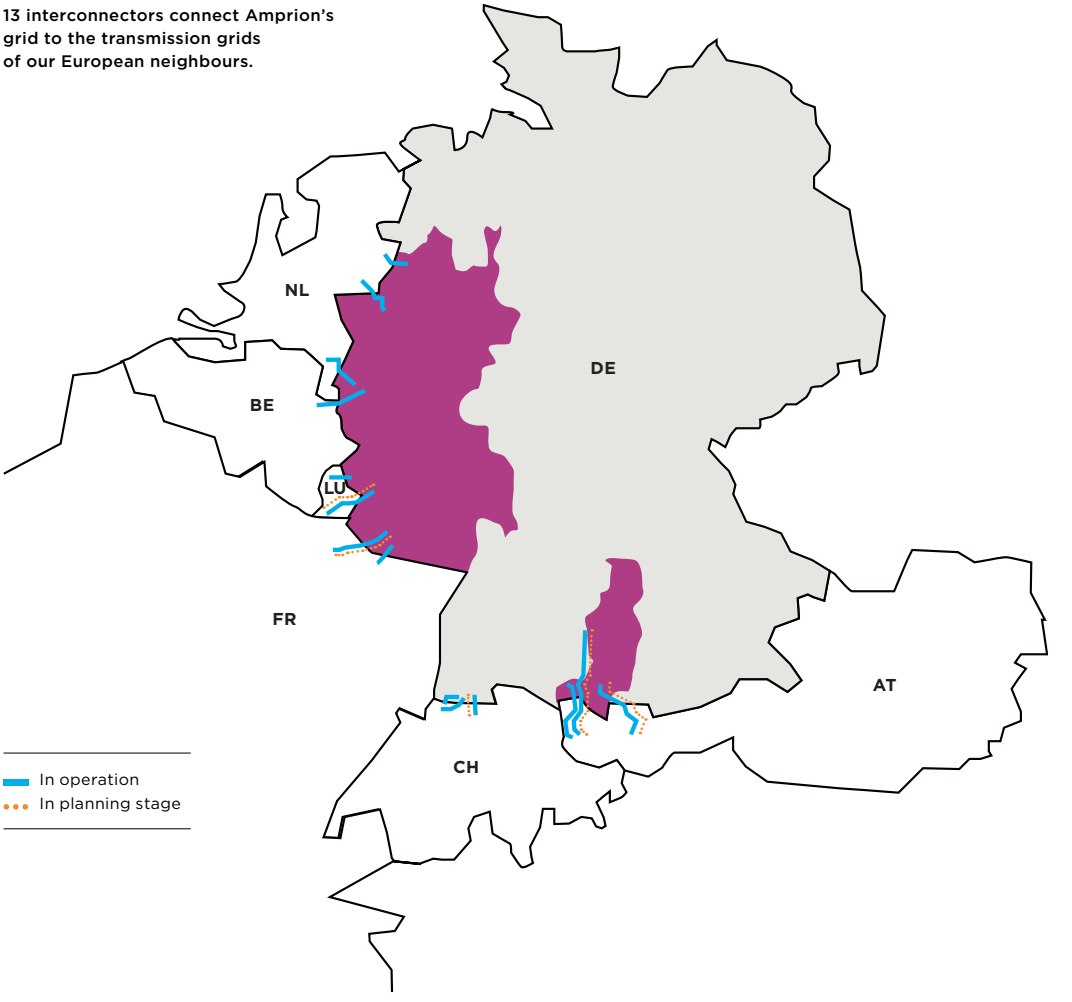
Maintaining the security of supply while dealing with increasing volumes of renewable energy has increasingly become a European task. Against this background, Amprion is driving the evolution of the common internal electricity market on the continent. Under the umbrella of the European Network of Transmission System Operators for Electricity (ENTSO-E), we are pushing for the installation of European framework conditions – together with 42 other transmission system operators from 35 countries.

Development of Europe's energy system

Amprion's grid lies at the very heart of Europe and is consequently the hub of European electricity trading. In 2020, Amprion continued to upgrade and expand its cross-border power lines – the "interconnectors" – to Austria, France, Belgium, Luxembourg and Switzerland. By doing so, we have been working to make the cross-border exchange of electricity within central Western Europe even more reliable. One milestone was the construction of the DC link between Germany and Belgium that goes by the name of ALEGrO. This went online in 2020 as an underground cable connection with a capacity of up to 1,000 MW. Amprion is currently participating in further grid expansion projects as part of the Ten Year Network Development Plan. This includes, for example, the new interconnector to Luxembourg between Aach and Bofferdange.

AMPRION CONNECTS EUROPE

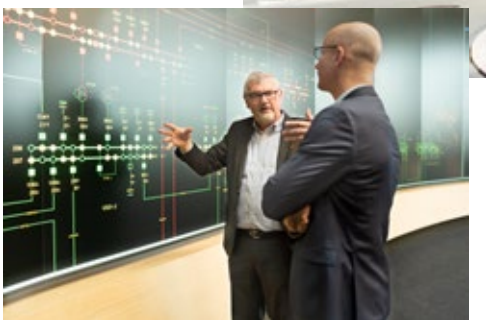
13 interconnectors connect Amprion's grid to the transmission grids of our European neighbours.



Europe-wide grid stability

System security requires European solutions. This is because cross-border power flows are on the increase, as is the volume of renewables being fed into Europe's grids. It is therefore vital that the increasing and at the same time fluctuating volumes of wind and solar power are controlled better at European level. To this end, Amprion is working together with other European transmission system operators in regional system security cooperations, such as the TSO Security Cooperation. With the help of joint grid security calculations, we forecast electricity flows in Europe as accurately as possible. On this basis, we then coordinate measures we use to jointly increase system security.

From Brauweiler to Brussels: We are also pleased to present the joint vision and plans for development of Europe's electricity system for the EU Parliament.



"Amprion works very closely with the other transmission system operators in Europe and assumes special responsibility for the security of the world's largest interconnected grid. This collaboration is also paving the way for the extensive integration of renewable energies and making a significant contribution to implementation of the European Green Deal."

JOACHIM VANZETTA
Amprion's Head of ENTSO-E Affairs

Contributing to the EU's climate targets

In order to achieve climate neutrality in Europe by 2050, Amprion is working with partners to implement the European Green Deal. With this deal, the European Commission aims to ensure a climate-neutral, sustainable and economically efficient electricity supply throughout Europe.

Central to the plans is the development of a common European offshore infrastructure. With a capacity of around 200 gigawatts (GW) by 2050 in the North Sea alone, offshore wind energy is an important building block on the road to a climate-neutral EU. Together with six other transmission system operators, Amprion has put forward the "Eurobar" concept. This initiative is intended to facilitate the gradual construction of a modular offshore infrastructure (for more on Eurobar, see page 10).

PARTNERSHIPS FOR THE ENERGY SYSTEM OF THE FUTURE

The complexity of the energy system demands close cooperation between a large number of players. With this in mind, Amprion is consciously working to build partnerships with other European transmission system operators, distribution system operators, the scientific community and partners in the energy industry. In doing so, we initiate innovation processes that benefit the entire energy sector.

Measures in collaboration with distribution system operators

Amprion is working with distribution system operators (DSOs) to better integrate distributed power producers into our system operation and control processes. As nuclear and coal-fired power plants are shut down, these processes are taking on an increasingly important role in the stability of the power grid. For example, they help to reactivate and ramp up grids again after a power failure. Redispatch measures – that is, the balancing of regional grid overloads – are also increasingly becoming the task of decentralised electricity producers. This is also the subject of the Connect+ project, in which Amprion is cooperating with other grid operators. The aim is to create a common operating infrastructure in order to extend redispatch measures to plants that generate electricity from renewables.

At the end of 2020, Amprion also entered into close cooperation with E.ON, Germany's largest distribution system operator. The aim here is to work together and at the interface between the transmission and distribution grids to create an energy system that is both climate-friendly and fit for the future. One focus, for example, is on cooperating in the grid planning phases in order to coordinate efforts to advance the crucial expansion of the transmission and distribution grids even more closely.

The most powerful hybrid substation in the European power grid is located in Kriftel. From here, Amprion stabilises and secures the power supply for the Rhine-Main region.

Innovations in collaboration with the scientific community

Amprion is working closely with the scientific community to develop innovative solutions to support the energy transition. We aim to complete a total of five cooperation projects with research institutions by 2024. We laid the foundation for this in 2020. One project has already been completed, in which, together with the Technical University of Kaiserslautern, we tested how restarting the grid with 100 per cent renewables can work. In March 2021, we also successfully completed the Gridcast research project together with the Fraunhofer Institute for Energy Economics and Energy System Technology (IEE) and the German Meteorological Service (DWD). In this project, we developed procedures to determine the expected wind and solar power feed-ins into the German interconnected grid even more precisely.

We are also participating in the InnoSys 2030 research project together with transmission and distribution system operators and manufacturers of control systems. In this case, field tests are being conducted to investigate how the available grid can transport even more power in future while maintaining at least the same level of system reliability. Specific findings will be presented when the project comes to an end in the second half of 2021. In three projects (SnowFogs, SOLREV and PermaStrom), we are also currently investigating how the feed-ins of solar energy can be better forecast – especially during extreme weather events. The findings of these projects are expected in 2024. Furthermore, Amprion was part of the EU-funded research project known as “Migrate”. The name stands for “Massive InteGRATion of power Electronic devices” and united 23 partners from science, industry and the energy sector. The aim was to develop solutions to important technical issues relating to grid stability, grid quality, control and the security of supply that arise from the integration of renewables.

