TenneT Holding B.V.

Integrated
Annual Report 2019

TenneT
Taking power further

Key figures 2019

Safe workplace

Safety (TRIR)

4.8

Diverse workforce

Gender ratio

23% 77%

Satisfied capital providers*

ROIC

5.1

Environmental impact

% Greened of our carbon footprint

27.4%

Grid availability

Grid availability

99.9998%

Safeguard capital structure*

FFO/Net debt

14.8%

Future proof grid*

Annual Investments (EUR million)

3,064

Our workforce

Number of employees (internal and external)

4,913

Engaged stakeholders

Reputation survey

fairly strong to very strong

Healthy financial operations*

EBIT (EUR million)

768

* Based on underlying figures

Integrated Annual Report 2019

Contents

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

TenneT at a glance 2019

Q1

We partnered up with Gasunie and Thyssengas in the Element Eins project, where we aim to find solutions to connect both electricity and gas infrastructures through the production of hydrogen.

Together with 50Hertz, Amprion and TransnetBW, we submitted the German Grid development plan (Netzentwicklungsplan) to the BNetzA after taking comments from a public consultation into consideration.

Q2

We decided to increase our biodiversity measures at 462 of our stations in the Netherlands and Germany.

We welcomed new members of the Supervisory Board (Edna Schöne, Essimari Kairisto and Stijn van Els) and Tim Meyerjürgens as COO in our Executive board in the first half of 2019.

We successfully issued another EUR 1.25 billion of Green Bonds.

Q3

We completed the COBRAcable in September 2019, which now allows green energy to flow between the Netherlands and Denmark.

After five years of construction, the Randstad 380 kV North Ring was commissioned. This will further strengthen our grid in one of the most densely populated regions in the Netherlands.

Q4

In November 2019, TenneT entered into the largest sustainable Revolving Credit Facility in the Benelux. This EUR 3 billion facility provides TenneT with more options to drive the energy transition.

We completed Borssele Alpha, TenneT's first, and at the same time largest connection system for wind farms on the Dutch North Sea.

We have completed our project at the Elbe Crossing in Germany. With this project, we quadrupled our capacity (from 2.4 to 9.6 gigawatts (GW)) and it created TenneT's most powerful line, using the highest masts in Europe.

We organised an annual event combining forces together with over 150 energy professionals to discuss how we can drive the energy transition.

TenneT announced plans to invest an additional EUR 215 million in the high voltage grid in the north of the Netherlands to increase connection capacity from solar and wind farms.

Letter from the Board

Ben Voorhorst
Chief Operational Officer

Manon van Beek
Chief Executive Officer

Otto Jager
Chief Financial Officer

Tim Meyerjürgens
Chief Operating Officer

Dear all,
To put it in a nutshell: our task is it, to keep the lights on. And we are good at it. With 99.9998% our grid availability is amongst the highest in the world. But times are changing, and we face new challenges as we prepare for a clean energy future, largely dependent on volatile renewable energy sources such as wind and sun. As we transition to a sustainable, reliable and affordable CO_2-free energy system, the tried and trusted methods and solutions we applied during the past 20 years, will not sustain us in the decades ahead.

We bring expertise and experience, but we don't have all the answers. We need to transform the way we collaborate, make decisions and solve problems to navigate the challenging times ahead. Being open and honest about these challenges is important to find the best way forward in partnership with others.

Last year exemplified the scale of change. It was a pivotal year for TenneT. We recognised that we are at a crucial point, facing the mounting challenges of a fast-paced energy transition while simultaneously launching an internal, multi-year effort to optimise our organisation, processes and strategy execution. But it is not easy to move as fast as we want to. We can only do this in close step with our partners and stakeholders and within the constraints of what is possible. Time is short and we face limited resources, including the availability of talent and external service providers.

We share a degree of concern about the affordability of the energy transition and the social acceptance that goes with it. It's primarily funded with public money – through taxes and energy tariffs. It can sometimes be difficult to explain why the energy transition requires such enormous investments. Even though sun and wind come for free, harnessing their power for society's ever-growing appetite for electricity is technically challenging and costly. Especially when near-perfect reliability and natural and environmental preservation are an essential part of the equation.

In order to implement the sustainable energy policies of the Netherlands and Germany, drive the energy transition and carry out large-scale maintenance work on our high-voltage grids, our annual investments will need to expand from approximately EUR 2 to 3 billion today to approximately EUR 4 to 5 billion within the next five years that implies that we are preparing for doubling our execution capacity in the next years. As announced earlier and recognised by our principal shareholder, the Dutch State, it is clear that additional equity capital is needed to maintain our solid standing in the financial markets and to ensure favourable access to a wide-ranging supply of financing sources.

Our aim is to further build on TenneT's strength as an integrated, European company. The energy transition recognises no borders – and we believe in a unified, rather than fragmented country-by-country approach. This is the best way to ensure the highest availability of our grid when it either gets flooded with green electricity, or when it is dark and windless. It also ensures efficient investment across a larger geographical area, avoiding costly miniature solutions. Finally, it will bundle knowledge and spur cooperation to achieve ambitious climate goals at a faster pace. As a consequence, we would like to further broaden and professionalise our existing shareholder base with a European-oriented party, that will continue to enable us to drive integrated network development, planning and operations across borders and facilitates a uniform, functional management of the entire company. We expect to reach a satisfactory solution on this before the end of 2020.

With much investment and innovation required to deliver new energy solutions, the bill will rise in the foreseeable future, whether funded through tariffs or taxes. Although our share of consumers' electricity bills is relatively low (less than 10%), the costs of the necessary investments in high-voltage networks will increase and we want to be as prudent as possible about how we invest our money.

Although major expansions of our onshore and offshore grids are required, we don't believe in endlessly more physical infrastructure. That's why, together with a number of partners, we are working on the application of new, smart technologies, such as blockchain data, real time system operations, hydrogen conversion and sector coupling. Considering that we are dealing with a high voltage grid that was mainly built in the 1960s and was never intended for the volatility of supply we see today, our thinking must extend beyond the legacy network.

That's why we focus on three main points when designing an energy system fit for a fossil-free future. Firstly, expansion – by which we mean extending the reach of our grids to connect and carry the power of on- and offshore wind to millions of users across the Netherlands and Germany and beyond. Transport across large distances, combined with international exchange of green electricity, is vital for the success of the energy transition. Secondly, optimising the utilisation of our existing grids will help us achieve a clean energy future faster. A promising development in this respect is the advanced thinking about an integration of electricity and gas power networks. In addition, automated system operations will help us achieve higher grid utilisation, which we are exploring together with universities, distribution system operators, suppliers and governments. With this new technology we expect to unleash latent grid capacity instead of upgrading or expanding our assets. And finally system thinking and sector coupling, where flexiblity is key. Flexibility of demand and supply of electricity is essential to keep the system in balance while intermittent renewable energy sources will increasingly dominate the scene. Flexibility can be achieved, among other things, from interconnectors, storage (batteries, hydrogen conversion), comprehensive participation of consumers in the energy system and demand-side response.

This presents the framework of our work in the coming years, something that we feel very passionate about. We need everyone at TenneT as well as all the partners with whom we drive the energy transition, to pull this off together. We will also practise what we preach, with a comprehensive plan to reduce our own carbon footprint and build our reputation as a green grid operator.

Clearly, the pressure on us and our partners to deliver, to perform, is high. This does not mean that haggling with an important theme such as security is acceptable. Working safely, where everyone can come home healthy in the evening, simply is a prerequisite in everything we do and we require the same dedication from our partners when it comes to safety. TenneT will continue to keep a special focus on this theme.

We would like to thank everyone at TenneT for their hard work and dedication during 2019 and look forward to building on our achievements in the challenging but exciting time ahead.

TenneT Holding Executive Board

About TenneT

Profile

TenneT is Europe's first cross-border grid operator. We design, build, maintain and operate the high-voltage electricity grid in the Netherlands and large parts of Germany and facilitate the European energy market. 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 and to playing our role in driving the energy transition. We transport electricity over a network of approximately 23,500 kilometres of high-voltage lines, from wherever and however it's generated, to over 42 million people while keeping electricity supply and demand balanced at all times.

Our task

We transport electricity across borders, connecting countries and ensuring the power supply on which we all depend. These are regulated tasks that take place within the framework of Dutch and German legislation and regulations. The Dutch State (represented by the Ministry of Finance) is the 100% shareholder of TenneT. The vast majority of our activities are regulated by the Autoriteit Consument & Markt (ACM) in the Netherlands and the Bundesnetzagentur (BNetzA) in Germany.

Designing the energy system

Energy transition

Balancing supply and demand of electricity is becoming increasingly complex as renewables flow into the power grid. Renewable energy sources, such as solar, biomass, hydropower and wind, are often located in remote areas, such as the North Sea. Bringing this energy onshore and transporting it across vast distances is a challenging task, demanding new thinking and pioneering design. The energy transition – the switch from traditional fossil fuels to renewable energy sources – is one of the biggest challenges the energy sector has ever faced. It is an immense task for grid operators in particular. This is likely to remain the case for the foreseeable future. We have a strong track record for security of supply and our ambition is to keep it at the highest possible level: our grid was available 99.9998% of the time during 2019.

Our role

As the debate on the climate emergency gathers pace in society, we are determined to play our part to accelerate the energy transition. We are fully aware that we cannot achieve our ambitions alone; we do not have all the answers. Real leadership is about bringing people together. That's why we're working with governments, industry and other stakeholders towards a more sustainable, affordable and reliable energy future. This is pioneering work and we are fortunate to be in a position where we can contribute to changes we believe society urgently needs. We're happy to share our ideas with others who share our commitment to a brighter future, because it benefits us all. We are all in the same position. At TenneT, we are proud to be lighting the way together.

Building, maintaining and operating the high-voltage electricity grid

Transporting electricity

The (extra-) high-voltage grid is the backbone of the electricity supply system. It is used for the transport of high-voltage electricity over long distances. We are a key player in the electricity supply chain. This consists of electricity producers from conventional and fast-growing renewable energy sources and large industry and distribution system operators (DSOs). In addition, we import and export electricity across borders to keep the grid stable and balanced at all times.

Because wind farms and other (renewable) energy sources are often far away from where electricity is used, we need to carry it over large distances without incurring major energy losses on the way. To achieve this, we transport electricity at very high voltages: 110 up to 525 kilovolt (kV) in the Netherlands and in Germany. Also, electricity generated at sea, for instance, is transported via subsea cables and then connected to the high voltage grid. Maps of our onshore and offshore high voltage grid can be found on our corporate website.

Maintaining the balance between supply and demand

As electricity is fed into the grid, we need to carefully balance the electricity supply with demand. The frequency of all electrical devices we use is 50 Hz. If the voltage in our high-voltage grid is not exactly 50 Hz, devices will not work properly. So, it's crucial that the voltage remains constant.

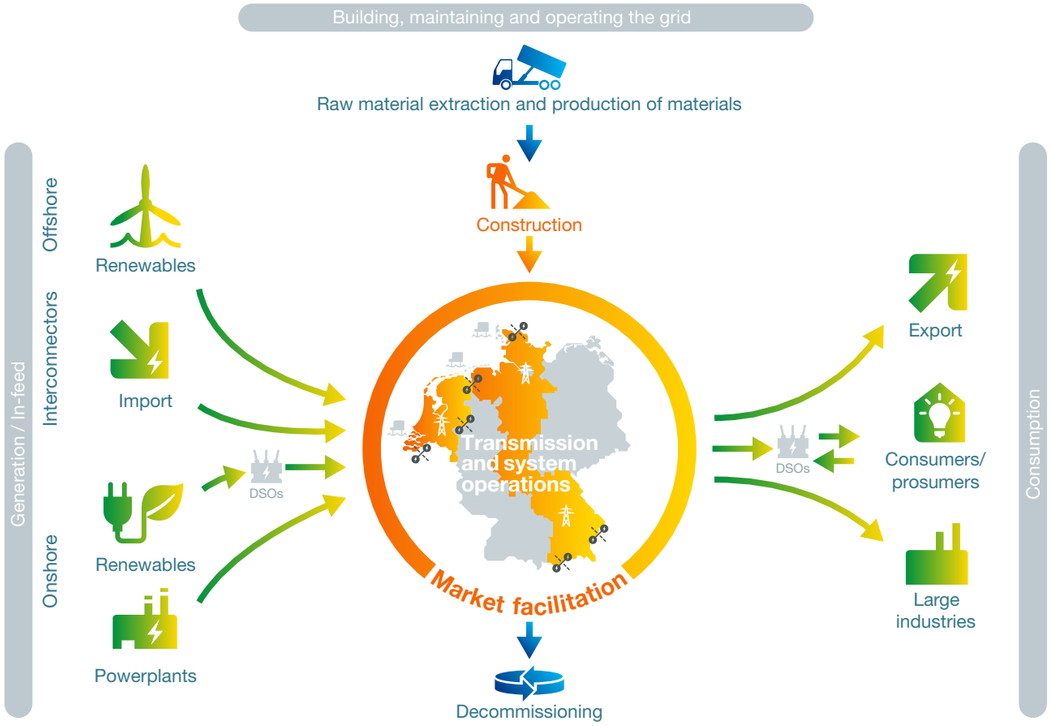
And since electricity cannot be stored in large quantities, continuous adjustment of supply and demand is needed to ensure security of supply. To do this, we have control centres in the Netherlands and Germany, where transport, supply and demand is monitored and balanced 24 hours a day, seven days a week.

Facilitating the European energy market

Electricity recognises no geographical borders, and we believe 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 facilitate a single market that guarantees a reliable electricity supply at a fair price.

The majority of our activities are so-called regulated activities. A full overview of our group structure can be found on our corporate website.

TenneT in the supply chain



Our supply chain explained

You can view our supply chain in two different dimensions, horizontally and vertically. Horizontally, to one side, you see from which source the electricity comes from, in the middle you see how we design, build, maintain and operate the high-voltage electricity grid in the Netherlands and large parts of Germany and facilitate the European energy market. On the right-hand side you see that we transport electricity to large industries and via DSOs to customers. In addition, we export electricity to the countries around us.

On the vertical axis you see that we use raw materials, such as copper and aluminium, which are mined by third parties and used in our projects to build and maintain our assets.

These assets are crucial for us to be able to operate our grid. When an asset is end-of-life, we need to decommission it. We are aware of the impact we have on our supply chain. In realising our projects, keeping our asset base up to par to secure supply and also further upstream and downstream in the supply chain. We want to be a green and responsible grid operator and take steps to reduce our negative impacts and even create positive impacts, where possible.

Our strategy and value creation

Our strategy

In 2019, we finalised the reorientation of our strategy. This has resulted in the following four strategic goals:

Strategic goals

Our strategy helps us drive the changes we believe society really needs, and we're happy to share those ideas with others who share our commitment to a brighter future, because it benefits us all. At TenneT, we believe that we are lighting the way together. With this, we aim to meet the needs of society. This will require us all to show courage, connect with each other and take ownership.

How our strategic goals and our value creation model are linked, is depicted in the table in the 'Materiality Analysis' section of this chapter. Here you can find the four strategic pillars, to which chapter they are linked and with that how they are linked to which output/outcome of the value creation model. Note that the strategic pillar 'Energise our people and organisation' is covered in multiple topics, but all related to 'Create a sustainable workplace'.

Our balancing act

Securing supply is our core task and our main responsibility. We aim to ensure a safe, reliable and secure supply of electricity to 42 million end-users, 24 hours a day, 365 days a year. We are committed to secure supply, not only today, but also tomorrow.

That is why we are working together with our stakeholders and through partnerships to shape the future energy landscape. We believe that this requires a multi-dimensional decision-making process in which we not only consider security of supply, but also how our decisions affect sustainability and affordability. This is a constant balancing act, in which we aim to make decisions that satisfy all three dimensions in the best way possible.

For example, when we plan our projects, we balance security of supply with making both sustainable and affordable choices in realising our assets. This is not always easy. An example of this could be, when we are planning a route and we foresee that the capacity might be insufficient to accommodate a future increase of renewable energy sources being connected to the grid. An option would be to increase our capacity now, which may require a larger investment, however, this also has clear benefits. Examples of this include less inconvenience for local communities as we can avoid expanding our capacity later and also avoid certain costs related to permitting. However, this way of forward-looking working is not encouraged in the current regulatory framework and therefore it is not common practice.

The balancing act is also reflected in the choices we make to build, maintain and operate our grid. We need to consider how these choices could affect the supply of electricity, the natural environment and the societal costs. An example of this is the use of SF_6 gas. This is a gas which we use as an insulator and extinguisher in some of our assets. However SF_6 is a strong contributor to greenhouse gas emissions and can have damaging environmental impact if leakages occur. Currently, we face limitations for switching to a more eco-friendly alternative to SF_6. Alternative solutions are still fairly new and relatively untested. They involve higher costs, but more importantly, they cannot be used with the same certainty, which imposes a risk for our ability to secure supply on a constant level. The question of switching to an alternative to SF_6 is therefore a continuous balancing act for us. We are investing in innovations to make new technologies sufficiently reliable for our requirements, while at the same time bringing costs down.

These examples illustrate that we do not just choose and find one of these elements more important than the other, but we strive to find the right balance between all three elements.

TenneT plays a vital role in society. By securing supply of electricity, we make a fundamental difference to the people working and living in the areas we serve. As such, our work involves a wide range of stakeholders, including our shareholder, local communities, our employees, regulators, investors, non-governmental organisations (NGOs), politicians, media, customers, suppliers and other European TSOs. We identified our main stakeholders in 2013 based on interviews with TenneT's senior management, 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, NGOs, local communities and other European TSOs).

As we need to build strong collaborations with partners to achieve the energy transition, we aim to re-examine our range of stakeholders as part of our Transformation and potentially expand it with partners in the energy sector and across sectors. If you would like to know who our stakeholders are and what we have done, please visit our corporate website.

How we create value

The way we create value is represented in the image on the following pages, using the concept of value creation as described in the International Integrated Reporting Framework of the International Integrated Reporting Council (IIRC). By means of the six inputs defined by this framework (financial, manufactured, intellectual, human, social & relationship and natural) we describe our input, output/outcome and impact. This model is the basis of our report. Our inputs, through which we create impact for society, are influenced by our strategy, our core tasks, how we balance our decisions and how we operate. All of these are described in this chapter. More information on the specific inputs and our related output/outcomes are disclosed in the chapters related to 'Our Performance in 2019'.

The way we aim to create long-term value for society is defined alongside the six inputs from our value creation model. Here we aim to:

Deliver a high security of supply. We have built extensive experience in operating the electricity grid and a clear vision on how to design the system to secure supply efficiently and effectively. In addition, we have years of experience in realising projects onshore and offshore that will help us ensure security of supply tomorrow. This is how we deliver on our promise and fulfil our societal role in making sure that we keep the lights on in a way that is sustainable for years to come.

Ensure critical infrastructure for society. We build and maintain the electricity grid, which has a vital role in the lives of our stakeholders. With the materials and products we use to build and maintain our grid, such as our cables, stations and interconnectors, we create the critical infrastructure that enables us to transport the electricity which supports society every day.

Create a sustainable workplace. Our people are our most important asset and essential to realising our ambitions. Our policies and actions, such as our safety vision, how we train our people and how we create an inclusive environment where people are energised to work, help us create a stable, safe and sustainable workplace.

Create value to transition to a low carbon economy. Our aim is to drive the energy transition. With the knowledge and experience gained the past decades, we want to contribute and help shape the future energy landscape. Realising our investment programme and innovation portfolio will contribute to the climate targets in the Netherlands and Germany, which is essential on the pathway to a low carbon economy. Looking at our business from a natural capital point of view, we create positive impact by connecting renewable energy sources to the electricity grid. This does however goes hand in hand with impact and dependencies related to the use of energy sources, the natural environment and materials to build operate and maintain our grid.

Secure a solid financial performance and investor rating. Our main sources of funding are our regulatory revenue and external financing, increasingly from green financing. Maintaining our strong credit rating by retaining a balanced equity to debt ratio is essential to safeguard our financial health, as well as by delivering a return on capital that meets the expectations of our capital providers. Our societal role is always part of the choices we make and the actions we take, so affordability is a key element in our decision-making. Handling this carefully and maintaining a healthy financial position allows us to build trust with our stakeholders.

Solve societal challenges with stakeholders and through partnerships. We are very aware that we operate in a multi-stakeholder landscape. We need to build strong relationships with our stakeholders to fulfil our societal role. On the one hand, this is visible in the connections we make as we undertake our projects, such as engaging with local communities, NGOs and local governments to gain acceptance. On the other hand, we also aim to build new relationships through partnerships. These collaborations are essential to find the answers and innovations we need to shape the energy landscape of the future. Our current relationships and social connections help us achieve this and we aim to expand this further.

Our ambition is to show our societal impacts as part of our value creation, but we have not yet been able to do so for all of these areas. This is being further developed in the next years. Together with others, we are following up on this and for now, we have started by showing elements of our impacts with respect to our natural capital. More information can be found in the chapter 'Create value to transition to a low carbon economy'.

Inputs

Extensive knowledge of and experience with operating the system and integrating energy markets

Cables, lines, stations, offices and interconnectors

Our skilled and motivated people

Energy, natural environment and materials to build, maintain and operate our grid

Regulatory return (Green) Financing

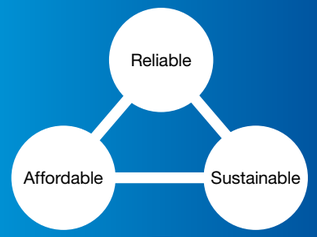
Strategic partnerships and our engagement with (project) stakeholders

How we create value

Strategy

- Drive the energy transition
- Energise our people and organisation
- Secure supply today and tomorrow
- Safeguard our financial health

Balancing our decisions



Create stakeholder value by providing security of electricity supply in the markets we serve and by pursuing, as a leading TSO, the development of an integrated and sustainable European electricity market.

How we operate

Enable the core activities

- Build the electricity grid
- Maintain the electricity grid
- Operate the electricity grid
- Enable the energy market
- Designing the energy system

Outputs/Outcomes

Deliver a high security of supply

With our knowledge and experience in operating the system and following up on our ambition to further integrate European energy markets, we are able to provide a secure supply of energy. In 2019, we have been able to achieve a **99.9998%** availability of our grid. The instances we were unable to secure supply, were the result of **14** interruptions. Our knowledge, experience and vision with respect to an integrated European energy market is reflected in our grid and the **15** interconnectors that have been realised as of 2019.

Ensure critical infrastructure for society

With our assets, we ensure that we are able to fulfill our core activities and tasks. We keep building and maintaining our grid to realise the critical infrastructure, which helps us drive the energy transition and supports the economic development and human wellbeing of the people that live in our serving area. **We expected to invest EUR 2.8 billion in 2019, of which we were able to realise EUR 3.1 billion**.

Create a sustainable workplace

Our goal is to create a working environment where our people feel safe and valued. We strive to bring out the best in our people to help them develop themselves and organise this in a way that energises them. This year we spent **EUR 2,371 per employee** on training. Unfortunately we did not manage to have zero safety incidents and recorded a **Total Recordable Incident Rate (TRIR) of 4.8**.

Create value to transition to a low carbon economy

We want to drive the energy transition, because we believe we are able to make a significant contribution. Realising our investment programme and innovation portfolio will contribute to the climate targets in the Netherlands and Germany, which is essential on the pathway to a low carbon economy. In 2019 we realised **1.6 GWh** additional offshore capacity, increasing the amount of connected renewable energy sources to the electricity grid in the Netherlands and Germany. At the same time, we ourselves have the firm ambition to be climate neutral as early as 2025, so that we too will contribute to part of the solution. In 2019 our (gross) carbon footprint was **2,525,904 tonnes CO_2**, which has been greened for **27.4%**.

Secure a solid financial performance and investor rating

TenneT is a regulated company, that has an important societal role. That is why we strive to make choices considering the impact on societal costs. To finance our grid investments, we raise the necessary financing and meet the expectations of our capital providers. This is reflected in various ways, such as our **credit rating of A3 S&P and A- Moody's, our ROIC of 5.1 and a S&P ESG evaluation, with a score of 83 out of 100 and a classification 'strong'**.

Solve societal challenges with stakeholders and through partnerships

We believe in the power of cooperation. Working together will help us achieve the next steps with respect to the energy transition faster and better. Furthermore, in realising our future grid, we engage with our stakeholders to consider societal objectives. That is why we also measure our reputation on a bi-annual basis. The outcome of this is a **reputation that can be classified as 'fairly strong to very strong'**.

Stakeholders

- Customers
- Debt investors
- Employees
- Governments
- Local communities
- Media
- NGOs
- Other European TSOs
- Shareholders
- Suppliers

Impacts

Materiality analysis

At TenneT, engaging with our stakeholders is a crucial part of our business. Our purpose is strongly rooted in society and success depends on working closely with a broad range of players including municipal governments, NGOs and local communities.

Engaging with our stakeholders provides valuable insight to help us determine the right policies and appropriate actions. In 2019, we re-evaluated our list of relevant topics. We reviewed this against relevant external reporting standards, such as GRI and SASB, as well as relevant internal information. We also performed a peer analysis by reviewing the list of topics relevant to other European TSOs and DSOs. This resulted in a list of relevant topics, of what we believe are the most important and relevant topics for TenneT. Compared to previous years, we updated this list and reduced the number of topics. Several topics on our previous list were combined and new topics were added, such as access to our grid. More information on this is included in our Additional CSR data document on our website.

During 2019, we also redefined our materiality analysis policy, to determine our most material aspects. We now perform our materiality analysis on a bi-annual basis, based on a survey of stakeholders in which we ask them to provide their views on the importance of specific aspects included on the topic list.

Furthermore, TenneT's economic, social and environmental impact was determined through internal analysis. This determines whether our impact per topic is either high, medium or low. This, together with the outcome of the stakeholder questionnaire, is the basis of the materiality analysis in 2019. This re-evaluation resulted in four key material topics: financial health, security of supply, stakeholder engagement and driving the energy transition. In the table below, we have indicated where more information can be found per material topic. The materiality process is thoroughly embedded in the TenneT organisation. The final step in the validation process is the approval from the CSR board. Both the CEO and CFO are members of this board.

Our policies, decision-making and our reporting are not limited by the most material topics in this analysis. We also consider other topics, which we disclose in this report or on our corporate website.

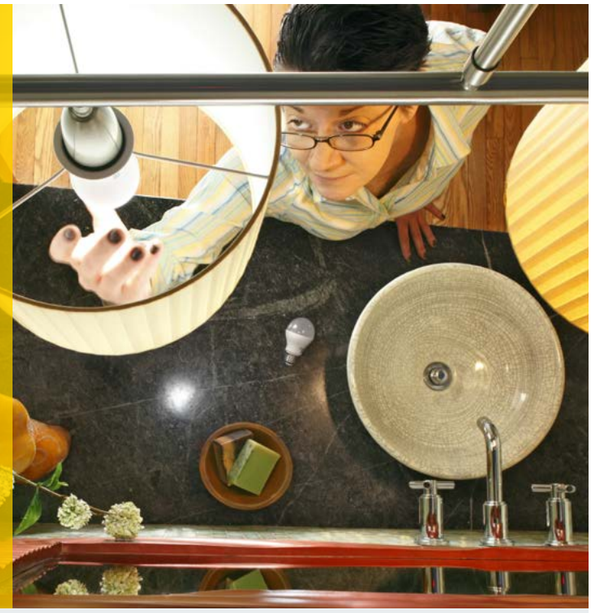
In addition, we also report on the contribution we are making with respect to the UN Sustainable Development Goals (SDGs). In this, we reached out to our stakeholders and requested feedback on the SDGs we currently focus on. The outcome of this is that we believe our current focus is still valid. With our core business activities, we clearly contribute to SDG 7 and SDG 9 and in the execution of these activities, we realise we have an impact on other SDGs. This relates to SDG 5 and SDG 8 are relevant to our people policies and actions and SDGs 12, 13, 14 and 15 are relevant to the choices we make that affect our planet. We have linked the SDGs to the relevant sections in our report in the table below.

Materiality

#	Subject
1	Financial health
2	Security of supply
3	Our own environmental impact
4	Health and development of our people
5	Diversity and inclusiveness
6	Safety
7	Talent attraction
8	Responsible supply chain practices
9	Stakeholder engagement
10	Strategic partnerships
11	Driving the energy transition
12	(Cyber) security
13	Accessibility of our grid

SDG	Subject	Reference	Related metrics (where available)
5	5 7	Create a sustainable workplace	- Percentage of female employees (headcount) - Percentage of females hired at management level - Percentage of female EB and SB members
7	1	Secure a solid financial performance and investor rating	- Return on invested capital
	11 13	Deliver a high security of supply	- Number of offshore connections
8	4 6 8	Create a sustainable workplace Ensure critical infrastructure for society	- Amount spent on training - Total Recordable Incident Rate
9	2 11 13	Deliver a high security of supply	- Grid availability - Annual investments
	9 10	Solve societal challenges with stakeholders and through partnerships	
	12	Ensure critical infrastructure for society	
12	3	Create value to transition to a low carbon economy	- Reduction of virgin copper use - Reduction of non-recyclable waste
13	3	Create value to transition to a low carbon economy	- Gross / net carbon footprint - SF_6 leakage
	11	Deliver a high security of supply	
14	3	Create value to transition to a low carbon economy	- Environmental incidents
15	3	Create value to transition to a low carbon economy	- Environmental incidents

We describe our performance in 2019 in the following six chapters, each describing one of the six outputs / outcomes as mentioned in our value creation model.



Our performance in 2019

Deliver a high security of supply

In today's connected world, people expect that power will always be available, when we flick a switch or reach for a power outlet. We rely on electricity to power many aspects of our lives –at work, home and on the move. Our modern, connected and growing high-tech economy relies on a high-performing electricity infrastructure. If we fail to meet the energy needs of society, we risk slowing economic growth and social prosperity.

As the grid operator for the Netherlands and large parts of Germany, our biggest responsibility is to ensure a safe, reliable and secure supply of electricity to 42 million end-users, 24 hours a day, 365 days a year. We have worked hard to meet this expectation during every step of our 20-year journey. This is also becoming more complex and dynamic as more renewable energy sources (RES) are introduced into the energy mix. By nature, power generated by the sun or wind is volatile, which makes it more dynamic for TenneT to balance supply and demand of electricity in the grid. To manage this, we need to be innovative, agile and more forward-thinking than ever before.

Furthermore, TenneT plays a critical role in helping society make the transition to a low carbon economy. The challenge is how to achieve this energy transition on the scale and at the speed society requires, while also considering the affordability of this societal change. It is a challenging quest for our entire industry, sparking a new age of ground-breaking invention and collaboration the world over.

As a cross-border, interconnected energy company working closely with government and partners across the energy spectrum, TenneT is at the centre of the change. We experience first-hand society's growing demand for electricity. We contribute by connecting more renewable electricity into the grid, and by making the grid smarter through continual innovation. Step by step, and together with many partners, we are helping to realise a new energy future.

Despite our efforts to secure supply of energy at all time, we noted a few outages, such as the interruption that occurred at the Maasvlakte in October 2019. However, we are proud of the work of our colleagues, who have worked hard to secure supply for the people that live in the areas we serve. This has resulted in a grid availability of 99.9998% in 2019.

Grid availability	Target	2019	2018	2017
Onshore[1]				
Grid availability	99.9996%	99.9998%	99.9988%	99.9986%
Interruptions	N/A	14	17	11
Energy not transported (MWh)	N/A	156	1,244	1,072
Offshore				
Grid availability	92.90%	93.20%	94.50%	97.80%

[1] In 2018, the definition for this indicator has been updated. The table shows the 2019 and 2018 result based on the updated definition. Based on the former definition, the 2019 figures remain the same, however for 2018 this results in a grid availability of 99.9988%, 16 interruptions and 1,184 MWh of energy not transported.

Investing to maintain security of supply

Maintaining security of supply also means investing in new assets, performing necessary maintenance and further linking our grid to the European electricity network. As a result, TenneT invested EUR 3.1 billion in critical infrastructure last year – including new high-voltage power lines, new cross-border connections and offshore platforms in the North Sea to bring wind-generated electricity onto the mainland, see Ensure critical infrastructure for society. Upgrading and futureproofing our network in this way allows us to keep our grid availability performance amongst the highest in the world.

