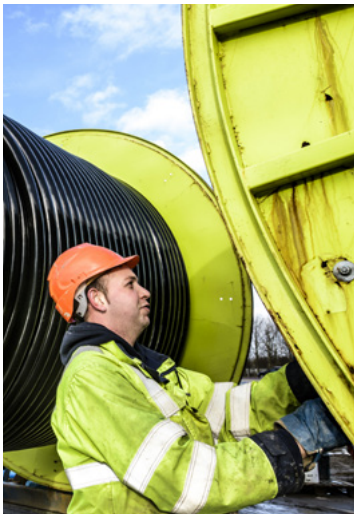
TenneT Holding B.V.

Integrated
Annual Report 2018

20 YEARS
POWERING SOCIETY

TenneT
Taking power further

20 YEARS
POWERING SOCIETY



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* These sections reflect the director's report as mentioned by Part 9 of Book 2 of the Dutch Civil Code

20 YEARS POWERING SOCIETY

Looking back at 20 years of achievement in the European electricity market

2008

TenneT takes over management of the 110 kV and 150 kV grids from the Dutch regional grid operators.

'NorNed' commissioned as world's longest HVDC subsea cable (700MW), linking Norwegian and Dutch markets.

1998

TenneT is formed when the Dutch government formally appointed us to operate the country's national high-voltage transmission grid.

2003

TenneT takes over the regional network operator B.V. Transportnet Zuid-Holland (TZH).

2006

TenneT starts to bring Europe's electricity markets together, as cross-border electricity trading and pricing begins for France, Belgium and the Netherlands.

2010

TenneT acquires the German high-voltage grid from E.ON, making TenneT Europe's first cross-border TSO. Electricity market integration extends to central-western Europe, including Germany and Austria.

BorWin1, the first DC offshore platform (400MW) goes into operation.

2013

The Randstad 380kV Zuidring goes into operation, supplying electricity to the densest urban area in the Netherlands. The project sees unprecedented lengths of high-voltage cables laid underground.

2016

TenneT is legally incorporated as an offshore electricity grid operator in the Netherlands. We conclude our first contract for subsea cables linking the offshore grid. We also introduce our vision for a North Sea Wind Power Hub, with the potential to serve wind power to tens of million Europeans by 2050.

DolWin2, the most powerful grid connection for offshore wind farms, goes into operation (900MW).

2011

BritNed, a 1,000MW subsea electricity link between Great Britain and the Netherlands is commissioned. BritNed is a joint venture between TenneT and National Grid UK.

2018

The 57-km 380 kV connection linking Doetinchem in the Netherlands with Wesel in Germany was commissioned, allowing further development of the north-west European electricity market.

2009

Opening of the first AC grid connection for the offshore wind farm Alpha Ventus.

2014

Electricity market integration extends to north-west Europe, including Great Britain, the Nordics and the Baltics, and south-west Europe, coupling the Iberian peninsula.

TenneT opens an office in Berlin.

2017

With 10 out of 13 planned grid connections in operation, TenneT provides more than 5,300MW transmission capacity in the German North Sea.

We also opened an office in Brussels.

At a glance 2018

2.3

Investments (EUR billion)

14

Interconnectors

Lost Time
Incident Frequency

2.36

"Balancing supply and demand with the unpredictable in-flows of wind and solar power requires us to make smarter use of our grid, making us more agile and proactive."

Letter from the CEO

Manon van Beek
CEO and Chair of the Excecutive Board

In 2018, TenneT celebrated 20 years of powering society. As we proudly reflect on two decades of achievements in the European electricity market, we must also look forward. Past performance is no guarantee for the future. The rapidly evolving energy system, driven by political, societal and technological changes, challenges us to think even further ahead with ever-more innovative solutions in order to maintain a secure and stable electricity supply for all. It is TenneT's core task to design, build, maintain and operate a reliable grid in the Netherlands and Germany, serving as a backbone infrastructure for the energy transition.

We anticipate - where possible - on government energy policy, such the Dutch Energy Agreement and the recently announced Coal Exit in Germany, and actively engage in the dialogues on this. With our cross-border base, we make every effort to contribute to the development of a North West European grid. Due to the increasing volumes of renewable energy we must innovate and optimise the use of the existing grid and look beyond our traditional boundaries of green electrons - like hydrogen, gas and storage.
At the same time, we must not forget that it is in society's common interest that the energy transition and the CO_2 reduction come at an affordable price, without the security of supply being jeopardized. This requires cooperation and partnerships at all levels, with all stakeholders.

I am excited to take over the baton and lead TenneT, as we begin the next phase in our journey as one of the drivers, or even accelerators, of the energy transition.

Handover 20 years TenneT

Thank you to everyone who has welcomed me as the new CEO of TenneT – a position I was thrilled to officially assume as of 1 September 2018. I have big shoes to fill, taking over from Mel Kroon who served TenneT with such vision and skill and dedication for 16 years. Under Mel's leadership, TenneT has developed into one of the leading transmission system operators (TSOs) in Europe.

I am keen to build on his heritage and add my 25 years of experience and expertise in the European energy and digital technology sectors. I look forward to collaborating with my new colleagues, our most valuable assets.

Keeping the lights on, now and in the future

The substantial expansion and reinforcement of our grid demonstrates our crucial role in driving the energy transition. Our commitment goes beyond what the law or the regulator expects; we are intrinsically driven to secure the supply

of electricity, 24/7, to end users in an affordable way. We embrace this responsibility, as we see the energy transition and the ongoing electrification of society as essential steps in building a more sustainable future for all.

The Dutch Agreement on Energy for Sustainable Growth (Energieakkoord voor duurzame groei) stipulates that renewable energy sources must account for at least 16% of the overall Dutch electricity supply by 2023. It also states that by 2023, 3.5 gigawatt of new wind farm capacity must have been realised in three offshore zones: Borssele, Holland Coast (south) and Holland Coast (north). TenneT has already started to prepare innovative and cost-effective solutions to connect these new offshore sites to the grid. We welcomed the opportunity to contribute to the draft Energy Agreement, which represents a substantial, integrated package aimed at reducing CO_2 emissions in the Netherlands by at least 49% in 2030.

Equally ambitious, the German government has committed itself through the Energiewende, to boost the efficiency, modernisation, innovation and digitisation of the energy supply. The new German government has raised the bar for the share of renewables, aiming for 65% in 2030, as well as decommissioning all nuclear and coal-fired power plants. It fully recognises the challenges of transporting wind energy, primarily generated in the north of Germany, over large distances to the end-users in the south. Crucial for a successful Energiewende therefore, is the expansion of both the cross-regional grids and the local distribution grids.

In 2018, we continued to execute essential new infrastructure projects, to ensure a future-proof security of electricity supply. We opened the new 57 km 380 kV Doetinchem-Wesel interconnector, linking the Netherlands with Germany, allowing further exchange of electricity in the North West European market. In June, the support-structure for the Borssele Alpha transformer station was successfully transported and anchored to the sea-bed, laying a first building block in the development of the Dutch offshore grid. In November we celebrated the ‘landing’ of the COBRA-cable, a 325 km overseas interconnector that will be operational in 2019 and will connect the Dutch and Danish electricity grids.

Green electricity comes at a cost

To achieve vital new connections, and bring green electricity into homes and businesses across Germany and the Netherlands, we must raise financing for our extensive investment portfolio. During the year the European Investment Bank (EIB) invested in a EUR 100 million hybrid bond, issued by TenneT to support the construction of the NordLink Direct Current interconnector between Norway and Germany. In June, TenneT issued another EUR 1.25 billion through its Green Bond programme, underlining its status as the largest corporate issuer of green debt in the Netherlands.

In addition, we are in a constructive dialogue with the Dutch Ministry of Finance, our shareholder, on our future equity capital needs and its role as shareholder. As our debt will increase, we need to maintain a balanced equity-debt ratio, in order to secure our current credit ratings.

Setbacks and dilemmas to address

In realising our ambitious project portfolio, we also faced a number of setbacks. In October 2018 we had to terminate the Wintrack II contract with consortium company Heijmans Europoles B.V. (HEP), involving and delaying the construction of new high-voltage pylons. A new tender was started in January 2019, with the aim to start construction of the project in the first quarter of 2020.

As well as building for the future, we must also maintain our existing grid to ensure continuing high reliability.

We had to deal with several outages during 2018, including the August power failure in the Tilburg area in the south of the Netherlands, when over 100,000 households and several hundred companies could not be provided with electricity for at least 22 minutes and some up to one hour. We regret these outages and make every effort to learn from these experiences.

The most pressing energy-related dilemma at the moment for society and therefore for TenneT concerns the preferred path of the energy transition. Due to the long-term nature of our business, we look as far ahead as 2035 or even 2050. At present, there is no clear answer to the question of how electricity supply can be guaranteed 365 days a year with a system that is largely based on renewable energy sources, when there is hardly any sun or wind for several weeks, which often occurs in the winter. To address these situations we started a series of innovative (pilot) projects, such as crowd sourcing via blockchain technology (with IBM, VandenBron, Engie, Sonnen, Escozon, Energie Samen, Scholt Energie and Enervalis); power- to- gas (e.g. hydrogen production facility with Gasunie Deutschland and Thyssengas) and a joint initiative in Germany aimed at connecting offshore wind energy to hydrogen production (with Shell and Siemens).

Other dilemmas we face relate to the social acceptance of new infrastructure. Not only regarding its physical presence in the built environment, but also its affordability.

In fact, most of our dilemmas are 'trilemmas': our continuous challenge to balance security of supply, affordability and sustainability. These also form the pillars of Dutch and German energy policy.

Make smarter use of the grid(s)

The challenges facing TenneT require us to be more innovative than ever before. Pioneering research in areas such a green hydrogen and solutions based on block chain technology have the potential to help society achieve its ambitious carbon targets, but there is more we need to do in the shorter term. Balancing supply and demand with the unpredictable in-flows of wind and solar power requires us to make smarter use of our grid, making us more agile and proactive.

In this way, we are becoming a more digital, data-driven company, shifting us into a new area of expertise that may be just as essential to our future as our physical power grid, onshore and offshore. In the future, we may be able to use the reserve capacity of our grid to a much greater extent.

We trust that the compensation we receive from our regulators will not be restricted to building and maintaining assets, but will also provide us with incentives to develop innovative solutions for a smarter grid.

Working together on TenneT's future

Our people remain our most valuable assets. I am very proud of our exceptionally high levels of employee engagement, running at 80% in 2017, and of the results of the 2018 MT500 survey, which ranked TenneT among the top 25 most admired companies in the Netherlands. In this survey, we achieved second place in the utility sector, and received maximum scores in terms of employment and excellent execution.

Our status as one of Europe's leading TSOs at the cutting edge of the energy transition is reflected in our new German headquarters in Bayreuth, which opened in September. This state-of-the-art campus reflects our desire to be one of the most innovative employers in northern Bavaria, attracting the best talent to achieve our ambitious goals.

As we embark on designing and building the grid of the future, developing the system operations function of the future with new technologies and across geographies and accelerating the energy transition, our top-management structure is changing. We started with a larger statutory Executive Board with a CEO, CFO and double COO function with strong footholds in both countries. As a next step we will be working to further optimise the organisation, where end-to-end processes and integrated thinking are central and in which our people can deploy all their talents.

Looking ahead

As our current strategy is nearing the end of its 5-year term, we conducted a strategic reorientation in the fourth quarter of 2018 and concluded that our strategy needs to be adapted in order to manage our fast growth and cope with the rapid changes that the energy transition brings. The recalibration our current strategy, focuses on four pillars: maintain security of supply, today and tomorrow; accelerate the energy transition; energize our people and our organisation and safeguard our financial health. During this year, we will design – and start executing – a roadmap for these priorities for the medium term and long term. One thing is clear: collaboration at all levels and with multiple stakeholders will be key.

A rising tide lifts all boats

When it comes to make the energy transition happen, we are all in the same boat. As TenneT, we will hopefully 'rock the boat' sometimes with new ideas, because we want to push the limits of our current thinking. The ocean or even the North Sea is big and our TenneT boat is small by comparison. The boat might be safer anchored in the harbour, but that is not the purpose of boats. I call upon all around us to find the inspiration and courage to innovate together and make a great journey.

Manon van Beek
CEO and Chair of the Executive Board

About TenneT

Profile

TenneT is Europe's first cross-border grid operator. We operate, maintain and expand the high-voltage grid in the Netherlands and a large part of Germany. We are committed to providing a secure and reliable supply of electricity, today and in the future, 24 hours a day, 365 days a year. We transport electricity over approximately 23,000 km of high-voltage lines, from wherever and whatever source it is produced, to more than 41 million end-users while keeping electricity supply and demand in balance at all times.

Responsible, engaged and connected

We transport electricity across borders, connecting countries and ensuring the power supply on which we all depend. As we do this we take responsibility toward the world around us. We work to meet our stakeholders' needs by being responsible, engaged and connected.

The vast majority of our activities are regulated by the ACM in the Netherlands and the Bundesnetzagentur (BNetzA) in Germany. We have three regulated tasks: (1) the transportation of electricity, (2) system services for maintaining the energy balance, and (3) market facilitation.

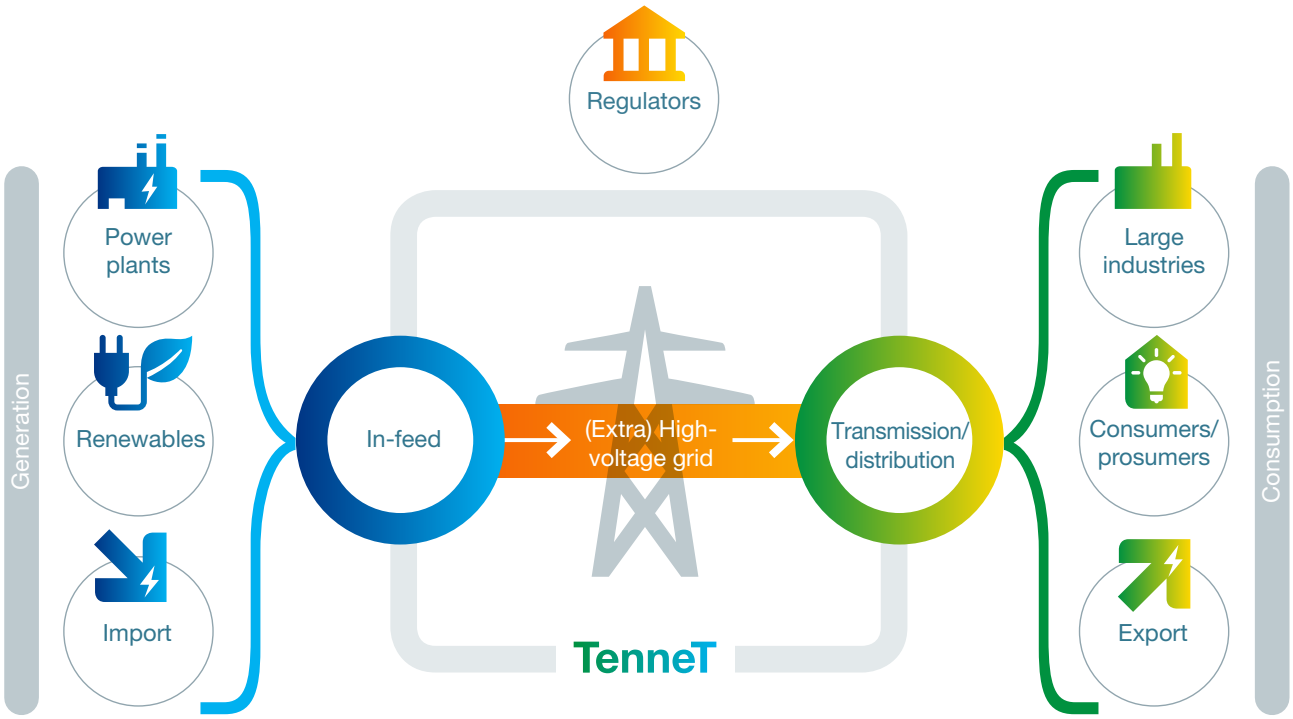
Transporting electricity

The high-voltage grid is the backbone of the electricity supply system. It is used for the transport of large quantities of electricity over long distances. Electricity generated at sea, for instance, is transported via subsea cables and then connected to the high-voltage grid. We are a key player in the electricity supply chain. This chain consists of grid operators and producers of electricity from both conventional and fast-growing renewable energy sources that feed in to our grid as well as large users of electricity.

Because wind farms and power plants are often far away from where electricity is used, we need to carry it over large distances without incurring major losses on the way. To achieve this, we transport electricity at very high voltages: 110 kV and higher in the Netherlands and 220 kV and higher in Germany.

Our high-voltage grid is connected to regional and local distribution grids managed by a large number of other grid companies, so-called distribution system operators (DSOs). It is also connected to large industrial customers and prosumers, i.e. energy consumers simultaneously acting as producers. Maps of our onshore and offshore high voltage grid can be found on our corporate website.

TenneT in the supply chain



Energy transition

Although balancing supply and demand of electricity is far more complex than it used to be, our track record is solid with our grid being available 99.9988% of the time during 2018. While global electricity demand keeps increasing, so too does the supply from sustainable and clean sources – such as wind, solar, bio mass and tidal. These are often located in remote areas, such as on the North Sea. Bringing it onshore and then transporting it over vast distances across land is a challenging task. This switch from traditional to renewable energy sources – often called the 'energy transition' – is currently the biggest challenge faced by the energy sector in general and grid operators in particular.

Maintaining the balance between supply and demand

As electricity is fed into the grid, we need to carefully balance the electricity supply with demand. Since electricity cannot be stored in large quantities, continuous adjustment of supply and demand is needed to ensure security of supply. To do this, we have control centres in the Netherlands and in Germany, where supply and demand are monitored and balanced 24 hours a day, seven days a week.

Market facilitation

Electricity recognises no geographical borders, and we believe North West Europe is better served by an integrated electricity market. As such, we have extensively connected our electricity grid with the countries around us. In doing so, we help establish a single market that guarantees a reliable electricity supply at a fair price.

Non-regulated activities

In addition to our core tasks, we are involved in a limited number of so-called non-regulated activities. These either help to ensure that the energy market operates smoothly and efficiently, or are ancillary to our regulated activities by making better use of existing assets. A full overview of our group structure can be found on our corporate website.

Our mission, strategy and value creation

As a grid operator, we have an essential role and a major responsibility. We are driven by our desire to ensure that all of the Netherlands and a large part of Germany have a reliable, sustainable, secure and affordable electricity supply. This is part of **our mission**.

Security of supply

Security of supply is our biggest concern. We consider it is more reliable for our grid to be linked to the North West European (NWE) network, than having a stand-alone grid. Encouraging this integration of the European market, and facilitating its evolution, is a core part of our vision. This is particularly important as more and more renewable energy flows into the grid. It makes the market more complicated to manage and design, requiring more innovation and cross-border collaboration.

More detailed information on our mission and vision can be found on our corporate website.

Strategy

To succeed in our mission, we developed a strategy which runs until 2020. This is also the strategy we will report on in this Annual Report. At the time of publication, we are working a recalibration of our current strategy for the coming years. Our business has reached a point where we need to pivot and embark on a new dimension of development and innovation. We arrive at this juncture in our 20th year – an ideal moment to take stock, re-energise and challenge ourselves to scale new heights. In the Annual Report 2019 we will go into more detail on what this will entail for TenneT.

Our overarching objective in 2018 is to deliver value for our stakeholders and we aim to realise this through four strategic goals:

Strategic goals

DELIVER
stakeholder value

Secure supply

Securing
a reliable supply of electricity and facilitating the integration of sustainable energy sources

Lead NWE integration

Leading
the development of an integrated and sustainable NWE electricity market

Innovate business

Innovating
and adapting our business for the future

Engage stakeholders

Engaging
with our stakeholders at all levels

This report is structured following these strategic goals. To help us realise these goals and fulfil our mission, we have set seven strategic priorities.

Enhance the flexibility and resilience of our transmission grid to ensure security of supply
To manage the rapid rise of renewable energy sources, improve our ability to balance power, ensure continuous voltage control and relieve grid congestion, we apply market-based solutions that improve supply and demand flexibility. We will also use software and possibly hardware solutions, such as developing storage technology.

Advance the use of data and analytics
To gain insight into the renewables feeding into the grid and improve our forecasting to ensure security of supply, we are collecting and enriching electricity and electricity-related data, which will also help us drive market integration.

Drive integration of the NWE electricity market
We work closely with other TSOs on various topics, including market design, market coupling and regional security centres, to drive the further integration of the NWE electricity market.

Anticipate and address what society wants and needs through dialogue and innovation
We actively engage with society and respond to society's needs and concerns with innovative developments such as transmitting electricity underground and dynamic line rating.

Maintain access to capital markets and equity capital
The size of our investment programme requires ongoing financing and, given the timing and regulatory uncertainties, it also requires flexible access to equity.

Pursue operational excellence
We optimise the efficiency of our capital expenditures (capex) and operational expenditures (opex) through smart investment solutions and keeping operating costs low.

Pursue organisational excellence
We do this by creating a performance culture, organisational flexibility and best-in-class safety performance.

To see whether we are on the right track with our strategy, we started with the project: 'Make Strategy Work'. The goal of this project is to develop a KPI framework for our strategic priorities and strengthen the KPI governance and monitoring. This way we are able to make qualitative improvements and reduce undesired spending when it comes to less or non-effective strategic efforts. The KPI framework is still being developed and will be further implemented in 2019.

Value creation

TenneT plays a vital role in society. Our work makes a fundamental difference to the people living and working in the areas we serve and involves a wide range of stakeholders. These include our shareholder, local communities, our employees, regulators, investors, NGOs, politicians, the media, customers, suppliers and other European TSOs.

Because we operate in a stakeholder arena with many different, sometimes conflicting, interests at play, it is important to maintain a relationship with stakeholder groups and see where and how we can deliver value. Creating acceptance and understanding for what we do within the highly complex and relevant energy sector is therefore important to us. We need to properly understand each party's expectations and be able to update them on our activities, inform them of our plans and address their concerns as best and as early as we can. As our range of stakeholders is very diverse, we need to consider each group's questions, concerns and needs separately. This diversity requires a proactive and coordinated approach to stakeholder management and communication – which we take seriously.

Our culture plays an important role in our activities. As such, we strive to hold ourselves to the **values** of quality and integrity.

Quality requires the highest standards of safety in everything we do.

Integrity means being open, honest and respectful in the way we serve society, particularly local communities, partners and employees.

The TenneT brand is built on our **brand values**, a commitment to be **responsible**, **engaged** and **connected**. This is our promise to the outside world, describing how we serve our stakeholders and how we want them to see us.

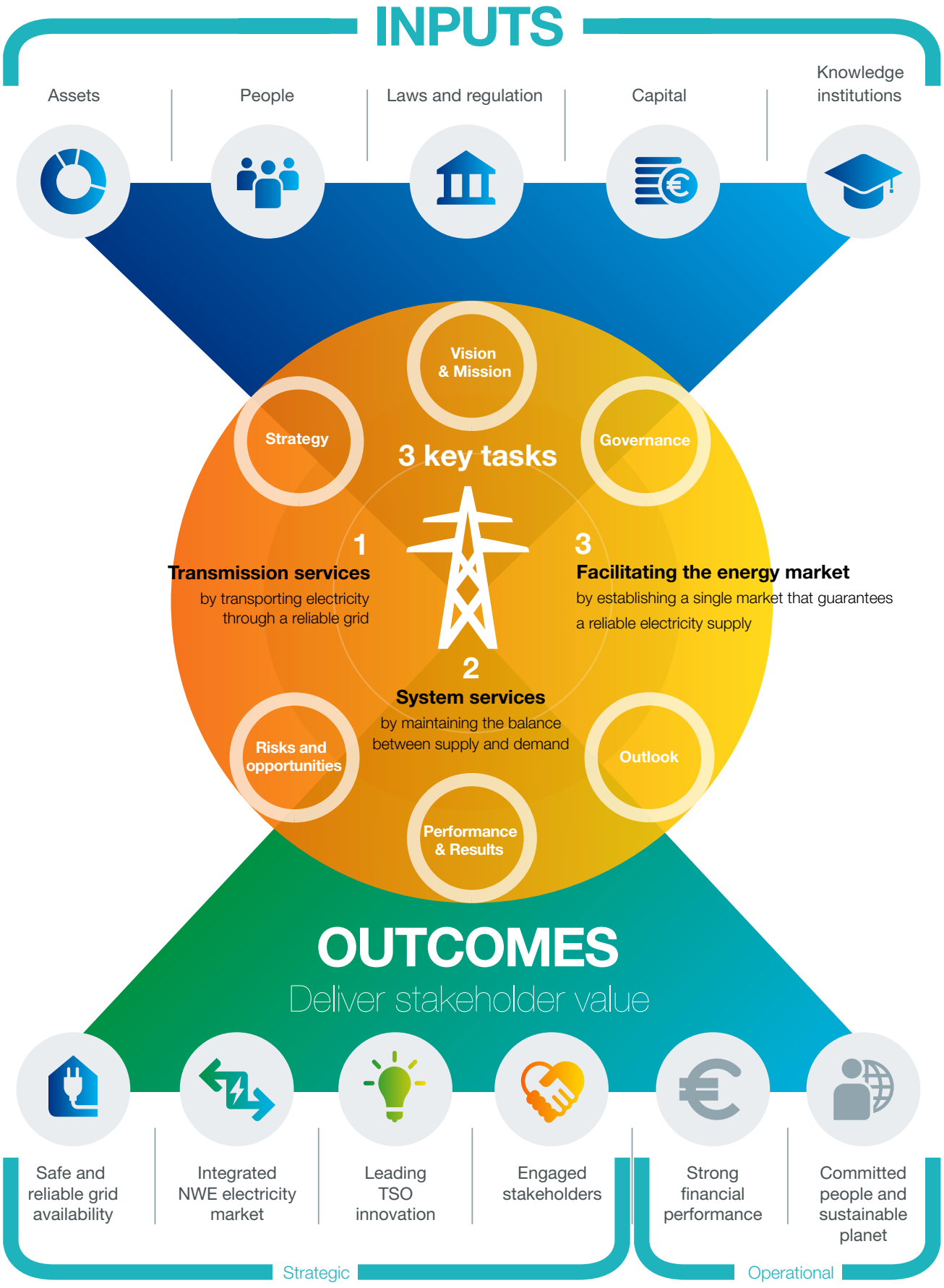
Measuring and monitoring

To know if we are on the right track and whether we should continue or maybe change the way we work, we measure and monitor our performance, and the perception thereof, on a regular basis. We test opinions and sentiments by conducting stakeholder satisfaction surveys – with employees and customers – and we also monitor and analyse our media exposure, and make a real-time analysis of social media.

Value creation model

Our stakeholders play a central role in our long-term value creation. The interactive value creation model summarises the input we use and the added value we create for our stakeholders through our key activities. Furthermore, all the elements in our interactive value creation model are linked to the respective sections of this report which provide further details on each element.

Value creation model



Our stakeholders

Providing a sustainable and secure supply of electricity to society is about more than volts, power lines and turbines. It's also about having a dialogue and doing the right thing. We define our stakeholders as those people or groups who are affected by our actions and who have an effect on our organisation and services. Who our stakeholders are was defined in 2013 after an analysis based on interviews with senior management of TenneT in the Netherlands and Germany, as well as a validation among the stakeholders identified. Our relationship with them may be defined by law (shareholders, governments, political parties and regulatory bodies), by internal or external cooperation (employees, suppliers, debt investors and rating agencies) or by the nature of the services we provide (customers, the media, NGO's, local communities, and other European TSOs).

Engagement with our stakeholders

Customers

- Customer events
- Customer committees
- Market review reports
- Meetings with project partners (e.g. DSOs, suppliers, industry partners)
- Pilots on e.g. improvement of RES forecasting and integration of small-scale flexible assets in the congestion management processes

Governments, political parties and regulatory bodies

- Collaboration with the relevant ministries
- Various bilateral and multilateral talks
- Parliamentary face-to-face meetings
- Close cooperation with state and provincial governments
- Regular contact with regulatory bodies
- TenneT Virtual Vision

Local communities

- Quantitative and qualitative research
- Local community sessions on project planning and safety during building phase
- Information and experience centres
- Student programmes
- Project newsletters
- Project websites and social media

Media

- Press releases, press events and public performances
- Frequent contact with journalists
- Media monitoring and analysis
- Social media

Employees

- Training and education
- Intranet and in-company magazine
- Formal and informal employee events
- Health and vitality programmes
- (Female) Leadership programmes and meetings
- Good working environment
- Continuous performance dialogues
- Market conform terms of employment
- Frequent contact with Works Councils
- Diverse and inclusive organisation, good work-life balance

Debt investors and rating agencies

- Roadshow and meetings with financial investors
- Regular contact with credit rating and sustainable rating agencies
- Yearly meeting with all relationship banks

Shareholders (corporate and projects)

- Approval of investment proposals
- Quarterly meetings on past performance and future capital needs
- Project updates
- Financial and sustainability reporting

Other European TSOs

- Presidency of ENTSO-E
- Participation in consultative committees in ENTSO-E
- Regular meetings with other TSOs
- North Sea Wind Power Hub consortium
- Active involvement in various ENTSO-E and CIGRE expert groups

Suppliers

- Competitive and fair tender and contract negotiations
- Strict safety and high CSR standards
- Market consultations, meetings and negotiations
- Member of UN Global Compact (UNGC) and mandatory supplier code of conduct
- Meetings on Board level with suppliers
- Safety Culture Ladder (SCL) certifications
- Dialogue on performance and safety with top suppliers
- Contractor Forum – Sustainability, Safety, Innovation

NGOs

- Close cooperation with Greenpeace, Natuur & Milieu, Stichting de NoordZee and Dutch, Danish, German, British and Brussels based NGOs
- Extensive dialogue with national and local environmental NGOs on our projects
  - Cooperation agreement with the Vlinderstichting to have ecological measures implemented in projects and operation
  - Renewed cooperation agreement with Stichting de Noordzee and Natuur & Milieu
  - Cooperation agreement with Natuurmonumenten on green, sustainable, maintenance

Materiality analysis

Engaging with our stakeholders and understanding what is in their hearts and minds is important to us in our day to day business.

By understanding our stakeholders, we are able to make choices that have a sustainable benefit. Determining what is material to our stakeholders and focussing on our material impacts is important as it enables us to address these topics internally as well as report to our stakeholders on this externally.

The process starts with interacting with our stakeholders and having a common understanding of the road forward, so we can determine the right policies can be made and proper actions to be taken. Every year, we analyse what our stakeholders consider to be important and where we have a significant impact from a social, economic and environmental point of view. Last year we performed a survey to make sure this understanding is current. This year, in addition to the information gleaned from our regular stakeholder engagements, we updated our understanding based on a document review and media analysis. The outcome of this update has been validated internally by key senior decision makers. We aim to perform a survey again in 2019.

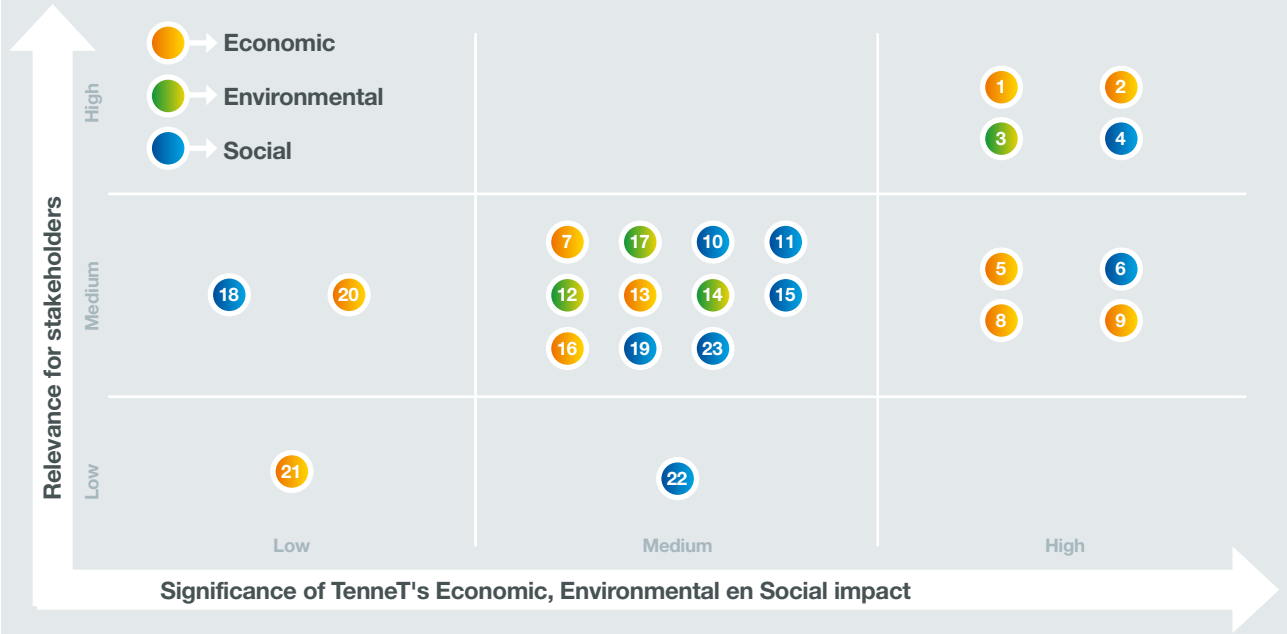
This analysis shows that the topics most material to our stakeholders remain unchanged from last year. These are; engaging with local communities; securing supply for our markets; societal financial impact and the North West European (NWE) electricity market are still key material topics as they were last year. Also safety in our working environment and investments in our grid (onshore and offshore) to realise the energy transition are still important topics. We have renamed the topic related to our investments 'Sustainable Grid Infrastructure'. This is a better reflection of our challenges related to the way we can make smarter use of our assets and in what way we can invest in our infrastructure to facilitate the energy transition.

Topics such as financing and financial performance remain evenly material, which seems logical considering our role and responsibility in the energy transition and the trade-off we as TenneT have between our regulatory task and leading the way to a more sustainable energy grid. The topics of security and cyber-security have become more material in this year's analysis. In the previous year, only copper theft was included, but we have broadened and renamed this topic to include (cyber) security to better reflect our task of providing a safe and secure grid infrastructure in a better way.

Our policies, decision-making and our reporting are not limited by the topics that are both material to our stakeholders and can be significantly impacted by us. We also consider other topics in this report, including those deemed less significant or material enough to be of importance to act upon and to disclose them in this report or on our corporate website.

We also report on how we contribute to the United Nations Sustainable Development Goals. With our core business activities we clearly contribute to SDG7 and SDG9, and in the execution of these activities we realise we have an impact on other SDGs. In the previous year, we asked our stakeholders to identify the SDGs where they felt TenneT could make most impact. In 2018, we have used this as an input for our CSR ambition plan 2025. And we have linked our ambitions and our contribution to specific SDGs. The relevant SDGs are shown below and we have included these in the table on the next page, where we have disclosed the connection between the SDGs, our materiality analysis, performance metrics and chapters in our report.

Materiality



#	Subject
1	Security of supply
2	Sustainable grid infrastructure
3	NWE Electricity Market
4	Community engagement
5	Societal financial impact
6	Safety
7	Digital technologies
8	Financial performance
9	Financing
10	Connecting citizens
11	Customer Care and Satisfaction
12	Environmental incidents
13	Regulatory framework
14	Carbon footprint
15	Diversity and equal opportunity
16	Procurement practices & Supplier Assessments
17	Biodiversity
18	Human Rights
19	Employee health & development
20	Tax transparency
21	Remuneration policy
22	(Cyber) security
23	Talent attraction

SDG	Subject	Reference	Related metrics	
5	15	Non-financial	- % of female employees, - % newly hires females at management level - % of female EB and SB members	
7	1 5 7 8 9	Secure supply Financial	- Grid availability - Financial metrics (Revenue, EBIT, ROIC)	
8	6 18	Non-financial	- LTIF	
9	1 2 3 4	Secure supply Innovate business Financial Non-financial	- Grid availability - # of interconnectors - Price convergence - Import / export	- Annual investments - # of stakeholder engagements
12	16	Non-financial	- Reduction of virgin copper use	
13	14	Non-financial	- Gross / net carbon footprint - SF_6 leaked	
14	12 17	Non-financial	- Environmental incidents - Liters of oil leaked	
15	12 17	Non-financial	- Environmental incidents - Liters of oil leaked	

Our performance in 2018

Strategic performance

Our performance in 2018 is split into our strategic performance and our operational performance. Our reporting related to our strategic performance is structured following our four strategic goals. Our reporting related to our operational performance includes our financial and non-financial results.

Secure supply

At TenneT, our mission is clear: to keep the lights on. Making sure that more than 41 million people across the Netherlands and Germany enjoy uninterrupted access to electricity is the foundation of our business. By investing in new assets, performing necessary maintenance and making sure that we are prepared in case of unforeseen events, we aim to ensure security of supply for society.

In today's always-on world, electricity users assume they have power available at their fingertips – never more than a power outlet away.

We have worked hard to meet this expectation on every step of our 20-year journey. This is a complex task, which involves operating, maintaining, upgrading and expanding a network of approximately 23,000 km of high-voltage lines and cables.

In addition, we must transport electricity from a growing number of renewable energy sources (RES) that are, by nature, more difficult to predict and supply. If the wind doesn't blow in one area or the sun doesn't shine in another, the market must be ready to flexibly shift electricity from one source to another to meet demand.

Meeting these expectations is not only core to our mission to deliver security of supply, it also links to the wider ambition of SDG 7 – Affordable & Clean Energy. SDG 7 links to TenneT's role in contributing to national and international climate agreements, as we want to facilitate access to affordable, reliable and modern energy services.

This goal, which recognises a basic need of modern society, is central to TenneT's role and we are committed to supporting it by operating our grid with maximum availability. Our work to build cross-border electricity transport capacity is an important part of this endeavour, growing our access to supply and thereby helping to lower electricity costs for end-users. To ensure that we are able to secure supply, we are continuously maintaining our grid and monitoring its availability. When an unexpected outage occurs, we report and investigate its nature and impact so we can resolve it as quickly as possible and learn from it to prevent – as far as possible – it re-occurring in the future.

Results

Grid availability	2018	2017	2016
Onshore [1)]			
Grid availability	99.9988%	99.9986%	99.9999%
Interruptions	16	11	6
Energy not transported (MWh)	1,184	1,072	59
Offshore			
Grid availability	94.50%	97.80%	92.00%

[1] The 2018 figures are presented based on the former definition. When applying the updated definition, the grid availability remains unchanged (99.9988%), the number of interruptions will be 17 and the energy not transported will be 1,244 MWh.

Our onshore security of supply rose slightly to 99.9988% in 2018. Although we work hard to secure supply of energy at all times, several outages occurred that contributed to this result. These included a notable outage in August, in the Tilburg area in the south of the Netherlands, where at least 100,000 households and hundreds of companies lost power for at least 22 minutes and some up to one hour. Another incident occurred in April, in the Amsterdam area. The outage was resolved within a couple of hours, however due to knock-on effects at Schiphol, the main airport in the Netherlands, the impact was visible throughout the next day. Starting 2018, we have updated our definition of interruptions to create further alignment in the Netherlands and Germany. This now includes interruptions of supply, which is not only related to end-use consumers, but also to energy suppliers when they are unable to deliver energy to our grid.

Expanding, modernising and future-proofing our grid helps us avoid outages as much as possible. TenneT assesses its investments each quarter, adjusting plans and actions as necessary. In 2018 we invested EUR 2.3 billion in expanding and maintaining our grid. We can face delays in this important process for example when approval processes take longer than expected or when late delivery of materials puts projects behind schedule. This occurred in 2018, when the summer drought made the water level in parts of the Rhine river too low for transport. We experienced a notable setback in October 2018 when we terminated the Wintrack II contract, involving the construction of new high-voltage pylons running on two tracks: Eemshaven-Vierverlaten and Borssele-Rilland. This contract was with the Dutch consortium Heijmans Europoles B.V. (HEP).

Technical data	2018	2017	2016
Total circuit length (km)	22,862	22,857	22,637
Overhead lines (km)	18,725	18,974	18,830
Underground cabling (km)	4,137	3,883	3,724
Interconnectors	14	13	13
Number of substations	462	462	458
Number of HVDC stations	18	16	16

With respect to securing supply through new projects, work is progressing well on both the Mittelachse line and the Westküstenleitung line in Schleswig-Holstein. These are important projects for the energy transition. In the future, the connection will transport this renewable electricity to energy users in southern Germany.

DolWin3 is also a significant step in the development of the offshore grid and the North West European market. This 160 km DC connection for offshore wind power became operational at the end of 2018 and is the third in the DolWin cluster. It connects wind farms in the southwestern part of the German North Sea to the onshore transmission grid supplying more than one million households with clean wind energy.

Linking the wind energy hubs of the north with consumption centres in the south is essential for the success of the energy transition in Germany. This will be especially true after 2022, when nuclear power plants will stop generating electricity in Germany. That is why TenneT is working on major projects such as SuedLink and SuedOstLink helping to future-proof the German energy infrastructure.

We reached a milestone in 2018 when the jacket of TenneT's first offshore transformer platform for the Borssele offshore wind farm was successfully installed. The project will see two connections of 1,400 MW, come into service in 2019 and 2020. Four AC cables will run from the platforms to the mainland, routed via the Western Scheldt river. Coming ashore near the existing high-voltage substation at Borssele, they will connect to the substation via underground 220 kV cables. The onshore Borssele substation will be expanded to create extra room for the transformers required to convert the voltage level from 220 kV to 380 kV. The national 380 kV high-voltage grid will then distribute the wind energy to households across the country.

In September, TenneT signed an agreement with Enecogen for the provision of a 'black-start' facility at the Enecogen gas station in Rotterdam-Europoort. In the event of a black out, this emergency provision can be used to put the high-voltage grid back into operation. TenneT now has three such facilities available in the Netherlands, contributing to a stable and reliable energy supply. In Germany we continue to work on facilities to secure and restore supply in case of local grid situations. By law, we are permitted to assign third parties to build and provide these facilities. We are currently reaching an agreement for this purpose with Amprion and TransnetBW in Bavaria, Baden-Wuerttemberg and South Hesse, with the intention to finalise in Q2 2019. We have also contracted additional reserves in southern Germany and outside of Germany.

Looking to the future, when wind and solar generation will account for higher amounts of electricity feeding into the grid, TenneT believes that the use of green hydrogen will be an important addition to our energy system. Produced through the electrolysis of water by renewable electricity, green hydrogen is carbon-free and is considered alongside other renewables in the Dutch Climate and Energy Agreement. As it can be stored, green hydrogen is a flexible controllable energy source, which will benefit security of supply.

Our ongoing goal is to provide a secure and reliable supply of energy. We aim to do this as cost efficiently as possible to provide affordable electricity. This is why we invest in innovation as we believe this will make our grid more resilient and futureproof providing long-term value for society. However the current reimbursement structure does not always compensate for innovation, especially with respect to IT driven solutions, which we believe will benefit the security of supply. In this context, we need to balance the financial health of the company with the cost of innovation projects that will be beneficial for society in the future.

Also, when planning and tendering our projects, we acknowledge that increasing standards we expect from our suppliers are a challenge. However, as we feel that we are a company that wants to meet these standards, we want to help our suppliers and reach the level we desire, rather than lower the bar for ourselves.

Challenges

Challenge	Action
The investment portfolio leads to high workload along the entire supply chain. TenneT faces scarcities in the supplier markets caused by a strongly increasing market demand on power transmission components and especially for overhead-lines and cables. With this high workload we also see a lack of qualified staff for TenneT and its suppliers, which we see as a challenge related to our investment portfolio. This could result in a delay of projects.	We settle framework agreements, bulk orders, enforce standardisation, increase storage capacities, improve demand forecasts, actively support development of new technologies (e.g. 525 kV DC-cables) and look for alternative supplier and service providers worldwide. Furthermore, we extend employment of external project management service providers to staff construction projects in the onshore grid. To mitigate a lack of internal resources, we pro-actively perform analysis to have an adequate succession plan of our staff.
Due to faster RES integration and increased activities on our existing grid reducing the outage planning is essential	We continue to develop new and innovative ways to further improve our way of working to be able to secure supply of electricity. TenneT had some successes in 2018 in keeping systems up during maintenance, thanks to innovative uses of technology. For example, when we discovered that a high voltage cable buried under the seabed of the North Sea was beginning to surface due to sediment movements of the actual seabed, our engineers successfully managed to re-bury them whilst the cable remained in service, thereby minimizing the down-time to a short interruption that was required for technical reasons. TenneT has also executed a pilot project with a spin-off company of ETH Zürich to investigate if a four-legged robot can execute inspections in support of unmanned phases of the offshore platforms.
The low carbon emission ambition resulting in increasing RES integration creates new challenges related to system balancing, as RES output predictions prove to be more volatile due to fluctuations in the real time weather conditions.	Being able to better predict weather conditions and translating this properly will become increasingly important. Unlocking flexibility and investing in broad spectrum predictive RES output modelling in a progressive market design is essential. With this we can better inform and challenge other market parties in system balancing.

Strategic risks

Most relevant risks regarding security of supply are related to the ageing of infrastructure assets, resource constraints in the supply chain, scarcity of qualified personnel, uncertainty in energy markets and politics terror/cyber-attacks as well as major delays of large infrastructure projects. However, there are also opportunities, particularly in the use of digitalisation and the development of new technologies.

The likelihood of unplanned outages increases as TenneT's infrastructure assets grow older. The growing share of renewable electricity can also add to the risk of outages; as wind or solar-generated energy is less predictable, it is more challenging to shut down parts of the grid to perform maintenance works. To mitigate this risk, additional resources are made available for maintenance works and we are increasing the efficiency and flexibility of our maintenance programme by monitoring and simplifying internal processes.

In today's cross-border energy market, security of supply is enhanced by the interconnectivity of the European transmission grid, from Portugal to Turkey and from Scandinavia to Italy. However, misalignment in the energy policies of individual European countries – such as stalling plans to invest in nuclear power, stopping the development of coal or lignite plants, or increasing the development of renewables – have a significant impact on the entire European grid. As such, the challenge of dealing with European grid issues becomes more of a daily occurrence, especially as the further integration of renewables and lower availability of conventional power production increases the likelihood of critical situations. This is particularly true during autumn and winter. This requires international alignment of political targets. TenneT works towards this by engaging in and providing transparency in political discussions.

Our planned investment projects all involve a high degree of organisational complexity. This can include communicating with a large number of stakeholders, assessing different technological options, routing options, interdependencies of work packages between different projects and challenges in the political environment. Delays in licensing (especially necessary permits from the authorities) as well as challenges arising from the use of innovative technology (HVDC, Wintrack-II respectively) can also throw a project off schedule. TenneT works to mitigate these risks by communicating transparently with regional stakeholders, working closely with authorities, enforcing high quality standards and closely monitoring its suppliers and deliverables. Additionally, TenneT continuously works to optimise its organisational processes , including lean decision making processes, an emphasis on employee training and use of probabilistic schedule analyses.

Nonetheless, technology plays a crucial role in mitigating risks around security of supply. In particular, TenneT sees an opportunity in using digitalisation to improve the utilisation of the grid, without increasing black-out risks. To this end, we are exploring the potential of big data to improve our capacity to predict the weather and assess levels of consumer demand. Sophisticated data analytics can also help us determine the condition of our assets and reduce demand on the grid at peak times by connecting decentralised batteries together (so-called "peak shaving"). Owning, or at least having real-time access to, specific data while complying with the requirements of the EU General Data Protection Regulation (GDPR) certainly presents risks for TSOs. It also means high requirements for IT skills and capacity, requiring data to be processed in real time.

TenneT takes the possibility of a severe outage resulting from a terror or cyber-attack very seriously. We regard the risk of a politically-motivated attack, either government-backed or non-state cyberterrorists, higher than "usual" computer fraud crime. Hence, a successful attack cannot be ruled out entirely, despite us having physical and digital prevention measures in place that are continuously assessed, optimised and tested. To this end, we develop, align and carry out contingency plans together with national authorities. In Germany, TenneT achieved ISO27001 certification in 2018.

Outlook

Maintaining a reliable and safe electricity supply by improving and maintaining the high-voltage grid is only part of the challenge. As society demands more renewable electricity, all grid operators face the challenge of maintaining security of supply in a more volatile energy environment.