KEY DATA SECURE POWER SYSTEM

Technical data of the grid

	2020
Grid area [km²]	79,187
Total grid length [km]	10,557.83
Length of routes [km]	5,875.87
Overhead lines	5,630.22
Cables	245.65
Interconnectors [no.]	13
Substations [no.]	168

Installed capacity of grid

in MW	2020	2019	2018
Total	**65,286**	**66,872**	**66,211**
Non-renewable energies	**39,837**	**42,530**	**42,369**
Renewable energies	**25,449**	**24,342**	**23,842**
Solar	11,891	11,046	10,342
Wind	10,784	10,504	10,260
Biomass	1,507	1,483	1,492
Hydropower (excl. pumped storage)	1,008	1,012	1,403
Geothermal	8	8	8
Other	251	289	337

Grid availability

	2020	2019	2018
Grid availability [%]	100	99.9977	99.9983
Interruptions/100 km of cable [no.]	0	0.009	0.009
Average duration of interruptions [min]	0	12	9
Volume of energy not transported [MWh]	0	8.60	39.75

Grid investments

in € million	2020	2019	2018
Investments in the grid	1,069	779	762

Grid losses

	2020	2019	2018
Volume [MWh]	2,760,650	2,501,106	2,626,932
Price [€ cents/kWh]	5.108	3.512	2.783

OUR APPROACH?

DIALOGUE AND PARTNERSHIP.

FIELD OF ACTION
SOCIETY AND CUSTOMERS

Amprion continues to develop its grid infrastructure and drive the energy transition. To achieve this, we rely on close collaboration with numerous stakeholders. In those regions affected by grid expansion, we champion an ongoing conversation and involve all interested parties from a very early stage. We work together with our partners and customers on joint solutions to bring about the transformation of the energy world. This is our contribution to help ensure the collaborative project we all know as the "energy transition" is a success – in Germany and in Europe.

SOCIETY AND CUSTOMERS

The energy transition is one of the largest infrastructure projects in the history of the Federal Republic of Germany – and of Europe, too. For it to succeed, the transmission grid must be upgraded and expanded.

Amprion is dedicated to making this happen. That said, we are well aware that this restructuring of the energy system can only work if we have the broad acceptance of the population. The construction of new power lines in particular affects the interests of many people. In respect of our grid expansion projects, this means we want and need to open a dialogue with the stakeholders and provide transparent information about the various projects.

It is important to us that we take the concerns of the municipalities and citizens into account in our plans from an early stage. To do so, we invite them to acquaint themselves with the circumstances and submit any comments they may have even before the formal approval process begins. In doing so, we go beyond what is required of us by law. This also applies in part to our dialogue formats. In this way, we create the conditions for a dialogue that takes the various interests into account from the outset and actively encourages discussion – even in situations of conflict.

Furthermore, we seek to build a close collaborative relationship with our grid customers that goes above and beyond the legal requirement to provide non-discriminatory grid access. This is because development of the grid infrastructure depends on us cooperating with distribution grid operators, industry and electricity producers. We work together on solutions that help protect the climate and safeguard grid stability.

IN DIALOGUE WITH CITIZENS AND MUNICIPALITIES

The grid expansion project underway in Germany is a multi-stage project, involving a great many stakeholders, that has been commissioned and written into law by parliament. It covers everything from determining the level of demand (scenario framework, Network Development Plan and Federal Requirement Plan) to the approval of specific projects (regional planning and planning approval procedures). In each step – with the exception of the Federal Requirement Plan – the authorities and the public are given the opportunity to voice their interests.

“Involving people early on in the project planning process is something we are really eager to do. We are convinced that the energy transition will succeed faster if we can get the majority of the population to broadly accept it. That’s why we actively seek a face-to-face dialogue with local stakeholders.”

DR INGO JÜRGENS
Head of Approval Procedures and Nature Conservation at Amprion

Communication in the project regions

Right from an early stage of our planning activities, Amprion gives environmental organisations, associations, authorities and citizens the chance to participate in grid expansion projects by expressing their concerns. To this end, we provide them with relevant project information right from the start. We explain to them why new transmission links are needed and how they are planned, approved and built. In addition, we listen to the opinions and interests of the stakeholders at an early stage, creating the basis for a broad-based dialogue.

Amprion is currently drawing up a “Stakeholder Management Guideline”, which will create the basis for an orderly dialogue with our stakeholders, especially in the regions where we are expanding and upgrading our grid. Amprion is also setting out important in-house principles for communication in the project regions in a detailed guideline to be followed by our employees.

In each of our projects, one member of staff from the Project Communication department is put in permanent charge of taking care of the concerns of local and regional stakeholders. As the main point of contact, they manage all local communication activities and mediate between all of the stakeholders. They also remain available throughout the project to take on board input and answer questions. In addition, they pass on any relevant information gleaned from the local dialogue to the various technical departments at Amprion.

4,250

visitors took part in dialogue events in 2020.

PARTICIPATION

DIALOGUE IN TIMES OF CRISIS – DIGITAL AND ANALOGUE

An efficient grid is essential for the energy transition – as is dialogue in the regions. In 2020, Amprion's public consultation efforts were dominated by the coronavirus pandemic. By launching virtual consultation offerings, we successfully compensated for the loss of in-person events. We also made greater use of established channels such as telephone consultations. We distributed information mainly via email, newsletters and project websites. In this way, despite the restrictions in place, we were able to keep the dialogue with citizens going and allow them to participate in our planning process.

We held the information event on EnLAG line project no. 16 and many other events in a virtual format.

Early participation in the border region – with an info tour and webinar

In July 2020, Amprion was out and about in the German-Luxembourg border region. There we informed the local communities about a planned grid upgrade between Trier and the Luxembourg border. Due to the pandemic, we used both analogue and digital formats for this purpose. As part of an information tour, we provided the mayors of the villages affected with initial information about the project and took initial statements and opinions from local politicians on board. An accompanying webinar was also held to enable those who couldn't or preferred not to take part in person to nevertheless participate virtually. By taking this flexible approach, we ensured that the regions were involved from an early stage, despite the prevailing situation.

Route expansion along the Rhine: for the first time with online consultation for citizens

2020 saw us hold our very first online citizens' consultation meeting – for the grid expansion project on the power line between Frankfurt and Karlsruhe. The number of participants was comparable with the numbers that took part prior to the coronavirus pandemic. By providing additional telephone consultations via a free hotline, we ensured a dialogue that kept citizens in the loop, despite the pandemic.

We employ a range of different dialogue formats to conduct a citizen-focused conversation in the project areas. We have deliberately given our selection of information and participation formats a broad base in order to involve as many people as possible in the dialogue. It is important to have this local perspective so that we can implement solutions that match the local circumstances. Our participation formats help us to incorporate the knowledge gathered locally at an early stage – using analogue or digital formats depending on the needs and the target group.

Even after the project has been completed, we remain committed to the regions. Utilising a number of compensation measures, we ensure that the long-term impacts of our projects are kept to an absolute minimum. In this way, we create regional value added for society and the environment (see section on the Environment, page 77ff).

OUR DIALOGUE FORMATS FOR CITIZENS AND MUNICIPALITIES

Citizens' info market

Dialogue-oriented information and consultation offering for all stakeholders in the project region

Citizens' consultation meeting/Construction consultation

Face-to-face dialogue on various topics

Stakeholder consultations

Informative one-to-one or group consultations with relevant stakeholders

Excursions and on-site visits

On-site meetings in project areas

Infomobile

Information service for small towns and villages for a mobile and flexible dialogue

Other formats: lecture and discussion events, owners' forum, workshops, workshop process/ planning dialogue, round table

	Federal and state politics, esp. local MdL/MdB*	trade associations Business and	infrastructure managers Public agencies,	project region Public in the	local alliances Citizens' action groups and	with affected properties Owners and locals	conservation representatives/associations Environmental protection and nature	Media (local and national)	(politics and administration) Municipalities, towns, districts
Citizens' info market	•	•	•	•	•	•	•	•	•
Citizens' consultation meeting/ Construction consultation	•			•	•	•	•		•
Stakeholder consultations	•	•	•	•	•	•	•	•	•
Excursions and on-site visits	•	•	•	•	•	•	•	•	•
Infomobile	•	•		•	•	•	•	•	•
Lecture and discussion events	•	•	•	•	•	•	•	•	•
Owners' forum		•		•		•			•
Workshop, workshop process/ planning dialogue	•	•	•	•	•	•	•		•
Round table	•	•	•	•	•	•	•		•

* MdL = Member of the State Assembly; MdB = Member of the German Bundestag.

WORKING IN PARTNERSHIP

Amprion's grid infrastructure connects large power generating installations to major power consumers. Our customer portfolio comprises some 60 customers from the power plant operator, distribution system operator and industrials segments. In particular, these customers include electricity-intensive enterprises from the chemical, steel and aluminium industries. A large number of consumers such as private households, commercial operations or decentralised generating plants based on renewables are also connected via the distribution grids. Amprion maintains dependable and cooperative relationships with all of its customers.