One of the most important reasons for investment is to help the grid cope with the intermittent peaks and troughs of in-feed from wind and solar energy. We need to make ongoing investments in the grid to help us overcome this volatility and maintain a secure supply. An example of this is our 'Beter Benutten' (Utilise Better) programme. Started in 2019, this will increase the capacity of the national 380 kV electricity transmission network in the Netherlands. It does not involve installing new lines but increasing the capacity of the existing connections. The first stage of work began with the Lelystad-Ens connection. Four other connections, will then be upgraded between 2019 and 2024. Investments like this will enable the network to transport more electricity in the future, and help it to cope with the strongly fluctuating in-flows of sustainable energy.

Another example is our project at the Hamburg/Nord – Dollern (Elbe Crossing) in Germany. Here we have invested in our grid and have quadrupled our capacity (from 2.4 to 9.6 gigawatts (GW)). This has created TenneT's most powerful line, using the highest masts in Europe.

Flexibility for the future

To meet the challenges of the energy transition and fulfil our mission to provide security of supply for society, we must realise all capabilities of our grid so that it is fit for the future. To do this, we must harness innovations, in both the market and technology, to develop more flexibility that can support the system.

Doing this is not only a matter of building more assets. We also need to be smarter, including using digital solutions to prepare our grid for more volatile renewable energy sources. As such, we are investing in many innovations to unlock new flexibility, such as advanced data analytics, crowd balancing and blockchain technology.

We work on this ourselves and more importantly, with our partners. There are several examples from 2019, including our project with Sonnen E-services, a company that specialises in energy storage systems. This partnership aims to manage the exchange of electricity between different sources, including wind, solar, combined heat and power (CHP), electric cars and electric pumps, in order to get more flexibility in the system. Another example is Innosys 2030, a collaborative project that explores innovations to boost grid flexibility and automation. Furthermore, TenneT is partnering in Element Eins, an important project exploring how the electricity and gas power systems can come together to help overcome peaks and troughs in wind and solar energy. For more detail and other examples of partnerships, see Solve societal challenges with stakeholders and through partnerships

Securing supply not only today, but also tomorrow

In securing supply, we do not merely focus on the present, we also plan ahead to secure supply in the future. We see an ongoing debate in society with respect to climate change and ambitions of (local) governments to step up their ambitions.

We are helping governments in our service area to realise these ambitions. An example of this is with our offshore projects, where we bring the steadily growing amount of wind generated electricity to land.

In its 20-year journey, TenneT has become a leading offshore TSO, playing a strong role in building an offshore grid in the North Sea that will help to connect new wind power capacity to the onshore electricity network. Major projects include BorWin3 in the German North Sea and Borssele Alpha in the Dutch North Sea, which were commissioned in 2019 (see: Ensure critical infrastructure for society). These are critical steps in realising the offshore grid, bringing clean wind-powered electricity to millions of users across Germany and the Netherlands. We will continue to put the 'dot' on the horizon to push the transition forward. For instance, with respect to our partnership related to the North Sea Wind Power Hub.

Connecting across borders

Ensuring security of supply also means connecting European energy markets so we can share electricity with our neighbours. TenneT has long been a pioneer in building cross-border connections and supporting the evolution of an integrated European electricity trading market.

An important example is the COBRAcable between the Netherlands and Denmark, which became available for the electricity market in September 2019. The 325 km-long subsea high-voltage direct current cable has a capacity of 700 megawatts (MW) and will enable the Netherlands to import more sustainable electricity, mainly wind energy from Denmark. It can also be used to export electricity to Denmark when prices are low in the Netherlands. The project was supported with a European Energy Programme for Recovery (EEPR) grant from the European Commission to stimulate innovation.

The COBRAcable is an initiative of TenneT and the Danish electricity and gas grid operator Energinet. With construction starting in 2016, the cable runs between Eemshaven (the Netherlands) via the German Bright and Endrup (Denmark). Two onshore converter stations, one in the Netherlands and one in Denmark, convert alternating current (AC) into direct current (DC) and vice versa. This is beneficial when transporting electricity over longer distances as it reduces the losses in the system.

Another example is NordLink. This will be the first direct power connection between Germany and Norway. The high-voltage DC link will enable the exchange of 1,400 MW of renewable energy – wind power from Germany and hydropower from Norway. NordLink will contribute to the energy transition in Germany and Europe. Enabling the exchange of renewable energy between the two countries will not just help to lower energy prices, but also facilitate the integration of the European power markets. This connection is planned to be fully in operation in 2021.

Cyber security

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 cyberterrorism, to be higher than conventional computer 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. Moreover, we continuously perform penetration tests. More details related to our cyber security risks can be found in our Governance and Risk management chapter.

What could prevent us from realising our goals?

In today's cross-border energy market, security of supply is enhanced by the interconnectivity of the European transmission grid. 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 – is having a significant impact on the entire European grid. Dealing with European grid issues has become more of a daily challenge, especially as the further integration of renewables and reduced availability of conventional energy production has increased the likelihood of critical situations. This is particularly likely during the autumn and winter. To address this requires international alignment of political targets. TenneT works towards this by engaging in and providing transparency in political discussions.

An example of how political decisions can impact us is the Clean Energy Package (CEP), which is an initiative of the European Commission. The CEP will come into force in 2020 and includes measures with respect to the electricity market. The effect of some articles of the CEP may endanger our security of supply as congestion is likely to increase and could be in conflict with the decarbonisation targets of the member states. In close cooperation with both ministries and regulators we have defined actions to be compliant to the CEP.

We have agreed to report on structural congestion and defined starting values for capacities on our network elements. Our ministries have provided an action plan for each country in order to reach 70% market capacity on all critical network elements. In the Netherlands we have also submitted two derogations in order to prepare our organisation to be able to meet the yearly increased targets.

The increased infeed of renewables presents challenges to operate our grid in its current form. Essential investments are required to ensure our grid is future-proof and can facilitate the energy transition. We continue to develop new and innovative ways to improve our way of working to secure supply of electricity today and tomorrow. An example of this is the progress we made in 2019 to balance our grid with the help of mainly decentralised small flex units and renewable energy sources. This has been part of the Frequency Containment Reserve (FCR) pilot. FCR is an ancillary service used to support ('contain') the frequency in the interconnected European electricity supply system within a few seconds to 15 minutes. In 2019, we succeeded to increase the percentage of FCR delivered via small flex units and renewable sources. In the month of October, 76% of FCR has been allocated on "small flex units" and for 33 days FCR has been delivered using only power from small flex units. The success of this pilot helps us in our next steps to balance our grid when we strive to switch from conventional to renewable energy sources.

Furthermore, observed weaknesses in market design have led to a systematic shortage of electricity production. In addition to significant frequency deviations in the grid and the challenges created by new technologies may, result in an increased risk of outages. Technology itself can, however, also play a crucial role in mitigating risks around security of supply. In particular, TenneT sees an opportunity to use digitalisation to improve the utilisation of the grid, without increasing operational 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.

Technological innovation plays an important role in achieving the ambitions of the energy transition. Although there are many innovations 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 yet clear which technological developments will be the most promising. It will most likely 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. 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.

Cyber risks are an ongoing risk in our sector. To ensure we can handle cyber-related risks and any repercussions, we continuously work on understanding our cyber risks (and how best to handle them) as a joint effort between internal and external allies. We have ISO 27001 certification for information security in place in Germany and ongoing in the Netherlands. We also carry out penetration tests and crisis management exercises every year.

Outlook

Our energy landscape is changing and we see more renewable energy sources becoming a larger part of the production mix. We are making steps towards a low carbon economy by increasingly connecting more renewable energy sources (RES) to our grid. In our systems we can also already identify the impact RES have on the distribution grids. This provides both opportunities and challenges in the design and operation of the future system. As mentioned, connecting more RES to our grid requires us to think of new solutions to operate our grid in a way that allows us to secure supply. Solutions should manifest themselves on at least three axes.

- Continue to invest in the grid to be able to transport and connect more solar and wind in areas that traditionally had limited production of RES. In the North East of the Netherlands this will lead to an increased connection capacity up to 2 GW by 2025.
- Continue to invest in partnerships with DSOs and other stakeholders in the energy landscape to unlock flexibility at a decentral level.
- Support market and product developments to ensure that we benefit from international characteristics of a variety of production sources as well as local initiatives. This will enable a broad variety of participants be active in the markets we serve. Developments should happen at multiple voltage levels, all with the goal to create value for society while securing supply not only today but also tomorrow.

Interview with
Nienke Homan & Matthijs Coops

Working with partners to drive the energy transition

Set on the coast of the Dutch North Sea, Eemshaven is a crucial hub for connecting sustainable energy into the Netherlands' electricity grid.

"TenneT and the Province of Groningen are working closely together on projects that are helping to drive the energy transition, particularly in Eemshaven (Port of Groningen & Chemiepark).

Any transition calls for out-of-the-box thinking, innovation, trust and collaboration. We're impressed at TenneT's very thorough approach: they carefully weigh different interests and analyse future scenarios. We look forward to partnering with TenneT again as we play our parts in achieving the ambitious goals of the energy transition."

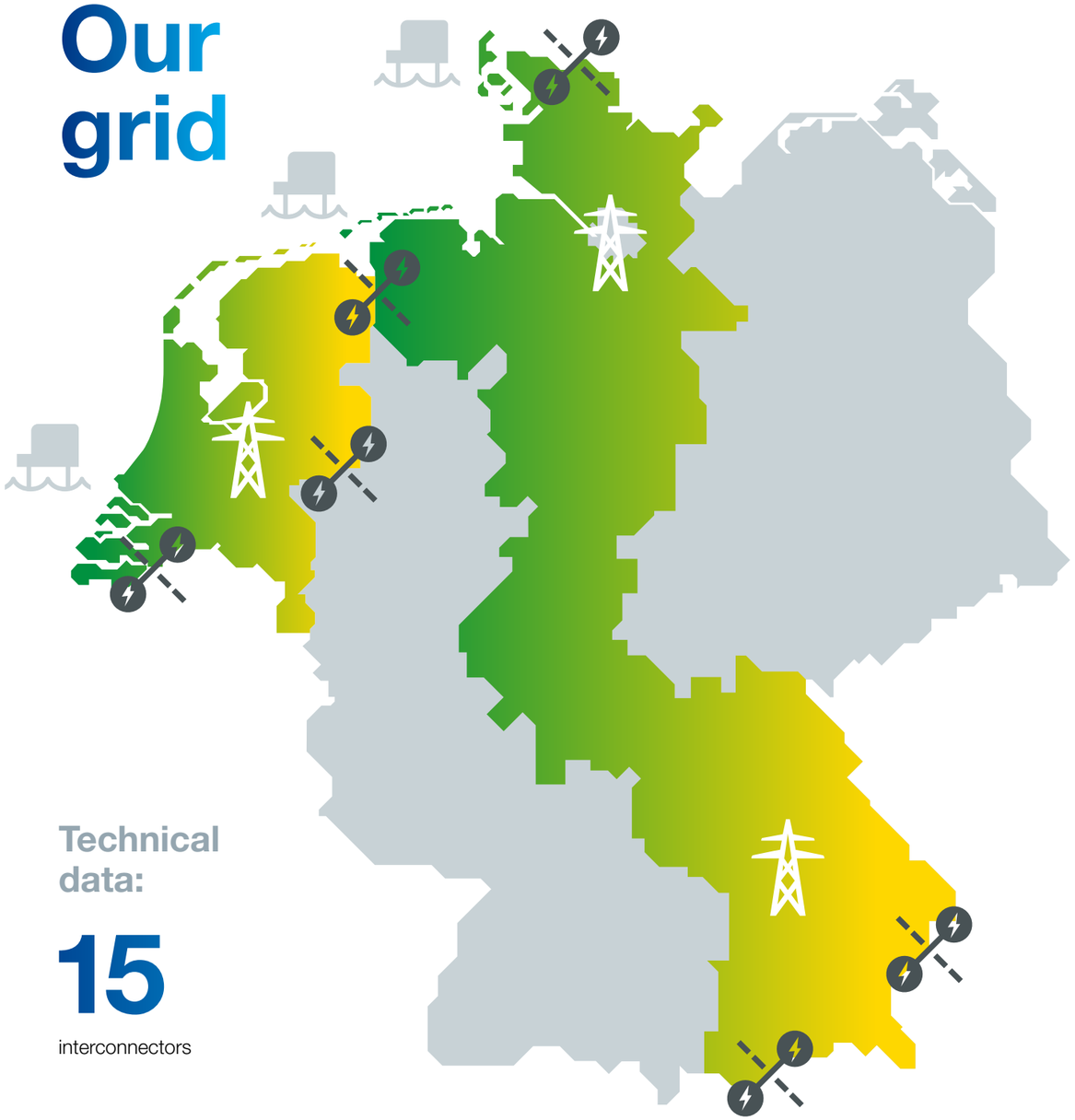
Nienke Homan
Regional Minister Energy Transition

"Eemshaven is an energy port. It is a central hub for wind and sun as well as for conventional power and connects the Danish and Norwegian cables – Cobra and NorNed – to the Dutch grid.

In terms of stakeholders and residents, the province of Groningen is a sensitive area for energy projects following earthquakes caused by gas extraction. We are very aware of these sensitivities and want to inform and engage with stakeholders so we can be part of the solution, not the problem. In the spring of 2020, we will open an information centre for stakeholders in Eemshaven."

Matthijs Coops
Advisor TenneT

Our grid



Technical data:

15
interconnectors

23,555
KMs of circuit

13
offshore connections

over 26,000
pylons

462
substations

Ensure critical infrastructure for society

Investing in the energy infrastructure is very important – not only for TenneT, but for all players in this complex and fast-changing market. We have an important role in helping to meet society's demands with respect to the energy transition, while maintaining reliability and affordability for end-users.

To ensure that our 42 million end-users in the Netherlands and Germany continue to enjoy a secure supply of electricity, TenneT plans to increase its investment level from approximately EUR 2 to 3 billion today to approximately EUR 4 to 5 billion within the next five years. This is necessary to future-proof our grid and will cover essential projects, such as our North Sea infrastructure projects and our interconnection agenda.

The fight against climate change demands a long-term commitment. To this end, our plans should look as far ahead as 2030 or even 2050. We have to think big, plan for the unexpected and work closely together with our stakeholders to safeguard security of supply in a carbon-free energy future.

For the next decade, our investments in the Netherlands and Germany aim to deliver the required backbone to support the energy transition, with solutions that accommodate and balance renewables in the electricity supply, connect across borders, allow renewable electricity to be stored and transported further, and link the offshore and onshore grids. At the same time, we strive to keep the cost for society as low as possible, minimise our impact on the natural environment and local communities and optimise the working environment of our people.

(EUR million)	Actual	Budget	Difference
Investments	3,064	2,781	283

Sustainable supply chain practices

Our contractors and suppliers are important partners for us in realising our investment portfolio. When we contract them, we require them to adhere to our supplier code of conduct, particularly regarding sustainable practices. These are not only related to environmental impact, but also to moral, ethical and safe working standards, based on the principles of UN Global Compact which TenneT committed to in 2015. As a state-owned company, we aim to set the right example. As such, we are committed to the OECD (Organisation for Economic Co-operation and Development) guidelines, as are the Dutch and the German governments. For more information on this, please refer to the 'Additional CSR Data' document on our website. For the first time, we were asked in 2019 to commit ourselves to the supplier code of conduct of one of our customers, Vynova, which we have done so.

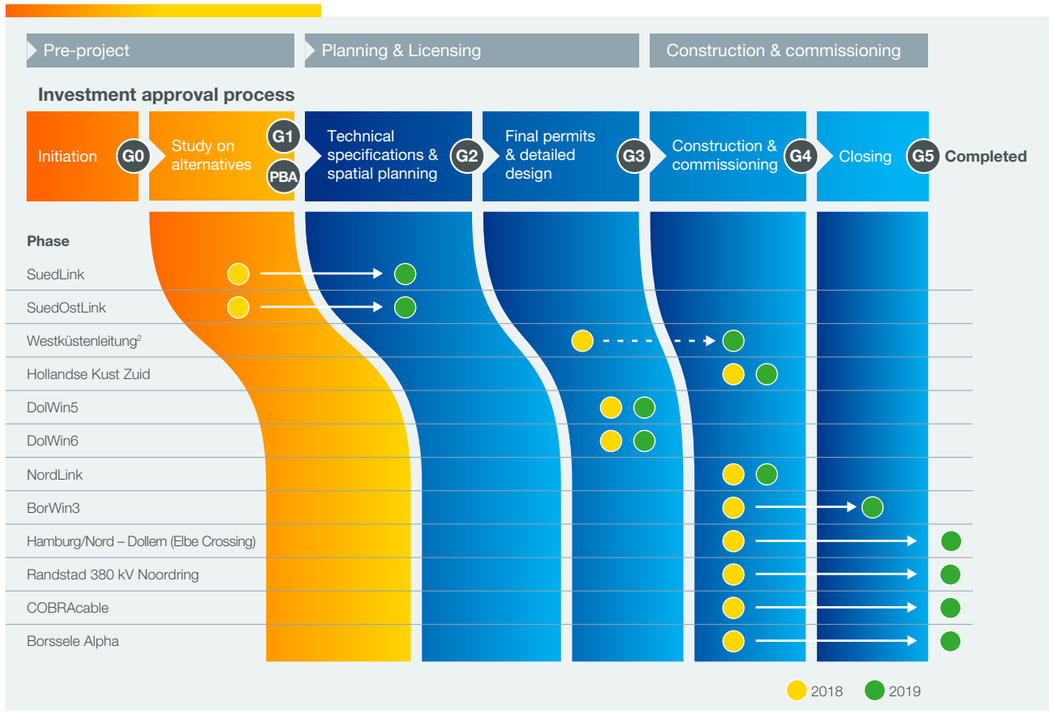
As we rely on our suppliers to provide essential components and materials for our work – e.g. pylons and power lines – we want to ensure that none of them are involved, directly or indirectly, in conduct that does not meet our policies, e.g. from the perspective of product quality, environmental aspects or related to human rights.

Our policy is to visit suppliers, ask them detailed questions on these issues and discuss with them how to make improvements where necessary. In 2019, we performed 32 supplier visits. It is our policy that suppliers who fail to meet our standards will not be accepted. We strive to help these suppliers to improve their practices, to be able to meet our standards at a later stage. This has been the case in 9 instances. In the other instances, suppliers met our standards or were given the opportunity to be fully in line with our standards after follow up of corrective actions.

This year, we completed a human rights scan in our supply chain. This helped us identify the human rights issues most pertinent to our business. These are so-called 'salient issues'. To us, this relates to the topics 'fair business practices, human rights and ethics' (which include elements such as corruption, community impact and land use & property rights). They also relate to 'labour rights' (related to topics with respect to child labour, forced labour, human trafficking, labour conditions, freedom of association, wage & remuneration, discrimination and workers' health and safety). This analysis showed that these salient issues are mainly related to our supply chain as we buy our parts on the worldwide market. We are currently following up on the outcome of this human rights scan to take the next steps in this respect.

The key performance indicator to show our progress in realising the necessary critical infrastructure, is the annual realised amount of our investment portfolio. This relates to projects that have been completed, progress on ongoing investments and our maintenance portfolio. Several large projects were commissioned in 2019. Key highlights were the commissioning of two large North Sea infrastructure projects, Borssele Alpha and BorWin3, and the completion of the COBRAcable, the Hamburg Nord/Dollern (Elbe Crossing) project and the Randstad 380 kV Noordring in our project portfolio. We are proud that we were able to meet our investment goal with good progress made in 2019. This is despite facing challenges, such as with our NordLink project (see below).

Progress on investments portfolio[1]



[1] Please note that this overview contains a selection of our project portfolio. For more information with respect to our projects, please refer to our corporate website.

[2] This project relates to multiple sections. Each section is in different phases, however all phases at least reached this phase and the majority of the sections are either in construction or even completed.

Our investment process

Our investment process can be divided into three phases: Pre-project, Planning & Licensing and Construction & Commissioning.

The Initiation phase starts with identifying capacity constraints. This is reported periodically to our regulators. Studies are then performed and alternatives defined, resulting in a 'general investment decision'. At this stage, it is decided to either accept the capacity constraint or to solve it with infrastructure. If the decision is the latter, the next phase is initiated, and technical design studies are performed for several alternatives. All alternatives are presented and a decision will be made. In the planning & licensing phase other elements are considered, such as the spatial planning of the project. In our decision steps, we do not just consider technical solutions, but also the wider impact. This includes environmental and community considerations, such as weighing alternatives and considering the impact on safety and the impact of the project during the construction and lifetime. We also use internal carbon pricing in our decision making to help us determine the alternative to proceed with.

When a final investment decision has been made, permits are requested and final design details are formalised. A project is tendered to award a contract for the realisation of the project. The project will be carried out by the supplier that is awarded this project. Assets are tested before being accepted and if everything is realised according to plan, assets are commissioned, and the project or asset is formally accepted. When the project is administratively closed, it is formally completed.

Realised large projects

In September, Borssele Alpha, TenneT's first and largest connection system for wind farms on the Dutch North Sea became ready for operation. Completed according to plan, Borssele Alpha is ready to transport wind energy from major offshore wind farms in the North Sea. The Borssele area is critical for the Netherlands to meet its renewable energy targets. Borssele Alpha is the first of two connections of 1,400 MW in aggregate, with the second expected to be ready in 2020. This brings our total completed offshore connections to 13.

With respect to the German renewable energy targets, TenneT out-performed expectations in 2019, by achieving the Federal Government's 2020 target (6.5 GW) for offshore grid connections. By doing so, TenneT is helping to accelerate the Energiewende. The offshore transmission capacity in the German part of the North Sea alone amounted to more than 7 GW by the end of 2019. By the end of 2025, three other connection systems will be added - DolWin5, DolWin6 and BorWin5. This will bring the available transmission capacity in the North Sea up to almost 10 GW.

We also celebrated the delivery of key projects in our interconnector agenda. In September, the COBRAcable between the Netherlands and Denmark became available for the electricity market. For more information on the COBRAcable, see 'Delivering a high security of supply'.

Between the German federal states Schleswig-Holstein and Lower Saxony, the Hamburg/Nord – Dollern (Elbe Crossing) connection was completed in 2019. This project was related to the realisation of a 45 kilometres long power line and is considered to be an important project with respect to the energy transition, as this connection serves as a bridge between the two largest wind power states in Germany.

October 2019 saw the completion of the Randstad 380 kV Noordring project. This strategically important connection is a new 380 kV high-voltage connection between Beverwijk and Bleiswijk.

With a length of 65 km, it is TenneT's largest land-based project in the Netherlands and is essential for the security of supply of electricity in the Randstad, a metropolitan area comprising the four largest Dutch cities and their surrounding areas. Not only is this region of great economic and strategic importance, its energy demands are growing. Having overcome the challenges of constructing a powerline in one of Europe's most urbanised environments, TenneT is proud of the completion of this project. The connection also helps to future-proof our grid, as it will transport green energy from the wind farms in the North Sea.

Progress update

Next to these completed projects, we also made important progress on several large projects. For example in 2019 important steps were taken in the planning and licensing phase for the 'SuedLink' and 'SuedOstLink' projects.
For SuedLink, the preferred corridor for the direct current connection was published, followed by extensive stakeholder dialogues and the beginning of the plan approval procedure. This corridor is the result of detailed studies and is planned to run from Schleswig-Holstein through Western Lower Saxony, Northern Hesse and Southern Thuringia to Bavaria and Baden-Württemberg.
In order to efficiently advance the approval procedure and the subsequent construction of SuedLink, TenneT and TransnetBW have contracted an international project developer, Jacobs. Moreover, the EU-wide tenders for DC underground cables and the DC3 convertor - key components of the projects – were launched, which is a big step towards achieving this connection.
For SuedOstLink, similar progress has been made and the project has entered the next phase to work on the technical specifications and spatial planning.

The 'Westküstenleitung' project provides a connection to Germany's most Northerly state, Schleswig-Holstein from Brunsbüttel to the Danish border. Consequently, this important 380 kV power line will help transport electricity from renewable energy sources generated in the North of Germany to end-users further South. During 2019 good progress was made on the construction of the lines and substations. Section 1 between Brunsbüttel – Süderdonn has been in continuous operation and section 2, Süderdonn – Heide (including the Heide substation), was commissioned. Section 3, Heide – Husum, is in construction and making good progress. The planning and licensing activities for the remaining sections of the route are ongoing.

Despite the progress made on the construction of the 'NordLink' interconnection, the in-service date has been delayed from end of 2020 to the beginning of 2021. The start of trial operation with market involvement is planned for the end of 2020. This will be the first direct power connection between Germany and Norway. For more information on NordLink, please read the chapter 'Deliver a high security of supply'.

A significant project for supporting the energy transition in the Netherlands is the 'Hollandse Kust (Zuid)' grid connection. This consists of two 700 MW connections, 1,400 MW in total. During 2019 the construction of the topside and jacket for the platforms started. The platforms will be connected to the high-voltage 220 kV substation at the Maasvlakte by means of four AC cables. The civil works to accommodate the installation of the cables (horizontal directional drillings) through the sea defence wall and across the harbour ship channel, were completed in 2019.

In Germany we made progress with the 900 MW grid connections 'DolWin5' and 'DolWin6', serving the DolWin wind farm cluster in the Southwestern German North Sea and thereby helping to support the energy transition. In 2019 both projects worked on the required plan approval and licenses for the route. In summer 2019, the first steel cut for the platform of DolWin6 was made and at the end of 2019 the construction work for the land station started.

Unfortunately, we did encounter some challenges with DolWin3. Due to an incident beginning of the year, a large number of valve modules were damaged. The duration of the repair works lasted several months and required further outages.

Maintenance

TenneT is facing a major replacement task for its aging 110 and 150 kV substations. The traditional component replacement method cannot meet the necessary replacement rate and obstructs the application of new technology. In order to be able to replace many substations in a short time span, we developed a new bay replacement concept. This will enhance the 110-150 kV segment of the Dutch grid and reduce the costs and time on-site required for replacements, extensions, operation and maintenance. The new concept is based on prefabricated standardised modules and new digital protection and control technology. In 2020 we start with the realisation of six Proof of Concept substations and the prepare the large-scale rollout of 140 substations for the next decade.

What could prevent us from realising our goals?

Society is demanding a swift transition towards renewable energy. Our investment portfolio causes a high workload throughout the entire supply chain and we face scarcities in our supplier markets due to strongly increasing market demand for power transmission components and especially for overhead lines and cables. This high workload is amplified by the lack of skilled staff available to us and our suppliers in the labour market. Together with the high degree of organisational complexity our projects have, these factors present a viable risk to realising our investment portfolio and achieving a successful return on investment without delay and against affordable costs.

To mitigate this challenge, we use framework agreements, bulk orders, standardisation, increased storage capacities, improved demand forecasting and we actively support the development of new technologies (e.g. 525 kV DC-cables) and look for alternative supplier and service providers. We also employ external project management service providers to staff construction projects in the onshore grid. To counterbalance a lack of internal resources, we pro-actively perform analyses to ensure adequate succession planning.

Ageing infrastructural assets are a challenge in realising the investment portfolio of an asset-driven company like TenneT. We continuously work to optimise our organisational processes, including lean decision-making, an emphasis on employee training, and using probabilistic schedule analyses. We make additional resources available for maintenance work and are increasing the efficiency and flexibility of our maintenance programme by monitoring and simplifying internal processes. We consider bottlenecks in outage planning in addition to an increasing duration of unplanned outages still to be a risk.

In a highly dynamic market, there is a certain risk associated with the emergence of new players who may either overreach 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.

As a company that builds critical infrastructure in the natural environment, our engagement with stakeholders treads a fine line between societal and local interests. What is good for and desired by society is not always welcomed by the communities affected by our projects.

We communicate with a large number of stakeholders, assess different technological options, routing options, interdependencies of work packages between different projects and challenges in the political environment. Delays in licensing (especially mandatory permits issued by authorities) as well as challenges arising from the use of innovative technology (e.g. newly designed 525 kV cabling) can also throw a project off schedule. TenneT works to mitigate these risks by identifying possible constraints and the cost of viable solutions in the early stages of the decision-making process, communicating transparently with regional stakeholders, working closely with authorities, enforcing high quality standards and closely monitoring its suppliers and deliverables. We are aware that we will not always overcome local opposition.

There are certain environmental developments in Europe, also related to our service area, that may pose a risk and delay projects. These include various European government policies on perfluoroalkylated substances (PFAs) and nitrous oxide. This is embedded in our daily operation.

On the other hand, there might also be opportunities in this area, such as digitalisation, which could reduce costs and help us achieve a secure energy transition. This may come with some strict requirements, not only regarding data security, but also especially for information management and human resources in terms of designing, developing, maintaining and operating systems. As such, TenneT continuously develops its IT capabilities, enhancing its organisation, training employees and reviewing the performance of IT service providers.

Outlook

We have reviewed and updated the outlook with respect to our investment portfolio. We now expect that we have to increase our delivery capabilities and that means that we need to raise our investment level from approximately EUR 2 to 3 billion today to approximately EUR 4 to 5 billion within the next five years. Naturally, we do our utmost to optimise our existing assets and are fully aware that the way in which we manage our investment portfolio is crucial in this. We remain focused on not just investing in new assets, but on finding smarter, digital solutions that allow us to use our existing assets in a better and more efficient way.

Interview with
Bastiaan Burger & Jannes Kinds

First and biggest connection to the Dutch North Sea
on time and within safety targets

The completion in 2019 of Borssele Alpha, TenneT's first and largest connection system for the Borssele wind farms on the Dutch North Sea, is a major step in achieving the Netherlands' climate targets.

"The Borssele grid connection is a first major step in linking the wind parks in the North Sea to the onshore grid, reducing the Netherlands' dependency on fossil fuels.

The collaboration with our construction partner HSM Offshore, which is building the offshore substation, benefits from trust, transparency, mutual understanding and a continuous focus on results. Key to success is early stakeholder involvement and TenneT's holistic approach to the process in collaboration with the Ministry of Economic Affairs and Climate.

Bastiaan Burger
Project Lead Borssele Platform
Alpha and Beta TenneT

"Borssele Alpha and Beta will be the largest AC substations in the world and are the first large-scale grid connections to be constructed under the Dutch National Energy agreement for offshore wind farms.

We completed the hook-up, commissioning and certification of Borssele Alpha in August 2019, making the grid connection ready to receive power from the two Borssele wind parks. At HSM we are very proud to be handling all the engineering, procurement, construction, transport, installation, connection and the testing. It was also a privilege to work closely with the TenneT team on this and pioneer this together. We look forward to continuing to work closely on Borssele Beta, in the same cooperative way and spirit."

Jannes Kinds
Project Manager Borssele
Alpha & Beta HSM Offshore BV

Create a sustainable workplace

At TenneT, we are proud of the successes of the first 20 years in the European electricity market. During this time, we have grown rapidly, becoming a European cross-border grid operator with a dedicated workforce exceeding 4,900, internal and external, employees. We are pioneers, working at the forefront of the energy transition, which is an important challenge for society as a whole.

To continue to meet this challenge, TenneT needs to transform. We are proud of what we have achieved so far, but to reach our goals, we must adapt and evolve. We need an organisation that allows our people to perform at their best with new ways of working, so that we're in the best possible shape to drive the energy transition, now and in the future. We also need to attract and retain the best people.

Given the skills shortage in our industry and our demand for new hires, we simply cannot afford to overlook any talent. To fulfil our roll, we have updated our strategy and need to evolve our culture and processes in step with the changes and challenges the energy sector faces.

SDG	Impact area	KPI identified	Target	**2019**	2018	2017
5	Diversity	Percentage of female employees (headcount)	22% in 2023	23%	22%	21%
		Percentage of females hired at management level	22% in 2023	15%	28%	N/A
		Percentage of female Executive and Supervisory Board members	30% in 2023	36%	22%	20%
8	Safety	TRIR [1)]	<3.74 in 2020	4.83	3.74	3.74[2)]

[1] Prior year's figures have been updated as we harmonised our methodology to determine the contractor hours for this indicator. For more information, refer to our CSR reporting website.

[2] The 2017 Total Recordable Incident Rate (TRIR) has not been assured, as this metric was introduced last year as a KPI.