On the 26th of January 2019, the coal commission presented a consensus on the phase-out of coal fired power plants in Germany. The main cornerstones are a 12.5 GW reduction of coal-fired power plants by 2022, a further reduction of 13 GW until 2030 and a complete phase-out by 2038. This might influence our grid extension plans until 2035 and beyond.

As we advance with the energy transition, the task of maintaining this balance becomes more complex and involves more market players, including large generators and small-scale domestic producers. These players now actively participate in an increasingly decentralised electricity market.

In this scenario, TenneT – along with other grid operators – needs more sophisticated solutions and flexible commercial agreements to balance electricity demand and supply. Existing market designs can become barriers to innovation and progress and may need to be changed. Significant grid innovations will be essential to prevent energy shortages and realise society's green energy ambitions.

True Value **DolWin2**

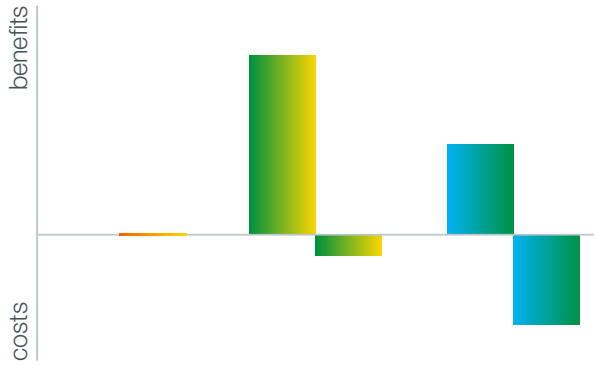
This is one of our most recent offshore projects taken into operation. This offshore converter platform connects renewable energy from wind farms through a 135 km long cable to the onshore grid. The development of these offshore projects is essential to realise climate ambitions. Construction of this platform started in 2012 and with a transport capacity of 916 MW, DolWin2 has the potential to supply more than one million households with clean energy per year.

As we aim to invest a significant amount to expand and maintain our grid, we are aware that our impact goes beyond the financial 'bottom line'. Our assets, have both positive and negative impacts for society. To gain more insights of these impacts, we have monetised environmental, social and economical factors related to DolWin2. Our case study has focused on specific steps in the value chain, from raw material extraction to the operation phase of this project.

We realise that this case study is a part of the first steps we are taking to gain insights on the True Value of our operations. In recent years, we have performed similar pilot projects for our onshore operations. That is why we have chosen an offshore project for this year's case study. We aimed to collect data for the most material impacts of each phase of DolWin2 and monetise these impacts with a Euro value, to have one common denominator at the end of this case study.

The results of this case study show that the main impact of DolWin2 is environmental. Negative environmental impacts are mainly related to material extraction and constructing the platform. However, by realising this project, we are able to avoid carbon emissions that otherwise would have been emitted by less sustainable sources such as coal plants. This case study shows that next to the economical costs and benefits, the true value of this project lies in the environmental impact this project has for society,

Monetised impact (indicative)



Societal
Environmental
Economical

We acknowledge that impact reporting is still an area that is under development. That is why we work together with other companies in the Dutch infrastructure sector and MVO Nederland in the 'Groene Netten' coalition to take next steps and create a common language. This will help our stakeholders gain more insight into the impacts we as companies in this sector have. It can also help us internally in our decision-making process. More details on this case study can be found on our website.

Lead North West European integration

Electricity doesn't recognise borders, electrons simply flow to the point of least resistance. Therefore, in an energy market with an increasing share of renewables, it makes little sense to act on a national level. To secure the supply of electricity and to integrate large amounts of renewable energy into the grid, TenneT is building an interconnected, cross-border grid, strengthening the electricity market in North West Europe (NWE).

TenneT has been working to integrate the NWE electricity markets for more than a decade, with the aim of creating a single market where electricity can be traded and supplied, easily and efficiently. By connecting our electricity grid with the countries around us, we physically enable electricity to flow across Europe. With increased interconnection capacity between countries, EU-wide rules have become crucial to manage electricity flows. In addition to building and operating the high-voltage transmission grid, it is also our role to support harmonising the rules and regulations for grid operation and electricity trading across national European electricity markets. By doing so we are creating one single fully-functioning integrated European electricity market.

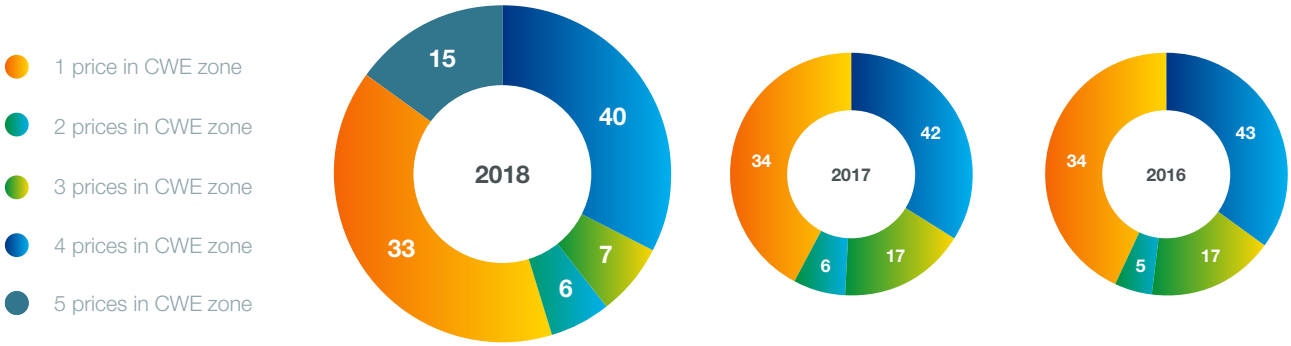
In this regard, our work can be linked to SDG 9 - Industry, Innovation and Infrastructure, as well as to SDG 13, Climate Action. Our work to increase the amount of cross-border capacity for electricity transport and ensure a secure, sustainable, efficient and cost-effective energy supply, helps combat climate change and its impacts.

Results

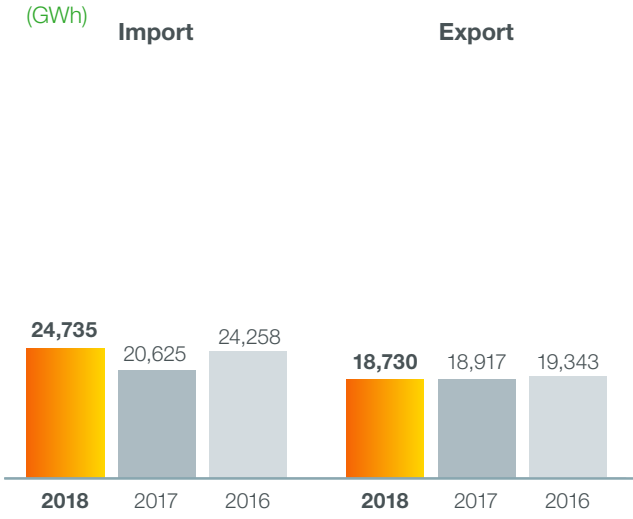
Market results

Price convergence

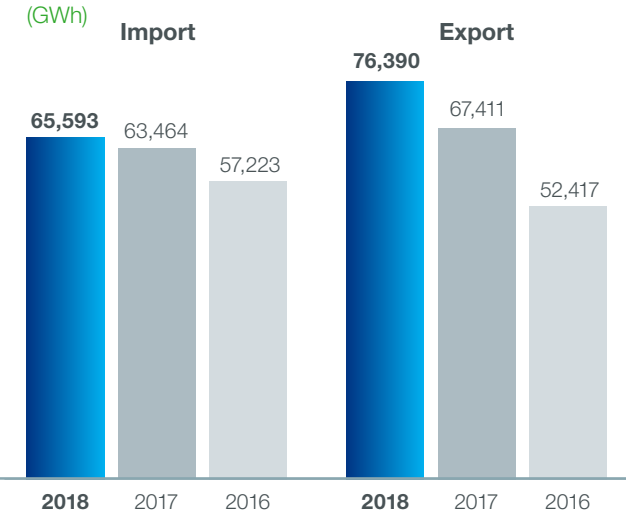
(%)



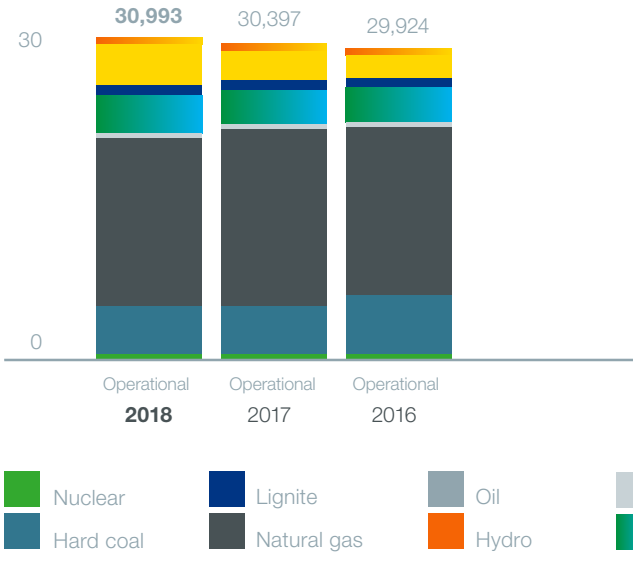
Inbound and outbound flows of Dutch TenneT grid



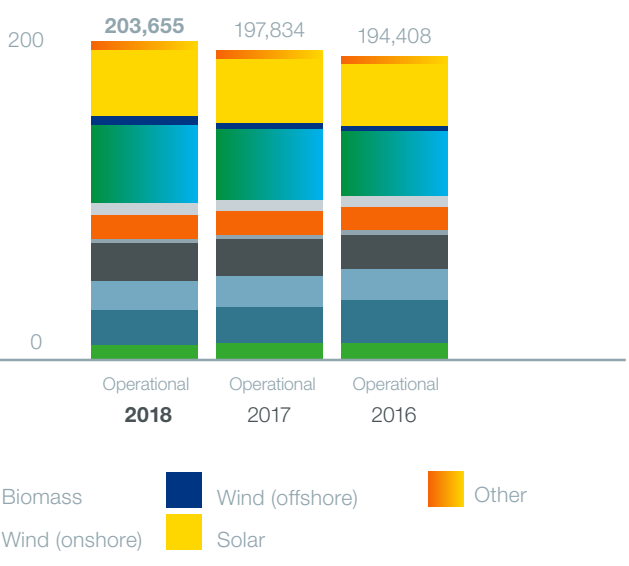
Inbound and outbound flows of German TenneT grid



Operating generation capacity Netherlands



Operating generation capacity Germany



Source: BNETZA, kraftwerkslisten

These results show how we are working on creating a more integrated NWE market. By increasing the number of interconnectors, we create more opportunities to import and export energy. This can benefit a more cost-efficient supply, as energy with a lower price on the other side of the border can be imported. Additionally it creates more opportunities to secure supply within the NWE region. Furthermore, we see that the installed capacity of the Dutch and our German part of the grid have a higher share of renewable energy sources (RES). Conventional generation such as nuclear and coal have a reduced share in the energy mix, which is in line with the German government's ambition to phase out all nuclear power plants by the end of 2022 and the phase out of coal-fired power plants in the Netherlands.

Infrastructure investments

With currently four connections between the Netherlands and Germany, one with the United Kingdom, two with Belgium, two with Austria, one with the Czech Republic, one with Sweden, two with Denmark and one with Norway, our grid forms a crucial link in the integrated NWE electricity system (see grid map on our website).

A good example of our work to strengthen the cross-border electricity market was recently completed. After years of planning, preparing and construction together with Amprion, the Doetinchem-Wesel 380 kV line became fully operational in November 2018. This 57 km connection between the Netherlands and Germany can carry up to 1,500 MW of electricity. Doetinchem-Wesel brings the number of cross-border interconnectors operated by TenneT up to 14.

In 2018, we continued our construction activities on the COBRAcable together with Energinet.dk. This high-voltage direct current (HVDC) sub-sea cable directly connects the grids in the Netherlands and Denmark with a capacity of 700 MW. In November 2018 a new milestone was reached when the cable was brought ashore in the Netherlands. The cable is planned to commence commercial operation in Q3 2019. An innovative feature of the COBRAcable is its ability to connect with an offshore wind farm. This project contributes to a sustainable international energy landscape by stabilising electricity prices in both countries, while further facilitating European market integration.

Our NordLink cable connecting the German and Norwegian grid is another important new interconnection supporting the development of an integrated European energy market. Once it is fully operational in 2020, it will be the first direct connection between the two countries' power markets. With a capacity of 1,400 MW, the interconnector can provide renewable energy for more than 3.6 million households and will be able to export wind energy from approximately 466 wind turbines of 3 megawatts, each.

The Westküstenleitung project constructs new, high capacity lines, which will collect the wind power produced on the west coast of Germany and transport it to the South. To meet the requirements of the energy transition, the Mittelachse project is replacing the 220 kV overhead line between Hamburg and Denmark with a new 380 kV overhead line that can transport seven times as much electricity over a distance of around 150 km.

Market rules and regulations

To facilitate the harmonisation, integration and efficiency of the European electricity market, the association of European Transmission System Operators (ENTSO-E) has been tasked with drafting the so-called "network codes". These network codes are legally binding European Commission regulations, governing cross-border electricity market transactions and system operations.

Each network code is integral to the drive towards completing the internal energy market, and achieving the European Union's energy objectives for 2030 of:

- At least a 40% cut in greenhouse gas emissions (from 1990 levels);
- At least 27% share for renewable energy;
- At least 27% improvement in energy efficiency.

ENTSO-E has delivered a total of eight network codes, but the work is not yet completed as each requires TSOs to deliver more detailed methodologies and implement the regulations from the network codes. TenneT has been actively involved in drafting the network codes and is fully involved in delivering the remaining required methodologies and implementing them at EU, regional and national levels. This is a very time consuming process and requires a major effort of TenneT as many local IT-systems, documents and procedures have to be adapted. Key milestones in 2018 are the delivery of capacity calculation methodologies for day-ahead and intraday, a common grid-model methodology, as well as methodologies for coordinating operational security analyses.

In June 2018, following several years of intensive development and testing, an important step towards creating a European intraday market was taken with the successful launch of the European cross-border intraday (XBID) solution. XBID enables continuous trading of electricity across 14 countries, including the Netherlands and Germany, and automatically couples 10 local intraday markets. Most other European countries are due to take part in a second 'wave' in 2019.

In October 2018, meeting the requirement of the Bundesnetzagentur (BNetzA), TenneT and other German TSOs successfully implemented congestion management on the border between Germany and Austria. Prior to that, there was unrestricted electricity trading between the two countries, but this led to bottlenecks in the heavily-loaded power grid that could only be stabilised with extensive measures. By implementing congestion management, the TSOs expect the effects of capacity constraints between Germany and Austria to be less severe. This will reduce the need for grid stabilisation and ease pressure on neighbouring transmission grids. In the long-term, this will have a positive effect on grid fees and help to reduce costs for electricity consumers.

Adhering to European harmonised rules has created a dilemma for TenneT. As a consequence of applying approved rules on capacity calculation on the Danish-German border, the amount of capacity that could be offered went down considerably over time. This decrease in offered capacity was reason for the European Commission to open a competition procedure against TenneT Germany. The European Commission argued that the lack of capacity at the Danish border might be considered discriminatory against Danish producers as it closed the German market.

While TenneT rejected the notion that the company behaves discriminatory, TenneT nevertheless committed to increase the capacity offered at the German-Danish border irrespective of the results of common capacity calculation rules. Based on this commitment proposal the European Commission has closed the case, thereby obliging TenneT to implement the commitment. The effect will be that capacity offered at the border by TenneT will be higher than the capacity offered in the past.

Challenges

Challenge	Action
A potential negative impact of the European Commission's Clean Energy Package legislation (to keep the European Union competitive as the clean energy transition changes global energy markets), is the prescribed new way of cross-border calculations. Not only does it carry a risk for security of supply, it could also lead to higher financial burdens for member states and TSOs, and increased electricity prices for end-users. The fact that the package rules out a possible tariff reduction, through income from congestion rents, is not encouraging.	We continue to invest a great deal of time in discussing how an integrated European market should function. We provided detailed input to policy-makers throughout all ministry, council and parliamentary consultations and discussions. Collaboration between TSOs is vital, we need to work together on future market design and the way of market coupling.
Lack of coordination in European context to plan / collaborate more efficiently between the member states in realizing our joint responsibility to ensure security of supply in an efficient and effective manner while also facilitating the shift to a low carbon economy.	Given the share of RES increases with a high level of correlation between regions, the current practise of relying on neighbours to secure security of supply diminishes. We continue to work together and engage with other TSOs and governments to make progress in this field.

Strategic risks

As a result of increasingly uncertain power production and power flows, caused by the rapidly increasing amount of renewable energy flowing into the European grid, there is a growing need for more cross-country power balancing and concerted system operation. TenneT is well prepared to take a leading role in the further integration of national markets and developments. For instance, TenneT operates and builds interconnectors, increases border capacities and is currently heading ENTSO-E.

Outlook

After many years of effort to realise an interconnected North-West European electricity market, we have reached a turning point. Now that TenneT has brought 14 interconnectors into operation and crucial projects like COBRAcable and NordLink are nearing completion, integration and cross-border co-operation are reaching a stage where significant volumes of cross-border trade will have a significant impact on the internal high-voltage grid and will compete with internal transactions.

With upcoming rules from the Clean Energy Package (CEP) which oblige TenneT to always offer an amount of minimum capacity for cross-border trade, the electricity system will be forced towards the limits of safe and secure operation and more congestions in the local networks is expected. The focus will therefore shift from investing in more cross-border interconnection capacity towards increasing investments in local grids so that electricity flows from cross-border trade can be safely transported alongside electricity flows from internal electricity markets.

European Cross-Border Intraday **(XBID) trading platform**

On 12 June, 2018 the European Cross-Border Intraday (XBID) trading platform was launched. This is one of the key projects on the roadmap towards the European Commission end-goals of the European Internal Energy Market. The XBID project realised the delivery of a single and harmonised XBID trading platform.

The delivery of the XBID platform has been a complex and intensive but successful process that lasted for several years. The cause for the specific delivery circumstances originate from the fact that the project context consists of a multitude of project partners (TSOs and Operators of the electricity trading markets) and stakeholders (European Commission, European & national regulators, market parties) from 14 countries that joined the XBID GO-live. Managing the complex dimensions such as international governance, political, regulatory, competition, technical, operational, etc. is something all involved parties can be proud of.

The successful delivery of XBID was without any doubt a clear European team effort of above mentioned project parties and stakeholders.

TenneT has at specific moments in the project, and at key positions within the project, clearly put the leading ambitions for NWE integration into practice. Examples of this are the TSO project manager position filled in by TenneT during the early initiation of the XBID project, the IT task force leader role during the implementation of the IT systems and also the broadly acknowledged key-expert contribution of TenneT during the entire project.

Now that XBID is in stable operation, the positive effects can be clearly observed. The short-term and cross-border trading of electricity in Europe has evidently become much easier and attractive. The availability of such an easily accessible, well-functioning and liquid short-term trading platform at pan-European scale is a pre-requisite to smoothly incorporate the increasing share of electricity production from Renewable Energy Sources into the European electricity system.

For the next years, a further European extension of the XBID trading platform is planned simultaneously with additional system improvements and further harmonisation.

Innovate business

Since TenneT was founded 20 years ago, we have seen a revolution in the energy market, as renewables have moved from niche to mainstream. The coming decades will see even more change, with international co-operation and ground-breaking innovation required to meet both the energy needs of society and the national and international carbon-reduction targets.

The energy transition and the resulting in-flows of wind and solar energy, require radical new thinking. For decades, society relied on a relatively simple and linear electricity model, where one power station would serve a large area, with electricity carried over relatively short distances. Today, electricity can be generated in any place, from wind farms far out in the North Sea to solar panels on the roofs of home-owners. Feeding this electricity into the grid, balancing its volatility and fluctuating supply with growing demand, transporting it over longer distances and maintaining affordable electricity prices and security of supply, requires radical new thinking and innovative solutions.

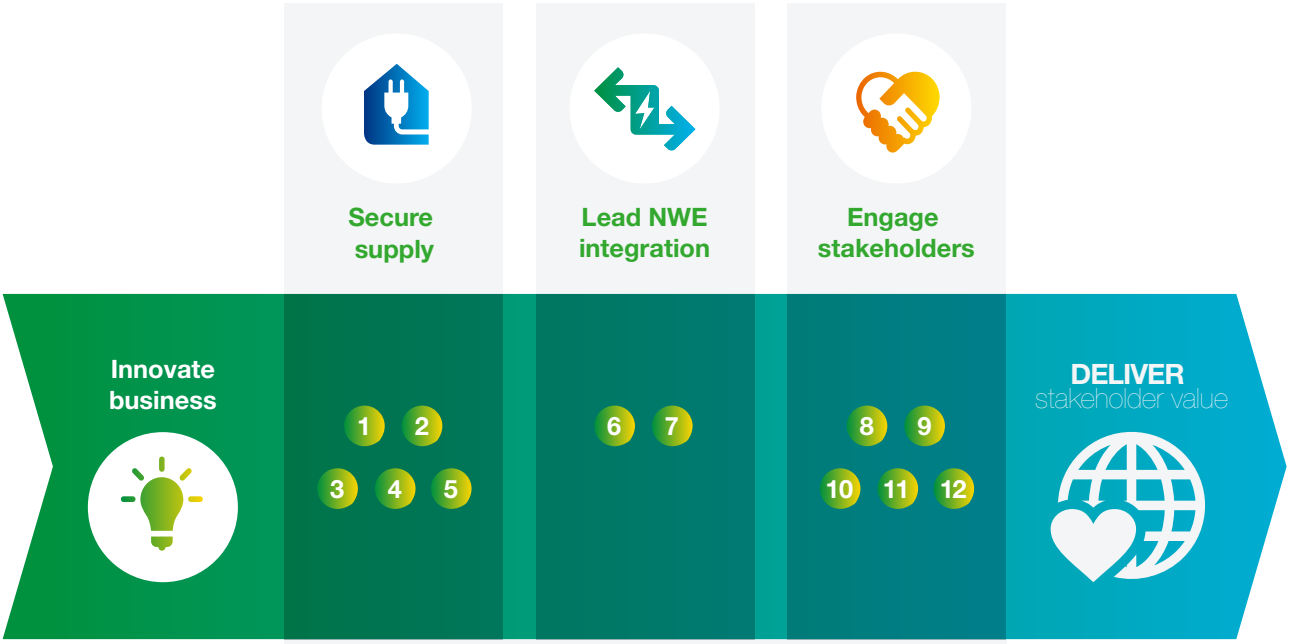
And renewable energy is not the only transformational change driving the need for innovation. The rapid development of an interconnected cross-border North West European (NWE) electricity market is another major technological challenge. TenneT is leading the way in facilitating this change and helping other TSOs, governments and technology providers build the infrastructure and high-tech backbone this model needs to function.

To create a grid that is fit for the future, old market rules and models must be upgraded to unlock modern technology options and new players need to step forward to provide previously unforeseen solutions. For TenneT, innovation is critical to developing the systems, services and technology we need to address the changes we face.

We define innovation as ‘the successful exploitation of new ideas to create value for the company and society’. Our approach to innovation is to create benefits for our stakeholders with a focus on our strategic goals, to enhance system flexibility and ensure security of supply. We also rely on innovation to advance the use of data and analytics and to drive the integration of the NWE electricity market. As such, our approach fits closely with SDG 9, ‘Industry, Innovation and Infrastructure’, promoting inclusive and sustainable industrialisation and innovation. Currently, we are working on ways to further improve how we manage this strategic innovation goal to monitor our progress.

Results

Innovate business



1. Blockchain pilot with Vandebron and Sonnen
2. Next Generation Scada project
3. Standardized substation replacement program
4. InnoSys 2030
5. Energised working
6. North Sea Wind Power Hub
7. XBID: Cross border intraday for 14 countries (see case study Lead NWE integration)
8. 10 year partnership with TU Delft
9. Multi supplier challenge for 2 - 5km horizontal drilling technology
10. Sector coupling as option for renewable integration
11. Supporting market parties for future flexibility products
12. Engaged in research consortia such as Promotion and Migrate

TenneT relies on continuous innovation to stay ahead in our fast-changing industry and to add value for society. Our people are experts in their field and we value their creativity. This ensures innovation, which helps us in our ongoing success and improvement.

To incorporate innovation in the core of our operations, we have designed and implemented an innovation programme that is connected to our strategy and overseen by our Innovation Board. Experts from the academic world, research centres and other TSOs help to push us further and make sure we are fully aware of cutting-edge technologies.

Innovating with stakeholders

10 year partnership with TU Delft

External stakeholders – and stakeholder engagement – play an important role in our approach to innovation. This includes close cooperation with universities, as research and innovation is essential for developing a sustainable energy system of the future. In this respect, TenneT has entered into a partnership with TU Delft to develop a new Electrical Sustainable Power Lab (ESP Lab).

Multi supplier challenge for 2 - 5 km horizontal drilling technology

To plan for the future we also seek innovation with other stakeholders, such as contractors and cable suppliers, especially as demands increase to lay cables underground. As we explore innovations in this area, we aim to cause as little disruption for the environment and local residents as possible, while also realising projects more quickly. Horizontal drilling over longer distances could be a solution, with the possibility to drill distances of five or more kilometres for our high voltage grid. We are now cooperating with contractors and cable suppliers to make this innovation a reality.

Supporting market parties for future flexibility products

As more renewable electricity is fed into the grid, demand for commercially viable energy storage solutions is growing. TenneT is facilitating the process with the Electricity Storage Valuation tool. This is designed for business users who need insight into the costs and benefits of large-scale energy storage allowing them to determine the optimal storage capacity for specific applications and plan large-scale storage projects.

The Flexibility Monitor is another innovation that will help manage a future energy system with variable renewable generation. Developed by TenneT, this aims to quantify the assets in the Dutch electricity market that provide flexibility when supply and demand need to be balanced in the grid. An understanding of the actual volume of flexibility in the market is important for TenneT as system operator, and also for energy producers, consumers and investors. To get this insight, TenneT teamed up with organisations such as VEMW, Unie van Waterschappen and Energie Nederland. A questionnaire was distributed among different market parties, including grid users, Balance Responsible Parties and aggregators. They were asked to provide their expected amounts of demand, storage and generation. The acquired data from the questionnaire and accompanying data analysis are being assessed and first results will be compiled in 2019.

Sector coupling as option for renewable integration

Sector coupling is an important area of innovation that also requires TenneT to cooperate with external stakeholders as we seek new solutions to manage the complexity of multiple energy sources. Sector coupling aims to harness the flexibility and/or storage capabilities of other energy sources and infrastructure to keep the power system balanced and stable.

For example, the electricity sector can be coupled with the mobility sector (e.g. electric vehicles), green gas transmission and storage, (dual fuel heat boilers, steel industry transferring to green gas and micro grids fuelled by hydrogen). Exploring these kind of options shows that TenneT is not solely focused on electricity solutions, but is also looking for solutions that support an affordable and secure power system and the evolution of a carbon-free future.

Engaged in research consortia such as PROMOTioN and MIGRATE

To better understand how energy can be brought onshore, TenneT is also actively engaged in research consortia of two EU Horizon2020 projects; MIGRATE and PROMOTioN. By 2020, high levels of wind and solar energy will flow through the pan-European high-voltage grid. As this occurs, more and more devices that generate and consume electricity will be connected to the grid through Power Electronics (PE). This will lead to technical challenges due to the lack of rotational inertia in the future power system, which endangers stability at 50 Hz. The MIGRATE research programme seeks to develop solutions to these technical issues, aiming to maintain grid availability and stability, quality of supply, control and grid protection. PROMOTioN will set out the development plan and optimise the regulatory and financial framework for Meshed Offshore Transmission Networks.

Innovation to secure supply

Blockchain pilot with Vandebron and Sonnen

In the future, decentralised energy sources will become increasingly important to maintain the balance between the supply and demand for electricity. To explore this, TenneT is undertaking a pilot project in collaboration with seven market parties: Engie, Enova, Escozon & Energie Samen, Next Kraftwerke & Jedlix, Scholt Energy & Enervalis, Sympower and Vandebron. This is a follow-up to a previous collaboration with Vandebron and uses blockchain software to manage transactions for electricity demand and supply. To model how electricity can be supplied from a growing number of sources, the project partners will apply a software management tool to energy sources including wind, solar, combined heat and power (CHP), heating grids, electric cars, electric boilers and electric pumps. During the pilot project, new data communication technologies will be tested to enable TenneT and suppliers of flexible generating capacity to exchange the required information for balance maintenance purposes.

InnoSys 2030

TenneT is exploring IT solutions for balancing the grid in Germany. It is leading a research project to investigate new IT concepts and tools to help in the energy transition, called InnoSys 2030. The German government initiated this programme with the four German TSOs, to investigate new ways to optimise grid utilisation through automated system operation.

Next Generation Scada project

Internally, TenneT is upgrading its own operating system to manage more complex electricity flows. The Next-Gen operating system will be designed to meet the challenges of the more complex energy landscape. In 2018 we conducted a market consultation to identify our requirements and potential suppliers, to be followed by a tender process in 2019.

Standardised substation replacement program

To make our 110/150 kV substations ready for the future, we need to replace approximately 140 substations over the next 10 years. These are over 45 years old. This means replacing an average of approximately one substation per month. To achieve the desired predictability and acceleration of replacement, we will introduce common technical standards and take a uniform approach to replacement, maintenance and management. Our Bay Replacement programme, which started in 2017, has largely designed this new approach in 2018, with inputs from market parties. The new concepts will be tested in 2019 with the replacement of six proof of concept-substations with AIS and GIS technology. Based on the results of the proof of concept phase from technical, organisational and financial perspectives, TenneT will proceed with the large volume replacement of 110/150 kV substations using the new technical standards and ways of working, for which TenneT will start preparations in 2019.

Energised working

As work on our assets becomes essential to secure supply and future-proof our infrastructure, we face the challenge of working with live installations, also known as 'Energised Working'. In the Netherlands this is prohibited by law, although the practice is permitted in other European countries.

However, given the importance of the availability of the high-voltage grid and the complexity of electricity supply as a result of the energy transition, it is increasingly difficult to switch off the operating voltage when we need to perform work. As a result, it has become difficult to maintain certain parts of the grid or to do so on time. Energised Working offers a safe alternative and does not pose greater risks than working on disconnected installations. To explore this further, TenneT collaborated with its partners.

Innovation to facilitate North West Europe market integration

North Sea Wind Power Hub

As TenneT plays a leading role in facilitating the evolution of a cross-border NWE electricity market, new approaches must be investigated to connect large scale offshore wind to the onshore grids. This will become even more important as wind generation capacity grows in the North Sea, with WindEurope forecasting a planned deployment of up to 70 GW by 2030. In this context, TenneT's vision for a North Sea Wind Power Hub, as part of a consortium with Energinet.dk, Gasunie and Port of Rotterdam, is a particularly important innovation. The concept of one or two hubs located in the North Sea, with interconnectors linking to neighbouring countries, would allow the mass-scale harvesting of wind power, delivered under the sea and across borders to North Sea bordering countries. Together with external experts, TenneT and its consortium partners are investigating feasible design options, the economic rationale, and the regulatory and market requirements for this ambitious international infrastructure.

The current regulatory framework incentivises grid maintenance and investments, whereas TenneT believes that investments in smart technologies and big data will enable us to optimise the use of our grid. To maintain an affordable cost for society, we continuously balance possible innovations against regulatory reimbursements.

Challenges

Challenge	Action
One of the biggest challenges in this dynamic environment is the relentless pace of change and the constant need to deliver solutions to meet the needs of society, regulators and government. Particularly challenging is spearheading innovation within an EU regulatory framework that has not fully caught up with the reality of today's electricity market.	As TenneT, we believe innovation is crucial to realise an affordable energy transition whilst meeting the demands of society, regulators and government. Through engagement with our stakeholders we continuously seek opportunities to enhance our toolbox of solutions meeting these demands. This has resulted in a joint assessment framework "Netverzwaren tenzij" in the Netherlands. This allows TenneT to consider in a transparent and verifiable way when it is socially efficient to include flexibility from the market as a (temporary) alternative to a grid reinforcement. The framework is now being discussed for regulatory implementation. In Germany the research project consortia of InnoSys 2030 with 17 partners has started research in 2018 to deliver innovative system operation concepts to increase transport capacity on existing lines. And together with Gasunie, TenneT has developed an Infrastructure Outlook 2050, exploring the opportunities of sector coupling based upon Dutch and German studies for our networks in the Netherlands and Germany. Participation both in Netherlands and Germany to support development of a 1 GW electrolyser solution by 2030 with significant cost reduction targets is also part of our commitment.
Keeping pace with the demand for transmission increase and renewals in our existing grid requires innovative approaches. As TenneT we rely on our suppliers to have the capacity and capability for delivery of the solutions we require.	We are in close contact with our stakeholders, also our suppliers to keep each other informed and to make sure delays are avoided as much as possible.

Strategic Risks

It is clear that technological innovation plays an essential role in achieving the energy transition. Although innovations abound in the energy sector, there are currently no decisive breakthroughs that will simultaneously guarantee security of supply, affordability for society and competitiveness of industry prices. It is not clear which technological developments hold the most promise; most likely it will be a mix of digitalisation, big data, market and price models, sector coupling, new types of cables, lines and other assets to transmit energy.

As new technologies are introduced, whether in physical assets or software solutions, there could be an increased risk of outages caused by malfunctioning. As such, TenneT demands high quality standards from its suppliers and service providers. As an additional measure, TenneT builds test procedures, test periods and guarantee periods into its project planning and supplier contracts.

In a highly dynamic market, there is some risk attached to the emergence of new players who may either over-reach themselves, fail or go out of business. To avoid a consequential lack of support or (spare) parts, TenneT assesses the financial stability of suppliers and prescribes a long-term availability of parts and services as one of its contractual pre-conditions.

On the other hand, digitalisation can also be an opportunity, helping to reduce costs and achieve a secure energy transition. However, that comes with high requirements, not only regarding data security, but especially for information management and human resources in the fields of designing, developing, maintaining and operating the systems. Therefore, TenneT continuously develops its IT capabilities, enhancing its organisation, training employees and reviewing the performance of IT service providers.

Outlook

The challenges facing TenneT require us to embrace truly pioneering inventions, such as green hydrogen. This will likely be among the solutions to help society achieve its ambitious carbon targets. To explore the possibilities, we are part of the Hydrogen Coalition, led by Greenpeace Netherlands, with 23 industry players. The coalition has presented government with a manifesto to stimulate the production of emissions-free green hydrogen, which is produced through the electrolysis of water by renewable electricity. TenneT is actively exploring the possibilities for new services made possible by converting wind-generated electricity into hydrogen. As well as being a carbon-free alternative to natural gas, the key benefit of this process is that hydrogen can be stored. This addresses an important challenge in the energy transition, as storage will help to even out imbalances between the supply and demand of renewable electricity.

TenneT and other industry players are engaged in a pilot project in Germany called Element 1, to bring green hydrogen solutions to market. TenneT is joining forces with the gas transport network operators Gasunie and Thyssennet to jointly build a power-to-gas installation with a capacity of 100 MW. Upon completion in 2022, this facility will be the largest power-to-gas installation in Germany. It will be constructed near a TenneT transformer station in Lower Saxony, where electricity from offshore wind turbines is distributed.

By storing wind energy surplus as hydrogen via power-to-gas conversion, TenneT has access to an important means to increase flexibility in its power system. This is a relevant solution for balancing the ever-increasing share of weather-dependent power production from wind and sun in the system. Hydrogen can also be mixed in the natural gas distribution networks and sold in hydrogen filling stations. From 2022 onwards, the three partners envisage to start storing green electricity as green hydrogen and thereby gain experience with power-to-gas on an industrial scale.

Grid **booster**

In Germany, the power generating landscape is changing fast. At the same time, the grid infrastructure needs to expand. As a result, the German power grid is reaching its thermal and stability limits. Consequently, congestion measures like Redispatch and EISMAN are needed. To cope with these challenges, the idea is to use unexploited transmission capacities, for example by implementing concepts of automated grid operation which are about to be investigated in the InnoSys2030 research project. Among the most promising of these concepts is the Grid-Booster.

In contrast to the classic preventive approach, the Grid-Booster ensures a (n-1) secure grid operation reactively, i.e. after fault occurred. Therefore, the power load of existing power lines can be increased beyond presently valid stability limits saving preventive Redispatch. In order to implement and test the Grid-Booster concept a pilot project has been started. Specifically, two spatially separated energy storage devices are planned to be installed in the north and south of the main grid congestions which act as source and sink of a “virtual power line” in case of emergency.

Engage stakeholders

Consumers and businesses across the Netherlands and Germany rely on the electricity we transport, across land and sea, giving us an important role in society.

Every minute of every day, 365 days a year, TenneT works to ensure electricity is reliably and affordably available to all who need it in the markets we serve. Meeting society's electricity needs is a fundamental responsibility that guides everything we do. We have a dialogue with our stakeholders every day and, as we perform our work, we aim to make all information easily available, take concerns seriously and use our expertise and experience to explain the necessity and effects of our work.

As we aim to do everything in the interests of our stakeholders, we must proceed in a way that attempts to build consensus and acceptance. We are aware that powering society cannot be done without impact on local communities and the environment. Installing new power lines – above or below ground, or under the sea – has consequences for nature and people. This is why we engage with our stakeholders during and after our projects. Our priority is to minimise any negative impact, while delivering the critical electricity infrastructure – on land and at sea – our society relies on.

Our reputation as a responsible, engaged and connected corporate citizen is important to us; better understanding and acceptance of our work, developed patiently over time through clear and transparent communication and respectful dialogue, underpins our licence to operate.

It is also important for us to play our part in the public debate on the energy transition, for example through our involvement in the Dutch government's Climate Tables. This forum was introduced to gain expert insight and advice from key players in the energy transition, as the Dutch government strives to meet the CO_2 reduction ambitions of the Dutch Climate Agreement.

Our ambition to engage with stakeholders links to several United Nations Sustainable Development Goals (SDGs). For example, SDGs 14 and 15, respectively relating to the sustainable use of sea and land, direct us in how we engage with communities and NGOs when planning and conducting our work in the natural environment. SDG 8, on decent work and economic growth, reflects our responsibility towards our employees and contractors. Furthermore, as a company that promotes diversity, we embrace SDG 5 on gender equality, with initiatives to encourage female leaders and equal opportunities for all employees. Among our stakeholders, we also aim to foster an environment of equality and respect, where everyone's views and standpoints are listened to and taken into account. More details on how we performed in these areas are disclosed in the Non-financial chapter.

Results

Stakeholder engagement	**2018**	2017	2016
# stakeholder engagement	738	756	171

Stakeholder dialogue is essential for developing understanding and acceptance. During 2018, we held 738 public meetings and events in the Netherlands and Germany, with over 12,500 visitors and participants. We aim for a fully transparent process, where all stakeholders' views and standpoints are listened to and considered.

We measure the effectiveness of our stakeholder dialogue with customers, employees and local communities, using various tools. Our customer satisfaction survey, which we run in alternate years in Germany and the Netherlands, is a major source of insights.

In the latest survey, conducted in the Netherlands, our overall customer satisfaction score (customers directly connected to our grid) rose slightly to 87%, compared to 86% in 2016. In the most recent survey in Germany (2017), we recorded a customer satisfaction score of 94% showing that our ongoing work to engage with stakeholders is helping to maintain consistently high satisfaction scores.

Gauging how sustainably engaged our employees are is also important. We do this via an employee survey. The last survey conducted in 2017, showed a high level of employee engagement of 80%.

To maintain and further increase this level of employee engagement, we also recognise the importance of building our reputation among potential recruits versus our industry peers. To this end, our success in the 2018 MT500 survey is an important achievement, ranking TenneT among the 25 most-respected companies in the Netherlands.

Other ongoing tools for measuring satisfaction with our stakeholder engagement, are the regular surveys we run at each phase of a new project. These ask people in the local community how they value their contact with TenneT, and the quality of communication and dialogue through information evenings, social media, emails, website and newsletters. On average, TenneT receives a rating of 6.7/10.

Research in the Netherlands shows that, on average, the public values the contact with infrastructure companies that execute large projects at 6.4, demonstrating that TenneT is performing on par with accepted benchmarks.

For particularly large projects, we also opened dedicated information centres. During 2018, for example, we opened an information centre in Dankern, Germany, for the AC cable under construction between Dörpen and Niederrhein, and a DC cable information centre in Wilster, for the new converter site serving the NordLink. In the Netherlands we opened an information centre in Kruiningen for people seeking information about the high-voltage connection between Borssele and Rilland.

Challenges

Challenge	Action
As a company that builds critical infrastructure in the natural environment, our engagement with stakeholders may tread a line between societal and private interests. What is good for and desired by society is not always welcomed by the communities which are affected by our projects. After all, lines and pylons in our landscape may not easily be accepted, but they are a necessity to transport electricity.	We meet this challenge by ensuring we have dialogues taking into account local interests, but we are aware that we will not overcome all local opposition. Moreover we identify possible constraints and cost of solutions in early stages of the decision-making process and communicate this openly on both local and political level.
Furthermore, the debate regarding health risks related to power cables and magnetic fields is still ongoing.	We make sure we comply with rules and regulations when building our assets taking sufficient caution. We proactively inform both governments and other stakeholders on magnetic fields related to our projects in cooperation with other parties involved (e.g. RIVM, DSOs, etc).

Strategic risks

As the energy transition gathers pace, there is a growing need for better external communication to explain its effects on society transparently. If there is a perceived lack of transparency, there is a risk of high dissatisfaction with TSOs, with consequential reputational damage, or financial loss in the form of lower investment or reduced cost reimbursements by ACM and/or BNetzA. To mitigate this risk, TenneT takes a leading role in stakeholder engagement, explaining its decisions to communities affected by its work, while also opening the door to discuss alternatives. As part of this, TenneT also takes into account alternatives outside the TSO business, e.g. sector coupling. Those alternatives have the potential to significantly reduce investments.

To ensure a future-proof grid, investments in extension and reinforcement by TSOs are necessary. The amended German NABEG legislation will include improvements with regard to licencing requirements, for instance for the replacement of existing overhead lines by higher voltage capacities and the option to use renewables as re-dispatch capacity. In the event of delays in project realisation, penalties could be imposed. To mitigate this risk, TenneT introduced professional project management many years ago. Despite this, we experienced and still anticipate the risk of bottlenecks caused by scarcity of resources and delays during the licensing process including as a result of stakeholder objections. Bearing these possible delays in mind, TenneT continuously reviews its project milestones and project commissioning dates.

Outlook

During 2018, the Dutch government engaged in an intense debate as it formulated a new action plan to combat climate change. This resulted in the publication of the 'Klimaatakkoord' (Climate Agreement) in July, with the Netherlands setting itself a target to cut greenhouse gas emissions (primarily carbon dioxide) by almost half (49%) in 2030, compared to 1990. That is 48.7 megatons (48.7 billion kilograms) more than targeted by previous policy.

Arriving at this landmark agreement involved an intensive process of multi-stakeholder consultation, including five 'Climate Tables' of energy sector players, three task groups and dozens of working groups. More than one hundred parties, including TenneT, were directly involved in the preparations. The result is an extensive package of agreements, measures and instruments that should reduce Dutch CO_2 emissions by at least 49% by 2030.

Since the summer, a great deal of hard work has been done, within and between sectors, on a package of measures to put the Dutch government's plans into action. The focus of this work follows three main areas: standardisation, pricing and subsidies. Cost is a recurring theme in all discussions, as the investments required to achieve the targets are high, but at the same time the government requires energy to remain affordable for all households. In addition, the competitive position of the Dutch business community must be maintained.

In Germany the Energiewende will rely heavily on renewable energy (particularly wind, photovoltaics, and hydroelectricity), energy efficiency, and energy demand management. Most, if not all, existing coal-fired generation capacity will need to be retired. The phase-out of Germany's nuclear power stations, to be complete by 2022, is a key part of the program. The German government has set itself the ambition to reduce CO_2 emission by 55% in 2030, compared to 1990. These targets go well beyond European Union legislation and the national policies of other European states.

As TenneT is a TSO covering large parts of Germany, we are adapting and upgrading our electricity infrastructure to play our part in facilitating the Energiewende. One of the obstacles we face is that attitudes to new infrastructure – such as the construction of power lines – varies between German states.

Overall, the German public are well-informed and have strong views about the effects of the Energiewende on their lives, resulting in ongoing public debate. This makes the planning and execution of new construction more challenging. In this context, we feel it is our responsibility to be open and transparent and involve local communities and other stakeholders in the decision-making process as much as possible.

These investments are essential to achieve our over-riding mission: to ensure that over 41 million end-users in the Netherlands and a large part in Germany have a secure supply of energy. With an investment portfolio of approximately EUR 35 billion over the next 10 years, involving onshore and offshore projects in both countries, we are working hard to provide a grid that meets society's energy demands and helps government achieve ambitious climate targets.

Harnessing ground-breaking new technology plays an essential role in this, as well as working closely with industry partners. Green hydrogen (hydrogen produced as a result of the electrolysis of water, using renewably generated electricity) is one such solution, and is being increasingly considered as part of a sustainable energy mix. The key benefit of green hydrogen is that it can be stored, which means it can help balance the fluctuating supply of wind and solar electricity. TenneT has joined forces with Gasunie, which owns the Netherlands gas transmission network, to conduct studies into the use of green hydrogen in the future.

As we and others work to build an electricity system in the challenging years ahead, we will strive to keep the cost for society as low as possible. We will also involve our stakeholders – including local communities – at the earliest stage of our projects, thereby building social consensus for our construction activities.

Community **dialogue**

Netherlands - Geertruidenberg

When TenneT began planning a new 380 kV connection between Rilland and Tilburg in the Netherlands, the Minister of Economic Affairs decided that the route would pass over part of the territory of the municipality of Geertruidenberg. The plan included placing sections of the existing above-ground 150 kV connection, between Geertruidenberg and Waalwijk, partially underground.

The Geertruidenberg town council was given the opportunity to decide the location of the underground cable. During the process, TenneT worked closely with the municipality, engaging local residents, landowners, provincial authorities, neighbourhood associations, water boards and nature organisations to find a consensus for the route of the cable and, where possible, making decisions together.

For example, two design workshops were organised involving representatives of various interest groups. During these, the possible locations for the new underground cable were considered, with the advantages and disadvantages of each one mapped out and discussed.

The workshop results were presented at an information evening for Geertruidenberg residents and landowners. We were very pleased with the turnout and the positive feedback received afterwards from attendees regarding this event.

Germany - Westküstenleitung

An example of our close connection with our stakeholders, is TenneT's West Coast Line (Westküstenleitung) a 380 kV and 140 km-long AC power line. Starting in Brunsbüttel, it will connect the German and the Danish electricity transmission systems (planned to be completed in 2022). The West Coast Line is on the European Commission's list of Projects of Common Interest (PCI), as an important interconnector supporting the EU's energy and climate policy.

In 11 community events, stakeholders were invited to receive information concerning TenneT's building activities. Moreover, meetings with local communities and mayors were organised to find the most acceptable solutions for erecting pylons along the route as well as discussions on how to use local roads during construction in the, safest and most careful way. For the most northern part, between Klixbuell and the Danish border, TenneT has started the pre-planning period with eight dialogue events, also involving the government of Schleswig-Holstein and representatives of all local districts.

Operational performance

Financial

Securing supply and facilitating the integration of sustainable energy sources into the high-voltage grid require substantial investments and flexible access to equity. Over the next 10 years, TenneT expects to invest approximately EUR 35 billion in onshore and offshore grid connections. It is our role to ensure our capital expenditures are efficient and our responsibility to keep the costs of power transmission and system services as low as possible for end-users. We seek to balance the financial interests of our stakeholders with our obligation to ensure electricity remains affordable and available to all.

Results

In 2018, we issued additional Green Bonds and successfully signed a United States Private Placement (USPP) transaction to fund our extensive investment programme. We work with our regulators to ensure our investments are as efficient as possible with project-specific efficiency assessments and reference grid analyses, which had positive outcomes. In our LEAN and continuous improvement programme, we performed scans to gain a better insight into the drivers affecting our productivity and implemented over 100 improvement initiatives.