Working together for new solutions

As a transmission system operator, Amprion provides its approximately 60 grid customers from industry, the DSO and the power plant segments with access to its EHV grid. In accordance with our legal mandate, we act in keeping with objective, transparent and non-discriminatory criteria.

Amprion keeps the grid stable and secure for its customers. To guarantee this, we buy in system services such as balancing energy. This enables us to compensate power fluctuations in the grid and keep the supply of and demand for electricity in equilibrium at all times. In this way, Amprion secures the electricity supply for customers in its control area and beyond. At the same time, we are working with our partners to develop solutions for integrating renewable energy sources, which are set to play a massive role in the decarbonisation of industry. Manufacturers in our grid area increasingly want to use renewables to power their production facilities. To help them achieve this goal, we are working with them to plan more efficient grid connections and facilitate "greener" production.

103

terawatt-hours (TWh) – the volume of electricity we transported to our 60 or so grid customers in 2020.

In addition to our own customers, other companies and all households supplied with electricity via the distribution system operators are also benefitting from the increasing feed-in of renewables into our transmission system. In this way, we are contributing at all levels to a more climate-friendly society.

Improving customer satisfaction

Knowing that our customers are satisfied with the service we provide them means a lot to us. That is why we survey them every two to three years on aspects such as performance, competence, customer orientation, reliability and trustworthiness. According to an initial analysis of the latest survey for 2020, overall satisfaction with Amprion's services lies at 85 per cent.

While the latest results are currently still being evaluated in detail, in the past surveys our customers emphasised Amprion's important role in shaping the energy transition – both in terms of technical implementation and in shaping the framework conditions. Our clients expect us to assist policy makers with our expertise. As a neutral technical advisor, we are committed to finding solutions that make economic sense. Among other things, these include taking into account the interests of industry on the path to decarbonised production.

However, the surveys also revealed potential for improvement from our customers' point of view. In particular, this concerns the restructuring of technical aspects and the implementation of grid connections and expansions. In order to better meet the needs of our customers, we have launched a pilot project together with a key customer from the chemical industry and a research institute. We aim to redefine the "customer journey" and establish a new and sustainable grid concept at the interface with the customer. Our most important goal is to provide additional grid connection capacity. In this way, we support industry's path to decarbonising production.

In order to keep our dialogue with customers alive in 2020, we held the NetzForum at the beginning of September as a hybrid event. Participants were able to take part online or in person.

The insights gained from the improved customer journey will in future also be applied to the grid connection of data centres. This is because the number of data centres located in Amprion's grid area is growing as digitalisation advances. They house internet nodes or servers and are the backbone of the digital society. Due to the high volumes of electricity these data centres require, Amprion offers the option of connecting them directly to the transmission grid. By delivering a secure and reliable power supply to them, we are facilitating the continuing expansion of the digital infrastructure – for our customers and many other businesses.

In dialogue with our customers

Amprion fosters a constant dialogue with its customers. Through recurring information offerings, such as our customer magazine NetzImpuls, mailing campaigns on political and grid-related matters as well as web conferences, we keep our customers up to date on the latest developments. In addition, Amprion regularly invites customers to a range of different events. For the distribution network operators in our customer portfolio, for example, we hold special "NetzDialogs" (see explanation on next page). We extend this format to cover other customer segments, such as power plant operators, on an ad hoc basis. We discuss with our customers current developments in the energy industry, such as the phasing-out of coal-fired power generation or other routes to achieving climate neutrality in Germany and Europe – especially at the annual Amprion Customer Day. Amprion intends to emphasise the concept of sustainability even more in its dialogue with its customers. In future, we will be making our events more sustainable than they already are and we will be increasingly addressing environmental issues in our customer communication.

710

customer representatives attended the six customer events we organised in 2020.

In order to keep our dialogue with our customers alive despite the coronavirus pandemic, we are increasingly relying on virtual dialogue formats. This includes the new event format we have entitled NetzForum; the first such event was held in 2020. These events give businesses, politicians, the Federal Network Agency and network operators an opportunity to exchange views and ideas on overarching topics in the energy sector. The key topic of the first NetzForum was the path to climate-neutral industry. The speakers spoke on site in Bonn – observing all the necessary hygiene measures – while the participants were able to tune in to the event to watch live. Questions and suggestions were able to be submitted via a chat function. We plan to hold more virtual events in the future. In this way, we want to enable our customers to participate remotely and at the same time reduce travel in the interests of sustainability.

OUR FORMATS FOR CUSTOMER DIALOGUE

Amprion Customers' Day

Lecture event with alternating speakers from Amprion and external experts

NetzDialog

Lecture and discussion format on contemporary issues with a workshop-like atmosphere

NetzForum

Event with short presentations and motivational speeches given by in-house and external speakers from the worlds of politics and business, as well as moderated discussion of overarching themes relating to the energy industry

DSO Day

Annual dialogue format between TSOs and DSOs for practice-oriented exchange of ideas

Surveys

Face-to-face customer survey on aspects such as performance and competence, customer orientation, reliability and trustworthiness

NetzImpuls

Amprion's customer magazine, published twice a year, providing information on grid-related topics and news from the company

	Power plant operators	Distribution grid operators	Industry
Amprion Customers' Day	•	•	•
NetzDialog		•	
NetzForum	•		•
DSO Day		•	
Surveys	•	•	•
NetzImpuls	•	•	•

VALUE ADDED FOR SOCIETY

A perpetual and secure power supply is the basis of our highly industrialised and networked society. Our infrastructure contributes to a functioning energy network – and in the process secures people's quality of life as well as the development of our grid area, indeed of all Germany, as a great place to do business.

Dependable and sustainable – any time, right across Europe
With our commitment to a safer and more sustainable energy world, we are contributing to the common good. By actively shaping the energy transition, we are assuming responsibility for our society and for sustainable development.

What is more, we are committed to further advancing Europe's internal electricity market. To this end, we are working with numerous stakeholders and participating in a number of initiatives to promote cross-border concepts and projects. One of them is, for example, ALEGrO, the first direct power link between Germany and Belgium. With this new DC connection, Amprion is providing urgently needed grid capacities for cross-border electricity flows. These initiatives also help to align price levels in the European countries. The EU also acknowledges the importance of the project to society. In 2018, the European Union added it to its list of "Projects of Common Interest" (PCIs). These cross-border power lines bring additional prosperity and welfare gains to Europe.

Local-level social commitment
Even beyond our core business, we are committed to being a good corporate citizen who champions a range of social issues. For example, we commissioned the Sozialtherapeutische Werkstätten Gottessegen – a regional socio-therapeutic institution based in Dortmund – to build our insect hotels.

Amprion also supports community work conducted by its employees through its "Soziale Projekte im Netz" (SPIN, Social Projects on the Net) funding programme. In this way, we encourage our employees to help good causes. In 2020, a total of eleven SPIN projects were funded, including a primary school basketball tournament, a wood workshop for children and the installation of playground equipment at day-care centres.

OUR MISSION?

TO CONSERVE NATURE.

FIELD OF ACTION
ENVIRONMENT

Amprion is helping to facilitate the energy transition by the manner it is operating and restructuring its grid infrastructure. In doing so, we are demonstrating how protecting the climate and environment belongs to our remit. Across our entire grid area, we implement measures that protect our natural resources and livelihoods. We design our routes and facilities in accordance with green standards and look to protect the climate and operate as resource-efficiently as we can in everything we do. In this way, we reduce the impact of our actions on the environment – and at the same time make positive contributions towards keeping nature intact.

Through our measures in the field of action entitled the "Environment", we are contributing directly to fulfilling **SDGs 13 – Climate Action** and **15 – Life on Land.**

ENVIRONMENT

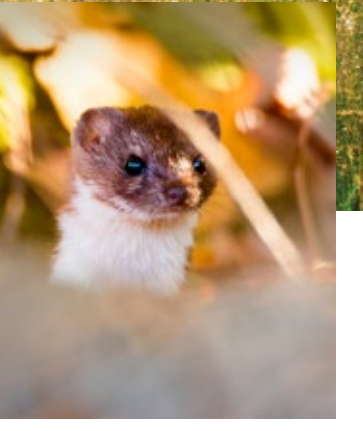
Transmission grids transport electricity over long distances from the generation centres to the consumption centres. In the process, the power lines cross landscapes, forests and meadows, coasts and waterbodies – and impact the various ecosystems.

We at Amprion see protecting these ecosystems as an important part of our remit. As a consequence, we consciously align our operational activities with ecological criteria. This applies both to how we design our routes and to how we operate our substations and our buildings.

For more than 20 years, Amprion has been playing a pioneering role in the area of conservative route maintenance. This is founded on a holistic approach: we take environmental aspects into account not only when planning but also when constructing and operating our power lines and other installations. And our input does not end simply once we have fulfilled the legal requirements. At the core of our commitment is our concept for environment-friendly route management, which has grown over the years. Thanks to our measures, numerous spaces have been created along the grid in which protected species have settled. At the same time, we have a responsibility to ensure that our overhead power lines have as little impact as possible on the habitats of birds and other protected animal species. And environmental aspects also play a significant role in our substation and underground cable projects. In particular, we take special precautions to protect soils and water resources. Amprion's comprehensive commitment to the environment also includes respecting and using resources as efficiently as we can. We use "green" materials in our plants and facilities, increase our energy efficiency and take measures to protect the climate.