Transforming for growth

We are organising for growth, adopting structures and processes that will help to drive the energy transition, enabling our employees to take faster and more decisive action. We want to accelerate decision-making with more personal responsibility, clearer roles, and work seamlessly across borders and departments. We are working to energise our people and our organisation, offering them an inclusive and safe environment where they enjoy coming to work. Our aim is to create a leadership model that empowers, inspires and creates growth opportunities, so everyone can perform at their best and work as one.

To facilitate this, we are developing new ways of working and adopting a new organisational model, based on a 'functional organisation'. We believe this approach best prepares us to address our current and future challenges.

The principal characteristics are functional, steering across borders and boosting empowerment at lower organisational levels, allowing us to develop excellence in all functions. This is designed to create a unified company-wide view, supported by end-to-end processes.

Moving towards a functional and harmonised organisation will help to make TenneT fit for the future and deliver on our ambitions and promises. We are currently redefining our purpose and values and we want to inspire and support our people to bring them to life in their work. This also means creating development opportunities for ambassadors within our company. An example is the Coalition of the Daring, a group of over 100 colleagues who have volunteered to be leaders for change and a sounding board for management. Several events were organised this year and workgroups formed to actively provide feedback to our senior leadership.

What does this mean for our employees?

Our people are at the heart of our organisation. They are essential to the successful delivery of our sharpened strategy and transformation, as well as our new processes, leadership and culture. Our people will help us achieve internal structural change and benefit from our new ways of working, being open, curious and courageous. We aim to champion innovation, which means creating a culture in which mistakes are accepted more often, as long as we learn from them.

What does it mean for our leaders?

We are in the process of repositioning TenneT. We want leaders who empower, inspire and create growth opportunities, so everyone can perform at their best and work as one in a culture that helps us all tackle the changes coming our way, both externally (e.g. energy transition) as well as internally. We want to build on our existing strengths and develop all of our people. To that end, we want a culture where we take Ownership, build Connection with each other and our stakeholders and act with Courage when necessary. We have defined our principles as follows:

- Ownership: we are responsible for our words, actions and decisions and create a safe working environment together.
- Connection: we get personally involved, work actively with others, respect different opinions and accept differences and diversity.
- Courage: we say what we think honestly, openly and clearly. We dare to make decisions, take initiatives and are prepared to learn from our mistakes.

The work to achieve these goals is the basis of Transforming TenneT in the upcoming years. We need everyone at TenneT to join us in this journey and contribute in this critical process. We realise we are asking a lot from our people to help us achieve this. However, we strongly believe our employees will benefit from our transformation – it will empower them and make TenneT an even more exciting place to work.

Attracting and retaining talent

To succeed in our role to drive and realise the energy transition, we need to attract new talent and expand our workforce. In 2019 the number of internal employees grew from 3,409 to 3,768. However, recruiting talent is getting harder, particularly in the technical sector where there is strong competition for the personnel we are looking for.

To attract the talent we need, it is important to be seen as an employer of choice. During 2019, TenneT received recognition for being a great place to work. We were certified as a Top Employer in the Netherlands in 2019 by the globally recognised Top Employers Institute. In Germany, we also received a Top Company qualification from Kununu, a classification given to approximately 5% of the companies evaluated by this German employer rating platform. This means that TenneT is recognised as an employer that demonstrably works towards creating the best work surroundings for its employees. Top Employers are those who have worked hard to shape their HR-policy and improve continuously. They give opportunities to their employees by setting up strategic and well-thought out programmes that creating workplaces where employees can grow and thrive.

As the energy transition requires us and our partners to step up our efforts to recruit and train technical staff, we have been working on new ways to attract talent. That is why we have committed ourselves to an agreement to train MBO students (Intermediate Vocational Education) for work on the energy transition. This is a new way for us to attract technical staff and help us build and maintain the future grid. The MBO-Covenant Klimaattechniek is a collaboration between the educational sector, government and grid operators and includes agreements to create more training positions and job guarantees for technical MBO students. We believe this will help alleviate the shortage of technical staff. We are also working with NGOs, such as the Refugee Talent Hub and Rising You. With the Refugee Talent Hub, we entered a partnership to uncover new talent and in 2019, we welcomed six new colleagues who will gain relevant work experience at TenneT. With Rising You, we are developing employment opportunities to refugees, with training to work high above ground. For more on this, please read our chapter 'Creating solutions with our stakeholders and through partnerships' chapter.

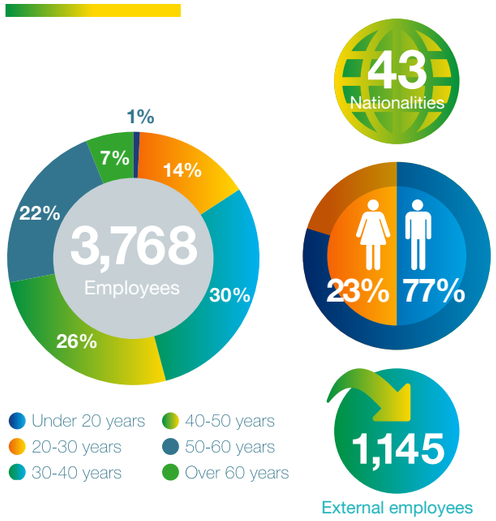
In addition, we want to retain talent by offering a competitive rewards package. We work on this closely with our employee representatives and reached collective labour agreements, covering a significant proportion of our employees. TenneT negotiated its own CAO (collective labour agreement) in the Netherlands for the first time. This will enable TenneT to offer a tailored set of primary labour conditions which we believe is more suitable to TenneT's business and labour market position.

Diversity and inclusion

We value diversity in a wider sense, not only in terms of gender, religion and culture, but also socio-economic backgrounds, skills, knowledge, personality, experience and a balanced reflection of geographical backgrounds. We believe that a diverse working environment helps us perform better as a company and deliver better value for our stakeholders and society. We strive to be a workplace where everybody feels safe and included. Safe not only in its physical sense, but also socially.

We have introduced various initiatives to improve gender equality, including a female leadership training programme and diversity workshops in Germany and the Netherlands. We are actively seeking more female talent in our recruitment efforts, attending recruitment events such as HerCareer in Munich. We realise it may take considerable time to make significant progress, but we believe we are heading in the right direction. Additional information can be found in our Supervisory Board report.

Diversity at TenneT



Health and development

We believe in energising our people. This means empowering them to perform to their full potential, ensuring they are fully equipped to do their work in the best way possible. We give our people, opportunities to participate in external trainings and we also train them internally, sharing our knowledge on a frequent basis.

We also continued our Always Energy programme, designed to support the physical and mental health of our employees.

Safety for our people

In 2019 we launched our TenneT Safety Vision 2022, based on two central themes: Safety Leadership and Safety Execution. The Safety Vision 2022 builds on TenneT's previous safety vision, with new targets to achieve Zero Harm. Although our Safety Vision means we want to focus less on statistics and put people first, we will of course still ensure we record our safety progress and set new targets. For example, we have adjusted our safety indicator, the Lost Time Incident Frequency (LTIF), to include Total Recordable Injury Rate (TRIR). The TRIR includes a larger scope of incidents, as certain less severe incident categories are also included, such as medical treatment cases. We recorded a TRIR of 4.83 this year and a LTIF of 3.61. We consider every incident to be one too many and are therefore not content with this outcome.

Developing Safety Leadership and keeping it up to date is an ongoing effort. In 2019 we organised training sessions to stimulate safe behaviour. An example of this are our workshops on Safety Leadership where we trained our employees.

Safety for our suppliers

Safety is not just about TenneT's own employees, but also about the employees of our contractors who perform work for us. As such, we involve our suppliers as much as possible in our safety improvement programmes. An example is the rollout of the Safety Culture Ladder (SCL) to our contractors. More than 100 TenneT contractors have now been certified for the SCL, and that number is rising steadily. TenneT also opted to be certified by the SCL and last year achieved SCL level 3 (out of 5). This level means that all relevant instruments within the organisation are correctly implemented and employees are familiar with the systems and how to use them. In 2019, we successfully passed the intermediate audit, which verified that we still comply with the results of the initial certification achieved in 2018.

TenneT also strives to work with other stakeholders. For example, TenneT works with the Dutch Distribution System Operators (DSOs), resulting in, for example, the development of a joint gate instruction, where safety rules at site level are explained. Furthermore, TenneT seeks and encourages safety cooperation at the European level and is a driving force in cooperation with other European TSOs to exchange knowledge and to tackle joint projects. Next to this, TenneT is also working closely with DGUV (Deutsche Gesetzliche Unfallversicherung) / BG (Berufsgenossenschaft) to share learnings on safety initiatives.

What could prevent us from realising our goals?

Without the right culture, structure and common understanding throughout all layers of our organisation, TenneT might not be able to execute the strategy as intended. Furthermore, the impact of "Transforming TenneT" on employee perception of job security could also impact the motivation of our workforce. As such, ongoing dialogue and open communication with our employees are essential in this perspective. Transforming TenneT is a clear objective for us, and next to this we remain focussed on the development and mobility of our people.

One key risk both in the shorter and longer term is the scarcity of qualified staff. To address this risk, we focus on tailored sourcing approaches and are aiming on building an image of TenneT as an attractive employer, as well as actively work on internal succession planning. We are interacting more with potential employees, actively participating in career events and reaching out to students during their studies. We are investing in our future talent pipeline, including initiatives to attract potential employees such as our International Trainee Programme and our High Voltage Trainee programme.

Working with high voltages and in capital-intensive projects can mean an increased risk of injuries and even fatalities. This also applies to, perhaps even to a greater extent, the work our suppliers are performing. They might consider and apply safety values that are different to the ones at TenneT. We continue to explain what safety means at TenneT and build awareness of this among subcontractors.

Outlook

We all need to pull together to drive the energy transition. In the years ahead, TenneT will continue to work hard to bring out the best in our people and our company. People are our most valuable assets and we will continue to seek opportunities to attract talented new colleagues. Any failure to attract and retain the right, properly qualified staff, could undermine our efforts to fulfil our investment portfolio. That is why we are working closely with our stakeholders and other strategic partners to ensure we have the talent we need for the future. In the course of 2020, we expect to complete the new organisational structure of our company as a result of Transforming TenneT. We acknowledge that is a challenging process and continue to work together with our employees to make our organisation future-proof and equipped to drive the energy transition.

Interview with
Connie-Ann Nkouka-Bracht & Jakob Huber

Coalition of the Daring
for change from within

A hundred colleagues volunteer to lead TenneT's transformation from within.

"Being part of the Coalition of the Daring by playing an active role in focusing on the fundamentals of leadership makes me feel very energised.

I feel empowered taking others with me on this important journey of change. My key insight is that the improvements most often lie in the small behavioral changes we all can realise if self-reflection is an appreciated given."

Connie-Ann Nkouka-Bracht
Team Manager Stations in LPO

"As part of the Coalition of the Daring I learned that change starts with yourself and with small steps.

I see colleagues that make small steps and so things are happening that were not possible years ago."

Jakob Huber
Team Learning and Development TenneT

Create value to transition to a low carbon economy

We want to drive the energy transition, because we believe we are able to make a significant contribution. Realising our investment programme and innovation portfolio will contribute to the climate targets in the Netherlands and Germany, which is essential on the pathway to a low carbon economy. At the same time, we ourselves also have an important role to play in this transition and have set the firm ambition for ourselves to lead as a green grid operator. To this end we identified three main impact areas: Climate, Circularity and Nature.

Looking at our business from a natural capital point of view, our main positive impact is related to connecting renewable energy sources to the electricity grid. This does however go hand in hand with impact and dependencies related to the use of energy sources, the natural environment and materials to build operate and maintain our grid. These are put to use in our projects and operations to secure supply and to connect more and more renewable energy sources.

We realise that we need to combine our impact on nature with the ability to make a positive difference. Our impact on nature is one of the important factors in the balancing act we face in our business: we strive to deliver a reliable and secure supply of electricity, at an affordable cost for consumers while ensuring that we act as sustainably as possible.

SDG	Impact area	KPI identified	Target	2019	2018	2017
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.	1,833,950	1,975,205	1,889,936
		SF_6 leakage (%)[1]	< 0.28% in 2020	0.24%	0.30%	0.28%
		SF_6 leakage (kg)[1]	< 1,106kg in 2020	979	1,069	934
12	Circularity	Reduction of virgin copper use	In 2025 25% less impact of virgin copper use [2]	N/A	N/A	N/A
		Reduction of non-recyclable waste	In 2025 25% less impact of non-recyclable waste [2]	N/A	N/A	N/A
14	Nature	(Net) impact on nature [3]	Zero (net) impact on Nature in 2020	N/A	N/A	N/A
15		Environmental incidents	N/A	50	55	44

[1] Based on the current definition. We have updated our definition to include projects from the date they have been reported operational to the regulator. When applying the former definition, this will result in a leakage rate of 0.25% and 976 kg leaked.

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

[3] This KPI is currently in progress.

Climate

TenneT aims to drive the energy transition and increase the share of renewable energy in the energy mix. This reduces the climate impact of electricity consumption in the Netherlands and Germany. At the same time, we also have a climate impact ourselves.

In accordance with SDG 13 on Climate Action, we take responsibility for our own climate impact. We have defined action plans related to our climate ambition, which includes projects and initiatives to reduce our own environmental impact. Our climate impact is related to our own operations (offices, substations and mobility), the emissions related to our grid losses and those resulting from the leakage of SF_6 gas.

To reduce our environmental impact, we are taking steps to reduce SF_6 emissions (see below) as well as implementing measures at our stations to use less energy. The energy savings programme to execute these measures was approved in 2019 and will be executed in 2020.

Next to this, greening is an additional step to reduce our impact. We will “green” our electricity use with green guarantees of origin to the maximum extent permissible by law. This relates to the full energy use of our substations in Germany and the Netherlands and our grid losses in the Netherlands. We report a gross carbon footprint (without greening) and a net carbon footprint (with greening). In addition, we have successfully completed the installation of solar panels on our Redwitz substation. Furthermore, we also promoted more sustainable ways of travelling during 2019, with a commitment via the “Anders Reizen” initiative to halve the CO_2 emissions of all TenneT’s business traffic for 2030.

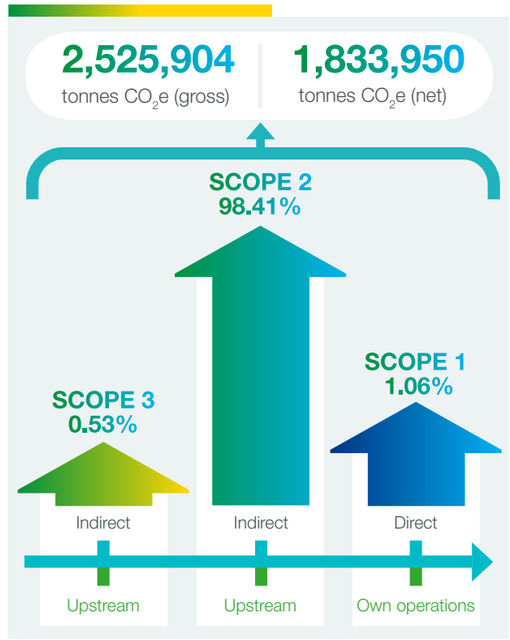
These are not merely internal ambitions. TenneT is entering into partnerships with respect to these initiatives as part of our quest to become climate-neutral by 2025.

Our main carbon impact reported is related to our grid losses. There are many factors that influence the amount of these losses, but they are inherent to the transportation of electricity. We continue to look for opportunities that can reduce these losses.

A TSO-specific part of our carbon footprint is the leakage of SF_6 gas. This gas is used as a highly-effective insulator and extinguisher in switching installations. It allows these switching installations to be more compact, which is often necessary in built-up environments. It is also necessary for interrupting currents in the networks. However, SF_6 is a greenhouse gas that is over 23,000 times more polluting than CO_2. There is currently no technology concept for gases, that has proven itself over the long-term, other than SF_6 at our (high) voltage levels. This makes it necessary for TenneT to use SF_6 in our operations.

However, we recognise the growing concerns about the use of SF_6 in our industry and noted reports in the media during 2019 focused on the climate impact of SF_6. We have been working on reducing our climate impact related to SF_6 for many years and realise that we need to accelerate this important work.

Carbon footprint breakdown



Data Carbon footprint

Travel and transport **0.53%**	Grid losses **94.58%**	SF_6 leakage **0.91%**
	Electricity use stations **3.71%**	Lease vehicles **0.11%**
	Electricity use offices **0.12%**	Gas consumption **0.03%**

In 2019, we agreed to focus on our SF_6 leakage beyond 2020, and have agreed to keep our leakage rate below a target of 0.28% for the years until 2025. Knowing that our asset base will increase considerably due to large-scale network expansions, these objectives are ambitious.
To reduce our SF_6 impact, we have been increasing our efforts to prevent leakages in our maintenance programmes and also stimulating innovation to explore alternative solutions. Examples of these include a project at the Ovenstädt station, where we installed a power switch with clean air. Also, at our Meeden station, we are applying an alternative gas in a gas-filled station.

We use these pilots to investigate the effects on network reliability, costs and sustainability. Ultimately, as the network operator, we will have to weigh up all these aspects and find a solution that meets our needs without damaging the environment.

To make our progress against our climate ambitions even more visible, we signed a EUR 3 billion sustainable Revolving Credit Facility (RCF) to further drive the energy transition. With this RCF we connect our financing efforts to our performance on our own CO_2 emissions. In practice this means that, depending on the realisation of the KPIs, a discount will be applied to the interest margin on the RCF. This is related to the green percentage of energy use of our stations (100% in 2019 vs 12% in 2018) and of our offices (84% in 2019 vs 70% in 2018), SF_6 (refer to the carbon footprint table above) and our mobility where the KPI related to the net carbon impact of mobility against the total number of employees (3.1 in 2019 vs 4.1 in 2018).

In 2019, we have been working together with other companies within the Groene Netten coalition to continue our journey to measure impacts. We have started this year in our own annual report by including a part of both our negative and our positive environmental impact. For now we focus on our own operational carbon footprint on the one hand and the avoidance of carbon emissions due to more renewables on the grid on the other hand. In measuring our impacts, we use a carbon price of 100 euros per ton CO_2.

The first step in providing insights with respect our negative impacts, is measuring the impact of our own carbon emissions. This results in a negative impact of EUR 183.4 million based on our net carbon footprint. For TenneT, our main positive environmental impact is the potential avoidance of carbon emissions. This relates to connecting more renewable energy sources to the grid, which reduces the share of conventional energy sources in (and thereby lowers the CO_2 impact of) the grid mix. This impact is a combined effort of both the companies that are responsible for the generation of renewable energy and us, as a TSO, to connect this to our grid and transporting the renewable energy. This results in a positive impact of EUR 962.0 million for our offshore connections in Germany in 2019. We acknowledge that these are just elements of the impact we have as TenneT. We strive to continue on our journey with respect to the measurement of impacts and aim to include more on this in the next years.

Circularity

We define circularity as minimising our use of scarce materials, re-using materials where possible, and reducing waste in our operations. As we realise that operating in a fully circular way is not yet possible, we therefore focus on contributing to a circular economy with feedback loops. 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 by taking steps with respect to circularity. For our raw material use we are focussing our 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 KPI to reduce non-recyclable waste, we have set targets (refer to table) to monitor our progress. To reach this goal, we have set a target 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 use a raw material passport in our tender procedures and identify our sources of waste. This will set the basis for our reference year 2020. Based on the first raw materials passports obtained in 2019, we have concluded that we already purchase components with partly non-virgin copper and that copper is very recyclable. We are working closely together with similar companies in the Netherlands, Germany and other European TSOs to align our requests to the market.

We are currently working on taking the next steps and obtaining more insights regarding our circular ambition. In November 2019, we organised a Copper Dialogue together with other coalition partners in the “Groene Netten” coalition. Professionals in procurement and asset management attended this round table meeting and shared knowledge on copper to help each other accelerate their respective circular ambitions. We also launched an internal initiative to involve our colleagues in our quest for circularity, called “Power to the Planet”. Ideas from this campaign include more efficient waste management and entering into partnerships to refurbish end-of-life materials.

Furthermore, we held a market consultation in spring 2019 asking for circularity proposals for power transformers that are no longer in use, including possibilities to repair, re-use or refurbish components and materials. Some 40 participants attended the workshop, submitting 12 proposals. These insights will help us develop solutions that will contribute to our circularity KPIs.

Nature

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 the landscape. Our commitment to nature is to minimise our impact and protect and improve nature in the areas where we operate.

Our Nature ambition is for our projects to have zero net impact on nature in 2020. To achieve this, we aim to create positive impacts, such as promoting biodiversity at our substations and considering our impact on nature early in the process of realising a project. This relates to the planning & licensing phase of our projects (for more information refer to the chapter Ensure critical infrastructure for society). We will also track the number of substations with positive biodiversity measures. With respect to potential negative impacts on nature, we also track environmental incidents that can unfortunately occur in the course of our daily operations. These are the number of environmental incidents in a reporting year. In 2019, we recorded 50 environmental incidents, which is a slight decrease with respect to the 55 incidents we recorded in 2018. Although this figure is moving in the right direction, we regret the environmental incidents that have occurred. An example of this is the incident that occurred near Doetinchem, where one of our substations caught fire.

To achieve our ambitions, we have agreed on our nature roadmap, which sets the targets for the coming year and our definition of zero impact on nature. We have defined birds and insects as the nature closest to our business. As one of the most important decisions in our roadmap during 2019 we announced a plan to promote biodiversity at all of our 462 high-voltage substations in the Netherlands and Germany, especially as regards protecting and increasing bird and insect populations.

Our stations, which are unmanned, serve as an excellent location for biodiversity and can be connecting hubs for nature in the surrounding area.The plan follows excellent results from a pilot project at three such substations in the Netherlands, revealing that nature-friendly maintenance of these sites conserved up to 72% of their insect populations. The new programme will ensure this biodiversity-friendly approach will become standard practice. By 2020 we aim for all new projects to include a positive nature measure in the investment process, ensuring they are built into the planning and design.

Another example of our steps with respect to our nature ambition is related to our project “Nature inclusive design”. Together with NGOs, such as the North Sea Foundation, we have come up with possible measures to improve biodiversity for life near and at our assets. We are currently including this element as part of our tender procedures and this concept will be used in the Holland Coast (North) offshore project – due to come on stream in 2023. We have also introduced a Bird Action Plan to help us minimise harm to bird populations from our infrastructure. Here we have defined follow up actions, which helps us take proactive mitigation measures.

What could prevent us from realising our goals?

The scarcity of natural resources (such as copper and aluminium) may jeopardise our ability to complete projects, also against affordable costs. As such, we have defined a policy and actions for our circular ambitions. We are stepping up our efforts to use the resources we need in our daily operations with maximum efficiency and raising the bar on our circular ambitions. That is why we are striving to reduce our use of virgin copper in our asset management activities. Our initial focus is on our copper usage. We will then use this information to determine what actions we need to take to reach our goals.

Our circular ambitions are a part of our overall CSR ambition. Together with our stakeholders, such as our contractors, we strive to realise these ambitions. We work together with contractors and sometimes we need to challenge them to help us to realise our goals. However, this is not always easy as there is quite some pressure from different stakeholders to build and maintain our assets in a way that is affordable and putting demands on the market that they cannot fulfil is contra productive. To us, the challenge is to balance this out and try to raise the bar at the same time for us but also for our contractors to find a solution that meets our ambition and those of our stakeholders.

In our tender procedures, we require our contractors to be transparent about their carbon footprint to create insights, for us but also for our contractors. And it gives the necessary information for more steering in the future. An example of this is the aforementioned tender procedure for the Holland Coast (North) project, where we have included CSR aspects, like nature and CO_2. This way, we are stepping up to realise our ambitions and at the same time working together with our partners to get there.

Another difficulty, which at the same time creates opportunities to us, is the impact we have on the natural environment. We build our assets in the habitat of living creatures. We are working on implementing measures to create solutions to positively influence the biodiversity near our assets. An example of this is working on nature inclusive design, where solutions that create positive effects for life on land and at sea are included in the design phase of our projects. We work closely together with our Asset Management and Grid Services colleagues to include nature inclusive design in our projects. We carefully weigh potential risks and decide on which are acceptable and which are not and proceed with including more innovations to create positive impacts near our assets with respect to biodiversity. The most important lesson learned so far is that the earlier measures are taken into account, the more likely it is they will eventually be implemented. We aim to balance the positive effects as a responsible grid operator against the costs for society and the reliability of our grid. At first instance, an extra measure which does not directly contribute to security of supply could be seen as risk in realising a project.

We have also noticed that our stakeholders are increasingly paying attention to our climate-related risks and opportunities. Physical climate-related risks with respect to our assets include drought and higher temperatures significantly increasing the risk of wildfire, resulting in damage to substations and over-headlines, which in turn causes outages. With respect to climate adaptation, we are working together with authorities. For instance, we are cooperating with authorities to protect our assets against rising sea levels.

In general, signs are currently pointing to a global economic slowdown, fuelled by nationalism, state-centred politics, erratic trade policies and regulatory changes, large-scale geopolitical conflicts, potential frequent financial market turmoil and rapid advances in technology. A severe economic crisis could impact the current focus on climate change and energy transition. It could also call into question the affordability of projects and also impact how much society is willing to accept the cost of energy transition.

Outlook

Current megatrends predict, that many natural resources will become scarcer. That is why we want to ensure long-term value creation by including our circular ambitions. The effect the climate has on society, policies and regulation and also on our own direct operations are factors we continue to weigh in how we manage our natural capital and the broader topic of climate. Examples of this include our efforts with respect to the recommendations of the Taskforce for Climate related Financial Disclosures, where we incorporated these recommendations in our risks assessments.

We will continue to make progress on our road towards science-based targets. In 2019, TenneT signed a pledge organised by the United Nations Global Compact as a call to the business community, in connection with the 25th annual climate change conference, COP25, to set emission reduction targets. The pledge is in line with the report on 1.5 degrees by the Intergovernmental Panel on Climate Change (IPCC) and aims to reach net-zero emissions by no later than 2050. With this pledge, we also commit ourselves to set science-based targets and this will be one of our action items for 2020 next to other initiatives to further reduce our carbon footprint.

Interview with
Albert Vliegenthart, Louise Vet & Margriet Rouhof

Setting a standard for biodiversity in the energy transition

TenneT proudly promotes biodiversity around all of its 462 high-voltage stations in the Netherlands and Germany. Relatively simple steps can make all the difference to maintaining insect populations.

“This is very encouraging. TenneT is demonstrating how simple,

relatively minor adjustments at hundreds of stations can achieve impressive results. Maintaining the insect population at these levels is impressive and a crucial step in helping tackle the challenges of preserving biodiversity.”

Albert Vliegenthart
Ecologist
De Vlinderstichting

“Restoring our biodiversity is absolutely crucial - not just for the natural world, but also for our own wellbeing.

This can only be achieved through partnership, working closely together with a wide range of stakeholders from NGOs and farmers to corporates and financial institutions. That’s why I applaud this initiative of TenneT and will do what I can to share this good work with others.”

Louise Vet
Professor in Evolutionary Ecology at University Wageningen

“Last year, we conducted a biodiversity pilot around three Dutch substations.

We took the following steps to strengthen biodiversity: sowing indigenous seeds to strengthen local biodiversity and mowing in a non-linear way (so-called sine mowing). The pilot demonstrated how non-linear mowing helps maintain the insect population by up to 72%. If we mowed in normal straight lines, these insects wouldn’t survive.”

Margriet Rouhof
CSR Manager TenneT

Secure a solid financial performance and investor rating

We need smart solutions to meet climate targets and drive the energy transition. We need to optimise existing infrastructure as well as expand and strengthen our high-voltage grid. To raise the necessary financing, TenneT strives to maintain its strong credit rating by retaining a balanced equity to debt ratio, as well as by delivering a return on capital that meets the expectations of our capital providers.

Rising investments, financing costs and related grid fees all impact the tariffs we pass on to end users. We seek to limit this impact through stringent cost management and operational excellence. In addition, we also need our regulators to provide us with more cost-efficient incentives to develop innovative solutions for a smarter grid. This would be preferable to the current incentive, which is to simply develop more assets. While we have a clear role in enabling the energy transition, it comes at a financial cost. Either through taxes, subsidies or tariffs, the public cost of the energy transition will rise.

Raise the necessary financing

Equity

In line with the EUR 1.19 billion capital commitment by the Dutch government in 2016, TenneT received a third unconditional tranche of equity of EUR 280 million at the end of 2019. The Ministry of Finance also granted the conditional fourth and last tranche of EUR 410 million, which was also received in 2019.

TenneT's investment portfolio will increase further due to increasingly ambitious climate targets in both the Netherlands and Germany. We believe this will require additional equity of EUR 2 to 3 billion in the next four years to ensure TenneT's current credit rating, which is deemed crucial to raise the necessary financing at attractive and – from a regulatory point of view efficient interest rates – to execute TenneT's strategy.

On 13 September 2019, the Minister of Finance and the Minister of Economic Affairs sent a letter to Dutch parliament, referring to several alternatives for raising the necessary equity. These include: a further capital contribution by the Dutch State, a (partial) sale of TenneT to a private party, or some form of cooperation with the German State.

It is a pre-condition for the Minister that the Dutch public interest and national security be safeguarded, whatever decision is reached. This will be weighed against the advantages of cross-border activities and a possible reduced financial risk relating to TenneT's German activities.

Net debt position

TenneT's net debt position rose from EUR 8,712 million in 2018 to EUR 9,500 million in 2019 due to EUR 1,750 million of new financing in 2019, capped with EUR 756 million of redemptions of interest bearing loans.

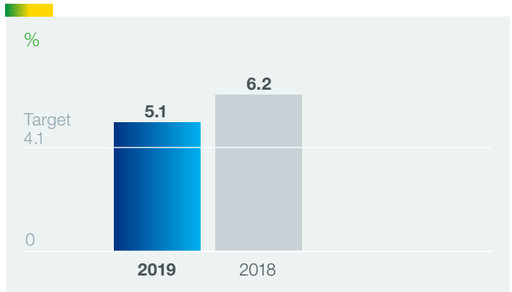
In January, TenneT received the proceeds of EUR 500 million from its first green private placement in the United States. In May, TenneT issued EUR 1.25 billion in green bonds under its Green Bond Programme. The issue was split into two tranches – a EUR 500 million tranche, with an 11-year maturity (coupon of 0.875%) and a EUR 750 million tranche, with a 20-year maturity (coupon of EUR 1.5%).

In November, TenneT refinanced its EUR 2.2 billion Revolving Credit Facility (RCF) and increased the principal to EUR 3 billion. The maturity date of the RCF, which can be used for general corporate purposes, was extended to November 2024 with two one-year extension options. The interest rate TenneT pays for this RCF partially depends on our progress in reducing our own CO_2 emissions.

Senior unsecured credit ratings for TenneT Holding B.V. remained unchanged in 2019 and were reaffirmed by Standard & Poor's (A- / stable outlook) and Moody's Investor Service (A3 / stable outlook). Standard & Poor's also conducted an Environmental, Social and Governance (ESG) evaluation of TenneT; an assessment of its ability to operate successfully, now and in the future. Standard & Poor's awarded TenneT the classification 'strong', with a score of 83 out of 100.

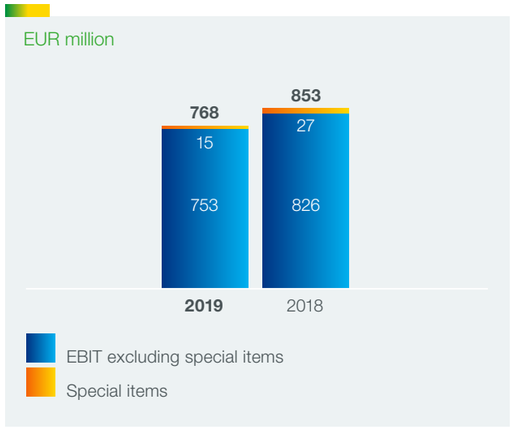
Deliver a return on capital that meets the expectations of our capital providers

ROIC



Our key performance indicator used to measure the value TenneT delivers to its capital providers is the rate of return on invested equity (ROIC). Our minimum target of 4.1% is based on an average of long-term returns derived from Dutch and German regulatory frameworks in combination with our target financial leverage profile. Realised ROIC decreased from 6.2% in 2018 to 5.1% in 2019, mainly due to the increase in equity.