Underlying results

(EUR million)	2018	2017	Difference in €	Diference in %
Revenue	4,176	3,948	228	6%
Operating expenses	3,439	3,119	320	10%
EBIT	806	897	-91	-10%
EBITDA	1,528	1,549	-21	-1%
Profit for the year	443	531	-88	-17%

Monitoring and managing the performance of our business is based on underlying financial information and not on IFRS-reported financials. Underlying financial information involves the recognition of regulatory receivables and payables, which – based on the current regulatory framework – can be recouped or are to be returned through future grid tariffs (see section 2 of our consolidated financial statements). Under IFRS, reimbursement/settlements through future grid tariffs may not be taken into account. As a result, the balance of any expense or income is not recognised as a regulatory asset or a liability under IFRS.

Operating expenses

During 2018, rising grid and depreciation expenses from increased investments, caused our operating expenses to increase. In Germany, we had higher redispatch costs caused by bottlenecks due to grid investments of neighbouring TSOs as the expansion of wind energy plants forced us to temporarily suspend the feed-in of renewable energy sources.

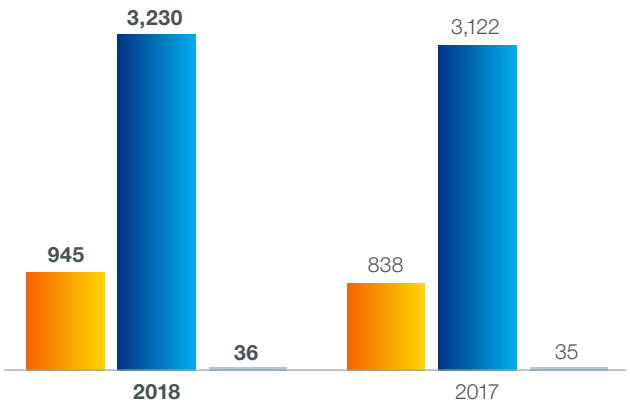
Cold reserve costs in Germany are lower due to decreased use of Austrian power plants caused by congestion management on the German-Austrian border.

In order to maintain the balance between supply and demand in the electricity transmission system, TenneT concluded contracts with electricity suppliers to obtain emergency reserve power. Due to an increase in the required volumes combined with higher prices, the costs for emergency reserve power increased in the Netherlands.

Revenues

Revenue

EUR million



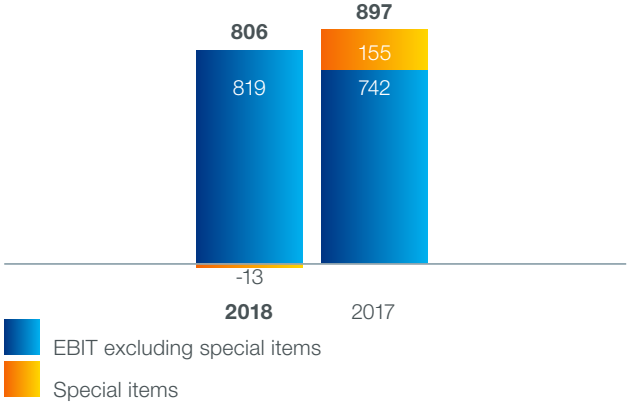
Regulation in the Netherlands and Germany compensate for the depreciation of our investments and allow us to make a return on the capital invested in our regulatory assets. As this asset base has grown in the past few years, this revenue increased in 2018.

Revenues are also influenced by regulatory decisions and changes. Following a CBb-decision in July, the Dutch regulator changed the regulatory treatment of system services back from a "budget-based" system to a "pass-through" system. This resulted in higher revenue compared to 2017.

EBIT

EBIT

EUR million



Underlying EBIT decreased from EUR 897 million in 2017 to EUR 806 million in 2018 which can mainly be explained by the special items in both years. The 2018 offshore reimbursement in Germany exceeding the actual costs considerably decreased compared to 2017. In addition, there have been smaller retrospective regulatory changes and a write-off of the Wintrack II assets to fair value, decreasing the 2018 EBIT.
The overall decrease in EBIT is partly compensated by the EBIT growth in our asset base, causing a higher return on capital in Euro terms.

Investments

Capital expenditure (capex) totalled EUR 2,253 million in 2018. This is slightly less than planned, although represented an increase of approximately 30% compared to 2017 (EUR 1,774 million). Investments increased mainly due to offshore projects in the Netherlands.

Investments

EUR million

At the end of 2018, our main projects under construction are:

- Germany: BorWin3, DolWin6, SuedLink and SuedOstLink
- Netherlands: Randstad 380 and the "Net op Zee" (Borssele Alpha + Beta)
- Cross-border: COBRAcable (Netherlands - Denmark), NordLink (Germany - Norway), Hamburg Nord-Kassø (Germany - Denmark) and Westküstenleitung (Germany - Denmark)

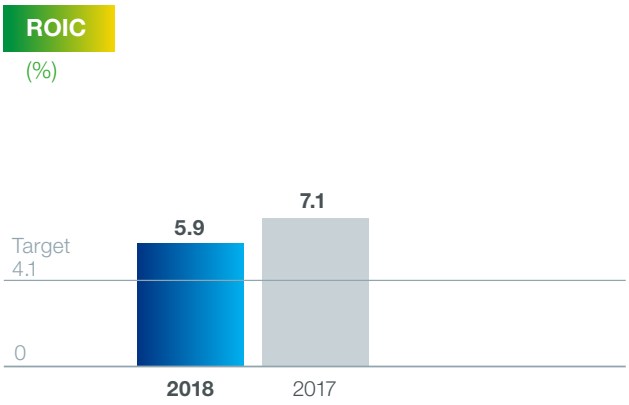
We have updated our 10-year investment programme. At this moment, we expect to invest approximately EUR 35 billion in the next 10 years. Investments in the portfolio in the Netherlands amount to EUR 7 billion offshore and EUR 5.5 billion onshore. For Germany these amount to EUR 16 billion and EUR 7 billion respectively. The amount of these investments have increased approximately EUR 7 billion compared to the amount reported in our 2017 integrated annual report. The main driver for this difference is related to Wind op Zee 2 (EUR 5 billion). Other factors causing this increase are related to changing planning of projects, inflation and increased investments in our existing grid.

TenneT's investment plans are strongly influenced by the climate ambitions and resulting energy agendas of the Netherlands and Germany, in particular as it relates to the timing and location of additional renewable energy sources. In addition, a wide range of ongoing technological developments, such as energy storage, energy conversion and digitalisation, may impact the energy system in general, and the operation, build-out and maintenance of the electricity grid specifically. This requires extensive scenario analysis and flexibility in the investment plans of TenneT, including regular reassessment of its entire investment portfolio.

For more detailed information on these and our other projects, please visit the dedicated project section of our website.

Return on invested capital

When measuring the value we deliver to our financial stakeholders, we use the rate of return on invested capital (ROIC) as our key performance indicator. Our target is based on an average of the long-term returns as stipulated in, or implied by, Dutch or German regulations. For 2018, ROIC decreased compared to 2017, due to our decreased EBIT (see "EBIT" paragraph for further details) and increased invested capital. The main driver for the decline is the (relative) decrease in allowed regulatory return on invested capital in the Netherlands. The ROIC of 5.9% significantly exceeded our minimum target of 4.1%.



Capital structure and financing

We seek to maintain a solid financial position, with sufficient flexibility and resilience to manage any necessary or required changes to our operations as well as any regulatory amendments. To carry out our extensive and ongoing investment programme, we need sufficient funding and full access to the financial markets under favourable conditions. Senior unsecured credit ratings for TenneT Holding B.V. remained unchanged in 2018 and were reaffirmed by Standard & Poor's (A- / stable outlook) and Moody's Investor Service (A3 / stable outlook).

CSR rating agency Oekom assessed our social, environmental and governance performance, resulting in our overall CSR rating remaining unchanged at level B (status Prime). In June 2018, we obtained a MSCI "A"-rating.

Equity

On 13 August 2018, the European investment Bank (EIB) purchased EUR 100 million hybrid securities, reaffirming its support for the NordLink interconnector between Germany and Norway, after the loans to TenneT and Statnett in 2017.

Net debt position

Our net debt position increased from EUR 7,687 million in 2017 to EUR 8,712 million in 2018. This mainly reflects the higher net funding provided for our capital investment programme.

In June 2018, TenneT successfully completed another green bond issue, worth EUR 1.25 billion, under its Green Bond programme. The issue was split into two tranches – a EUR 500 million tranche, with a 10-year maturity (coupon of 1.375%) and a EUR 750 million tranche with a 16-year maturity (coupon of 2.000%).

In December 2018, we successfully signed an EUR 500 million United States Private Placement (USPP) transaction, consisting of a tranche of EUR 160 million, with a 10-year maturity (coupon of 1.610%) a EUR 295 million tranche with a 12-year maturity (coupon of 1.830%) and a tranche of EUR 45 million, with a 15-year maturity (coupon of 2.01%). The settlement is carried out at 24 January 2019.

The green bonds relate to investments in the transmission of renewable electricity from offshore wind farms to the onshore electricity grid. The eleven offshore projects financed with the proceeds from the green bonds are examples of how we use green financing to invest in the infrastructure we need to support the energy transition.

For more information on our capital management policy, procedures and financial risks, see note 6 (Capital structure and financing) of our consolidated financial statements. For more information on our green bonds as included in our separate Green Finance Report.

As TenneT is set-up as a private company with a societal role, we need to carefully balance our financial and societal interests.

We face the ongoing dilemma of balancing public demand for better electricity infrastructure with financial constraints. Because TenneT's investments are mainly publicly funded, we ensure our investments in the high-voltage grid are efficient, as defined by the regulators. If the additional costs of a project cannot be recovered via grid fees, there are limits to how much TenneT can invest. For example, in 2018, TenneT announced it would not press ahead with a pilot project to install a 3.4 km underground 'super cable' in the Dutch city of Enschede. The superconducting high-voltage system would have had benefits for the city and was welcomed when announced, but further planning made it clear that the cost of such a project would be prohibitive.

For our solvability reference is made to note 6.1 of the consolidated financial statements.

Challenges

Challenge

Attracting equity & debt to finance investments facilitating the energy transition is an area of focus.

Action

We have regular contact with our financial investors and are working on further broadening our green bond program and extending our investor base to the USPP. We are in discussions with our shareholder about the level and timing for payment of additional equity

Risks

The significant amount of investments requires additional equity to secure a sufficient credit rating. In parallel, investments by the Dutch state are critically assessed by society and politics. We work closely together with the Dutch Ministry of Finance and continuously work on alternative solutions for financing.

Our revenues are based on the regulatory framework in the Netherlands and Germany. With the growing sentiment on the energy bill tension on the reimbursement system increases. Adverse changes in the regulatory system might impact our performance. For more information we refer to the regulatory risks in the risk paragraph.

Outlook

Looking ahead, we face the challenge of realising a very large investment portfolio. For the next ten years, we expect our asset base to keep growing, increasing our depreciation and revenues. This growth will also increase our operating expenses, as we work to attract more staff, leading to an increase of overhead costs. We plan to compensate for this rise through more focus on cost management and operational excellence by streamlining the organisation and improving our decision making processes.

Regulatory changes will also impact the development of our revenue. In Germany, revenue is expected to decrease due to unification of grid fees and a new offshore regulatory framework in which the operational expenses are treated as pass-through instead of a fixed percentage. In addition, there is a discussion on the regulatory treatment of the onshore operational expenses, which could impact future revenues.

Non-financial

Transporting electricity and maintaining the security of electricity supply in a responsible manner are critically important for a modern, well-functioning society.

We strive to make choices that benefit people and the planet, at the same time as generating an adequate return for our capital providers. In doing so, we not only aim to fulfil our company's role, but also our responsibilities to our stakeholders and help to fulfil national and international agreements and goals, such as the UN SDGs. How we want to achieve this is set out in our Corporate Social Responsibility (CSR) ambition plan 2025.

With this plan we aim to:

- Contribute to society, creating maximum impact for people working for us and impacted by us;
- Commit to the environment, avoid, minimise and compensate for our environmental impact on the planet;
- Ensure an affordable cost of electricity supply for society and an adequate return on capital for our capital providers.

Our CSR plan includes clear ambitions in seven areas where we believe we can make a difference. We have set, or are in the process of setting, key performance indicators (KPIs) and targets for each ambition area to demonstrate our progress to our stakeholders, showing how we are reducing our negative impacts, and maximising the positive ones.

In this chapter we show how we address our responsibility as a company with regard to our people and planet ambition. Our performance against our profit ambition is presented in the financial section of our integrated annual report.

Results

Our people ambition

SDG	Impact area	KPI identified	Target	2018	2017	2016
5	Diversity	Percentage of female employees (headcount)	22% in 2023	22%	21%	22%
		Percentage of newly hired females at management level	22% in 2023	29%	N/A	N/A
		Percentage of female Executive and Supervisory Board members	30% in 2023	22%	20%	17%
8	Safety	LTIF	<1.8 in 2020	2.36	2.53	3.60
9	Society	# Stakeholder engagement	[1)]	738	756	171

[1] We are currently developing a new KPI for the society impact area.

We consider our employees to be our most valuable asset. They are essential to our ability to fulfil our purpose in society and live up to our promises and ambitions.

This is why we aim to create a safe and inclusive working environment where our employees can thrive and perform to the best of their ability.

Headcount	2018	2017	2016
Internal employees (headcount)	3,409	3,187	304%
External employees (headcount)	1,129	871	63100%

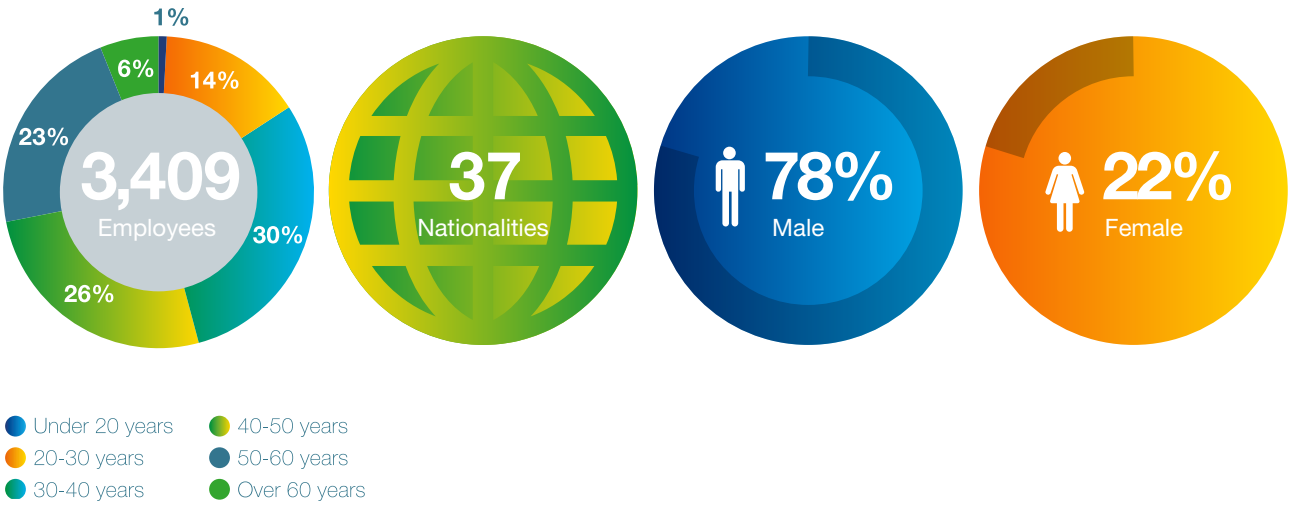
As our business plays a role in helping society tackle far-reaching challenges – including the transition to a low-carbon economy – TenneT needs to attract a larger workforce. In 2018 our workforce grew from 3,187 to 3,409. However, recruiting talent is getting harder, particularly in the technology sector where there is strong competition for good people. To overcome this, we invested in initiatives such as the Power Minor – a module in which bachelor-level students can learn more about technology and the energy sector. In 2018, this initiative was nominated for the Pro-Motor award, an annual award for innovative solutions where governments, companies and higher education work together. We have also invested in attracting female talent through university and career events.

Diversity

Diversity is an important area of our people ambition, as we strive to create an inclusive environment with equal opportunity for all. We recognise diversity in its wider sense – not only in terms of gender, religion and culture, but also socio-economic backgrounds, skills, knowledge, personality and experience. We believe that a diverse working environment helps us perform better as a company and deliver better value for our stakeholders and society.

For now, we focus on gender diversity in our CSR ambition plan, as we believe we can improve on this front. We are not alone in our sector in facing this challenge, including at senior management level. In 2018, we saw positive developments for all of our diversity ambitions and in 2019, we intend to maintain this focus and momentum. That is why we have developed a diversity road map, outlining the steps we need to take to achieve our goals. These include building further diversity awareness and discussion around diversity within TenneT and further embedding it in our recruitment activities. We have introduced various initiatives to improve gender equality, including a female leadership training programme and diversity workshops in Germany and the Netherlands. We recognise it will take considerable time to make significant progress, but we are making progress here. Additional information can be found in our Supervisory Board report.

Diversity at TenneT



Safety

We consider safety to be among the highest priorities for everyone who works for us, whether directly or indirectly. We are building a company-wide safety culture, introducing it to employees when they join the company, and reinforcing it on a daily. An example of this is further embedding the Safety Culture Ladder (SCL) – a NEN (Dutch Standardisation Institute) certification which allows us to assess the safety culture within a company.

We request our suppliers to adhere to this standard. In 2018 65 contractors were certified, with more expected in 2019. We also measure ourselves against this standard, which has resulted in a SCL level 3 certification. We have developed our Safety ambitions further in the new TenneT Safety Vision 2022 (Act Safe, Stay Safe), which primarily focuses on Safety Leadership and Safety Execution.

Recognising that our suppliers play a big part in our overall safety performance, we continue to seek dialogue and close cooperation with our suppliers on improving safety performance, by sharing best practices, working on joint programmes and creating a pro-active safety culture. Developing a safety culture starts with building a common awareness on all levels within the company. TenneT organises this by mobilising safety initiatives and awareness bottom up, and organising top down via Safety Leadership. In 2018 TenneT rolled out two Safety Leadership pilot programs within the Business Units Grid Service Offshore and Grid Service Onshore Netherlands, covering management and employees. Further roll out of Safety Leadership initiatives are embedded in TenneT Safety Vision 2022 and Safety Roadmap.

To measure the impact of these efforts, we use the Lost Time Injury Frequency (LTIF). In 2018, this was 2.36 which is an improvement compared to 2.53 in 2017. Starting in 2019, we will replace LTIF as our key performance indicator (KPI) for safety with Total Recordable Incident Rate (TRIR) as it counts all incidents, not only the Lost Time Injuries. In 2018, the TRIR was 3.1.

Society

Our aim is to engage with all stakeholders impacted by our activity. We track this through the number of stakeholder engagements we hold during the year in local communities.

We are currently working on updating our goals and KPIs regarding this ambition. More on how we engaged with our stakeholders is disclosed in the Engage stakeholders section.

Other people developments

To be a sustainable employer of choice, we also support our employees in their personal and professional development, helping them to learn and grow, on and off the job. We do this through formal training, on-the-job learning and regular discussion and feedback. We organise leadership trainings for new potentials and career development workshops where we want to think together with our employees how we can ensure their employability. For instance, we discuss with employees in different stages of their life and working care on how we can enable them to continue working in a sustainable manner.

We also offer a competitive reward package. Currently 83% of our employees in the Netherlands and Germany are covered by our CLA. In December 2018, we reached a new agreement with a term of 18 months. In Germany, a new 'Vergütungstarifvertrag' was also negotiated early 2018. This agreement ends in June 2019.

Remuneration

Remuneration ratio	**2018**	2017	2016
Remuneration ratio	5.6	7.5	7.0

Our remuneration ratio, compares the organisation's highest-paid individual to the median annual total compensation for all other employees. Due to the salary cap of our shareholder, the ratio in 2018 dropped to 5.6 compared to 7.5 in 2017. In the appointment of our new CEO we have complied with our shareholders' policy. The median of the annual total compensation did not change significantly this year.

Wellbeing

We consider employee wellbeing to be an important aspect, which is why we support initiatives that maintain a healthy balance, between body and mind. These include encouraging our people to stay active with a sports membership and to participate in our Always Energy health and vitality programme. In 2018, a number of workshops were held to help our people build and maintain a healthy body and mind.

In our new Bayreuth campus in Germany, which opened in February 2018, we have built a designated active health facility, where health courses and trainings are offered.

Our Planet ambition

Our Planet ambition relates to the actions we take to have a positive impact on the environment, while minimising our negative impact. In going about our business, we generate emissions, create waste, use non-renewable materials, and have an impact on the natural environment around us. This is why we have included three main impact areas in our Planet ambition: Climate, Circularity and Nature.

SDG	Impact area	KPI identified	Target	2018	2017	2016
13	Climate	CO_2 footprint of our substations, offices and mobility (net emission in tonnes of CO_2)	To be climate neutral for our substations, offices and mobility in 2020.			
			To be fully climate neutral (SF_6 emissions, grid losses, energy use offices, stations and mobility of our employees) in 2025.	2,037,122	2,095,129	1,709,354
		SF_6 leakage (%)	< 0.28% in 2020	0.30%	0.28%	0.38%
		SF_6 leakage (kg)	< 1,106kg in 2020	1,069	934	1,248
12	Circularity	Reduction of virgin copper use	In 2025 25% less impact on virgin copper use [1)]	N/A	N/A	N/A
		Reduction of non-recyclable waste	In 2025 25% less impact of non-recyclable waste [1)]	N/A	N/A	N/A
14	Nature	(Net) impact on nature [2)]	Zero (net) impact on Nature in 2020	N/A	N/A	N/A
15		Oil leakages (litres)	50% reduction of oil leakage in 2020, compared to 2017	6,379	6,860	2,087

[1] Not applicable as 2020 will be our base year.

[2] This KPI is currently in progress.

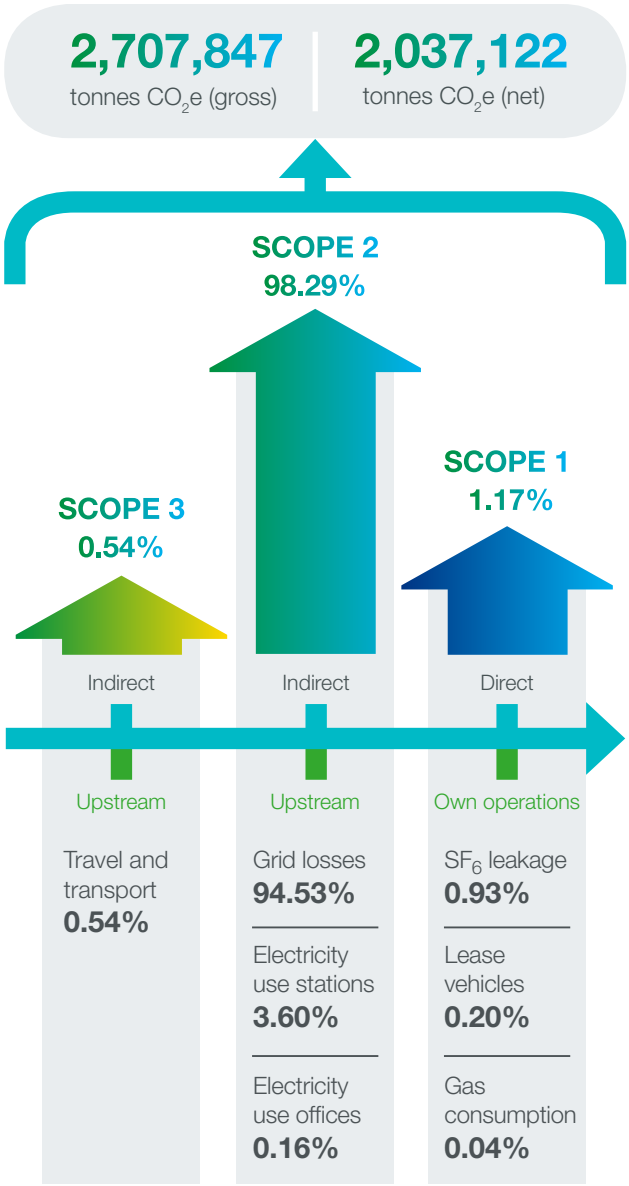
Climate

Climate	2018	2017	2016
Gross carbon footprint (ton CO_2e)/transported electricity (GWh)	10.5	10.8	9.3
Grid losses (GWh)	5,040	5,080	4,212

As we facilitate the energy transition, we work to protect against climate change by connecting more renewable energy sources. However, we also accept that through our infrastructure we are responsible for greenhouse gas (GHG) emissions, which are mostly the result of electricity produced to compensate for grid losses in our network. The electricity we use in our own operations and some leakage of sulphur hexafluoride (SF_6) – used as an insulating gas in high-voltage equipment – account for the majority of the remainder.

We will 'green' our electricity use with green certificates to the maximum extent permissible by law, we report a gross carbon footprint (without greening) and a net carbon footprint (with greening). As we work to minimise these factors, we are striving to become carbon neutral in 2025. To get there, we have set a milestone to be climate neutral for our substations, offices and mobility by 2020.

Carbon footprint breakdown



To reach our climate goals, we save energy and green our consumption. We use Internal CO_2 Pricing (also known as internal carbon pricing) to place a monetary value on greenhouse gas emissions. This allows us to factor the carbon cost (30 euros per tonne) into our investment decisions and business operations. This is especially useful when taking grid design decisions. With respect to leakage of SF_6, a greenhouse gas that is over 20,000 times more pollutive than CO_2, we continue to experiment with replacement alternatives and have taken action to reduce leakage across our network. During 2018 we also introduced measures to green our energy at several of our substations and are in the process of installing solar panels at our Redwitz substation in Germany.

We also realise that unfortunate incidents might occur, where SF_6 is leaked. In 2018, we have had an incident in Germany at our Siems substation, which is the main reason for the slight increase of percentage of SF_6 leaked in 2018 (0.30% compared to 0,28% in 2017). We will keep focussing on our efforts to avoid leakage of SF_6 in the next years to reduce our environmental impact and reach our 2020 target.

Circularity

As a large player in the energy transition we use copper, steel, aluminium and many more materials to expand our grid. In working with these materials, we aim to reduce our impact taking our next steps with respect to circularity. For our raw material use, we focus on copper as it is expected to become scarce in the near future and we have a high dependency on it in our operations. Regarding our waste, we have set a new target (refer to the table above) to reduce non-recyclable waste as we want to contribute to closing the material loop.

To reach this goal, we have set a new target (refer to the table above) for our virgin copper use and non-recyclable waste, to reduce both by 25% in 2025 compared to 2020. To obtain insight into our current virgin copper use, we will apply a raw material passport in our tender procedures and identify all sources of waste. This will set the basis for our reference year 2020. Pilot projects are designed to make progress on these focus areas, including a 2018 project at our Emmeloord Zuidervaart station to identify the value of waste streams for re-use.

Nature

It is essential to consider, our impact on the environment. As our assets are located throughout the Netherlands and Germany, often in areas of natural beauty, we are aware our business has an impact on biodiversity, ecosystems and landscape.

As a responsible company, we strive to reduce our negative impact while stimulating positive impacts. We have included our initiatives in this respect in our Green Charter. Examples include creating better nesting spaces for kestrels and owls and ‘insect hotels’ to improve biodiversity, two of these are located around our Arnhem and Bayreuth offices. Our Green Charter is regularly updated with new initiatives.

In addition, we work with external partners, including Natuurmonumenten and the Vlinderstichting, to care for the flora and fauna near our stations and cables.

For our offshore projects, we are working together with Stichting de Noordzee and Natuur & Milieu to join forces regarding the challenges at sea. Next to this, we are a member of the Renewables Grid Infrastructure, which is a unique collaboration of NGOs and Transmission System Operators (TSOs) from across Europe. The aim of this Initiative is to promote transparent, environmentally sensitive grid development to enable the further growth of renewable energy and the energy transition.

Commitment to nature	2018	2017	2016
Environmental incidents	55	44	58

Unfortunately, we sometimes encounter environmental incidents during our operations, such as oil leakages from our transformers and cables. This year, we had 55 environmental incidents and 6,379 litres of litres of oil spilled. The environmental incidents have increased compared to 2017, where we had 44 incidents.

The oil leakages show a small decrease compared to last year, where we have reported 6,860 litres of oil leaked in 2017 and this year this is 6,379 litres. We consider every incident to be one to many and are aiming to further reduce this in the next years.

Impact on our supply chain

Impact on our supply chain

At TenneT our supply chain starts with the raw materials that are mined to eventually build and maintain our assets. Main raw materials are copper and aluminium, mining of these metals has negative environmental and social impact. We are aware of this impact and for that reason we start in 2019 with asking our suppliers to provide us with more insights in the raw materials they use, by a so called 'raw material passport'. We purchase our components on world-wide markets and acknowledge that in other parts of the world different social and environmental standards may apply. Construction of our assets is being executed by local, national and international contractors. These activities impose risks for social and environmental aspects. For both our suppliers and contractors we request them to comply with our Supplier Code of Conduct. Assets are being operated and after reaching the end of their lifetime, we decommission our assets in a responsible way, e.g. by considering if it is possible to reuse the scarce materials used as much as possible. We strive to positively contribute to help improve the way other stakeholders in our supply chain act responsibly in doing their business.

To further ensure sustainable practices among our suppliers, we updated our Supplier Code of Conduct in 2018. The code has now also been extended to include more anti-corruption related content. We ask our suppliers and their subcontractors to commit to this code and standards that reduces environmental impact and support moral and ethical standards and which is based on the principles of the United Nations Global Compact (UNGC). TenneT has been a member of UNGC since 2015 and our commitment includes our approach to human rights, which is particularly important in our supply chain. Our suppliers provide parts for our grid assets, e.g. power lines.

We want to be sure that none of these suppliers is involved, directly or indirectly, in child labour or any other human rights, ethical or environmental abuse. This is particularly crucial if suppliers work in countries where these types of abuse tend to occur more frequently. Our policy is to visit suppliers, ask them detailed questions on these issues and discuss with them how to make improvements where necessary. It is our policy that suppliers who fail to meet our standards will no longer be accepted. In 2018 we did not conduct any supplier visits, because no new framework contracts were signed. In 2019 we will execute these supplier visits, which will give us insights in the current CSR performance of our suppliers.

We are currently working on a human rights scan in our supply chain. This will identify salient issues, helping us take necessary steps to address them. Based on the outcomes of this project, we will issue KPIs to track our progress. As part of our tender procedures, we ask our suppliers to adhere to the Supplier Code of Conduct. We are proud to help suppliers further enhance their sustainable working practices, contributing to better ways of working in our industry.

A clear dilemma for our organisation is the realisation of our ambitious CSR plan while at the same time managing our investment portfolio and our ongoing operations. We realise this requires complex decision making in an already complex environment. This is however, the only way forward. We need to be smart in the way we execute our projects and at the same time live up to our CSR goals. This in the end, will deliver best value for people, planet and profit. In our decision-making process around investments, we already consider CSR aspects to guarantee the most sustainable decision. This is however, work in progress, since this is new to our people, which means that in our proposals we need to improve and in our decision making we need to take these aspects even far better into account.

Challenges

Challenge	Action
Current labour market challenges with respect to attracting sufficient talent. This is becoming more and more difficult especially with respect to recruiting a futureproof workforce that has the right skills. There is a high demand within the market place for technically skilled talent which creates a challenge for us.	To make our workforce futureproof, we consider diversity to be an important element in our recruitement strategy. To attract sufficient and the right people, we increase interaction with potential employees, actively participating in career events and interacting with students during their studies. We invest in our future talent pipeline, which include initiatives to attract potential employees such as our International Trainee Programme and our High Voltage Trainee programme. Furthermore, we launched an employer branding campaign in the Bayreuth and Lehrte area to generate more awareness of TenneT.
Limits to the natural resources; in our regular course of business, we construct and maintain our assets. With this, we make use of natural resources such as copper and aluminium, which are becoming scarce, our challenge is to facilitate the energy transition whilst limiting our ecological footprint.	We are increasing our efforts to use the natural resources we need in our daily operations with maximum efficiency and to boost our circular ambitions. That is why we strive to reduce the use of virgin copper in our activities. We first focus on getting insight in our copper usage and we will use this information to determine proper actions to reach our goals.
As Tennet, we strive to make choices that contribute to a more sustainable future. The direct financial impact of these choices are a challenge as we need to balance this against ensuring affordable cost for society.	Investigate and identify opportunities where the business case is beneficial from both a short- and long-term value creation. Furthermore, we also aim to embed a broader sense of costs in our investment decisions, as we use carbon pricing to make sure we make choices that have considered both the financial bottom line, as well as a sustainable impact.

Risks

The world around us is changing fast, driven by megatrends such as resource scarcity, climate change and changing demographics. These factors create risks and also opportunities for TenneT. With respect to our investment portfolio, the availability of natural resources is a risk to successfully finalizing our projects as we use significant amounts of these resources, such as copper.

Regarding climate change, physical risks such as extreme weather conditions can affect our assets and operations. For example, the drought in 2018 caused delays with respect to our projects, as supply vessels carrying essential parts were not able to navigate parts of the river Rhine. We have taken the first steps in incorporating core elements of recommended climate-related financial disclosures as described by the Taskforce for Climate-Related Financial Disclosures (TFCD). These relate to our governance regarding CSR, which includes our ambitions towards climate. Furthermore, we have started to include climate-related risk and opportunities in our annual risk identification and assessment process.

Also, we see that changing demographics have an impact on our workforce, as society and the labour market are changing. Life expectancy is higher than it used to be which could impact the average age of our workforce in the future. This creates some risk for TenneT in terms of succession planning and having the right skills available at the right time.

Outlook

During 2018, we took significant steps to realise our 2025 CSR ambition and we will continue to take additional steps in the years ahead to make sure we deliver on our promises. This includes working closely with our stakeholders to ensure we maintain a sustainable impact with respect to people, planet and profit. We are confident that our actions will make a difference, helping us execute our business activities in a more sustainable way. Since much of our impact is also located in our supply chain, upstream and downstream, cooperation with our supply chain stakeholders is essential.

Statements of the Executive Board

The Executive Board is responsible for designing and operating TenneT's risk management and internal control system, and for reviewing its effectiveness.

In control statement

The Executive Board is responsible for designing and operating TenneT's risk management and internal control system, and for reviewing its effectiveness.

The risk management and internal control system consists of the following elements:

- The enterprise risk management system aimed to identify, analyse, define mitigating measures and monitor the development of risks relevant to TenneT;
- The internal control framework aimed to manage critical processes, including control self-assessments to document the effectiveness of their control processes;
- Business plans and quarterly reports with information on corporate objectives and their achievement;
- Internal audits of critical processes and discussions on the follow-up to audit findings with relevant management;
- A follow-up on recommendations made in the external auditor's management letter;
- An internal Letter of Representation (LOR) process, resulting in a company-wide LOR signed by the Executive Board.

The Executive Board reviews and analyses the strategic, operational, financial and compliance risks to which TenneT is exposed. It also regularly assesses the design and effectiveness of the risk management and internal control system. The results of these assessments are shared with the Audit, Risk and Compliance Committee, the Supervisory Board and the external auditor.

The risk management and internal control system does not provide absolute assurance that corporate objectives will be achieved, nor does it give absolute assurance that material errors, losses, fraud or violations of laws and regulations will not occur in the operational processes and/or the financial reporting.

With due regard to the above, the Executive Board is of the opinion that TenneT's risk management and internal control system has established that the financial reporting does not contain any errors of material significance and that the risk management and internal control system has operated adequately in the year under review.

Statement of responsibility

We confirm that, to the best of our knowledge, the financial statements for the period 1 January to 31 December 2018 have been prepared in accordance with IFRS, as adopted by the EU, and with Part 9, Book 2 of the Dutch Civil Code; that the disclosures in the financial statements are a true and fair view of TenneT's assets, liabilities, financial position and results as a whole; and that the disclosures in the annual report give a true and fair review of TenneT's performance, results and position, together with a description of the most significant risks and uncertainties we face. Furthermore, the Group has adequate resources to remain in operation and consequently the financial statements have been prepared on a going concern basis.

Arnhem, 18 February 2019

M.J.J. van Beek *
B.G.M. Voorhorst *
O. Jager *
W. Breuer

* Statutory Director

M.J.J. (Manon) van Beek
Chair Executive Board / Chief Executive Officer

B.G.M. (Ben) Voorhorst
Member of the Executive Board / Chief Operating Officer

Our Executive Board

M.J.J. (Manon) van Beek

Chair Executive Board / Chief Executive Officer

1970, Dutch

Initial appointment: 2018

Other positions qualitate qua:

- Chair of the Supervisory Board of TenneT TSO GmbH

Other positions:

- Chair Supervisory Board Kanker.nl foundation
- Chair Board Giving Back foundation
- Chair Board Refugee Talent Hub foundation
- Member Supervisory Board Topvrouw van het Jaar

B.G.M. (Ben) Voorhorst

Member of the Executive Board / Chief Operating Officer

1959, Dutch

Initial appointment: 2006

Other positions qualitate qua:

- Member Board TenneT TSO B.V.
- Member Board TenneT TSO GmbH
- President of ENTSO-E
- Member of the Board of Netbeheer Nederland
- Member of the Cooperation Board of TSCNET Services GmbH
- Member of the Supervisory Board of ETPA Holding B.V.

O. (Otto) Jager
Member of the Executive Board / Chief Financial Officer

W. (Wilfried) Breuer
Member of the Executive Board

O. (Otto) Jager

Member of the Executive Board / Chief Financial Officer

1970, Dutch

Initial appointment: 2013

Other positions qualitate qua:

- Member Board TenneT TSO B.V.
- Member Board TenneT TSO GmbH
- Member of the Supervisory Board of Relined B.V.

W. (Wilfried) Breuer

Member of the Executive Board

1965, German

Initial appointment: 2014

Other positions qualitate qua:

- Member Board TenneT TSO B.V.
- Member Board TenneT TSO GmbH
- Member Board TenneT Offshore GmbH
- Member of the German committee of CIGRE
- Member of the Administration Council of FGH eV

Supervisory board report

Preface

In 2018, after a careful search, we selected a new CEO, Manon van Beek. This is a momentous change for TenneT. She succeeded Mel Kroon, who led TenneT for 16 years growth and transformation. His leadership and vision have propelled TenneT from a mid-sized national TSO to a leader in North West Europe. Without Mel Kroon, we doubt TenneT would be the company it is today. We are fully confident that Manon van Beek is the right person in the right place and will lead TenneT through the next phase.

The extensive search for Manon van Beek saw the Supervisory Board working very closely together. The Supervisory Board interviewed a shortlist of five candidates, in which Manon van Beek scored highly on the TenneT Leadership Profile, which addresses issues such as leading business, change, leading people and personal impact. The Supervisory Board valued her experience in the energy sector, as well as her understanding of the challenges TenneT faces, gained over two decades. She is a long-term strategic thinker, a crucial quality in a business like TenneT.

On top of the challenging task of finding a new CEO, the past year has been extremely busy at TenneT, and the year ahead will be no less so. TenneT is working flat out to secure a reliable electricity grid while dealing with the challenges presented by the large-scale inflow of renewables. Meanwhile, vital work continues to be done on several crucial investment projects. Besides providing transmission and system services, while facilitating a smooth-functioning electricity market, TenneT is playing a leading role in shaping an integrated European electricity market. Throughout all of this, TenneT remains focused and dedicated to its central purpose of safeguarding the safety and security of supply.

These are significant achievements, made possible by the hard work, dedication and continuous commitment of TenneT's employees. We would like to thank them for this. Integrating renewable sources of energy into the grid, while keeping the flow of electricity balanced and stable, requires substantial investments and careful decision-making. As TenneT's Supervisory Board, we are closely involved in this process, overseeing and advising the Executive Board on strategy as well as on operational performance. With a busy agenda there is the risk that there is only little time for reflection and informal dialogues. The Supervisory Board is aware of this and aims to address this.

Strategy

The five-year 'Enabling the Change' strategy (2015-2020) was the basis for the strategic orientation which Manon van Beek initiated when she took up her role. We welcomed the constructive dialogue on this strategic orientation which we had with the Executive Board at the end of 2018 and look forward to continuing this process, which should result in an updated strategy in 2019.

Deliver stakeholder value

Operating in a stakeholder field where many different interests are at play, it is vital to stay in close contact with all stakeholder groups. These include our shareholder, the Dutch and German authorities, the general public, our customers, our suppliers, NGOs, politicians, regulators, investors, the media, other European TSOs and TenneT's employees. Discussing alternatives and creating understanding and acceptance is crucial, as stakeholder interests are not always aligned. Everyone wants electricity, but not all welcome new lines in their area. We encouraged the company to transparently communicate trade-offs in this respect.

Engage stakeholders

Weighing what residents want from their environment versus the need to build necessary infrastructure can be complicated. We welcome TenneT's insistence on keeping all lines of communications open.

We were in frequent formal contact with our shareholder throughout 2018. These contacts regarded mainly the appointment of the new CEO and the financing of the company. Next to this there were occasions to meet in a more informal setting, such as at the opening of the interconnector Doetinchem-Wesel.

Secure supply

While undertaking substantial and complex investments to allow for the inflow of renewables in both Germany and the Netherlands, TenneT must continue to focus on the maintenance of its existing grid. Executing maintenance with minimum downtime and disruption was high on the agenda of the EB and therefore also in our focus this year. Strengthening the grid with new investments, building onshore and offshore grid connections and cross-border interconnector capacity are just as crucial to security of supply as perfectly executed maintenance.

The Supervisory Board carefully assesses the strategic, societal, financial, and technical aspects of investments and maintenance, in line with our mandate. We take a broad and long-term view, as these factors do not always work in the same way and can lead to different outcomes. The most attractive option from an environmental perspective for instance, may be too expensive. Besides these dilemmas, we also have to look at TenneT's long-term investments in the context of a fast-changing market affected by the inflow of renewables and technological developments. We do not want TenneT to build too much and burden society with assets that then become obsolete.

Strategic Investment committee

Throughout the year, the Strategic Investment Committee reviews investment proposals above EUR 50 million and advises the Supervisory Board. The Strategic Investment Committee assesses whether a proposal is compatible with the company's economic, financial, and technical objectives and the impact an investment will have on stakeholders. The dilemmas we discussed this year included issues such as the cost of grid expansion versus those of redispatch. The Strategic Investment Committee also monitors timeliness, quality, cost efficiency and the risks associated with large projects. In 2018, the committee met six times, each time incorporated in a plenary Supervisory Board meeting, because of the large investment portfolio at hand and due to the fact that the Supervisory Board is, with only four members, currently short staffed. The Strategic Investment Committee consists of Rien Zwitserloot, Laetitia Griffith and Pieter Verboom.

Lead NWE integration

Further integration of the North Western European markets, as well as upgrading the Dutch and German electricity grid, are necessary to ensure security of supply. TenneT is a thought leader in establishing a single European energy market and has more interconnectors in place across national borders than any other TSO in Europe. International cooperation and a high degree of onshore and offshore connectivity are crucial to realising the energy transition and securing an uninterrupted and cost-efficient supply of electricity. We believe that it is in society's interest that TenneT and its North West European counterparts cooperate and expand their role of facilitating the energy transition. However balancing European goals with national security of supply interests can be challenging.

In this regard the Supervisory Board appreciates that Ben Voorhorst, COO of TenneT, is currently President of the European Network of Transmission System Operators, ENTSO-E.

The Supervisory Board has discussed the EC's decision about the trading capacity available to the market between Germany and Western Denmark including the implication for TenneT.

Innovate business

Innovation is high on our list of priorities, particularly the innovation roadmap, innovation programs and the way TenneT structures and governs innovation. Achieving change in a corporate culture where reliability is highly valued can be challenging.

Operational performance

Financial

TenneT must weigh the financial interests of its capital providers against its duty to ensure security of supply. TenneT's license to operate is rooted in securing electricity supply in its markets, while delivering optimal benefit to society in the most financially viable way.

Audit, Risk and Compliance Committee

The Audit, Risk and Compliance Committee ("ARCC") monitors the company's financial reporting, including our quarterly and annual reports, financing, risk management and internal control, internal audit, the independent external audit of the financial statements and the evaluation of the external auditor.

The ARCC consisted of Pieter Verboom (Chair) and Ab van der Touw. The committee held four meetings attended by the CEO, the CFO, the senior manager for Internal Audit and the company's external auditor. For relevant agenda topics, also the senior managers Financial Control and Business Control as well as the Compliance & Integrity Officers joined the meetings. As in previous years, the ARCC also spoke to the external auditor without the board being present. No additional material topics arose from these meetings. As in previous years, the CFO had multiple one-on-one meetings with the chair of the ARCC. The senior manager Internal Audit also met with the chair of the ARCC, to discuss the Audit Plan for 2019.

Management letter

The Management Letter was discussed with the external auditor and the EB in both the meeting of the ARCC as well as the plenary SB. The ARCC/SB noted that the external auditor observed in 2018 a stable control environment within TenneT. New policies, procedures and harmonisation initiatives between Germany and the Netherlands were implemented to strengthen the internal control environment. The internal control framework is a relevant element in supporting the 'in control' statement by management as included in the integrated annual report. TenneT is not best in class in this regard, leaving room for improvement. The ARCC/SB is of the opinion that the EB should determine the ultimate goal in this respect.

The following observations of the external auditor were discussed:

- Lead times in resolving internal control deficiencies can be improved.
- The Company is dependent on highly automated data flows. Application controls that are embedded in the processes are not yet included in the Internal Control Framework. The ARCC/SB adheres to the recommendation of the external auditor to embed the automated internal controls into the ICF and to appoint an owner for each automated control who needs to ensure and assess its operational effectiveness.
- Regarding the governance of the cross-country integration of the compliance and integrity function the ARCC/SB welcomed the repositioning of the German compliance and integrity officer directly under the lead compliance and integrity officer who reports to the CEO.

Risk management

Individual interviews were conducted with the members of the Supervisory Board as part of the 2018 annual strategic risk assessment. The dilemma of accommodating the rapid growth of the company while simultaneously controlling risks was accepted as the basis for the strategic risk assessment. The Executive Board was responsible for finalising the set of strategic risks as mentioned in the section 'Risk management and internal control'. Quarterly progress reports on large projects were reviewed by the Strategic Investment Committee and subsequently by the Supervisory Board. These focused on project management, with specific attention paid to timely delivery, risks of delays and interruptions, and the societal demands that could lead to delays and/or projects becoming more expensive.

Compliance and integrity

Compliance and integrity are matters that both require constant attention. The Supervisory Board met with both the Lead Compliance & Integrity Officer as well as the German Compliance & Integrity Officer. The Supervisory Board discussed the quarterly compliance and integrity reports. The Supervisory Board noted the implementation of the Corporate Policy on Conflict of Interest and included a reference to this policy in the Rules governing the Supervisory Board.

Financing

TenneT's financial position, financing structure and overall financing plan were also assessed by the Supervisory Board, including shareholder objectives, the long-term continuity of the company and short-term liquidity needs. Topics included the financing structure of the TenneT Group, cash flow and liquidity forecasts, equity need and solutions and several debt financing instruments. The Supervisory Board also keeps a close eye on the balance between the shareholder's focus on the Dutch investment portfolio and the equity needs for the entire TenneT Group. Given the company's sizable investment programme, further equity will be needed to ensure continuing access to other financing. The necessity of an equity contribution has been thoroughly discussed and we welcomed the intention of the shareholder to present the possible equity funding scenarios to parliament in summer 2019.

Regulation

The Supervisory Board continues to discuss the implications of TenneT operating in a regulated environment in the Netherlands and in Germany. Ongoing relevant issues include striking a balance between regulatory optimisation and creating value for society and the concurrence of growing company profits and increasing grid tariffs.
The Supervisory Board also discussed the (implications of) changes in the regulatory regime, such as the reimbursement of offshore operating expenses in Germany and the costs for Energy & Capacity in the Netherlands.

Integrated reporting and audit

TenneT's financial statements for the 2017 financial year, the 2018 internal quarterly reports and the 2018 interim results were all discussed by the Supervisory Board during the year. These meetings also covered the independent auditor's report, the auditor's management letter, internal audit reports, results from internal risk and control assessments, the 2019 budget and the medium-term plan 2019-2021.

Financial statements

The Supervisory Board has examined the Integrated Annual Report 2018, the financial statements 2018 and independent auditor's report, the assurance report related to non-financial information, the auditor's management letter and the audit results report issued by TenneT's external auditor. This review is based on the Audit, Risk and Compliance Committee's preparatory work and advice. As a result, the Supervisory Board endorses the documents and recommends that the General Meeting of Shareholders adopts the financial statements.