POWER GRID IN THE AGE OF NATURE CONSERVATION

Amprion takes the protection of flora and fauna seriously both when expanding and operating its grid. In this way, we create the conditions for an environmentally compatible power line network. When it comes to grid expansion, we make as small a mark on the landscape and nature as possible. We then use our land to cultivate biotope structures that are typical of the local area.



In order to keep the impact of grid expansion as low as possible, Amprion creates ecological compensation areas – such as this one near Plettenberg in the Sauerland region. Kingfishers and weasels find suitable habitats here.

Grid expansion in harmony with nature

Grid expansion is indispensable if the energy transition is to be a success. This is the only way we can achieve the ambitious climate targets set by Germany and the EU. However, it does mean we have to make interventions in nature. In order to conserve resources and, in turn, protect mankind and the environment, Amprion follows the NOVA principle outlined in Germany's Energy Industry Act (EnWG). We only undertake grid expansion measures if existing grid capacities cannot be optimised or strengthened. This can be seen, for example, in our grid expansion project between Bürstadt (north of Mannheim) and Maximiliansau (on the opposite side of the Rhine from Karlsruhe). By equipping existing routes with more efficient lines, no new tracts of land were required.

If new route corridors are necessary, nature conservation plays an important role – along with economic viability, the interests of the local population and technical concerns. This is also taken into account by legislators. The aim is to avoid or minimise potential environmental impacts by means of technical measures. The environmental impacts of a project are assessed primarily by the environmental experts. Their findings are incorporated into the procedures that are then followed at federal or state level. Here, potential environmental impacts are assessed on the basis of corridors. Ecological criteria are also taken into account when deciding whether to use overhead lines or underground cables if the project is listed as a pilot cable project in the relevant legislation. During the course of the planning approval procedures, the possible environmental impacts of the route in question are dealt with in detail and on a site-specific basis.

AMPRION'S NATURA 2000 SITE IN THE SAUERLAND

Wherever new power lines or substations are built, nature and the landscape will change. Amprion compensates for these interventions at suitable locations. One such "ecological compensation area" is located near Plettenberg in the Sauerland region. This 50-hectare site is part of the nature reserve known as the "Lennealtarm Siesel" (meaning the 'cut-off Lenne river meander at Siesel') that hosts rare habitats. The number of species that live there is increasing from year to year. Animals such as the kingfisher, the grass snake, the black stork, the common lizard, the red-backed shrike and the white-throated dipper find a suitable habitat here.

Amprion is obliged to keep the impact on nature and the landscape as low as possible in all power line construction projects. We achieve this by taking ecological aspects into account from the very outset when planning our projects. In addition, Amprion adopts compensatory measures, which must be located in a landscape that is identical to that of the project location. For Amprion, however, this means having to identify and ecologically upgrade such areas, which are predominantly located within the grid area. Through such measures, flora and fauna find new habitats, some of which have become

rather scarce. In Dinslaken, for instance, Amprion has created a 20-hectare flower meadow with fruit trees that serves as a feeding and hunting habitat for insects and birds.

Ecological route management for overhead lines

Amprion's overhead lines span countryside with a very diverse range of vegetation. As early as 20 years ago, Amprion began to organise plant cover in the vicinity of its transmission routes according to environmental criteria – especially in the case of forests and wooded areas. Today, all of these routes are maintained in line with the principles and guidelines of an ecological route-management system. In this way, we ensure the trouble-free transmission of power and, at the same time, protect the existing flora and fauna along our overhead lines.

To enhance its ecological route management, Amprion brings together know-how from a wide range of different fields. This includes external experts in landscape protection and nature conservation as well as other employees at Amprion who specialise in route maintenance. Furthermore, we are in constant dialogue with authorities and nature conservation associations.

The framework for route maintenance is set out in a separate concept that lays down key principles: according to this, forest areas along our transmission routes should be maintained in such a way that vegetation can develop in the long term without interfering with the overhead lines. The concept also includes maintenance measures that support and nurture flora and fauna typical of the region. Management plans form the basis for this. In these plans, all areas of our overhead line routes are mapped and divided into 'maintenance units'. This enables us to adapt the route maintenance measures necessary to ensure safe operation of the grid in keeping with the respective local conditions.

~ 9,000

hectares are currently being maintained on the basis of ecological route management.

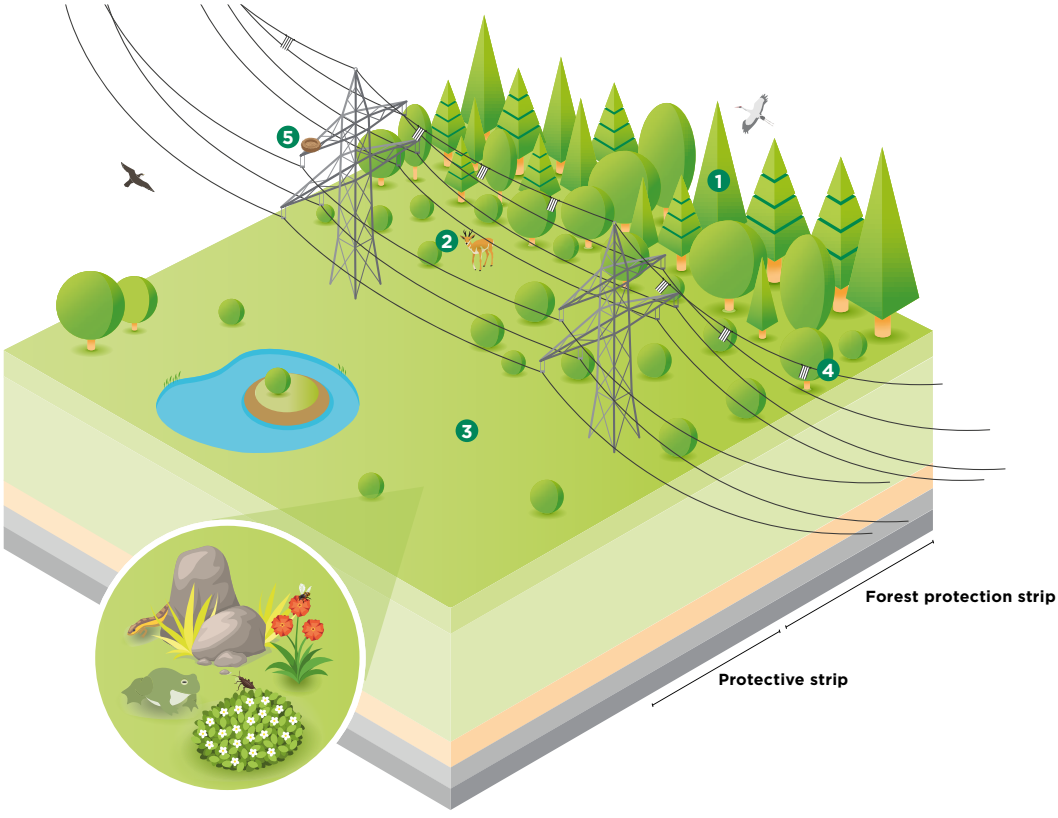
Successes for flora and fauna

The principles of ecological route maintenance place special demands on routes that cross forests. To ensure trouble-free operation, it is essential to keep adequate clearance between live conductors and the surrounding vegetation. To this end, we remove fast-growing species of tree and promote various species of shrub and trees that grow slowly. In this way, we ensure a smooth transition between the route vegetation and the adjacent woodland at the periphery of the protective strip. This creates stable, structured borders to the woods and forests that provide a habitat for a multitude of species and even enhance this habitat.

POWER LINE = LIFELINE

AMPRION PROTECTS HABITATS

Power line = lifeline – by this we mean our power lines, which pass through long stretches of open landscapes, forests and meadows. They are the backbone of the power supply system but also a habitat for countless species of animals and plants. For over 20 years, we have been maintaining and cultivating these habitats beneath our overhead power lines – and also taking measures to protect the flora and fauna. To do this, we use route management plans on which the areas beneath our lines are divided into “maintenance units”. Route maintenance is adapted to the respective local conditions.



1 Forest border management: Promotion of stable and highly structured forest borders with shrubs and low-growing tree species.

2 Biotope network structures: Overhead power lines can interconnect the differing habitats of various animal and plant species.

3 Open landscapes: Maintenance of valuable habitats in open landscapes, such as rough pastures, hedgerows or heathland.

4 Bird protection: Reducing the collision risk to birds by installing bird protection markers on the earth wires.

5 Pylons as breeding sites for birds: If necessary, securing nests or installing species-specific nesting aids.

We regularly visit Amprion's underground cable construction sites and testing grounds to check the condition of the soil.

For example, rare animal species such as the narrow-headed ant and the European stonechat benefit from our ecological route maintenance. As further evidence of the success of our measures, some of our route areas have been designated as parts of German or even European protected areas (e. g. Fauna Flora Habitats = FFH areas). This shows that the construction and operation of power lines by no means has to conflict with landscape protection, nature conservation and the protection of birds. Responsible management can even create new habitats.

Soil protection when laying underground cabling

Amprion relies on innovative power-transmission technologies and also takes their environmental compatibility into account. This also applies to underground cabling, which, while it preserves the landscape, in some cases requires extensive earth-moving measures. Independent experts therefore draw up a comprehensive soil-protection concept for each of our underground cable projects. This serves as a basis for the examination and evaluation of environmental concerns. A soil expert continuously supervises the construction work and subsequent interim management activities on site in order to ensure that the underground cable is laid in a "soil-friendly" way. Once soil-friendly construction of the underground cable system and site-specific recultivation of the soil have been completed, the land can generally go back to being used for agricultural purposes as it had been before.

