

TenneT in the society



TenneT is the first cross-border electricity transmission operator and we take the effects of our operations on people, planet and profit into account in various ways. TenneT and the industry in which we operate are characterised by the attention that is paid to the quality of the living environment during the planning and installation of (new) connections. On this website, we report on TenneT's activities relating to Corporate Social Responsibility (CSR). This report on 2010 serves as a supplement to TenneT's regular Annual Report. Wherever the two reports complement one another, references have been included per theme, subject or indicator.

1. Accountability

In determining the relevant issues for the CSR report (which could be either material issues or issues relating to TenneT's operating process), we built on the inventory of relevant topics performed in 2008 and 2009 in collaboration with the consultancy firm DHV. Based on desk research, the expectations of external stakeholders were taken into consideration (other TSOs, producers, local residents, etc.). In addition, we asked our staff, as our main internal stakeholders, to state via a survey what role they expect of TenneT in connection with CSR. We also reviewed, at that time, TenneT's relationship with the Dutch Office of Energy Regulation (in terms of obligations and expectations).

The similarities and differences between internal and external stakeholders were compared and discussed during two internal workshops. During these sessions a set of indicators was formulated. A working group composed of seven members of the CSR Sounding Board Group subsequently supplemented and tested this set based on the members' varying experience and expertise. In this they took account of current and recent developments: progress and interaction with local parties and other stakeholders in the context of various new construction projects, as well as the process of integrating the Dutch and German parts of TenneT in 2010.

Moreover, when drawing up the report we adhered to the indicators of the international Global Reporting Initiative (GRI), version G3, including the industry supplement for the electricity sector. The relevance of the indicators included is thus assured by the GRI, and TenneT opted for GRI application level C. Finally, we used the criteria from the Transparency Benchmark (version 2011) of the Ministry of Economic Affairs, Agriculture & Innovation as a guideline.

1.1 Target groups

The target groups of this report are various stakeholders of which customers and employees are two important examples. With regard to customers, TenneT wants to enhance their understanding of the way in which we try to perform our activities in a socially responsible manner. With regard to employees, we not only want to use this report to render account, but also to meet our staff's need for information and to encourage them to come up with new CSR initiatives and suggestions. Furthermore, the report fulfils an important informative function for stakeholders (local residents, regional and local governments) that are closely involved with or affected by our work. Naturally, this group also includes various non governmental organisations (NGOs) and other interest groups. Through this report, TenneT wants to meet the desire of our Shareholder (the Ministry of Finance) to report on CSR in a transparent manner.

1.2 Scope and reliability

The scope of the presented CSR information is fully in line with TenneT's regular reporting activities. This means that in principle all CSR information presented applies to both our activities in the Netherlands and Germany, unless it is expressly stated otherwise. The data relate to the calendar year 2010, unless stated otherwise.

2010 was the first year in which TenneT reported on CSR in accordance with the Global Reporting Initiative (GRI). We decided to continue this approach in 2011. The emphasis in our reporting activities was on information about our own operations to optimise the process of data

TenneT in the society

collection and verification and to make a comparison between the two reporting years. Information from external (supply chain) parties, like subcontractors and service providers, that directly affects our own operations was requested from these parties and has been included in full in the reporting information. Examples are various indicators for our environmental performance, such as Volatile Organic Compound (VOC) emissions, soil calamities and emissions of sulphur hexafluoride (SF₆).

Where possible, our results relating to the CSR dimensions of people, planet and profit have been quantified to the greatest degree possible. To this end we used various methods for the measurement, collection and consolidation of data, depending on the indicators. An explanation on methodology used for data gathering and calculations (if any) is given at each of the various topics and themes.

The reliability of the data presented (including quantitative performance) was verified by TenneT's officers who are responsible for the specialist subjects in question. Where possible, trend analyses were conducted using data collections from previous years. In addition, our performance was connected to internal and external developments wherever possible, like the integration of the Dutch and German parts of TenneT in 2010 or public calls for the realisation of a sustainable energy supply. The ultimate CSR report was assessed by the CSR Sounding Board Group composed of representatives across the organisation and key-contact persons in who evaluated the contents based on their relevance and reliability.