The Supervisory Board recommends that the General Meeting of Shareholders discharges the Executive Board from liability in respect of its management of the company and releases the Supervisory Board from liability in respect of its supervision.

Non-financial

Planet

Although TenneT is facilitating the transition to green energy, its activities have an unavoidable impact on nature. As TenneT's Supervisory Board, we are fully aware of our responsibility to protect the natural environment for future generations. TenneT's Commitment to Nature vision underlines the company's approach to biodiversity, ecosystems and the natural landscape.

People

TenneT's people are at the heart of the company's continued success and growth. The Supervisory Board aims to help create a safe, healthy, stimulating and energising workplace where TenneT employees can perform to the best of their abilities. Attracting the right people in an environment where talented technical specialists are scarce and empowering them to perform is crucial to TenneT's ongoing success.

Safety

Safety at TenneT is an important area of focus for the Supervisory Board with TenneT's safety performance, benchmarked against peers and overall best-performing companies. The Supervisory Board continued to closely monitor the implementation of TenneT's Safety Vision 2018 and discussed the safety track record of TenneT and its contractors. Suppliers not meeting TenneT's safety targets are a major point of attention. During its meetings, the Supervisory Board discussed individual safety incidents, as well as the lessons learned and best practices from other industries.

Remuneration and Appointments Committee

The Remuneration and Appointments Committee (RAC) is tasked with the company's remuneration policy and the remuneration of individual board members. The Remuneration and Appointments Committee also establishes criteria for (re)appointing new statutory Executive Board and Supervisory Board members and supervises the recruitment process. Furthermore, it is responsible for the management review and succession planning regarding the Executive Board.

Selection, appointments, remuneration and performance

Selection and succession concerning TenneT's Executive Board are clearly an important task for the Supervisory Board. As part of this, the Supervisory Board conducts performance appraisals of the members of the Executive Board. The Remuneration and Appointments Committee gathers input for these appraisals during a Supervisory Board meeting not attended by the Executive Board. To gather more insight in Executive Board team dynamics as well as the individual functioning, the Supervisory Board members meet annually with individual Executive Board members. The Supervisory Board wholeheartedly supported the proposal of the Executive Board to have an Executive Board with only statutory members. Up to December 2018, the Executive Board existed of three statutory members and two titular members. As from 2019 the Executive Board will consist of four statutory members: CEO Manon van Beek, CFO Otto Jager, COO Ben Voorhorst and a second COO-function. With regard to the latter the RAC started the selection and appointment process end of 2018.

Apart from assessing the performance of the Executive Board, the Supervisory Board also discussed the performance of TenneT's wider senior management, including succession planning.

The RAC consists of Laetitia Griffith and Ab van der Touw and held six meetings, the majority of which were attended by the CEO. Discussions concerning the remuneration report were held in the presence of the CFO. Next to this the RAC played a crucial role in the search for a new CEO to replace Mel Kroon. In this framework the RAC was temporarily enlarged with Pieter Verboom. Furthermore the RAC was engaged in the transition period and handover to Manon van Beek.

In the second half year of 2018, the RAC started the process of selecting and nominating new members of the Supervisory Board. Many factors are considered, including the required expertise and background of its members.

During summer 2018, the shareholder re-appointed Rien Zwitserloot for a period of two years. In the past 8 years (two terms of four years) Rien Zwitserloot has proven to be an asset to the Supervisory Board, with his in-depth knowledge of large (infrastructural) projects. In light of the many changes in the Supervisory Board, the Supervisory Board nominated Rien Zwitserloot for a re-appointment.

Diversity

TenneT aims for its Executive Board and Supervisory Board to be comprised of people from diverse backgrounds with a range of experience, skills and knowledge. TenneT values this diversity and believes it contributes positively to the way situations are assessed and decisions made. Bearing in mind the Dutch Civil Code and Dutch Corporate Governance Code, the Supervisory Board set a gender diversity target of 30% female directors, both the Executive Board and the Supervisory Board. The Supervisory Board is aware that TenneT's Executive Board still lacks gender diversity - despite the appointment of Manon van Beek as CEO. With Stephanie Hottenhuis leaving the Supervisory Board due to accepting a new executive position, the percentage of female representatives in our Supervisory Board is currently below our target of 30%.

Contact with the Works Council

Fostering good relations with the Works Council, which represents employee interests, is important to the Supervisory Board. As such, Laetitia Griffith regularly met with members of the Works Council during the year to keep abreast of employee issues and concerns. With regard to the selection and nomination of new Supervisory members, the Works Council decided to avail itself of its right of recommendation of a new Supervisory member. The Supervisory Board applauds this active engagement by the Works Council.

The Supervisory Board welcomed the joint meeting it attended in November with the Works Council and the Executive Board because it presented a good opportunity for exchanging ideas on the future of the workforce.

Ongoing education

Newly appointed Supervisory Board members participate in a programme introducing them to TenneT's key business areas. In October 2018, an in-depth workshop was held on the Dutch Climate Accord and its implications for TenneT. This meeting was combined with a visit to the High Voltage Lab of the Technical University in Delft.

Composition of the Supervisory Board

In 2018, the Supervisory Board said farewell to two distinguished members. In February, Aad Veenman retired as chair of the Supervisory Board after reaching the maximum number of three terms. We would like to thank Aad Veenman for his vital contribution during this crucial period of expansion for TenneT. From 22 February 2018 through 1 June 2018 Pieter Verboom, the vice-chairman of the Supervisory Board, acted as interim chair.

Ab van der Touw joined as the new chair of the Supervisory Board as of 1 June 2018.

To the regret of the Supervisory Board, Stephanie Hottenhuis stepped down as member of the Supervisory Board as of 1 August 2018, having accepted an incompatible executive position. The Supervisory is grateful for her contribution over the past five years.

With only four members, the Supervisory Board is currently understaffed. The Supervisory Board is acutely aware that it is not at full strength during a crucial time in TenneT's development and is determined to remedy this within a reasonable time frame.

In accordance with the Dutch Corporate Governance Code, all Supervisory Board members are independent. Furthermore, the Supervisory Board complies with the Electricity Act, which stipulates that the majority of its members have no direct or indirect links with legal entities (or shareholders thereof) engaged in the production, purchase or supply of electricity or gas.

In 2018, Laetitia Griffith joined the Aufsichtsrat of TenneT TSO GmbH, the German equivalent of the Supervisory Board. It was a legal requirement to enlarge the Aufsichtsrat, since the German business now has over 2000 employees.

For more information on the members of the Supervisory Board as well as the (re)appointment schedule, please visit our website.

Supervisory Board evaluation

The Supervisory Board evaluated its own performance at the end of 2018 with the support of an external consultant. The outcome will be discussed early 2019.

In 2018, Supervisory Board meetings ended with an evaluation of the meeting. Open feedback on topics such as setting the agenda, the quality of documents submitted, and the effectiveness and atmosphere of the meeting is valuable. Also the duration of the meetings was addressed, bearing in mind the range of topics that need to be discussed.

Corporate secretary

The Supervisory Board would like to thank the corporate secretary, Saskia van Rassel. Her contribution is greatly appreciated.

Supervisory Board meetings and other topics

In this report, we as a Supervisory Board aim to reflect the discussions held in 2018 during the Committee meetings as well as the six regular plenary meetings. All of these plenary meetings were attended by all Supervisory Board members. Also the committee meetings were attended by the members.

In our capacity as Supervisory Board, we have advised and overseen the policies of the Executive Board during 2018, helping to ensure that TenneT continues to play a leading role in the fast-changing and challenging integrated European electricity market. We look forward to continuing our work in 2019.

Arnhem, 18 February 2019

Supervisory Board TenneT Holding B.V.

Ab van der Touw
Pieter Verboom
Laetitia Griffith
Rien Zwitserloot

Remuneration policy

The remuneration policy has been determined by the shareholder and is effective as of 2011. The most important elements of the current remuneration policy are described below.

Employment market reference group

Remuneration for the directors of TenneT Holding B.V. (TenneT) has been set using a benchmark, a comparison with organisations competing in the same business and employment markets as TenneT. These organisations include:

- International transmission system operators (TSOs);
- Infrastructure operators;
- Installation specialists/engineering firms;
- Construction companies;
- Financial institutions.

The companies in the benchmark group are divided into three sub-groups, (semi) public (50%), private (25%) and international TSOs (25%). The remuneration norm for TenneT directors has been determined on the basis of the level of the (weighted) median of the subgroups and the specific responsibilities of the position concerned.

As part of its analysis, the shareholder tests the remuneration norm for TenneT directors against a group of reference companies relevant to TenneT, comprising 75% (semi) public and 25% private companies.

The Remuneration and Appointments Committee takes note of the individual Executive Board member's view concerning the level and structure of their own remuneration.

Reference for the remuneration ratio is made to the non-financial chapter of 'our performance'.

Remuneration norm

The benchmarking method as applied by TenneT results in a 'norm' level of remuneration for TenneT directors that exceeds the maximum desired by the shareholder of EUR 372,000 (as of 1 January 2018). The spread of the remuneration is measured by comparing CEO and median full-time salaries, including fixed salary, variable remuneration and pension benefits. This spread is disclosed in the Annual Report and taken into consideration for the remuneration policy.

On the appointment of a new statutory director, the Supervisory Board shall, at the request of the shareholder, limit the sum of fixed and variable remuneration to a maximum of EUR 372,000 (as of 1 January 2018).

If, in the opinion of the Supervisory Board, the maximum remuneration as required by the shareholder leads to unacceptable risks to the organisation because the available candidates do not have the right profile or necessary experience, the Supervisory Board shall consult the shareholder.

The Supervisory Board decides on the annual increase in the base salary. If the total remuneration of a statutory director has reached its maximum, further increases will be limited to the structural increments as agreed upon in the Collective labour agreement which is applicable to all Dutch TenneT employees.

Variable remuneration

To further encourage the achievement of the company's objectives, part of the directors' remuneration is linked to certain challenging targets. The variable remuneration criteria support the realisation of TenneT's strategic objectives and therewith long term value creation. These are set in advance by the Supervisory Board and include those of a public or societal nature and focus on long term value creation. The annual variable remuneration of the company's statutory directors is limited to 20% of their fixed annual salary.

Performance criteria fall into four categories: security of supply and safety, strategy, operations and finance. The comparative weighting of these performance categories varies from one year to the next, and differs according to the individual director's portfolio. The criteria are a mix of quantitative and qualitative targets. Each category includes certain public or societal objectives, the attainment of which will account for no less than 20% of the total. If, within a reasonable period after determining the variable remuneration, it is established that the award needs to be adjusted as a result of factors unknown when the award was made, the Supervisory Board shall decide whether and the extent to which the award of the variable remuneration needs to be revised.

Service agreement and compensation for early termination

Directors are appointed as statutory directors for a period of four years. The total set of agreed employment terms and conditions is recorded in a service agreement for an undefined period. If the contract is terminated by the company within that period, compensation ('severance pay') will be limited to the equivalent of one year's fixed salary. No severance pay is offered in case of voluntary leave or in the event of termination by the company for urgent cause.

Other allowances and secondary benefits

The total remuneration package for directors includes an appropriate and fiscally acceptable allowance for necessary expenses, the use of a lease car (of a type comparable to those provided to directors of similar organisations) including possible private use, accident and directors' and officers' liability insurance, and thirty days' paid leave per annum.

Secondary benefits also include a nominal contribution towards health insurance premiums and the choice of other flexible individualised benefits as well as a percentage of the fixed salary in the form of an employer's contribution to a life-course savings scheme. The percentage is established by the collective labour agreement. The above benefits are applicable to all TenneT employees in the Netherlands. The company does not extend loans, loan guarantees or advances against future earnings to any director.

Pensions

The directors participate in a pension regulation according to pension as defined in the collective labour agreement and as applicable for all employees in the Netherlands. The employers and employee contribution for the directors is the same as for all other employees. The applicable pension regulations define the pensionable salary up to EUR 105,075 (gross pension).

TenneT directors receive the same compensation as TenneT employees with an income above EUR 105,075. The compensation is based on the fiscally allowed age dependent premium percentages up to EUR 105,075. These percentages are also applied above EUR 105,075, to calculate the contributions. After tax, the resulting net contributions are paid to the directors.

Employment contracts of directors appointed before 2011

The current remuneration policy as described above does not affect the agreed employment terms and conditions of directors appointed before 2011.

Board remuneration

The section on the board remuneration specifies the current remuneration for the statutory directors in 2018, their success at meeting set targets and the resulting awards of variable remuneration. The report also specifies the remuneration received by the members of the Supervisory Board. For further details on the remuneration policy click here.

Remuneration of the statutory directors

Total remuneration

2018 (in EUR thousand)	Fixed remuneration	Variable remuneration (annual)	**Total remune-ration**	Gross Pension	Net pension	**Total pension**	Other
M.J.J. van Beek [1]	103	21	124	8	9	17	4
J.M. Kroon [2]	272	44	316	38 [4]	150 [4]	188	11
U.T.V. Keussen [3]	59	N/A	59	44	-	44	2
B.G.M. Voorhorst	276	48	324	23	31	54	19
O. Jager	269	49	318	23	23	46	19
Total	**979**	**162**	**1,141**	**136**	**213**	**349**	**55**

[1] From 1 September 2018.

[2] January - September 2018, Mr. Kroon left TenneT 30 September 2018.

[3] January - February 2018, Mr. Keussen left TenneT 28 February 2018.

[4] Including a pension compensation of EUR 87,045 of his individual pension plan over the period October 2018 – June 2019.

2017 (in EUR thousand)	Fixed remuneration	Variable remuneration (annual)	**Total remune-ration**	Gross Pension	Net pension	**Total pension**	Other
J.M. Kroon	355	71	426	68[1]	96	164	12
U.T.V. Keussen	351	65	416	107	N/A	107	5
B.G.M. Voorhorst	272	51	323	21	30	51	13
O. Jager	265	48	313	21	22	43	16
Total	**1,243**	**235**	**1,478**	**217**	**148**	**365**	**46**

[1] Including individual pension plan NL/GER.

Fixed remuneration

In accordance with the indexation as of January 2018 for employees as determined by the collective labour agreement for TenneT, the salaries of all statutory directors will be indexed by 3% as of 1 January 2019.

Variable remuneration

The Supervisory Board decided on the statutory directors' variable payment realisation percentages over 2018 based on the achievement of present criteria. The realised percentages are included in the table below. The Supervisory Board has concluded that there are no current insights that might lead to the revision of the variable remuneration paid out in former years The Supervisory Board decided to grant the new CEO the full amount of variable remuneration over 2018 pro rata the time of employment.

	M.J.J. van Beek		J.M. Kroon		B.G.M. Voorhorst		O. Jager	
	Realised	Maximum	Realised	Maximum	Realised	Maximum	Realised	Maximum
Security of supply	20.0%	20.0%	14.3%	20.0%	14.3%	20.0%	14.3%	20.0%
Safety	15.0%	15.0%	13.8%	15.0%	13.8%	15.0%	13.8%	15.0%
Financial	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
People	10.0%	10.0%	0.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Strategy	15.0%	15.0%	12.5%	15.0%	12.5%	15.0%	12.5%	15.0%
Operations								
Individual targets depending on indivual board member's portfolio	25.0%	25.0%	21.2%	25.0%	21.0%	25.0%	25.0%	25.0%
Total variable remuneration realised in 2018	**100%[1)]**	**100.0%**	**76.8%**	**100.0%**	**86.6%**	**100.0%**	**90.6%**	**100.0%**

[1] Based on her contract, M.J.J. van Beek received 100% realisation of the targets over the period September – December 2018 because she started during the second half of 2018.

The table below shows the realisation for the quantitative targets security of supply, safety and financial.

Weight	Performance criteria	Weight	Target [1)]	Realised
15%	**Safety**			
	LTIF Group	50%	1.8	2.36
	Investigation Index Group	50%	100%	100%
20%	**Security of Supply**			
	ASAIDI Germany Onshore 230/380 kV	40%	0 min	0.06 min
	ASAIDI Netherlands Onshore 230/380kv	25%	0 min	0 min
	SAIDI NL Onshore 110/150kv	25%	2 min	5.50 min
	ASAIDI Germany Offshore	10%	628 hours	483 hours
15%	**Financial**			
	EBIT Group	50%	EUR 736 milion	EUR 806 milion
	ROIC Group	50%	5.4%	5.9%

[1] Target performance results in maximum pay-out.

As to the more qualitative criterias with respect to strategy, people and the operational targets the Supervisory Board concluded that most of the targets have been met. These targets are linked to long term value creation, for example a pilot launched and ready to start for a Frequency Restoration Reserve project using aggregation of reserves of small entities using new digital techniques; and achieving a company-wide productivity improvement (in terms of total workforce costs) through LEAN process improvement and LEAN decision making.

Pension cost

The pensions of all Dutch statutory directors are administered by the ABP Pension Fund. The pension accrual is based on an average pay system till the fiscal maximum (gross pension). Over the fixed remuneration above the fiscal maximum the Dutch statutory directors can participate in a net pension system.

Besides the ABP pension, additional pension was accrued for the former CEO to facilitate retirement at 61 years of age, under a non-contributory pension plan based on total income, agreed when he joined the company. Over the period October 2018 – June 2019 the CEO received a compensation of EUR 87,045 as part of his individual pension plan as mentioned before. TenneT paid a tax amount of EUR 241,000 to the Dutch tax authorities for the contractual pre-pension plan of the former CEO as a result of a change in the tax regime.

Pension accruals considering the German income of the Dutch statutory directors based on the German activities are organised in a standard defined contribution contract with Swiss Life. The pension entitlements of the German vice-chair are based on the so-called Beitragsplan, a company agreement applicable for all employees of TenneT in Germany.

Based on an agreement with the Supervisory Board, the former CEO was entitled to acquire leave days as of 2010. The costs of these leave days have been accrued annually. The value of the acquired leave days of the former CEO in 2018 was EUR 17,280 (2017: EUR 25,545). Upon the departure of the former CEO in 2018, the accrued but unused leave day obligation of EUR 115,000 was paid out to him. The settled leave days are not included in the remuneration table.

Other allowances and secondary benefits

All statutory directors use a company car, the value of the private use of this car as shown in the table is based on the taxable value in the domestic country. In addition, with respect to the private use of leased vehicles, the customary addition to taxable income is applicable for personal income tax purposes. The company does not reimburse its directors for any personal income tax consequence resulting from the private use of leased cars.

For the Dutch statutory directors the secondary benefits as included in the remuneration table, includes the contribution to the life-course savings scheme based on the collective labour agreement, a contribution to health insurance and a budget for flexible terms of employment.

Each statutory director received a monthly allowance for necessary business expenses, of EUR 2,196 a year. This monthly allowance is not included in the table as it is a compensation of costs and not a remuneration component.

The total remuneration paid to the statutory directors is reconciled to and further disclosed in the note 3.2.2 of the consolidated financial statements.

Remuneration of the Supervisory Board

The remuneration policy for the Supervisory Board defines the remuneration for the different roles and committees of the Supervisory Board. Each Supervisory Board member is either a member or chair of one or two committees. To establish a link between the Supervisory Board and the Aufsichtsrat of TenneT TSO GmbH, two of the members of the Supervisory Board are also members of the Aufsichtsrat.

The responsibilities on the committees are as follows:

	Supervisory Board	Audit, Risk and Compliance Committee	Remuneration and Appointments Committee	Strategic Investments Committee	Aufsichtsrat TenneT TSO GmbH
A.F. van der Touw [1]	Chair	Member	Member		
A.W. Veenman [2]	Chair	Member	Member		
P.M. Verboom	Vice-chair Chair [3]	Chair	Member [4]	Member	
R.G.M. Zwitsersloot	Member			Chair	Member
S. Hottenhuis [5]	Member	Member [4]	Chair		
L.J. Griffith	Member		Chair [7]	Member [2]	Member [6]

[1] Started from June 2018.

[2] End on February 2018.

[3] During the period March - May chair of the Supervisory Board.

[4] January - May 2018.

[5] Mrs. Hottenhuis resigned in July 2018 because of her assignment at KPMG.

[6] Member since October 2018.

[7] Chair since June 2018, before member.

The shareholder decided to introduce an annual indexation of the Supervisory Board remuneration following the collective labour agreement, as of 1 January 2015. The Supervisory Board remuneration was indexed by 1.5% as of 1 January 2018 and will be indexed by 3% as of 1 January 2019. The remuneration was as follows in 2018:

(EUR)		
Chair	28,257	per annum
Vice-chair	22,726	per annum
Member	20,281	per annum
Audit, Risk and Compliance Committee	6,756	per annum
Remuneration and Appointment Committee	5,343	per annum
Strategic Investment Committee	5,343	per annum
Aufsichtsrat TenneT TSO GmbH	5,500	per annum

The total remuneration received by members of the Supervisory Board in 2018 was as follows:

	2018			2017		
(in EUR thousand)	Fixed remuneration	Committee fee	**Total**	Fixed remuneration	Committee fee	**Total**
A.F. van der Touw	16	7	23	-	-	-
A.W. Veenman	5	2	7	28	12	40
P.M. Verboom	24	14	38	22	9	31
R.G.M. Zwitserloot	20	11	31	20	11	31
S. Hottenhuis	12	7	19	20	5	25
L.J. Griffith	20	7	27	20	5	25
J.L.M. Fisher	-	-	-	15	4	19
Total	**97**	**48**	**145**	**125**	**46**	**171**

The impact of changes in positions during 2018 on the remuneration of the Supervisory Board are reflected in the table above.

A.F. (Ab) van der Touw
Chair of the Supervisory Board

P.M. (Pieter) Verboom
Vice-chair of the Supervisory Board

Our Supervisory Board

A.F. (Ab) van der Touw

Chair Supervisory Board /
Member of the audit, Risk and Compliance committee /
Member remuneration- and appointments committee

1955, Dutch

Initial appointment: 1 June 2018

End of first term: 1 June 2022

Principal position:
- Former CEO Siemens Nederland (until 1 April 2019)

Other positions:
- Vice-president Executive Committee VNO/NCW
- Vice-president Board Deutsch-Niederländische Handelskammer
- Chair Supervisory Board Universiteit Leiden
- Chair Board Dutch Bach Association
- Chair Board Fonds Slachtofferhulp
- Chair Supervisory Board NIBA
- Member Board GAK Foundation
- (External) member Ondernemingskamer Gerechtshof 's Gravenhage

P.M. (Pieter) Verboom

Vice President Supervisory Board /
Chair Audit, Risk and Compliance Committee /
Member Strategic Investments Committee

1950, Dutch

Initial appointment: 18 September 2012

End of second term: 18 September 2020

Principal position:
- Former CFO of RFS Holland Holding
- Former Executive Vice President and CFO of Schiphol Group

Other positions:
- Chair of the Curatorium Master Register Controllers and Advisor Programme 'The new CFO' (Erasmus University Rotterdam)
- Expert lay member of the Dutch Enterprise Court
- Member of the Advisory Board of NIBC
- (until 1 September 2018)
- Chair of the Supervisory Board and member of the Audit Committee and Remuneration Committee of Ampelmann Operations B.V. (until 1 May 2018)

R.G.M. (Rien) Zwitserloot
Member of the Supervisory Board

L.J. (Laetitia) Griffith
Member of the Supervisory Board

R.G.M. (Rien) Zwitserloot

Member of the Supervisory Board /
Chair of the Strategic Investments Committee

1949, Dutch

Initial appointment: 24 November 2010

End of third term: 24 November 2020

Principal position:

- Former CEO of Wintershall AG

Other positions:

- Member of the Supervisory Board of Royal VOPAK N.V.
- Member of the Supervisory Board of Amsterdam Capital Trading Group B.V.
- Member of the Supervisory Board of Vroon B.V.

L.J. (Laetitia) Griffith

Member Supervisory Board /
Chair Remuneration and Appointment committee /
Member Strategic Investments committee /
Member Aufsichtsrat TenneT TSO GmbH

1965, Dutch

Initial appointment: 1 July 2015

End of first term: 1 July 2019

Principal position:

- Former state councillor in the advisory division of the Dutch Council of State

Other positions:

- Vice-chair of the Supervisory Board of KPMG
- Chair of the Supervisory Board of Holding Nationale Goede Doelen Loterijen
- Chair of the Dutch security industry association Nederlandse Veiligheidsbranche
- Member of the Board of VNO-NCW
- Chair of the Board of the Netherlands Film Fund
- Member of the Supervisory Board of Gassan Diamonds B.V.

Governance and risk management

Corporate governance

As a transmission system operator, TenneT plays an important role in society. We believe in having a good governance structure, effective oversight and a transparent accountability to all stakeholders. To that end, we comply with the Dutch Corporate Governance Code (hereafter: the Code), insofar as the Code is applicable.

Corporate governance structure

TenneT's corporate governance structure comprises the Executive Board, the Supervisory Board and the General Meeting of Shareholders. Our internal auditor and external auditor also play an important role in this structure.

Executive Board

The Executive Board of TenneT Holding B.V. has three statutory and one non-statutory directors. The Executive Board members have joint authority to represent the company. Each board member also holds limited individual power of attorney. Two members of the Executive Board of TenneT Holding B.V. are managing directors of TenneT TSO B.V., two other members of the Executive Board are managing directors of TenneT TSO GmbH and one of these two other members is managing director of TenneT Offshore GmbH.

The Executive Board is responsible for TenneT's general policies and strategy, which includes regulated and unregulated activities.

Supervisory Board

The Supervisory Board of TenneT Holding B.V. oversees TenneT's general policies and strategy. It carries out its duties in the interests of the company and its stakeholders, and also takes into account relevant aspects of corporate social responsibility. TenneT has a two-tier board structure, as specified in the Electricity Act.

All information about the Supervisory Board (such as its rules and resignation schedule) is available on our corporate website.

General Meeting of Shareholders

All shares in TenneT's capital are held by the Dutch state, which is represented by the Ministry of Finance. Under the Electricity Act, only the Dutch state may hold voting interests in the company. A General Meeting of Shareholders is held within six months of the end of each financial year. The agenda for this meeting includes a discussion of the integrated annual report, the adoption of the financial statements, and a dividend proposal. The meeting also discharges the Executive Board and Supervisory Board members from liability from their respective activities in the past year. Other shareholder meetings are held as and when deemed necessary by the Executive Board, Supervisory Board or shareholder.

External auditor

The General Meeting of Shareholders has the power to appoint external auditors to audit the financial statements prepared by the Executive Board.

These auditors report to the Supervisory Board and the Executive Board, and their findings are presented in an independent auditor's report, an assurance report, a management letter and an audit results report.

The performance of the external auditors is evaluated by the Executive Board and the Audit, Risk and Compliance Committee and, if necessary, also by the Supervisory Board.

The external auditors attend meetings of the Audit, Risk and Compliance Committee. They also attend Supervisory Board meetings when the independent auditor's report on the financial statements is discussed and the financial statements approved.

Internal auditor

The internal auditor attends all meetings of the Audit, Risk and Compliance Committee.

Compliance & integrity officers

TenneT has a lead compliancy & integrity and a loacal comliance & integrity officer. A summary of the compliance and integrity cases is shared and discussed with the Audit, Risk and Compliance Committee.

Related parties

Related party transactions are disclosed in note 7.3 to the consolidated financial statements.

Diversity

Diversity is disclosed in the Supervisory Board report.

Deviations from the Dutch Corporate Governance Code

Certain principles and best-practice provisions in the Code do not apply to TenneT. The reasons why and to what extent TenneT decided not to or could not adopt these particular principles and best-practice provisions are explained below:

2.1.3, 3.1.3: Not applicable: no Executive Committee has been established at TenneT.

2.3.8: Not applicable: no delegated Supervisory Board member is employed by TenneT.

2.3.2: If the Supervisory Board has more than four members, the Code stipulates that the board shall appoint from among its members an Audit Committee, a Remuneration Committee, and a Selection and Appointments Committee. The TenneT Supervisory Board has combined the tasks of the latter two committees into a Remuneration and Appointments Committee.

2.7.5 - 2.8.3, 3.3.2, 3.3.3: Not applicable: these provisions do not apply to TenneT because it only has one shareholder, namely the Dutch state.

Chapter 4: Most paragraphs are not applicable to TenneT because it only has one shareholder, namely the Dutch state. Regarding all other paragraphs, TenneT complies with the Code.

Chapter 5: Not applicable, given TenneT's two-tier structure, this chapter is not applicable.

Risk management and internal control

Risk management and internal control are at the heart of every effective management control system, including TenneT's.

Risk management and internal control objectives

With our Risk management and Internal Control System we aim to identify and manage any risks threatening realisation of TenneT's strategic and operational objectives, as well as enhance the control we have over our day-to-day processes.

The key objectives of TenneT's risk management and internal control system are:

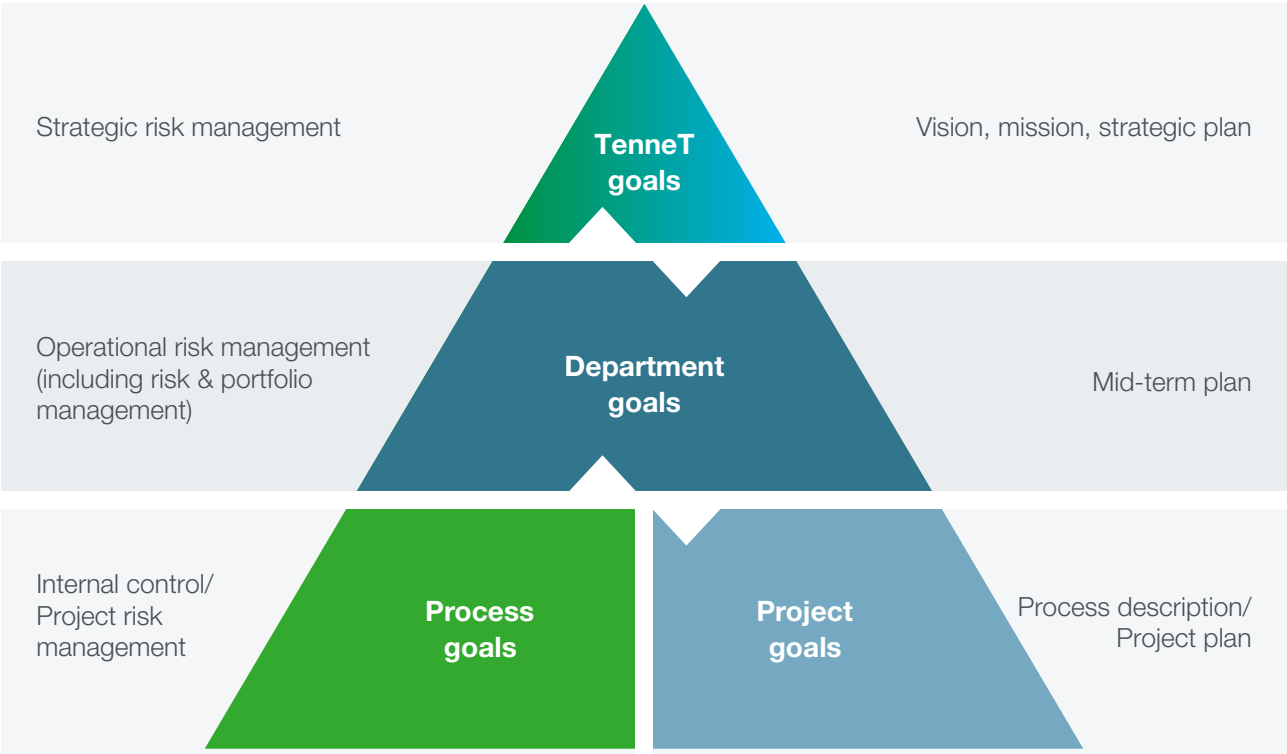
- Identification and assessment of future events with negative or positive impact on strategic, operational, process and/or project objectives
- Creating risk awareness and open corporate culture to address risks and opportunities
- Providing a uniform risk management process and tools to help the organisation making decisions based on consolidated, timely, relevant and reliable information to ensure efficient priority based resource allocation
- Providing transparency and comfort to the boards, internal and external auditor as well as shareholder that they are apprised of the most significant risks potentially impacting shareholder value, non-compliance issues and/or increasing director and officer's liability

TenneT's Enterprise Risk Management and Internal Control Framework are based on the latest COSO model (Committee of Sponsoring Organisations of the Treadway Commission) and are compliant with the requirements of applicable laws and regulations, e.g. Dutch Corporate Governance Code, German Control and Transparency in Business Act and the German Accounting Law Reform Act.

ERM is clustered in:

- Strategic risk management
- Operational risk management including risk and portfolio management with respect to asset management
- Project risk management and
- Internal Control (process risk management)

Risk management and internal control

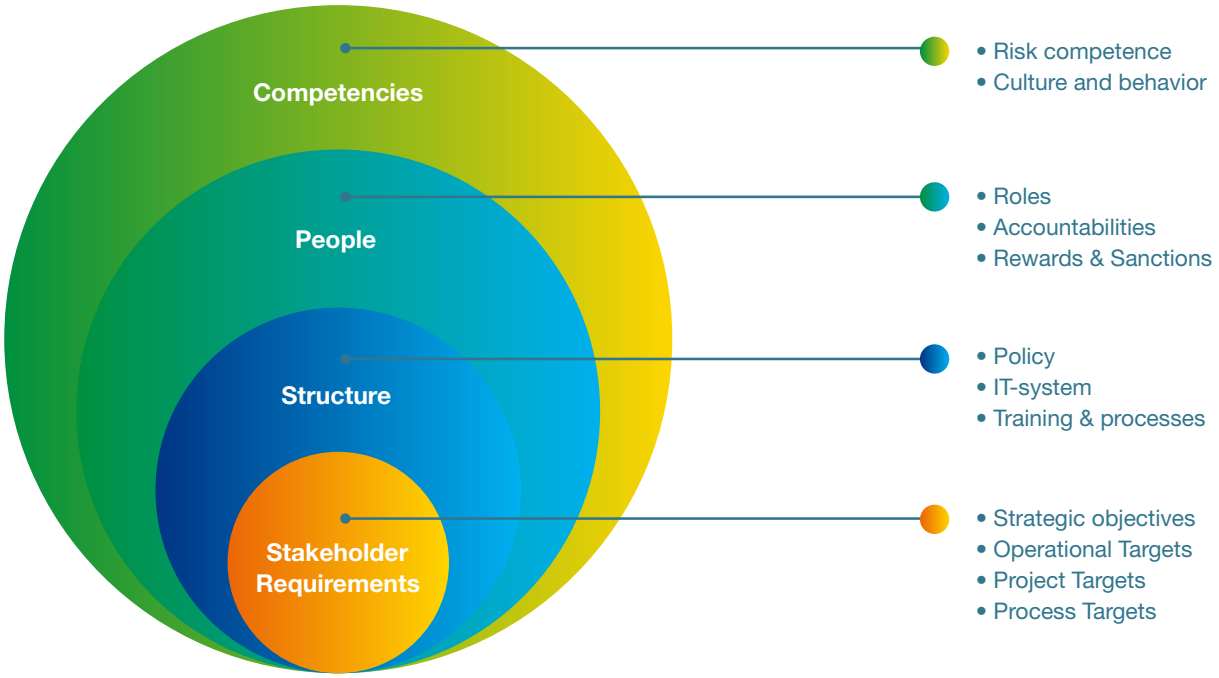


Different levels of goals and ownership face different types of risks which are interrelated.

Therefore the following factors to unfold full value of risk management and internal control for the organisation are designed according to the stakeholder requirements:

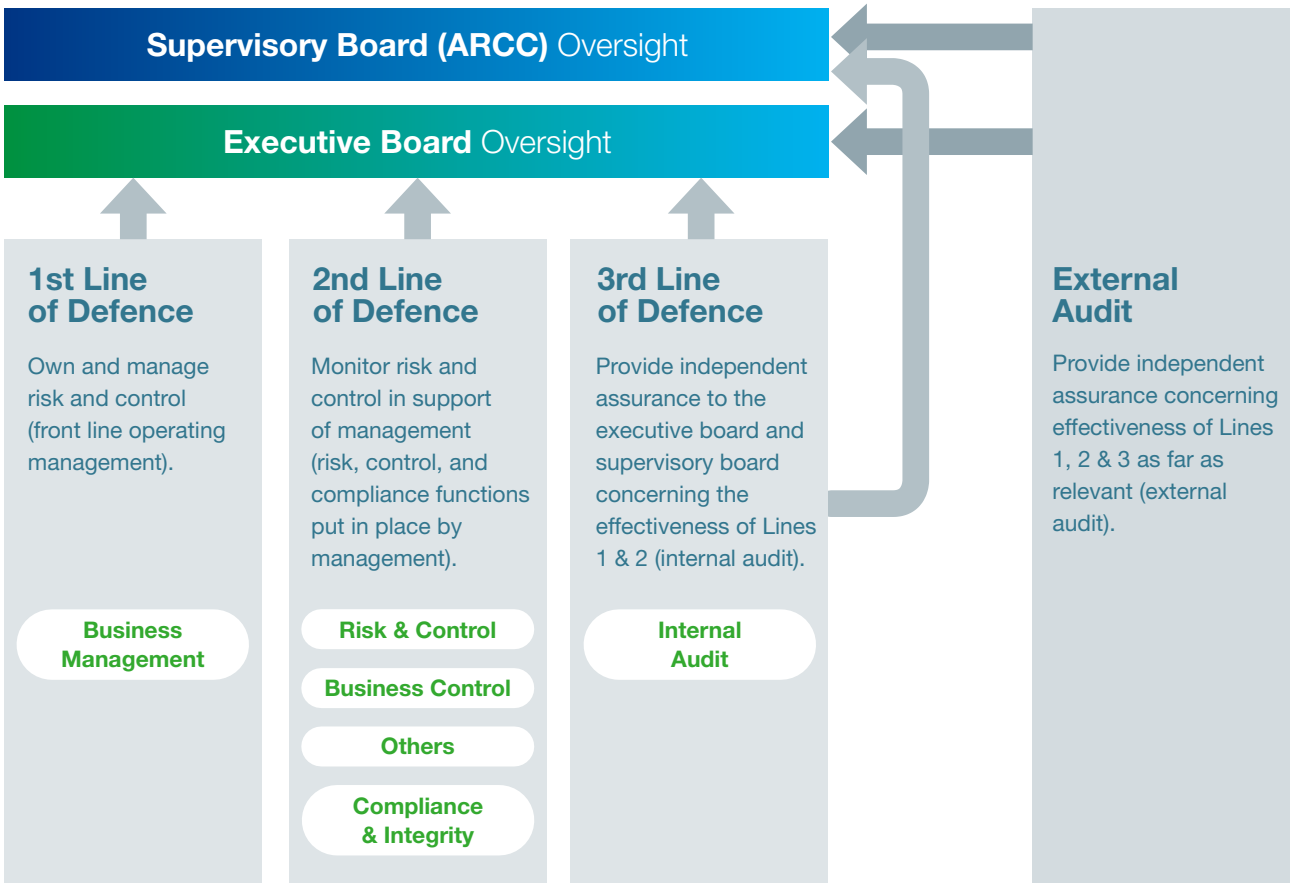
- Structure: policies, IT-systems, reports, processes, etc.
- People: roles and accountabilities, profile, education and skills, etc.
- Competencies: risk culture and competence on management level, etc.

Key factors of Risk Management Framework



Risk management as second line of defence function is interlinked with other 2nd line functions like risk transfer, Business Control, Project Control and Compliance Officer as well as third line functions, e.g. Internal Audit. Twice a year the Executive and Supervisory Boards receive an overview of risks on all company levels. These risk reports include the status of internal controls as part of the risk management reporting. This provides management with the necessary means to realise an effective risk management strategy.

Three lines of defence



Risk management and internal control framework

Strategic risk management (SRM)

SRM focusses on future events which may influence strategic objectives in positive or negative ways. The Executive Board evaluates the risks as they develop as well as the effectiveness of applicable mitigating actions. TenneT's strategic risk position is shared and discussed with the Supervisory Board and the Audit, Risk and Compliance Committee.

In 2018 the strategic risks assessment, performed as Executive Board interviews, was split into three different strategic risk dimensions to ensure a broad view and the future perspective of strategic objectives. These dimensions include events in the current playing field, events that tilt the current and events that could even create new playing fields for TenneT as TSO. Additionally, discussion on opportunities was strengthened.

Operational risk management (ORM)

The operational risks affecting the various business units and corporate departments are documented and evaluated to assess the adequacy of mitigating actions at least twice a year. TenneT's Corporate Risk Management & Internal Control department challenges the organisation to review its risks and related mitigating actions. TenneT's updated operational risk position is part of the Letter of Representation (LoR).

Risk & portfolio management

Furthermore to strengthen the security of supply TenneT's asset management uses condition monitoring and risk based assessments to plan maintenance and investments. Grid constraints are identified by analysing grid components and failures and by monitoring the necessary transport capacity. These constraints are assessed according to the risk they pose to TenneT's objectives. Should the risk exceed a predefined level, a measure to mitigate this risk is proposed and included in our investment portfolio.

Project risk management (PRM)

To face challenges of the enormous investment portfolio and derived objectives around ten years ago TenneT started to implement project risk management, first with a focus on large projects. PRM aims at enhancing the chance of realising project goals on time, budget and quality.

For all large projects, dedicated project risk managers review and manage risks together with project leads systematically within the quality and uniformity standards safeguarding by corporate risk management.

Other Risk Management activities

Risk Management process is more and more integrated in day to day decision making processes. For example in management and board decision submissions, risks and alternatives have to be named and assessed.

TenneT introduced Lean Management to work on the efficiency of processes. Those improvement projects follow the DMAIC steps. In the "Definition" phase as well as "Improve" phase risks have to be identified and assessed. Certified green belts and black belt ensure the quality.

Internal control (IC)

Our internal control framework is designed to support and safeguard the realisation of our process objectives, as well as fulfil our legal obligations and establish the reliability of our internal and external reporting. To assess the effectiveness of this framework and identify opportunities for improvement, a control self-assessment is performed by control owners and validated by management twice a year. Risk Management & Internal Control performs quality assessments on the outcomes. Internal Audit checks randomly selected self-assessments during the year to form an independent opinion. The outcomes of these control self-assessments are direct input for the Letter of Representation procedure. Identified issues are reported to Risk Management & Internal Control, which monitors and follows up on mitigating steps with the relevant business owners. Overall control effectiveness is reported in our State of Risk report.

As a direct result of the integrated approach IC framework, IC developed in 2018 from country specific frameworks to one harmonised leading Corporate Internal Control Framework. Focus of our framework is continuing to gradually shift from a core finance perspective towards a business objective driven approach with the inclusion of core business- and additionally non-financial reporting processes.

Compliance and integrity

TenneT provides all parties with guaranteed, non-discriminatory access to our transmission grid.

Preventing potential fraud, bribery & corruption is part of our compliance & integrity system. Detecting potential breaches is part of all our internal audits and compliance & integrity investigations. Guidance in the form of corporate policies (i.e. Supplier Code of Conduct, Policy on Gifts & Hospitality, Whistleblowing Policy, Conflict of Interest Policy and Investigation Policy), effective communication and training sessions on compliance & integrity awareness help to protect TenneT, our employees and the society against economic and reputational harm.

As part of our compliance management system - besides the presence of regional Compliance & Integrity Officers in the Netherlands and in Germany - TenneT has set up a compliance & integrity committee that deals with compliance and integrity issues, comprising members from relevant functions (Risk Management & Internal Control, Internal Audit, Corporate Safety & Security, Human Resources Corporate, trusted counsellors and Compliance & Integrity officers). The objective of our Compliance & Integrity Committee is to share company information on compliance and integrity risks detected by the above mentioned officers and/or departments, raise awareness about these risks and remediate them by taking action on the detected risks. In addition, in the fourth quarter of 2018, TenneT has initiated a project to align the existing compliance management system with the ISO 19600, a best practice for international Compliance Management Systems

TenneT also has an external committee that deals with sexual harassment, a whistleblowing policy and a procedure for internal and external compliance and integrity issues. In the Netherlands, employees can report any concerns confidentially to either a trusted counsellor or a compliance & integrity officer, and if the concerns relate to sexual harassment or violence, they can report them to the committee dealing with sexual harassment. In Germany, employees can report these concerns to their compliance & integrity officer and the works council. In addition, employees as well as external parties can report compliance and integrity issues through an independent whistleblowing portal freely accessible on the internet.

To assure compliance with financial regulatory obligations (MiFID II, MAR), TenneT has finalised legal assessments, updated its publication and disclosure protocol and insider trading regulations, which prohibit any form of trading with inside information. Furthermore, the insider trading list has been updated and the Corporate Supplier Code of Conduct has been updated.

In 2018, eighteen compliance cases were reported. Two of these alleged violations were reported via the whistleblowing portal. Five cases resulted in compliance investigations. After initial assessment the other cases did not give rise to a compliance investigation

No fraud, bribery nor corruption breaches with material impact were identified by TenneT in 2018. Material impact is defined in our risk matrix by a severe breach that has a significant adverse effect on TenneT's reputation and/or financial position.

With respect to compliance, in the Netherlands a renewed building decision is in place, which refers to the NEN 8700 with stricter requirements regarding some foundations of TenneT's existing pylons. TenneT is liaising with the authorities whether it is fair that these strict requirements, which seem to be there for buildings and bridges, should apply to TenneT's pylons. Furthermore, TenneT has the obligation to store strategic reserve capacity components to comply with art. 16, section 1q in order to protect the grid from external influences. Some of these components have been ordered, for others a tender procedure will be initiated in 2019 to ensure compliance.

Next to this, TenneT did not comply with the law requiring implicit auctions on the Dutch German Border due to the delay of the project called cross border intraday. After the Go-Live in June 2018 this non-compliance has been remedied, and TenneT is compliant now.

Risk appetite

Risk appetite can be defined as the extent to which deviations are deemed acceptable in achieving goals.

TenneT's risk appetite has been set by the Executive Board for each of our strategic goals. In terms of the level of risk that we are willing to accept in relation to our strategic goals, we differentiate between the following categories: risk averse (low risk appetite), risk neutral (medium risk appetite) and risk-taking (high risk appetite). The following graph summarises risk appetite and trends on risks and opportunities assessed by the Executive Board. To learn more about specific strategic risks please refer to chapter *our performance 2018.*

Risk appetite and trend score

Strategic goal	Goal description	Risk Appetite Low High	Risk Trend - +	Opportunities Trend - +
Secure supply	Secure reliable supply of electricity and facilitate the integration of sustainable energy sources			
Lead NWE integration	Lead the development of an integrated and sustainable nort-west European electricity market			
Innovate business	Innovate and adapt the business to anticipate the energy transition			
Engage stakeholders	Engage with our stakeholder at all levels employees, sharholders, regulators, policymakers, customers, suppliers and local communities			

To realise our 10-year investment portfolio, access to financing and the ability to attract and develop personnel are of the utmost importance. Without these essential resources we will not be able to achieve our strategic objectives as addressed above.

Key risks

Strategic risks are presented in the “strategic performance” chapter. This section includes regulatory, reporting, other operational and compliance risks.

Regulatory risks

Regulatory risk	Risk-mitigating actions
• Inability by TenneT to meet exacerbating efficiency targets imposed by incentive regulation. Especially taking into account a strongly growing company and the need of investments in innovation.	• TenneT performs regular reviews of processes and organizational structure and introduced lean management. Additionally, TenneT scrutinizes the results of efficiency audit by the regulators and disputes or starts litigation, if needed.
The Netherlands	
• TenneT is not able to achieve a reasonable return on its invested capital as the return allowed by the regulator is set at a too low level because of low interest rates.	• In general, the ACM continued to use the existing approach for the regulatory period of 2017-2021. TenneT has started legal proceedings as it disagrees with certain items of ACM’s decision. The CBb court decided that the ACM should repair its decision. The repair is pending early 2019.
• Inability to meet the regulatory budget on operational expenditures for procuring energy and ancillary services, such as grid losses and re-dispatch costs.	• ACM amended this part of the regulation, exposing TenneT to the full price and volume risk of this cost element. TenneT started legal proceedings at the CBb court and the CBb decided that the ACM should repair its decision. As a result, the ACM confirmed that it will re-install the bonus/malus regime of the previous regulatory period.
• ACM has, together with the Council of European Energy Regulators, initiated a new international TSO benchmark exercise to measure the efficiency on capital and operational expenditures of European TSOs. The benchmark exercise runs during 2018/2019.	• TenneT proactively participates in the benchmark. TenneT will advocate to the ACM to prudently apply the benchmark results within the regulatory framework for the next regulatory period. The ACM confirmed that it intends to account for the additional costs of Wintrack towers in a separate national run of the benchmark.
Germany	
• TenneT is unable to achieve a reasonable rate of return on equity within the regulatory period of 2019-2023.	• Although TenneT had intensive dialogues with BNetzA and BMWI to reach a sufficient rate of return on equity, BNetzA determined a value which is below our expectations of a reasonable rate of return. TenneT started court proceedings against the BNetzA determination to reach a higher value. The decision on the higher regional court of Düsseldorf was in favor of TenneT but BNetzA further processed that to the federal supreme court.
• The grid fees of the German TSOs are unified beginning in 2019. As part of this process, the offshore costs will not be reimbursed from the grid fees any more, but from the offshore levy. In this context, BNetzA has also proposed a new approach for determining the costs that enter the levy. This new system is not in line with the demand of investors to have a stable regulatory framework.	• Towards the ministry and the regulator TenneT actively lobbied for maintaining the current regulatory regime for offshore as this could lead to damages for the reputation of the German regulatory system. In the discussions between BMWi, BNetzA and the TSOs a compromise - a grandfathering option for all assets being constructed until end of 2019 and a new system for all future investments - was reached. This passed the federal cabinet and still needs an approval of the Federal Council (Bundesrat).