EBIT

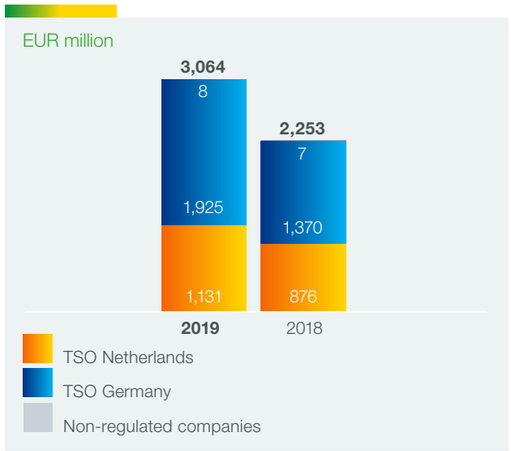


The decrease of underlying EBIT is mainly driven by a reduced regulatory rate of return on equity in Germany, starting with the new 5-year regulatory period and other regulatory changes, partly offset by a higher regulatory asset base due to investments.

Reimbursement of capital expenditure (capex)

TenneT earns a return on capital invested in regulatory assets (such as power lines, transformer stations, and converter stations) and is compensated for the depreciation of its investments. Overall, capital reimbursement decreased in 2019 compared to 2018 due the start of a new regulatory period in Germany, characterised by a lower rate of return on equity and a change in the application of reimbursement rules for the investment measures. This decrease is partly offset by an increase in the regulatory asset base.

Investments



Our capital expenditure totalled EUR 3,064 million in 2019. This represents an increase of 36% compared to 2018 (EUR 2,253 million).

Compensation for our onshore and offshore operating costs

Due to lump sum compensation, as well as increasing assets, compensation for our onshore operating costs increased, while onshore operating costs were kept stable. Compensation for our offshore operating costs in Germany decreased due to a new offshore regulatory framework in which actual operational expenses are reimbursed, rather than a significantly higher fixed percentage.

Special items

EBIT was negatively impacted in 2019 due to a balance of several positive and negative developments in regulatory decisions, reference is made to regulatory considerations and risks included.

Regulatory considerations

Our revenues are strongly influenced by decisions taken by our regulators. Currently, the German regulator is questioning whether 2018 offshore compensation should have been based on a lump sum or whether the pass-through compensation should have already been applied.

At the same time TenneT holds the view it should receive compensation for asset retirement costs provided for to be able to decommission offshore assets at the end of their useful lives.

In November 2019, the CBb ruled favourably for TenneT regarding both the WACC and the ex-post settlement of offshore OPEX costs related to the Netherlands. The tariff decision 2020 takes into account the new x-factor decision and EUR 100 million from congestion income. Approximately EUR 50 million of allowed revenue 2020 is postponed to the tariff decision of 2021.

For the current regulatory period, the efficiency factor, theta, has been set at 0.979 in 2021. The ACM has organised a new international TSO benchmark in 2018/2019. The model and methodology of the benchmark have been significantly revised compared to the previous benchmark. TenneT has communicated to the ACM that there are substantial errors in the benchmark model. The revision of the benchmark model and outcome may have a significant adverse impact on TenneT's efficiency score for the next regulatory period. However, the revision of the benchmark model has not yet been finalised and the final revision thereof – in which NL operator specific conditions have been incorporated – is expected in 2020.

What could prevent us from realising our goals?

In order to fund our investment portfolio and raise the required debt financing, TenneT needs to secure a sufficient credit rating by attracting sufficient additional equity. At the same time, society and politicians are critically assessing investments by the Dutch state. As such, 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. The growing sentiment against the increasing cost of energy is putting more pressure on the reimbursement system. Adverse changes in the regulatory system might impact our performance.

Outlook

In mid-2020, the Dutch cabinet expects to inform parliament on the desirability and feasibility of the various options regarding TenneT's future equity financing. We are confident that there will be a solution that fits our strategy: balancing our aims of driving the energy transition, ensuring security of supply and safeguarding the financial health of TenneT and the wellbeing of our people. Various options will have to be evaluated to achieve the best fit with our strategic ambitions To contribute to the climate goals, additional investment in our assets and smart solutions for optimising the use of our grid will be necessary. This will lead to higher financing costs, increased grid fees and ultimately higher energy bills for end users. We are fully aware that this impacts the affordability of energy, and we will do all we can to execute our projects and operations as efficiently and effectively as possible.

Quote by
Timm Krägenow & Tetiana Chuvilina-Bueschgens

Driving the energy transition

"International cooperation is key for an affordable, sustainable and reliable energy system.

Increasing interdependencies of energy transmission infrastructures in Europe, as a cost-minimal source for flexibility, require strong political cooperation as well as alignment within Europe and also globally. However, a one-size fits all approach is not the right way. We need regional flexibility to establish the transformation efficiently and effectively. Example: the North Sea requires different energy policy than the Ruhr area. Offshore is different than onshore, now not recognised in regulations.

The foreseen European New Green Deal CO_2-reduction targets for electricity are very ambitious. Only if we set the frameworks right they will be achievable without endangering affordability and reliability of the energy system. We as TenneT will build new grids, but we are also working intensively on innovations to increase the transport capability of existing grids and to make decentralised flexibility available to the market.

For TenneT it is clear we have to look beyond electricity and beyond national borders. We have to co-optimise the infrastructure for green electrons and for green molecules. And it is clear that this infrastructure should not be a patchwork of national systems, but a European system. The future offshore wind system will not be national but will make best use of the available wind and available space in the North Sea. As first cross-border TSO, TenneT is eager to play a key role in driving this forward and we are already working on it intensively."

Timm Krägenow
Head Brussels Office

Tetiana Chuvilina-Bueschgens
Deputy Head of Group Representative Office Berlin

Interview with
Gerard Kits & Floris Jongens

Financing the energy transition with broad, solid and sustainable funding

To help drive the energy transition, TenneT plans to increase its investment level from approximately EUR 2 to 3 billion today to approximately EUR 4 to 5 billion within the next five years in offshore and onshore grid connections across the Netherlands and Germany.

“Sustainability is key to TenneT’s business operations.

Linking the pricing of the sustainable Revolving Credit Facility to our CSR ambitions in order to be fully climate neutral in 2025 underlines our commitment to sustainability. I am very proud that TenneT is leading the way in green and sustainable financing through green bonds and now with this credit facility as well.”

Gerard Kits
Manager Treasury TenneT

“Sustainability is a core value for us, so we are proud to support leaders, like TenneT, who are helping to drive the energy transition.

We do this by providing them with tailored financial services and access to knowledge and networks. The Netherlands is faced with a dual challenge: the country needs to find a sustainable way to satisfy its energy needs while at the same time meeting climate change targets.”

Floris Jongens
Director Loan Syndication Rabobank

Solve societal challenges with stakeholders and through partnerships

Working with our stakeholders and through partnerships, TenneT has an important role to play in driving the energy transition. To succeed in this revolutionary change for society, we need to work even more closely with our partners to share perspectives, develop new energy solutions and build support. This is one of the key ways we create value for society.

Our partners range from fellow European TSOs and DSOs, knowledge and business partners to NGOs and local communities. Together, we are able to take the necessary steps by using our combined knowledge and experience to realise this transition in a way that is beneficial for all.

A fact-based dialogue with government, industry and academia

At government level, we actively engage in the public debate on the energy transition. In the Netherlands and Germany, we work closely with communities and governments, local, regional and national. For example, during 2019, we participated as a partner in the Dutch climate agreement (Klimaatakkoord). We are one of the signatory members of this agreement and have committed ourselves to follow up on the measures that were agreed upon. Announced in June 2019, the agreement is the result of a multi-stakeholder consensus on how to transition to a low carbon economy, contributing to solutions that will help the Netherlands achieve its target to reduce carbon emissions by 49% by 2030. Likewise, in Germany, we are working with government and multiple stakeholders to find solutions that will help achieve the targets of the Energiewende. These include a 65% share of renewables in the energy mix by 2030 and a 55% reduction in carbon emissions compared to 1990.

Another example of our dialogue with our stakeholders is the first TenneT E-TOP, a meeting we organised in 2019. Together with CEOs and other experts in the energy sector, we discussed the energy transition and how we can further accelerate it. The aim was to find opportunities for more cooperation on important issues with respect to the energy transition and system integration.

Pro-actively engage project stakeholders

The infrastructure and technology needed to deliver electricity to end users, unavoidably impacts local communities. As such, our work involves a delicate balance: what is good for and desired by the broader society is not always welcome at a local level. We manage this by striving to act as a partner who puts our newly defined values of Ownership, Connection and Courage into practice. Whenever we start a new project, our goal is to listen to the concerns and needs of those affected and provide all relevant information to evaluate and discuss. We want all stakeholders' views to be listened to and considered. At the same time, we want to build a better understanding of our work, developed patiently over time through clear and transparent communication. This is essential to our licence to operate and our reputation as a responsible corporate citizen.

For larger projects, we open dedicated information centres, to ensure everyone has the chance to make their voice heard and using their feedback to help us minimise the impact of our work.

We measure the quality of our stakeholder engagement in a bi-annual reputation survey, conducted in the Netherlands and Germany. The latest evaluation rated our reputation among our stakeholders highly for the third consecutive time. We are proud of this and work hard to earn this trust as working closely with our stakeholders is at the heart of our work and key to our success. Our stakeholders are defined as all those who are affected by our actions and who have an effect on our organisation and services.

We aim to build on solid public awareness of the complexity and challenges faced by TenneT in the energy transition, with a strong emphasis on TenneT's strategic input and appreciation for our contribution to the Dutch Climate Tables.

As such, our engagement with stakeholders helps to strengthen our reputation as a strategist, supporter and partner in the energy transition.

Likewise, in Germany, we are seen by our stakeholders as an important player in the Energiewende. As we are the only TSO with a North-South link, we cover one of the biggest challenges of the Energiewende.

We realise that building acceptance and considering the needs and wishes of all stakeholders is difficult. When determining the route of a new project, there are many considerations. These can be environmental, where the natural landscape needs to be protected and social, where local communities object to the construction of power lines in their vicinity. Examples of this are the routes of SuedLink and SuedOstLink. In 2019 these two onshore grid projects required TenneT to engage with intense stakeholder activities across all levels. Balancing community viewpoints at this project phase, including investigations for long cable routes, is a big challenge. We therefore held many meetings in this process, including individual talks and other events where we inform our stakeholders.

Innovative collaborations to unlock flexibility

Working with our stakeholders also means enabling, encouraging and partnering with entities that can help us unlock flexibility in the energy market. We need to do this because matching supply and demand while managing a higher infeed of renewable energy sources carries significant technological and capacity challenges. There are several areas where we are increasingly working in partnerships to overcome these challenges, including collaborations to explore the integration of the electricity and gas power networks.

Coupling electricity and gas grids

TenneT is working with Gasunie to find answers to the energy transition. A joint project, called Infrastructure Outlook 2050, proposes a scenario where the electricity and gas energy infrastructures are seamlessly integrated. One of the principal benefits of this is that it allows wind-generated electricity to be stored, after conversion into hydrogen gas using power-to-gas technology (electrolysis). Energy storage will be increasingly important to keep electricity supply and demand in balance and coping with the fluctuations in weather-dependent renewable energy sources.

As part of this, TenneT started working on a pilot project with Gasunie and Thyssengas called Element Eins. This involves the construction of a power-to-gas installation with a capacity of 100 MW in Lower Saxony, Germany, which is expected to come into operation gradually from 2022. By bringing electricity and gas together in this way, we can create an integrated energy system, capable of serving our needs in a green energy future. The Federal Government of Germany has selected the project as one of 20 "real laboratories of the energy transition" to receive its funding, reflecting its strategic importance for society.

Future vision for North Sea Wind Power Hub

TenneT also works extensively with partners to help shape a more integrated European energy market for the long-term. Our collaboration on the North Sea Wind Power Hub project is an example, where TenneT is partnering with Gasunie, Energinet and the Port of Rotterdam. Together, we are evaluating and developing technical concepts for an internationally coordinated roll out of 'hub-and-spoke' power hubs in the North Sea. These would connect onshore energy markets with offshore wind power and use smart solutions to integrate the wind-powered electricity into the onshore energy grid, including power to gas.

Finding new solutions in digital technology and the market

As we rely on more renewable energy sources, TenneT is also working with partners to explore new digital solutions that can help us balance electricity supply and demand. To help keep the grid balanced, TenneT is looking for new (decentralised) sources that can offer flexibility, such as household batteries and electric cars, and 'prosumers' who generate their own electricity from solar and wind installations.

By working with different suppliers and 'aggregators', and by applying innovative blockchain technology, the capacity of all these sources can be harnessed, and consumers can also participate directly in the energy market. In 2019, TenneT did two pilot projects, where we use a blockchain technology platform to aggregate power from electric cars and household batteries. This provides flexibility, helping to balance the grid and prevent congestion. In the Netherlands, TenneT is working with sustainable energy supplier Vandebron, while in Germany we work with Sonnen E-services.

TenneT has also been working with other partners to unlock flexibility through new market concepts. An example is a partnership with the Dutch Distribution System Operators (DSOs) to launch GOPACS, a new smart solution to reduce congestion in the electricity grid by using flexible power from the market. It is an important step to mitigate capacity shortages in the electricity grid (congestion) and help keep the Dutch grid reliable and affordable. GOPACS is a good example of active collaboration between TenneT and regional grid operators (DSOs).

Furthermore, TenneT, has been working with 25 partners (TSOs, Universities and Industry) as consortium lead, to better understand the impact of the upcoming converter dominated power system on secure operation. This is a research project called MIGRATE (Massive InteGRATion of power Electronics). This is an important TSO research project funded by the European Commission and its role is to find solutions to the technological challenges of the power system stability. In particular, it tackles the growing impact of Power Electronic (PE) devices on the dynamic stability of the grid. The project is delivering internationally recognised results that aim at maximisation of the amount of RES installed in the system while keeping the system stable. In particular, it helps clarify the need for new control and protection schemes and possibly new connection rules to the grid and suggests requirements for future measures, methods and tools for a secure operation while the share of PE converters is steadily growing.

Innosys 2030, a collaborative project that explores innovations to boost grid flexibility and automation is another example of TenneT has worked together with other partners to find new solutions to help shape the future energy landscape. This program was initiated by the German government and the four German TSOs.

Partnering with NGOs

We also work together with NGOs to realise our ambitions, specifically to lead as a green grid operator. We enter into key partnerships in which we share knowledge and information and define actions together to enhance our impacts. Examples of this include the “Vlinderstichting”, with respect to our nature ambitions, MVO Nederland, where we work together in the “Groene netten” coalition to achieve certain common goals with other companies in the Infrastructure sector and the “Natuur & Milieu” and North Sea Foundation, where we extended a partnership to promote environmental responsibility in our offshore projects. Next to this, we also work together with other NGOs and TSOs in the Renewables Grid Initiative (RGI).

The aim is to promote fair, transparent, sustainable grid development to enable the growth of renewables and achieve full decarbonisation in line with the Paris Agreement. For more information about how we partner up and aim to lead as a green grid operator, please read the chapter ‘Creating value to transition to a low carbon economy’.

Giving back to society

As a company with a strong social purpose, we also give back to society through several partnership initiatives, such as supporting sports activities for underprivileged children with the Johan Cruyff Foundation, and supporting nature through a partnership with the Nationale Park de Hoge Veluwe, located near our Dutch head office in Arnhem. Furthermore, we have supported a visitor centre at the UNESCO World Heritage Site of Norderney Island in the Wadden Sea. We also help to connect refugees with employers through our partnership with the Refugee Talent Hub. We welcomed six new colleagues through this partnership, helping them gain relevant work experience at TenneT. Our Rising You partnership strives to achieve the same goal. Rising You aims to help refugees by training them to work at heights. Through initiatives like this, we help refugees gain relevant work experience, which benefits us, but also our suppliers in search of talent.

What could prevent us from realising our goals?

To be able to drive the energy transition and lead as a green grid operator, it is important to create societal acceptance of the energy transition. Lack of acceptance could lead to the inability to fulfil our ambitions and delay the transition to a low-carbon economy.

Societal acceptance of our assets remains important. TenneT’s construction and operation of substations, underground cables and transmission lines, and investments in sustainable energy solutions may affect a large number of people and interests. Because grid expansion projects take years to develop and cost hundreds of millions of euros, the impact of project delays, difficulties or shutdowns may be significant.

The expansion of our high-voltage electricity grid may significantly alter landscapes in a way that can affect the livelihood of surrounding residents. The debate with respect to potential health risks related to our overhead transmission lines and magnetic fields is ongoing. As TenneT, our aim is to comply with rules and regulations and take sufficient caution in the construction and operation of our assets.

We are also currently working together with the respective authorities and other involved stakeholders to include their views as we in the process of updating our policy with respect to magnetic fields.

In our view, forming long-term partnerships within and outside the TSO playing field is an opportunity to drive the energy transition. Initiatives like crowd balancing need strong partnerships between several industries and the public domain.

Outlook

We believe in the power of partnership. Our philosophy is that we can achieve more by working with partners than acting alone. With a challenge of the scale of the energy transition, we consider it is essential to work with multiple partners to find the solutions that can shape our energy future.

TenneT’s goal is to embrace the opportunities of digitalisation, data and flexibility, to be a green and responsible grid operator. Innovation will be essential to manage the balancing act of securing supply, while also making choices that are affordable and sustainable. TenneT is in a pioneer role, exploring new project partnerships in the wind power storage and automobile industry to find the answers we need to succeed in the new energy age. Only truly pioneering partnerships and inventions will deliver these answers and help us in our ambition to transition to a low carbon economy.

Interview with
Friedrich Kunz & Alexander Heim

Power-to-gas with partners

Element Eins is an important step forward in the energy transition, demonstrating how renewable electricity can be transported and stored as green hydrogen gas.

“Element Eins underlines that innovations play a crucial role in the energy transition. This pilot project converts green electricity to gas and enables us to explore new ways of transporting and storing renewable energy.

This will allow renewable energy to be used in a larger variety of ways, while reducing greenhouse gas emissions. Moreover, we can explore its contribution to energy networks in order to make better use of existing infrastructures.”

Friedrich Kunz
Advisor Market Development TenneT

“The energy transition needs diversification, innovation and advanced engineering to succeed. The planned construction of this major power-to-gas plant addresses these needs and helps the development of the energy transition.

If we take a cross-sector technical approach and use our expertise in a purposeful and focused way, we will succeed. Power-to-gas in combination with the existing gas network has great potential and can help offer the flexibility and storage solutions we need to meet ambitious renewable energy targets.”

Alexander Heim
Project leader Element Eins Thyssengas

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 and control critical processes, including control self-assessments to document the effectiveness of control processes;
- Business plans and quarterly reports with information on corporate objectives and their achievement;
- Internal audits of critical processes and follow-up to audit findings with relevant management;
- Actions based on recommendations made in the external auditor's management letter;
- A decentralised 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 & Compliance Committee, acting as a committee of Supervisory Board (also acting as audit committee), the Supervisory Board and the external auditor.

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

Taking the above into account the Executive Board is of the opinion that TenneT's risk management and internal control system provides reasonable assurance 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 2019 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 it face. Furthermore, the Group has adequate resources to remain in operation during the next 12 months and consequently the financial statements have been prepared on a going concern basis.

Arnhem, 9 March 2020

M.J.J. van Beek *
O. Jager *
T. Meyerjürgens
B.G.M. Voorhorst *

*Statutory Director

Our Executive Board

M.J.J. (Manon) van Beek

Chair Executive Board / Chief Executive Officer

49, Dutch (f)

Initial appointment: 1 August 2018

Other positions qualitate qua:
- Chair of the Aufsichtsrat TenneT TSO GmbH
- Member Board TenneT Verwaltungs GmbH

Other positions:
- Chair Supervisory Board Kanker.nl Foundation
- Chair Board Giving Back Foundation
- Chair Board Refugee Talent Hub Foundation
- Member of Advisory Board Top Woman of the Year Foundation
- General Member Board of German-Dutch Chamber of Commerce DNHK
- Council of the Thinktank Agora Energiewende

B.G.M. (Ben) Voorhorst

Member of the Executive Board / Chief Operating Officer

60, Dutch (m)

Initial appointment: 1 December 2007
Reappointment: 1 December 2019

Other positions qualitate qua:
- Member Board TenneT TSO B.V.
- Member Board TenneT TSO GmbH

Other positions:
- Member of the Board of Netbeheer Nederland
- Member of the Cooperation Board of TSCNET Services GmbH
- Member of the Supervisory Board of ETPA

O. (Otto) Jager

Member of the Executive Board / Chief Financial Officer

50, Dutch (m)

Initial appointment: 1 August 2013
Second appointment: 1 August 2017
End of second appointment: 31 July 2021

Other positions qualitate qua:
- Member Board TenneT TSO B.V.
- Member Board TenneT TSO GmbH
- Member of the Supervisory Board of Relined B.V. until 31 December 2019

Other positions:
- Member Advisory Council of the New CFO Executive Program, Erasmus University Rotterdam

T. (Tim) Meyerjürgens

Member of the Executive Board / Chief Operating Officer

44, German (m)

Initial appointment: 1 March 2019
End of first appointment: 28 February 2023

Other positions qualitate qua:
- Member Board TenneT TSO B.V.
- Member Board TenneT TSO GmbH
- Member Board TenneT Verwaltungs GmbH
- Member Board TenneT Offshore GmbH

Other positions:
- Chair Supervisory Board foundation
- Member Executive Board WAB (Wind Energy Association Bremerhaven)
- Member Advisory Board Offshore Wind Energy MBA
- Member Board of Trustees German Offshore Wind Energy Foundation
- Member Advisory Board Federal Association of Wind Farms Offshore
- Member Board of Directors FGH (Forschungsgemeinschaft für Elektrische Anlagen und Stromwirtschaft e. V.)
- Board of Trustees FGE (Forschungsgesellschaft Energie e. V.)
- Member of the German National Committee of CIGRE

Supervisory Board Report

The Supervisory Board (SB) supervises the Executive Board and advises it on setting and achieving strategic goals. In this report, the Supervisory Board details how it fulfilled its role in 2019: a truly transitional year. The energy transition is in full swing, with grid operators an indispensable link in making this happen. But besides changes in the external world, TenneT itself has embarked on a transitional journey as a company. And all this while successfully safeguarding a safe working environment and continuous security of supply.

Safety and security of supply

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 monitor the implementation of TenneT's Safety Vision closely and evaluated the safety track record of TenneT and its contractors. Suppliers that do not meet TenneT's safety targets are a point of particular attention. In its meetings, the Supervisory Board discussed significant individual safety incidents, as well as lessons learned and best practices from other industries. At the same time, the Supervisory Board is well aware of the demands the energy transition puts on people and the system.

Further integration of the European markets, as well as upgrading the Dutch and German electricity grids, are needed 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 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.

Other main topics of attention

Besides safety and security of supply, the other main areas of focus for the Supervisory Board in 2019 were:

- TenneT's revised strategy
- The financing need
- The sizeable investment portfolio,
- Grid maintenance efforts
- HR related topics including the composition and remuneration of the Executive Board.

Revised strategy

In various sessions the Supervisory Board discussed the revised strategy with the Executive Board which resulted in four strategic pillars at the end of the second quarter of 2019. In October 2019, an update on related strategic initiatives was on the agenda.

Financing

Safeguarding the company's financial health is one of TenneT's strategic pillars. TenneT's financing 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 discussed included the financing structure of the TenneT Group, cash flow and liquidity forecasts, equity solutions and several debt financing instruments. The Supervisory Board is keeping 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 significant investment programme, further equity will be needed to ensure TenneT's credit rating, which is crucial to execute TenneT's strategy. The SB actively discussed alternatives with the Executive Board as well as the shareholder.

Investment portfolio

Next to the assessments of Project Budget Applications and Exception Reports, the Supervisory Board and management discussed the potential investment volume for the next 10 years, mainly based on grid investments driven mainly by the requirements of the energy transition. The SB carefully assessed the strategic, societal, financial, and technical aspects of investments and maintenance, in line with its mandate. It takes a broad and long-term view, as these factors can lead. Besides these considerations, 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 under-utilised assets.

Maintenance and renewal efforts

While undertaking substantial and complex investments to allow for the inflow of renewables in Germany and the Netherlands, TenneT must also focus on maintaining its existing grid. As such, performing maintenance with minimum downtime and disruption is continuously a focal point.

Strengthening the grid with new investments, including onshore and offshore grid connections and cross-border interconnectors, are just as crucial to security of supply as smooth maintenance. The Supervisory Board discussed maintenance and renewal including topics such as: the health index; strengthening the relationship between maintenance and renewal improving the prognosis for asset renewal; holistic consideration of measures for aged assets; improving decisions on planned outages; taking risk management prioritisation further and developing an unambiguous strategy for out-sourcing and in-house knowledge.

Composition of the Executive Board

At the start of 2019, two directors of TenneT Holding B.V., Lex Hartman and Wilfried Breuer, left the company. The Supervisory Board wants to thank them both for their significant contribution in building up TenneT to where it stands today. We are pleased to see that TenneT found a suitable successor for Wilfried Breuer within their company as Tim Meyerjürgerns was appointed as COO as of 1 March 2019.

Ben Voorhorst's term as statutory director of TenneT Holding B.V./COO expired on 1 December 2019. Our shareholder reappointed him for a term of 1.5 years per the nomination of the Supervisory Board. The Supervisory Board appreciates that Ben Voorhorst agreed to a new term, helping to safeguard continuity in the Executive Board in these times of transformation.

Composition of the Supervisory Board

In May 2019 the Supervisory Board was expanded with three new members and now consists of seven people. The appointments were made with the retirement rota in mind as the terms of two SB-members expire in 2020. The three new members of the Supervisory Board followed a three-day introductory programme in which all aspects of the company were covered. Each new member also participated in specific introductory sessions, focused on the areas of expertise of the Supervisory Board committees they joined. The Supervisory Board also actively participated in the TenneT Leadership and Cultural Transformation programme. Members of the Supervisory Board continue to reflect on their personal leadership styles and the team dynamics.

The Supervisory Board believes that the Leadership and Cultural Transformation should reach everyone in the organisation and engaged in individual and team dialogues around personal, leadership and company values and their relation to the strategic agenda and role of the Supervisory Board.

These sessions are facilitated by individual experts. Other topics addressed in these dialogues included ethics and communication styles.

These dialogues were held with members of the Supervisory Board only, but their reflections were also shared with the Executive Board. The Supervisory Board plans to continue these facilitated dialogues in 2020.

The SB met eight times in 2019, with 94% of the SB-members present at the meetings. To safeguard a high level of engagement, external positions of the members are discussed on an annual basis.

SB attendance 2019	Supervisory Board	Audit, Risk and Compliance Committee	Remuneration and Appointments Committee	Strategic Investments Committee
A.F. van der Touw (chair)	7/8	4/4	4/5	-
P.M. Verboom (vice-chair)	8/8	4/4	-	4/5
R.G.M. Zwitserloot	8/8	-	-	5/5
L.J. Griffith	8/8	-	5/5	-
E.M Schöne [1)]	5/6	-	-	3/4
E. Kairisto [1)]	5/6	2/2	-	-
A.C.C.. van Els [1)]	6/6	-	3/3	4/4
Total attendance	94.0%	100.0%	92.3%	88.8%

[1] Appointed as per 1 May 2019.

The composition of the Supervisory Board complies with the Electricity Act, which stipulates that the majority of its members have no direct or indirect links to legal entities (or shareholders thereof) engaged in the production, purchase or supply of electricity or gas. It was noted that Essimari Kairisto is member of the Supervisory Board of Fortum Oyj, however it was concluded that this does not result in any conflict of interest. For more information on the members of the Supervisory Board as well as the (re)appointment schedule, please visit our website.

Ongoing education

In 2019, an in-depth workshop was held to discuss the Infrastructure Outlook 2050, together with the Supervisory Board of Gasunie. More information regarding this joint project is included in the 'Solve societal challenges with stakeholders and through partnerships' chapter. Furthermore, the so-called Powerflow Model, which visualises the physical challenges of system operations that we face every day, e.g. frequency, avoiding congestion, n-1, need for perfect traffic forecast and need for redispatch, was presented in a separate session.

Committees

Strategic Investment Committee

The Strategic Investment Committee (SIC), as a committee of the SB, reviews investment proposals exceeding EUR 50 million and advises the Supervisory Board on such proposals. In 2019, the SIC assessed 20 Project Budget Applications and Exception Reports as preparation for decision making by the SB.

The SIC assesses whether a proposal is compatible with the company's economic, financial, and technical objectives, as well as with TenneT's risk profile and the impact an investment will have on stakeholders. The dilemmas the SIC discussed this year included facilitating the energy transition versus affordability for society. The SIC also monitors timeliness, quality, cost efficiency and the risks associated with large projects, on the basis of the quarterly investments reports. In light of the volume and complexity of TenneT's project portfolio, ample time for a dialogue on the reporting is catered for. In 2019 areas of focus included the availability of resources was a focus point; next to the availability of suitable human resources and the supplier market, especially pro-active supplier management.

In 2019, the SIC met five times; on four of these occasions the meeting of the SIC was incorporated in a plenary Supervisory Board meeting, due to the size and importance of the investment portfolio. The SIC consists of Rien Zwitserloot, Edna Schöne, Pieter Verboom and Stijn van Els.

Audit, Risk & Compliance Committee

The Audit, Risk & Compliance Committee (ARCC), as a committee of SB, monitors the company's financial reporting, including 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.

In 2019, the ARCC consisted of Pieter Verboom (Chair), Essimari Kairisto 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, the senior managers of Financial Control and Business Control as well as the Lead Compliance & Integrity Officer also joined the meetings. As in previous years, the ARCC also spoke several times to the external auditor without any Executive Board members being present. No additional material topics arose from these meetings.

As in previous years, the CFO had additional meetings with the chair of the ARCC. The senior manager Internal Audit also met with the members of the ARCC separately, to discuss the Audit Plan for 2020.

Management Letter

The Management Letter was discussed with the external auditor and the EB in the ARCC meeting - and was also included in the plenary SB agenda. The ARCC/SB noted that the external auditor classified the control environment at TenneT as stable in 2019. As the company rapidly increases in size and complexity, a robust and effective internal control framework is an important backbone for management to remain in control of expanding business operations. The internal control framework is important in supporting the 'in control' statement by management as included in the management board report. Room for improvement is still present, but whether the company should aim to maximise controls deserves careful consideration given the additional effort and cost this would cause.

Within the framework of the Management Letter the following topics were discussed:

- Impact of the organisational re-structuring on the internal control and governance structure following TenneT's revised strategy needs to be evaluated. For example, further aligning TenneT's control structure between its geographical locations, in terms of design and operation, may support an effective oversight and monitoring function over the achievement of strategic and financial objectives. It was noted that the importance of internal controls has been developing continuously.
- The unification of ERP systems offers an opportunity to make the internal control framework more robust. It is crucial to properly embed IT risk management within this project on a broad level.
- Regulatory risks e.g. how these risks are treated from an accounting point of view (IFRS and underlying).
- The update on the three key audit matters
  - Underlying vs. IFRS reporting;
  - Growth in renewable energy sources and the implications for grid expenses;
  - Third-party claims

Risk management

Individual interviews were conducted with members of the Supervisory Board as part of the 2019 annual strategic risk assessment. Accommodating the rapid growth of the company while controlling risk was a key challenge in the strategic risk assessment. The Executive Board was responsible for determing the final 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 reports focused on project management, with specific attention paid to timely delivery, risks of delays and interruptions, and societal demands that could lead to delays and/or projects becoming more expensive.

Compliance and integrity

Compliance and integrity topics require constant attention. The Supervisory Board welcomed the newly appointed Lead Compliance & Integrity Officer and the strengthening of the team. The Supervisory Board discussed quarterly compliance and integrity reports, with a focus on lessons learned from all four cases investigated as well as on prevention and education. The Supervisory Board suggested to invite external players for workshops on lessons learned by other companies.

Regulation
The Supervisory Board continued to discuss the implications of TenneT operating in a regulated environment in the Netherlands and in Germany. Relevant issues include striking a balance between regulatory optimisation and creating value for society as well as the balance between attracting investors and increasing grid tariffs.