TenneT decided against external verification of all CSR data, because in view of current developments we do not think this provides significant added value in terms of improving the reliability in relation to the relevance of the information presented. For our financial performance an external auditor's statement has been issued.

2. Strategy and policy

We take the effects of TenneT's activities on people, planet and profit into consideration in various ways. TenneT and

the industry in which we operate are characterised by the attention that is paid to the quality of the living environment during the planning and installation of (new) connections.

In our maintenance, reconstruction and building operations we are subject to specific agreements relating to nature management. When deciding whether or not to install connections underground, we take account of the integration into the landscape and the technical feasibility. The aspect of magnetic fields also receives considerable attention.

In the context of the energy transition, TenneT actively promotes the development of infrastructure that enables a sustainable energy supply, for instance by facilitating the use of offshore wind.

We never lose sight of our most important, statutory duty to guarantee the security of supply. Our paramount interest is to ensure that the electricity supply is secure and reliable.

2.1 CSR strategy

Facilitating a transition to a sustainable energy supply is part of TenneT's mission and vision. In this regard we have formulated a number of spearheads focused on society, customers, shareholders and employees. These have been translated into the corporate strategy that includes realising and connecting sustainable energy sources as well as reducing our environmental footprint. Our staff are offered various education and training programmes to enable their ongoing development. In addition, we encourage employees to stay physically active by taking part in the Committed Power initiative. At TenneT, a responsible approach to people, planet and profit goes hand in hand with innovation.

2.2 CSR assurance at TenneT

The Vice-President of the Board of Management, Martin Fuchs, bears responsibility for CSR. He reports to the Supervisory Board on behalf of the Board of Management.

TenneT in the society

The performance of our CSR activities has been fully delegated to TenneT's line management in accordance with our regular corporate governance processes.

The CSR coordination duties have been distributed between the staff departments of Corporate Safety & Security (CSS) and Control & Reporting (C&R). CSS is responsible for policy development, monitoring and supporting the business. C&R takes care of data collection for reporting purposes.

2.3 CSR process control

We have included CSR as a component of the annual plans of all organisational units in accordance with TenneT's regular corporate governance processes. The Board of Management establishes the frameworks for this on an annual basis. CSR is one of the themes. For 2010, for instance, the departments in the Netherlands were asked to indicate how their department or business contributes to CSR. These initiatives were incorporated in the annual plans and included, for example, pilots to prevent bird casualties and research into our opportunities for realising the best possible landscape integration.

In 2010 the frameworks for 2011 were established. Safety, Health & Environment (SHE) was included as a separate theme with concrete key performance indicators (KPIs), like reducing the number of incidents and near-incidents, quickly following up Risk Analyses & Evaluations (RA&E) and charting the soil situation.

Monitoring and adjustment occur based on regular internal reporting structures and process control. This means that the organisational units periodically issue internal reports on the main developments, among other things in relation to the objectives set out in the annual plans.

Developments in the area of CSR are discussed by the CSR Sounding Board Group and serve as input for policy development.

For internal audits and risk management, TenneT makes use of a risk matrix. The components of environment,

safety and compliance form part of this risk matrix (besides other subjects). Various business units have been certified based on external standards. The Dutch performance unit Grid Service, for instance, holds a SSC/VCA** certification (Safety for Operational Managers) and the performance unit System Operations has been ISO9001-certified.

2.4 CSR organisation

TenneT has a CSR Sounding Board Group composed of around 15 representatives from the company's organisation in the Netherlands. In 2010 consultation with contact persons in Germany took place on an ad-hoc basis. In 2011 we are planning to either include German colleagues in the CSR Sounding Board Group and/or set up a similar consultative body in Germany.

The members of the CSR Sounding Board Group meet four to six times a year. Within the Group a smaller working party has been appointed, which addresses CSR topics more frequently. The Corporate Safety & Security (CSS) department coordinates the Group. The CSR Sounding Board Group does not bear formal responsibility for CSR, but fulfils an advisory role towards the CSS department. One of the things the Group does is discuss new (draft) policy proposals and operational plans and provide feedback. It also reviews suggestions and ideas which are then taken on by CSS.

2.5 CSR policy development

In 2010 TenneT worked on a new policy approach to CSR. Partly based on a brainstorming session conducted at the end of 2010, we decided to develop our CSR policy on three levels: corporate policy, a strategic plan and an operational plan. Draft versions of these documents were drawn up in 2010 and these will be finalised in 2011.