Reporting risks

The table below presents TenneT Holding's most important reporting risks.

Reporting risk	Risk-mitigating actions
• Financial statements do not give a true and fair view of the company's financial position, financial performance and cash flows. Financial statements are not compliant with applicable laws and regulations.	• Internal control framework, including control self-assessments and Letter of Representation procedure.
• Incorrect (regulatory) reports or information to BNetzA, ACM and/or tax authorities.	• Internal and external audit reviews and follow-up on findings. • Use of internal accounting manuals. • Intensive monitoring of internal activities by the Regulatory department. • Position papers. • Data analytics.

Operational risks

The table below details TenneT Holding's most important operational risks.

Operational risk	Risk mitigating actions
• Gap between planned and realised maintenance and preservation. Risk of deterioration of the condition of the grid in the long term.	• Risk-based maintenance and preservation planning in alignment with the commissioning dates for large projects.
• Insufficient or inconsistent availability of adequate resources – staff, material and services	• Substation-driven replacement strategy. • Strategic personnel planning and development • Further integration of external service providers (e.g. via EPCm) • Employer Branding • Strategic procurement planning • Bundling of order processes, e.g. pooling of order for multiple projects • Development and qualification of new supplier (markets) • Increased utilisation of warehousing capacities
• Insolvency of suppliers	• Monitoring and quality assurance of supplier and service provider performance • Monitoring of supplier credit rating • Early transfer of ownership
• Work-related incidents and accidents that may harm the health and well-being of our own employees and the employees of contractors, that work for TenneT.	• Request of guarantees and performance & warranty bonds • Implementation Life Saving Rules and improved approach on incident investigation • Further development of and certification on the Safety Culture Ladder
• Risk of not realising efficiency targets set by regulator	• SHE requirements integrated in supplier and service contracts • Development of a procurement strategy reflecting the regulatory framework
• Unavailability of ancillary services due to mothballing of conventional power.	• Utilisation of lean management in all business areas to enable continuous improvement • Extension of standards for the market integration of renewable energies and (pools of) small generation plants and integration of approved plants • Development of crowd balancing opportunities • Petition the regulator to veto the decommissioning of system-relevant power plants in Germany • Implement assets to safeguard grid stability and sufficient black-start capacities

Compliance risks

The table below presents risks and mitigating actions, grouped according to the three areas general/legal, financial and technical compliance.

Compliance risk	Risk-mitigating actions
General / Legal compliance	Risk-mitigating actions
• Non-compliance with European or national laws and regulations, e.g. regarding health, safety and environment, labour, tendering and energy markets.	• Actively involve experts from Legal Affairs, Procurement, Human Resources, Safety & Security, Regulation, etc. Monitoring by Compliance via the LOR procedure. • Train employees
• Risk of fraud and/or conflict of interest.	• Corporate Gifts & Hospitalities policy • Increase cultural awareness via internal communication messages and face-to-face training sessions
• Non-Compliance with Code of Conduct	• Content of the Code of Conduct is confirmed by all (new) employees via written consent. • Compliance Experts explain the principles in the Code of Conduct via training sessions.
• Non-compliance with bilateral agreements between TenneT and other TSOs, suppliers, customers, etc. • Non-compliance with GDPR	• Ensure adequate registration of decisions and contracts by Legal Affairs and other departments involved. • Company-wide process- and data analyses. Awareness campaigns and trainings and ISO 27001 certification
• Non-compliance with permits and licenses.	• Provide regularly training and awareness programs.
Financial compliance	Risk-mitigating actions
• Non-compliance with financial and tax laws and legislation, e.g. IFRS, local GAAP, the Dutch Corporate Governance Code, the German Control and Transparency in Business Act, the German Accounting Law Reform Act, etc.	• Actively involve experts from Finance & Control, Treasury, Tax and Legal departments. Monitoring by Compliance via the internal LOR procedure. • Ensure availability of accounting manuals, treasury statute, etc. • Use internal and external experts as advisors, if and when necessary.
• Non-compliance with financing agreements.	• Frequent knowledge update by means of training, external audit/ expert reviews, etc. • Quality control by participations control and / or treasury
Technical compliance	Risk-mitigating actions
• Non-compliance with electricity laws and technical codes, ENTSO-E operational handbook, electrical safety regulations and standards, etc.	• Actively involve experts from Asset Management and System Operations. Assessments by the technical compliance and quality officer. Use of four eye-principles. • Cooperate with regulatory authorities through the Corporate Asset Owner department. • Involve authorized electrical safety experts and technical strategists. • Technical Audits

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Consolidated financial statements

Consolidated statement of income

For the year ended 31 December (EUR million)

	Notes	2018		2017	
Revenue	3.1		**4,269**		**3,976**
Grid expenses	3.2.1	-2,283		-2,111	
Personnel expenses	3.2.2	-214		-191	
Depreciation and amortisation of assets	4.1, 5.1	-700		-629	
Other operating expenses	3.2.3	-235		-205	
Other (gains)/losses	4.1	-26		-9	
Total operating expenses			**-3,458**		**-3,145**
Share in profit of joint ventures and associates	5.3		69		69
Operating profit			**880**		**900**
Finance income		1		9	
Finance expenses	3.3	-182		-179	
Finance result			**-181**		**-170**
Profit before income tax			**699**		**730**
Income tax expense	3.4		-189		-177
Profit for the year			**510**		**553**
Profit attributable to:					
Equity holders of ordinary shares	6.2.1	389		442	
Hybrid securities	6.2.1	31		35	
Owners of the company			**420**		**477**
Non-controlling interests	6.2.2		90		76
Profit for the year			**510**		**553**

Earnings per share attributable to the equity holders of ordinary shares

For the year ended 31 December (EUR per share)

	Notes	2018	2017
Basic and diluted earnings per share	3.5	1,985	2,255

Consolidated statement of comprehensive income

For the year ended 31 December (EUR million)

		Attributable to equity holders of the company						Non-controlling interest	Total equity
		Hedging reserve	Retained earnings	Unappropriated result	Equity attributable to ordinary shares	Hybrid securities	Equity attributable to owners of the company		
	Notes	6.2.1	6.2.1	6.2.1		6.2.1		6.2.2	
2017									
Other comprehensive income to be reclassified to profit or loss in subsequent years:									
Amortisation of hedges	6.2.1	-1	-	-	-1	-	-1	-	-1
Taxation	3.4	-	-	-	-	-	-	-	-
		-1	**-**	**-**	**-1**	**-**	**-1**	**-**	**-1**
Items not to be reclassified to profit or loss in subsequent years:									
Re-measurement of defined benefit pensions	7.1.1	-	3	-	3	-	3	-	3
Taxation	3.4	-	-1	-	-1	-	-1	-	-1
		-	**2**	**-**	**2**	**-**	**2**	**-**	**2**
Total other comprehensive income 2017		**-1**	**2**	**-**	**1**	**-**	**1**	**-**	**1**
Profit for the year		-	-	442	442	35	477	76	553
Total comprehensive income 2017		**-1**	**2**	**442**	**443**	**35**	**478**	**76**	**554**
2018									
Other comprehensive income to be reclassified to profit or loss in subsequent years:									
Amortisation of hedges	6.2.1	-1	-	-	-1	-	-1	-	-1
Taxation	3.4	-	-	-	-	-	-	-	-
		-1	**-**	**-**	**-1**	**-**	**-1**	**-**	**-1**
Items not to be reclassified to profit or loss in subsequent years:									
Re-measurement of defined benefit pensions	7.1.1	-	5	-	5	-	5	-	5
Taxation	3.4	-	-2	-	-2	-	-2	-	-2
		-	**3**	**-**	**3**	**-**	**3**	**-**	**3**
Total other comprehensive income 2018		**-1**	**3**	**-**	**2**	**-**	**2**	**-**	**2**
Profit for the year		-	-	389	389	31	420	90	510
Total comprehensive income 2018		**-1**	**3**	**389**	**391**	**31**	**422**	**90**	**512**

Consolidated statement of financial position

For the year ended 31 December (EUR million)

Assets	Notes	2018	2017
Non-current assets			
Tangible fixed assets	4.1	16,049	14,530
Intangible assets	5.1	111	98
Investments in joint ventures	5.3.1	529	413
Investments in associates	5.3.2	37	37
Deferred tax assets	3.4	15	5
Other financial assets	5.4	42	311
Total non-current assets		**16,783**	**15,394**
Current assets			
Inventories	5.8	68	78
Account- and other receivables	5.5	2,509	2,434
Income tax receivable	3.4	60	2
Cash and cash equivalents	6.4	1,253	1,329
Total current assets		**3,890**	**3,843**
Assets of disposal group classified as held for sale	5.2	3	-
Total assets		**20,676**	**19,237**

Consolidated statement of financial position

For the year ended 31 December (EUR million)

Equity and liabilities	Notes	2018	2017
Equity			
Equity attributable to ordinary shares	6.2.1	3,964	3,713
Hybrid securities	6.2.1	1,120	1,018
Equity attributable to owners of the company		**5,084**	**4,731**
Non-controlling interests	6.2.2	796	857
Total equity		**5,880**	**5,588**
Non-current liabilities			
Borrowings	6.3	7,964	6,786
Contract liabilities	4.2	308	283
Deferred tax liability	3.4	124	222
Provisions	5.7	774	697
Net employee defined benefit liabilities	7.1.1	208	186
Other liabilities		3	2
Total non-current liabilities		**9,381**	**8,176**
Current liabilities			
Borrowings	6.3	756	917
Contract liabilities	4.2	3	3
Income tax payable	3.4	84	7
Provisions	5.7	86	92
Other financial liabilities		71	61
Account- and other payables	5.6	4,414	4,354
Bank overdrafts	6.4	-	39
Total current liabilities		**5,414**	**5,473**
Liabilities of disposal group classified as held for sale	5.2	1	-
Total equity and liabilities		**20,676**	**19,237**

Consolidated statement of changes in equity

For the year ended 31 December (EUR million)

		Attributable to equity holders of the company								Non-controlling interest	Total equity
		Paid-up and called-up capital	Share premium reserve	Hedging reserve	Retained earnings	Unappropriated result	**Equity attributable to ordinary shares**	Hybrid securities	**Equity attributable to owners of the company**		
	Notes	6.2.1	6.2.1	6.2.1	6.2.1	6.2.1		6.2.1		6.2.2	
At 1 January 2017		**100**	**1,380**	**5**	**1,791**	**134**	**3,410**	**520**	**3,930**	**971**	**4,901**
Profit for the year		-	-	-	-	442	442	35	477	76	553
Total other comprehensive income		-	-	-1	2	-	1	-	1	-	1
Total comprehensive income		**-**	**-**	**-1**	**2**	**442**	**443**	**35**	**478**	**76**	**554**
Dividends paid	6.2.1	-	-	-	-	-146	-146	-	-146	-43	-189
Capital contribution	6.2.1	-	-	-	-	-	-	-	-	15	15
Capital repayment	6.2.1	-	-	-	-	-	-	-500	-500	-162	-662
Issue of hybrid securities	6.2.1	-	-	-	-3	-	-3	1,000	997	-	997
Distribution on hybrid securities	6.2.1	-	-	-	-	-	-	-37	-37	-	-37
Tax on distribution on hybrid securities	6.2.1	-	-	-	-	9	9	-	9	-	9
Appropriation remaining prior year result		-	-	-	-3	3	-	-	-	-	-
At 31 December 2017		**100**	**1,380**	**4**	**1,787**	**442**	**3,713**	**1,018**	**4,731**	**857**	**5,588**
Profit for the year		-	-	-	-	389	389	31	420	90	510
Total other comprehensive income		-	-	-1	3	-	2	-	2	-	2
Total comprehensive income		**-**	**-**	**-1**	**3**	**389**	**391**	**31**	**422**	**90**	**512**
Dividends paid	6.2.1	-	-	-	-	-147	-147	-	-147	-79	-226
Capital repayment	6.2.1	-	-	-	-	-	-	-	-	-72	-72
Transition effect IFRS 9	1.2	-	-	-	-1	-	-1		-1		-1
Issue of hybrid securities	6.2.1	-	-	-	-	-	-	101	101	-	101
Distribution on hybrid securities	6.2.1	-	-	-	-	-	-	-30	-30	-	-30
Tax on distribution on hybrid securities	6.2.1	-	-	-	-	8	8	-	8	-	8
Appropriation remaining prior year result		-	-	-	303	-303	-	-	-	-	-
At 31 December 2018		**100**	**1,380**	**3**	**2,092**	**389**	**3,964**	**1,120**	**5,084**	**796**	**5,880**

Consolidated statement of cash flows

For the year ended 31 December (EUR million)

	Notes	2018		2017	
Operational activities					
Operating profit			**880**		**900**
Non-cash adjustments to reconcile profit to net cash flows:					
Depreciation, amortisation and impairment of assets	4.1, 5.1	700		629	
Result on disposal of assets	4.1	22		-7	
Gain on acquistion of subsidiary	5.2	-		-3	
Share in profit of joint ventures and associates	5.3	-69		-72	
Dividends received from joint ventures and associates	5.3	47		54	
Movements in provisions and other (financial) liabilities and assets		-14		-66	
			686		**535**
Working capital adjustments excluding EEG working capital:					
(Increase)/decrease in account- and other receivables	5.5	32		-274	
(Increase)/decrease in inventories		10		-4	
Increase/(decrease) in account- and other payables	5.6	82		379	
Increase/(decrease) in contract liabilities	5.3	25		2	
Increase/(decrease) in current financial liabilities		-23		7	
			126		**110**
Income tax paid (net)			-239		-181
Net cash flows from operating activities excluding EEG working capital			**1,453**		**1,364**
EEG working capital adjustments:					
(Increase)/decrease in EEG receivables	5.5	73		-94	
(Increase)/decrease EEG deposits > 3 months	5.5	-250		-	
Increase/(decrease) in EEG payables	5.6	137		325	
			-40		**231**
Net cash flows from operating activities			**1,413**		**1,595**
Investing activities					
Purchase of tangible and intangible fixed assets	4.1, 5.1	-2,324		-1,762	
Acquisition of a subsidiary, net of cash acquired	5.2	-		-5	
Capital contribution to joint ventures and associates	5.3	-92		-72	
Interest received		1		2	
Net cash flows used in investing activities			**-2,415**		**-1,837**
Financing activities					
Net financing					
Proceeds from borrowings	6.3	1,930		1,370	
Repayment of borrowings	6.3	-917		-1,127	
			1,013		**243**

Continuation >

< Continued

Consolidated statement of cash flows

For the year ended 31 December (EUR million)

	Notes	2018		2017	
Other financing activities					
Interest paid		-170		-151	
Dividends paid to ordinary shareholders of the company	6.2.1	-147		-146	
Proceeds from capital contributions	6.2.1	350		150	
Repayment of hybrid securities	6.2.1	-		-500	
Proceeds from issue of hybrid securities	6.2.1	100		997	
Distribution on hybrid securities	6.2.1	-30		-37	
Dividends paid and capital repayments to non-controlling interests	6.2.2	-151		-205	
Proceeds from capital contributions by non-controlling interests	6.2.2	-		15	
			-48		**123**
Net cash flows from financing activities			**965**		**366**
Net change in cash and cash equivalents			**-37**		**124**
Cash and cash equivalents at 31 December	6.4	1,253		1,290	
Cash and cash equivalents at 1 January	6.4	1,290		1,166	
			-37		**124**

Notes to the consolidated financial statements

We are continuously improving our financial reporting to make it more relevant and understandable to our stakeholders. These financial statements focus on the key (financial) topics for 2018. Like last year, the notes to the consolidated financial statements have been grouped into seven sections relating to key topics and figures from a business perspective. Accounting policies are indicated with ⓘ, while key assumptions and estimates are identified by using ✍ in front of the header.

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1. Basis for reporting

Accounting policies describe our approach to recognising and measuring transactions and balance sheet items during the year. Accounting policies, including new EU endorsed accounting standards, amendments and interpretations, relating to the consolidated financial statements as a whole are described below. This section also provides general guidance regarding assumptions, estimates and judgement used in the preparation of the consolidated financial statements. A more detailed description of accounting policies and significant estimates related to specific reported amounts is presented in the respective notes. Accounting policies which are deemed non-material are not presented in these financial statements. We consider an item material if, in our view, it is likely to have an impact on the economic decisions of the users of these financial statements.

1.1 General

We (TenneT Holding B.V. and its subsidiaries) are a leading electricity TSO with activities in the Netherlands and in Germany. Our activities in the Netherlands are carried out by TenneT TSO B.V. and its subsidiaries. Our activities in Germany are performed by TenneT GmbH & Co. KG and its subsidiaries.

The Dutch State holds the entire issued share capital of TenneT Holding B.V. Also hybrid securities are issued, which are deeply subordinated securities and are considered part of equity attributable to equity holders of TenneT. Our head office and legal seat is located in Arnhem, the Netherlands.

These consolidated financial statements for the year ended 31 December 2018 were prepared and authorised by our Executive Board for issue in accordance with a resolution of the Supervisory Board on 18 February 2019.

1.2 Basis for preparation

These consolidated financial statements have been prepared in accordance with IFRS as adopted by the European Union, and Part 9, Book 2 of the Netherlands Civil Code. The company financial statements for TenneT Holding B.V. have been prepared in accordance with the provisions of Part 9, Book 2, of the Netherlands Civil Code.

These consolidated financial statements have been prepared on a going concern basis. The going concern basis presumes that the Group has adequate resources to remain in operation, and that the Executive Board intend it to do so, for at least one year from the date the financial statements are signed.

These consolidated financial statements are prepared on a historical cost basis, except for derivative financial instruments if any which have been measured at fair value. They are presented in euros and all values are rounded to the nearest million (EUR 000,000), except when otherwise indicated.

Significant new and amended standards adopted by the Group

TenneT has not adopted any standard, interpretation or amendment that has been issued but is not yet effective.

TenneT is applying IFRS 15 Revenue from Contracts with Customers and IFRS 9 Financial Instruments for the first time in 2018. The nature and impact of each amendment is described below.

The new IFRS 15 ‘Revenue from contracts with customers’ introduces a new five-step model to be applied to revenue from contracts with customers and provides a more structured approach to measuring and recognising revenue.

Based on an assessment encompassing interviews within several internal departments and review of existing contracts, we have concluded that the standard has no impact on our financial statements.

IFRS 9 Financial instruments replaces IAS 39 Financial Instruments: Recognition and Measurement for annual periods beginning on or after 1 January 2018, bringing together all three aspects of the accounting for financial instruments: classification and measurement, impairment and hedge accounting. TenneT has applied IFRS 9 retrospectively, with the initial application date of 1 January 2018 without restating the comparative financial statements.

Under IFRS 9, debt financial instruments are subsequently measured at fair value through profit & loss (FVPL), amortised cost, or fair value through other comprehensive income (FVOCI). The classification for financial assets is based on two criteria: TenneT's business model for managing the assets; and whether the instruments` contractual cash flows represent 'solely payments of principal and interest' on the principal amount outstanding (the 'SPPI criterion'). TenneT's business model involves collecting contractual cash flows. TenneT assessed if financial instruments are SPPI. This assessment is referred to as the SPPI test and is performed at an instrument level. TenneT concluded all financial instruments are SPPI. As a result of the above assessments the measurement of TenneT's financial instruments remains unchanged at amortised cost.

The adoption of IFRS 9 has changed TenneT's accounting for impairment losses for financial assets by replacing IAS 39's incurred loss approach with a forward-looking expected credit loss (ECL) approach. ECL is based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. TenneT applied the simplified approach and records lifetime expected losses on all trade receivables. TenneT has determined that, the loss allowance increased with EUR 1 million in 2018 due to the adoption of IFRS 9.

IFRS standards issued but not yet effective and adopted by the Group

A limited number of new standards, amendments to standards and interpretations, and annual improvement cycles have been issued but are not effective for the financial year beginning 1 January 2018. Below we describe the potential impact of IFRS 16, which will have a material impact on our financial statements. Other changes to standards which we expect to have no material impact on our financial statements are not further described.

IFRS 16 was issued in January 2016 and it replaces IAS 17 Leases, IFRIC 4 Determining whether an Arrangement contains a Lease, SIC-15 Operating Leases-Incentives and SIC-27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease. IFRS 16 sets out the principles for recognition, measurement, presentation and disclosure of leases and requires lessees to account for all leases under a single on-balance sheet model similar to the accounting for finance leases under IAS 17. The standard includes two recognition exemptions for lessees – leases of 'low-value' assets (e.g., personal computers) and short-term leases (i.e., leases with a lease term of 12 months or less). At the commencement date of a lease, a lessee will recognise a liability to make lease payments and an asset representing the right to use the underlying asset during the lease term. Lessees will be required to separately recognise the interest expense on the lease liability and the depreciation expense on the right-of-use asset.

Lessees will also be required to remeasure the lease liability upon the occurrence of certain events (e.g., a change in the lease term, a change in future lease payments resulting from a change in an index or rate used to determine those payments). The lessee will generally recognise the amount of the remeasurement of the lease liability as an adjustment to the right-of-use asset.

IFRS 16 requires lessees and lessors to make more extensive disclosures than under IAS 17.

TenneT will adopt IFRS 16 retrospectively with the cumulative effect of initially applying the Standard recognised at the date of initial application, as of 1 January 2019. TenneT elects to use the exemptions proposed by the standard on lease contracts for which the lease terms ends within 12 months as of the date of initial application, and lease contracts for which the underlying asset is of low value.

TenneT elects to measure the right-of-use asset for an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognised in the statement of financial position immediately before the date of initial application. TenneT elects not to apply IFRS 16 for contracts that were not previously identified as containing a lease applying IAS 17 and IFRIC 4.

The estimated impact of the adoption of IFRS 16 is based on assessments undertaken to date. The impact on the financial position as at 1 January 2019 is expected to be as follows:

(EUR million)	1 January 2019
Asset increase	384
Liability increase	-384
Retained earnings	**-**

Based on our IFRS 16 leases as of 1 January 2019 the IFRS 16 implementation is expected to have the following impact for 2019:

(EUR million)	1 January 2019
Depreciation expense	131
Other operating expense	-132
Operating profit	**1**
Finance costs	1
Income tax expense	
Profit for the year	**-**

Due to the adoption of IFRS 16, the Group's operating profit will improve, offset by an increase in finance expense. This is due to the change in the accounting for expenses of leases that were classified as operating leases under IAS 17. There will be no impact on the segment information other than already disclosed above.

Annual Improvements Cycle - 2015-2017

IAS 12 Income Taxes – Income tax consequences of payments on financial instruments classified as equity: The amendments clarify that the income tax consequences of dividends are linked more directly to past transactions or events that generated distributable profits than to distributions to owners. Therefore, an entity recognises the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where the entity recognised the originating transaction or event that generated the distributable profits giving rise to the dividend. TenneT applies the amendments for annual reporting periods beginning on or after 1 January 2019. When an entity first applies the amendments, it applies them to the income tax consequences of dividends recognised on or after the beginning of the earliest comparative period. The impact for TenneT will be a reclassification of "tax on distribution on hybrid securities" from the consolidated statement of equity to the consolidated statement of income.

1.3 Basis for consolidation

The consolidated financial statements incorporate the financial statements of TenneT Holding B.V. and its subsidiaries as at 31 December 2018. A list of the legal entities included in the consolidation is included in note 7.4.
Subsidiaries are consolidated from the date of acquisition, constituting the date on which control is obtained, and continue to be consolidated until the date when such control ceases. The financial statements of subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intercompany balances, transactions, unrealised gains and losses resulting from intercompany transactions and dividends are eliminated in full in consolidation.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If we cease to have control of a subsidiary, we derecognise the subsidiary's assets (including goodwill) and liabilities, with any non-controlling interest and the cumulative translation differences recorded in equity. Furthermore, the fair value of the consideration received, the fair value of any investment retained and any surplus or deficit in profit or loss are recognised. Acquisitions are accounted for using the acquisition method, where the purchase price is allocated to the identifiable assets acquired and liabilities assumed on a fair value basis and the remainder recognised as goodwill.

1.4 Significant accounting judgements, estimates and assumptions

The preparation of financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from these estimates. Such estimates are assessed continuously on the basis of previous results and experience, consultations with experts, trends, prognoses and other methods which we deem appropriate in each individual case. Significant items containing estimates and assumptions are as follows:

Item	Note	Estimate/assumptions
Tangible fixed assets	4.1	Estimate of remaining useful life
Intangible fixed assets	5.1	Estimate of recoverable amount and remaining useful life
Impairment review of goodwill	5.1	Estimate of cash flow projections and pre-tax discount rate
Grid expense payable	5.6.3	Estimate of electricity usage and energy prices
Provision for environmental management and decommissioning	5.7.5	Estimate of removal costs, removal dates, discount rate and price increases in the period leading up to removal
Tariffs related provision	5.7.5	Estimate of electricity usage and number of parties
Other provisions	5.7.5	Mainly relate to estimate of probability, realisation date and curtailed feed-in volumes and prices
Net employee benefit obligation	7.1	Financial, actuarial and demographic assumptions

1.5 Foreign currency

These consolidated financial statements are presented in euros, which is also the parent company's and all subsidiaries` functional currency.

2. Segment information

This section sets out the financial performance for the year in accordance with the way we manage our business (operating segments). We measure and assess our performance based on underlying financial information, which is explained further below.

We generate the majority of our revenue from our regulated operating segments in the Netherlands and Germany. Therefore close collaboration with our respective regulators to obtain agreements that provide reasonable compensation for the risks we face is key to us. Our involvement in certain limited non-regulated activities are closely related and ancillary to our core tasks.

2.1 Segment analysis

Our Executive Board is the chief operating decision-making body of the company (as defined by IFRS 8 'Operating segments'). Periodically, it monitors the performance of the respective operating segments for the purpose of performance management and decision making about resource allocation. The segment performance is based on underlying financial information, where EBIT and investments are the key metrics. The definition of EBIT equals operating profit. Performance of non-regulated activities is evaluated based on EBIT.

Underlying financial information is based on the principle of recognising regulatory assets and liabilities for all of our regulated activities. This implies that amounts resulting from past events and which are allowed to be received or required to be returned trough future tariffs are recorded as an asset or liability, respectively (see note 2.2 for further reference). We believe that the presentation of underlying financial information leads to a sound, consistent and transparent financial insight into past and future business performance.

Our operating segments consist of (i) TSO Netherlands, (ii) TSO Germany and (iii) non-regulated companies.

For management information purposes, the performance of our regulated activities in the Netherlands and in Germany are considered separately into two segments (corresponding to the geographical distribution). This segmentation, based on separately applicable regulatory frameworks, is the key determinant for financial management of the business and for decision-making on budgets, allocation of resources and financing.

Financing activities (including finance income and expenses) are managed on a Group basis and amounts related thereto are not allocated to the segments. Transfer prices between the Netherlands and Germany are set at arm's length in a manner similar to transactions with third parties. These intercompany transactions are eliminated in the consolidation.

There are two customers in the German segment that have revenues that are more than 10% of our total revenue. Revenue from one customer amounted to EUR 789 million (2017: EUR 731 million). Revenue from the other customer amounted to EUR 632 million (2017: EUR 612 million).

	2018					2017				
(EUR million)	**Rev-enue**	**EBIT**	**Invest-ments**	**Assets**	**Liabili-ties**	Revenue	EBIT	Invest-ments	Assets	Liabilities
TSO Netherlands	945	121	876	6,165	3,646	838	190	735	5,781	3,323
TSO Germany	3,230	644	1,370	16,067	11,135	3,122	651	1,037	15,519	10,669
Non-regulated activities	36	43	7	684	159	35	59	2	1,026	137
	4,211	**808**	**2,253**	**22,916**	**14,940**	**3,995**	**900**	**1,774**	**22,326**	**14,129**
Eliminations and adjustments	-35	-2	-	-1,133	1,143	-47	-3	-	-1,914	814
Consolidated underlying information	**4,176**	**806**	**2,253**	**21,783**	**16,083**	**3,948**	**897**	**1,774**	**20,412**	**14,943**

For an analysis of the underlying results see the 'Financial' section of 'Our performance in 2018' section of the integrated annual report.

2.2 ⓘ Accounting policies applied for underlying financial information

Underlying financial information matches regulatory revenues and expenses in a corresponding reporting period, and defers certain income items until used for investments or tariff reductions.

Matching is achieved by recognising regulatory deferral accounts. The key requirement for the recognition of regulatory deferral accounts is that an existing regulatory framework must be in place that permits the future reimbursement or requires the future settlement of regulated assets or liabilities respectively. Consequently, a regulated asset is recognised in underlying financial information in respect of permitted reimbursements of current year expenses in future years tariffs. Vice versa, a regulated liability is recognised in underlying financial information in respect of required settlements (i.e. repayments) of current year revenues through future tariffs.

Furthermore, until 2015 certain investments were financed via auction receipts resulting from auctioning available capacity on cross-border interconnections (see note 2.3). The different accounting treatment of the regulatory deferral accounts also results in a different carrying amount of these assets.

2.3 Regulatory deferral accounts: reconciliation to IFRS figures

The difference between underlying financial information - as presented in the segment information and board report - and IFRS reported figures is related to the recognition of regulated assets and liabilities, auctions receipts, and the measurement of tangible fixed assets. In our IFRS financial statements, these are recognised as revenue when realised. In the underlying financial information these are recognised when invoiced.

These differences also result in different deferred tax balances in underlying financial information compared to IFRS reported figures. No other differences between underlying financial information and IFRS exist.

Underlying financial information can be reconciled to reported IFRS figures as follows:

2018 (EUR million)	Revenue	EBIT	Assets	Liabilities	Recovery/ reversal period (years)
Consolidated underlying information	**4,176**	**806**	**21,783**	**16,083**	
To be settled in tariffs	-82	-126	-785	-140	0 - 5
Auction receipts	156	156	-	-852	0 - 30
Investment contributions	-10	-6	-	-249	0 - 30
Maintenance of the energy balance	29	29	-	-41	0 - 1
Difference in tangible fixed assets	-	21	-300	-	0 - 30
Effect on deferred tax balances	-	-	-22	-5	0 - 30
Consolidated IFRS financial statements	**4,269**	**880**	**20,676**	**14,796**	

2017 (EUR million)	Revenue	EBIT	Assets	Liabilities	Recovery/ reversal period (years)
Consolidated underlying information	**3,948**	**897**	**20,412**	**14,943**	
To be settled in tariffs	-116	-116	-848	-92	0 - 5
Auction receipts	127	80	-	-910	0 - 30
Investment contributions	-10	-10	-	-259	0 - 31
Maintenance of the energy balance	27	27	-	-35	0 - 1
Difference in tangible fixed assets	-	22	-322	-	0 - 31
Effect on deferred tax balances	-	-	-5	2	0 - 31
Consolidated IFRS financial statements	**3,976**	**900**	**19,237**	**13,649**	

As the adjustments for reconciling consolidated underlying revenue to consolidated IFRS revenue are the same for the reconciliation of EBIT, no further information is included in this respect in the above tables.

To be settled in tariffs

Revenue surpluses and deficits resulting from differences between expected (ex ante) and realised (ex post) electricity transmission volumes are incorporated in the tariffs of subsequent years in both, Germany and the Netherlands. In the underlying financial information, these surpluses and deficits are recorded as assets and liabilities, respectively, in the statement of financial position under 'to be settled in tariffs'.

Auction receipts & investment contributions

Auction receipts result from auctioning the available transmission capacity on cross-border interconnections. These receipts are not at our free disposal. In accordance with European law, auction receipts are to be used to invest in additional cross-border interconnections or to be refunded through tariff reductions. In the Netherlands, we have agreed with our regulator (Autoriteit Consument en Markt) to fully utilise auction receipts to reduce future tariffs. The current outstanding balance of auction receipts will be refunded via tariffs over the coming years. In Germany, the use of auction receipts for investments is effectively achieved by reducing tariffs over a rolling 30-year period.

Investments financed by using auction receipts are classified as investment contributions and are reported under 'liabilities'. A periodic amount equal to the depreciation charges, plus a portion of the operating expenses, is released to the statement of income.

Maintenance of the energy balance

As system manager of the high-voltage grid in the Netherlands, we receive funds for performing certain statutory duties, such as the maintenance of the energy balance. The proceeds from these activities (i.e., imbalance settlements) may only be used after approval by the ACM. Imbalance settlements collected during the year are to be offset in transmission tariffs in the subsequent year. Consequently, these amounts are recorded as a liability in the underlying financial information.

Differences in tangible fixed assets

Differences in tangible fixed assets occur due to the difference in accounting treatment of the regulatory deferral accounts and the related cash flows in order to determine the economic useful life and recoverable amount of the assets resulting from acquisitions and used for impairment analysis.

3. Results for the year

This section comprises notes related to the revenue, operating expenses and results for the year as determined under IFRS. Also our taxation policies, including our tax strategy, accounting policy, and an analysis of the income tax for the year and its related deferred tax assets and liabilities at year-end are included in this section.

3.1 Revenue

The disaggregated revenue are presented below.

	2018			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total**
Connection and transmission services	594	2,467	-	3,061
Maintenance of energy balance	72	61	-	133
Operation of energy exchanges	102	62	-	164
Offshore balancing	-	798	-	798
Other	17	60	36	113
Inter-segment	19	16	-	35
Total revenue IFRS	**804**	**3,464**	**36**	**4,304**
Inter-segment adjustments and eliminations	-19	-16	-	-35
Total revenue from contracts with customers IFRS	**785**	**3,448**	**36**	**4,269**

	2017			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total**
Connection and transmission services	627	2,278	-	2,905
Maintenance of energy balance	58	49	-	107
Operation of energy exchanges	88	48	-	136
Offshore balancing	-	737	-	737
Other	13	43	35	91
Inter-segment	30	17	-	47
Total revenue IFRS	**816**	**3,172**	**35**	**4,023**
Inter-segment adjustments and eliminations	-30	-17	-	-47
Total revenue from contracts with customers IFRS	**786**	**3,155**	**35**	**3,976**

Set out below, the reconciliation of revenue from contracts with customers based on IFRS with the amounts disclosed in the segment information (Note 2) based on underlying financial information:

	2018			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total**
Total revenue	**804**	**3,464**	**36**	**4,304**
To be settled in tariffs	255	-173	-	82
Investment contributions	10	-	-	10
Auction receipts	-96	-60	-	-156
Maintenance of the energy balance	-28	-1	-	-29
Total revenue underlying	**945**	**3,230**	**36**	**4,211**
Inter-segment adjustments and eliminations	-19	-16	-	-35
Total revenue from contracts with customers underlying	**926**	**3,214**	**36**	**4,176**

	2017			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total**
Total revenue	**816**	**3,172**	**35**	**4,023**
To be settled in tariffs	120	-4	-	116
Investment contributions	10	-	-	10
Auction receipts	-82	-45	-	-127
Maintenance of the energy balance	-26	-1	-	-27
Total revenue underlying	**838**	**3,122**	**35**	**3,995**
Inter-segment adjustments and eliminations	-30	-17	-	-47
Total revenue from contracts with customers underlying	**808**	**3,105**	**35**	**3,948**

3.1.1 Connection and transmission services

Materially, all revenue from connection and transmission is regulated by the ACM in the Netherlands and by the BNetzA in Germany. Revenue from connection and transmission services includes revenue from services provided to regional grid operators and industrial clients (such as resolution of transmission restrictions, congestion management and reactive power management). Revenue increased mainly due to a higher asset base.

3.1.2 Maintenance of the energy balance

We are responsible to ensure that electricity supply and demand is in balance at all times (i.e. alternating current frequency in the power grid must be at 50 Hz continuously). If this balance is significantly disrupted, it may result in a power outage or even a black-out, depending on the length and severity of the imbalance. To ensure this balance, we contract and deploy (among others) reserve and emergency capacity to compensate unexpected fluctuations in supply and demand. The proceeds from maintaining this energy balance (e.g. imbalance settlements) fluctuate considerably and are refunded through regulated tariffs in both the Netherlands and Germany in subsequent years.

3.1.3 Operation of energy exchanges

This amount includes revenues resulting from the auctioning of cross-border (electricity transmission “interconnection”) capacity.

3.1.4 Offshore balancing

In accordance with German law, approximately 70% of our offshore-related costs are charged through to the other three German ‘Transmission Service Operators’ (TSOs) (so called ‘horizontal balancing’). The associated revenue is classified as ‘revenue from offshore balancing’.

3.1.5 ⓘ Accounting policy with respect to revenue

Revenue primarily represents the sales value derived from the connection and transmission of electricity together with the sales value derived from the provision of other services to customers during the year. Revenue from contracts with customers is recognised when control of the services is transferred to the customer at an amount that reflects the consideration to which the Group expects to be entitled in exchange for those goods or services.

Revenues are from contracts with a single performance obligation. The assessment of unbilled connection and transmission services supplied to customers between the date of the last meter reading and year-end is subject to significant judgement. This assessment is primarily based on expected consumption and weather patterns.

If revenue received or receivable exceeds the maximum annual amount as determined by the regulator, ACM or BNetzA, an adjustment will be made to future tariffs to reflect this over-recovery. Under IFRS, no liability is recognised since this adjustment relates to the provision of future services. Similarly, no asset is recognised when a regulator permits increases to be made to future tariffs in respect of under-recovery.

3.2 Operating expenses

3.2.1 Grid expenses

(EUR million)	2018	2017
System services	1,437	1,368
Connection and transmission services	285	285
Maintenance of energy balance	97	79
Maintaining and operating transmission grids	470	378
Other	-6	1
Total	**2,283**	**2,111**

In 2018, the grid expenses increased proportionally in line with the increase in revenue.

3.2.2 Personnel expenses

(EUR million)	2018	2017
Salaries	259	240
Social security contributions	36	33
Pension charges defined benefit plans	23	11
Pension charges other plans	16	15
Other personnel expenses	23	18
Capitalised costs for tangible fixed assets	-143	-126
Total	**214**	**191**

Average workforce in FTEs (internal employees only)	3,253	3,061
Average workforce in FTEs employed in the Netherlands	1,443	1,304

Key management remuneration

Members of the Executive Board and Supervisory Board are regarded as key management. Aggregate remuneration of members of the Supervisory Board and Executive Board is as follows:

Supervisory Board (EUR thousand)	Fixed	Committee fee	Total
2018	**97**	**48**	**145**
2017	125	46	171

Executive Board (EUR thousand)	Fixed	Variable	Pension cost	Termination benefit	Total
2018	**1,586**	**248**	**687** [1]	**600**	**3,121**
2017	1,802	326	478	-	2,606

[1] This includes a tax amount of EUR 241,000 paid to the Dutch tax authorities for the contractual pre-pension plan of the former CEO as a result of a change in the tax regime.

The aggregate Executive Board remuneration comprises remuneration of statutory directors of EUR 1,803 thousand (2017: EUR 1,915 thousand) and remuneration of non-statutory directors of EUR 1,318 thousand (2017: EUR 691 thousand). Pension remuneration equals (i) the contributions payable to the defined contribution plan for service rendered in the period or (ii), for defined benefit plans, the current service cost and, when applicable, past service cost.

3.2.3 Other operating expenses

(EUR million)	2018	2017
Accommodation and office expenses	89	76
Consultancy expenses	21	24
Hiring of temporary personnel	54	46
Travel and living expenses	15	14
Other expenses	56	45
Total	**235**	**205**

Other expenses in 2017 included a partial release of the provision for compensation payable to offshore wind farm (OWF) operators in respect of possible interruptions and or delays in offshore high-voltage connections. For further details see note 5.7.3.

The total fees for EY network firms (including Ernst & Young Accountants LLP) were as follows:

(EUR thousand)	2018	2017
Audit of the financial statements		
Ernst & Young Accountants LLP	667	596
Other Ernst & Young firms	589	556
Total audit of the financial statements	**1,256**	**1,152**
Other assurance services		
Ernst & Young Accountants LLP	224	224
Other Ernst & Young firms	182	206
Total other assurance services	**406**	**430**
Total assurance services	**1,662**	**1,582**
Tax consultancy (other Ernst & Young firms)	-	27
Other services (other Ernst & Young firms)	40	24
Total other services	**40**	**51**
Total EY network fees	**1,702**	**1,633**

3.3 Finance expenses

(EUR million)	2018	2017
Interest on borrowings and credit facilities	152	154
Capitalised interest on assets under construction	-8	-8
Interest on provisions	18	19
Interest on defined benefit pensions	4	3
Other finance expenses	16	11
Total	**182**	**179**

3.4 Income tax

We strive to comply with all applicable tax legislation in a socially responsible manner, maintaining among the highest levels of transparency, quality and integrity. Management responsibility and oversight of our tax strategy lies with our 'Chief Financial Officer' (CFO), our Senior Manager Corporate Financial Control and our Corporate Tax Manager who monitor our tax activities and report to the Executive Board and the Audit, Risk and Compliance Committee.

Our tax strategy is fully consistent with our corporate strategy. Building a transparent relationship with tax authorities based on mutual trust is an integral part of this strategy. We have built and are continuously improving our tax control framework to be 'in control' of tax risks and to allow the company to demonstrate to all its stakeholders, including the tax authorities, that the company fully complies with all applicable laws and regulations.

Income tax is payable in the Netherlands and Germany. In the Netherlands, we entered into a so called 'horizontal monitoring agreement' with the Dutch tax authorities. Based on transparency and mutual trust, this agreement ensures that tax positions are fully disclosed and agreed on in advance, as a result of which generally no tax audits are performed by the Dutch tax authorities. All corporate income tax returns in the Netherlands have been filed up to and including 2016. Corporate income tax paid in the Netherlands in 2018 amounted to EUR 72 million.

In Germany, corporate income tax and trade tax returns for all German entities have been filed up to and including fiscal year 2017. In 2017, the German tax authorities have started a tax audit for the fiscal years 2013 to 2016 relating to all German entities. In 2018, we paid EUR 167 million of corporate income tax in Germany.

The key components of income tax expense are:

Consolidated income statement (EUR million)	**2018**	2017
Current income tax charge	299	210
Deferred tax:	-110	-33
Income tax expense reported in the income statement	**189**	**177**

Consolidated statement of comprehensive income (EUR million)	**2018**	2017
Effect of re-measurement of defined benefit pensions	-2	-1
Income tax charged directly to other comprehensive income	**-2**	**-1**

Income tax on profits has been provided at the rates prevailing in the respective countries. In the Netherlands, a statutory corporate income tax rate of 25% applied, while in Germany, on average, a marginal statutory corporate income tax rate of 29.4% applied (including trade tax levied by municipalities or 'Gewerbesteuer'). Reconciliation between tax expense and the accounting profit multiplied by a statutory income tax rate of 25% is as follows:

(EUR million)	**2018**	2017
Profit before income tax	**699**	**730**
Statutory income tax rate of 25% (The Netherlands, 2017: 25%)	175	183
Effect of higher tax rate in Germany	30	24
Effect future tax rate change in the Netherlands	-11	-
Deferred and current tax differences	9	-8
Non-deductible interest	1	-12
Non-deductible/taxable mainly participation exemption effect	-5	-6
Tax paid by third parties	-10	-4
At the effective income tax rate of 27% (2017: 24%)	**189**	**177**

The main reason for the higher effective tax rate is the effect of the higher tax rate in Germany. The remeasurement of the deferred tax position due to the enacted rate change in the Netherlands is partly offset by the impact of the German tax audit on the German current and deferred tax differences. In 2018 the TenneT Group had less deductible interest in comparison to 2017, the reason for this difference was the use of an interest carry forward in 2017 in Germany. The increase of the tax paid by third parties relates to tax paid by the investors in German entities due to increase of profit before tax.

Deferred tax relates to the following:

	Statement of financial position		Statement of income	
(EUR million)	**2018**	2017	**2018**	2017
Auction receipts	-182	-215	-32	-32
Investment contributions	-62	-73	-12	-
Tariffs to be settled	18	8	-10	-3
Accelerated depreciation for tax purposes	-157	-165	-8	-11
Provisions	242	224	-19	-36
Profit allocation to hybrid	-5	-4	-	-
Other	37	8	-29	49
Net deferred tax assets/(liabilities)	**-109**	**-217**		
Deferred tax expense/(income)			**-110**	**-33**

Deferred taxes are presented in the statement of financial position as follows:

(EUR million)	**2018**	2017
Deferred tax assets	15	5
Deferred tax liabilities	-124	-222
Deferred tax, net	**-109**	**-217**

Movements of deferred tax positions are set out below.

(EUR million)	**2018**	2017
At 1 January	**-217**	**-249**
Tax expense during the period recognised in statement of income	110	33
Tax income during the period recognised in other comprehensive income	-2	-1
At 31 December	**-109**	**-217**

The Group did not have any tax loss carry forwards as of 31 December 2018.

ⓘ Accounting policy

The tax charge for the period is recognised in the income statement, the statement of comprehensive income or directly in equity, in accordance with the relevant accounting treatment of the related transaction. The tax charge comprises both current and deferred tax.

Current income tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the tax authorities. The tax rates and tax laws used to calculate these amounts are those enacted or substantively enacted at the reporting date in those countries where we operate and generate taxable income.

Deferred tax is recognised using the liability method with respect to temporary differences between the tax bases of assets and liabilities and their respective carrying amounts for financial reporting purposes at the reporting date. Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realised or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date in the relevant jurisdictions.

Deferred tax is generally recognised in respect of all temporary differences, the carry-forward of unused tax credits and any unused tax losses. Deferred tax assets (also in association with investments in subsidiaries, associates and interests in joint arrangements) are recognised to the extent that it is probable that taxable profit will be available against which the deductible temporary differences and the carry-forward of unused tax credits and unused tax losses can be utilised. This is assessed annually. Deferred tax is not recognised for the temporary differences arising from the initial recognition of goodwill or an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss.

Unrecognised deferred tax assets are reassessed at each reporting date and are recognised to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities must be recognised gross in the statement of financial position unless:

- the entity has a legally enforceable right to set off current tax assets against current tax liabilities and
- the deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authority on either:
  - the same taxable entity or
  - different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realise the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

3.5 Earnings per share

Earnings per share have been calculated by dividing profit for the year attributable to ordinary shareholder of the Group, after adjustment for the distribution on hybrid securities, by the weighted average number of ordinary shares outstanding during the year. The following table reflects the income and share data used for the basic and diluted earnings per share calculations:

(EUR million)	**2018**	2017
Profit for the year attributable to ordinary shareholder of the company	420	477
Allocation to hybrid securities	-31	-35
Tax effect on allocation to hybrid securities	8	9
Profit for the year attributable to equity holders of the company adjusted for the allocation to hybrid securities	**397**	**451**
Weighted average number of ordinary shares in issue (in thousands)	200	200

4. Grid investments, other tangible fixed assets and related commitments

We own a significant physical asset base to operate our transmission grid. To solve transmission bottlenecks and ensure grid stability we continue to invest in our network. To accommodate expanding renewable energy sources sizable further onshore and offshore grid investments in Germany and the Netherlands are necessary in the upcoming years. This section focuses on our tangible fixed assets and related commitments which form the backbone of our activities.