In pilot projects, Amprion is gaining relevant knowledge on, among other things, the environmental impact of underground cable lines during their construction and operation. Our underground cable project in Raesfeld stands out in particular. Early citizen participation, a soil protection concept that was new at the time, and constant supervision of the construction and subsequent interim management activities by soil experts ensured that the pilot project was implemented in a way that protected the soil. A comprehensive monitoring programme was also set up for this project: around 700 sensors continuously measured the level of warming and the water balance of the soil in the immediate vicinity of the cable. In addition, we used drones to take infrared images of cornfields in the area of the underground cable route in 2019 and 2020. The outcome: along the entire route, the yields differ only slightly from those on the neighbouring areas of land. This shows that the yield capacity of the soils is largely preserved by successfully implemented protective measures.

“In projects such as the underground cable in Raesfeld, we are always learning something new. We also share the knowledge we have gained with policymakers, NGOs and other transmission system operators. In this way, we not only refine our own soil protection concept, but also deliver important findings with respect to the environmental compatibility of underground cable projects. We use these findings in further projects to continuously make improvements to site-specific solutions.”

LUKAS ZANTOPP
Head of Environmental Planning/Nature Conservation Power Lines

Amprion’s soil protection efforts in Raesfeld aroused a great deal of interest and triggered an intensive dialogue on the subject of soil protection with other transmission system operators, non-governmental organisations and approval authorities. In 2020, together with the other German transmission system operators, we collated and summarised the findings from the pilot projects in a report entitled “Field report on the use of underground cables in the extra-high-voltage three-phase AC segment” and submitted it to the Federal Ministry for Economic Affairs and Energy (BMWi).

Water conservation

Whether groundwater, lakes, rivers or oceans – the protection of waterbodies is of key importance to humans as well as to nature and wildlife conservation. This is why Amprion takes care to protect important aquatic ecosystems during the construction and operation of substations and power lines on land and out at sea. As a matter of principle,

we consistently comply with the laws at EU, federal and state level with regard to water and marine conservation throughout the entire construction and utilisation phase. We also take the protection of aquatic ecosystems into account right from the planning stage.

Offshore lines need to be built in order to connect offshore wind farms to the onshore transmission grid. The expansion of offshore wind energy is a central component of the energy transition. This is also becoming increasingly important in view of the rising demand for electricity. Amprion is connecting offshore wind farms in the North Sea to the transmission grid in order to bring the increasing volumes of offshore wind energy onshore. This will require cables to be laid in sensitive coastal areas such as the Wadden Sea and the North Sea. Over and above the legal requirements set down at EU, federal and state level, we are taking measures to protect the habitats there. In the Wadden Sea National Park, for example, we follow the "zero discharge principle". That is, we leave nothing behind that does not naturally occur there. When laying the power cables in the Wadden Sea National Park, we adhere to prescribed construction time windows in order to impact the flora and fauna as little as possible. At the same time, we use a variety of tried-and-tested cable laying methods that protect small animals in and on the seabed as much as possible. As part of our marine conservation efforts, we also show consideration for marine wildlife. When installing the converter platforms out at sea, we take special noise control measures to protect the very acute hearing of marine animals such as the common or harbour porpoise.

Water conservation also plays a role at Amprion's onshore switchgear and substations: transformers and reactors are filled with oil used to cool and insulate them. A leakage would endanger the groundwater. For this reason, we equip all installations with containment (capture) and protection facilities. For example, transformers are always positioned on oil-proof drainage surfaces with associated containment basins. These prevent oil from seeping into the ground and contaminating waterbodies in the event of a leakage. At the same time, we are investigating the use of alternative insulating agents and biodegradable oils.

SPECIES PROTECTION

By following a comprehensive ecological route management programme, Amprion creates new habitats along its power line routes. At the same time, our extensive transmission grid helps to connect ecosystems with one another. This creates a network of biotopes that prevents the "islanding" of species and fosters their development. Species protection also means protecting animals while our overhead lines are in operation. In this context, in addition to our efforts to protect animal and plant species, we are particularly committed to the protection of birds.

Collaborating to support bird protection: we have been working very closely with scientists and conservationists for more than 20 years.

Commitment to bird protection

The protection of birds is a major issue for Amprion. Our acclaimed work has evolved over a period of more than 20 years. To celebrate the first 20 years, we held a conference in 2018 entitled “Bird protection on extra-high-voltage overhead lines”. The following year, we published a transcript of the discussions held and the presentations given by the experts at the conference.

Our bird protection work is characterised by strong liaison and teamwork with scientists and nature conservationists. Our activities first kicked off with joint research projects conducted with ornithological field stations, universities and associations, in which we investigated the dangers that our overhead power lines can pose to birds. Subsequently, together with experts, we initiated our own bird protection programme. This gave rise to measures that are now an integral part of our overhead line management. This includes the development of bird protection markers. Thanks to the bird protection markings attached to the earth wires above the conductor cables, the collision risk for some species can be reduced locally by up to 90 per cent. As part of our bird protection programme, Amprion also equips suitable route sections with nesting aids. In this way, we enable various species such as the white stork, kestrel and peregrine falcon to breed on pylons. Our ecological route management also contributes directly to successes achieved in bird protection – such as in Mörfelden-Walldorf in the state of Hesse. Thanks to many years of targeted management of the heathland in the area, the populations of rare bird species there have developed positively. The overhead line route has therefore been integrated into the Special Protection Area (SPA; in accordance with the EU Birds Directive) known as “Mönchbruch und Wälder bei Mörfelden-Walldorf und Groß-Gerau”. And species such as stonechat, red-backed shrike, woodlark and wryneck are benefitting from this.

~332

kilometres of our power lines are now equipped with bird protection markers.

To ensure effective bird protection, Amprion also cooperates with environmental associations as important expert partners. Together with other grid operators, we support, for example, the “Bird hotline” portal operated by the German branch of BirdLife (Naturschutzbund Deutschland e. V., or NABU for short) on behalf of the Renewables Grid Initiative (RGI). The aim is to help identify route sections that are particularly relevant from the point of view of bird protection. For this purpose, grid operators and NABU are now, for the first time, jointly evaluating data. In the coming years, Amprion will also be involved in the EU-wide bird protection project “LIFE EUROKITE”. Since 2020, this project has been tracking movement profiles of birds of prey such as the red kite. On this basis, the researchers are identifying critical areas across Europe in order to target and reduce threats to these birds throughout their geographic range. As part of our long-term commitment to bird protection, we will in future continue to work with experts on a range of measures and projects.

By introducing our flowering-meadow concept, we are bringing more and more areas around our substations to bloom and creating important habitats for insects.

Contributing to biodiversity through flowering meadows

Amprion is committed to insect protection and promotes biotopes for insects in its own grid area by planting flowering meadows. Among other things, we turn the numerous and extensive areas of land on which our facilities stand over to this purpose. In this context, Amprion has developed a flowering-meadow concept on its own initiative. With the aid of this concept, we are examining to what extent we can create flowering meadows and set up insect nesting aids on our company premises. Since the launch of the flowering-meadow concept in 2019, new habitats have been created in a total of ten flowering meadows located, for example, at our substations in Dortmund and Opladen and at our sites in Brauweiler, Föhren near Trier and Lotte near Osnabrück. Amprion had all of the insect nesting aids for all locations built by a regional socio-therapeutic institution in Dortmund with its own workshops – the Sozialtherapeutische Werkstätten Gottessegen.

RESOURCE EFFICIENCY AND CLIMATE PROTECTION IN THE COMPANY

At Amprion, environmental protection starts “at home”, that is, in the company. By taking measures in our plants and facilities, we are helping to conserve resources and protect the climate.

Environmental management at Amprion

Amprion has summarised the key principles of its environmental management programme in its Environmental Guideline. In order to implement this programme effectively, we attach great importance to ensuring that we apply recognised standards. Our environmental management system is therefore certified in accordance with international

standard ISO 14001. Amprion has set up a separate in-house policy unit to handle its corporate environmental management responsibilities. The actual activities involved in corporate environmental protection, as an element of environmental management, are performed by the relevant specialist departments. One exception to this is the environmental protection officer, who is directly assigned to the staff department.

Respecting and conserving resources

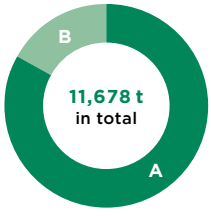
In Amprion's core business, most resources are used to expand the grid infrastructure. Steel, concrete, aluminium and copper in particular are required in the construction of overhead lines, underground cables, substations, transformers and other installations. After construction, material usage is largely limited to the maintenance of power lines and installations. Even if our consumption of resources is manageable, we focus from the word go on using them efficiently. In this context, we make a point of deliberately using durable materials in the construction of our power lines and, where possible, recycling them once they are no longer in use. What is more, recycled materials, such as FSC/PEFC-certified paper, are increasingly being used in our administrative buildings.

Resource conservation as a goal

The most important resources for Amprion are steel, concrete, copper and aluminium, as well as gas, oil and coal. We want to use them as efficiently as possible. To this end, we are currently working to identify potentials for paring down the use of resources, analysing where the greatest consumption levels lie in order to target their reduction. In the coming year, we will be drawing up quantitative targets for the resources we use most.