In the corporate policy we express, in line with the corporate mission and vision, that TenneT wants to facilitate the transition to a sustainable energy supply. In this, we are taking account of the regional and local effects of TenneT's activities for the people, planet and profit

TenneT in the society

dimensions of CSR. TenneT's CSR principles are stated in this policy. An essential principle is that CSR is part of our core business and must be approached in accordance with our regular governance processes wherever possible.

The strategic plan includes the CSR objectives for a two-year period. Examples of objectives included in this plan are increasing the degree of transparency towards stakeholders, acting as a proactive discussion partner in our collaboration with third parties and promoting innovation and sustainability.

In the operational plan, actions, action owners and a time plan have been stated for a period of up to one year. Important actions for 2011 are setting up a stakeholder dialogue with internal and external parties, developing communication guidelines from a CSR perspective (based on, among other things, ISO26000) and increased collaboration with other TSOs in the area of CSR (including within the Netherlands Association of Energy Grid Operators).

3. Description of the electricity system

TenneT operates within the chain of the electricity supply system. This chain consists of producers of electricity from both conventional and sustainable sources (including wind energy), grid companies that transmit electricity (including TenneT), suppliers and customers (industrial and small-scale users). TenneT is responsible for transmission in the Netherlands via the high-voltage grid of 110 kV and higher, as well as a large share of the German high-voltage grid of 220 kV and higher. TenneT does not produce electricity itself, but only takes care of transmission. Our activities consist of providing transmission and system services; constructing, operating and managing transmission grids; and continually monitoring and, where necessary, restoring the balance between electricity supply and demand.

The high-voltage grid comprises various components which are considered to be TenneT's assets. High-voltage pylons and the large offshore converter stations in the north of Germany are perhaps two of the most

conspicuous examples of assets. There are also various high-voltage substations from which electricity (at 110 kV, 150 kV, 220 kV or 380 kV) is transferred along the high-voltage routes via transformers and switching systems. These routes can consist of overhead lines as well as underground cables. The components, such as transformers and switching systems, are provided by various suppliers (think of companies like Siemens and ABB). In the Netherlands, TenneT commissions service providers for the management and maintenance of various parts of the high-voltage grid. This concerns external parties like Liandon and Enexis, and also the internal business unit Grid Service. Grid Service in turn outsources many maintenance and repair works to specialised companies. Grid Service holds a SSC/VCA** certification (Safety for Operational Managers) and requires the same certification of its subcontractors. This means that apart from substantive order specifications, general requirements as regards safety and environment are also imposed (education and training of staff, environmental management system, etc.). In Germany TenneT imposes similar requirements on subcontractors that perform activities on its behalf.

TenneT's high-voltage grid is connected to the regional and local distribution grids managed by various other grid companies. They are responsible for the ultimate supply to small-scale users and most businesses. Contrary to the producers, the grid companies do not act as commercial parties.

Suppliers of electricity purchase a certain amount of electricity from producers and then sell it to customers. Some customers, however, are businesses that operate on such a large scale that they buy electricity directly from a producer without going through a supplier. The price of the traded electricity is subject to market forces, e.g. on trading exchanges such as the APX. TenneT does not have any influence on the price.

More information about the chain (or system) of the electricity supply and the operation of the (international)

TenneT in the society

transmission system can be found in various brochures published by TenneT.

3.1 Impacts of the electricity system

TenneT is responsible for the transmission of electricity within the chain of the electricity supply system. The various parties involved in this chain can have a range of effects on people, the environment and society. Producers can use both conventional fossil fuels (such as natural gas or coal) and sustainable alternative energy sources (such as wind or the sun). Nuclear energy, too, is a source of electricity. The emission of the greenhouse gas carbon dioxide (CO₂) is an important effect of electricity generation through conventional sources. The use of alternative sources of energy fits in with society's desire for a transition to a sustainable energy supply.