4.1 Tangible fixed assets

(EUR million)	High-voltage substations	High-voltage connections	Other assets	Assets under construction	**Total**
Cost					
At 1 January 2017	**6,486**	**5,290**	**676**	**3,736**	**16,188**
Additions	133	119	20	1,491	1,763
Initial recognition of acquired companies (note 5.2)	-	-	11	-	11
Transfers	302	408	7	-717	-
Changes in estimations (note 5.7.1)	17	24	-	-	41
Disposals	-8	-	-	-	-8
At 31 December 2017	**6,930**	**5,841**	**714**	**4,510**	**17,995**
Additions	206	121	87	1,798	2,212
Transfers	1,198	733	83	-2,014	-
Changes in estimations (note 5.7.1)	1	4	-	-	5
Disposals	-4	-	-2	-22	-28
At 31 December 2018	**8,331**	**6,699**	**882**	**4,272**	**20,184**
Depreciation and impairment					
At 1 January 2017	**1,346**	**1,348**	**173**	**-**	**2,867**
Depreciation for the year	320	233	48	-	601
Disposals	-3	-	-	-	-3
At 31 December 2017	**1,663**	**1,581**	**221**	**-**	**3,465**
Depreciation for the year	358	262	52	-	672
Disposals	-1	-	-1	-	-2
At 31 December 2018	**2,020**	**1,843**	**272**	**-**	**4,135**
Net book value:					
At 1 January 2017	5,140	3,942	503	3,736	13,321
At 31 December 2017	5,267	4,260	493	4,510	14,530
At 31 December 2018	6,311	4,856	610	4,272	16,049

High-voltage substations include onshore and offshore transformer and converter stations. High-voltage connections consist of overhead and underground connections. Unlike lands for substations, lands surrounding high-voltage pylons and cables are generally not owned by the Group. Other tangible fixed assets consist of office buildings, office ICT equipment and other company assets.

TenneT has decided to terminate the Wintrack II contract with Heijmans-Europoles B.V. (HEP). The contracts concern the projects South-West 380 kV West and North-West 380 kV, and involve the design and installation of the high-voltage pylons, including civil engineering work for the connections. This decision has led to a write-off of assets under construction with an impact of EUR 22 million that is presented in other gains/losses.

In 2018 the discount rate for the decommissioning provision is 2.9% (2017: 3.0%) for OWF connections and is 2.2% (2017: 2.2%) for onshore connections (see note 5.7.5). Since the main part of the decommissioning provision was recognised as part of the carrying value of the related asset, changes in discount and inflation rate, if any, directly impact this carrying value.

The amount of borrowing costs capitalised during 2018 is disclosed in note 3.3. The effective interest rate used to determine the amount of borrowing costs capitalised was 2.2% (2017: 2.2%).

Assets under construction and investments

	2018		2017	
(EUR million)	**Investments**	**Assets under construction**	Investments	Assets under construction
TSO Netherlands	841	1,785	728	1,328
TSO Germany	1,364	2,487	1,033	3,182
Non-regulated activities	7	-	2	-
Total	**2,212**	**4,272**	**1,763**	**4,510**

ⓘ Accounting policy tangible fixed assets

Tangible fixed assets are valued at cost, net of accumulated depreciation and accumulated impairment losses, if any. Such cost includes the cost of replacing part of the asset and borrowing costs for long-term construction projects if the recognition criteria are met. When significant parts of the asset are required to be replaced at intervals, such parts are recognised as individual assets with specific useful lives and depreciated accordingly. Likewise, when a major maintenance is performed, its cost is recognised in the carrying amount of the asset as a replacement, if the recognition criteria are satisfied. All other repair and maintenance costs are recognised in profit or loss as incurred. The present value of the expected cost for the decommissioning of an asset after its use is included in the cost of the respective asset, if the recognition criteria for a provision are met. Depreciation is calculated on a straight line basis.

An asset is derecognised on disposal or when no future economic benefits are expected from its use. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the statement of income when the asset is derecognised.

General and specific borrowing costs directly attributable to the acquisition, construction or production of the tangible fixed assets, are added to the cost, until such time that the assets are substantially ready for their intended use or sale. No borrowing costs are capitalised where the borrowing costs are directly compensated in the year of construction.

Key estimates and assumptions tangible fixed assets

To calculate depreciation amounts, the following useful lives of various asset categories are assumed:

Estimated useful lives tangible fixed assets	Years
Substations	
Switches and offshore converter stations	20-35
Security and control equipment	10-20
Power transformers	20-35
Capacitor banks	20-35
Telecommunications equipment	10-20
Connections	
Pylons/lines	35-40
Cables (subsea and underground)	20-40
Other	
Office buildings	40-50
Office IT equipment	3-5
Process automation facilities	5
Other company assets	5-10

Residual values, useful lives and methods of depreciation of assets are reviewed at each financial year-end and adjusted prospectively, if appropriate.

4.2 Contract liabilities

The majority of the contract liabilities relates to investment contributions received from certain third parties for the construction of a new substation, a grid connection or increased connection capacity (EUR 305 million; 2017: EUR 281 million). This was due to received contributions of EUR 38 million minus EUR 14 million amortisation. The current part of the investment contributions amounts to EUR 3 million (2017: EUR 3 million) and is presented separately in the statement of financial position.

Accounting policy

Contract liability is recognised when the payment is made or the payment is due (whichever is earlier). Contract liabilities are recognised as revenue when TenneT performs under the contract. At initial recognition contributions received from third parties are measured at fair value, presented as contract liabilities ('investment contributions') and are subsequently recognised as revenue over the related asset's useful life.

4.3 Commitments and contingencies related to investments

Off-balance sheet rights and obligations related to investments consist of the following categories:

(EUR million)	2018	2017
Off-balance sheet rights		
Bank guarantees received	1,556	1,380
Comfort letters received	693	682
Total	**2,249**	**2,062**
Off-balance commitments		
Capital commitments	3,611	3,705
Comfort letters issued	775	775
Operating lease commitments	384	283
Total	**4,770**	**4,763**

The expected cash flows for capital commitments and other operating lease commitments are equal to the amounts in the above table. For comfort letters issued no cash flows are expected.

The probability of certain off-balance sheet commitments was reassessed from remote to low. This resulted in an increase of comfort letter issued. Based on this assessment the comparative figures for the off-balance sheet commitment was corrected from EUR 4 million to EUR 775 million.

4.3.1 Bank guarantees received

Bank guarantees received include guarantees for investment projects.

4.3.2 Comfort letters received

The majority of comfort letters received is from construction companies primarily involved in the construction of German offshore projects.

4.3.3 Capital commitments

Capital commitments relate to commitments entered into with regard to the purchase of tangible fixed assets. Approximately EUR 1,974 million of capital commitments are payable within the next 12 months (2017: EUR 1,401 million).

4.3.4 Operating lease commitments

In 2018 the operating lease expenses amount to EUR 159 million (2017: EUR 87 million). The majority of operational lease commitments are for power plants. There are also operational leases for offices, telecom, ground and cars. Future minimum lease payments under non-cancellable operating leases are as follows:

(EUR million)	**2018**	2017
Within the next 12 months	133	93
Whitin 2-5 years	163	149
More than 5 years	88	41
Total	**384**	**283**

ⓘ Accounting policy

Leases in which not substantially all risks and rewards of ownership are transferred to the lessee are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to the statement of income on a straight-line basis over the period of the lease.

Leases in which substantially all risks and rewards of ownership are transferred to the lessee are classified as financial leases.

5. Other invested capital including working capital and provisions

Other invested capital includes intangible assets to support our operations, goodwill related to acquired business and working capital. Working capital comprises current assets and current liabilities which result from our daily operations (such as trade receivables and payables). Our working capital requirements are significantly impacted by the execution of the 'Renewable Energy Sources Act' (EEG) legislation, our grid related accruals and investments.

We carry a provision that reflects the expected cost to remediate and decommission our assets. Also in the ordinary course of our business, we are party to several claims from and disputes with third parties. We record a provision for these claims and disputes when we expect a future cash outflow.

5.1 Intangible assets

(EUR million)	Goodwill	Software	Customer contracts	Other intangible assets	Intangible assets under construction	**Total**
Cost						
At 1 January 2017	**31**	**193**	**64**	**23**	**3**	**314**
Additions	-	2	-	1	8	11
Initial recognition of acquired companies (note 5.2)	-	-	-	6	-	6
Transfers	-	7	-	-	-7	-
At 31 December 2017	**31**	**202**	**64**	**30**	**4**	**331**
Additions	-	6	-	-	35	41
Transfers	-	36	-	-	-36	-
At 31 December 2018	**31**	**244**	**64**	**30**	**3**	**372**
Amortisation and impairment						
At 1 January 2017	**-**	**159**	**38**	**8**	**-**	**205**
Amortisation for the year	-	21	5	2	-	28
At 31 December 2017	**-**	**180**	**43**	**10**	**-**	**233**
Amortisation for the year	-	20	5	3	-	28
At 31 December 2018	**-**	**200**	**48**	**13**	**-**	**261**
Net book value:						
At 1 January 2017	31	34	26	15	3	109
At 31 December 2017	31	22	21	20	4	98
At 31 December 2018	31	44	16	17	3	111

At 31 December 2018 and 2017, goodwill was allocated to the following cash generating units (CGUs): TSO Netherlands (EUR 3 million), TSO Germany (EUR 24 million) and non-regulated activities (EUR 4 million). At year-end all assets under construction are presented under the tangible fixed assets. When an asset is finalised it is determined what part relates to tangible fixed assets and intangible assets. At year-end an amount of approximately EUR 26 million (2017: EUR 39 million) of the assets under construction relates to the intangible assets.

ⓘ Accounting policy

Intangible assets are measured at acquisition cost on initial recognition. The cost of intangible assets acquired in a business combination is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation and accumulated impairment losses. Internally generated intangible assets, excluding capitalised development costs, are not capitalised and expenses are reflected in the statement of income in the period in which they are incurred.

Goodwill is initially measured at cost and represents the excess of the consideration transferred over TenneT's interest in the value of the net identifiable assets, liabilities and contingent liabilities of the acquiree and the amount of the non-controlling interest in the acquiree. After initial recognition, goodwill is measured at cost less any accumulated impairment losses.

At each reporting date, we assess whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the asset's recoverable amount is estimated. The recoverable amount is the higher of an asset's or CGU's fair value less costs of disposal and its value in use. When the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

Key estimates and assumptions

Estimated useful lives intangible assets	Years
Goodwill	Indefinite
Software	3-5
Customer contracts	10-14
Purchased rights to use land	25-45
Other	5-15

Intangible assets, with the exception of goodwill, are assumed to have a fixed useful life as shown above and are amortised over this useful life. The useful life is re-assessed each reporting period. Intangible assets are amortised on a straight line basis, as this best reflects the use of the asset.

Goodwill is assumed to have an indefinite useful life and is therefore not amortised, but is tested for impairment annually or more frequently, if events or changes in circumstances indicate a triggering event, either individually or at the CGU level.

Impairment testing of goodwill

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the CGUs (our operating segments) or groups of CGUs expected to benefit from the synergies of the combination. Each CGU or group of CGUs to which the goodwill is allocated represents the lowest level within the entity at which the goodwill is monitored for internal management purposes.

In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs of disposal, an appropriate valuation model is used, if no recent market transactions can be identified.

The impairment calculation is based on detailed projections, which are prepared separately for each of the CGUs to which the individual assets are allocated. The projections reflect current regulatory parameters, taking into account expected future regulatory developments. Management believes that the resulting cash flows can be determined reliably and that they give an appropriate reflection of the CGUs cash flow generating potential.

The recoverable amount of the Germany CGU was determined based on a value in use calculation using cash flow projections from our three year business plan. The pre-tax discount rate applied to cash flow projections was 3.9% (2017: 4.1%). The cash flows beyond the three-year period until 2038 were estimated on the basis of regulatory allowed returns and invested capital. The terminal value is determined estimating the regulatory asset base as of December 2037. We concluded that the recoverable amount was significantly in excess of the carrying value and as such no impairment loss needed to be recognised and as such no impairment is required.

5.2 Business combinations

NOVEC has made the decision to sell 60% of the shares of WL Winet B.V. Therefore, on 31 December 2018, the assets and liabilities of WL Winet B.V. were classified as held for sale and impaired for EUR 2 million.

Effective 17 February 2017 TenneT acquired the remaining 50% in Relined B.V. from Prorail for a cash consideration of EUR 5 million and consequently obtained full control. The acquisition of Relined gave rise to an EUR 3 million gain and resulted in the derecognition of the joint venture interest of EUR 2 million.

ⓘ Accounting policy

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, we elect whether to measure the non-controlling interest in the acquiree at fair value or at the proportionate share of the acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred and included in administrative expenses.

Non-current assets held for sale are defined as non-current assets (other than financial instruments or property investments) immediately available for sale and highly likely to be sold within a year. Non-current assets held for sale have been stated at the lower end of the asset's carrying value and fair value less costs of disposal.

5.3 Investments in joint ventures and associates

5.3.1 Joint ventures

We have, directly or indirectly, 50% equity stakes in BritNed Development Ltd. ('BritNed'), DC Nordseekabel GmbH & Co. KG ('NOKA'), DC Nordseekabel Beteiligungs GmbH, DC Nordseekabel Management GmbH, Reddyn B.V., Tensz B.V. and TeslaN B.V. These investments are classified as joint ventures, for which only the investments in BritNed (legal seat: Arnhem, the Netherlands) and NOKA (legal seat: Bayreuth, Germany) are each considered as an investment of material value. Other joint ventures are considered immaterial and are therefore not further disclosed. The Group's share in profit (which is equal to other and total comprehensive income) of these immaterial joint ventures amounted to EUR 4 million in 2018 (2017: EUR 1 million).

BritNed

BritNed is a joint venture with National Grid International Ltd, the British TSO. It owns and operates a 1,000 MW 'Direct Current'(DC) interconnector between the United Kingdom and the Netherlands. Operating costs and trading revenue are shared equally between TenneT and National Grid.

NOKA

In February 2015, partner companies Statnett SF, TenneT and KfW IPEX-Bank GmbH made a final investment decision to establish an interconnector between Norway and Germany under the project name 'NordLink'. Ownership of the interconnector is equally split, with TenneT and KfW owning the Southern part through NOKA, a jointly owned company and Statnett owning the Northern part. At the moment the main activities of NOKA are the construction of the Southern part of the interconnector. Operating costs and trading revenue are shared equally between NOKA and Statnett.

The table below shows summarised financial information of material joint ventures and the reconciliation with their carrying amounts.

	2018		2017	
Statement of financial position (EUR million)	**BritNed**	**NOKA**	BritNed	NOKA
Non-current assets	432	686	448	511
Cash and cash equivalents	60	35	16	24
All other current assets	18	22	45	6
Non-current liabilities	-11	-56	-11	-35
Current liabilities	-44	-85	-37	-142
Equity	**455**	**602**	**461**	**364**
Ownership TenneT	*50%*	*50%*	*50%*	*50%*
Carrying amount of the investment	**228**	**301**	**231**	**182**

	2018		2017	
Statement of income (EUR million)	**BritNed**	**NOKA**	BritNed	NOKA
Revenue	108	55	148	36
Depreciation and amortisation	-15	-	-16	-
Other costs	-16	-1	-19	-1
Operating profit	**77**	**54**	**113**	**35**
Finance income and expenses	-	-2	-	-1
Income tax expense	-15	-	-22	-
Profit for the year*	**62**	**52**	**91**	**34**
Ownership TenneT	*50%*	*50%*	*50%*	*50%*
Group's share in profit	**31**	**26**	**46**	**17**

* Profit for the year is equal to other and total comprehensive income.

BritNed has contingent liabilities of EUR 9 million (2017: EUR 5 million) mainly related to comfort letters issued. NOKA has contingent liabilities of EUR 0.5 billion (2017: EUR 0.8 billion) mainly related to investments in tangible fixed assets.

None of our joint ventures are permitted to distribute profits until consent from all shareholders or partners has been obtained. In 2018 EUR 34 million dividend was received from BritNed (2017: EUR 49 million) and EUR 3 million from other interests in joint ventures (2017: EUR 1 million). During 2018 we contributed EUR 92 million to NOKA's capital (2017: EUR 72 million).

Other interests in joint ventures amount EUR 1 million at 31 December 2018 (2017: nil).

5.3.2 Associates

At 31 December 2018 our substantial investments in associates consisted of a 34% interest in HGRT and a 25% interest in Open Tower Company B.V. (hereafter referred to as 'OTC'). In addition, the Group holds four immaterial investments in Energie Data Services Nederland B.V. (EDSN), European Market Coupling Company GmbH (EMCC) and TSCNET Services GmbH (TSC). The Group's share in profit (which is equal to other and total comprehensive income) of these immaterial associates amounted to EUR 4 million in 2018 (2017: EUR 2 million).

The summarised financial information of the material associates and reconciliation with their respective carrying amounts, of the investment in the consolidated financial statements is as follows:

	2018		2017	
Statement of financial position (EUR million)	**HGRT**	**OTC**	HGRT	OTC
Non-current assets	90	99	103	106
Current assets	7	32	1	30
Other non-current liabilities	-	-167	-	-141
Current liabilities	-	-2	-	-17
Equity	**97**	**-38**	**104**	**-22**
Ownership TenneT	*34%*	*25%*	*34%*	*25%*
Carrying amount of the investment	**33**	**-**	**35**	**-**

	2018		2017	
Statement of income (EUR million)	**HGRT**	**OTC**	HGRT	OTC
Revenue	-	26	-	26
Depreciation and amortisation	-	-6	-	-6
Other costs, gains and losses	-	-5	-	-5
Operating profit	**-**	**15**	**-**	**15**
Finance income and expenses	10	-9	8	-6
Income tax expense	-	-1	-	-2
Profit for the year*	**10**	**5**	**8**	**7**
Ownership TenneT	*34%*	*25%*	*34%*	*25%*
Group's share in profit	**3**	**1**	**3**	**2**

* Profit for the year is equal to total and other comprehensive income.

HGRT

The legal seat of HGRT is in Paris, France. HGRT holds a 49% stake in EPEX. EPEX is the exchange for the power spot markets for the 'North West Europe' (NWE) region and the United Kingdom. At 31 December 2018, HGRT had no contingent liabilities outstanding (2017: nil). In 2018, EUR 4 million in dividends was received (2017: EUR 2 million).

OTC

OTC (legal seat: Vianen, the Netherlands) is a holding company and holds majority interests in three asset companies: Colonne B.V., Mobile Radio Networks Vehicle B.V. (MRNV) and OTC II B.V. These companies mainly own infrastructure assets specifically designed for terrestrial communications. OTC had no contingent liabilities as at 31 December 2018 (2017: nil). EUR 6 million dividend from OTC was received in 2018 (2017: EUR 2 million).

Other

Our interest in other associates amounted EUR 4 million at 31 December 2018 (2017: EUR 2 million).

5.3.3 ⓘ Accounting policy joint ventures and associates

A joint venture is an arrangement whereby the parties in the arrangement have joint control over the net assets of the joint arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.
An associate is an entity in which we have significant influence, but no control. Significant influence is the power to participate in the financial and operating policy decisions of the investor.

Investments in joint ventures and associates are accounted for using the equity method. Under the equity method, the investment in the joint venture or associate is initially recognised at cost. The carrying amount of the investment is adjusted to recognise changes in the Group's share of net assets of the investment since the acquisition date. Goodwill relating to the associate is included in the carrying amount of the investment and is neither amortised nor individually tested for impairment.

The statement of income reflects our share in the results of operations of the investment. Any change in other comprehensive income of those investors is presented as part of the other comprehensive income. In addition, when there is a change recognised directly in the equity of the investment, our share of any change is recognised in the statement of changes in equity. Unrealised gains and losses resulting from transactions between us and the investment are eliminated to the extent of the interest in the investment.
When an associate or joint venture makes dividend distributions to us in excess of our carrying amount, a liability is recognised if TenneT:
(i) is obliged to refund the dividend;
(ii) have incurred a legal or constructive obligation; or
(iii) made payments on behalf of the associate.
In the absence of such obligations, the excess in net profit for the period is recognised. When the associate or joint venture subsequently makes profits, this is only recognised when they exceed the excess cash distributions recognised in net profit plus any previously unrecognised losses.

After application of the equity method, we determine whether it is necessary to recognise an impairment loss on our investment in the joint venture or associate. At each reporting date, we determine whether there is objective evidence that the investment is impaired. If such evidence exists, the amount of impairment is calculated as the excess of the carrying value of the investment over its recoverable amount and recognised in the statement of income.

On loss of significant influence over the joint venture/associate, any retained investment is valued at fair value. Any difference between the carrying amount of the investment on loss of significant influence and the fair value of the retained investment and proceeds from disposal is recognised in the statement of income.

5.4 Other financial assets

(EUR million)	**2018**	2017
Receivables from related parties	34	23
Receivable from shareholder	-	280
Fees for credit facilities available	2	3
Other	6	5
Total	**42**	**311**

The receivables from related parties mainly consists of loans granted to NOKA and Mobile Radio Networks Vehicle B.V. (a 100% subsidiary of OTC) for the amount of EUR 28 million respectively EUR 5 million. For more details about the receivable from shareholder see note 5.5.

5.5 Account- and other receivables

(EUR million)	2018	2017
Amounts to be invoiced to EEG trade debtors	1,046	1,087
EEG trade receivables	8	40
EEG deposits > 3 month	250	-
Trade receivables	226	288
Amounts to be invoiced	514	479
Receivable from shareholder	280	350
VAT receivables	42	41
Interest receivable	4	4
Other	139	145
Total	**2,509**	**2,434**

5.5.1 EEG trade receivables and amounts to be invoiced to EEG trade debtors

In accordance with the Renewable Energy Sources Act (EEG) in Germany, TSOs like TenneT TSO GmbH are required to purchase electricity from producers of renewable energy at fixed feed-in tariffs. Subsequently such renewable energy is sold on power exchanges at spot prices.

The difference is fully compensated by an EEG levy, determined annually, which is part of German consumer tariffs. EEG revenues and expenses are legally required to be administrated separately and are legally bound to be equal, except for certain potential bonus amounts payable to TenneT for marketing the energy on the power exchange. The EEG levy also includes an additional liquidity buffer to avoid a net financing need for the TSOs. We act as an agent with respect to these EEG services.

EEG trade debtors and receivables consist of the accrual of unbilled EEG levy mainly for the month December, the outstanding invoices for the EEG levy, the accrual for horizontal balancing amounts (i.e. unsettled charges to the other German TSOs) and energy trading revenues. EEG trade receivables are not at our free disposal. Refer to 5.6 for the EEG accounts payable.

Refer to 6.7 for EEG deposits.

5.5.2 Trade receivables

As at 31 December, the ageing analysis of the trade receivables was as follows:

			Past due		
(EUR million)	Total	Not past due	0-30 days	31-60 days	More than 60 days
2018	**226**	**193**	**8**	**5**	**20**
2017	288	254	11	3	20

Changes in the provision for expected credit loss were as follows:

(EUR million)	2018	2017
At 1 January	**9**	**5**
Transition effect IFRS 9	1	-
Charge for the year	8	5
Utilised	-3	-
Unused amounts reversed	-3	-1
At 31 December	**12**	**9**

As at 31 December 2018, receivables with an initial value of EUR 4 million (2017: EUR 1 million) were fully provided for.

5.5.3 Amounts to be invoiced

The majority of the amounts to be invoiced relate to unbilled grid fees and rechargeable offshore costs in Germany.

5.5.4 Receivable from shareholder

Receivable from shareholder reflects our contractual right to receive the cash consideration following the 2016 capital commitment. The EUR 350 million receivable from 2017 was received in 2018. The EUR 280 million is due in 2019 and was presented under non-current other financial assets in 2017.

5.6 Account- and other payables

(EUR million)	2018	2017
EEG accounts payable	2,479	2,342
Accounts payable	301	204
Payables in connection with tangible fixed assets purchases	211	365
Grid expenses payable	1,071	1,029
Interest payable	92	97
Social securities and other taxes payable	35	11
Payables to related parties	20	20
Other payables	205	286
Total	**4,414**	**4,354**

5.6.1 EEG accounts payable

See note 5.5.1.

5.6.2 Payables in connection with tangible fixed assets purchases

Payables in connection with tangible fixed assets purchases relates to unbilled services and deliveries for onshore and offshore investment projects.

5.6.3 Grid expenses payable

The grid expenses payable consists mainly of accrued expenses for (i) feed-in management, and (ii) redispatch measures.

Key estimates and assumptions

In terms of accrued expenses for measures taken to restore the imbalance of the electricity grid, we procure balancing services and ask various generators to come on or off the grid to help balance supply and demand or to manage 'constraints' (i.e. bottlenecks) in the electricity grid. At year-end, we record an accrual for all balancing costs. The accrual is based on actual volumes (if available) or forecast volumes derived from models. Several assumptions regarding such matters as weather conditions, requested volumes and capacity per plant are made in these models.

Prices are based on the underlying contracts and/or historical data. The complexity of the electricity market and uncertainties in assessing, variable renewable energy production makes estimating the grid expenses payable a complex task.

5.6.4 Other payables

Other payables mainly comprise compensation payments to offshore wind farms, personnel related liabilities and accruals for which invoices are not yet received.

Key estimates and assumptions

Compensation payments to OWFs are based on amounts of electricity which could not be fed into the grid. The pass-through accrual is based on a comparison of the costs incurred and the revenue generated by the offshore liability surcharge.

5.7 Provisions

	2018			2017		
(EUR million)	**Current**	**Non-current**	**Total**	Current	Non-current	Total
Environmental and decommissioning	11	665	676	24	570	594
Tariff related	28	5	33	41	16	57
Other	47	104	151	27	111	138
Total	**86**	**774**	**860**	**92**	**697**	**789**

(EUR million)	Environmental management and decommis-sioning	Tariff related	Other	**Total**
At 1 January 2017	**513**	**127**	**143**	**783**
Addition	28	8	24	60
Utilisation	-3	-21	-7	-31
Changes in estimations	47	-	-	47
Unused amounts reversed	-9	-58	-22	-89
Imputed interest	18	1	-	19
At 31 December 2017	**594**	**57**	**138**	**789**
Addition	71	3	11	85
Utilisation	-4	-9	-3	-16
Changes in estimations	8	-	5	13
Unused amounts reversed	-10	-18	-1	-29
Imputed interest	17	-	1	18
At 31 December 2018	**676**	**33**	**151**	**860**

5.7.1 Provisions for environmental management and decommissioning

Provisions for environmental management and decommissioning serves to cover future obligations in relation to high-voltage connections and underground cables, and to cover the decommissioning costs. In 2018 this included an additional EUR 70 million (2017: EUR 10 million) for future decommissioning costs for projects constructed during 2018. Changes in estimations relate to the provision for decommissioning for EUR 5 million (2017: EUR 42 million). Both were not recognised through the statement of income. There was no significant decommissioning of substations in 2018. The first decommissioning of an offshore grid connection is expected to start in 2029.

5.7.2 Tariff related provisions

Tariff-related provisions mainly relate to provisions for system service fees in the Netherlands. We charge electricity consumers a fee for system services performed. Following a change in law, the court in the Netherlands concluded that only parties with a direct connection to a grid maintained by a TSO are required to pay system service fees for the period prior to 31 December 2014. Consequently, we are required to refund certain amounts to parties without a direct grid connection. These refunds can be recouped through future tariffs. In 2018 EUR 18 million (2017: EUR 58 million) of the provided amount matured and was released to the statement of income.

5.7.3 Other provisions

The majority of the other provisions relate to risks associated with delays and interruptions of offshore connections in Germany. The connection of OWFs presents additional technical and organisational challenges. A number of factors, including a lack of supplier resources required for the construction of offshore grid connection system, as well as weather conditions and the application of new technologies, hindered the timely realisation and/or interrupted the operational phase of offshore grid connection systems. TenneT based its assumptions and estimates on parameters available at the time the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising that are beyond control. Such changes are reflected in assumptions when they occur.

5.7.4 ⓘ Accounting policy provisions

Provisions are recognised when there is (i) a legal or constructive obligation as a result of past events, (ii) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and (iii) when the amount can be reliably estimated. The provisions are measured at the present value of estimated cash flows to settle the obligation, based on expected price levels. The cash flows are discounted at a current pre-tax rate that reflects the risks specific to the liability. The interest unwinding is recognised in the statement of income as a finance cost.

Estimated future costs are reviewed annually and adjusted as appropriate. Changes in estimated future costs and discount rates for decommissioning costs are recognised as changes in estimations in the tangible fixed assets. For all other provisions changes in estimated future costs and discount rates are recognised in the statement of income.

5.7.5 Key estimates and assumptions provisions

The estimated decommissioning provision involves assessing the expected remaining useful life of the relevant asset. The useful life of the offshore grid connections is estimated at 20 years. Decommissioning costs are provided for at the present value of expected costs to settle the obligation. This provision assumes a discount rate of 2.9% (2017: 3.0%) and an inflation rate of 2.9% (2017: 3.0%). A change in the discount rate of 1% could have a maximum impact of EUR 71 million on the asset value. The onshore substations, cables and powerlines have a lower risk profile for which a discount rate of 2.2% (2017: 2.2%) is used to calculate the net present value of expenditures. A change in discount rate of 1% could have an impact of EUR 1 million on the related book value.

A discount rate of 2.2% is applied for environmental management provisions (2017: 2.2%).

The estimated amount of the risks associated with delays and interruptions concerning the Group's offshore activities in Germany is based on the number of offshore grid connections, and the compensation paid to the offshore grid connections.

We are of the opinion that the recorded provisions reflect the best estimate of the probable outflow of resources. However, uncertainty about the assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of these provisions in future periods.

5.8 Inventory

Inventory is primarily composed of oil which is used for measures taken at power plants that are standing by for TenneT.

6. Capital structure and financing

To keep pace with the rising electricity consumption, the need for more transport capacity and shift in production areas, we must invest substantially in upgrading and expanding our high-voltage grid. Therefore, a solid financial standing is needed to maintain good access to the financial markets to fund the necessary investments in our infrastructure. This section focuses on capital management, financing and the related risks.

6.1 Capital management

The primary objective of our capital structure is to ensure that we have a solid financial position to anticipate changes in the regulatory environment and to enable us to execute our extensive investment programme which is essential for the success of the energy transition in the Netherlands and Germany. The majority of the funding for our investment programme comes from the debt capital markets i.e. from institutional investors, commercial banks and international financial institutions (e.g. the European Investment Bank).

To maintain excellent access to financial markets at favourable conditions, we have defined capital management objectives, policies and processes that aims to:

1. maintain a senior unsecured long-term credit rating of at least A3/A-;
2. maintain a Funds From Operations (FFO) to Net debt ratio based on 'underlying' financial information of at least 8%;
3. diversify the maturities of long-term funding instruments to limit refinancing risk;
4. maintain liquidity through cash and undrawn committed credit lines covering at least our net cash requirement on a rolling 12-month forward-looking basis.

Our capital management objectives, policies or processes were unchanged during 2018.

1. Maintain a senior unsecured credit rating of at least A3/A-

As of 31 December 2018 TenneT Holding B.V. had the following senior unsecured credit ratings from Standard & Poor's and Moody's Investor Service, which comply with our financial policy.

Credit rating at 31 December 2018 and 2017	Long-term rating	Short-term rating
Standard & Poor's	A– (stable outlook)	A-2
Moody's Investor Service	A3 (stable outlook)	P-2

2. Maintain a FFO/Net debt ratio based on underlying financial information of at least 8%

To maintain a solid financial position, we intend to maintain a FFO/Net debt ratio of at least 8% based on underlying financial information (see note 2), which meet the requirements for an A-/A3 long-term unsecured credit rating as formulated by the credit rating agencies Standard & Poor's and Moody's Investor Service.

A reconciliation of the FFO and net debt is provided in the following table.

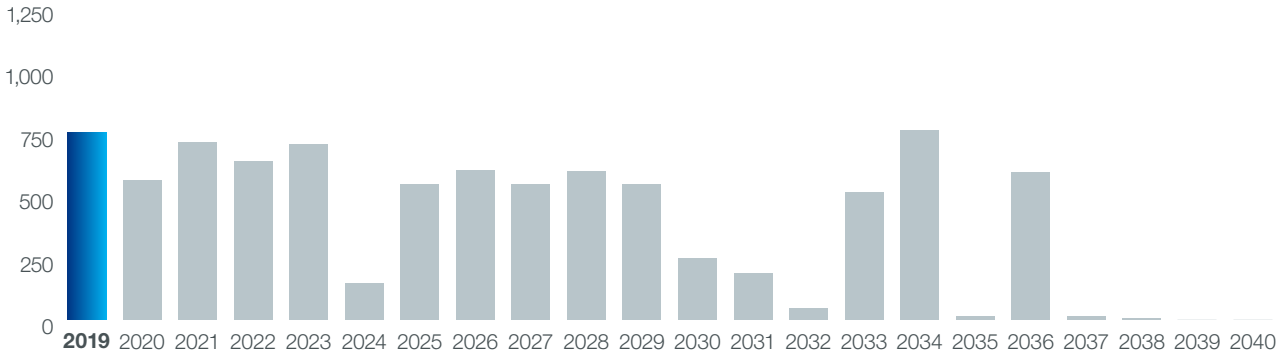
Based on underlying information (EUR million)	2018	2017
Net profit for the year	443	531
+ amortisation, depreciation and impairments	721	651
+ result on disposal of assets (non-cash)	26	7
Total FFO	**1,190**	**1,189**
Net debt		
+ Long term borrowings	7,964	6,786
+ Short term borrowings	756	917
+ Bank overdrafts	-	39
- Cash and cash equivalents at free disposal	-8	-55
Total net debt	**8,712**	**7,687**
FFO/net debt	**13.7%**	**15.5%**

3. Diversify the maturities of long-term funding instruments to limit refinancing risk

To minimise refinancing risk, we aim to diversify the maturity profile of our senior debt. As of 31 December 2018, our interest bearing debt (excluding bank overdrafts) had the following annual redemption profile:

Annual redemption of debt

EUR million



4. Maintain liquidity through cash and undrawn committed credit lines covering at least the Group's net cash requirement on a rolling 12-month forward-looking basis

We monitor the liquidity of the Group on a rolling 12-month forward-looking basis. This means that the sum of (i) cash and cash equivalents, (ii) undrawn committed credit facilities and (iii) 12-month net cash flow from operating activities should be sufficient to meet the expected aggregate of scheduled debt repayments, investments in fixed assets and dividend payments over the subsequent 12 months. To support the 12-month liquidity requirement, we signed a EUR 500 million euro-denominated Green US Private Placement with maturities of 10 till 15 years, in three tranches, with settlement in January 2019, have a EUR 2.2 billion revolving credit facility (RCF) and a EUR 350 million committed undrawn EIB facility available as of 31 December 2018. The 12-month liquidity requirement was met on 31 December 2018 and 31 December 2017.

6.2 Equity

6.2.1 Equity attributable to owners of the company

Paid-up and called-up capital

The Company's authorised share capital amounts to EUR 500 million (2017: EUR 500 million), divided into one million shares of EUR 500 each. Of these shares, two hundred thousand shares have been issued and paid-up.

Share premium reserve
The share premium reserve consists of the capital contribution granted by the shareholder of ordinary shares, the Dutch State represented by the Ministry of Finance. In December 2016 the Dutch State formally agreed to contribute up to EUR 1.19 billion of additional equity over the period 2017-2020 to finance TenneT's Dutch onshore- and offshore investment portfolio. The first tranche of EUR 150 million was received early March 2017. In 2018, TenneT received the second tranche of EUR 350 million. The third tranche of EUR 280 million will be made available in 2019. The final tranche of EUR 410 million in 2020 is conditional and will only be granted after further consideration of the financial situation of TenneT at that time. The final tranche is not part of the share premium reserve.

Hedging reserve
The hedging reserve relates to the cumulative result of sold forward-starting interest rate swaps (hereafter referred to as 'FSIRS'), classified as cash flow hedges. The interest rate swaps were sold at the moment Euro Medium Term Notes ('EMTN') were issued in 2010 and 2011. The end term of the original FSIRS is 2020 and 2021. As at 31 December 2018, the 2020 FSIRS amounts to EUR -1 million and for the 2021 FSIRS amounts to EUR 4 million.

Retained earnings
Part of the retained earnings has been presented as legal reserve. For more details see note 8.8.

Hybrid securities
Hybrid securities are deeply subordinated securities and are, with the exception of common equity, the most junior instruments in the capital structure of the company. The hybrid securities are undated and do not default on non-payment of coupons (unless such payment was mandatory following a resolution or payment of a dividend to common shareholders, i.e. as so called 'dividend pusher').

The holders of the hybrid securities have limited ability to influence the outcome of a bankruptcy proceeding or a restructuring outside bankruptcy. Consequently, the hybrid security holders cannot oblige us to pay interest or redeem the securities in part or in full. Payment of interest on and redemption of the loan is at our sole discretion. As a result, the hybrid securities are classified as part of the equity attributable to the company's equity holders.

The hybrid securities bear an optional, cumulative coupon of 2.995%, payable at TenneT's discretion annually on 1 June of each year. As at 31 December 2018, the unpaid cumulative dividend amounts to EUR 18 million (2017: EUR 18 million), relating to the period 1 June until 31 December and payable on 1 June 2019.

On 13 August 2018, the European investment Bank (EIB) obtained EUR 100 million hybrid securities, reaffirming its support for the NordLink interconnector between Germany and Norway, after the loans to TenneT and Statnett in 2017.

Dividend distribution
In 2018 a common full-year dividend of EUR 147 million (EUR 735 per share) to our ordinary shareholder was distributed. In agreement with the State of the Netherlands we have established a dividend policy with a pay-out of 35% of the underlying profit for the year after payments of distributions to hybrid securities holders and minority investors. We made a distribution to the holders of hybrid securities of EUR 30 million during 2018 (2017: EUR 37 million). The income tax benefit resulting from the latter distribution amounted to EUR 8 million during 2018 (2017: EUR 9 million). The appropriation of the 2018 profit is at the free disposal of the General Meeting of Shareholders.

6.2.2 Non-controlling interests

The proportion of economic interests held by non-controlling interests in the Group's subsidiaries is as follows:

% Non Controlling Interests	Country	2018	2017
TenneT Offshore 2. Beteiligungsgesellschaft mbH ("TO2")	Germany	69%	69%
TenneT Offshore 8. Beteiligungsgesellschaft mbH ("TO8")	Germany	63%	63%
TenneT Offshore DolWin3 Beteiligungs GmbH & Co. KG ("TOD3")	Germany	59%	61%
TenneT Offshore DolWin3 Verwaltungs GmbH ("TODV")	Germany	67%	67%
ETPA Holding B.V. ("ETPA")	Netherlands	50%	60%

The Group has the power to control TO2, TO8, TOD3 and TODV, and holds 51% of the voting rights in these entities. TenneT acquired, an additional 10.002% of the voting interest and economic rights in ETPA effective 19 April 2018. After this transaction TenneT holds 50.002% of the voting rights and controls ETPA. Movements in the non-controlling interest, to the extent material, is summarised below.

(EUR million)	TO2	TO8	TOD3
At 1 January 2017	**264**	**286**	**421**
Profit attributable to non-controlling interests	15	23	38
Dividends paid	-18	-25	-
Capital contribution	6	9	-
Capital repayment	-	-	-162
At 31 December 2017	**267**	**293**	**297**
Profit attributable to non-controlling interests	8	18	64
Dividends paid	-29	-50	-
Capital repayment	-	-	-72
At 31 December 2018	**246**	**261**	**289**

The non-controlling interest in TODV and TOD3 are held by Copenhagen Infrastructure Partners (CIP), which owns a 67% economic interest in the adjusted (for certain regulatory effects) profits of these companies. The non-controlling interest in TO2 and TO8 are held by Mitsubishi Corporation, which owns aggregate 49% of the voting interest and respectively 69% and 63% of the economic rights.

Financial information of these subsidiaries, to the extent material, is summarised below on a consolidated basis before intercompany eliminations and in conformity with our accounting principles.

	2018		
Statement of financial position (EUR million)	**TO2**	**TO8**	**TOD3**
Non-current assets	1,031	1,557	1,662
Current assets	132	106	24
Non-current liabilities	-691	-1,129	-1,129
Current liabilities	-115	-121	-64
Equity	**357**	**413**	**493**
Attributable to owners of the parent	111	152	204
Attributable to non-controlling interests	246	261	289

	2017		
Statement of financial position (EUR million)	TO2	TO8	TOD3
Non-current assets	1,079	1,638	1,483
Current assets	131	105	37
Non-current liabilities	-729	-1,190	-873
Current liabilities	-92	-86	-146
Equity	**389**	**467**	**501**
Attributable to owners of the parent	122	174	204
Attributable to non-controlling interests	267	293	297

	2018		
Statement of income (EUR million)	**TO2**	**TO8**	**TOD3**
Revenue	174	240	225
Depreciation and amortisation	-83	-99	-38
Other expenses	-49	-60	-9
Operating profit	**42**	**81**	**178**
Finance income and expenses	-24	-39	-22
Income tax expense	-6	-13	-20
Profit for the year	**12**	**29**	**136**
Other comprehensive income	-	-	-
Total comprehensive income	**12**	**29**	**136**
Attributable to non-controlling interests	8	18	64
Capital repayment to non-controlling interests	-	-	72
Dividends paid to non-controlling interests	29	50	-

	2017		
Statement of income (EUR million)	TO2	TO8	TOD3
Revenue	182	249	132
Depreciation and amortisation	-79	-98	-
Other costs	-45	-59	-2
Operating profit	**58**	**92**	**130**
Finance income and expenses	-25	-40	-18
Income tax expense	-11	-17	-14
Profit for the year	**22**	**35**	**98**
Other comprehensive income	-	-	-
Total comprehensive income	**22**	**35**	**98**
Attributable to non-controlling interests	15	23	38
Dividends paid to non-controlling interests	-	25	-

(EUR million)	2018 TO2	2018 TO8	2018 TOD3
Net cash flows from operating activities	-13	-18	32
Net cash flows used in investing activities	-2	-16	-213
Net cash flows from financing activities	15	34	181
Change in cash and cash equivalents	**-**	**-**	**-**

(EUR million)	2017 TO2	2017 TO8	2017 TOD3
Net cash flows from operating activities	99	91	109
Net cash flows used in investing activities	-38	-83	-133
Net cash flows from financing activities	-61	-8	24
Change in cash and cash equivalents	**-**	**-**	**-**

6.3 Borrowings

(EUR million)	Effective interest rate	Maturity	Redemption schedule	2018	2017
2.125% bond 2013 EUR 500 million	2.22%	Nov-20	At maturity	499	499
0.875% green bond 2015 EUR 500 million	0.96%	Jun-21	At maturity	499	499
4.50% bond 2010 EUR 500 million	4.60%	Feb-22	At maturity	498	496
4.625% bond 2011 EUR 500 million	4.70%	Feb-23	At maturity	499	499
0.75% green bond 2017 EUR 500 million	0.87%	Jun-25	At maturity	496	496
1.000% green bond 2016 EUR 500 million	1.04%	Jun-26	At maturity	498	498
1.75% green bond 2015 EUR 500 million	1.83%	Jun-27	At maturity	497	497
1.375% green bond 2018 EUR 500 million	1.49%	Jun-28	At maturity	494	-
1.375% green bond 2017 EUR 500 million	1.41%	Jun-29	At maturity	498	498
4.75% bond 2010 EUR 200 million	4.92%	Jun-30	At maturity	196	196
1.250% green bond 2016 EUR 500 million	1.35%	Oct-33	At maturity	493	492
2.0% green bond 2018 EUR 750 million	2.04%	Jun-34	At maturity	745	-
1.875% green bond 2016 EUR 500 million	1.97%	Jun-36	At maturity	492	491
Non-current interest-bearing bonds				**6,404**	**5,161**
0.813% loan 2016 EUR 125 million	0.81%	2019-2038	Linear	119	125
2.74% loan 2012 EUR 150 million	2.74%	Sep-23	At maturity	150	150
4.12% loan 2010 EUR 150 million	4.12%	Jan-21	At maturity	150	150
0.72% loan 2015 EUR 500 million	0.72%	2018-2032	Linear	447	483
0.77% loan 2015 EUR 150 million	0.77%	2018-2037	Linear	134	142
4.44% loan 2010 EUR 140 million	4.44%	2016-2023	Linear	42	54
4.71% loan 2010 EUR 40 million	4.71%	2016-2022	Linear	9	12
4.40% loan 2010 EUR 40 million	4.40%	2016-2021	Linear	10	10
Non-current interest-bearing loans				**1,061**	**1,126**
0.646% green Schuldschein 2016 EUR 77 million	0.67%	May-22	At maturity	77	77
0.989% green Schuldschein 2016 EUR 100 million	1.01%	May-24	At maturity	100	100
1.310% green Schuldschein 2016 EUR 55 million	1.32%	May-26	At maturity	55	55
1.500% green Schuldschein 2016 EUR 50 million	1.51%	May-28	At maturity	50	50
1.750% green Schuldschein 2016 EUR 43 million	1.76%	May-31	At maturity	42	42
1.750% green Schuldschein 2016 EUR 95 million	1.76%	May-31	At maturity	95	95
2.000% green Schuldschein 2016 EUR 80 million	2.01%	May-36	At maturity	80	80
Non-current interest-bearing Schuldschein				**499**	**499**
Total non-current interest-bearing borrowings				**7,964**	**6,786**

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(EUR million)	Effective interest rate	Maturity	Redemption schedule	**2018**	2017
3.88% bond 2011 EUR 500 million	3.00%	Feb-18	At maturity	-	500
Current interest-bearing bonds				**-**	**500**
Cash loans	-0.01%	Jan-19	At maturity	100	110
EUR commercial papers	-0.33%	Jan-19	At maturity	591	265
0.813% loan 2016 EUR 125 million	0.81%	Oct-19	Linear	6	-
0.72% loan 2015 EUR 500 million	0.72%	Sep-19	Linear	34	18
0.77% loan 2015 EUR 150 million	0.77%	Jan-19	Linear	8	7
4.44% loan 2010 EUR 140 million	4.44%	Nov-19	Linear	11	11
4.71% loan 2010 EUR 40 million	4.71%	Nov-19	Linear	3	3
4.40% loan 2010 EUR 40 million	4.40%	Nov-19	Linear	3	3
Current interest-bearing loans				**756**	**417**
Total current interest-bearing borrowings				**756**	**917**
Total borrowings				**8,720**	**7,703**

Changes in our borrowings arising from our financing activities are as follows:

(EUR million)	(Non)-current interest-bearing bonds	(Non)-current interest-bearing loans	Non-current interest-bearing Schuldschein	**Total**
At 1 January 2017	**4,668**	**2,295**	**499**	**7,462**
Cash inflow from new borrowings	995	375	-	1,370
Cash outflow from redemptions	-	-1,127	-	-1,127
Amortisation (non-cash)	-2	-	-	-2
At 31 December 2017	**5,661**	**1,543**	**499**	**7,703**
Cash inflow from new borrowings	1,239	691	-	1,930
Cash outflow from redemptions	-500	-417	-	-917
Amortisation (non-cash)	4	-	-	4
At 31 December 2018	**6,404**	**1,817**	**499**	**8,720**

A group of 11 banks has provided TenneT a Revolving Credit Facility (RCF) of EUR 2.2 billion maturing 31 December 2021. Besides that, the Group has signed a EUR 500 million euro-denominated Green US Private Placement, in three tranches, with settlement in January 2019 and received a loan facility of EUR 350 million from the European Investment bank (EIB) related to the NordLink project. The agreement was signed on 3 April 2017, which at year end 2018 was undrawn. The borrowings and undrawn facilities have no financial covenants.

For more information about the fair value and applicable accounting policy, see note 6.5 and 6.6, respectively.

6.4 Cash, cash equivalents and bank overdrafts

Cash and cash equivalents consist of:

	2018			2017		
(EUR million)	At free disposal	Not at free disposal	**Total**	At free disposal	Not at free disposal	**Total**
Collateral securities	-	71	71	-	61	61
EEG funds	-	1,024	1,024	-	1,213	1,213
EEG deposits < 3 months	-	150	150	-	-	-
Cash at bank	8	-	8	55	-	55
Cash and cash equivalents	**8**	**1,245**	**1,253**	**55**	**1,274**	**1,329**
Bank overdrafts	-	-	-	-39	-	-39
Total cash and cash equivalents used in cash flow statement	**8**	**1,245**	**1,253**	**16**	**1,274**	**1,290**

Since 2016, funds related to EEG have been legally separated as required by BNetzA. EEG Funds are not at the Group's free disposal. For further reference regarding EEG we refer to note 5.5.1.
Cash at banks carry interest at floating rates based on daily bank deposit rates.