TOTAL VOLUME OF WASTE

Total quantity of waste, share recovered/recycled



A 83.3% – share recovered/recycled
B 16.7% – share disposed of

As we use resources, we make sure that we handle reusable and recyclable materials with care. Where possible, we avoid waste or promote its recycling. All unavoidable wastes are collected separately and disposed of in compliance with the legal requirements. Typical wastes generated by transmission system operators are, for example, steel-reinforced aluminium conductors, copper, steel and insulating oils. For these types of waste, we have developed appropriate recycling channels. We employ a waste balance sheet to record all waste-related data, such as the type, quantity and whereabouts of the wastes, which we regularly evaluate. In this way, we create full transparency vis-à-vis the authorities.

In 2020, Amprion generated some 11,678 tonnes of waste. The majority of this, around 9,587 tonnes, consisted of non-hazardous waste materials. In all, 83 per cent of the total volume of waste generated was sent for recycling.

When constructing and operating our installations, the resource-friendly use of materials such as steel and copper is very important to us.

Increasing energy efficiency

Amprion requires energy for its operational processes. In order to make these processes as energy-efficient as possible, we installed an energy management system as long ago as 2013. Following continuous development, this system has been certified in accordance with ISO 50001 since 2014. We have laid down processes, measures and targets in our Energy Management Manual. In total, Amprion consumed around 146,920 MWh of energy in 2020.

Amprion uses diesel, natural gas and electricity as its energy sources. The bulk of the electricity we consume is attributable to the operation of our substations and switchgears. Apart from this, we use electricity – and natural gas – to run and heat our administrative buildings. Amprion uses diesel to run its fleet of vehicles, which technicians use to get to the grids in order to carry out servicing work or make repairs in the event of a malfunction or outage, because this can sometimes entail long journeys over rough terrain.

Our pursuit of energy efficiency is also reflected in the design of our buildings. In principle, all new buildings at Amprion provide the highest level of energy efficiency. The new headquarters in Dortmund, which opened in 2019, is a model of sustainable building management. This building was planned and built in line with the gold standard of the German Sustainable Building Council (DGNB). Thanks to innovative heating and cooling technology and other energy efficiency measures, its primary energy requirement is comparatively low. 70 per cent of this is covered by renewable energies, primarily geothermal energy in combination with photovoltaics (PV). These energy sources are also playing an increasingly important role in existing buildings. And whenever we construct new buildings, we always include PV systems in our plans.

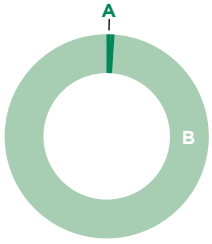
Climate protection "on home soil"

Climate protection is part of Amprion's social responsibility. We also face up to this responsibility in our own operations. For instance, we are constantly working to reduce greenhouse gas emissions. In 2021, we will also develop a concrete, measurable climate target.

In order to identify potential savings, we measure our greenhouse gas emissions at regular intervals. We are currently analysing our CO_2 emissions and possible abatement potentials in order to be able to set quantitative reduction targets by 2022. In 2020, Amprion generated greenhouse gas emissions of around 1,115,915 tonnes of CO_2 equivalents. According to the definitions of the Greenhouse Gas Protocol, these consist of direct (scope 1) and indirect (scope 2) emissions. Scope 1 emissions accounted for around 8,894 tonnes of CO_2 equivalents in the year under review. They are produced in our own company through the combustion of natural gas and fuels. Sulphur hexafluoride (SF6) also accounts for a large share of scope 1 emissions. This is a gas that is used as an insulating agent in high-voltage equipment, where it can escape in the event of a leak, for example. The majority of our greenhouse gas emissions, on the other hand, are scope 2 emissions. In 2020, these amounted to 1,107,021 tonnes of CO_2 equivalents. They arise during the generation of the electricity we consume, but especially through energy transmission losses via our lines. These losses inevitably arise whenever electricity is transmitted, and Amprion can influence them only to a limited degree.

GREENHOUSE GAS EMISSIONS

Emissions, shares of scope 1/2 in tCO_2e



A **8,894 tCO_2e** – scope 1
B **1,107,021 tCO_2e** – scope 2

With regard to our direct emissions, we are working very hard on reducing SF6 emissions, as SF6 is a far more potent and persistent greenhouse gas than CO_2. Since the introduction of an SF6 management system, the SF6 gas in equipment that is to be scrapped has been extracted, reconditioned and reused in new devices. As a result, we now no longer need to purchase as much SF6 to fill new HV equipment. Furthermore, under the umbrella of ENTSO-E, we are helping to find better and safer ways to handle SF6 gas and are contributing to research into alternative insulating agents. In this context, Amprion undertakes to limit the annual discharge of SF6 used in existing plant to less than 0.5 per cent. In 2020, SF6 losses at Amprion were as low as 0.13 per cent. We are also currently piloting a number of SF6-free voltage transformers on our 220 kV lines, with further transformers planned to be trialled in our 380 kV system.

In order to also reduce emissions during operation, we have installed geothermal heat pumps in a number of our buildings. And we are also working to speed up the electrification of our own vehicle fleet by installing charging stations.

KEY DATA ENVIRONMENT

Energy consumption*

in MWh	2020	2019	2018
Total	**146,920**	**135,455**	**135,981**
Diesel	7,901	7,893	7,516
Petrol	55	107	87
Natural gas	8,333	6,548	6,093
Electricity	130,631	120,907	122,285

* Excl. grid losses

Greenhouse gas emissions

in tCO_2e	2020	2019	2018
Total	**1,115,915**	**1,012,830**	**1,239,551**
Scope 1	**8,894**	**9,886**	**10,147**
Fleet fuel	2,123	2,134	2,028
Gas consumption	1,683	1,322	1,231
SF6 losses	5,084	6,430	6,863
Refrigerant losses from A/C units	4	0	25
Scope 2	**1,107,021**	**1,002,944**	**1,229,404**
Own consumption of electricity	52,383	48,484	57,229
Grid losses	1,054,638	954,460	1,172,175

SF6

	2020	2019	2018
SF6 emitted [kg]	223	282	301
SF6 losses [tCO_2e]	5,084	6,430	6,863
SF6 losses [%]	0.13	0.17	0.19

Waste

	2020	2019	2018
Total [t]	**11,678**	**9,687**	**12,053**
Non-hazardous waste	9,587	8,112	10,514
Hazardous waste	2,091	1,575	1,539
Recovery/recycling [%]	83.3	94.1	56.4
Disposal* [%]	16.7	5.9	43.6*

* The comparatively high disposal rate is the result of an unusually large amount of soil from construction measures that had to be disposed of.

OUR BEDROCK?

COMPETENT AND COMMITTED EMPLOYEES.

FIELD OF ACTION EMPLOYEES


amprion
amprion

Amprion makes sure that the lights never go out and that electricity from renewable energy sources reaches the people. This is made possible by our workforce of more than 2,000 employees. They play their part in keeping the power grid stable and safe – and in paving the way for a sustainable energy system. A prerequisite for this is a working environment that takes both their potentials and their needs into account. That is why Amprion offers a safe and secure working environment, promotes a corporate culture based on togetherness and develops and broadens the skills of its employees.

Through our measures in the field of action entitled "Employees", we are contributing directly to fulfilling **SDG 8 – Decent Work and Economic Growth.**

EMPLOYEES

Transmission system operators are active in an environment that is undergoing a massive transformation. Technical, regulatory and digital innovations make it necessary to constantly adapt to new circumstances.

Amprion is facing up to the growing challenges with a diverse and motivated workforce. More than 2,000 people – this being some 20 per cent more than in 2019 – are employed at our headquarters in Dortmund, the System Operation and Control Centre in Brauweiler (Pulheim) near Cologne as well as in Ludwigsburg and more than 30 regional operating sites and project offices. Amprion brings together people with a wide variety of professions at these sites, ranging from engineers, master craftspeople and technicians to landscape ecologists, project managers and IT experts.

This diversity of professional experience combined with the different backgrounds of our employees is a reflection of Amprion's corporate culture. It makes it possible to pool different fields of expertise and to work on solutions from an interdisciplinary viewpoint. In our day-to-day business, we therefore also promote cross-disciplinary work. Attractive jobs and a safe and healthy working environment are the foundation on which we build a motivated, efficient and united workforce at Amprion. We rely on recognised occupational safety standards that allow our staff to work safely on our grid. In addition, Amprion pursues a needs-oriented personnel development policy. We are continuing to build and expand the skills required to transform the energy system and are developing our employees in line with their needs and potential. To also increase the level of employee satisfaction within the company, we are creating opportunities and ways to help our employees find their own work-life balance.

OCCUPATIONAL HEALTH AND SAFETY

A safe workplace with healthy employees is the basis for motivated, satisfying and successful work. To ensure this, Amprion has put an occupational safety management system and a company health management system in place in which it lays down suitable parameters, processes and measures. This serves to ensure that employees go home each day as healthy as when they came to work.

Safe working

At Amprion, employees frequently work not only close to high-voltage components but also at great heights and beneath heavy loads. Work in the stations and on the power lines in particular therefore demands the highest safety standards. To achieve this, Amprion has installed an occupational safety management system certified in accordance with the OHSAS 18001 standard. We are currently in the process of switching this system over to be in line with the international standard ISO 45001. An occupational safety management officer is coordinating this changeover throughout the company.