The transmission and distribution of electricity by the grid companies has a variety of effects. Important consequences for stakeholders are related to the planning and realisation of new high-voltage routes. During these activities we try to take as much account as possible of the wishes of the various parties involved. Moreover, we avoid negative consequences for the environment and the surrounding area wherever we can, for example by dealing responsibly with waste, soil management and the use of sulphur hexafluoride (SF₆). With a view to CO₂ emissions, the grid losses due to the transmission of electricity are an important factor. These grid losses are unavoidable, but TenneT tries to reduce them to a minimum through smart choice of materials, optimum infrastructure and proper maintenance.

If we want to meet the increasing demand for electricity and society's desire for the realisation of a sustainable energy supply, innovative solutions are needed, such as the realisation of new offshore connections and cross-border interconnections. For this purpose, TenneT often works together with other TSOs in the Netherlands, Germany and elsewhere in Europe. This is necessary in order to control the risks and seize opportunities. One example is the fact that grid expansions are required for

the planned new generating capacity at the Maasvlakte site and at Eemshaven (the Netherlands) and the integration of mainly wind energy in Germany. Particularly in the Netherlands, the relatively long lead times of planning procedures can cause congestions on the current high-voltage grid. This is comparable to the development of traffic jams on motorways and it causes a high risk of an overload on the high-voltage grid. In collaboration with other grid operators and in close consultation with the Dutch Ministry of Economic Affairs, Agriculture and Innovation, TenneT is developing a system to effectively resolve these (temporary) congestions until the grid once again has sufficient capacity. Thanks to congestion management, however, planned developments or opportunities to enhance the energy supply, sustainably or otherwise, do not need to suffer delays.

Consumers of electricity, like businesses and households, also have various effects. The measures that can be taken depend on the type of consumer and may include energy-efficient production techniques or building insulation, for example.

3.2 Vision of the future

In the traditional electricity system, the current mainly runs in one direction, i.e. from producer to consumer. For the integration of sustainable energy sources, however, more flexibility is required, because generation will follow demand to a lesser degree. The supply of wind energy, for instance, strongly depends on weather influences. In addition, more and more regional and local electricity is being generated. In such cases the transmission and distribution of electricity will occur in multiple directions. Large and small storage systems will play an increasingly important role. Think of a storage system in the Alps or in the Norwegian basins, but also of electric vehicles.

TenneT is proactively working on meeting the need for a more flexible electricity system and the transition to a sustainable energy supply. Important projects in this regard include the various projects for expansion and upgrading of the high-voltage grid. Examples are

TenneT in the society

Randstad 380 kV, South-West 380 kV and North-West 380 kV in the Netherlands. In Germany, TenneT has already built and is still expanding the number of connections for offshore wind farms in the North Sea and builds more than 500 kilometers of (extra-) high voltage lines onshore. Interconnections such as those with Norway (NorNed) and Great Britain (BritNed) enable international transmission and are part of our aim to facilitate the development of a single north-west European energy market.

4. TenneT and its stakeholders

TenneT is aware of its position in society. We realise that our activities affect our relationships with our stakeholders. With a number of these stakeholders we maintain a contractual relationship and with others the relationship is of a social nature. TenneT is constantly looking for ways to improve the security of supply and to enhance the sustainability of the energy supply. It is not impossible that this will lead to situations in which there are conflicting interests. TenneT is happy to explain how we deal with conflicting interests per type of stakeholder.

4.1 Relationships with government bodies

Communicating transparently with the government is important to TenneT. We frequently interact with national, provincial and regional government authorities. In our communication, TenneT's specialists try to transparently clarify the objectives of our activities, which sometimes are or seem to be conflicting.

For instance, TenneT is regularly asked to install large sections of the 380kV high voltage grid below ground. In terms of technology, installing a 380kV connection below ground is an ambitious challenge for TenneT, in which we want to be a global frontrunner. However, the security of supply is of great importance in this respect, which is why the possibilities for this alternative that society calls for need to be assessed in a controlled manner. We try to substantiate this dilemma to our stakeholders through thorough research and studies. This does not mean that TenneT is not progressing in this area. The challenge we

see in this is converted to innovative projects, partly because of the criteria imposed by national authorities.