Assurance tender
The current contract with regard to assurance services for TenneT expires on 31 March 2020. TenneT has started a new tender procedure. The ARCC was engaged in the selection phase, the initial offers and the presentations and advised the Supervisory Board on the nomination for the appointment of the new auditor by the Shareholder.

Integrated reporting and audit
TenneT's financial statements for the 2018 financial year, the 2019 internal quarterly reports and the 2019 interim results were all discussed by the Supervisory Board during the year. These meetings also covered the independent auditor's report, internal audit reports, results from internal risk and control assessments, the 2020 budget and the Integrated Performance Plan 2020-2022.

Financial statements
The Supervisory Board examined the Integrated Annual Report 2019, the financial statements 2019 and independent auditor's report, the assurance report of the independent auditor related to non-financial information, the 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 Management Board members from liability in respect of its management of the company and releases the Supervisory Board from liability in respect of its supervision.

Remuneration & Appointments Committee
The Remuneration & Appointments Committee (RAC), as a committee of SB, is tasked with the company's remuneration policy and the remuneration of individual board members. The Remuneration & 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 for the Executive Board.

The RAC consists of Laetitia Griffith, Ab van der Touw and Stijn van Els and met five times according to the regular meeting schedule. The meetings were also attended by the CEO, the CFO and the senior manager HR.

Succession planning and performance
Selection and succession concerning TenneT's Executive Board are 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 & Appointments Committee gathers input for these appraisals during a Supervisory Board meeting not attended by the Executive Board. To gather more insight into Executive Board team dynamics as well as in individual functioning, Supervisory Board members meet annually with individual Executive Board members. Besides assessing the performance of the Executive Board, the Supervisory Board also discussed the performance of TenneT's wider senior management team, including for planning.

Ancillary positions
At the request of the RAC a policy was drafted regarding the ancillary positions of Executive Board members, including topics such as time to be spent and remuneration paid. In within reason the Supervisory Board welcomes Executive Board members engaging in ancillary activities not linked to their employment; time spent is explicitly discussed in the yearly performance dialogue.

HR Strategic plan
The RAC discussed with HR their work towards establishing a harmonised people operating model to effectively organise TenneT's demand and supply in the Netherlands and Germany.

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 are made. Bearing in mind the Dutch Civil Code and the Dutch Corporate Governance Code, the Supervisory Board set a gender diversity target for 30% female directors, both executive and non-executive. The Supervisory Board is aware that even after the appointment of Manon van Beek as CEO, TenneT's Executive Board could further increase in diversity.

With three out of seven Supervisory Board members being female, the percentage of female representatives on our Supervisory Board is currently above 30%. For the RAC diversity and inclusion will be a top priority in 2020.

Remuneration
During 2019, the Supervisory Board frequently discussed the remuneration policy for Executive Board members with the Shareholder. The SB aims to have a remuneration policy in place which enables the company to attract suitable employees. Although the SB's responsibility doesn't extend beyond EB-members, any remuneration policy set for the EB has impact throughout the company. The SB fully recognises that TenneT is a state-owned company and as such it has to respect certain limitations on remuneration packages. Nevertheless, the SB strives for a remuneration policy which reflects the complexity and size of the company. So far, discussions with the Shareholder on this topic have not yet been concluded.

Composition of the Supervisory Board
In the second half year of 2018, the RAC started the process of selecting and nominating new members of the SB. Many factors are weighed in the composition of TenneT's Supervisory Board, including the nature of the company, its diversity and the required expertise and background of its members. In May 2019, the Supervisory Board nominated three new members to join it and these were appointed by the Shareholder Stijn van Els was co-nominated by the Dutch Works Council exercising its right of recommendation. The works council conducted this selection and nomination process in close collaboration with the RAC.

Evaluation of the Supervisory Board
The Supervisory Board evaluated its own performance at the end of 2018, supported by an external consultant. The outcome was discussed in early 2019. One of the topics addressed was the duration of the meetings. Previously, it was agreed not to spend a whole day on regular SB-meetings. However reducing them to half a day was considered by some to be too short. Furthermore, finding a balance between dialogue/discussion and decision making remains a point of attention. Another topic addressed in the evaluation was allowing ample time to attend to the increasingly complex issue of stakeholder management.

Also in 2019, 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 was deemed valuable.

Contact with the works councils
Fostering good relations with the works councils, which represent employee interests, is important to the Supervisory Board. As such, Laetitia Griffith and Stijn van Els, both appointed as Supervisory Board members on the nomination by the Dutch Works Council, regularly met with members of the Dutch Works Council during the year to keep abreast of employee issues and concerns, especially in the framework of TenneT Transformation. Through their membership of the Aufsichtsrat of TenneT TSO GmbH, both Laetitia Griffith and Rien Zwitserloot were also in close contact with the representatives of the German Works Council in the Aufsichtsrat.

The Supervisory Board welcomed the joint session held in November with the Dutch Works Council and the Executive Board because it presented a good opportunity to get to know each other better in an informal setting.

Company Secretary
The Supervisory Board would like to thank the company secretary, Saskia van Rassel, who stepped down in January 2020. Her support for the Supervisory Board and the Executive Board was highly valuable and greatly appreciated.

Closing words
TenneT's significant achievements are only made possible by the hard work, dedication and continuous commitment of its employees. We would like to thank them wholeheartedly or their efforts during this year.

The Supervisory Board advised and oversaw the policies of the Executive Board during 2019, helping to ensure that TenneT continues to play a leading role in the fast-changing and challenging European electricity market. We look forward continuing our work in 2020.

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

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 383,160 (as of 1 January 2019).

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. For 2019, this limit is set at EUR 383,160.

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 and does not account for 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 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 the fiscal maximum of EUR 107,593 (gross pension).

TenneT directors receive the same compensation as TenneT employees with an income above the fiscal maximum pension salary. The compensation is based on the fiscally allowed age dependent premium percentages up to fiscal maximum pension salary. These percentages are also applied above the fiscal maximum pension salary of EUR 107,593, 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.

Revision of the policy

In 2019 the revision of the policy is discussed on several occasions with the Shareholder.

Board remuneration

The section on the board remuneration specifies the current remuneration for the statutory directors in 2019, 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.

Remuneration of the statutory directors

Total remuneration

2019 (in EUR thousand)	Fixed remunera-tion	Variable remunera-tion (annual)	**Total remunera-tion**	Gross Pension	Net pension	**Total pension**	Other
M.J.J. van Beek	320	56	376	26	27	53	12
B.G.M. Voorhorst	286	50	336	25	35	60	16
O. Jager	283	50	333	24	23	47	21
Total	**889**	**156**	**1,045**	**75**	**85**	**160**	**48**

2018 (in EUR thousand)	Fixed remunera-tion	Variable remunera-tion (annual)	**Total remunera-tion**	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.

Fixed remuneration

Due to the adjustment of the variable remuneration to 20%, the Supervisory Board decided in July 2019 to equalise the fixed remuneration of the other two statutory board members to 90% of the fixed remuneration of the CEO. With this adjustment their remuneration is aligned to the remuneration policy. In accordance with the indexation as of July 2019 and the indexation in February 2020 for employees as determined by the collective labour agreement for TenneT, the salaries of all statutory directors will be indexed by 1% as of January 2020 and 3.5% as of February 2020.

Variable remuneration

The Supervisory Board decided on the statutory directors' variable payment realisation percentages over 2019 based on the achievement of present criteria. The criteria are linked to the four strategic pillars of the sharpened strategy. 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.

	M.J.J. van Beek		B.G.M. Voorhorst		O. Jager	
	Realised	Maximum	Realised	Maximum	Realised	Maximum
Secure supply today and tomorrow	21.0%	25.0%	21.0%	25.0%	21.0%	25.0%
Energise our People and our organisation	22.0%	25.0%	22.0%	25.0%	22.0%	25.0%
Safeguard our financial health	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Drive the Energy Transition	20.0%	25.0%	20.0%	25.0%	20.0%	25.0%
Total variable remuneration realised in 2019	**88.0%**	**100.0%**	**88.0%**	**100.0%**	**88.0%**	**100.0%**

The table below shows the realisation for the quantitative targets Security of Supply Today and Tomorrow, Energise our People and our Organisation and Safeguard our Financial Health. Each pillar contains quantatitive and qualitive targets.

	Target [1]	Realised
Secure supply today and tomorrow		
SAIDI NL 110/150kV	≤ 2,00 min	0,94 min
ASIDI NL 220/380kV	0,00 min	0,00 min
ASIDI GE 220/380kV	0,00 min	0,0002 min
ASIDI Offshore	≤ 628hrs	597 hours
Energise out People and our organsation		
Total Recordable Incident Rate	≤ 3,2	4.8
Investigation Index	100.00%	95.00%
Safeguard our financial health		
EBIT	≥ 692M	768M
ROIC	≥ 4,4	5.1

[1] As to the more qualitative criteria with respect to Secure Supply Today and Tomorrow and Drive the Energy Transition the Supervisory Board concluded that most of the targets have been met. These targets are linked to long-term value creation.

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.

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, include the contribution to the so-called "levensloop" 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 ratio

The remuneration ratio to employees is measured by comparing CEO annual total compensation with median annual total compensation, including fixed salary, variable remuneration and pension benefits of all other employees.

The remuneration ratio to senior management is measured by comparing CEO annual total compensation with median annual total compensation, including fixed salary, variable remuneration and pension benefits of senior management employees.

Remuneration ratio	**2019**	2018	2017
Remuneration ratio to employees	5.4	5.6	7.5
Remuneration ratio to senior management	2.1	2.2	2.8

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.

In May 2019 the Shareholder appointed three new members for the Supervisory Board.

The responsibilities on the committees are as follows:

	Supervisory Board	Audit, Risk and Compliance Committee	Remuneration and Appointments Committee	Strategic Investments Committee
A.F. van der Touw	Chair	Member	Member	
P.M. Verboom	Vice-chair	Chair		Member
R.G.M. Zwitserloot	Member			Chair
L.J. Griffith	Member		Chair	
E.M. Schöne [1)]	Member			Member
E. Kairisto [1)]	Member	Member		
A.C.C. van Els [1)]	Member		Member	Member

[1] Appointed as per 1 May 2019.

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 with 3% as of 1 January 2019 and will be indexed with 1% as of January 2020 and 3,5% as of February 2020.

(EUR)		
Chair	29,105	per annum
Vice-chair	23,409	per annum
Member	20,890	per annum
Audit, Risk and Compliance Committee	6,959	per annum
Remuneration and Appointment Committee	5,504	per annum
Strategic Investment Committee	5,504	per annum

The total remuneration received by the Supervisory Board in their capacity as Supervisory Board members in 2019 was as follows:

	2019			2018		
(in EUR thousand)	Fixed remuneration	Committee fee	**Total**	Fixed remuneration	Committee fee	**Total**
A.F. van der Touw	29	12	41	16	7	23
P.M. Verboom	23	12	35	24	14	38
L.J. Griffith	21	5	26	20	7	27
R.G.M. Zwitserloot	21	5	26	20	11	31
E.M Schöne [1)]	14	4	18	-	-	-
E. Kairisto [1)]	14	5	19	-	-	-
A.C.C. van Els [1)]	14	7	21	-	-	-
A.W. Veenman	-	-	-	5	2	7
S. Hottenhuis	-	-	-	12	7	19
Total	**136**	**50**	**186**	**97**	**48**	**145**

The changes in the Supervisory Board during 2019 and the impact on the remuneration of the Supervisory Board are reflected in the table above.

At the end of 2018, the composition of the Aufsichtsrat of TenneT TSO GmbH had to be reassessed due to changed legal requirements (given the size of the company in Germany). The Aufsichtsrat is a governance body for the German corporate units; it's therefore not considered a committee of the Supervisory Board. Two members of the Supervisory Board of TenneT Holding BV (Mr Zwitserloot and Mrs Griffith) are also member of the Aufsichtsrat and received, just like the other Aufsichtsrat members, a remuneration of Euro 15.000 over 2019 for this role. Mrs Van Beek, CEO of TenneT Holding BV and (qualitate qua) Chair of the Aufsichtsrat, waived the remuneration.

Our Supervisory Board

A.F. (Ab) van der Touw

Chair of the Supervisory Board / Member of the Audit, Risk & Compliance Committee / Member Remuneration & Appointments Committee

64, Dutch (m)

Initial appointment:
1 June 2018
End of first term:
1 June 2022

Principal position:
- Former CEO Siemens Nederland (until 1 April 2018)

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

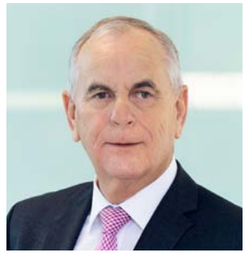
Vice Chair Supervisory Board / Chair Audit, Risk & Compliance Committee / Member of the Strategic Investments Committee

69, Dutch (m)

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:
- Managing Director DESAJO BV as of 1 March 2019.
- Expert lay member of the Dutch Enterprise Court



R.G.M. (Rien) Zwitserloot

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

70, Dutch (m)

Initial appointment:
24 November 2010
End of third term:
24 November 2020

Principal position:
- Former CEO of Wintershall AG

Other positions:
- Member of the Aufsichtsrat TenneT TSO GmbH
- Member of the Supervisory Board of Royal VOPAK N.V.
- Member of the Supervisory Board of Amsterdam Capital Trading Commodities Group B.V.
- Member of the Supervisory Board of Amsterdam Capital Trading FS Holding B.V.
- Member of the Supervisory Board of Vroon B.V.s

L.J. (Laetitia) Griffith

Member of the Supervisory board / Chair of the Remuneration & Appointment Committee

54, Dutch (f)

Initial appointment:
1 July 2015
Expiry second term:
1 July 2023

Principal position:
- Former State Councillor in the Advisory Division of the Dutch Council of State

Other positions:
- Member of the Aufsichtsrat TenneT TSO GmbH
- Chair Supervisory Board Holding Nationale Goede Doelen Loterijen
- Chair board Nederlands Filmfonds
- Member of the Supervisory Board of Gassan Diamonds B.V.
- Member of the Supervisory Board of ABN AMRO

E.M. (Edna) Schöne

Member of the Supervisory board / Member Strategic Investments Committee

48, German (f)

Initial appointment:
1 May 2019
Expiry first term:
1 May 2023

Principal position:
- Member Executive Board Euler Hermes AG

E. (Essimari) Kairisto

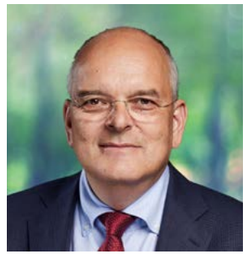
Member of the Supervisory Board / Member of the Audit, Risk & Compliance Committee

53, German and Finnish (f)

Initial appointment:
1 May 2019
Expiry first term:
1 May 2023

Principal position:
- Former CFO Hochtief Solutions AG

Other positions:
- Member Supervisory Board Fortum Oyj
- Member Supervisory Board Freudenberg SE
- Member Supervisory Board Applus+ Services SA



A.C.C. (Stijn) van Els

Member of the Supervisory Board / Member Strategic Investments Committee / Member Remuneration & Appointments Committee

55, Dutch (m)

Initial appointment:
1 May 2019
Expiry first term:
1 May 2023

Principal position:
- Former CEO Shell Germany

Governance and risk management

Corporate governance

As a transmission system operator, TenneT plays an important role in society. We believe in having a solid 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 it is applicable.

Corporate governance structure

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

Executive Board

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

The Executive Board is responsible for TenneT's general policies and strategy, which includes regulated and non-regulated 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 may also discharge 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 & Compliance Committee and, if necessary, also by the entire Supervisory Board.

The external auditors attend all meetings of the Audit, Risk & 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 & Compliance Committee.

Compliance & integrity officers

TenneT has a Lead Compliancy & Integrity Officer and a Local Compliance & Integrity Officer. All material compliance and integrity cases are shared and discussed with the Audit, Risk & Compliance Committee.

Related parties

Related party transactions are disclosed in note 7.2 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: Regarding paragraph 4.1 TenneT complies with the Code. Paragraphs 4.2 – 4.4 are not applicable to TenneT because it only has one shareholder, namely the Dutch state.

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

Risk management and internal control

State-of-the-art risk management and internal control is key to efficient and effective risk-based decision making throughout the TenneT organisation.

Risk management and internal control objectives

To actively apply and advance our risk management system, we periodically identify and continuously manage uncertainties (comprising risks and opportunities) affecting the realisation of TenneT's strategic and operational objectives. By applying top notch standards within TenneT's internal control system, we also enhance the efficiency and effectiveness of our day-to-day processes.

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

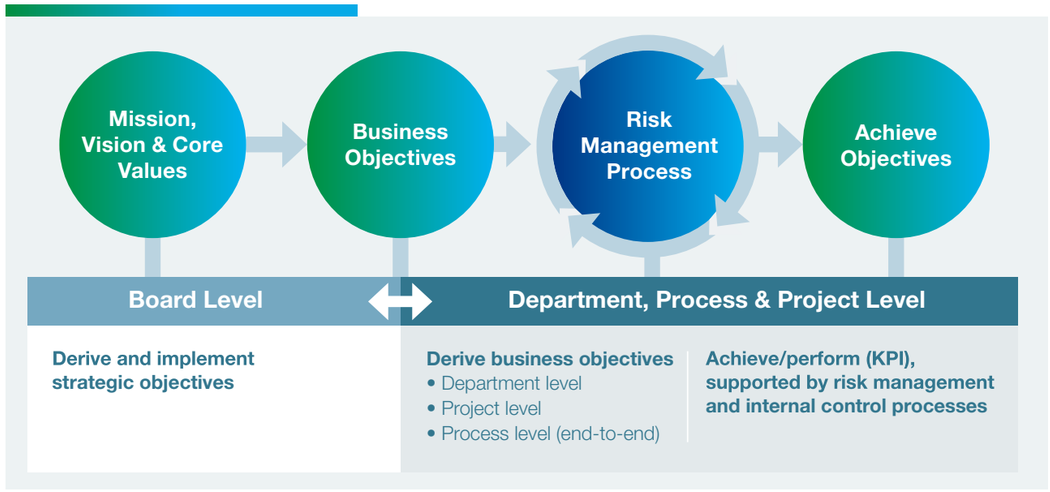
- To identify and assess uncertainties with a potentially negative or positive impact on strategic and operational (department, process and project) objectives
- To create risk awareness and open culture of addressing risks and opportunities
- To provide a uniform risk management framework and tools, which enables the organisation to take risk based decisions founded on relevant, reliable and timely information and to ensure efficient priority based resource allocation
- To provide transparency to the boards, internal and external auditors and shareholders so they stay informed about the most significant risks potentially impacting strategic objectives

TenneT's enterprise risk management and internal control frameworks are based on ISO 31000 and COSO standards and are compliant with the requirements of applicable laws and regulations like Dutch Corporate Governance Code, the German Control and Transparency in Business Act and the German Accounting Law Reform Act.

Enterprise risk management at TenneT is clustered in:

- Strategic risk management
- Operational risk management, including project risk management
- Process risk management (such as internal control)
- Other risk domains, such as asset risk and portfolio management

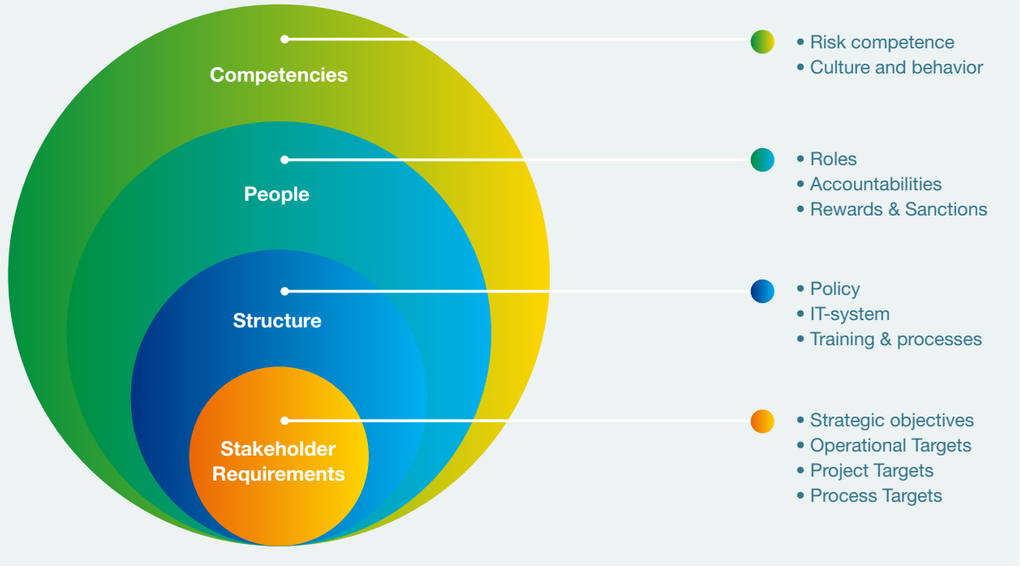
Risk management and internal control



TenneT regards the following factors as crucial to realise the full value of risk management and internal control for the organisation. They are designed in line with stakeholder requirements:

- Structure: policies (e.g. corporate enterprise risk management policy), IT-systems, reports, processes etc.
- People: roles and accountabilities, profile, education and skills etc.
- Competencies: risk culture and competencies at management level etc.

Key factors of Risk Management Framework



The principles of risk management should be taken into account in all activities performed at and for TenneT. Furthermore, at the heart of the governance system, risk management and internal control is interlinked with other second line of defence functions like risk transfer, business control, project control and the compliance office as well as third line of defence functions, such as internal audit.

Corporate risk management facilitates top down and bottom up dialogues and workshops as well as special topic analyses. The resulting outcomes provide management with insights to help take risk-based decisions that support the achievement of objectives set at all organisational levels.

Three lines of defence

Risk management and internal control framework

In 2019 TenneT's full risk management and internal control cycle was reviewed and subsequently revised. The aim of this was to further strengthen risk management and internal control as a link between goal setting and decision-making. As a result, state-of-the-art assessment and prioritisation tools and tailor made approaches like adjusted bow-ties were introduced in strategic and operational risk management processes. We also increased internal control focus on the establishment of application controls due to increasing level of automation of core and supporting processes.

Strategic risk management (SRM)

SRM focusses on future events and trends which may affect strategic objectives in positive or negative ways (risks vs. opportunities). Corporate risk management helps the Executive Board to derive and assess uncertainties and design risk response strategies. Furthermore, TenneT's strategic risk position is shared and discussed with the Supervisory Board and the Audit, Risk & Compliance Committee.

In 2019 the strategic risk assessment, performed as part of Executive Board interviews and workshops, was strongly focussed on the current strategy. Taking a forward-looking approach, potential risk scenarios were identified, prioritised and evaluated. Scenarios related to TenneT's core playing fields, i.e. trends capable of changing the playing field or even creating new playing fields for TSOs. To broaden the approach, challenges in the fields of ESG (Environmental, Social and Governance) corporate social responsibility have been taken into account.

Operational risk management (ORM)

Operational risks affecting the various business units and corporate departments are regularly updated documented and evaluated in the course of interviews and workshops with senior management to assess the adequacy of mitigating actions. TenneT's corporate risk management & internal control team facilitates the organisation to review its risks, opportunities and related responses.
TenneT's updated, operational risk position is part of the Letter of Representation (LoR).

Project risk management (PRM)

To meet challenges arising from the enormous investment portfolio and related objectives, TenneT started around ten years ago to implement project risk management, first with a focus on large projects. PRM aims to boost the likelihood of realising project goals on time, on budget and with a high level of quality. For all large projects, dedicated project risk managers systematically review and manage risks together with project leads within the quality and uniformity standards safeguarded by corporate risk management. Project risk management has reached a high maturity level within TenneT.

Risk & portfolio management

To strengthen 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, responses are proposed and included.

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. The risk management & internal control team performs quality assessments on the outcomes. Internal audit randomly checks selected control self-assessments during the year to form an independent opinion. The outcomes of these control self-assessments provide direct input for the Letter of Representation procedure. Identified issues are reported to the risk management & internal control team, which monitors and follows up on mitigating steps with the relevant business owners. Overall control effectiveness is reported in our State of Risk report.

We strive for a high-quality and harmonised TenneT wide internal control framework. Our framework has gradually shifted from a core finance perspective towards a business objective driven approach with the inclusion of core business- and non-financial reporting processes.

Compliance and integrity

With compliance and integrity, we aim to prevent, detect and respond to compliance risks that threaten the realisation of TenneT's strategy and objectives and may lead to economic or reputational harm. In addition to having clear guidance from corporate and local policies (like the Supplier Code of Conduct, Policy on Gifts & Hospitality, Whistleblower Policy, Conflict of Interest Policy and Investigation Policy), the right tone at the top, leadership principles and a training and communication plan are essential elements of a well-functioning compliance and integrity management system.

As part of Transforming TenneT, TenneT revisited the organisational design of the company to be prepared for future growth. The ongoing reorganisation envisages that data protection officers will become part of the Compliance & Integrity department. Furthermore, the team is expected to grow with additional resources. The Head of the Compliance & Integrity department will report directly to the CEO and will be part of the Senior Management. At the start of 2019, a new Head Compliance & Integrity Officer was appointed. The Regional Compliance & Integrity Officer in Germany has not changed.

Besides the presence of Compliance & Integrity Officers in the Netherlands and in Germany, TenneT has 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 the committee is to share company information on compliance and integrity risks, raise awareness and mitigate risks by taking action. The committee met twice in 2019.

TenneT also has an independent 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 whistleblower portal, freely accessible on the internet.

Besides the day-to-day management of compliance risks and supporting, advising and handling compliance cases, the project to align the existing compliance management system with the ISO 19600, a best practice for international compliance management systems (CMS), made progress in 2019. We expect the outline of the CMS and a multi-year strategy and implementation plan to be in place by mid-2020. We have also implemented the updated Supplier Code of Conduct and Conflicts of Interest Policy.

A company-wide mandatory e-learning about compliance and integrity and data protection was rolled out in April for the first time. The next e-learnings on REMIT (the regulation on wholesale energy market integrity and transparency) and information security were launched in early 2020. E-learnings on compliance-related topics will be part of a training curriculum and the HR performance management system, i.e. a personal 'licence to operate'.

In 2019, 23 alleged compliance-related breaches were reported (2018: 18). Three of these alleged violations were reported via the whistleblower portal. Four cases resulted in compliance investigations, of which two are closed and two in progress. After an initial assessment, the other alleged breaches did not result in a compliance investigation and the majority of the alleged breaches have been closed. None of the breaches were of a material nature that would have justified disciplinary action. The outcome of the alleged breaches and investigations has no material impact on the company.

The Compliance & Integrity Officers have received more than one hundred requests for advice throughout the year. The majority of the questions relate to gifts, hospitality and conflicts of interest, but some also relate to the interpretation of legal directives and guidelines, information security and integrity matters.

There have been 35 data leaks and/or irregularities in 2019 (2018: 49). Where required, they have been reported to the relevant authorities. Sessions on the lessons learned were held and mitigating measures taken. We also conducted an internal audit on the data protection organisation in 2019.

TenneT did not identify any fraud, bribery or corruption breaches with material impact in 2019. Material impact is defined in our risk matrix as a severe breach that has a significant adverse effect on TenneT's reputation and/or financial position.

Risk appetite

Risk appetite is the amount and type of risk TenneT is willing to take or not to take, in pursuit of value, relative to its major business objectives.

TenneT's risk appetite was set by the Executive Board for each of our strategic pillars. It is communicated by management, endorsed by the Executive Board and disseminated throughout the company. In terms of the amount 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)
- 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 the section 'Our performance in 2019'.

Risk appetite and trend score

Strategic goal	Goal description	Risk Appetite (Low – High)	Risk Trend (- / +)	Opportunities Trend (- / +)
Drive the energy transition	as a green grid operator and a thought leader.			
Energise our people and organisation	with an inclusive and safe environment where people enjoy coming to work.			
Secure supply today and tomorrow	by maintaining the grid to meet reliability targets and operating it to its maximum capability.			
Safeguard our financial health	by implementing a regulatory framework to support our strategy, and delivering a return in line with what our capital providers expect, and raising the necessary external financing.			

Key risks

Strategic risks are presented in the section "Our performance in 2019". This section includes regulatory, reporting, other operational and compliance risks.

Regulatory risks

Regulatory risk	Risk-mitigating actions
• Inability 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 scrutinises the results of efficiency audit by the regulators and disputes or starts litigation, if needed.
• TenneT is unable to achieve a reasonable return on its invested capital as the regulated return continues to decline due to the low interest environment and stricter regulatory incentives on its total expenditures.	• In the Netherlands, TenneT constructively discusses with the ACM the regulatory parameters for the next regulatory period. In general, no material changes are expected in ACM's WACC approach. In Germany the discussions focus on the remuneration of investments.
Europe	
• The 'Clean Energy Package' (CEP) has entered into force. It requires a.o. that TSOs provide to the market 70% of the total cross-border transmission capacity, a number hardly possible without extensive and costly redispatch activities. The CEP however allows a linear fade-in until 2024 if an action plan is provided by governments. This plan might impose costly and hard-to achieve measures on TenneT. Other provisions of the CEP have a financial impact e.g. how TSOs have to use congestion revenues.	• Advocate at the ministry and regulator that redispatch and other costs are reasonably covered since they arise as an effect of changes in European law. Constantly follow up the development of the action plan both in the making (until end 2019) and in the implementation to ensure technical and financial feasibility of the proposed actions within the required timeframe. In addition, TenneT puts resources in the relevant working groups at European level (ENTSO) to shape methodologies which are developed at that level such that they are not harmful for TenneT.
The Netherlands	
• The ACM has initiated the start of the next regulatory period (starting 2022 with an expected duration of 5 years). The ACM will set the regulatory parameters relating a.o. to the efficiency (based on the international TSO benchmark), cost of capital and recovery of operational expenditures such as procurement of energy and ancillary services. There is the risk that the ACM sets to strict regulatory incentives, particularly relating to efficiency.	• TenneT is in a constructive dialogue with the ACM to ensure reasonable efficiency targets and cost recovery. However, similar to the 6th regulatory period (2014 - 2016), there is a risk that TenneT will need to dispute the applied efficiency targets before court. TenneT is advocating the regulation includes forward looking challenges, such as cost recovery for congestion management and positive incentives for innovation.
Germany	
• BMWi plans to introduce incentives on redispatch costs. Most probably there will be an amendment of the incentive regulation including a determination competence for BNetzA to design the specific scheme. There is a risk that this scheme does not reflect the degree to which redispatch costs can really be influenced by the TSOs. Specifically, there is a risk that completely exogenous impacts such as influences of the Clean Energy Package (e.g. cross border capacity 70 %) or weather conditions (thus RES infeed), are incentivised.	• TenneT discusses constructively with BMWi, BNetzA, Federal Ministries and Members of the Parliament to achieve an appropriate incentive scheme. Key objectives of TenneT's engagement is to exclude exogenous impacts from the model and to limit the expected risk of the incentive scheme.
• It is discussed to adjust the remuneration of investments. BMWi supposes misplaced incentives to complete investments too late, but based this thesis on flawed calculations. There is a risk that the investment remuneration scheme changes although there are no misplaced incentives in reality.	• TenneT explains how the financing of investments is to be managed and which incentives are currently in place. Furthermore TenneT together with the other three TSOs delivered correct calculations, showing that there are no misplaced investments. In general TenneT argues that the consistency of the investment framework is crucial for the energy transition.

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
• Limited availability of adequate resources – external and internal workforce, material and services.	• Strategic procurement planning and development based on deep demand analyses. • Further integration of external service providers (e.g. via EPCm). • Further develop employer branding and recruiting process. • Development and qualification of new suppliers and markets.
• Risk of outages caused by progressing obsolescence of high voltage equipment.	• Adapt reinforcement strategy to current developments. • Continuously improve the asset risk based approach. • Bundled project portfolio with optimised outage requirements.
• Lacking pro-active safety culture and behaviour. In conjunction with high pressure on people and projects that might increase the risk of work-related incidents and accidents.	• Further development of safety leadership and behaviour. • TenneT successfully completed a re-audit of Safety Culture Ladder Level 3.
• (Cyber) Terrorist or state attack against critical infrastructure.	• Implementation and certification of Corporate Information Security Management System (ISO 27001). • Improvement projects focusing on protection of physical assets. • Improved detective controls such as new tooling and improved security processes. • Regular cyber crisis management exercises. • Update disaster recovery plans with regards to new cyber threats.
• Public resistance and political opposition against large DC projects resulting in significant project delays.	• Early involvement of stakeholders, proactive consultation about identified issues and transparent communication. • Intense talks with political stakeholders on all levels in order to guarantee efficient planning.