ⓘ Accounting policy

In the consolidated statement of cash flows, cash and cash equivalents include cash at bank, deposits held at call with banks, other short-term highly liquid investments with remaining maturities of three months or less and are presented net of outstanding bank overdrafts. Securities are deposits on collaterals that serve as financial security for auction and energy exchange transactions. A matching obligation is recognised towards the party that deposited the funds on the collateral. Securities are initially stated at fair value and subsequently at amortised cost.

6.5 Fair values

The table below provides an overview of the carrying value and fair value of financial instruments, including IFRS treatment, and the level in the valuation hierarchy the instruments are measured at fair value.

		Carrying amount		Fair value		
(EUR million)	Notes	**2018**	2017	**2018**	2017	Hierarchy
Financial liabilities						
Borrowings:						
- Borrowings – bonds	6.3	6,404	5,661	6,734	6,064	Level 1
- Borrowings – other	6.3	2,316	2,042	2,323	2,087	Level 2
Total		**8,720**	**7,703**	**9,057**	**8,151**	

As at 31 December 2018, no instruments carried at fair value were held (2017: nil). Furthermore, we concluded that the fair value of the loans and receivables, cash and cash equivalents, account- and other payables, and other financial liabilities approximate their carrying amounts at year end 2018, due to the short-term maturities of these instruments.

The following hierarchy by valuation technique is used in calculating the fair value of assets and liabilities:

- Level 1: Measurement based on quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: Measurement based on inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices).
- Level 3: Measurement based on inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs).

The fair value of the level 2 borrowings is based on discounted cash flows. A change in the assumptions used to calculate the fair value will not result in a significantly different outcome. There were no transfers between the fair value hierarchy levels during 2018.

6.6 ⓘ Accounting policies for financial instruments

Financial assets

Financial assets in general are classified, at initial recognition, as subsequently measured at amortised cost, fair value through other comprehensive income (OCI), and fair value through profit or loss. All TenneT's financial assets are classified as amortised cost, because the following two conditions are met

- The financial asset are held within a business model with the objective to hold financial assets in order to collect contractual cash flows.
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at amortised cost are subsequently measured using the effective interest (EIR) method and are subject to impairment.

The Group recognises an allowance for expected credit losses (ECLs) for financial assets. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. For trade receivables and contract assets, the Group applies a simplified approach in calculating ECLs. Therefore, the Group does not track changes in credit risk, but instead recognises a loss allowance based on lifetime ECLs at each reporting date.

Financial liabilities

All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs. The Group's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts.

After initial recognition at fair value, interest-bearing loans and borrowings are subsequently measured at amortised cost using the EIR method. Gains and losses are recognised in profit or loss when the liabilities are derecognised as well as through the EIR amortisation process. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included as finance expense in the statement of profit or loss.

6.7 Financial risk management

Our business activities are exposed to a number of financial risks such as interest rate risk, credit risk, liquidity risk and refinancing risk, which are described in detail in this note. Our financial risk management strategy primarily focuses on protecting the liquidity, equity capital and net result in order to safeguard our ability to continue active operations while providing an adequate return to our shareholders. Our approach to managing financial risks, including a number of specific disclosures (such as a maturity analysis of contractual undiscounted financial obligations) required by accounting standards, are set out in this note. For details about regulatory risks we refer to the 'Risk Management' section of our Executive Board report.

Risk management related to financing activities is conducted by our Treasury department under policies included in the Treasury Statute approved by our Executive Board and Audit, Risk and Compliance Committee. Our financial risk management objectives, policies and processes remained unchanged in 2018 compared to 2017. The Treasury department's objective is to facilitate the realisation of our financial and strategic objectives from a funding and financial risk perspective. The Treasury Statute includes principles covering specific areas such as interest rate risk, liquidity risk, the use of derivatives, and the investment of excess liquidity. The use of all ordinary course financial instruments is permitted, provided these are used solely to cover open positions. Any speculative use of financial instruments is expressly not authorised. Our Executive Board has also approved specific risk management solutions such as the issuance of new debt capital market instruments.

Interest rate risk
We are exposed to interest rate risk on our debt portfolio. To limit this risk, our policy is to base the majority of our loan portfolio on fixed interest rates. As of 31 December 2018, the long-term loan portfolio was entirely based on fixed interest rates. An increase or decrease in interest rates of 2 percentage points would result in an increase or decrease of EUR 14 million in our net interest cost (2017: EUR 8 million) resulting from short-term loans.

Furthermore, there is a risk that interest payable on borrowings exceeds the interest compensation by TenneT under the prevailing regulatory systems. The ACM has set the relevant interest rate which will linearly decrease from 3.58% in 2016 to 2.29% in 2021. In Germany, the actual interest costs are compensated up to a predefined maximum on a rolling average basis.

Credit risk
In general we are exposed to the risk of loss resulting from counterparties' defaulting on their commitments including failure to pay or make a delivery on a contract. Our exposure to credit risk from operating activities and treasury activities is inherent to our business activities.

Operational credit risk
In respect of our operating activities, we have a credit policy in place, which takes into account the risk profiles of our counterparties. We also have policies in place to monitor the financial viability of counterparties.

In both the Netherlands and Germany, we are responsible for maintaining the balance between supply and demand of energy. The associated costs are covered by income from parties with balance responsibility, which are charged for any imbalances attributable to them. Any surplus is deducted from subsequent tariffs for system services. For certain situations, securities in the form of bank guarantees and collaterals are held as protection against the default risk of parties with balance responsibility.
With respect to the investment projects, we require counterparties to deliver bank guarantees or collaterals as a protection against defaults.
The management of energy exchanges, the execution of the Renewable Energy Act in Germany and the maintenance of the energy balance between supply and demand requires transfer of large cash amounts. Our policies are aimed at minimising the risks associated with the clearing transactions in connection with these cash flows.

Credit risk on trade and other receivables is limited, because most trade and other debtors have a low risk of default. TenneT has no material collateral as security and no insurance for credit risk. The maximum exposure to credit risk at the reporting date is the carrying value of each class of financial assets disclosed in note 5.4 and 5.5. The movement of the allowance for expected credit losses of trade receivables is included in note 5.5.2.

The provision rates for expected credit losses are based on groupings of various customer segments with similar loss patterns (such as customer type and arrears in payments). Any expected credit losses for financial guarantee contracts and commitment letters (if any) are also provided for. The calculation reflects the probability-weighted outcome, the time value of money and reasonable and supportable information that is available at the reporting date about past events, current conditions and forecasts of future economic conditions. Generally, trade receivables and other financial assets are written-off if there is no reasonable expectation of recovering the contractual cash flows. The Group considers a financial asset in default when contractual payments are 90 days past due. However, in certain cases, TenneT may also consider a financial asset to be in default when internal or external information indicates that the Group is unlikely to receive the outstanding contractual amounts in full before taking into account any credit enhancements held by the Group.

Financial credit risk

In 2018, financial credit risk arose mainly from our transactions and positions with 50 institutions. As at 31 December 2018, the maximum credit risk amounted to EUR 37 million (2017: EUR 55 million). Funds related to EEG are not at our free disposal and are legally separated from our cash at bank. In accordance with EEG legislation, shortfalls are reimbursed through the subsequent year's EEG levy. As a result, there is no credit risk on the side of TenneT TSO GmbH regarding the EEG funds and these are therefore not included in the aforementioned credit risk amount.

In accordance with our treasury policies, counterparty credit exposure is monitored frequently against the counterparty credit limits. We have concentration limits in place when funds are placed on deposit or when financial derivatives are entered into. At 31 December 2018 we have EUR 400 million deposits with third parties for EEG cash amounts (2017: nil) and no financial derivatives outstanding. An amount of EUR 250 million of the deposits has an maturity of more than 3 months.

Management does not expect any significant losses from non-performance by treasury counterparties.

Liquidity risk

Liquidity risk is defined as the risk that the Group cannot meet its short-term financial obligations. Our objective when managing liquidity is to be able to meet our short-term obligations at all times. Liquidity is monitored every quarter on a rolling 12-month forward-looking basis. The liquidity requirement was met each quarter including 31 December 2018 and 31 December 2017 as explained in note 6.1.

The following maturity schedule presents our financial obligations on a contractual, non-discounted basis:

(EUR million)	Notes	<1 month	1 to 3 months	3 to 12 months	1 to 5 years	More than 5 years	**Total**
At 31 December 2018							
Borrowings	6.3	543	148	223	3,171	6,001	10,086
Account- and other payables	5.6	1,052	885	2,344	1	-	4,282
Other financial liabilities		71	-	-	-	-	71
Total		**1,666**	**1,033**	**2,567**	**3,172**	**6,001**	**14,439**
At 31 December 2017							
Borrowings	6.3	113	832	128	2,489	5,348	8,910
Account- and other payables	5.6	2,209	587	1,461	-	-	4,257
Other financial liabilities		61	-	-	-	-	61
Total		**2,383**	**1,419**	**1,589**	**2,489**	**5,348**	**13,228**

Our borrowings, have a diversified maturity profile, which reduces refinancing risks (see also note 6.1).

In order to minimise our exposure to liquidity risk, we have a EUR 2.2 billion committed revolving credit facility (RCF) at our disposal for general corporate purposes. At 31 December 2018, this facility was undrawn. Furthermore, we have successfully signed our first euro-denominated Green US Private Placement of EUR 500 million, which is in three tranches, with settlement in January 2019 and we had EUR 350 million of undrawn long-term loan commitments from the EIB available at 31 December 2018. Finally, we had EUR 450 million of short-term uncommitted credit facilities available at year end. At the balance sheet date, EUR 0 million (2017: EUR 39 million) were drawn from these facilities.

The size of our credit facilities is such that we expect that all substantial adverse financial developments and events can reasonably be expected to be accommodated and that continuation of day-to-day operations is ensured for at least 12 months. The terms and conditions of our credit facilities include negative pledge and pari passu clauses. No security interest over any of the Group's assets has been provided. All credit facilities have floating-rate interest conditions.

We also have access to diversified funding sources through our EUR 15 billion EMTN programme and our EUR 2.2 billion CP programme. Both programmes significantly reduce our dependency on the banking sector.

We expect to meet our financial obligations for 2019 with (i) cash and cash equivalents, (ii) funds from operations (iii) unused credit facilities, (iv) capital contribution from the Dutch State and (v) capital market transactions. We expect to meet our financial obligations for the subsequent years through various capital market transactions and intend to manage future refinancing risks by spreading the tenors of new financing arrangements.

Refinancing risk
There is a risk of a lack of access to equity on a sustainable basis. This risk reflects the inability to raise additional equity in a timely fashion in case of large increases in our investment portfolio or negative regulatory developments. Actions taken in order to mitigate this risk are: (i) active financing strategy to create and maintain an optimal capital structure as well as to diversify funding sources and manage financial risks, (ii) proactive approach of potential investors and active discussion with shareholder to contribute additional equity and (iii) lobbying activities to ensure that regulatory frameworks remain adequate to safeguard regulators income and returns to investors.

To address this risk, TenneT's shareholder the Dutch State, made available up to EUR 1.19 billion of additional equity over the period 2017-2020 to enable the financing of future investments in the Dutch grid (see note 6.2.1). The additional equity is paid in yearly tranches. The final tranche of EUR 410 million in 2020 is conditional and will only be granted after further consideration of the financial situation of TenneT at that time.

7. Other disclosures

Other mandatory disclosures, such as details of pension liabilities and related party transactions, which are not directly related to our business are described in this note.

7.1 Net employee defined benefit liabilities

7.1.1 Pension plans Germany

We have defined benefit plans for the majority of our German personnel. Said personnel are mainly employed based on the collective labour agreement of 'Tarifgruppe Energie' and thus enjoys benefits in the form of old-age, disability and surviving dependents' pensions. The large majority of the benefit obligations are based on pension schemes that define annual pension claims based on respective employee's pensionable income of the particular year. Furthermore, each employee is allowed to defer a certain amount compensation to raise the annual pension claim within defined bounds.

The Group contributes to two post-employment defined benefit plans in Germany: a works council agreement called 'Betriebliche Alterssicherung' (hereafter referred to as 'pension scheme 2001') and a works council agreement called 'Beitragsplan' (hereafter referred to as 'pension scheme 2008'), as well as to a small number of individual pension commitments. The pension obligations related to these plans are partly covered by assets held in two Contractual Trust Arrangements (CTA) administrated by 'Helaba Pension Trust e.V.' (Helaba). According to German law, TenneT remains ultimately liable for fulfilling these pension obligations.

Until December 31, 2017 the plan assets of the second CTA were part of a reinsurance contract with 'Versorgungskasse Energie VVaG' (VKE). Based on the partners' decision to liquidate VKE these reinsurance contracts were terminated and the underlying funds transferred into the second CTA during 2018.

Pension scheme 2001

This scheme covers employees who started their employment with TenneT Germany on or before 31 December 2007 (or later, if the individual employment contract was agreed on or before 1 April 2008). The scheme became effective on 1 January 2001 and absorbed older plans. As part of the transition in 2001 to the new plan, employees were guaranteed a vested pension claim based on the old plan for their years of service prior to the transition. The plan offers benefits in the form of old-age, disability and surviving dependents' pensions, and is composed of the employer-funded basic level based on the respective employee's yearly pensionable income, the employer-funded top-up level based on the respective company's performance, and the employee-funded supplementary level which allows employees to increase their pension entitlement through deferred compensation. Yearly fixed pension claims are calculated with a fixed internal interest rate that sum up to the total earned pension benefits of the respective employee.

Pension scheme 2008

This scheme covers employees who started their employment with TenneT Germany after 31 December 2007 (unless the individual employment contract was agreed before 1 April 2008, for which the pension scheme 2001 applies). This scheme offers benefits in the form of old-age, disability and surviving dependents' pensions.

Pension cost is composed of the employer-funded basic level based on the respective employee's yearly pensionable income, the employer funded top-up level based on the respective company's performance and the employee-funded supplementary level which allows employees to increase their pension entitlement through deferred compensation. If the employee contribution to the supplementary level reaches a certain level, the company pays an additional contribution of one-third of the respective basic level contribution.

Annually, yearly fixed pension claims are calculated with an interest rate that is recalculated based on the weighted average current yield of German Federal Government Bonds (Bundesanleihen) with different maturities (10, 20 and 30 years) reflecting the average duration of the plan. The pension claims sum up to the total earned pension benefits of the respective employee.

Differences between the plans are limited and refer mainly to the way internal interest rates and the pensionable income are determined. Therefore disclosure in the notes below is not specified per plan.

Components of the net benefit expense recognised in the statement of income are as follows:

(EUR million)	**2018**	2017
Current service costs (note 3.2.2)	23	11
Net interest costs (note 3.3)	4	3
Net benefit expense	**27**	**14**

The funded status of the plans and the amounts recognised in the statement of financial position are as follows:

(EUR million)	**2018**	2017
Defined benefit obligation	302	281
Fair value of plan assets	-94	-95
Benefit liability	**208**	**186**

Changes in the present value of the defined benefit obligation ('DBO') over the year are as follows:

(EUR million)	**2018**	2017
Defined benefit obligation at 1 January	**284**	**270**
Current service costs	23	11
Interest costs	6	4
Contributions by plan participants	2	-
Benefits paid	-3	-3
Re-measurements on obligation	-10	2
Defined benefit obligation at 31 December	**302**	**284**

Changes in the fair value of plan assets of the year are as follows:

(EUR million)	**2018**	2017
Fair value of plan assets at 1 January	**95**	**88**
Actual return on plan assets	-2	5
Contributions by employer	3	2
Benefits paid	-2	-
Fair value of plan assets at 31 December	**94**	**95**

Major categories of plan assets as a percentage of the fair value of the total plan assets are as follows:

	2018	2017
Quoted in active markets:		
Equity instruments	33%	20%
Debt securities	48%	32%
Investment funds	0%	0%
Other	5%	3%
Unquoted investments:		
Equities	0%	3%
Debt securities	5%	0%
Real estate	8%	0%
Cash	1%	42%

Re-measurements, including actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions, recognised in the statement of comprehensive income are as follows:

(EUR million)	2018	2017
Accumulated balance at 1 January	**126**	**129**
Re-measurements during the year	-5	-3
Accumulated balance at 31 December	**121**	**126**

ⓘ Accounting policy

For defined benefit plans, pension costs are determined using the projected unit credit method. Re-measurements, comprising of actuarial gains and losses, the effect of the asset ceiling (excluding net interest) and the return on plan assets (excluding net interest), are recognised in other comprehensive income in the period in which they occur. Re-measurements are not reclassified to profit or loss in subsequent periods.

Service costs comprising current service costs and, if applicable, past-service costs, gains and losses on curtailments and non-routine settlements are recognised as personnel expenses in the consolidated statement of income. Interest is calculated by applying the discount rate to the net defined benefit liability or asset and is recognised as part of the finance result in the statement of income.

Prepaid pension costs relating to defined benefit plans are capitalised only if they lead to refunds to the employer or to reductions in future contributions to the plan by the employer.

Key estimates and assumptions

Pension obligations and pension entitlements that are known on the reporting date are valued using economic trend assumptions including, among others, salary growth rates and pension increase rates, that are intended to reflect realistic expectations, as well as variables specific to reporting dates such as discount rates. The principal assumptions used in determining the pension obligation were as follows:

	2018	2017
Discount rate	2.00%	1.95%
Inflation rate	2.00%	2.00%
Future salary increases	2.50%	2.50%
Future pension increases	1.75%	1.75%

Assumptions regarding future mortality experience are set based on actuarial advice in accordance with published statistics and actuarial experience. An increase in each of the main assumptions would have had the followings effects:

(EUR million)	2018	2017
0.25% change of discount rate	-16	-15
0.5% change of salary increase rate	-	2
0.5% change of pension increase rate	1	4
Change of 1 year in life expectancy	10	9

The sensitivities indicated are computed based on the same methods and assumptions used to determine the present value of the defined benefit obligations and are based on variations in a single variable only. Note that the sensitivity analyses may not be representative of an actual change in the defined benefit obligation, as it is unlikely that changes in assumptions would occur in isolation.

We expect to contribute EUR 0.8 million to our defined benefit pension plans in 2019 and expect the following, undiscounted, benefit payments from the plan:

(EUR million)	2018	2017
Within the next 12 months	5	3
Within 2-5 years	22	20
Within 5-10 years	38	34
More than 10 years	392	386
Total	**457**	**443**

7.1.2 Pension plan the Netherlands

For the majority of our Dutch personnel we have a multi-employer scheme at ABP Pension Fund (ABP) in the Netherlands. The pension contribution rate for 2018 was 22.9% of the pensionable salary. In 2019 we expect to contribute EUR 17 million to the multi-employer scheme administered. Compared to the total participants in the ABP pension fund, our share in ABP is very limited. We are not liable for deficits in the multi-employer plan, but may be required to pay higher contributions (i.e. surcharge to the contribution rate) to the scheme like other participants.

ABP has indicated that it is unable to provide the kind of company-specific information required by IFRS for defined-benefit pension schemes. As such, this scheme is treated as if it were a defined contribution scheme.

Since the financial situation of the ABP pension plan at 31 December 2015 was inadequate from a regulatory perspective, ABP filed a recovery plan, which was approved by De Nederlandsche Bank (DNB) during the course of 2016. In accordance with this recovery plan, ABP evaluates how recovery is progressing at the start of each year. Progress is measured by means of the policy funding ratio at the end of the preceding year. The policy funding ratio is the 12-month moving average of the nominal funding ratio. ABP's policy funding ratio as at 31 December 2018 was 103.8% (2017: 101.5%) and that is above the critical coverage rate level under which pensions would have to be reduced.

ⓘ Accounting policy

Payments to defined contribution plans are charged as an expense in the period to which they relate.

7.2 Other commitments and contingencies

(EUR million)	2018	2017
Grid-related commitments	1,241	1,382
Other off-balance sheet commitments	451	628
Total off-balance sheet obligations	**1,692**	**2,010**
Off-balance sheet rights		
Government guarantees received	300	300
Other off-balance sheet rights	65	124
Total off-balance sheet rights	**365**	**424**

The expected cash flows for grid-related commitments and other off-balance sheet commitments are equal to the amounts in the above table. For guarantees issued no cash flows are expected.

7.2.1 Grid related commitments

Grid-related commitments include received but unused auction receipts in the Netherlands amounting to EUR 555 million (2017: EUR 646 million).

7.2.2 Government guarantees received

TenneT benefits from a guarantee issued by the Dutch State for an amount of EUR 300 million expiring in 2020, relating to its (indirect) investment in TenneT TSO GmbH.

7.2.3 Other

Other off-balance sheet commitments mainly comprise of TenneT's commitment to provide the NOKA joint venture with sufficient funds for the construction of the Southern Part of the NordLink cable. Various other off-balance sheet commitments and contingencies as well as other off-balance sheet rights exist which are immaterial from a disclosure perspective.

Due to the nature of our business we received certain legal claims from third parties, which we believe are unlikely to prevail in court, although inherent uncertainty exists about the outcomes. Therefore no provision has been accounted for. The majority of these claims relate to (i) construction contracts where additional payments would be capitalised, or (ii) claims relating to compensation for delays and interruptions where any compensation would be pass-through for TenneT or (iii) claims relating to refunds of transmission services, which would be compensated in future tariffs. In the unlikely event that these claims would prevail in court, this could have a material impact on the company's financials.

7.3 Related parties

Note 7.4 provides an overview of legal entities included in the consolidated financial statements.

TenneT has entered into transactions with the following related parties:

- State of the Netherlands: TenneT Holding B.V. is controlled by the Dutch State, which owns 100% of the Company's ordinary shares (refer to note 5.4 and 5.5);
- Joint ventures NOKA and BritNed (refer to note 5.3.1);
- Associates HGRT and OTC (refer to note 5.3.2);
- The former CEO, Mel Kroon, bought the company car that was made available to him during his tenure at arms lengths for an amount of EUR 75 thousand;
- Members of the Executive and Supervisory Board of TenneT Holding B.V. (refer to note 3.2.2);
- Mobile Radio Networks Vehicle B.V. (refer to note 5.4).

Legal entities that share key management personnel

Ms Hottenhuis was a member of the Executive Board of ARCADIS N.V. until 31 July 2018. ARCADIS is one of our suppliers. Ms Hottenhuis has not been involved in any commercial dealings between ARCADIS and TenneT. Contract reviews, negotiations or awards between the two companies were conducted at the appropriate business levels and in the ordinary course of business. In the course of 2018 Ms Hottenhuis' membership of the Supervisory Board ended. Further reference is made to the Supervisory Board report.

Ms van Beek was Country Managing Director of Accenture Netherlands until 31 August 2018. Accenture Netherlands is one of our suppliers. Ms Hottenhuis has and will not be involved in any commercial dealings between Accenture Netherlands and TenneT. Contract reviews, negotiations or awards between the two companies were conducted at the appropriate business levels and in the ordinary course of business.

ARCADIS and Accenture Netherlands are not considered related parties.

7.4 Consolidated subsidiaries

The following legal entities are included in the consolidation of TenneT Holding B.V:

			Voting interest		Economic interest		
Subsidiary	Legal seat	Country	2018	2017	2018	2017	
B.V. Transportnet Zuid-Holland	Voorburg	Netherlands	100%	100%	100%	100%	*
CertiQ B.V.	Arnhem	Netherlands	100%	100%	100%	100%	
Duvekot Rentmeesters B.V.	Bathmen	Netherlands	100%	100%	100%	100%	
ETPA Holding B.V.	Amsterdam	Netherlands	50%	40%	50%	40%	
ETPA B.V.	Amsterdam	Netherlands	50%	40%	50%	40%	
Nadine Netwerk B.V.	Arnhem	Netherlands	100%	100%	100%	100%	*
NLink International B.V.	Arnhem	Netherlands	100%	100%	100%	100%	*
NOVEC B.V.	The Hague	Netherlands	100%	100%	100%	100%	
Omroepmasten B.V.	Vianen	Netherlands	100%	100%	100%	100%	
Saranne B.V.	Arnhem	Netherlands	100%	100%	100%	100%	*
Stichting Beheer Doelgelden Landelijk Hoogspanning-snet	Arnhem	Netherlands	N/A	N/A	N/A	N/A	
TenneT Duitsland Coöperatief U.A.	Arnhem	Netherlands	100%	100%	100%	100%	*
TenneT Green B.V.	Arnhem	Netherlands	100%	100%	100%	100%	*
TenneT Orange B.V.	Arnhem	Netherlands	100%	100%	100%	100%	
TenneT TSO B.V.	Arnhem	Netherlands	100%	100%	100%	100%	
TenneT TSO Duitsland B.V.	Arnhem	Netherlands	100%	100%	100%	100%	*
TransTenneT B.V.	Arnhem	Netherlands	100%	100%	100%	100%	*
WL Winet B.V.	Maasdijk	Netherlands	100%	100%	100%	100%	
Relined B.V.	Utrecht	Netherlands	100%	100%	100%	100%	
Relined GmbH	Emsbüren	Germany	100%	100%	100%	100%	
DC Netz BorWin3 GmbH	Bayreuth	Germany	0%	100%	0%	100%	***
DC Netz DolWin4 GmbH	Bayreuth	Germany	100%	100%	100%	100%	
DC Netz GmbH	Bayreuth	Germany	0%	100%	0%	100%	***
DC Netz HelWin1 GmbH	Bayreuth	Germany	100%	100%	100%	100%	
DC Netz SylWin2 GmbH	Bayreuth	Germany	100%	100%	100%	100%	
NOVEC GmbH	Emsbüren	Germany	100%	100%	100%	100%	
TenneT GmbH & Co. KG	Bayreuth	Germany	100%	100%	100%	100%	**
TenneT Offshore 1. Beteiligungsgesellschaft mbH	Bayreuth	Germany	51%	51%	31%	31%	
TenneT Offshore 2. Beteiligungsgesellschaft mbH	Bayreuth	Germany	51%	51%	31%	31%	
TenneT Offshore 4. Beteiligungsgesellschaft mbH	Bayreuth	Germany	100%	100%	100%	100%	
TenneT Offshore 7. Beteiligungsgesellschaft mbH	Bayreuth	Germany	100%	100%	100%	100%	
TenneT Offshore 8. Beteiligungsgesellschaft mbH	Bayreuth	Germany	51%	51%	37%	37%	

Continuation >

< Continued

			Voting interest		Economic interest		
Subsidiary	Legal seat	Country	2018	2017	2018	2017	
TenneT Offshore 9. Beteiligungsgesellschaft mbH	Bayreuth	Germany	51%	51%	37%	37%	
TenneT Offshore Dolwin3 Beteiligungs GmbH & Co. KG	Bayreuth	Germany	51%	51%	41%	39%	**
TenneT Offshore Dolwin3 GmbH & Co. KG	Bayreuth	Germany	51%	51%	39%	39%	**
TenneT Offshore Dolwin3 Verwaltungs GmbH	Bayreuth	Germany	51%	51%	33%	33%	
TenneT Offshore GmbH	Bayreuth	Germany	100%	100%	100%	100%	
TenneT TSO GmbH	Bayreuth	Germany	100%	100%	100%	100%	
TenneT Verwaltungs GmbH	Bayreuth	Germany	100%	100%	100%	100%	
WL Winet GmbH	Emsbüren	Germany	100%	100%	100%	100%	

* For these companies TenneT has issued a declaration of liability as referred to in Book 2, Part 9, Section 403 of the Netherlands Civil Code.

** This company, which has been consolidated in these financial statements, has opted for the exemption of Section 264b of the German Commercial Code.

*** These entities where merged in 2018 with TenneT Offshore GmbH.

As we can exercise direct control over its management and financial and operational policies, the consolidation includes Stichting Beheer Doelgelden Landelijk Hoogspanningsnet, a foundation which temporarily manages funds arising from the maintenance of the energy balance and auctioning of cross-border capacity by TenneT TSO B.V.

7.5 Events after the reporting period

No significant events occurred after the reporting period.

Company financial statements

Company statement of income

For the year ended 31 December (EUR million)

(EUR million)	Notes	2018	2017
Revenue		**1**	**-**
Other operating expenses		-3	-4
Other gains/(losses)		-	3
Total operating expenses		**-3**	**-1**
Share in profit of joint ventures and associates		4	3
Operating profit		**2**	**2**
Finance income	8.2	165	171
Finance expenses	8.3	-170	-171
Finance result		**-5**	**-**
Profit before income tax		**-3**	**2**
Income tax expense		-13	-22
Profit from subsidiaries	8.4	436	497
Profit for the year		**420**	**477**

Company statement of financial position

For the year ended 31 December (EUR million)

Assets	Notes	2018	2017
Non-current assets			
Investments in subsidiaries	8.4	6,690	6,296
Investments in joint ventures and associates	8.5	35	35
Other financial assets	8.6	6,232	6,050
Total non-current assets		**12,957**	**12,381**
Current assets			
Other financial assets	8.6	1,393	1,342
Account- and other receivables	8.7	309	350
Cash and cash equivalents		3	51
Total current assets		**1,705**	**1,743**
Total assets		**14,662**	**14,124**

Equity and liabilities	Notes	2018	2017
Equity	8.8		
Paid up and called-up capital		100	100
Share premium		1,380	1,380
Revaluation reserve		43	54
Reserve for participating interests		61	8
Reserve for internally generated assets		22	9
Hedging reserve		3	4
Retained earnings		1,966	1,716
Unappropriated result		389	442
Equity attributable to ordinary shares		**3,964**	**3,713**
Hybrid securities		1,120	1,018
Equity attributable to owners of the company		**5,084**	**4,731**
Non-current liabilities			
Borrowings	8.9	7,964	6,786
Payables to group companies		-	280
Deferred tax liability		5	4
Total non-current liabilities		**7,969**	**7,070**
Current liabilities			
Borrowings	8.9	756	917
Account- and other payables	8.10	853	1,367
Bank overdrafts		-	39
Total current liabilities		**1,609**	**2,323**
Total equity and liabilities		**14,662**	**14,124**

Notes to the company financial statements

These notes contain information about the company financial statements of TenneT Holding B.V. Underlying details related to TenneT Holdings B.V.'s financial results and position are provided, as well as a description of the specific accounting policies applied when compiling these company financial statements.

8.1 Company accounting policies

The company financial statements for TenneT Holding B.V. have been prepared in accordance with the provisions of Part 9, Book 2 of the Netherlands Civil Code. The same principles governing valuation and the determination of results (including the principles governing the classification of financial instruments as equity or liability) have been applied when compiling the company financial statements and the consolidated financial statements, as permitted by Article 2:362, clause 8 of the Netherlands Civil Code.

ECL provisions for receivables from subsidiaries will be eliminated as intercompany positions. As a result changes in these ECL provisions will not impact the carrying amounts of the financial assets in the company statement of the financial position.

8.2 Finance income

Result on finance income is mainly related to the interest received on intercompany loans and other in- house financing activities (see note 8.6). The intercompany agreements have terms equivalent to those that prevail in arm's length transactions.

8.3 Finance expenses

Finance expenses mainly relate to interest on borrowings and credit facilities (2018: EUR 152 million; 2017: EUR 154 million).

8.4 Investments in subsidiaries

Changes in investments in subsidiaries can be broken down as follows:

(EUR million)	2018	2017
At 1 January	**6,296**	**5,841**
Share in result	436	497
Capital contribution	1	-
Dividends received	-46	-54
Re-measurement of defined benefit pension	3	2
Net effect on (partial) sale/acquisition of subsidiaries	-	10
At 31 December	**6,690**	**6,296**

In 2018 we increased our share in ETPA Holding B.V. from 40% to 50.002% and therefore it has become a subsidiary. Investments in subsidiaries relate to the legal entities included in the consolidation as disclosed in note 7.4 of the consolidated financial statements.

ⓘ Accounting policies

The investments in subsidiaries are measured at net asset value. The net asset value of a participating interest is determined by valuing the assets, provisions and liabilities and calculating the result using the accounting principles applied to the consolidated financial statements.

When our share of losses in an investment equals or exceeds our interest in this investment, (including separately presented goodwill or any other unsecured non-current receivables, as part of the net investment), we do not recognise any further losses, unless we have incurred legal or constructive obligations or made payments on behalf of this investment. In such case, we will recognise a provision.

8.5 Investments in joint ventures and associates

Investments in joint ventures and associates are mainly related to HGRT.
In 2018, TenneT's share in HGRT's result amounted to EUR 3 million (2017: EUR 3 million) and EUR 4 million (2017: EUR 2 million) dividends were received. Further reference is made to note 5.3.2 of the consolidated financial statements.

8.6 Other financial assets

(EUR million)	2018	2017
Receivables from shareholder	-	280
Receivables from subsidiaries	6,226	5,767
Other financial assets	6	3
Total	**6,232**	**6,050**

Receivables from subsidiaries are mainly related to intercompany loans and the in house bank activities of TenneT Holding B.V. The agreed interest rate for the intercompany loans is our cost of fund rating +0.125%. These receivables are unsecured. The movement schedule is as follows:

(EUR million)	2018	2017
At 1 January	**6,050**	**6,200**
Additions	611	657
Repayments	-33	-391
Transfer to current	-394	-419
Other movements	-2	3
At 31 December	**6,232**	**6,050**

Besides non-current other financial assets, the company has EUR 1.4 billion (2017: EUR 1.3 billion) of current other financial assets which is related to receivables from subsidiaries. Certain subsidiaries have guaranteed the payment to creditors of TenneT Holding up to an amount of EUR 2,642 million.

8.7 Account- and other receivables

(EUR million)	2018	2017
Receivable from shareholder	280	350
Current income tax receivable	29	-
Total	**309**	**350**

Compared to previous year the account- and other receivables are presented in line with the consolidated financial statements as a seperate account. The comparative figures are also reclassified from the other financial assets to account- and other receivables.

8.8 Equity

(EUR million)	Reserve Participating interests	Reserve for internally generated assets	Hedging reserve	Revaluation reserve	**Total legal reserve**
At 1 January 2018	**8**	**9**	**4**	**54**	**75**
Result NOKA and HGRT	29	-	-	-	29
Result NOKA prior years	28	-	-	-	28
Dividend NOKA and HGRT	-4	-	-	-	-4
Internally generated intangible assets	-	13	-	-	13
Depreciation revaluation tangible fixed assets	-	-	-	-11	-11
Amortisation of hedges	-	-	-1	-	-1
At 31 December 2018	**61**	**22**	**3**	**43**	**129**

The statement of changes in equity and disclosure to that statement are included in the consolidated financial statements. For details on the hybrid securities see note 6.2.1 of the consolidated financial statements.

The revaluation reserve covers the IFRS 1 revaluation of tangible fixed assets in 2004. The legal reserve for joint venture NOKA which amounts EUR 28 million at the end of 2017 was reclassified from the retained earnings to reserve for participating interests in 2018. The reserve for participating interests relates to HGRT and NOKA, from which we cannot enforce payment of dividends. In the consolidated financial statements, the revaluation reserve, the reserve for internally generated assets, and the reserve for participating interests are included in retained earnings.

The legal reserves are not freely distributable.

The appropriation of the 2018 profit is at the free disposal of the General Meeting of Shareholders and has not been recorded in the financial statements.

8.9 Borrowings

Details on borrowings are included in the consolidated financial statements, see note 6.3.

8.10 Account- and other payables

(EUR million)	**2018**	2017
Payables to subsidiaries	757	1,260
Interest payable	92	97
Current income tax payable	-	5
Other payables	4	5
Total	**853**	**1,367**

8.11 Events after reporting period

See note 7.5 of the consolidated financial statements.

Arnhem, 18 February 2019

Executive Board TenneT Holding B.V.
M.J.J. van Beek*
B.G.M. Voorhorst*
O. Jager*
W. Breuer

Supervisory Board TenneT Holding B.V.
A.F. van der Touw
P.M. Verboom
R.G.M. Zwitserloot
L.J. Griffith

* Statutory Director

TenneT Holding B.V.
Utrechtseweg 310
6812 AR Arnhem
The Netherlands
Chamber of Commerce register 09083317

Other information

Profit appropriation

The appropriation of profits is governed by Section 38.3 of the Articles of Association, which states the following “To the extent that the profit is not used to make up prior losses in accordance with the provision of paragraph 2, it shall be at the free disposal of the general meeting. In the calculation of the profit amount to be distributed on every share, only the amount of the compulsory payments on the nominal amount of the shares shall be taken into consideration. In the event of a tied vote on a proposal to distribute or reserve profits, the profits to which the proposal relates shall be reserved”.

Independent auditor's report

To: the Shareholder and Supervisory Board of TenneT Holding B.V.

Report on the audit of the financial statements 2018 included in the integrated annual report

Our opinion

We have audited the financial statements 2018 of TenneT Holding B.V., based in Arnhem. The financial statements include the consolidated financial statements and the company financial statements.

In our opinion:

- The accompanying consolidated financial statements give a true and fair view of the financial position of TenneT Holding B.V. as at 31 December 2018, and of its result and its cash flows for 2018 in accordance with International Financial Reporting Standards as adopted by the European Union (EU-IFRS) and with Part 9 of Book 2 of the Dutch Civil Code
- The accompanying company financial statements give a true and fair view of the financial position of TenneT Holding B.V. as at 31 December 2018, and of its result for 2018 in accordance with Part 9 of Book 2 of the Dutch Civil Code

The consolidated financial statements comprise:

- The consolidated statement of financial position as at 31 December 2018
- The following statements for 2018: the consolidated statement of income, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows
- The notes comprising a summary of the significant accounting policies and other explanatory information

The company financial statements comprise:

- The company statement of financial position as at 31 December 2018
- The company statement of income for 2018
- The notes comprising a summary of the accounting policies and other explanatory information.

Basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing.
Our responsibilities under those standards are further described in the "Our responsibilities for the audit of the financial statements" section of our report.

We are independent of TenneT Holding B.V. in accordance with the EU Regulation on specific requirements regarding statutory audit of public-interest entities, the "Wet toezicht accountantsorganisaties" (Wta, Audit firms supervision act), the "Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten" (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the "Verordening gedrags- en beroepsregels accountants" (VGBA, Dutch Code of Ethics).

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Materiality

Materiality	EUR 82.9 million (2017: EUR 78.0 million)
Benchmark applied	1.4% of total equity (2017: 1.4% of total equity)
Explanation	We have determined total equity to be the most relevant measure for TenneT Holding's primary stakeholders, being the Dutch State (as the sole Shareholder) and external investors in both equity and liability instruments of the group. A sufficient equity balance and solvency ratio is in our view the most relevant measure for the capital providers to make their investment decisions, also considering the long-term nature of TenneT Holding's core business.

We have also taken misstatements into account and/or possible misstatements that in our opinion are material for the users of the financial statements for qualitative reasons.

We agreed with the Supervisory Board that misstatements in excess of EUR 4.1 million (being 5% of the materiality), which are identified during the audit, would be reported to them, as well as smaller misstatements that in our view must be reported on qualitative grounds.

Scope of the group audit

TenneT Holding B.V. is at the head of a group of entities. The financial information of this group is included in the consolidated financial statements of TenneT Holding B.V.

Our group audit mainly focused on the regulated significant group entities TSO Netherlands, TSO Germany and the non-regulated entity BritNed. In establishing the overall approach to the group audit, we determined the type of work that needed to be performed at the reporting units within these business segments, either by us, as the group engagement team, or component auditors within EY Netherlands and EY Germany operating under our instruction. Where the work was performed by component auditors, we determined the level of involvement we needed to have in the audit work at those reporting units to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the group financial statements as a whole. Accordingly, we identified that the consolidated group entities TSO Netherlands and TSO Germany, which both consist of multiple entities, required an audit of their complete financial information due to their size.

Specific audit procedures on certain balances and transactions were performed at BritNed. These specific audit procedures were performed by a non-EY auditor.

The procedures described above provide coverage of 98% of the total assets and 99% of EBIT (operating profit) and of the Group.

By performing the procedures mentioned above at group entities, together with additional procedures at group level, we have been able to obtain sufficient and appropriate audit evidence about the group's financial information to provide an opinion about the consolidated financial statements.

Our key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements. We have communicated the key audit matters to the Supervisory Board. The key audit matters are not a comprehensive reflection of all matters discussed.

These matters were addressed in the context of our audit of the financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

The key audit matters are in line with prior year.

TenneT's Underlying financial performance reflected in Segment Reporting (IFRS 8), as disclosed in note 2 of the consolidated financial statements	
Risk	Underlying financial information is based on the principle of recognising regulatory assets and liabilities, which (based on the current regulatory framework) need to be collected from or are to be returned to customers through future grid tariffs. Under IFRS, reimbursements or settlements through future grid tariffs may not be taken into account. As a result, regulatory assets or liabilities cannot be recognised under IFRS. The Underlying financial information is reconciled for revenue, EBIT, assets and liabilities to the consolidated financial statements in note 2.3. The Executive Board manages and monitors TenneT's business based upon Underlying financial information, as explained in note 2 Segment Information, as the Executive Board is of the opinion that the presentation of underlying financial information leads to a better financial insight into past and future business performance. The Underlying financial information is also included in the 'Financial' section of the 'Our Performance in 2018' chapter as included in the director's report. Given the relevance of the topic for the financial statements we conclude that the reconciliation of the Underlying financial information to the consolidated IFRS financial statements is a key audit matter.
Our audit approach	We have obtained an understanding of the regulatory frameworks in the Netherlands and Germany, and of relevant regulatory developments. We have assessed whether the Underlying financial information reflects how TenneT's Executive Board assesses performance and manages the business. We have obtained an understanding of the process including the relevant internal controls and performed a walkthrough to confirm our understanding of the process. We obtained the internal quarterly reporting of Q4-2018 based on Underlying financial performance and reconciled that information to the segments identified in the segment reporting as included in the financial statements note 2. We audited the reconciliation of Underlying financial information to the consolidated IFRS financial statements as disclosed in note 2.3.
Key observations	We determined that the Underlying financial information and identified segments are consistently applied compared to previous year. Furthermore, we consider that the disclosure of the Underlying financial information (including the reconciliation between the Underlying financial information to the consolidated IFRS financial statements) as disclosed in note 2 Segment Reporting of the financial statements is appropriate.
Growth in renewable energy sources and the implications for grid expenses, as disclosed in notes 3.2.1 and 5.6.3 of the consolidated financial statements	
Risk	The increase in intermittent renewable energy generation, such as onshore and offshore wind and onshore photovoltaic capacity impacts the German onshore grid significantly. TenneT needs to ensure a stable grid operation and to achieve this, balancing measures are needed. The number of measures has grown compared to prior years, and, consequently, the related expenses increased. The grid expenses payable is based on actual volumes (if available) or forecast volumes derived from models. Several assumptions regarding such matters as weather conditions, requested volumes and capacity per plant are made in these models. Prices are based on the underlying contracts and/or historical data. The complexity of the electricity market and uncertainties in assessing, variable renewable energy production makes estimating the grid expenses payable a complex task. Given the relevance of the topic for the financial statements we conclude that this risk is a key audit matter.
Our audit approach	We have obtained an understanding of TenneT's estimation process in relation to the accrual for balancing measures and other grid related expenses including the relevant internal controls and performed a walkthrough to confirm our understanding of the process. We obtained and inspected evidence to support management's estimates and key assumptions used in establishing the related accruals. We also tested the integrity of the measurement model applied by TenneT in calculating the estimate, including the formulas applied in the model. We further assessed the adequacy of TenneT's disclosures as included in notes 3.2.1 and 5.6.3 of the consolidated financial statements.
Key observations	We consider management's estimates and key assumptions used to be within the acceptable range and we assessed the disclosures as being appropriate.
Offshore liability related provisions as part of the other provisions, as disclosed in note 5.7.3 and 5.7.5 of the consolidated financial statements	
Risk	Offshore grid connections and related undersea cabling and landside stations, which are required to be built by TenneT to connect offshore wind farms to the onshore high voltage grid, are in various stages of construction. The engineering, procurement and construction of these projects is complex, large in size and executed in parallel for a number of projects. The estimated amount of the risks associated with delays and interruptions concerning the offshore activities in Germany is based on the number of offshore grid connections, and the compensation paid to the offshore grid connections. Given the relevance of the topic for the financial statements we conclude that this risk is a key audit matter.
Our audit approach	We have obtained an understanding of TenneT's process in relation to the offshore liability provision including the relevant internal controls and performed a walkthrough to confirm our understanding of the process. We obtained evidence through inquiries, performed tests of details and executed sensitivity analysis to support the Executive Board's estimates and key assumptions used in establishing the other provisions, in particular probability of the assumptions. We also tested the integrity of the measurement model, including the formulas applied therein. We evaluated the reasonableness of management's judgements and assumptions applied in measuring the provisions recognised in the consolidated financial statements, note 5.7.3 and 5.7.5. We also assessed the adequacy of TenneT's disclosures as included in note 5.7.3 and 5.7.5 of the consolidated financial statements.
Key observations	We consider management's estimates and key assumptions used, to be within acceptable ranges and we assessed the disclosures as being appropriate.
Third-party claims, as disclosed in note 5.6.4 and 7.2.3 of the consolidated financial statements	
Risk	Due to the nature of the business, TenneT receives certain legal claims from third parties. The claims are a key element of our audit as they could be material and the Executive Board makes assumptions about the legal position, the likelihood and the impact of the expected future cash outflow related to these claims. For this, the Executive Board relies on internal and external advisors. Given the relevance of the topic for the financial statements we conclude that this risk is a key audit matter.
Our audit approach	We obtained and inspected internal legal and regulatory letters, legal letters from external attorneys and minutes of meetings of the Executive Board, the Audit, Risk and Compliance Committee and the Supervisory Board. We also inquired employees from TenneT's legal department as well as management. We assessed TenneT's assumptions underlying the recognition and valuation of these claims, as well as management's position with respect to claims that are not provided for at year-end. We also assessed the adequacy of TenneT's disclosures as included in note 7.2.3 of the consolidated financial statements.
Key observations	We consider management's assessment and position of third-party claims as being appropriate. We assessed the disclosures as being appropriate.

Report on other information included in the integrated annual report

In addition to the financial statements and our auditor's report thereon, the integrated annual report contains other information that consists of:

- 2018 at a glance
- Letter from the CEO
- Director's report, consisting of
  - About TenneT
  - Our Performance in 2018
  - Governance and risk management
- Supervisory Board report
- Other information required by Part 9 of Book 2 of the Dutch Civil Code

Based on the following procedures performed, we conclude that the other information:

- Is consistent with the financial statements and does not contain material misstatements
- Contains the information as required by Part 9 of Book 2 of the Dutch Civil Code

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements. By performing these procedures, we comply with the requirements of Part 9 of Book 2 of the Dutch Civil Code and the Dutch Standard on Auditing 720. The scope of the procedures performed is substantially less than the scope of those performed in our audit of the financial statements.

The Executive Board is responsible for the preparation of the other information, including the director's report in accordance with Part 9 of Book 2 of the Dutch Civil Code and other information as required by Part 9 of Book 2 of the Dutch Civil Code.

Report on other legal and regulatory requirements

Engagement

We were engaged by the Supervisory Board as auditor of TenneT Holding B.V. on 14 March 2013, as of the audit for the year 2013 and have operated as statutory auditor ever since that date.

No prohibited non-audit services

We have not provided prohibited non-audit services as referred to in Article 5(1) of the EU Regulation on specific requirements regarding statutory audit of public-interest entities.

Other non-prohibited services provided

In addition to the statutory audit of the financial statements we provided the following services:

- Regulatory reportings (Ernst & Young Accountants LLP and EY Network firms outside theNetherlands)
- Bond issue procedures (Ernst & Young Accountants LLP)
- Translation services (EY Network firms outside the Netherlands)

Description of responsibilities for the financial statements

Responsibilities of the Executive Board and the Supervisory Board for the financial statements

The Executive Board is responsible for the preparation and fair presentation of the financial statements in accordance with EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code. Furthermore, the Executive Board is responsible for such internal control as the Executive Board determines it is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

As part of the preparation of the financial statements, the Executive Board is responsible for assessing the company's ability to continue as a going concern. Based on the financial reporting frameworks mentioned, the Executive Board should prepare the financial statements using the going concern basis of accounting unless the Executive Board either intends to liquidate

the company or to cease operations, or has no realistic alternative but to do so. The Executive Board should disclose events and circumstances that may cast significant doubt on the company's ability to continue as a going concern in the financial statements.

The Supervisory Board is responsible for overseeing the company's financial reporting process.