All executives and employees have a role to play when it comes to occupational safety. Occupational safety is therefore a daily companion and an important part of their work. Accordingly, we encourage and help our employees to acquire appropriate qualifications in this field by offering regular advanced training measures. To this end, Amprion employs the services of external training providers as well as developing its own in-house formats, such as workshops or self-produced occupational safety videos. In 2020, such measures also included a workshop conducted in conjunction with installation companies involved in the construction of high-voltage overhead lines. During the course of this workshop, we discussed existing hazards and measures with internal and external experts with the aim of making further improvements to safety-critical work processes.

In 2020, we succeeded in reducing the number of work-related and commuting accidents among our employees compared to the previous year, despite an increase in staff of around 20 per cent. With a total of 15 accidents, this figure was two lower than in 2019. Most of these were minor accidents unrelated to the work process. Only five incidents were directly related to work processes.

Health promotion

Amprion not only creates a safe working environment, but also promotes the health of its employees. To this end, we also provided numerous preventive health care offerings in 2020. These included health days, various prevention courses and cancer screenings. In order to keep these services up and running during the pandemic, we have increasingly resorted to online and virtual measures. Moreover, Amprion actively involves its employees in matters of health promotion. Staff can submit suggestions in relation to the topic of health promotion to the health and prevention committee, the company's health management team or when discussing the issue with responsible contacts at the sites.

We want to use our various training programs to get more women interested in technical professions.

ACTIVE PERSONNEL DEVELOPMENT

At Amprion, teams with diverse experience, perspectives and skills master the growing complexity of our day-to-day work. At the same time, it is important to adjust to the new developments and technologies being introduced. This is why Amprion believes and invests in active personnel development. By doing so, we are empowering our employees to develop the best possible solutions for a climate-neutral, secure and efficient energy system.

Initial training

Amprion offers a range of apprenticeships in both commercial and technical occupations. Our training programme also includes degree courses in line with Germany's "dual system" that combines practical, on-the-job training with academic studies of higher education. This allows students to gain a profound insight into precisely what we do and get to know us, as their future employer, inside out, while also studying for their bachelor's degree. By offering this option, Amprion aims to develop talented people for specific tasks and responsibilities, while at the same time countering the demographic forces at play from within the company. Industrial placements and student traineeships, which we offer in many different fields and all year round, also play their part towards achieving the latter goal.

At the end of 2020, 43 women and men were undergoing vocational training at Amprion, 16 of whom were in their first year of training. A total of nine trainees also successfully completed their training in 2020. Seven of them then immediately began their careers at Amprion.

Personnel development – needs-based, tailored and targeted

The often complex tasks that have to be carried out at Amprion require particular competencies, specialist know-how and a wide range of skills and abilities. We impart such knowledge in training courses, seminars or workshops that are aligned with our corporate goals and our legal mandate. The personal and professional development of employees is complemented by various opportunities for professional engagement. These include active participation in (specialist) committees, participation in external development measures and project-related dialogue with research institutions. Thanks to its forward-looking personnel development policy, Amprion has been able to fill a large number of management positions from within the company.

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new employees started work at Amprion last year.

In view of the rapid changes underway in the energy sector, employees must be optimally prepared for the tasks ahead. For this reason, our employees begin their continuing professional development from the very moment they join the company. Onboarding helps new colleagues to find their way around quickly. In addition, mentors supervise and support new employees through their first steps in the company. At the beginning of this initial training phase, Amprion also welcomes them to interdisciplinary informational events such as “Welcome@Amprion”. The main part of onboarding takes place on site at the apprentices’ workplace, where they are taught both specialised and interdisciplinary knowledge. Due to the coronavirus pandemic, last year’s onboarding activities increasingly had to take place over the telephone or via video conferences. To enable this, we provided our new employees with, among other things, laptops or smartphones so that they could work from home.

Amprion offers all employees advice on all personnel development issues. Each employee spends an average of 38 hours attending advanced training measures every year. Amprion focuses on needs-oriented and tailored solutions for its personnel training. At the initiative of the employee or their supervising manager, timely meetings are held to discuss the need for personnel development measures. To ensure that these are as targeted as possible, we are currently drawing up specific development concepts – such as for aspiring and present managers, project leaders and proven specialists. Depending on the target group and the extent of previous knowledge and experience, content-related focal points and learning objectives are defined. Amprion also offers workshops to employees in key positions to support them in change processes.

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in-house advanced training events were conducted for our employees in 2020.

CORPORATE CULTURE

Having competent, motivated and committed employees is crucial to the success of any company. On the one hand, a common corporate culture is the essential prerequisite for ensuring precisely that. On the other hand, it is the result of the behaviour, attitude and the efforts of each individual member of the workforce.

Creating and living common values

Amprion's corporate culture has developed from the culture of its predecessor companies and since the founding of Amprion GmbH has developed into a strong system of values. It is substantially shaped by the characters, experiences and attitudes of our employees.

To ensure that our corporate culture and corporate success continue to remain in harmony with one another, we have repeatedly examined, by a range of different means, how our corporate culture manifests itself – for example, as part of employee surveys, workshops for the management team or through evaluations conducted by external researchers. The key take-away? Amprion's strong corporate culture is built on a togetherness and teamwork amongst what is a highly professional workforce. That said, it is also important to consciously fine-tune certain individual elements of our culture in order to prevent unnecessary friction.

With this in mind, we have begun in 2021 to take a closer look at how we work together, with particular regard to the elements of appreciation, transparency, learning objectives and interdepartmental cooperation, and to further improve them where necessary. Amprion will follow this development path over the next few years in order to further cultivate and strengthen our corporate culture for the long term. In doing so, we will ensure that employees continue to identify with their role at Amprion, provide their outstanding services with great enthusiasm and showing mutual respect for one another, and ultimately contribute to the transformation of the energy system.

Good working conditions

Amprion offers attractive working conditions. Among other things, these include performance-related remuneration and fair work time arrangements. The collective agreement determined between the employer and the employees forms the basis for this. In addition, we are guided by internationally established standards such as the core labour standards of the International Labour Organization (ILO) and the UN Global Compact.

We continuously integrate the interests of our employees. The Management Board and Joint Works Council are committed to this and are initiating concrete measures: we keep our employees constantly informed about the latest operational developments – at works meetings, via the intranet, the staff magazine, notice boards, and newsletters. And in order to promote a direct exchange of thoughts and ideas, the Management Board has in 2021 also begun to regularly invite the workforce to join in online chats.

Amprion also runs an established ideas management system designed to encourage active collaboration. Employees can use it to submit suggestions for improvement. In this way, we also promote the exchange of experiences and the transfer of knowledge in everyday working life. The spectrum of suggestions is wide and covers occupational health and safety as well as technical improvements, environmental protection and commercial processes. All ideas accepted are rewarded with a bonus.

Amprion also involves its employees in the issue of sustainability. Central to this is the company's Sustainability Officer, who pools all expertise relating to sustainability within the company, is the go-to person for all employees for advice on the subject, and promotes the exchange of information between the departments within the framework of the sustainability management system. The opinions of our employees are also taken into account when determining the key sustainability issues.

EMPLOYEE SURVEY ON THE ISSUE OF SUSTAINABILITY

Sustainability is important to our employees. This has been confirmed by a survey conducted as part of the Materiality Analysis 2020, in which over 600 Amprion employees took part. By doing so, they helped us to identify the sustainability issues of relevance to both them and us.

Advice and support for employees

Amprion wants to be a partner to its employees and supports them beyond what is required by law. One example of this is the Employee Assistance Programme. In this program, we offer our employees support in matters related to any health, family, psychological or legal problems they may be experiencing. All employees – and their relatives – can contact a 24/7 hotline we run to ask for advice. Medical and psycho-social counsellors will answer their questions and provide them with valuable assistance. This confidential service is also available to employees while they are on business trips or vacation.

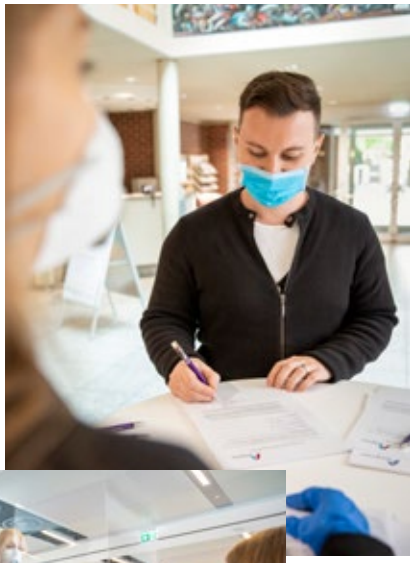
Diversity and equal opportunities

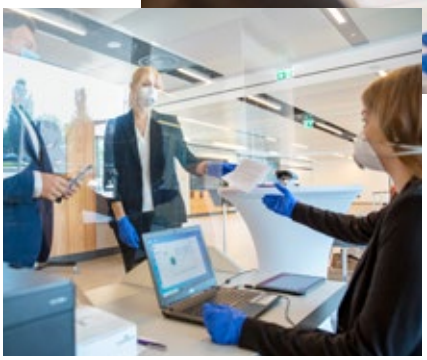
Amprion brings together people from very different backgrounds. We also live and experience cultural diversity in the context of our international cooperation with European partners. This diversity, collaboration among colleagues and the equal treatment of everyone characterise our daily interactions. This is why Amprion also consciously opposes any form of discrimination – be it on the basis of gender, nationality, ethnic

Day-to-day interaction at Amprion is characterised by collaboration among colleagues and the equal treatment of all people.