For example, TenneT will install 20 kilometers of the 380kV route in the Randstad, the Netherlands, conurbation below ground. In collaboration with Delft University of Technology and Eindhoven University of Technology, we will be investigating and monitoring the impact of the cables on the stability and availability of the transmission grid over the coming years. This study will be followed closely by interested parties around the world and its ultimate aim is to ascertain the long term feasibility of even longer underground cables. The study was started in late 2009 and will be conducted over a period of six to eight years. Also in Germany TenneT intends to test underground installation of sections of planned 380kV lines in recognition of the wishes of local residents. This will be carried out in accordance with the German law *Energieleitungsausbaugesetz* which names four pilot projects for partial cabling.

4.2 Contact with local residents

Unfortunately, electricity cannot be transmitted invisibly (or not yet), so that in many places the role of TenneT is still noticeable in the form of pylons. TenneT tries to reduce any inconvenience, no matter how small, to a minimum. In the development of the new routes of the planned Randstad 380 kV high voltage connection, our contact with local residents is being intensified. As a result, we face urgent dilemmas between the impact of a route on local residents and TenneT's duty to guarantee the security of supply in the most efficient manner possible.

Intensive communication with local residents is a fixed component of the realisation of such projects. Together with the Dutch government, TenneT organises (informal) information evenings for local residents and stakeholders at an early stage. For instance, in September 2010, well before the final decision on the installation of a submarine cable to Denmark (the so-called COBRACable), TenneT discussed the consequences with local residents at Eemshaven. The concerns expressed by small-scale

TenneT in the society

shipping and leisure boating companies during the meeting will be taken into account by TenneT for the proposed route and during the (future) building works.

At an information evening in the village of Boxtel a few months later, which concerned the new cable route between Boxtel and Oirschot, TenneT mainly answered questions about planning, inconvenience and compensation payments.

In Germany TenneT follows the same strategy and offers information evenings and round table discussions at an early planning stage. During all information meetings, TenneT adopts a transparent attitude towards local residents and tries to present as much relevant information as possible based on previous meetings. Because the legal decision-making process on whether a new connection needs to be realised or an existing connection needs to be upgraded has at that point usually been completed, the information meetings are generally focused on compensation schemes for possible inconvenience. For instance, TenneT provides information brochures about the compensation payments which local residents are entitled to in connection with the Randstad 380 kV project. On TenneT's website and specific project websites, more information can be found on progress and procedures which are relevant to local residents.

4.3 Customers: Service provision comes first!

TenneT sets great store by our relationships with our customers. In addition to large-scale industrial consumers and producers directly connected to the high-voltage grid (110 kV and higher), our customers also include the regional grid operators. We do not supply directly to small-scale producers and consumers.

TenneT's primary service is bound to rules as described in acts and (technical) codes. As a result, TenneT sometimes receives requests we cannot execute based on the applicable regulations. In order to nevertheless facilitate the market as effectively as possible, TenneT regularly sets up sounding board groups to discuss these dilemmas.

For instance, because of an important change in the regulations for so-called privately-owned grids, TenneT invited representatives to openly discuss the consequences of this change for their relationship with TenneT. The parties' interests in relation to each other were expressed, so that the implementation will occur without any problems.

For current developments, various services, points of contact and frequently asked questions, customers can visit our website or call the following number: +31 (0)26 373 17 17.

4.3.1 Customer satisfaction

Each year, TenneT asks its customers in the Netherlands to take part in our customer satisfaction survey. By means of a questionnaire and an interview, our customers evaluate TenneT's total service provision. In 2010 TenneT received a score of 7.2 out of 10. This was the second (slight) increase in a row compared to the previous year (2009: 7.1). TenneT is proud of this result but we are not yet satisfied. As of 2011 we will try to raise our score to 7.5. We will do this by translating the results into a concrete plan of action to implement improvements in our service provision.

4.3.2. Complaints and claims

Despite the fact that TenneT tries to take the environment in which we operate into consideration as much as possible, we are aware that our activities can lead to inconvenience. Moreover, failures in the grid in principle always cause inconvenience. It is important to TenneT to communicate transparently in such cases and to focus on our stakeholders. Clear communication and agreements are important in this respect, to avoid a lack of clarity and arrive at proper solutions.