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. • Non-compliance with permits and licenses.	• 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. • 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 authorised electrical safety experts and technical strategists. • Technical Audits.

Financial Statements

Consolidated financial statements

Consolidated statement of income

For the year ended 31 December (EUR million)

	Notes	2019		2018	
Revenue	3.1		**4,422**		**4,269**
Grid expenses	3.2.1	-1,955		-2,283	
Personnel expenses	3.2.2	-229		-214	
Depreciation and amortisation of assets	4.1, 4.2, 5.1	-973		-700	
Other operating expenses	3.2.3	-217		-235	
Other (gains)/losses		-6		-26	
Total operating expenses			**-3,380**		**-3,458**
Share in profit of joint ventures and associates	5.3		35		69
Operating profit			**1,077**		**880**
Finance income		3		1	
Finance expenses	3.3	-207		-182	
Finance result			**-204**		**-181**
Profit before income tax			**873**		**699**
Income tax expense *	3.4		-243		-181
Profit for the year			**630**		**518**
Profit attributable to:					
Equity holders of ordinary shares *	6.2.1	541		397	
Hybrid securities	6.2.1	33		31	
Owners of the company			**574**		**428**
Non-controlling interests	6.2.2		56		90
Profit for the year			**630**		**518**

* Income tax 2018 changed from -189 to -181 compared to the 2018 IAR due to a change in IAS 12 explained in note 1.3. As a result profit for the year also changed.

Earnings per share attributable to the equity holders of ordinary shares

For the year ended 31 December (EUR per share)

	Notes	2019	2018
Basic and diluted earnings per share	3.5	2,705	1,985

Consolidated statement of comprehensive income

For the year ended 31 December (EUR million)

		Attributable to equity holders of the company							
		Hedging reserve	Retained earnings	Unappro-priated result *	Equity attribut-able to ordinary shares	Hybrid securities	Equity attribut-able to owners of the company	Non-control-ling interest	Total equity
	Notes	6.2.1	6.2.1	6.2.1		6.2.1		6.2.2	
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 *		-	-	397	397	31	428	90	518
Total comprehensive income 2018		**-1**	**3**	**397**	**399**	**31**	**430**	**90**	**520**
2019									
Other comprehensive income to be reclassified to profit or loss in subsequent years:									
Amortisation of hedges	6.2.1	-2	-	-	-2	-	-2	-	-2
Taxation	3.4	-	-	-	-	-	-	-	-
		-2	**-**	**-**	**-2**	**-**	**-2**	**-**	**-2**
Items not to be reclassified to profit or loss in subsequent years:									
Re-measurement of defined benefit pensions	7.1.1	-	-137	-	-137	-	-137	-	-137
Taxation	3.4	-	40	-	40	-	40	-	40
		-	**-97**	**-**	**-97**	**-**	**-97**	**-**	**-97**
Total other comprehensive income 2019		**-2**	**-97**	**-**	**-99**	**-**	**-99**	**-**	**-99**
Profit for the year		-	-	541	541	33	574	56	630
Total comprehensive income 2019		**-2**	**-97**	**541**	**442**	**33**	**475**	**56**	**531**

* Unappropriated 2018 result changed from 389 to 397 due to a change in IAS 12 explained in note 1.3.

Consolidated statement of financial position

For the year ended 31 December (EUR million)

Assets	Notes	2019	2018
Non-current assets			
Tangible fixed assets	4.1	18,541	16,049
Right-of-use assets	4.2	392	-
Intangible assets	5.1	160	111
Investments in joint ventures	5.3.1	605	529
Investments in associates	5.3.2	33	37
Deferred tax assets	3.4	83	15
Other financial assets	5.4	61	42
Total non-current assets		**19,875**	**16,783**
Current assets			
Inventories	5.8	66	68
Account- and other receivables	5.5	2,085	2,509
Income tax receivable	3.4	46	60
Cash and cash equivalents	6.4	901	1,253
Total current assets		**3,098**	**3,890**
Assets of disposal group classified as held for sale	5.2	-	3
Total assets		**22,973**	**20,676**

Consolidated statement of financial position

For the year ended 31 December (EUR million)

Equity and liabilities	Notes	2019	2018
Equity			
Equity attributable to ordinary shares	6.2.1	4,696	3,964
Hybrid securities	6.2.1	1,120	1,120
Equity attributable to owners of the company		**5,816**	**5,084**
Non-controlling interests	6.2.2	744	796
Total equity		**6,560**	**5,880**
Non-current liabilities			
Borrowings	6.3	9,137	7,964
Contract liabilities	4.3	340	308
Deferred tax liability	3.4	63	124
Provisions	5.7	1,163	774
Lease liabilities	4.2	286	-
Net employee defined benefit liabilities	7.1.1	361	208
Other liabilities		3	3
Total non-current liabilities		**11,353**	**9,381**
Current liabilities			
Borrowings	6.3	565	756
Contract liabilities	4.3	3	3
Income tax payable	3.4	242	84
Provisions	5.7	248	86
Other financial liabilities		79	71
Lease liabilities	4.2	108	-
Account- and other payables	5.6	3,815	4,414
Total current liabilities		**5,060**	**5,414**
Liabilities of disposal group classified as held for sale	5.2	-	1
Total equity and liabilities		**22,973**	**20,676**

References relate to the notes starting with note 1 'Basis for reporting'. These form an integrated part of the consolidated financial statements.

Consolidated statement of changes in equity

For the year ended 31 December (EUR million)

		Attributable to equity holders of the company									
		Paid-up and called-up capital	Share premium reserve	Hedging reserve	Retained earnings	Unappro-priated result	**Equity attribut-able to ordinary shares**	Hybrid securities	**Equity attribut-able to owners of the company**	**Non-control-ling interest**	**Total equity**
(EUR million)	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 2018		**100**	**1,380**	**4**	**1,787**	**442**	**3,713**	**1,018**	**4,731**	**857**	**5,588**
Profit for the year		-	-	-	-	397	397	31	428	90	518
Total other comprehensive income		-	-	-1	3	-	2	-	2	-	2
Total comprehensive income		**-**	**-**	**-1**	**3**	**397**	**399**	**31**	**430**	**90**	**520**
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
Appropriation remaining prior year result *		-	-	-	295	-295	-	-	-	-	-
At 31 December 2018		**100**	**1,380**	**3**	**2,084**	**397**	**3,964**	**1,120**	**5,084**	**796**	**5,880**
Profit for the year		-	-	-	-	541	541	33	574	56	630
Total other comprehensive income		-	-	-2	-97	-	-99	-	-99	-	-99
Total comprehensive income		**-**	**-**	**-2**	**-97**	**541**	**442**	**33**	**475**	**56**	**531**
Dividends paid	6.2.1	-	-	-	-	-120	-120	-	-120	-36	-156
Capital contribution	6.2.1	-	410	-	-	-	410	-	410	-	410
Capital repayment	6.2.1	-	-	-	-	-	-	-	-	-72	-72
Distribution on hybrid securities	6.2.1	-	-	-	-	-	-	-33	-33	-	-33
Appropriation remaining prior year result		-	-	-	277	-277	-	-	-	-	-
At 31 December 2019		**100**	**1,790**	**1**	**2,264**	**541**	**4,696**	**1,120**	**5,816**	**744**	**6,560**

* 2018 Appropriation remaining prior year result changed from 303 and -303 into 295 and -295 due to a change in IAS 12 explained in note 1.3.

Consolidated statement of cash flows

For the year ended 31 December (EUR million)

	Notes	2019		2018	
Operational activities					
Operating profit			**1,077**		**880**
Non-cash adjustments to reconcile profit to net cash flows:					
Depreciation, amortisation and impairment of assets	4.1, 5.1	973		700	
Result on disposal of assets	4.1	6		22	
Share in profit of joint ventures and associates	5.3	-35		-69	
Dividends received from joint ventures and associates	5.3	38		47	
Movements in provisions and other (financial) liabilities and assets		70		-14	
			1,052		**686**
Working capital adjustments excluding EEG working capital:					
(Increase)/decrease in account- and other receivables	5.5	-18		32	
(Increase)/decrease in inventories		2		10	
Increase/(decrease) in account- and other payables	5.6	-71		82	
Increase/(decrease) in contract liabilities	4.3	32		25	
Increase/(decrease) in current financial liabilities		8		-23	
			-47		**126**
Income tax paid (net)			-200		-239
Net cash flows from operating activities excluding EEG working capital			**1,882**		**1,453**
EEG working capital adjustments:					
(Increase)/decrease in EEG receivables	5.5	-88		73	
(Increase)/decrease EEG deposits > 3 months	5.5	250		-250	
Increase/(decrease) in EEG payables	5.6	-718		137	
			-556		**-40**
Net cash flows from operating activities			**1,326**		**1,413**
Investing activities					
Purchase of tangible and intangible fixed assets	4.1, 5.1	-2,720		-2,324	
Proceeds from sale of tangible and intangible fixed assets	4.1, 5.1	4		-	
Capital contribution to joint ventures and associates	5.3	-73		-92	
Interest received		3		1	
Net cash flows used in investing activities			**-2,786**		**-2,415**
Financing activities					
Net financing					
Proceeds from borrowings	6.3	1,731		1,930	
Repayment of borrowings	6.3	-756		-917	
			975		**1,013**

Continuation >

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Consolidated statement of cash flows

For the year ended 31 December (EUR million)

	Notes	2019		2018	
Other financing activities					
Payment of lease liabilities	4.2	-129		-	
Interest paid		-167		-170	
Dividends paid to ordinary shareholders of the company	6.2.1	-120		-147	
Proceeds from capital contributions	6.2.1	690		350	
Proceeds from issue of hybrid securities	6.2.1	-		100	
Distribution on hybrid securities	6.2.1	-33		-30	
Dividends paid and capital repayments to non-controlling interests	6.2.2	-108		-151	
			133		**-48**
Net cash flows from financing activities			**1,108**		**965**
Net change in cash and cash equivalents			**-352**		**-37**
Cash and cash equivalents at 31 December	6.4	901		1,253	
Cash and cash equivalents at 1 January	6.4	1,253		1,290	
			-352		**-37**

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 2019. 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.

1. Basis for reporting

The accounting policies describe our approach to recognising and measuring transactions and balance sheet items in our financial statements. Accounting policies, including new European Union (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 judgements used in the preparation of the financial statements. 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 primary users of these financial statements.

1.1 General

TenneT Holding B.V. and its subsidiaries are a leading electricity transmission system operator with activities in the Netherlands and a large part of Germany. In the Netherlands, our activities are conducted by TenneT TSO B.V. and its subsidiaries. In Germany, the activities are performed by TenneT GmbH & Co. KG and its subsidiaries.

The Dutch State owns the entire issued share capital of TenneT Holding B.V. Furthermore, TenneT Holding B.V. has issued hybrid securities which are deeply subordinated and are accounted for as part of equity attributable to equity holders of the company. The head office and legal seat of TenneT Holding B.V. is located in Arnhem, the Netherlands.

These consolidated financial statements of TenneT Holding B.V. and its subsidiaries (hereafter referred to as 'TenneT', 'the company' or 'the Group') for the year ended 31 December 2019 were prepared and authorised by our Executive Board for issue in accordance with a resolution of the Supervisory Board on 9 March 2020. The financial statements will be submitted for adoption at the General Meeting of Shareholders. These consolidated financial statements have been audited by Ernst & Young Accountants LLP.

1.2 Basis for preparation

These consolidated financial statements have been prepared in accordance with IFRS as adopted by the EU, and Part 9, Book 2 of the Dutch 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 Dutch 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 intends it to do so, for at least one year from the date of the end of the reporting period.

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.

1.3 Changes in EU-endorsed published IFRS standards and interpretations effective in 2019

Significant new and amended standards adopted by the Group

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

TenneT is applying IFRS 16 Leases for the first time in 2019. The nature and impact is described below.

IFRS 16 was issued in January 2016 and replaces IAS 17 Leases, IFRIC 4 Determining whether an Arrangement contains a Lease, SIC-15 Operating Lease-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 are required to separately recognise the interest expense on the lease liability and the depreciation expense on the right-of-use asset.

Lessees are also 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 has adopted IFRS 16 using the modified retrospective approach. Under this approach, the cumulative effect of initially applying IFRS 16 is recognised as an adjustment to equity at the date of initial application (e.g. 1 January 2019). Comparative figures for the year ended 31 December 2018 are not restated to reflect the adoption of IFRS 16 but instead continue to reflect the lessee's accounting policies under IAS 17 Leases. TenneT applied the available practical expedients wherein it:

- Used a single discount rate to a portfolio of leases with reasonably similar characteristics;
- Applied the short-term leases exemptions to leases with lease term that ends within 12 months of the date of initial application;
- Excluded the initial direct costs from the measurement of the right-of-use asset at the date of initial application,
- Applied the low value leases exemptions to leases for which the underlying asset is of low value.

TenneT has elected 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 has elected not to apply IFRS 16 for contracts that were not previously identified as containing a lease applying IAS 17 and IFRIC 4.

In summary, the impact of adopting IFRS 16, on 1 January 2019 (note 4.2) on total assets was EUR 384 million as we recognised 'right-of-use assets' as part of the non-current assets. Correspondingly, we recognised an aggregated EUR 384 million for the items 'lease liability (long)' and 'lease liability (short)'. The impact on equity was EUR nil.

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 has applied 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. An adjustment of EUR 8 million is made from the consolidated statement of equity to the consolidated statement of income. Comparative figures are changed accordingly.

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

The IASB made amendments to the definition of materiality in IAS 1 and IAS 8. The new definition reads: Information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity. In line with the amendments we consider an item material if, in our view, it could reasonably be expected that the item has impact on the economic decisions of users of our general financial statements. The amendments to IAS 1 and IAS 8 are effective for annual periods beginning on or after 1 January 2020 and must be applied prospectively. Earlier application is permitted. No significant impact on the financial statements is expected.

1.4 Basis for consolidation

The consolidated financial statements incorporate the financial statements of TenneT Holding B.V. and its subsidiaries as at 31 December 2019. 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 over a subsidiary, we derecognise the subsidiary's assets (including goodwill), liabilities and any non-controlling interest in the former subsidiary at the date control is lost (including the cumulative translation differences). Furthermore, the fair value of the consideration received, the fair value of any investment retained and any surplus or deficit in statement of income 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 is recognised as goodwill.

1.5 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. 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. Actual results could differ from these estimates. Significant items containing estimates and assumptions are as follows:

Item	Note	Estimate/assumptions
Tangible fixed assets	4.1	Estimate of remaining useful life
Right-of-use assets and lease liabilities	4.2	Estimate of discount rate and expected extention or accelerated termination date
Intangible 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

1.6 Foreign currency

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

1.7 Changes in presentation

As of 2019, the intangible assets under construction are no longer presented as part of the tangible fixed assets under construction but separately as part of the intangible assets. This change affected the classification in the consolidated statement of financial position, impacting the line items tangible fixed assets and intangible assets as of 1 January 2019 for EUR 26 million. There was neither an impact on the consolidated statement of income nor on total equity.

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 of these activities.

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 through 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 three customers in the German segment that have revenues that are more than 10% of our total revenue. The revenue from these customers amount respectively EUR 921 million (2018: EUR 789 million), EUR 662 million (2018: EUR 632 million) and EUR 724 million (2018: EUR 365 million)

	2019					2018				
(EUR million)	**Revenue**	**EBIT**	**Investments**	**Assets**	**Liabilities**	Revenue	EBIT	Investments	Assets	Liabilities
TSO Netherlands	1,038	211	1,131	7,075	4,014	945	121	876	6,165	3,646
TSO Germany	3,050	526	1,925	16,977	11,836	3,277	691	1,370	16,067	11,038
Non-regulated activities	36	37	8	561	257	36	43	7	684	159
Total segments	**4,124**	**774**	**3,064**	**24,613**	**16,107**	**4,258**	**855**	**2,253**	**22,916**	**14,843**
Eliminations and adjustments	-40	-6	-	-937	1,307	-35	-2	-	-1,133	1,143
Consolidated underlying information	**4,084**	**768**	**3,064**	**23,676**	**17,414**	**4,223**	**853**	**2,253**	**21,783**	**15,986**

For an analysis of the underlying results see the 'Secure a solid financial performance and investor rating' 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 year's 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. The different accounting treatment of the regulatory deferral accounts also results in a different carrying amount of these assets.

For further explainations for the differences between IFRS and underlying see note 2.3.

Due to regulatory changes in Germany TenneT reassessed in 2019 its underlying revenue allocation for offshore assets and came to the conclusion that the methodology applied so far needs to be adjusted retrospectively to give better insights for users of our financial statements. While IFRS figures are not affected underlying figures in the TSO Germany segment have changed. The impact on underlying EBIT and revenue 2018 is EUR +47 million, the underlying liabilities 2018 of EUR -97 million and underlying equity 2018 of EUR +97 million.

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, auction receipts, and the measurement of tangible fixed assets. In the IFRS financial statements, revenue from contracts with customers is recognised when control of the goods or 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. In the underlying financial information revenues are recognised according the permissible tariff decision adopted by the regulator. By doing so, volume and post calculation differences are directly matched to the related costs and therefore provide better insight to management for steering TenneT.

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:

2019 (EUR million)	Revenue	EBIT	Assets	Liabilities	Recovery/ reversal period (years)
Consolidated underlying information	**4,084**	**768**	**23,676**	**17,414**	
To be settled in tariffs	181	131	-405	-2	0 - 5
Auction receipts	136	136	-	-790	0 - 20
Investment contributions	-5	-5	-	-243	0 - 29
Maintenance of the energy balance	26	26	-	-34	0 - 1
Difference in tangible fixed assets	-	21	-280	-	0 - 29
Effect on deferred tax balances	-	-	-18	68	0 - 29
Consolidated IFRS financial statements	**4,422**	**1,077**	**22,973**	**16,413**	

2018 (EUR million)	Revenue	EBIT	Assets	Liabilities	Recovery/ reversal period (years)
Consolidated underlying information	**4,223**	**853**	**21,783**	**15,986**	
To be settled in tariffs	-129	-173	-785	-43	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**	

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, under ‘to be settled in tariffs’. The expenses have to be settled in future tariffs in the coming years.

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. On 19 November 2019, an addendum to the original power agreement was signed. The agreements relate to the restitution of existing auction fees in order to limit the increase in net tariffs in 2020. In Germany, the use of auction receipts for investments is effectively achieved by reducing tariffs over a rolling 20-year period as of 2019.

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. Following the release scheme as described above.

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 and released in the subsequent year 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.

Between Underlying and IFRS there is no difference in depreciation method, but the amount of depreciation differs mainly due to an impairment under IFRS of the NorNed cable in 2015 of EUR 232 million which is not recognised under Underlying.

3. Results for the year

This section comprises notes related to revenue, operating expenses, results for the year as determined under IFRS.

3.1 Revenue

The disaggregated revenue is presented below.

	2019			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total segments**
Connection and transmission services	634	2,377	-	3,011
Maintenance of the energy balance	68	60	-	128
Operation of energy exchanges	68	77	-	145
Offshore balancing	-	1,012	-	1,012
Other	16	74	36	126
Inter-segment	25	15	-	40
Total revenue IFRS	**811**	**3,615**	**36**	**4,462**
Inter-segment adjustments and eliminations	-25	-15	-	-40
Total revenue from contracts with customers IFRS	**786**	**3,600**	**36**	**4,422**

	2018			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total**
Connection and transmission services	594	2,467	-	3,061
Maintenance of the 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**

3.1.1 Connection and transmission services

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 partly due to ongoing investments and a growing asset base. This increase on line item “Connection and transmission services” is offset by a different classification as a result of a changed methodology for the reimbursement of offshore costs as off the beginning of 2019. Until 2018 the offshore costs that were capped (EUR 417 million), thus based on lump-sum reimbursement method, were included under the “Connection and transmission services”. As of 2019 all offshore costs are included in the offshore grid levy and are fully reported in the line item “Offshore balancing”.

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. the 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. The tariffs are set by both the German and Dutch regulator.

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

Until 2018 offshore costs were partly (EUR 333 million) included in the revenue cap, which is included in the line items ‘connection and transmission services’ and ‘grid expenses’. As of 2019 all offshore costs are included in the offshore grid levy and are fully reported in the line item offshore balancing. Total offshore balancing decreased mainly (EUR 90 million) due to the new regulatory period with lower imputed return on equity.

Revenue from offshore balancing is regulated by the regulator.

3.1.5 Revenue reconciliation

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:

	2019			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total segments**
Total revenue	**811**	**3,615**	**36**	**4,462**
To be settled in tariffs	303	-484	-	-181
Auction receipts	-62	-74	-	-136
Investment contributions	12	-7	-	5
Maintenance of the energy balance	-26	-	-	-26
Total revenue underlying	**1,038**	**3,050**	**36**	**4,124**
Inter-segment adjustments and eliminations	-25	-15	-	-40
Total revenue from contracts with customers underlying	**1,013**	**3,035**	**36**	**4,084**

	2018			
(EUR million)	TSO NL	TSO Germany	Non-regulated	**Total**
Total revenue	**804**	**3,464**	**36**	**4,304**
To be settled in tariffs	255	-126	-	129
Auction receipts	-96	-60	-	-156
Investment contributions	10	-	-	10
Maintenance of the energy balance	-28	-1	-	-29
Total revenue underlying	**945**	**3,277**	**36**	**4,258**
Inter-segment adjustments and eliminations	-19	-16	-	-35
Total revenue from contracts with customers underlying	**926**	**3,261**	**36**	**4,223**

3.1.6 ⓘ 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 goods or 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)	2019	2018
System services	1,179	1,437
Connection and transmission services	317	285
Maintenance of the energy balance	98	97
Maintaining and operating transmission grids	370	470
Other	-9	-6
Total	**1,955**	**2,283**

From 1 January 2019 lease cost for power plants are no longer recorded as grid expenses due to the adoption of IFRS 16 but are reflected as depreciation of EUR 108 million instead. System services decreased additionally due to a release of the grid costs accrual of EUR 89 million and due to a decrease of the grid reserve cost (the cost for keeping emergency capacity in German power plants) of EUR 106 million mainly because some contracts with power plants that were not extended.

3.2.2 Personnel expenses

(EUR million)	2019	2018
Salaries	288	259
Social security contributions	40	36
Pension charges defined benefit plans	14	23
Pension charges other plans	19	16
Other personnel expenses	28	23
Capitalised costs for (in)tangible fixed assets	-160	-143
Total	**229**	**214**
Average workforce in FTEs (internal employees only)	3,526	3,253
Average workforce in FTEs employed in the Netherlands	1,538	1,443
Average workforce in FTEs employed in the Germany	1,988	1,810

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
2019	**136**	**50**	**186**
2018	97	48	145

Executive Board (EUR thousand)	Fixed	Variable	Pension cost	Termination benefits	Total
2019	**1,230**	**194**	**257**	**-**	**1,681**
2018	1,586	248	687[1)]	600	3,121

[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 1,253 thousand (2018: EUR 1,803 thousand) and remuneration of non-statutory directors of EUR 427 thousand (2018: EUR 1,318 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)	2019	2018
Accommodation and office expenses	66	89
Consultancy expenses	27	21
Hiring of temporary personnel	31	54
Travel and living expenses	16	15
Other expenses	77	56
Total	**217**	**235**

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

(EUR thousand)	2019	2018
Audit of the financial statements		
Ernst & Young Accountants LLP	770	667
Other Ernst & Young firms	592	589
Total audit of the financial statements	**1,362**	**1,256**
Other assurance services		
Ernst & Young Accountants LLP	309	224
Other Ernst & Young firms	172	182
Total other assurance services	**481**	**406**
Total assurance services	**1,843**	**1,662**
Other services (other Ernst & Young firms)	33	40
Total other services	**33**	**40**
Total EY network fees	**1,876**	**1,702**

3.3 Finance expenses

(EUR million)	2019	2018
Interest on borrowings and credit facilities	178	152
Capitalised interest on assets under construction	-9	-8
Interest on provisions	19	18
Interest on defined benefit pension plans	4	4
Interest on lease liability	2	-
Other finance expenses	13	16
Total	**207**	**182**

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 filled up to and including 2017. Corporate income tax paid in the Netherlands in 2019 amounted to EUR 58 million.

In Germany, corporate income and trade tax returns for all German entities have been filed up to and including fiscal year 2018. The tax audit for the fiscal years 2013 until 2016 relating to all German entities has been finished in 2019. The full impact of the tax audit is included in the annual financial statements. For the German Offshore entities the German tax authorities have started the tax audit for the fiscal years 2017 to 2018. In 2019, we paid EUR 142 million of corporate income tax in Germany.

The key components of income tax expense are:

Consolidated income statement (EUR million)	**2019**	2018
Current income tax charge *	332	291
Deferred tax:	-89	-110
Income tax expense reported in the statement of income	**243**	**181**

* Current income tax charge 2018 changed from 299 into 291 due to a change in IAS 12 explained in note 1.3.

Consolidated statement of comprehensive income (EUR million)	**2019**	2018
Effect of re-measurement of defined benefit pensions	40	-2
Income tax charged directly to other comprehensive income	**40**	**-2**

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 29.39% 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)	**2019**	2018
Profit before income tax	**873**	**699**
Statutory income tax rate of 25% (The Netherlands, 2018: 25%)	218	175
Effect of higher tax rate in Germany	39	30
Effect of future tax rate change in the Netherlands	9	-11
Adjustments in respect to current and deferred tax of previous years	-11	9
Non-deductible costs	1	1
Non-taxable income	-11	-13
Tax paid by third parties	-2	-10
At the effective income tax rate of 28% (2018: 26%*)	**243**	**181**

* The effective income tax rate 2018 changed from 27% into 26% due to a change in IAS 12 explained in note 1.3.

The main reason for the higher effective tax rate is the effect of the higher tax rate in Germany. The impact of the remeasurement of the deferred tax position due to the enacted rate change in the Netherlands is almost neutralised by the impact of the German tax audit which is mainly the amount presented in adjustments in respect to current and deferred tax previous years. The main items in the non-taxable income are the hybrid interest due to change in IAS 12 explained in note 1.3 and participation exemption. The decrease of the tax paid by third parties relates to reduced third party income compared to 2018.

Deferred tax relates to the following:

	Statement of financial position		Statement of income	
(EUR million)	**2019**	2018	**2019**	2018
Auction receipts	-185	-182	3	-32
Investment contributions	-62	-62	1	-12
Tariffs to be settled	50	18	-33	-10
Depreciation for tax purposes	-101	-157	-55	-8
Provisions	323	242	-42	-19
Profit allocation to hybrid securities	-5	-5	-	-
Other	-	37	37	-29
Net deferred tax assets/(liabilities)	**20**	**-109**		
Deferred tax expense/(income)			**-89**	**-110**

The effect on leases is part of 'Other' and due to low interest not material.

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

(EUR million)	**2019**	2018
Deferred tax assets	83	15
Deferred tax liabilities	-63	-124
Deferred tax, net	**20**	**-109**

The deferred tax assets is mainly relate to TSO Germany. The current German tax law contains no time limits for deferred tax assets.

Movements in deferred tax positions are set out below.

(EUR million)	**2019**	2018
At 1 January	**-109**	**-217**
Tax expense during the period recognised in statement of income	89	110
Tax income during the period recognised in other comprehensive income	40	-2
At 31 December	**20**	**-109**

The Group did not have any tax loss carry forwards as of 31 December 2019.

ⓘ Accounting policy

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

Current income tax assets and liabilities 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 are 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)	**2019**	2018
Profit for the year attributable to the ordinary shareholder of the company	574	428
Allocation to hybrid securities	-33	-31
Profit for the year attributable to equity holders of the company adjusted for the allocation to hybrid securities	**541**	**397**
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 substantial 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 2018	**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**
Additions	372	247	39	2,354	3,012
Transfers	1,524	1,401	44	-2,969	-
Transfer to intangible assets	-	-	-	-26	-26
Changes in estimations (note 5.7.1)	143	189	-	-	332
Disposals	-11	-6	-4	-4	-25
At 31 December 2019	**10,359**	**8,530**	**961**	**3,627**	**23,477**
Depreciation and impairment					
At 1 January 2018	**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**
Depreciation for the year	446	305	59	-	810
Impairment	2	-	-	-	2
Disposals	-6	-4	-1	-	-11
At 31 December 2019	**2,462**	**2,144**	**330**	**-**	**4,936**
Net book value:					
At 1 January 2018	5,267	4,260	493	4,510	14,530
At 31 December 2018	6,311	4,856	610	4,272	16,049
At 31 December 2019	7,897	6,386	631	3,627	18,541

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.

In 2019 the discount rate for the decommissioning provision was set between 0.4% and 0.7% (2018: 2.9%) for OWF connections (see note 5.7.5). The discount rate has been adjusted in 2019 to better reflect current market assessments of the time value of money and the risks specific to the liability. 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 2019 is disclosed in note 3.3. The effective interest rate used to determine the amount of borrowing costs capitalised was 2.1% (2018: 2.2%).

Assets under construction and investments

	2019		2018	
(EUR million)	**Investments**	**Assets under construction**	Investments	Assets under construction
TSO Netherlands	1,091	1,384	841	1,785
TSO Germany	1,916	2,243	1,364	2,487
Non-regulated activities	5	-	7	-
Total	**3,012**	**3,627**	**2,212**	**4,272**

ⓘ Accounting policy tangible fixed assets

Tangible fixed assets are valued at cost, net of accumulated depreciation and accumulated impairment losses, if any. Such cost include 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 major maintenance is performed, its cost is recognised in the carrying amount of the asset as a replacement, if the recognition criteria are met. All other repair and maintenance costs are recognised in the statement of income 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
Offshore platforms	20
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 Right-of-use assets and lease liabilities

Right-of-use assets

(EUR million)	Land & buildings	Power plants	Other right-of-use assets	**Total**
Cost				
At 1 January 2019	**-**	**-**	**-**	**-**
Initial recognition IFRS 16	95	218	71	384
Additions	17	95	30	142
Depreciation	-11	-108	-15	-134
At 31 December 2019	**101**	**205**	**86**	**392**

Leased Land & Buildings

Land is mainly leased to set up pylons for transmission cables. These contracts run for a period of 25 - 170 years. Buildings are leased mainly as office space and storage space. These contracts run for a period of 1 - 40 years.

Lease contracts for buildings are negotiated individually and include a variety of different terms and conditions, including extension options.

Lease payments are in substance fixed, only a minority of the lease contracts contain clauses with reference to the CPI index.

Leased power plants

TenneT is committed to the use of security and grid reserve power plants representing lease commitments according to IFRS 16. The commitments have a maturity of 4-6 years and can be prolonged depending on the decision of regulatory authorities.

Lease payments are in substance fixed and TenneT had no power plant leases which contained variable lease payments. Lease contracts do not include any clauses with reference to an index or contractual rate.

Leased others

Telecom lease contracts (including fibreglass cables) run for a period between 2 and 36 years. For qualifying employees TenneT leases cars with a lease term between 1 and 10 years.
TenneT does not purchase or guarantee the value of leased telecom assets or cars.

TenneT has several contracts with termination / extension options. In determining the lease term all relevant facts and circumstances that create a significant economic incentive to exercise those options are taken into consideration.

TenneT had no material 'sub lease' contracts in 2019 and therefore no material income from subleasing right-of-use assets. TenneT has not entered into any sale and leaseback contracts. No lease contracts with residual value guarantees are entered into. No lease contracts have been concluded that contain restrictions or covenants.

Lease payments are in substance fixed, only some of the lease contracts have pre-determined lease payment changes.

Short-term leases and leases of low value

In some cases TenneT leases other assets with terms of 1-3 years. TenneT considers these assets to be of low-value or short term in nature and therefore no right of use assets and lease liabilities are recognised for these leases. The aggregate total of short-term lease expenses for more than one month and low value assets lease expenses amounted to EUR 2 million.