Our responsibilities for the audit of the financial statements

Our objective is to plan and perform the audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not have detected all material errors and fraud.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

We have exercised professional judgment and have maintained professional scepticism throughout the audit, in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our audit included among others:

- Identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control
- Obtaining an understanding of internal control relevant to the audit in order to design auditprocedures that are appropriate in the circumstances, but not for the purpose of expressing anopinion on the effectiveness of the company's internal control
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Executive Board
- Concluding on the appropriateness of the Executive Board's use of the going concern basis ofaccounting, and based on the audit evidence obtained, whether a material uncertainty existsrelated to events or conditions that may cast significant doubt on the company's ability tocontinue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause a company to cease to continue as a going concern
- Evaluating the overall presentation, structure and content of the financial statements, includingthe disclosures
- Evaluating whether the financial statements represent the underlying transactions and eventsin a manner that achieves fair presentation

Because we are ultimately responsible for the opinion, we are also responsible for directing, supervising and performing the group audit. In this respect we have determined the nature and extent of the audit procedures to be carried out for group entities. Decisive were the size and/or the risk profile of the group entities or operations. On this basis, we selected group entities for which an audit or review had to be carried out on the complete set of financial information or specific items.

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant findings in internal control that we identify during our audit. In this respect we also submit an additional report to the Audit, Risk and Compliance Committee in accordance with Article 11 of the EU Regulation on specific requirements regarding statutory audit of public-interest entities. The information included in this additional report is consistent with our audit opinion in this auditor's report.

We provide the Supervisory Board with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Supervisory Board, we determine the key audit matters: those matters that were of most significance in the audit of the financial statements. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.

The Hague, 18 February 2019

Ernst & Young Accountants LLP

Signed by J.F.M. Kamphuis

Assurance report of the independent auditor

To: the Shareholder and the Supervisory Board of TenneT Holding B.V.

Our conclusion

We have reviewed the sustainability information in the Integrated Annual Report for the year 2018 of TenneT Holding B.V. at Arnhem (hereinafter: TenneT). A review is aimed at obtaining a limited level of assurance.

Based on our procedures performed nothing has come to our attention that causes us to believe that the sustainability information does not present, in all material respects, a reliable and adequate view of:

- The policy and business operations with regard to corporate social responsibility
- The thereto related events and achievements for the year 2018

in accordance with the reporting criteria as included in the section Reporting criteria below.

The sustainability information consists of the chapters '2018 at a glance', 'Letter from the CEO', 'About TenneT', 'Our Performance in 2018' (excluding the sections 'Financial' and 'Statements of the Executive Board') and the section 'About this report' of the Integrated Annual Report.

Basis for our conclusion

We have performed our review of the sustainability information in accordance with Dutch law, including Dutch Standard 3810N, "Assurance-opdrachten inzake maatschappelijke verslagen" (Assurance engagements relating to sustainability reports), which is a specific Dutch Standard that is based on the International Standard on Assurance Engagements (ISAE) 3000, "Assurance Engagements other than Audits or Reviews of Historical Financial Information". Our responsibilities under this standard are further described in the section Our responsibilities for the review of the sustainability information of our report.

We are independent of TenneT in accordance with the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten" (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. This includes that we do not perform any activities that could result in a conflict of interest with our independent assurance engagement. Furthermore, we have complied with the "Verordening gedrags- en beroepsregels accountants" (VGBA, Dutch Code of Ethics).

We believe that the assurance evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Reporting criteria

The sustainability information needs to be read and understood together with the reporting criteria. TenneT is solely responsible for selecting and applying these reporting criteria, taking into account applicable law and regulations related to reporting.

The reporting criteria used for the preparation of the sustainability information are the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) and the applied supplemental reporting criteria as disclosed in section 'About this report' of the Integrated Annual Report.

Limitations to the scope of our review engagement

The sustainability information includes prospective information such as ambitions, strategy, plans, expectations and estimates. Inherent to prospective information, the actual future results are uncertain. We do not provide any assurance on the assumptions and achievability of prospective information in the sustainability information.

The references to external sources or websites in the sustainability information are not part of the sustainability information as reviewed by us. We therefore do not provide assurance on this information.

Responsibilities of the Executive Board and the Supervisory Board for the sustainability information

The Executive Board is responsible for the preparation of the sustainability information in accordance with the reporting criteria as included in the section Reporting criteria, including the identification of stakeholders and the definition of material matters. The choices made by the Executive Board regarding the scope of the sustainability information and the reporting policy are summarised in the section 'About this report' of the Integrated Annual Report.

The Executive Board is also responsible for such internal control as the Executive Board determines is necessary to enable the preparation of the sustainability information that is free from material misstatement, whether due to fraud or errors.

The Supervisory Board is responsible for overseeing the reporting process of TenneT.

Our responsibilities for the review of the sustainability information

Our responsibility is to plan and perform the review in a manner that allows us to obtain sufficient and appropriate assurance evidence for our conclusion.

Procedures performed to obtain a limited level of assurance are aimed to determine the plausibility of information and vary in nature and timing from, and are less in extent, than for a reasonable assurance engagement. The level of assurance obtained in a review is therefore substantially less than the assurance obtained in an audit.

We apply the '"Nadere voorschriften kwaliteitssystemen" (NVKS, Regulations for Quality management systems) and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and other applicable legal and regulatory requirements.

We have exercised professional judgement and have maintained professional skepticism throughout the review performed by a multi-disciplinary team, in accordance with the Dutch assurance standards, ethical requirements and independence requirements.

Our review included amongst others:

- Performing an analysis of the external environment and obtaining an understanding of relevant social themes and issues, and the characteristics of the company
- Evaluating the appropriateness of the reporting criteria used, their consistent application and related disclosures in the sustainability information. This includes the evaluation of the results of the stakeholders' dialogue and the reasonableness of estimates made by the Executive Board.
- Obtaining an understanding of the reporting processes for the sustainability information, including obtaining a general understanding of internal control relevant to our review.
- Identifying areas of the sustainability information with a higher risk of misleading or unbalanced information or material misstatements, whether due to fraud or errors. Designing and performing further assurance procedures aimed at determining the plausibility of the sustainability information responsive to this risk analysis. These further review procedures consisted amongst others of:
  - Interviewing management and relevant staff at corporate and business level responsible for the sustainability strategy, policy and results
  - Interviewing relevant staff responsible for providing the information for, carrying out internal control procedures on, and consolidating the data in the sustainability information
  - Visits to TenneT Netherlands & Germany (Bayreuth) aimed at, on a local level, validating source data and evaluating the design and implementation of internal controls and validation procedures
  - Obtaining assurance information that the sustainability information reconciles with underlying records of the company
  - Reviewing, on a limited test basis, relevant internal and external documentation
  - Performing an analytical review of the data and trends submitted for consolidation at corporate level
- Reconciling the relevant financial information with the financial statements
- Evaluating the consistency of the sustainability information with the information in the Integrated Annual Report which is not included in the scope of our review
- Evaluating the overall presentation, structure and content of the sustainability information
- Considering whether the sustainability information as a whole, including the disclosures, reflects the purpose of the reporting criteria used

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the review and significant findings that we identify during our review.

Amsterdam, 18 February 2019

Ernst & Young Accountants LLP

Signed by R.T.H. Wortelboer

About this report

Scope of this report

The scope of this report is TenneT B.V. and the subsidiaries in which it has a controlling interest (generally speaking a voting interest of over 50%). For example, our 50% stake in BritNed and BritNed's activities are not included in our results. This integrated report covers the full year 2018, i.e. 1 January 2018 to 31 December 2018. TenneT's Integrated Annual Report 2018 was published on 21 February 2019 and is available online.

The 2017 Annual Report was published on 23 February 2018.

In 2018, there were no significant acquisitions or divestments impacting our non-financial reporting. A complete overview of all the entities consolidated in this Integrated Annual Report can be found in note 7.4 of the consolidated financial statements. Our reporting policy in the event of acquisitions or divestments can be found in Notes to the consolidated financial statements, 5. Other invested capital including working capital and provisions for our financial performance. For non-financial performance we report acquisitions and divestments from the day of purchase or when an entity is sold respectively. We recognise that in the event of acquisitions, reporting improvements may be required which may result in data being estimated.

Reporting principles

Our non-financial qualitative and quantitative information is prepared according to the Global Reporting Initiative (GRI) Standards, following the in-accordance option: 'Core'. We also adhere to the sector guidelines for our industry (G4 sector disclosures - electric utilities). For more information, refer to the reporting guidance document on our corporate website.

The GRI context index, as included on our corporate website, shows which GRI aspects are material to TenneT and refers to those sections in the report describing this aspect. In addition, and in accordance with the policy on state-owned companies (*Nota Deelnemingenbeleid Rijksoverheid 2013*), TenneT complies with the Dutch Corporate Governance Code, as laid down in the Corporate Governance section of this report.

We have used the Integrated Reporting (IR) framework, as defined by the International Integrating Reporting Council (IIRC) as a basis for this integrated report. This allows us to be transparent about our impact as an organisation. The financial information in this report was prepared in accordance with IFRS, as adopted by the EU, and complies with Section 9 of Book 2 of the Dutch Civil Code.

Furthermore, our Integrated Annual Report complies with the EU directive on the disclosure of non-financial and diversity information, which was translated to Dutch legislation and is mandatory for annual reports from 2017 onwards.

This report is also a Communication on Progress, i.e. an update on how we implement the 10 principles of the United Nations Global Compact (UNGC). We have endorsed these principles since 2015, not just to underline our own commitment, but also to drive CSR performance in the value chain. The UNGC principles are the basis of our TenneT supplier code of conduct and mandatory for all suppliers. New suppliers who do not meet our standards during factory audits, are disqualified from our tender procedures. Our Communication on Progress document can also be found on our website.

In 2015, the UN launched new Sustainable Development Goals (SDGs). These goals are accepted worldwide as driving sustainability. The section in our annual report on strategy performance describes our impact and the contribution we make to the SDGs that are most relevant to our business.

Stakeholders and materiality

In accordance with the applied reporting principles, this integrated report covers topics considered material to our organisation. TenneT uses the materiality principle to determine which subjects to include in the report and which activities and supply chain to take into account. Our corporate website (www.tennet.eu) includes additional information which was not considered material for integrated-reporting purposes. How we defined the material topics and the results of this assessment can be found in the materiality section. The fact that we report on selected topics does not mean we do not manage aspects that are not considered material to our business. Our activities and CSR policy are broader and are not limited to the outcome of the materiality analysis. For more detailed information, go to the CSR section of our website.

Scope and boundaries

The table below provides a clear overview of the material topics, their impact, our contribution and the boundaries. A detailed disclosure of our management approach on each material topic can be found in the CSR section of our website.

	Reference	Why material?	What is the impact?	What is our role?	What are the bounderies?	Key Performance Indicators (KPIs)	Targets/ ambitions	Unit(s) responsible within organisation
Material topic								
Security of supply	Secure supply	Our main task is to ensure security of electricity supply to over 41 million people across the Netherlands and Germany.	Electricity is the backbone of the economy of the countries we operate in.	We are responsible for maintaining a balance between supply and demand; we operate and manage the high-voltage grid.	We are responsible for transmission services. Production is the responsibility of producers, distribution lies with DSOs.	Security of supply: uptime in % Amount of interruptions (#) Energy not transported (MWh)	100% grid availability	Asset Owner
Sustainable Grid Infrastructure	Secure supply, Financial performance	We need to invest in onshore and offshore grid infrastructure to realise the energy transition over the next ten years, which includes additional investments in underground DC cables in Germany following the German government's decision hereon. Therefore it is important to carefully make the right investment decisions and to manage them properly to be sure we are doing the right things.	To finance our investments, we need to spend approximately EUR 35 billion in the coming ten years.	We are responsible for realising the investment programme and living up to our stakeholders' expectations.	We are responsible for realising our investment portfolio. The investment programme is based on the task we are given by the Dutch and German governments.	Capital expenditures (capex) on grid infrastructure / assets (in EUR million) Return on Investment (ROI): Benefits - Costs / Costs	Invest approximately EUR 35 billion in the period 2019-2028	Strategic Investment Committee Supervisory Board
NWE Electricity Market	Lead NWE Integration	Electricity does not respect borders and a NWE market is necessary to ensure a reliable and sustainable grid.	An integrated market drives price convergence and security of supply.	TenneT is taking a lead role in integrating the electricity market in NWE to encourage cross-border connections and closer collaboration for the benefit of society, both now and in the future.	Our responsibility is to our own grid and interconnections with neighbouring grids. Other European TSOs are responsible for their grid.	Interconnection capacity (imported and exported volumes + number of cross-border interconnections) Price convergence (number of price areas + number of hours of price equality)	A seamless cross-border energy market Realizing the North Sea Wind Power Hub	Customer & Markets
Community engagement	Engage stakeholders	It is crucial we connect with local communities, NGOs and politicians at the earliest stage of a project to address their concerns and gain their understanding and acceptance.	There is increasing public opposition to grid expansion, especially where new assets are concerned.	To be honest, open and fair to all stakeholders involved.	The decision to expand the grid is taken by the Dutch and German governments. Executing our work and explaining the necessity of it is our responsibility.	Number of stakeholder meetings and public events (#) Customer satisfaction score Corporate reputation Stakeholder approach score	Live up to our values (i.e. being responsible, engaged and connected) when addressing our stakeholders' concerns	Corporate Public Affairs (PAC) Corporate Communications (CMC)

For most of our figures, our reporting focus is on our own operations, although we do take some aspects of the value chain into account in our carbon footprint and LTIF. We recognise that reporting outside our gate (so-called 'value chain reporting') provides a better overview of our impact. We have therefore decided to include the impact of our offshore operations into our carbon footprint reporting.

EU Directive on Non-Financial and Diversity Information

Our annual report complies with the EU directive on non-financial reporting. The table below provides a clear overview of where the different aspects of this directive are reported.

	A description of the policies pursued, including due dilligence.	The outcome of those policies.	Principle risks in own operations and within value chain.	How risks are managed.	Non-financial key performance indicators.
Topic					
Relevant social and personnel maters (e.g. HR, safety etc.)	Strategic performance, engage stakeholder Operational performance, non-financial, our people ambition Summary stakeholder activities	Strategic performance, engage stakeholder Operational performance, non-financial, Our people ambition	Strategic performance, deliver stakeholder value, engage stakeholder Operational performance, non-financial, Our people ambition	Strategic performance, deliver stakeholder value, engage stakeholder Operational performance, non-financial, Our people ambition	Strategic performance, engage stakeholder Operational performance, non-financial, Our people ambition
Relevant Environmental maters (e.g. climate-related impacts)	Operational performance, non-financial, Our planet ambition	Operational performance, non-financial, Our planet ambition	Operational performance, non-financial, Our planet ambition	Operational performance, non-financial, Our planet ambition	Operational performance, non-financial, Our planet ambition
Relevant matters with respect for human rights (e.g. labour protection)	Operational performance, non-financial, Our impact on our supply chain	Operational performance, non-financial, Our impact on our supply chain	Operational performance, non-financial, Our impact on our supply chain	Operational performance, non-financial, Our impact on our supply chain	Operational performance, non-financial, Our impact on our supply chain
Relevant matters with respect to anti-corruption and bribery	Governance and risk management, Risk management and internal control, compliance and integrity	Governance and risk management, Risk management and internal control, compliance and integrity	Governance and risk management, Risk management and internal control, compliance and integrity	Governance and risk management, Risk management and internal control, compliance and integrity	Governance and risk management, Risk management and internal control, compliance and integrity

	A description of the policies pursued.	Diversity targets	Description of how the policy is implemented	Results of the diversity policy
Topic				
Insight into the diversity (Executive Board and the Supervisory Board)	Operational performance, non-financial, Our people ambition Supervisory Board report, Diversity and culture	Operational performance, non-financial, Our people ambition Supervisory Board report, Diversity and culture	Operational performance, non-financial, Our people ambition Supervisory Board report, Diversity and culture	Operational performance, non-financial, Our people ambition Supervisory Board report, Diversity and culture

Data collection process

The reported data is obtained from financial and non-financial data management systems in our own operations, such as IFS and SAP for financial and HR data, Mecoms for our electricity transport data, and iTask for our safety data. The key non-financial qualitative and quantitative data is included in the regular planning and control cycles and reported internally at least once a quarter by the Business Control department which performs a check on the quality and reliability of the data. TenneT's Executive Board and senior management contribute to the context of the report and the quantitative data.

The definitions and calculations used are disclosed in the abbreviations and definitions section of this integrated report and in the CSR section of our corporate website. The definitions and calculations used were re-assessed based on such things as process improvements, further alignment within the group and the materiality analysis. As a result, certain originally reported comparative figures were re-classified to conform to the current year's presentation.

The data for this report was measured, and where no data was available, it was estimated. An example of this is the energy use at some of our smaller offices. No uncertainties or inherent limitations to the data were identified due to the measurement, estimation or calculation of data.

External assurance

The financial statements included in this report are subject to an independent external audit and TenneT's non-financial reporting is subject to a limited assurance review. These were both conducted by our external auditor, EY Accountants LLP.

Reliable data is essential in our dialogue with stakeholders, so we decided to have our non-financial data reviewed by an external accountant. We have requested EY to review Integrated Annual Report chapters 'At a Glance', 'Letter from the CEO', 'About TenneT' and 'Our Performance in 2018' (excluding 'Operational performance: Financial' and 'Statements of the Executive Board') in accordance with the GRI Standards and audit the financial statements in accordance with IFRS and Section 9 of Book 2 of the Dutch Civil Code.

Governance of CSR

For TenneT, CSR covers a broad range of subjects, all aimed at creating a sustainable future for our internal and external stakeholders. In 2018, we have adopted a CSR Ambition plan 2025, focusing on three main areas with clear ambitions we aim to achieve by 2025. Priorities and targets have been set as well as key performance indicators. For some areas we are currently developing new or updating key performance indicators. In 2018, we have expanded our CSR organisation within TenneT. We have embedded the CSR role within the Asset Owner department to increase our efforts from a policy side, whilst keeping the CSR reporting role within the finance organisation.

Progress on CSR policy and actions are tracked every quarter in the CSR board. We have established a this board to monitor progress on the CSR Ambition plan and advise the Executive Board on the integration of CSR into the business. The CSR board, is chaired by the CSR manager and includes the CEO, CFO and senior managers from Asset Management, Large Projects, Communication, Public Affairs and Finance. It is TenneT's ambition to be one of the best-performing TSOs in CSR in Western Europe and as such we continuously look for innovations and opportunities to improve our CSR performance. We benchmark ourselves against our peers using external assessment processes, such as the Netherlands Transparency Benchmark, ISS-Oekom, Sustainalytics and Vigeo. Our ambition is to be in the top 25 of the Transparency Benchmark and within the top 25% for the other ratings. This supports our defined ambitions in CSR reporting and CSR substantive issues, respectively.

Reconciliation of non-IFRS financial measures

In the discussion of TenneT's financial results, a number of alternative performance measures (non-GAAP figures) are used to provide readers with additional financial information that is regularly reviewed by management. These 'underlying' (non-IFRS) figures should not be viewed as a substitute for TenneT's financial results as determined in accordance with IFRS, which are presented in TenneT's consolidated financial statements.

TenneT's main non-IFRS figures are explained below

EBITDA

TenneT defines EBITDA as operating result before interest, tax and depreciation (including impairments) of tangible fixed assets and amortisation (including impairments) of intangible assets.

(EUR million)	**2018**	2017
IFRS EBIT	880	900
IFRS Depreciation and amortisation	700	629
IFRS EBITDA	**1,580**	**1,529**
Other underlying adjustments	-74	-3
Underlying adjustment depreciation	21	22
Underlying EBITDA	**1,527**	**1,548**

Net profit

The following table shows the underlying alignment between the IFRS and underlying net profit.

(EUR million)	**2018**	2017
IFRS EBIT	880	900
IFRS finance result	-181	-170
IFRS tax expenses	-189	-177
IFRS net profit	**510**	**553**
Underlying EBIT adjustments	-74	-3
Underlying adjustment interest	-9	-24
Underlying adjustment deferred tax on to be settled in tariffs	44	29
Underlying adjustment deferred tax on auction receipts	-27	-33
Other underlying tax adjustments	-1	9
Underlying Net Profit	**443**	**531**

Return on invested capital

ROIC is defined as 'underlying' EBIT (see note 2.3) as a percentage of the average invested capital during the year. The average invested capital is defined as the 'underlying' equity + loans and bank overdrafts minus cash at free disposal. Average is defined as sum of year-end and previous year-end figures divided by two.

Summary of stakeholder activities

Stakeholder	Type of dialogue	What we discussed and achieved in 2018	Priorities for 2019
Governments, political parties and regulatory bodies			
	Informative and close involvement	• Closely monitored NOVI developments through regular contact with ministries, especially on the spatial consequences of sustainable ambitions • Held intensive sector consultations, generating more support for a central data platform. • Contributed to the Offshore Wind 2020-2030 roadmap • Renewed cooperation agreement with Stichting de Noordzee and Natuur & Mileu. • Arranged meetings with NGOs, resulting in e.g. The Hydrogen Manifesto led by Greenpeace. • Devised contributions to the Climate Accord based on main points published in July 2018. • Improved application of stakeholder management principles. • Held intensive dialogue on the Clean Energy Package with ministries, regulator and European actors in line with our responsibilities; achieved many improvements compared to initial proposals. • Presented ideas for NEP 2.0 (Grid Development Plan 2.0) that are now supported by dena (Deutsche Energie Agentur). • Developed strong political support for the InnoSys 2030 project. (Joint collaboration of TenneT with 10 industrial and 4 academic partners on NextGen System Control) • Maintained strong political support for grid expansion on a federal and state level, e.g. during summer visit by Germany's Federal Minister Peter Altmaier. • Developed concept for soil protection together with relevant stakeholders, e.g. farmers and local authorities. • Worked together with federal and state government on NABEG (Netzausbaubeschleunigungsgesetz) amendment, i.e. the grid expansion acceleration law.	• Contribute to a well-balanced, efficient and future-proof sustainable energy system through close interaction with governmental bodies and other relevant parties. • Continue to build relationships with relevant stakeholders, e.g. ministries, NGOs, etc., on various relevant subjects. • Work with stakeholders towards a future proof energy data hub and platform. • Further align our stakeholder activities for the Netherlands Environment and Planning Act in close cooperation with ministries to define process of stakeholder involvement. • Introduce an area-based approach towards stakeholders. • Build reliable relationships with new governments in Bavaria, Hesse and Thuringia. • Continue to position our views on the Clean Energy Package, e.g. ROCs (regional TSO cooperation), ACER recommendations, etc., with relevant stakeholders. • Implementation of the changing incentive regulation in Germany
Local communities			
	Informative and close involvement in various projects Local participation and interaction	• Opening of an Information Centre in Kruiningen for projects in the Zeeland region, Netherlands. • Opening of Cable Information Centres in Dankern (AC) and Wilster (DC) Germany. • TenneT and German TSO Amprion jointly organised a Local Community Day to coincide with the official opening of the new Doetinchem-Wesel 380 kV connection. • Proactive interaction with local communities and authorities on several 110/150 kV cabling projects and substations, during the general planning and landscape planning phases. • Interaction with local communities, authorities, land owners and stakeholders for the two large DC cabling projects, SuedLink and SuedOstLink and for other overhead line projects and cabling sections. As a pilot, we tested in the Netherlands small 'atelier' workshops designed for this purpose. This successful atelier approach is now being adopted for other projects. • Other stakeholder activities including mobile office road shows, information markets and planning forums for all AC and DC projects in Germany and the Netherlands. • In 2017, we began a pilot to quantitatively and qualitatively monitor sentiments and topical local community issues for all 380 kV projects in the Netherlands. In 2018, for other projects, online and offline monitoring of topical issues and sentiments became the standard.	• Implement proactive stakeholder communication for all new projects
Media			
	Informative and close involvement	• Positioned TenneT as a crucial European player in the energy transition. • Secured media understanding of our role as a key socially responsible player in the development of offshore wind energy. • Provided a review on the past developments and future challenges for TenneT, on the occasion of its 20th Anniversary.	• Continue to position TenneT as socially responsible and a key player in the development of a new electricity system based on renewables. • Share the relevance and necessity of close international cooperation (between TSOs) to realise the energy transition. • Promote TenneT's role in society, i.e. its CSR activities. • Promote TenneT's activities, focussing on innovation and digital transition to facilitate the new energy system.

Continuation >

Summary of stakeholder activities

< Continued

Stakeholder	Type of dialogue	What we discussed and achieved in 2018	Priorities for 2019
Customers			
	Informative, close involvement in various areas and contractual agreements	• Implemented Terms and Conditions for Balancing. • Formalised TenneT's role as BSP (Balance Service Provider). • Received contract to build IDCONS (Intra-Day Congestion Management), i.e. the TSO/DSO platform to use intraday bids for congestion management. • Improved nominations for BRPs. • Started the Flexibility Monitor. • Enlarged the flow-based domain. • Defined the market arrangements for the COBRA cable. • Conducted research into and meetings on the role of industry in the energy transition. • Carried out Customer Satisfaction Survey in the Netherlands. • Added functionalities to the MyTenneT portal for BRPs (IT connectivity). • Executed pilots for SINTEG (Schaufenster Intelligente Energie programme). • Elaborated congestion management concepts between TSOs and DSOs. • Tested redispatch potential of electric heaters together with DSOs. • Developed the TenneT energy storage tool also for the German market and provided open access on TenneT website to our customers. • Pre-qualified the first wind farm for the balancing market (negative mFRR, Frequency Restoration Reserves manual). • Discussed the future balancing market design with our customers (according to the GLEB).	• Detail what is required of TenneT following the Climate Accord. • Complete the first Flexibility Monitor. • Go live with IDCONS. • Collaborate in big renovation programmes, e.g. RenSec (Renovatie Secundaire installaties 380kV) and TenSec (Security measures), and field replacement. • Expand MyTenneT functionalities towards new user groups (e.g. BSPs, suppliers), new functionalities (e.g. ancillary services) and manual information exchange (e.g. emergency upload of XML messages). • Implement and go live with flex platforms for the coordination of flexibility for congestion management. • Develop and discuss a future-proof market design. • Offer a web portal for BRP customer data administration. • Optimise the lead time of the connection process.
Other European TSOs			
	Close involvement	• Detailed cooperation on joint strategies regarding upcoming European legislation, e.g. the Clean Energy Package. • Detailed cross-border coordination of system operation and grid planning. • Active involvement in various ENTSO-E and CIGRE expert groups. • Implementation of the Network Code.	• Ensure coordinated preparation for the new legislative term of the European Commission and the European Parliament • Continue operational cooperation
Suppliers			
	Market consultations, pre-qualifications, negotiations, meetings	• Awarded framework agreements for the AIS Bay replacement (for modular standardisation, smooth cooperation, increasing speed and reducing downtimes). • Awarded maintenance contract for electro-technical and mechanical components of TenneT's offshore infrastructure in Germany and the Netherlands. • Ran tender processes for large projects in Offshore Germany, e.g. DolWin5 (cable, converter and platform), Onshore Germany, e.g. SuedLink and SuedOstLink (cable) and Offshore The Netherlands, e.g. HKN (cable and platform). • Increased pre-qualified supplier base. • Ran tenders to support digitalisation strategy, e.g. Blockchain, EMS/Scada, ERP system and other platforms.	• Further drive supplier development on sustainability, safety and innovation. • Expand and secure supplier base by strengthening and further developing dedicated spend category management.

Continuation >

Summary of stakeholder activities

< Continued

Stakeholder	Type of dialogue	What we discussed and achieved in 2018	Priorities for 2019
Non-governmental organisation (NGOs)			
	Informative, cooperative, consulting and involvement on project level	• Formed Hydrogen Coalition in cooperation with Greenpeace and Natuur & Milieu. • Had dialogue with NGOs about the Offshore Wind 2020- 2030 roadmap. • Conducted joint fact-finding process with NSWPH with Dutch, Danish, German, British and Brussels-based NGOs. • Held intensive alignment discussions with NGOs on development of the Climate Accord. • Involved in a joint fact-finding process coordinated by Stichting de Noordzee to discuss future governance in relation to special use of the North Sea. • Developed a guideline for soil protection in cabling projects. • Launched Debatte Stromnetze gestalten project with Germanwatch and Renewable Grid Initiative (RGI). • Played an active role as member of the RGI.	• Execute the goals of the Climate Accord to reduce CO_2 while maintaining security of supply. • Continue our constructive dialogue with NGOs. • Facilitate the dialogue about grid expansion with critical, but constructive stakeholders.
Employees			
	Close involvement	• Created a shared people vision and strategy in line with revised business strategy. • Executed and evaluated several diversity initiatives, creating awareness throughout the company. • Executed leadership team's new performance management concept, including evaluating and preparing the introduction of new performance management concept for the rest of organisation. • Started discussion on new leadership concept based on trusted dialogue. • Designed employee value proposition to achieve our ambitious strategic project portfolio. • Reviewed and designed new learning and development approach.	• Implement derived corporate initiatives on people management and follow up on progress. • Continue and expand the dedicated activities on diversity and inclusion. • Roll out new performance management concept for senior management, including its design and implementation for rest of organisation to strengthen a performance and growth culture. • Design and implement leadership development interventions to foster a future-proof leadership. • Continue to improve TenneT's position on the labour market by innovating our recruitment processes to improve impact and efficiency. • Continue negotiations with trade unions on new TSO collective labour agreement in the Netherlands. Design more learning and development interventions for strategic target groups to respond to scarcity in the labour market and secure the specific expertise TenneT requires.
Shareholders (Corporate and projects)			
	Close involvement	• Obtained shareholder approval for investments in several large onshore and offshore projects. • Regularly updated and obtained shareholder approval when necessary. • Arranged company and site visits	• Finalise discussions with the Netherlands Ministry of Finance on increasing TenneT's equity capital in the short to medium term. • Hold frequent meetings with equity investors.
Debt investors and rating agencies			
	Close involvement and contractual agreements	• Maintained our A-/ A3 credit rating and our top 25% industry-recognised CSR rating. • Negotiated and arranged additional financing in banking and debt capital markets. • Held annual roadshow. • Diversified investor base by issuing a private placement in the US for EUR 500m.	• Negotiate and arrange additional financing in the banking and debt capital markets. • Manage financial risks and capital structure. • Focus and expand CSR activities.

SWOT Analysis

In the section 'Our performance in 2018' of our report, we elaborated upon TenneT's performance, strategic risks and the outlook for 2019. Our SWOT provides insight in our company's opportunities and strengths, as well as its threats and weaknesses, providing context to our stakeholders.

SWOT Analysis

Strengths

- High level of security of supply
- Competent, well-educated employees with a high degree of engagement
- Broad experience as a leading offshore grid operator
- Favourable corporate reputation amongst stakeholders
- Proven track record in leading NWE market integration
- Strong Finance track record and good access to debt funding

Weaknesses

- Suboptimal performance culture (a.o. internal processes and decision making procedures)
- Inadaptability to external changes
- Aging assets
- Lack of access to sustainable equity financing

S W O T

Opportunities

- Acceleration of the energy transition
- New (digital) technologies for a smarter grid
- Extended electrification of industries (a.o. transport, heating)
- System Integration / sector coupling (a.o. hydrogen)
- Storage solutions

Threats

- More fluctuating usage of our grid due to increase feed in of renewable energy
- Insufficient public acceptance of costs of the energy transition
- Changes in or contradictory political objectives
- Talent and resource scarcity
- Supplier shortages
- Negative developments in the regulatory framework

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Key figures: five-year summary
(based on underlying figures)

	2018	2017	2016	2015	2014
Net debt	8,712	7,687	7,347	5,736	4,159
EBIT	806	897	834	1,075	725
Profit for the year	443	531	523	681	418
Investments in tangible fixed assets	2,212	1,763	1,848	2,405	2,296
Grid availabiltiy	99.9988%	99.9986%	99.9999%	99.9750%	99.9999%
Interruptions	17	11	6	18	4
Interconnectors	14	13	13	13	13
Internal headcount	3,409	3,187	3,040	2,887	2,700
Stakeholder meetings	738	756	171	188	N/A

Glossary

ABP - Algemeen Burgerlijk Pensioenfonds
ABP is the civil service pension fund for government, education and energy employees in the Netherlands.

AC - Alternating current
In alternating current (AC), the flow of electricity periodically reverses direction. By contrast direct current (DC), electricity only flows in one direction. AC is used to transport electricity over relatively shorter distances and DC for relatively longer distances.

ACER - Agency for the Cooperation of Energy Regulators
The European network organisation for energy regulators. It has a key role in the integration of European electricity and gas markets, providing a framework for cooperation at EU level and regulatory certainty.

ACM - Autoriteit Consument & Markt
Dutch national regulatory authority

AIS - Air insulated switchgear
A switchgear that is insulated by air instead of gas.

Blockchain
The digital process of verifying and documenting the performance of distributed flexible devices. Blockchain is suited to connecting multiple parties and large numbers of distributed computed nodes and enabling them to undertake joint action in a scalable, transparent and trusted network.

BNetzA - Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen
German national regulatory authority

BritNed
The 260 km-long high-voltage direct current BritNed cable has a capacity of 1,000 MW and connects the Dutch and British electricity grids.

Capex - Capital expenditure
Capital expenditure (capex) is the amount spent on acquiring or improving long-term assets. Its benefits are enjoyed over a long period time, not only in the current year. Capex is of a non-recurring nature and results in the acquisition of permanent assets.

Carbon footprint
The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO_2).

CEP - Clean Energy Package
On 30 November 2016, the European Commission published its long-anticipated 'Clean Energy for All Europeans' package, more commonly referred to as the 'Winter Package', consisting of numerous legislative proposals together with accompanying documents, aimed at further completing the internal market for electricity and implementing the Energy Union.

CGU - Cash generating unit
A cash-generating unit is the smallest group of assets that independently generates cash flow and whose cash flow is largely independent of the cash flows generated by other assets.

CIGRE – International Council on Large Electric Systems
Founded in 1921, CIGRE, the Council on Large Electric Systems, is an international NGO for promoting collaboration with experts from all around the world by sharing knowledge and joining forces to improve electric power systems of today and tomorrow.

CIP - Copenhagen Infrastructure Partners
Copenhagen Infrastructure Partners is a fund management company that is joined between four senior partners and PensionDenmark.

CO_2 - Carbon dioxide
Carbon dioxide is a greenhouse gas formed by the burning of carbon-based fuels. Its concentration in the atmosphere is rapidly increasing, leading to global warming.

COBRAcable
A 275 km-long high-voltage direct current cable that is under construction to connect the Dutch and Danish electricity grids. It will have a capacity of 700 MW.

COSO - Committee of Sponsoring Organisations of the Treadway Commission
COSO has established the common internal control model against which companies and organisations assess their control systems.

CP programme - Commercial paper programme

A commercial paper is a flexible short-term debt instrument that is issued directly to the market with different maturities and is offered continuously.

CSR - Corporate social responsibility

Corporate social responsibility relates to the socially responsible business practices of a company balancing people, planet and profit.

Cross-border TSO

A cross-border TSO is a TSO that operates in more than one country

DC - Direct current

In direct current (DC), the flow of electricity is only in one direction. In alternating current (AC), the electricity flows periodically reverses direction. DC is used to transport electricity over relatively longer distances and AC for relatively shorter distances.

DMAIC - Define, Measure, AnalySe, Improve and Control

DMAIC is the problem-solving methodology behind Lean Six Sigma. It consists of five Phases: Define, Measure, Analyze, Improve and Control.

DSO - Distribution system operator

A regional electricity distribution company, that is connected with end users, and is responsible for providing (1) power distribution services, by constructing and maintaining a robust high-voltage grid, and (2) facilitating a smooth functioning, liquid and stable electricity market.

E-wet - Elektriciteitswet 1998

The Dutch electricity law.

EBIT - Earnings before interest and tax

Earnings for the period before income tax expense and interest payments are deducted.

EBITDA - Earnings before interest, tax, depreciation and amortisation

Earnings for the period before income tax expense, interest payments depreciation and amortisation are deducted.

EC - European Commission

The European Commission is the executive of the European Union and promotes its general interest.

EEG - Erneuerbare-Energien-Gesetz

German Renewable Energy Act, designed to govern the preferred supply of electricity from renewable sources into the grid with guaranteed, fixed minimum producer prices. It is intended to serve and protect the climate and is one of several statutory provisions aimed at reducing Germany's dependence on fossil fuels such as oil, natural gas or coal, and nuclear power.

EIB - European Investment Bank

The European Investment Bank is one of the key financial institutions of the EU. It is the only bank owned by and representing the interests of the EU member states, providing financing for sustainable investment projects that contribute to furthering EU policy objectives.

EMTN - Euro medium-term note

A flexible medium-term debt instrument that is issued directly to the market with different maturities and is offered continuously rather than all at once like a bond issue.

Energinet.dk

Energinet.dk is the Danish TSO that TenneT is partnering with to build the COBRAcable between the Netherlands and Denmark. Energinet.dk is also participating in the development of the North Sea Wind Power Hub.

ENTSO-E - European Network of Transmission System Operators for Electricity

ENTSO-E is the organisation of transmission system operators at a European level, representing 41 TSOs from 34 countries. Its mission is to promote important aspects of energy policy, especially integrating renewable energy and the completion of an internal energy market.

EU - European Union

The European Union (EU) is a political-economic union of 28 member states located in Europe.

EU DG COMP- Directorate-General for Competition

The Directorate-General for Competition (DG COMP) is a Directorate-General of the European Commission. The DG Competition is responsible for establishing and implementing a coherent competition policy for the EU.

EU DG ENER - Directorate-General for Energy

The Directorate-General for Energy is one of 33 policy-specific departments in the European Commission. It focuses on developing and implementing the EU's energy policy, namely to provide secure, sustainable, and competitive energy for Europe.

FCR – Frequency containment reserve

Frequency containment reserves are the active power reserves available to contain a system frequency of 50 Hz after the occurrence of an imbalance.

FFO - Funds from operations

Profit for the year plus depreciation, amortisation and impairments minus gain/loss on the disposal of assets.

FFO/net debt

Funds from operations divided by net debt.

FTE - Full-time equivalent

Full-time equivalent is a unit that measures work by converting work load hours into the number of people required to complete that task.

Gasunie - N.V. Nederlandse Gasunie

Gasunie is a European gas infrastructure company that transports natural gas and green gas in the Netherlands and the northern part of Germany. Gasunie is participating in the development of the North Sea Wind Power Hub.

GDPR - General Data Protection Regulation

The General Data Protection Regulation (EU) 2016/679 ("GDPR") is a regulation in EU law on data protection and privacy for all individuals within the European Union (EU) and the European Economic Area (EEA). It also addresses the export of personal data outside the EU and EEA areas.

GIS - Gas insulated switchgear

A switchgear insulated via SF_6 gas.

GRI - Global Reporting Initiative

The Global Reporting Initiative is a non-profit organisation that promotes sustainability and produces global standards for sustainability reporting.

GW - Gigawatt

A unit of power equal to one billion watts.

GWh - Gigawatt hour

A unit of energy equivalent to delivering one billion watts of power for a period of one hour.

Helaba - Helaba Pension Trust e.V.

Helaba Pension Trust e.V. is a subsidiary of German bank Landesbank Hessen-Thüringen and holds a part of the assets of the German pension plan.

HGRT - Holding des Gestionnaires de Réseaux de Transport d'Électricité S.A.S.

Holding des Gestionnaires de Réseaux de Transport d'Électricité S.A.S. is a holding company of EPEX SPOT power exchange.

HR - Human resources

Our HR department aims to make a distinctive contribution to TenneT's position as a leading TSO by attracting, recruiting and retaining qualified staff, and by creating a healthy and stimulating working environment.

HVDC - High-voltage direct current

A high-voltage, direct current system can transmit bulk electricity over longer distances than an alternating current system and with lower grid losses. As such, HVDC is used for connecting offshore wind farms to the onshore grid and for our Interconnectors NorNet to Norway, BritNed to the UK and COBRAcable to Denmark and NordLink to Norway.

ICF - Internal control framework

Framework for the set of internal controls, to provide reasonable assurance on the reliability of our internal and external reporting.

Market based congestion management is used to take into account the physical transmission capacity of the European power grid within the electricity market model.

IFRS - International Financial Reporting Standards

The internationally prescribed and recognised reporting guidelines.

Inbound / outbound flows of TenneT

Inbound flows are the amount of electricity in GWh transported from connected grids into our grid via the interconnections. Outbound flows are the amount of electricity in GWh transported from our grid via the interconnections to connected grids.

JAO - Joint Allocation Office
The merger of regional auction offices CASC.EU and CAO in June 2015 created the Joint Allocation Office for cross-border electricity transmission capacity; JAO is a collaboration of 20 TSOs from 17 European countries. It significantly increases the efficiency and transparency of the European electricity market, creating a single point of contact for market participants with harmonised auction rules that simplify trading and promises substantial savings to TSOs in the coming years.

KfW - Kreditanstalt für Wiederaufbau
KfW is the Reconstruction Credit Institute development bank owned by the German government.

kV - kilovolt
A unit of electric voltage equal to 1,000 volts.

KWK-G - Kraft-Wärme-Kopplungs-Gesetz
The German Combined Heat and Power Act.

LEAN
The core idea of LEAN is to maximise customer value while minimising waste. Simply, LEAN means creating more value for customers with fewer resources. The principles of LEAN were developed by the Japanese car manufactory Toyota.

LoR - Letter of Representation
A Letter of Representation is signed by the management of the Group and/or performance unit to attest to the accuracy of the financial statements.

LTIF - Lost-time injury frequency
The lost-time injury frequency is the number of lost-time injuries per million hours worked. A lost time injury is an injury that results in at least one day's absence from work.

MIGRATE - Massive InteGRATion of power electronic devices
The MIGRATE research programme seeks to develop solutions to technical issues

Moody's
Moody's Investors Service provides of credit ratings, research, and risk analysis.

MW - Megawatt
A unit of power equal to one million watts.

MWh - Megawatt hour
A unit of energy equivalent to delivering one million watts of power for a period of one hour.

Net debt
Gross debt minus cash and cash equivalents at free disposal.

Netbeheer Nederland
Netbeheer Nederland is the association in the energy sector representing the interests of national and regional electricity and gas network operators in the Netherlands.

NEN
NEN is a Dutch non-profit organisation that supports the standardisation process in the Netherlands.

NGO - Non-governmental organisation
A non-governmental organisation is a voluntary citizens' group that is neither a government initiative nor a conventional for-profit business.

NOKA - DC Nordseekabel GmbH & Co. KG
NOKA is jointly owned by TenneT and German development bank KfW. It is responsible for financing and building the German part of the NordLink cable.

NordLink
TenneT is jointly developing the NordLink interconnector with its project partners, the Norwegian TSO Statnett and German development bank KfW. With an overall transmission capacity of 1,400 MW, the subsea cable will run between Tonstad in the south of Norway and Wilster in northern German.

NOVI – Nationale Omgevingsvisie
The Netherlands' new Environment and Planning Act comes into effect in 2021, part of which is a single national roadmap for the living environment called the 'National Omgevingsvisie'.

NWE - north-west Europe(an)
A region in Europe that includes Netherlands, Germany, Belgium, Denmark, United Kingdom, France, and Luxembourg.

NWb - WENB Sector Energie NWb
NWb is a Dutch NGO for employers in the energy sector.

Oekom
Oekom research AG is a sustainability ratings agency and external assessor for benchmarking CSR reports.

Opex - Operational expenditure
Operating expenditure (opex) is the expenses that a company incurs as a result of its normal business operations.

OWF - Offshore wind farm operators
Offshore wind farms are constructed in bodies of water to generate electricity from wind.

PROMOTioN - Progress on Meshed HVDC Offshore Transmission Networks
A leading European research programme that will result in an offshore grid development plan for 2020 and beyond

Prosumers
Energy consumers simultaneously acting as producers

RCF - Revolving credit facility
A line of credit where TenneT pays a commitment fee and can then use the funds as and when they are needed.

RES - Renewable Energy Sources
All sources of renewable energy including sunlight, wind, tides, waves, biomass and geothermal heat.

RGI - Renewables Grid Initiative
The Renewables Grid Initiative is a unique collaboration of NGOs and TSOs from across Europe. It promotes transparent, environmentally sensitive grid development to enable the further steady growth of renewable energy and the energy transition.

ROIC - Return on invested capital
Earnings before interest and tax expressed as a percentage of the average invested capital during the year based on 'underlying' information.

S&P - Standard & Poors
Standard & Poors provides of credit ratings, research, and risk analysis.

SCL - Safety Culture Ladder
TenneT uses the Safety Culture Ladder (SCL) as a tool to increase safety awareness and enhance safety culture and not only within our own organisation but also for our contractors. The Safety Culture Ladder is a requirement in the selection phase of a tender as described in the 'Safety by Contractor Management' programme.

SDG - United Nations Sustainable Development Goals
The United Nations Sustainable Development Goals (SDGs), officially known as transforming our world: the 2030 Agenda for Sustainable Development, is a set of seventeen aspirational 'global goals' with 169 targets between them. This agenda is set by the UN.

SF_6 - Sulphur hexafluoride
An inorganic, colourless, odourless and non-flammable greenhouse gas that is used in the electricity industry to insulate high-voltage circuit breakers, switchgear and other electrical equipment.

SHE - Safety, health & environment
SHE is the set of activities relating to Safety, health & environment.

SINTEG - Schaufenster Intelligente Energie
With the SINTEG funding programme, the Federal Ministry for Economic Affairs and Energy (BMWi) aims to carry out a large-scale practical test for the energy supply of the future and the digitisation of the energy sector.

SLA - Service level agreement
A service-level agreement is an agreement between two or more parties, where one is the customer and the others are service providers.

Statnett
Statnett SF is the Norwegian TSO transmission system operator that TenneT and German development bank KfW are partnering with to build the NordLink cable between Germany and Norway.

SuedLink
A DC connection to transport electricity generated in the north of Germany to the south.

SuedOstLink
A DC connection to transport electricity generated in north of Germany to the south-east.

Sustainalytics
Sustainalytics is a sustainability ratings agency and external assessor for benchmarking CSR reports.

TSCNET
TSCNET Services is the service company of the TSC TSOs. The Munich-based company coordinates TSC's activities and provides integrated services for TSOs and their control centres

TSO - Transmission system operator
A transmission system operator transports electricity on a national or regional level from producers to distributers. A TSO is responsible for providing (1) power transmission services, by constructing and maintaining a robust high-voltage grid, (2) system services, by maintaining the balance between supply and demand of electricity 24/7 and (3) facilitating a smooth functioning, liquid and stable electricity market.

UN - United Nations
An international organisation formed to promote international peace, security, and cooperation under the terms of the charter signed by 51 founding countries in San Francisco in 1945.

UNGC - United Nations Global Compact
A call from the UN to companies to align strategies and operations with universal principles on human rights, labour, environment and anti-corruption, and take actions that advance societal goals.

VKE - Versorgungskasse Energie VVaG
Versorgugnskasse Energie VVaG is pension fund for energy mutuals and a subsidiary of E.ON SE. It holds a part of the assets of the German pension plan.

WACC - Weighted average cost of capital
The WACC is the rate that a company is expected to pay on average to all its capital providers to finance its assets.

XBID - European cross-border intraday solution
XBID enables continuous trading of electricity across 14 countries, including the Netherlands and Germany, and automatically couples 10 local intraday markets.

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We look forward to receiving your feedback on this report. Please send an email.

Disclaimer

`We´, `TenneT´, `TenneT Holding´, `the Group´, `the company´ or similar expressions are used in this report as a synonym for TenneT Holding B.V. and its subsidiaries.

Parts of this report contain forward-looking information. These parts may include unqualified statements on future operating results, government measures, the impact of other regulatory measures on the activities of TenneT as a whole, TenneT´s shares and those of its subsidiaries and joint-ventures in existing and new markets, industrial and macro-economic trends and TenneT´s performance in these. Such statements are preceded or followed by or contain words such as `believes´, `expects´, `anticipates´ or similar expressions. These forward-looking statements are based on current assumptions concerning future activities and are subject to known and unknown factors, and other uncertainties, many of which are beyond TenneT´s control, so that future actual results may differ significantly from these statements.

All financial information in this integrated annual report is reported in millions of euro, unless stated otherwise. As a result, small rounding differences may occur.

TenneT is a leading European transmission service operator (TSO), with a mission to ensure a secure supply of electricity to 41 million people in the Netherlands and large parts of Germany. We maintain a network of high voltage lines, of approximately 23,000 kilometres over land and sea. We are one of Europe's major investors in national and cross-border grid connections, linking North West Europe's energy markets and facilitating the energy transition. We employ over 3,400 people, turn over EUR 4.2 billion and have assets of EUR 22 billion. As we fulfill our mission, we make every effort to meet the needs of society by being responsible, engaged and connected. **Taking power further.**

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