Complaints and claims relating to our service provision in the Netherlands are, for instance, received centrally and monitored by our service centre. Once we have received a complaint or claim and have sent a confirmation of receipt, the complaint/claim is allocated to the relevant specialists

TenneT in the society

and the follow-up process is supervised by the Communications department. Together with the chain manager, the TenneT service centre monitors how the complaint or claim's processing is progressing and ensures that it is settled swiftly. In the Netherlands TenneT applies a term of up to six weeks for the processing of each complaint.

Due to the takeover of the Dutch 110-150kV grids by TenneT in the Netherlands, our exposure to complaints and claims from consumers and small-scale users has increased. Due to the power failure in the Bollenstreek area in 2010, for instance, a large number of affected parties reported to TenneT.

For the processing of complaints and claims resulting from this power failure, TenneT developed a process together with the Dutch grid operator Liander so that complaints could be dealt with via a transparent procedure. An important element of this procedure was that consumers and small-scale users needed to report to Liander, because Liander was the regional grid operator of the area.

While TenneT and Liander coordinated the mutual consequences and liability in the background, several clarifying publications were developed for consumers and small-scale users, so that people did not suffer any unnecessary delays in receiving their compensation payments.

In connection with the experience gained due to this power failure that occurred in early 2010, TenneT wants to develop similar processes with the other grid operators to ensure that the processing of failures and our communication with affected parties take place in a transparent manner.

4.4 Employees

TenneT's strength lies in the enthusiasm and expertise of our staff. We encourage them to retain this, and matters like health, safety and responsibility play an important role in this regard.

TenneT tries to offer staff good employership by means of an active absence policy and ample opportunities for sport and leisure. Our staff association organises monthly activities and our Committed Power programme encourages an increasing number of employees to perform sporting challenges each year. Employees of TenneT in Germany also took part in Committed Power in 2010. In addition, we have Young TenneT, a group of (young) employees in the Netherlands that jointly organise various activities to get to know one another and the organisation better. On behalf of the staff association, over 100 employees have made the effort to do volunteer work as part of the Dutch Oranje Fonds campaign called 'Nederland Doet'.

To assure the safety and responsibility of our staff, TenneT has developed a new Safety, Health & Environment (SHE) policy. The points of departure of this policy include that we want to be a 'frontrunner in SHE among the TSOs in Europe' and that we want to show a 'good management practice'. We are striving for continuous improvement of our performance based on the systematics of various management systems, such as OHSAS18001, ISO9001 and ISO14001.

4.5 Interest groups and industry federations

Other groups of stakeholders which TenneT maintains contact with are interest groups, industry federations and other (foreign) grid administrators and knowledge platforms. TenneT greatly values knowledge sharing and creating awareness of the effects of the performance of our activities.

For instance, TenneT maintains contact with and actively contributes to E-laad, ENTSO-E, the Smart Grids Taskforce, Cigré and Dutch Power. We are also constantly interacting with NGOs.

Another example is TenneT's collaboration with other TSOs, WNF, German Watch and Birdlife International in the Renewables Grid Initiative to ensure that both TSOs and NGOs can develop realistic scenarios to achieve their own goals.

TenneT in the society

Within the scope of our activities we adopt an open attitude to do justice to the role of interest groups, for instance. This results in dialogues in which we often look for consensus if conflicting interests are at stake. Due to the Dutch Independent Grid Administration Act (WON), for example, TenneT was able to welcome a great number of customers of various backgrounds in the Netherlands which had various (contractual) agreements with previous (regional) grid operators.

To efficiently arrive at new, market-supported agreements, TenneT has conducted intensive consultations in the Netherlands with the interest group Energy, Environment and Water (VEMW) for the development of new model agreements. In June 2010 these consultations resulted in four new model agreements in which the interests of customers and of TenneT are properly represented.

5. TenneT as an employer

Our staff are TenneT's greatest strength. The staff survey of 2010, which achieved a 78% response, showed that the typical TenneT employee can be characterised as being loyal, motivated and committed. All in all, TenneT has a dynamic, professional and informal working atmosphere, which is in line with our core values of quality and integrity.

5.1 Terms and conditions of employment

In 2010, all staff in the Netherlands were covered by the collective labour agreement for the energy sector. Our salaries are determined based on TenneT's salary structure. TenneT wants to enable its staff to gear their terms and conditions of employment to their own preferences and needs. That is why preparations were made in 2010 for the implementation of the Budget Benefit Planner. This implementation was realised on 1 January 2011.