Lease liability

(EUR million)	Lease liability Land & buildings	Lease liability power plants	Lease liability other leases	Total
At 1 January 2019	**-**	**-**	**-**	**-**
Initital recognition IFRS 16	95	218	71	384
Addition	17	95	30	142
Interest	1	-	1	2
Repayments	-11	-102	-16	-129
Other movements	-2	-4	1	-5
At 31 December 2019	**100**	**207**	**87**	**394**
Long-term liability	94	114	78	286
Short-term liability	6	93	9	108
Total	**100**	**207**	**87**	**394**

The total cash outflow (including low value items and short term leases) in 2019 was EUR 130 million. Future cash outflows of leases not yet commenced but to which TenneT is committed are EUR 46 million yearly from 2022 till 2032 (power plants) and EUR 48 million in 2020 respectively EUR 77 million yearly from 2021 until 2023 (NordLink).

All lease liabilities refer to operating lease commitments.

The maturity analysis of lease liabilities is disclosed in note 6.7.

(EUR million)	Total
Depreciation expense of right-of-use assets	-134
Short-term lease expenses	-2
Interest expense on lease liabilities	-2
Total amount recognised in profit and loss	**-138**

ⓘ Accounting policy

At inception of a contract, TenneT assesses whether a contract conveys the right to control the use of an identified asset for a period in exchange for consideration, in which case it is classified as a lease.

TenneT recognises a right-of-use asset and a lease liability at the lease commencement date. The asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to restore the underlying asset, less any lease incentives received.

The lease asset is subsequently depreciated using the straight-line method from the commencement date to the end of the useful life of the right-of-use asset, considered to be indicated by the lease term. The lease asset is periodically adjusted for certain remeasurements of the lease liability and impairment losses (if any).

The lease liability is initially measured at the present value of outstanding lease payments, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, TenneT's incremental borrowing rate. If available, TenneT uses its incremental borrowing rate as the discount rate. Otherwise the used discount rates are shown below.

	2019
Under 5 year	0.00%
5-10 years	0.50%
10-15 years	1.10%
15-25 years	1.60%
Above 25 years	2.00%

After initial recognition the lease liability is measured at the present value of the remaining lease payments using the effective interest method and is remeasured when there is a change in future lease payments arising from a change in an index or rate or if TenneT changes its assessment of whether it will exercise a purchase, extension or termination option. A corresponding adjustment is made to the carrying amount of the right-of-use asset with any excess over the carrying amount of the asset being recognised in the profit or loss.

Short-Term Leases and Leases of Low Value

TenneT has elected not to recognise right-of-use assets and lease liabilities for short-term leases (leases with a term of 12 months or less) and leases of low-value assets. TenneT recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

4.3 Contract liabilities

The majority of the contract liabilities relates to investment contributions received from third parties for the construction of new substations, grid connections or increased connection capacity and amounted to EUR 339 million (2018: EUR 305 million). This was due to received contributions of EUR 46 million minus EUR 12 million amortisation. The current part of the investment contributions amounted to EUR 3 million (2018: EUR 3 million) and has been presented separately in the statement of financial position.

ⓘ Accounting policy

Contract liabilities are recognised when payments are made or the payments are due (whichever is earlier). Contract liabilities are recognised in accordance with the related 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.

4.4 Commitments and contingencies related to investments

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

(EUR million)	2019	2018
Off-balance sheet rights		
Bank guarantees received	1,765	1,556
Comfort letters received	878	693
Total	**2,643**	**2,249**
Off-balance commitments		
Capital commitments	4,059	3,611
Comfort letters issued	774	775
Operating lease commitments	-	384
Total	**4,833**	**4,770**

The expected cash flows in respect of capital commitments are equal to the amounts in the above table. For comfort letters issued, no cash flows are expected.

4.4.1 Bank guarantees received

Bank guarantees received include guarantees for investment projects.

4.4.2 Comfort letters received

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

4.4.3 Capital commitments

Capital commitments are commitments entered into with regard to the purchase of tangible fixed assets. Approximately EUR 2.2 billion of capital commitments are payable within the next 12 months (2018: EUR 2.0 million).

4.4.4 Operating lease commitments

Due to the implementation of IFRS 16 operating lease commitments (except for short-term leases and leases of low value) are no longer off balance, see note 4.2.

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 in Germany, 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 businesses, we are exposed to several claims from and disputes with third parties. We record a provision for these claims and disputes if 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 2018	**31**	**202**	**64**	**30**	**4**	**331**
Additions	-	6	-	-	35	41
Transfers	-	36	-	-	-36	-
At 31 December 2018	**31**	**244**	**64**	**30**	**3**	**372**
Additions	-	3	-	1	48	52
Transfer from tangible assets	-	2	-	-	24	26
Transfers	-	20	-	10	-30	-
At 31 December 2019	**31**	**269**	**64**	**41**	**45**	**450**
Amortisation and impairment						
At 1 January 2018	**-**	**180**	**43**	**10**	**-**	**233**
Amortisation for the year	-	20	5	3	-	28
At 31 December 2018	**-**	**200**	**48**	**13**	**-**	**261**
Amortisation for the year	-	23	5	1	-	29
At 31 December 2019	**-**	**223**	**53**	**14**	**-**	**290**
Net book value:						
At 1 January 2018	31	22	21	20	4	98
At 31 December 2018	31	44	16	17	3	111
At 31 December 2019	31	46	11	27	45	160

As at 31 December 2019 and 2018, 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).

As of 2019 all intangible assets under construction are presented as part of the intangible assets and no longer as part of tangible fixed assets under construction.

During 2019 EUR 16 million (2018: EUR 13 million) of software was internally developed.

ⓘ 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. Except for capitalised development costs, internally generated intangible assets are not capitalised and expenses are reflected in the statement of income in the period in which they incur.

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 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, see note 2) 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 3.8% (2018: 3.9%). The cash flows beyond the three-year period until 2037 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

Effective 18 April 2019 Novec B.V. sold 60% of the shares in WL Winet B.V. to WL Winet Holding B.V. for a cash consideration of EUR 1.5 million and consequently lost full control. An impairment of EUR 2 million, on the held for sale transaction was already accounted for in 2018 in line item other losses.

ⓘ Accounting policy

Business combinations are accounted for using the acquisition method. The cost of the acquisition is measured as the aggregate of the assets and liabilities measured at their acquisition-date fair value (with a limited number of specified exceptions) including 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 2 million in 2019 (2018: EUR 4 million).

BritNed

BritNed is a joint venture with National Grid International Ltd (National Grid), 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 (KfW) 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 contains summarised financial information of material joint ventures and the reconciliation with their carrying amounts.

	2019		2018	
Statement of financial position (EUR million)	**BritNed**	**NOKA**	BritNed	NOKA
Non-current assets	454	780	432	686
Cash and cash equivalents	46	13	60	35
All other current assets	22	95	18	22
Non-current liabilities	-9	-72	-11	-56
Current liabilities	-65	-56	-44	-85
Equity	**448**	**760**	**455**	**602**
Ownership TenneT	*50%*	*50%*	*50%*	*50%*
Carrying amount of the investment	**224**	**380**	**228**	**301**

	2019		2018	
Statement of income (EUR million)	**BritNed**	**NOKA**	BritNed	NOKA
Revenue	91	32	108	55
Depreciation and amortisation	-16	-	-15	-
Other costs	-12	-2	-16	-1
Operating profit	**63**	**30**	**77**	**54**
Finance income and expenses	-1	-3	-	-2
Income tax expense	-11	-15	-15	-
Profit for the year *	**51**	**12**	**62**	**52**
Ownership TenneT	*50%*	*50%*	*50%*	*50%*
Group's share in profit	**26**	**6**	**31**	**26**

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

BritNed had contingent liabilities of EUR 2 million (2018: EUR 9 million) mainly related to comfort letters issued. NOKA had contingent liabilities of EUR 190 million (2018: EUR 0.5 billion) mainly related to investments in tangible fixed assets. The NOKA project is reaching its end in the next months. Therefore, the open amount for contingent liabilities is decreasing constantly.

None of our joint ventures are permitted to distribute profits without the consent from all shareholders or partners. In 2019 EUR 28 million dividend was received from BritNed (2018: EUR 34 million) and EUR 1 million from other interests in joint ventures (2018: EUR 3 million). During 2019 we contributed EUR 73 million to NOKA's capital (2018: EUR 92 million).

Other interests in joint ventures amounted EUR 1 million at 31 December 2019 (2018: EUR 1 million).

5.3.2 Associates

At 31 December 2019 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 five immaterial investments in Energie Data Services Nederland B.V. (EDSN), European Market Coupling Company GmbH (EMCC), WL Winet B.V. 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 2 million in 2019 (2018: EUR 4 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:

	2019		2018	
Statement of financial position (EUR million)	**HGRT**	**OTC**	HGRT	OTC
Non-current assets	91	92	90	99
Current assets	1	33	7	32
Other non-current liabilities	-	-168	-	-167
Current liabilities	-	-3	-	-2
Equity	**92**	**-46**	**97**	**-38**
Ownership TenneT	*34%*	*25%*	*34%*	*25%*
Carrying amount of the investment	**31**	**-**	**33**	**-**

	2019		2018	
Statement of income (EUR million)	**HGRT**	**OTC**	HGRT	OTC
Revenue	-	28	-	26
Depreciation and amortisation	-	-6	-	-6
Other costs, gains and losses	-	-8	-	-5
Operating profit	**-**	**14**	**-**	**15**
Finance income and expenses	10	-5	10	-9
Income tax expense	-	-2	-	-1
Profit for the year *	**10**	**7**	**10**	**5**
Ownership TenneT	*34%*	*25%*	*34%*	*25%*
Group's share in profit	**3**	**2**	**3**	**1**

* 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 2019, HGRT had no contingent liabilities outstanding (2018: nil). In 2019, EUR 5 million in dividends was received (2018: EUR 4 million). In 2019 the carrying amount was adjusted to properly reflect the equity value of the investment.

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 2019 (2018: nil). EUR 4 million dividend from OTC was received in 2019 (2018: EUR 6 million).

Other

Our interest in other associates amounted EUR 2 million at 31 December 2019 (2018: EUR 4 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 distributes dividend to us in excess of our carrying amount, a liability is recognised if TenneT:

- is obliged to refund the dividend;
- has incurred a legal or constructive obligation; or
- 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 non-current financial assets

(EUR million)	2019	2018
Receivables from related parties	41	34
Fees for credit facilities available	6	2
Other	14	6
Total	**61**	**42**

The receivables from related parties mainly consisted of loans granted to NOKA and Mobile Radio Networks Vehicle B.V. (a 100% subsidiary of OTC) in an amount of EUR 36 million (2018: EUR 28 million) respectively EUR 5 million (2018: EUR 5 million).

5.5 Account- and other receivables

(EUR million)	2019	2018
Amounts to be invoiced to EEG trade debtors	1,133	1,046
EEG trade receivables	9	8
EEG deposits > 3 month	-	250
Trade receivables	240	226
Amounts to be invoiced	520	514
Receivable from shareholder	-	280
VAT receivables	60	42
Interest receivable	4	4
Other	119	139
Total	**2,085**	**2,509**

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 German 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.

EEG revenues and expenses are legally required to be administrated separately and are legally designated 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 consisted 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 were not at our free disposal. Refer to 5.6 for the EEG accounts payable.

See note 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
2019	**240**	**207**	**18**	**3**	**12**
2018	226	205	8	5	8

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

(EUR million)	2019	2018
At 1 January	**12**	**9**
Transition effect IFRS 9	-	1
Charge for the year	4	8
Utilised	-2	-3
Unused amounts reversed	-1	-3
At 31 December	**13**	**12**

As at 31 December 2019, receivables with an initial value of EUR 4 million (2018: EUR 4 million) were fully provided for.

5.5.3 Amounts to be invoiced

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

5.5.4 Receivable from shareholder

In line with the capital commitment by the Dutch government in 2016, we received the third unconditional tranche of EUR 280 million at the end of 2019. The Ministry of Finance also granted the fourth -conditional- tranche of EUR 410 million, which we also received in 2019. See note 6.2.1.

5.6 Account- and other payables

(EUR million)	2019	2018
EEG accounts payable	1,761	2,479
Accounts payable	269	301
Payables in connection with tangible fixed asset purchases	424	211
Grid expenses payable	1,045	1,071
Interest payable	105	92
Social securities and other taxes payable	19	35
Payables to related parties	7	20
Other payables	185	205
Total	**3,815**	**4,414**

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 related to unbilled services and deliveries for onshore and offshore investment projects.

5.6.3 Grid expenses payable

The grid expenses payable consisted 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 are made in these models such as weather conditions, requested volumes and capacity per plant. 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 farm operators (OWFs), personnel related liabilities and accruals for which invoices were 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

	2019			2018		
(EUR million)	**Current**	**Non-current**	**Total**	Current	Non-current	Total
Environmental and decommissioning	15	1,127	1,142	11	665	676
Tariff related	123	5	128	28	5	33
Other	110	31	141	47	104	151
Total	**248**	**1,163**	**1,411**	**86**	**774**	**860**

(EUR million)	Environmental management and decommissioning	Tariff related	Other	**Total**
At 1 January 2018	**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**
Addition	122	98	8	228
Utilisation	-6	-3	-3	-12
Changes in estimations	334	-	2	336
Unused amounts reversed	-3	-	-17	-20
Imputed interest	19	-	-	19
At 31 December 2019	**1,142**	**128**	**141**	**1,411**

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 2019 EUR 122 million was added (2018: EUR 70 million) for future decommissioning costs for projects constructed during 2019. Changes in estimates related to the provision for decommissioning for EUR 334 million (2018: EUR 5 million) mainly due to a decrease of the discount rate used. Both were not recognised through the statement of income. There was no material decommissioning of substations in 2019. The first decommissioning of an offshore grid connection is expected to start in 2029.

5.7.2 Tariff related provisions

Tariff-related provisions relate to uncertain regulatory compensations of EUR 91 million and 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 amounts paid by certain parties to us without a direct grid connection. These refunds can be recouped by us through future tariffs. In 2019, none (2018: EUR 18 million) of the provided amount matured and was released through 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 systems, 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 for provisions

The estimated decommissioning provision involves assessing the expected remaining useful life of 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 assumed a discount rate between 0.4% and 0.7% (2018: 2.9%) and an inflation rate between 2.0% and 3.0% (2018: 2.9%). The discount rate has been adjusted to better reflect current market assessments of the time value of money and the risks specific to the liability. A change in the discount rate of 1% could have a maximum impact of EUR 108 million on the asset value.

A discount rate of 2.2% is applied for environmental management provisions (2018: 2.2%). A change in discount rate of 1% could have a maximum impact of EUR 9 million on the related book value.

A discount rate of 1.49% was applied for other provisions (2018: 2.2%). A change in discount rate of 1% could have a maximum impact of EUR 2 million on the related book value.

The estimated amount of 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 operators of 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 was primarily composed of oil which is used for measures taken at power plants that are standing by for TenneT.

ⓘ Accounting policy provisions

Inventory is stated at the lower of cost and net realisable value. Cost comprises direct purchase costs and associated costs incurred in bringing inventories to their present condition and location. The net realisable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

The fair value of inventory was not materially different from the carrying value.

6. Capital structure and financing

To keep pace with the rising electricity consumption and generation variability, the need for more transport capacity and the shift in production locations, 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 absorb 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 is sourced 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 which include:

1. maintaining a senior unsecured long-term credit rating of at least A3/A-;
2. maintaining a long-term average Funds From Operations (FFO) to Net debt based on 'underlying' financial information of at least 8.5%;
3. diversifying the maturities of long-term funding instruments to limit refinancing risk;
4. maintaining liquidity through cash and undrawn committed credit lines covering at least our net cash requirement on a rolling 12-month forward-looking basis.

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

As of 31 December 2019 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 2019 and 2018	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 8.5%

To maintain a solid financial position, we intend to maintain a long-term average FFO/Net debt ratio of at least 8.5% based on underlying financial information (see note 2), which meet the minimum 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.

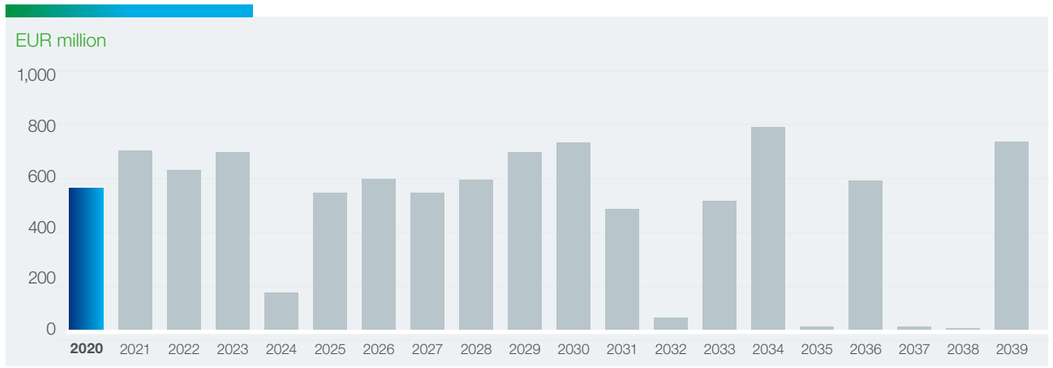
A reconciliation of the FFO and net debt is provided in the following table.

Based on underlying information (EUR million)	2019	2018
Net profit for the year	408	484
+ amortisation, depreciation and impairments	993	721
+ result on disposal of assets (non-cash)	8	26
Total FFO	**1,409**	**1,231**
Net debt		
+ Long term borrowings	9,137	7,964
+ Short term borrowings	565	756
- Cash and cash equivalents at free disposal	-202	-8
Total net debt	**9,500**	**8,712**
FFO/net debt	**14.8%**	**14.1%**

3. Diversify 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 2019, our interest bearing debt (excluding bank overdrafts) had the following annual redemption profile:

Annual redemption of debt



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 had a EUR 3 billion revolving credit facility (RCF) and a EUR 350 million committed undrawn EIB facility available as of 31 December 2019. The EUR 350 million EIB loan will be drawn in April 2020 with a fixed interest rate of 0.436% and a linear repayment schedule starting in 2025 and with a last repayment in 2039. The 12-month liquidity requirement was met on 31 December 2019 and 31 December 2018.

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 amounted to EUR 500 million (2018: 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. The first tranche of EUR 150 million and second tranche of EUR 350 million were received 2017 and 2018, respectively. In line with the capital commitment by the Dutch government in 2016, we received the third unconditional tranche of EUR 280 million at the end of 2019. The Ministry of Finance also granted the fourth - conditional - tranche of EUR 410 million, which we also received in 2019.

Hedging reserve

The hedging reserve related 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 2019, the 2020 FSIRS amounts to nil and for the 2021 FSIRS amounts to EUR 1 million.

Retained earnings

Part of the retained earnings has been presented as legal reserve. For more details see note 8.9.

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 distributions or redeem the securities in part or in full. Payment of distributions on and redemption of the securities 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 2019, the unpaid cumulative dividend amounts to EUR 18 million (2018: EUR 18 million), relating to the period 1 June until 31 December and payable on 1 June 2020.

Dividend distribution

In 2019 a common full-year dividend of EUR 120 million (EUR 600 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 33 million during 2019 (2018: EUR 30 million). The appropriation of the 2019 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	**2019**	2018
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	70%	59%
TenneT Offshore DolWin3 Verwaltungs GmbH ("TODV")	Germany	67%	67%
ETPA Holding B.V. ("ETPA")	Netherlands	50%	50%

The Group has the power to control TO2, TO8, TOD3 and TODV, and holds 51% of the voting rights in these entities. TenneT also holds 50.002% of the voting rights and has the power to control ETPA. Movements in the non-controlling interest, to the extent material, is summarised below.

(EUR million)	TO2	TO8	TOD3
At 1 January 2018	**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**
Profit attributable to non-controlling interests	14	19	23
Dividends paid	-5	-31	-
Capital repayment	4	-	-76
At 31 December 2019	**259**	**249**	**236**

The non-controlling interest in TODV and TOD3 are held by Copenhagen Infrastructure Partners (CIP), which owns a 70% economic interest in the adjusted (for certain regulatory effects) profits of these companies and 49% of the voting rights. 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.

	2019		
Statement of financial position (EUR million)	**TO2**	**TO8**	**TOD3**
Non-current assets	1,068	1,525	1,667
Current assets	152	134	95
Non-current liabilities	-712	-1,129	-1,310
Current liabilities	-135	-132	-116
Equity	**373**	**398**	**336**
Attributable to owners of the parent	114	149	100
Attributable to non-controlling interests	259	249	236

	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

	2019		
Statement of income (EUR million)	**TO2**	**TO8**	**TOD3**
Revenue	168	240	125
Depreciation and amortisation	-83	-100	-89
Other expenses	-37	-54	-14
Operating profit	**48**	**86**	**22**
Finance income and expenses	-22	-38	-28
Income tax expense	-8	-15	2
Profit for the year	**18**	**33**	**-4**
Other comprehensive income	-	-	-
Total comprehensive income	**18**	**33**	**-4**
Attributable to non-controlling interests	14	19	23

	2018		
Statement of income (EUR million)	TO2	TO8	TOD3
Revenue	174	240	225
Depreciation and amortisation	-83	-99	-38
Other costs	-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

	2019		
(EUR million)	**TO2**	**TO8**	**TOD3**
Net cash flows from operating activities	136	182	131
Net cash flows used in investing activities	-69	-5	-44
Net cash flows from financing activities	-67	-177	-87
Change in cash and cash equivalents	**-**	**-**	**-**

	2018		
(EUR million)	TO2	TO8	TOD3
Net cash flows from operating activities	107	169	219
Net cash flows used in investing activities	-34	-12	-209
Net cash flows from financing activities	-73	-157	-10
Change in cash and cash equivalents	**-**	**-**	**-**

A reclassification is made between the 2018 net cash flows from operating activities and net cash flows from financing activities to properly reflect dividends.

6.3 Borrowings

(EUR million)	Effective interest rate	Maturity	Redemption schedule	**2019**	2018
2.125% bond 2013 EUR 500 million	2.22%	Nov-20	At maturity	-	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	499	498
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	499	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	495	494
1.375% green bond 2017 EUR 500 million	1.41%	Jun-29	At maturity	498	498
0.875% green bond 2019 EUR 500 million	0.98%	May-30	At maturity	495	-
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	493
2.0% green bond 2018 EUR 750 million	2.04%	Jun-34	At maturity	745	745
1.875% green bond 2016 EUR 500 million	1.97%	Jun-36	At maturity	492	492
1.500% green bond 2019 EUR 750 million	1.58%	May-39	At maturity	739	-
Non-current interest-bearing bonds				**7,142**	**6,404**
4.12% loan 2010 EUR 150 million	4.12%	Jan-21	At maturity	150	150
4.40% loan 2010 EUR 40 million	4.40%	2016-2021	Linear	3	6
4.71% loan 2010 EUR 40 million	4.71%	2016-2022	Linear	6	9
2.74% loan 2012 EUR 150 million	2.74%	Sep-23	At maturity	150	150
4.44% loan 2010 EUR 140 million	4.44%	2016-2023	Linear	32	43
0.72% loan 2015 EUR 500 million	0.72%	2018-2032	Linear	414	448
0.77% loan 2015 EUR 150 million	0.77%	2018-2037	Linear	128	136
0.813% loan 2016 EUR 125 million	0.81%	2019-2038	Linear	113	119
Non-current interest-bearing loans				**996**	**1,061**
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	43	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				**500**	**499**
1.61% USPP 2019 EUR 160 million	1.63%	Jan-29	At maturity	160	-
1.83% USPP 2019 EUR 295 million	1.85%	Jan-31	At maturity	294	-
2.01% USPP 2019 EUR 45 million	2.02%	Jan-34	At maturity	45	-
Total non-current interest-bearing USPP				**499**	**-**
Total non-current interest-bearing borrowings				**9,137**	**7,964**

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(EUR million)	Effective interest rate	Maturity	Redemption schedule	**2019**	2018
2.125% bond 2013 EUR 500 million	2.22%	Nov-20	At maturity	500	-
Current interest-bearing bonds				**500**	**-**
Cash loans	-0.01%	Jan-19	At maturity	-	100
EUR commercial papers	-0.33%	Jan-19	At maturity	-	591
4.71% loan 2010 EUR 40 million	4.71%	Nov-20	Linear	3	3
4.40% loan 2010 EUR 40 million	4.40%	Nov-20	Linear	3	3
4.44% loan 2010 EUR 140 million	4.44%	Nov-20	Linear	11	11
0.72% loan 2015 EUR 500 million	0.72%	Sep-20	Linear	34	34
0.77% loan 2015 EUR 150 million	0.77%	Jan-20	Linear	8	8
0.813% loan 2016 EUR 125 million	0.81%	Oct-20	Linear	6	6
Current interest-bearing loans				**65**	**756**
Total current interest-bearing borrowings				**565**	**756**
Total borrowings				**9,702**	**8,720**

Changes in borrowings arising from financing activities are as follows:

(EUR million)	(Non)-current interest-bearing bonds	(Non)-current interest-bearing loans	Non-current interest-bearing Schuldschein	Non-current interest-bearing USPP	**Total**
At 1 January 2018	**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**
Cash inflow from new borrowings	1,232	-	-	499	1,731
Cash outflow from redemptions	-	-756	-	-	-756
Amortisation (non-cash)	6	-	1	-	7
At 31 December 2019	**7,642**	**1,061**	**500**	**499**	**9,702**

TenneT has renewed and extended its Revolving Credit Facility (RCF) of EUR 3.0 billion as of November 2019. The RCF matures November 2024 and has two one-year extension options. Besides that, the Group has 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 2019 was undrawn and will be settled in April 2020. The borrowings and undrawn facilities have no financial covenants.

The amount of borrowing costs (including fair value adjustment) capitalised was EUR 59 million (2018: EUR 47 million).

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:

	2019			2018		
(EUR million)	At free disposal	Not at free disposal	**Total**	At free disposal	Not at free disposal	**Total**
Collateral securities	-	79	79	-	71	71
EEG funds	-	589	589	-	1,024	1,024
EEG deposits < 3 months	-	30	30	-	150	150
Cash at bank	202	1	203	8	-	8
Cash and cash equivalents	**202**	**699**	**901**	**8**	**1,245**	**1,253**
Bank overdrafts	-	-	-	-	-	-
Total cash and cash equivalents used in cash flow statement	**202**	**699**	**901**	**8**	**1,245**	**1,253**

Since 2016, funds related to EEG activities 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	**2019**	2018	**2019**	2018	Hierarchy
Financial liabilities						
Borrowings:						
- Borrowings – bonds	6.3	7,642	6,404	8,354	6,734	Level 1
- Borrowings – other	6.3	2,060	2,316	2,203	2,323	Level 2
Total		**9,702**	**8,720**	**10,557**	**9,057**	

As at 31 December 2019, no instruments carried at fair value were held (2018: 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 2019, due to the short-term maturities of these instruments.

The following hierarchy by valuation technique was used to calculate 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 2019 or 2018.

6.6 ⓘ Accounting policies for financial instruments

Financial assets

All financial assets are recognised initially at fair value, net of directly attributable transaction cost.

After initial recognision financial assets are 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 assets 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 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 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 statement of income 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 comprehensive income.

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 liquidity, equity capital and net profit 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. 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 explicitly not authorised.

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 2019, 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 4 million in our net interest cost (2018: EUR 3 million).

Furthermore, there is a risk that interest payable on borrowings exceeds the interest compensation received 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, 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 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 of our trade and other debtors have a low risk of default. Consequently, 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 2019, financial credit risk arose mainly from our transactions and positions with several institutions. As at 31 December 2019, the maximum credit risk amounted to EUR 36 million (2018: EUR 37 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 2019 we had EUR 30 million deposits with third parties for EEG cash amounts (2018: EUR 400 million) and no financial derivatives outstanding. As of 31 December 2019 none of these deposits had a maturity of more than 3 months (2018: EUR 250 million), see note 5.5.1.

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 2019 and 31 December 2018.

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 2019							
Lease liabilities	4.2	10	19	87	202	139	457
Borrowings	6.3	7	48	692	2,777	7,771	11,295
Account- and other payables	5.6	2,091	417	1,200	1	-	3,709
Other financial liabilities		79	-	-	-	-	79
Total		**2,187**	**484**	**1,979**	**2,980**	**7,910**	**15,540**
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**

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 3.0 billion committed revolving credit facility (RCF) at our disposal for general corporate purposes. At 31 December 2019, this facility was undrawn. Furthermore, we had EUR 350 million of undrawn long-term loan commitments from the EIB available at 31 December 2019. This facility will be settled in April 2020. Finally, we had EUR 450 million of short-term uncommitted credit facilities available at year end. At 31 December 2019 these facilities were not drawn (2018: EUR nil).

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 medium-term note (EMTN) programme and our commercial paper (CP) programme. Both programmes significantly reduce our dependency on the banking sector.

We expect to meet our financial obligations for 2020 with (i) cash and cash equivalents, (ii) funds from operations, (iii) unused credit facilities and (iv) capital market transactions. We expect to meet our financial obligations for the subsequent years through various capital market transactions and equity contributions 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 unexpectedly large increases in our investment portfolio or negative regulatory developments. Actions taken in order to mitigate this risk are: (i) an active financing strategy to create and maintain an optimal capital structure as well as to diversify funding sources and manage financial risks, (ii) a proactive approach of potential investors and active discussion with shareholders to contribute additional equity and (iii) lobbying activities to ensure that regulatory frameworks remain adequate to safeguard regulators income and returns to investors.

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 enjoy 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 of 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.

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, for each year a contribution to the pension claims is 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 annual pension claim contributions for all years of service 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 shows the combined plans

Components of the net benefit expense recognised in the statement of income were as follows:

(EUR million)	2019	2018
Current service costs (note 3.2.2)	14	23
Net interest costs (note 3.3)	4	4
Net benefit expense	**18**	**27**

The funded status of the plans and the amounts recognised in the statement of financial position were as follows:

(EUR million)	2019	2018
Defined benefit obligation	465	302
Fair value of plan assets	-104	-94
Benefit liability	**361**	**208**

Changes in the present value of the defined benefit obligation ('DBO') over the year were as follows:

(EUR million)	2019	2018
Defined benefit obligation at 1 January	**302**	**284**
Current service costs	14	23
Interest costs	6	6
Contributions by plan participants	2	2
Benefits paid	-4	-3
Re-measurements on obligation	145	-10
Defined benefit obligation at 31 December	**465**	**302**

Re-measurements on obligation are EUR 145 million, mainly due to the change of the discount rate from 2.00% to 1.05%.

Changes in the fair value of plan assets of the year were as follows:

(EUR million)	2019	2018
Fair value of plan assets at 1 January	**94**	**95**
Actual return on plan assets	8	-2
Contributions by employer	5	3
Benefits paid	-3	-2
Fair value of plan assets at 31 December	**104**	**94**

Major categories of plan assets as a percentage of the fair value of the total plan assets were as follows:

	2019	2018
Quoted in active markets:		
Equity instruments	36%	33%
Debt securities	43%	48%
Other	5%	5%
Unquoted investments:		
Debt securities	5%	5%
Real estate	9%	8%
Cash	2%	1%

Re-measurements, including actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions, recognised in the statement of comprehensive income were as follows:

(EUR million)	2019	2018
Accumulated balance at 1 January	**121**	**126**
Re-measurements during the year	137	-5
Accumulated balance at 31 December	**258**	**121**

Re-measurements of the year originate from

(EUR million)	2019	2018
Re-measurements from actuarial gains(-)/losses in DBO	145	-10
Exceeding return on plan assets (over net interest incl. in net liability)	-8	5
Accumulated balance at 31 December	**137**	**-5**
Thereof:		
actuarial gains(-)/losses from experience	-4	-10
actuarial gains(-)/losses from changes in demographic assumptions	-	3
actuarial gains(-)/losses from changes in actuarial assumptions	149	-3

The actuarial losses of EUR 3 million from the changes in demographic assumptions mentioned in the 2018, result from the introduction of the new mortality table 'Heubeck 2018 G'.

ⓘ 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 statement of income 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:

	2019	2018
Discount rate	1.05%	2.00%
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)	2019	2018
0.25% change of discount rate	-27	-16
0.5% change of salary increase rate	2	-
0.5% change of pension increase rate	2	1
Change of 1 year in life expectancy	18	10

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.