HEALTH

WORKING DURING THE CORONAVIRUS PANDEMIC





Even under the extremely difficult conditions resulting from the Covid-induced lockdowns, Amprion's employees have fully shouldered their responsibilities, whether it be in the System Operation and Control Centre in Brauweiler, at the operating sites, on the construction sites or at headquarters. Extensive measures taken to protect our workforce against the SARS-CoV-2 virus minimised the risk of infection. For example, Amprion responded exceedingly quickly to the situation and provided our employees with the equipment they needed so they could work from home. This is one reason why there were ultimately no confirmed cases of Covid-19 at any of Amprion's sites. At one point, around 1,300 staff members were working from home. Thanks to an array of concepts and the commitment of our employees, all processes were able to be kept up and running. Special priority was given to employees with a family, too. To relieve the pressure on them, Amprion came up with individually tailored, needs-based solutions, whether it be emergency childcare in a day-care centre or paid time off so they could look after their children themselves. And despite the pandemic, Amprion's HR department continued to foster its employees' professional development by, for example, expanding the range of virtual training courses available.

origin, religion, ideology, disability, age, sexual orientation or identity. To express this commitment, Amprion has signed the “Charta der Vielfalt” (Diversity Charter) – a charter founded by the eponymous German foundation based in Berlin – and is intensifying its diversity activities. In 2020, no cases of discrimination came to light at Amprion.

The issue of equality is reflected in a number of initiatives. In October 2020, the first meeting of the new LGBTIQ network took place. The aim of this initiative is to support the interests of lesbian, gay, bisexual, transgender and other non-binary people at Amprion. The network now has 19 members. The patron of the initiative is Dr Hans-Jürgen Brick, Amprion’s CEO. Likewise, 2021 has also seen the launch of a women’s network, which tackles the issues of equal rights, the advancement of women and the compatibility of private, family and professional life. Women currently account for around 20 per cent of Amprion’s workforce.

Work-life balance

Employee satisfaction is also linked to an attractive work-life balance. To offer our workers a healthy work-life balance, Amprion puts conditions in place that allow them to enjoy a productive working life that harmonises with their private life and the needs of friends and family. On the one hand, we believe in flexible working hours, which we have made possible by, for example, installing a time-tracking system. On the other hand, we are creating childcare options for parents. These include parent-child offices at our Dortmund and Brauweiler sites, which employees can use as a workplace in the event of a childcare emergency and that offer a child-friendly environment. In addition, Amprion organises places in child day-care centres for employees’ children. Similarly, we also support the growing desire of fathers to take parental leave.

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nationalities: Amprion successfully brings together people from greatly differing backgrounds.

Volunteer work by employees

Amprion wants to promote on a small scale what holds society together on a larger scale. That is why we are committed to sponsoring social causes. Through our “Social Projects on the Net” (SPIN) programme, we support employees who do volunteer work in their free time. Those projects that have been granted funding so far reflect a broad spectrum of civic engagement: from child education and upbringing, through care for the elderly and disabled, to sport, culture and environmental protection. The Joint Works Council and Amprion decide jointly on the allocation of grants.

KEY DATA EMPLOYEES

Workforce

	2020	2019	2018
Total no. of employees	**2,037**	**1,682**	**1,425**
Full time	1,911	1,565	1,308
Part time	47	41	36
Permanent	1,953	1,619	1,383
Temporary	84	63	42
Pay scale	1,614	1,308	1,107
Non-pay scale	389	342	289
Senior executives	34	32	29
New hires	424	324	186
Turnover [%]	1.5	1.8	1.3

Age structure

	2020	2019	2018
Average age overall	**39.7**	**40.6**	**41.6**
< 30	417	324	256
30–50	1,245	994	826
> 50	445	425	400
No. in semi-retirement	79	76	81
Average age in supervisory bodies	**52.1**		
< 30	0		
30–50	8		
> 50	8		

Equal opportunities

	2020	2019	2018
Overall proportion of women [%]	**20.4**	**19.3**	**18**
Proportion of women in management positions	8.8	6.7	6.3
Proportion of women in supervisory bodies	18.8	16.7	8.3
Proportion of severely disabled employees	2.7	2.8	3
Cases of discrimination	0	2	0

Basic and advanced training*

	2020	2019	2018
Trainees	**43**	**36**	**36**
Proportion of trainees [%]	2.1	2.1	2.5
Advanced training courses			
In-house training events [no.]	612	412	294
Participations at in-house training events [no.]	4,335	3,186	2,273
Participations at in-house training events [no.]	632	564	478
Average no. of hours of advanced training per employee per year (qualified estimate)	38	38	38

* A breakdown by gender is of no relevance to Amprion's management activities and is therefore not reported.

Occupational health and safety

	2020	2019	2018
Work-related/commuting accidents [LTI]*	**15**	**17**	**17**
Rate for work-related/commuting accidents [LTIF in %]**	4.6	6.5	7.4
No. of deaths	0	0	0
No. of work-related/commuting accidents among contractors' workers	32	39	24
No. of deaths among contractors' workers	0	0	1

* Lost time incident (LTI)

** Lost time incident frequency (LTIF): no. of occupational accidents resulting in lost time (> 24 h) per 1,000,000 man-hours actually worked

REPORT PROFILE

Content and scope of the report

This report is the first Sustainability Report published by Amprion GmbH, headquartered in Dortmund. It provides information on the company's non-financial performance in the reporting year 2020. Quantitative information is generally presented on a three-year comparison basis (2018–2020); qualitative information has been included in the report up to the editorial deadline of 30 June 2021. There was no external review of the content of this report.

German Sustainability Code (DNK) as a framework

The report has been drawn up in accordance with the criteria of the German Sustainability Code (DNK) as a framework. The internationally applicable Sustainability Code was developed by the German Council for Sustainable Development (RNE) and provides a framework for reporting non-financial performance in the areas of strategy, process management, environmental concerns and society. The 20 criteria and the complementary GRI (Global Reporting Initiative) performance indicators of the GRI standards make Amprion's sustainability performance transparent and comparable. The German Sustainability Code index (on page 103) refers to the passages in the report that make reference to DNK criteria. In addition to the Sustainability Report, the DNK declaration of conformity can be viewed on the DNK website.

Further information and follow-up report

This is a translation of the German version. In cases of uncertainty or conflict, the German version shall prevail. Amprion's Sustainability Report is published both in printed form and online on our website.

https://www.amprion.net/sustainability/

The next comprehensive report will be published in mid-2023.

GERMAN SUSTAINABILITY CODE (DNK) INDEX

The full DNK Declaration with detailed reporting of all criteria is available for download at: **www.deutscher-nachhaltigkeitskodex.de**.

The SUSTAINABILITY Code Signatory 2020

DNK sec.	DNK criteria	Comment/Declaration of omission	Page reference
Strategy	**01 Strategy**		18, 20–21, 24–25, 27–31
	02 Materiality		23–26
	03 Objectives	Amprion already published detailed objectives in 2019 in the annex to the Sustainability Strategy Report. We are currently working on further SMART goals, particularly in the areas of human rights and the climate.	21, 27–31, 39–40
	04 Depth of the Value Chain		34–35, 41
Process Management	**05 Responsibility**		20–21, 26
	06 Rules and Processes		36–39, 64, 85–86, 93–94
	07 Control		21, 37–39, 86–87
	08 Incentive Schemes	Flexible remuneration schemes for executives and employees are in place at Amprion. Sustainability goals have been included in the target agreement for selected employees. The Supervisory Board is kept informed of developments, goals and measures relating to sustainability. It monitors the Management Board, also with regard to the achievement of selected sustainability goals. Remuneration at Amprion is largely regulated by collective agreements. The proportion of incentives in relation to annual remuneration is sensitive data that is not reported.	
	09 Stakeholder Engagement		20–21, 22–25, 36, 45–50, 63–70, 80–81
	10 Innovation and Product Management	When selecting core banks, Amprion pays attention to a good ESG (environmental, social and governance) rating. The percentage of audited financial assets cannot be stated at present.	29, 35–36, 45–49, 51–54, 57–58, 63, 66–69, 71, 84, 86
Environment	**11 Usage of Natural Resources**		75, 78–87
	12 Resource Management	The materials used and scope 3 emissions cannot yet be reported. We are aiming to report on these issues, and concept development has been initiated. The water withdrawal indicator is of no significance to Amprion.	75–89
	13 Climate-Relevant Emissions		75, 88–89
Society	**14 Employee Rights**	Work-related illnesses are sensitive data that is not reported.	93–94, 97–101
	15 Equal Opportunities	Concrete goals are currently being drawn up.	93, 97–98, 101–103
	16 Qualifications	Concrete goals are currently being drawn up.	93–96, 100
	17 Human Rights	No human rights violations were recorded at the business locations in 2020 via the reporting system anchored in the Compliance Code. However, there is no active auditing process.	38–39, 41
	18 Corporate Citizenship		19, 35, 59, 66–67, 71, 101
	19 Political Influence		39–40, 54–57
	20 Conduct that Complies with the Law and Policy	The number of cases of corruption is sensitive data and is not reported.	35–36, 38–40

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