Due to the strong development of plan assets and the change in (statutory) discount rates, we do not expect to have an obligation to contribute to plan assets in 2020. We expect the following, undiscounted, benefit payments from the plan:

(EUR million)	2019	2018
Within the next 12 months	5	5
Within 2-5 years	23	22
Within 5-10 years	38	38
More than 10 years	365	392
Total	**431**	**457**

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 2019 was 24.9% of the pensionable salary. In 2020 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 limited. We are not liable for deficits in the multi-employer plan.

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 2019 was 95.8% (2018: 103.8%) which is above the critical regulatory 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)	2019	2018
Grid-related commitments	1,109	1,241
Other off-balance sheet commitments	69	451
Total off-balance sheet obligations	**1,178**	**1,692**
Off-balance sheet rights		
Government guarantees received	300	300
Other off-balance sheet rights	76	65
Total off-balance sheet rights	**376**	**365**

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 included received but unused auction receipts in the Netherlands amounting to EUR 470 million (2018: EUR 555 million).

7.2.2 Government guarantees received

TenneT benefits from a financial guarantee issued by the Dutch State for an amount of EUR 300 million which expired in February 2020, relating to its (indirect) investment in TenneT TSO GmbH.

7.2.3 Other

Other off-balance sheet commitments mainly consisted of:

- TenneT's commitment to provide the NOKA joint venture with sufficient funds for the construction of the Southern Part of the NordLink cable;
- Several parties claim compensation for the delay or non-availability of the offshore grid connection. The related legal proceedings are still pending. If and to the extent the claims are (partly) justified and the payments resulting therefrom could not be passed through to the end customers, the binding rulings may have a negative impact on the financial position;
- TenneT TSO B.V. is currently involved in a claim procedure because of alleged wrongful termination of construction contracts and in a counter claim procedure against this counter party regarding financial settlement & damages due to the alleged non-fulfilment of the construction contracts;
- The ACM has started a formal investigation regarding the interruption in TenneT TSO B.V. network in 2018. The ACM concluded in the formal investigation that TenneT TSO B.V. violated the grid redundancy criteria n-1 and the legal obligation to take all necessary measures to avoid an interruption. Both violations are classified by the ACM in the highest category of violations ('very severe') and the ACM decided to initiate the formal process to fine TenneT for non-compliancy of the Electricity Act. Such a fine, if and to the extent rendered and confirmed by a court in final instance, could have a negative effect on the TenneT's reputation, and could have a material adverse effect on the TenneT's business, financial condition and net income.

For these items it is not practicable possible to determine the financial effect and possible timing of cash outflows.

Various other off-balance sheet commitments and contingencies as well as other off-balance sheet rights existed but were immaterial from a disclosure perspective. 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.

Finally, we expect to spent an amount of EUR 55 million to finalise already commissioned projects.

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 6.2.1);
- Joint ventures NOKA and BritNed (refer to note 5.3.1);
- Associates HGRT and OTC (refer to note 5.3.2);
- 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).

7.4 Consolidated subsidiaries

The following legal entities were included in the consolidation of TenneT Holding B.V:

			Voting interest		Economic interest		
Subsidiary	Legal seat	Country	2019	2018	2019	2018	
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%	50%	50%	50%	
ETPA B.V.	Amsterdam	Netherlands	50%	50%	50%	50%	
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 Hoogspanningsnet	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%	*
Relined B.V.	Utrecht	Netherlands	100%	100%	100%	100%	
Relined GmbH	Emsbüren	Germany	100%	100%	100%	100%	
DC Netz DolWin4 GmbH	Bayreuth	Germany	100%	100%	100%	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	0%	100%	0%	100%	
TenneT Offshore 7. Beteiligungsgesellschaft mbH	Bayreuth	Germany	0%	100%	0%	100%	
TenneT Offshore 8. Beteiligungsgesellschaft mbH	Bayreuth	Germany	51%	51%	37%	37%	
TenneT Offshore 9. Beteiligungsgesellschaft mbH	Bayreuth	Germany	51%	51%	37%	37%	
TenneT Offshore Dolwin3 Beteiligungs GmbH & Co. KG	Bayreuth	Germany	51%	51%	30%	41%	**
TenneT Offshore Dolwin3 GmbH & Co. KG	Bayreuth	Germany	51%	51%	30%	41%	
TenneT Offshore Dolwin3 Verwaltungs GmbH	Bayreuth	Germany	51%	51%	33%	33%	

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			Voting interest		Economic interest		
Subsidiary	Legal seat	Country	2019	2018	2019	2018	
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 in liquidation	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.

**** WL Winet GmbH exists since 2016 but never showed a positive result. Although sales were increasing, management didn't expect an improvement of the result due to the lack of finding qualified personnel. Therefore it was decided to liquidate WL Winet GmbH. The liquidation commenced on 1 March 2019 and, in accordance with German law, will last at least one year.

As TenneT is able to 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	2019	2018
Revenue		**-**	**1**
Other operating expenses	8.2	-3	-3
Other gains/(losses)		-	-
Total operating expenses		**-3**	**-3**
Share in profit of joint ventures and associates		-	4
Operating profit		**-3**	**2**
Finance income	8.3	177	165
Finance expenses	8.4	-192	-170
Finance result		**-15**	**-5**
Profit before income tax		**-18**	**-3**
Income tax expense *		-1	-5
Profit from subsidiaries	8.5	593	436
Profit for the year		**574**	**428**

* Due to a change in IAS 12 (see note 1.3) income tax expense 2018 changed from -13 to -5 compared to the 2018 IAR. As a result total profit for the year also changed.

Company statement of financial position

For the year ended 31 December (EUR million)

Assets	Notes	2019	2018
Non-current assets			
Investments in subsidiaries	8.5	7,552	6,690
Investments in joint ventures and associates	8.6	29	35
Other financial assets	8.7	6,655	6,232
Total non-current assets		**14,236**	**12,957**
Current assets			
Other financial assets	8.7	1,777	1,393
Account- and other receivables	8.8	30	309
Cash and cash equivalents		194	3
Total current assets		**2,001**	**1,705**
Total assets		**16,237**	**14,662**

Equity and liabilities	Notes	2019	2018
Equity	8.9		
Paid up and called-up capital		100	100
Share premium		1,790	1,380
Revaluation reserve		32	43
Reserve for participating interests		62	61
Reserve for internally generated assets		62	22
Hedging reserve		1	3
Retained earnings		2,108	1,958
Unappropriated result		541	397
Equity attributable to ordinary shares		**4,696**	**3,964**
Hybrid securities		1,120	1,120
Equity attributable to owners of the company		**5,816**	**5,084**
Non-current liabilities			
Borrowings	8.10	9,137	7,964
Deferred tax liability		5	5
Total non-current liabilities		**9,142**	**7,969**
Current liabilities			
Borrowings	8.10	565	756
Account- and other payables	8.11	714	853
Total current liabilities		**1,279**	**1,609**
Total equity and liabilities		**16,237**	**14,662**

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 Holding 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.

Expected credit loss (ECL) provisions for receivables from subsidiaries will be eliminated as intercompany positions. Changes in these ECL provisions will impact the carrying amounts of the financial assets in the company statement of the financial position due to a possible provision. This will result in a difference between the company equity and the consolidated equity. No ECL provision was deemed necessary.

8.2 Other operating expenses

Part of the other operating expenses is the total fee to EY network firms which are disclosed in note 3.2.3 of the consolidated financial statements.

8.3 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.

8.4 Finance expenses

Finance expenses mainly relate to interest on borrowings and credit facilities (2019: EUR 178 million; 2018: EUR 152 million).

8.5 Investments in subsidiaries

Changes in investments in subsidiaries can be broken down as follows:

(EUR million)	2019	2018
At 1 January	**6,690**	**6,296**
Share in result	593	436
Capital contribution	410	1
Dividends received	-44	-46
Re-measurement of defined benefit pension	-97	3
Net effect on (partial) sale/acquisition of subsidiaries	-	-
At 31 December	**7,552**	**6,690**

Investments in subsidiaries related 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.

8.6 Investments in joint ventures and associates

Investments in joint ventures and associates mainly related to HGRT. In 2019, TenneT's share in HGRT's result amounted to EUR 3 million (2018: EUR 3 million) and EUR 5 million (2018: EUR 4 million) dividends were received. In 2019 the carrying amount was adjusted to properly reflect the equity value of the investment. Further reference is made to note 5.3.2 of the consolidated financial statements.

8.7 Other financial assets

(EUR million)	2019	2018
Receivables from subsidiaries	6,646	6,226
Other financial assets	9	6
Total	**6,655**	**6,232**

Receivables from subsidiaries mainly related to intercompany loans and cash management 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)	2019	2018
At 1 January	**6,232**	**6,050**
Additions	1,941	611
Repayments	-1,408	-33
Transfer to current	-109	-394
Other movements	-1	-2
At 31 December	**6,655**	**6,232**

Besides non-current other financial assets, the company had EUR 1.8 billion (2018: EUR 1.4 billion) of current other financial assets which were related to receivables from subsidiaries. Certain subsidiaries have guaranteed the payment to creditors of TenneT Holding up to an aggregate amount of EUR 2,524 million (2018: EUR 2,642 million).

8.8 Account- and other receivables

(EUR million)	2019	2018
Receivable from shareholder	-	280
Current income tax receivable	30	29
Total	**30**	**309**

8.9 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 1 January 2019	**61**	**22**	**3**	**43**	**129**
Result NOKA and HGRT	5	-	-	-	5
Dividend NOKA and HGRT	-4	-	-	-	-4
Internally generated intangible assets	-	52	-	-	52
Depreciation on internally generated intangible assts	-	-12	-	-	-12
Depreciation revaluation tangible fixed assets	-	-	-	-11	-11
Amortisation of hedges	-	-	-2	-	-2
At 31 December 2019	**62**	**62**	**1**	**32**	**157**

The statement of changes in equity and disclosures to that statement are included in the consolidated financial statements. For details on the hybrid securities see note 6.2.1.

The revaluation reserve covers the IFRS 1 revaluation of tangible fixed assets in 2004. The reserve for participating interests related to HGRT and NOKA, for which we do not control payment of dividends. In the consolidated financial statements, the revaluation reserve, the reserve for internally generated assets, and the reserve for participating interests were included in retained earnings.

The legal reserves are not freely distributable.

The appropriation of the 2019 profit is at the free disposal of the General Meeting of Shareholders and has not been recorded in the financial statements.

8.10 Borrowings

Details on borrowings are included in the consolidated financial statements, see note 6.3.

8.11 Account- and other payables

(EUR million)	**2019**	2018
Payables to subsidiaries	606	757
Interest payable	105	92
Other payables	3	4
Total	**714**	**853**

8.12 Events after the reporting period

See note 7.5 of the consolidated financial statements.

Arnhem, 9 March 2020

Executive Board TenneT Holding B.V.
M.J.J. van Beek*
O. Jager*
T. Meyerjürgens
B.G.M. Voorhorst*

* Statutory Director

Supervisory Board TenneT Holding B.V.
A.C.C. van Els
L.J. Griffith
E. Kairisto
E.M. Schöne
A.F. van der Touw
P.M. Verboom
R.G.M. Zwitserloot

TenneT Holding B.V.
Utrechtseweg 310
6812 AR Arnhem
The Netherlands
Chamber of Commerce register 09083317

Other information

Profit appropriation

Profit appropriation 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 2019 included in the integrated annual report

Our opinion

We have audited the financial statements 2019 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 2019, and of its result and its cash flows for 2019 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 positions of TenneT Holding B.V. as at 31 December 2019, and of its result for 2019 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 2019
- The following statements for 2019: 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 2019
- The company statement of income for 2019
- 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.

Our audit approach

Our understanding of the business

TenneT Holding B.V. and its subsidiaries are a leading electricity transmission system operator with activities in the Netherlands and a part of Germany. The group is structured in components and we tailored our group audit approach accordingly. We paid specific attention in our audit to a number of areas driven by the operations of the group and our risk assessment. Further reference is made to the other topics in this section “Our audit approach” and section “Our key audit matters”.

We start our audit by determining materiality and identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud, non-compliance with laws and regulations or error in order to design audit procedures responsive to those risks, and to obtain 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.

Materiality

Materiality	EUR 92.1 million (2018: EUR 82.9 million)
Benchmark applied	1.4% of total equity (2018: 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 into account misstatements 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 4.6 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.

Our focus on fraud and non-compliance with laws and regulations

Our responsibility

Although we are not responsible for preventing fraud or non-compliance and cannot be expected to detect non-compliance with all laws and regulations, it is our responsibility to obtain reasonable assurance that the financial statements, taken as a whole, are free from material misstatement, whether caused by fraud or error. Non-compliance with laws and regulations may result in fines, litigation or other consequences for the company that may have a material effect on the financial statements.

Our audit response related to fraud risks

In order to identify and assess the risks of material misstatements of the financial statements due to fraud, we obtained an understanding of the entity and its environment, including the entity's internal control relevant to the audit and in order to design audit procedures that are appropriate in the circumstances. As in all of our audits, we addressed the risk of management override of internal control. We do not audit internal control per se for the purpose of expressing an opinion on the effectiveness of the company's internal control.

We considered available information and made enquiries of relevant Executive Board members, senior managers (including internal audit, legal and compliance and integrity) and the Supervisory Board. As part of our process of identifying fraud risks, we evaluated fraud risk factors with respect to financial reporting fraud, misappropriation of assets and bribery and corruption.

We evaluated the design and the implementation of internal controls that mitigate fraud risks. In addition, we performed procedures to evaluate key accounting estimates for management bias in particular relating to important judgment areas and significant accounting estimates as disclosed in note 1.5 to the financial statements. We have also used data analysis to identify and address high-risk journal entries.

We incorporated elements of unpredictability in our audit. We considered the outcome of our other audit procedures and evaluated whether any findings were indicative of fraud or non-compliance. If so, we re-evaluate our assessment of fraud risk and its resulting impact on our audit procedures.

Our audit response related to risks of non-compliance with laws and regulations

We assessed factors related to the risks of non-compliance with laws and regulations that could reasonably be expected to have a material effect on the financial statements from our general industry experience, through discussions with the Executive Board, reading minutes, inspection of internal audit and compliance and integrity reports, and performing substantive tests of details of classes of transactions, account balances or disclosures.

We also inspected lawyers' letters and correspondence with regulatory authorities and remained alert to any indication of (suspected) non-compliance throughout the audit. Finally we obtained written representations that all known instances of non-compliance with laws and regulations have been disclosed to us.

Going concern

In order to identify and assess the risks of going concern and to conclude on the appropriateness of management's use of the going concern basis of accounting, we consider based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue 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.

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.

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.

Our group audit mainly focused on TenneT GmbH & Co. KG, TenneT TSO B.V., BritNed Development Ltd and TenneT Holding B.V. company-only. We identified that the consolidated group entities TenneT GmbH & Co. KG and TenneT TSO B.V., which both consist of multiple entities, required an audit of their complete financial information due to their size. TenneT Holding B.V. company-only required an audit due to the company financial statements. Specific audit procedures on certain balances and transactions were performed at BritNed Development Ltd. These specific audit procedures were performed by a non-EY auditor.

In total these procedures represent 100% of the group's total assets and 99% of EBIT (operating profit).

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.

Teaming and use of team members with specialised knowledge and specialists

We ensured that the audit teams both at group and at component levels included the appropriate skills and competences which are needed for the audit of TenneT Holding B.V. We included team members with specialised knowledge in the areas of IT audit and income tax and included specialists in the area of actuaries.

General audit procedures

Our audit further included among others:

- Performing audit procedures responsive to the risks identified, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management
- Evaluating the overall presentation, structure and content of the financial statements, including the disclosures
- Evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation

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.

The key audit matter *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* which was included in our last year's independent auditor's report, is not considered a key audit matter for this year as the offshore liability related provisions are no longer affected by a fraud risk due to the decreased magnitude compared to previous year. Our other key audit matters did not change compared to last year.

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.

Topic	Our audit response
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 2019' 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 assessed whether the Underlying financial information and identified segments are consistently applied compared to previous year. 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 Q4-2019 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 noticed that the identified segments are consistently applied compared to previous year. We noted, as disclosed in note 2.2, that TenneT reassessed in 2019 its Underlying revenue allocation for offshore assets and came to the conclusion that the methodology applied so far needs to be retrospectively adjusted. Furthermore, we assessed 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 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 amounting to EUR 1,045 million per 31 December 2019 (EUR 1,071 million as per 31 December 2018) is based on actual volumes (if available) or forecast volumes derived from models. Several significant 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 structure and dynamics 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, key assumptions applied and model used to be within the acceptable range and we assessed the disclosures as being appropriate.
Third-party claims and regulatory matters, 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 received legal claims from third parties including notifications from regulators. These items 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 the breakdown of the legal expenses, 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 and regulatory department as well as management. We assessed TenneT's assumptions underlying the recognition and measurement of these claims and notifications, 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 and regulatory matters 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:

- 2019 at a glance
- Letter from the Board
- Director's report, consisting of
  - About TenneT
  - Our Performance in 2019
  - Governance and risk management
- Supervisory Board report
- Other information as 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 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, other information 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 the Netherlands)
- 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 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 detect all material errors and fraud during our audit.

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. The Our audit approach section above includes an informative summary of our responsibilities and the work performed as the basis for our opinion.

Communication

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 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.

Rotterdam, 9 March 2020

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 accompanying Integrated Annual Report for the year 2019 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 2019

in accordance with the reporting criteria as included in the section Reporting criteria.

The sustainability information consists of the chapters '2019 at a glance', 'Letter from the Board', 'About TenneT', 'Our Performance in 2019' (excluding the sections 'Secure a solid financial performance and investor rating' 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.

The absence of an established practice on which to draw, to evaluate and measure sustainability information allows for different, but acceptable, measurement techniques and can affect comparability between entities and over time.

Limitations to the scope of our review

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 reliable and adequate 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 summarized in 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
  - Determining the nature and extent of the review procedures for TenneT Netherlands & Germany including 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 in the information 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.

Rotterdam, 9 March 2020

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 2019, i.e. 1 January 2019 to 31 December 2019**.** TenneT's Integrated Annual Report 2019 was published on 12 March 2020 and is available online.

The 2018 Annual Report was published on 21 February 2019.

In 2019, 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, please 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 has been mandatory for annual reports since 2017.

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 the Sustainable Development Goals (SDGs). These goals are accepted worldwide as driving sustainability. The section in our integrated annual report on our performance in 2019 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	Deliver a high security of supply	Our main task is to ensure security of electricity supply to over 42 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
Financial health	Have a solid financial performance and reputation	Having a solid financial performance and reputation will enable us to drive the energy transition against lower societal costs. 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 plan to increase our investment level from EUR 2 to 3 billion to more than EUR 5 billion per year over the next 10 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	Over EUR 5 billion per year	Strategic Investment Committee Supervisory Board
Community engagement	Solve societal challenges with stakeholders and through partnerships	To drive the energy transition, we believe that partnerships are essential to transition to a low carbon economy in a better and faster way. Furthermore, we believe it is crucial to 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 attention with respect to the impact of climate change and with that the topic of transitioning to a low carbon economy. This can also impact the opposition to grid expansion, especially where new assets are concerned.	To enter into partnerships that can unlock new possibilities and 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.	Corporate reputation	Live up to our values (i.e. being responsible, engaged and connected) when addressing our stakeholders' concerns.	Corporate Public Affairs (PAC) Corporate Communications (CMC)
Drive the energy transition	Deliver a high security of supply, Solve societal challenges with stakeholders and through partnerships	With our knowledge, experience and vision with respect to the future energy landscape, we believe that we can serve society by helping to drive the energy transition in an effective and efficient manner.	National governments in the area we serve have committed themselves to national and international climate agreements. We are an important stakeholder to them to help realise this.	To lead as a green grid operator, be a thought leader in the energy transition, develop innovative instruments to unlock flexibility and establish a pivotal role in the energy data world to facilitate innovation.	Our boundaries with respect to leading as a green and responsible grid operator are not restricted to our own organisational boundaries. We strive to also consider our impact in our supply chain. For our Carbon emissions we consider not only our scope 1 and scope 2, but we have also started with identifying scope 3 emissions.	Carbon footprint Amount of GWh of offshore capacity realised	Live up to our values (i.e. being responsible, engaged and connected) when addressing our stakeholders' concerns	Large Projects (LP) Grid Services (GS) Asset Owner (AOC) Asset Managment (AM) Digital Transformation (DTC)

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 safety (TRIR). 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 in 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.)	Create a sustainable workplace, Create value to transition to a low carbon economy, Solve societal challenges with stakeholders and through partnerships	Create a sustainable workplace, Create value to transition to a low carbon economy, Solve societal challenges with stakeholders and through partnerships	Create a sustainable workplace, Create value to transition to a low carbon economy, Solve societal challenges with stakeholders and through partnerships	Create a sustainable workplace, Create value to transition to a low carbon economy, Solve societal challenges with stakeholders and through partnerships	Create a sustainable workplace, Create value to transition to a low carbon economy, Solve societal challenges with stakeholders and through partnerships
Relevant Environmental maters (e.g. climate-related impacts)	Create value to transition to a low carbon economy	Create value to transition to a low carbon economy	Create value to transition to a low carbon economy	Create value to transition to a low carbon economy	Create value to transition to a low carbon economy
Relevant matters with respect for human rights (e.g. labour protection)	Ensure critical infrastructure for society	Ensure critical infrastructure for society	Ensure critical infrastructure for society, Create value to transition to a low carbon economy	Ensure critical infrastructure for society, Create value to transition to a low carbon economy	Ensure critical infrastructure for society
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)	Create a sustainable workplace Supervisory Board report, Diversity and culture	Create a sustainable workplace Supervisory Board report, Diversity and culture	Create a sustainable workplace Supervisory Board report, Diversity and culture	Create a sustainable workplace 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. Due to the nature and maturity level of non-financial data, we acknowledge that it is a journey to fully align this with the level of financial systems and processes. Therefore, improvements can be made over time with the aim to provide our stakeholders better and more relevant information. That is why 100% completeness and accuracy of our data cannot be guaranteed as processes may be subject to a higher degree of manual data collection.

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, Ernst & Young Accountants LLP. Reliable data is essential in our dialogue with stakeholders, so we decided to have our non-financial data reviewed by an external assurance provider. We have requested EY to review the Integrated Annual Report sections 'At a Glance', 'Letter from the Board', 'About TenneT' and 'Our Performance in 2019' (excluding 'Have a solid financial performance and reputation' and 'Statements of the Executive Board') in accordance with the GRI Standards and audit the financial statements in accordance with IFRS as adopted by the EU and Part 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. We have adopted a CSR Ambition plan 2025 in 2018, focusing on three main areas with clear ambitions we aim to achieve by 2025. We have set clear priorities, targets and key performance indicators in this plan. For some areas we are currently developing new or updating key performance indicators. Our CSR board tracks progress on CSR policy and actions and meets on a quarterly basis. We established this board to monitor progress on the CSR Ambition Plan 2025 and advise the Executive Board on the integration of CSR in the business. This board measures progress on all relevant KPIs of the CSR Ambition Plan 2025 on a bi-annual basis, also evaluating the effectiveness of our policy and activities and defining which actions are needed to further improve. 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.

TenneT's aims to be one of the best-performing TSOs in terms of CSR in Western Europe and as such we are continuously looking 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 and Sustainalytics. In 2019, S&P also performed an ESG evaluation. 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. In 2019, we attained our goals: we were ranked no.13 in the 2019 Transparancy Benchmark, scored 83 out of 100 in the S&P ESG evaluation and were in the top 25% of the other sustainability ratings. From 2020 onwards, we have decided to focus on the ISS-Oekom evaluation and we aim to be among the top 10%.

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)	**2019**	2018
IFRS EBIT	1,077	880
IFRS Depreciation and amortisation	973	700
IFRS EBITDA	**2,050**	**1,580**
Other underlying adjustments	-309	-27
Underlying adjustment depreciation	-21	21
Underlying EBITDA	**1,720**	**1,574**

Net profit

The following table shows the underlying alignment between the IFRS and underlying net profit.

(EUR million)	**2019**	2018
IFRS EBIT	1,077	880
IFRS finance result	-204	-181
IFRS tax expenses	-243	-181
IFRS net profit	**630**	**518**
Underlying EBIT adjustments	-309	-27
Underlying adjustment interest	-28	-9
Underlying adjustment deferred tax on to be settled in tariffs	117	30
Underlying adjustment deferred tax on auction receipts	-5	-27
Other underlying tax adjustments	4	-1
Underlying Net Profit	**409**	**484**

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.

SWOT Analysis

In the section 'Our performance in 2019' of our report, we elaborated on TenneT's performance, strategic risks and the outlook for 2020. Our SWOT provides an insight into our company's opportunities and strengths, as well as threats and weaknesses, providing context to our stakeholders.

SWOT Analysis

S – 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 European market integration
- Strong finance track record and good access to debt funding

W – 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
- Lack of focus in internal projects

O – 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
- Willingness of stakeholders to partner up

T – Threats

- More fluctuating usage of our grid due to increased feed in of renewable energy
- Insufficient public acceptance of increasing asset base and of costs of the energy transition
- Changes in or contradictory political objectives
- Inability to deliver our projects in time due to supplier shortages and talent and resource scarcity
- Negative developments in the regulatory framework
- Growing and evolving cyber security threat landscape
- Delay in the decision making with respect to equity and ownership structure

Key figures: five-year summary

	2019	2018	2017	2016	2015
Net debt	9,500	8,712	7,687	7,347	5,736
EBIT	768	853	897	834	1,075
Profit for the year	409	484	531	523	681
Investments in tangible fixed assets	3,012	2,212	1,763	1,848	2,405
Grid availability	99.9998%	99.9988%	99.9986%	99.9999%	99.9750%
Interruptions	14	17	11	6	18
Interconnectors	15	14	13	13	13
Internal headcount	3,768	3,409	3,187	3,040	2,887

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 relatively longer ones.

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.

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 – apital 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.

CPI index
A consumer price index measures changes in the price level of a weighted average market basket of consumer goods and services purchased by households.

CSR – Corporate social responsibility
Corporate social responsibility relates to the socially responsible business practices of a company, balancing people, planet and profit.

CSR Board
We have established 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.

Cross-border TSO
A cross-border TSO is a TSO that operates in more than one country.

CTA - Contractual Trust Arrangements
A contractual trust arrangement is essentially a form of company pension fund where the fund's assets have been transferred to a legal entity separate from the company.

DBO - Defined Benefit Obligation
A defined benefit obligation pension plan is a type of pension plan in which an employer/sponsor promises a specified pension payment, lump-sum or combination thereof on retirement that is predetermined by a formula based on the employee's earnings history, tenure of service and age, rather than depending directly on individual investment returns.

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 over shorter ones.

DGUV – Deutsche Gesetzliche Unfallversicherung
The DGUV (German Social Accident Insurance) is the umbrella association of the accident insurance institutions for the industrial and public sectors (the BGs and the public-sector accident insurers respectively).

DMAIC – Define, Measure, AnalySe, Improve and Control
DMAIC is the problem-solving methodology behind Lean Six Sigma. It consists of five Phases: Define, Measure, Analyse, 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.

ECL - Expected Credit Loss
Expected Credit Loss is the probability-weighted estimate of credit losses (i.e., the present value of all cash shortfalls) over the expected life of a Financial Instrument.

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.

EEPR – European Energy Programme for Recovery
A EU programme launched in 2009 in order to support key investments in the context of the economic crisis and in order to promote energy transition.

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.

EIR - Effective Interest Rate
The effective interest rate is the interest rate on a loan or financial product restated from the nominal interest rate and expressed as the equivalent interest rate if compound interest was payable annually in arrears.

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
Energinet 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 27 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, as well as 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 linking offshore wind farms to the onshore grid and for our Interconnectors NorNed to Norway, BritNed to the UK and COBRAcable to Denmark and NordLink to Norway.

IAS - International Accounting Standards
International Accounting Standards (IAS) are older accounting standards issued by the International Accounting Standards Board (IASB), an independent international standard-setting body based in London. The IAS were replaced in 2001 by International Financial Reporting Standards (IFRS).

ICF – Internal control framework
Framework for the set of internal controls, to provide reasonable assurance on the reliability of our internal and external reporting.

IFRIC – International Financial Reporting Interpretations Committee
IFRIC Interpretations are developed by the IFRS Interpretations Committee (previously the International Financial Reporting Interpretations Committee, IFRIC) and are issued after approval by the International Accounting Standards Board (IASB).

IFRS – International Financial Reporting Standards
The internationally prescribed and recognised reporting guidelines.

IFRIC Interpretations are developed by the IFRS Interpretations Committee (previously the International Financial Reporting Interpretations Committee, IFRIC) and are issued after approval by the International Accounting Standards Board (IASB).

IIRC – International Integrated Reporting Council
The International Integrated Reporting Council (IIRC) is a global coalition of regulators, investors, companies, standard setters, the accounting profession, academia and NGOs. The coalition promotes communication about value creation as the next step in the evolution of corporate reporting.

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 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.

NorNed
NorNed is a 580-kilometre long high-voltage direct current submarine power cable between Feda in Norway and the seaport of Eemshaven in the Netherlands, which interconnects both countries' electrical grids.

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'.

NWb – WENB Sector Energie NWb
NWb is a Dutch NGO for employers in the energy sector.

OCI – Other comprehensive Income
Other comprehensive income comprises items of income and expense (including reclassification adjustments) that are not recognised in profit or loss as required or permitted by other IFRSs.

OECD – Organisation for Economic Co-operation and Development
The Organisation for Economic Co-operation and Development is an intergovernmental economic organisation with 36 member countries, founded in 1961 to stimulate economic progress and world trade.

Oekom
Oekom research AG is a sustainability rating agency and external assessor for benchmarking CSR reports.

Opex – Operational expenditure
Operating expenditure (opex) is the expense 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 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 credit ratings, research, and risk analysis.

SASB – Sustainability Accounting Standards Board
The Sustainability Accounting Standards Board is a nonprofit organisation that sets financial reporting standards. SASB was founded in 2011 to develop and disseminate sustainability accounting standards.

SCL – Safety Culture Ladder
TenneT uses the Safety Culture Ladder (SCL) as a tool to increase safety awareness and enhance safety culture, 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 Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. The 17 aspirational 'global goals' with 169 targets between them were adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development which set out a 15-year plan to achieve the Goals.

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.

SIC - Standard Interpretation Committee
SIC Interpretations were previously issued by the Standard Interpretations Committee (SIC), and were subsequently endorsed by the International Accounting Standards Board (IASB). The IFRS Interpretations Committee has reissued Interpretations in this series if it considers it necessary.

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.

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.

TRIR – Total recordable incident rate
The total recordable incident rate is the number of total recordable incidents per million hours worked. Recordable incidents are fatalities, lost work day cases, restricted work day cases and medical treatment cases.

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 at 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.

TenneT Holding B.V.

Utrechtseweg 310, 6812 AR, Arnhem, the Netherlands
P.O. Box 718, 6800 AS, Arnhem, the Netherlands
W: www.tennet.eu

Colophon
TenneT Holding B.V.

Visiting address
Utrechtseweg 310, 6812 AR, Arnhem, the Netherlands
T: +31 (0)26 – 37 31 111

Concept & Design
DartGroup, Amsterdam

Copy
Stampa Communications, Amsterdam

Corporate Communications Department
T: +31 (0)26 – 37 32 600
E: communication@tennet.eu

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 grid operator (Transmission System Operator (TSO). We design, build, maintain and operate the high-voltage electricity grid in the Netherlands and large parts of Germany and facilitate the European energy market. 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 and to playing our role in driving the energy transition. We transport electricity over a network of approximately 23,500 kilometres of high-voltage lines, from wherever and however it's generated, to over 42 million people while keeping electricity supply and demand balanced at all times. With close to 5,000 employees, we achieve a turnover of 4.1 billion euros and a total asset value of 23.7 billion euros. TenneT is one of the largest investors in national and international onshore and offshore electricity grids. TenneT makes every effort to meet the needs of society. This will require us all to take ownership, show courage and connect with each other. **Taking power further.**

TenneT Holding B.V.
Utrechtseweg 310, 6812 AR, Arnhem, the Netherlands
P.O. Box 718, 6800 AS Arnhem, the Netherlands

Telephone: +31 (0)26 – 37 31 111
E-mail: communication@tennet.eu
Website: www.tennet.eu