By offering people the flexibility to choose their own working hours (e.g. to work 4 x 9 hours), by ensuring that offices have long opening hours and by adopting a positive attitude towards part-time work, TenneT enables staff to maintain the right balance between work and their

private lives. In Germany, a Work Life Balance programme has been set up for this purpose, including home office agreements and procurement of child care, elder care, home help etc. in cooperation with the so-called "Familienservice".

5.2 Training and personal development

In our opinion it is essential that TenneT's employees continue to evolve both personally and professionally. Paying attention to people's development enhances their motivation and this has a positive effect on the quality level of an organisation.

The training budget, too, shows that it is important to TenneT that employees permanently learn and evolve, as this budget is higher in the Netherlands than elsewhere in the market. By comparison:

The average training budget of Dutch companies with 400-1000 staff is 2% (Berenschot Benchmark)

- 2010: Training budget of TenneT equalled 5.5% of staffing expenditure (in the Netherlands)
- 2011: Training budget of TenneT equals 4.8% of staffing expenditure (in the Netherlands)

To ensure the best possible facilitation of the training and development of our staff, TenneT's Dutch Human Resources department will introduce the TenneT Academy in 2011, a digital training catalogue that will be accessible to employees and managers in the Netherlands. Via this catalogue they can register for training courses quickly and easily. Evaluation and documentation will also occur digitally. In Germany TenneT has a comparable program.

5.3 Education

TenneT interacts closely with various universities and institutes for intermediate vocational education. Particularly in the areas of energy technology and engineering, TenneT aims for the best possible alignment between education programmes and our field of work. This social involvement manifests itself in joint education programmes, visiting lectureships, excursions to TenneT locations and

TenneT in the society

information meetings for teachers of secondary and higher education. Concrete examples include the Power Minor and the Watt campaign, in which TenneT tries to actively recruit students together with other parties.

TenneT puts a lot of effort into these initiatives, particularly into the Power Minor. A considerable group of energy students of universities of applied sciences have already completed the programme:

2008 – 2009	23 students
2009 – 2010	22 students
2010 – 2011	20 students

A number of the students who complete the Power Minor subsequently do a traineeship at TenneT and some of them (also) enter into employment at TenneT after their graduation.

TenneT moreover actively participates in educational innovation processes. One example is the Vocational Education Platform, through which TenneT is involved in an education project concerning the integration of a sustainable energy supply in the energy chain, from production to end-user.

Also in Germany TenneT is present on academic job fairs and other recruitment events. TenneT wants to increase its popularity as good employer, especially for technical students of the energy market, and to get in contact with students and graduates who are potential future employees.

5.4 Health and absenteeism

TenneT encourages employees to take responsibility for their own health and fitness. Our policy is geared to this. Absenteeism at TenneT is still relatively low. In 2010 the absence in the Netherlands was 3.1%, which is 0.1% lower than in 2009, when the absence rate was 3.2%. In Germany the absence rate was even lower with 2.6% in 2010.

Employees have access to the company physician at all times. In the Netherlands a collective health insurance is in

place and all employees are offered contribution towards their health insurance premiums.

The fact that TenneT believes the health of its staff is important is reflected by various actions and initiatives, such as:

- Committed Power, including an annual medical check-up for all staff .
- In-company physiotherapy in Arnhem (the Netherlands) and mobile massages once a week at low cost in Bayreuth, Bamberg and Lehrte (Germany).
- Fruit at work: Free fruit for all staff at all TenneT locations in the Netherlands.
- Programmes for employees in the Netherlands who are on sick leave or who are in danger of taking sick leave ('Sick leave prevention' and 'Actively working on recovery'), which are funded by TenneT and are partly organised during working hours.
- Partially in co-operation with regional clubs our German company-facilitated sports groups offer a wide range of sport activities for our employees, e. g. soccer, motorcycling, tennis, skiing, athletics and biking.
- In Germany we subsidize self-directed health programs by paying up to 50 % of the total account (at most three programs per year). Also in the Netherlands we compensate for health programs.
- Company doctors apply flu vaccinations free of charge to all employees.
- In all German cafeterias we offer healthy food with vegetarian and non-vegetarian components. Our cooks were instructed to use special recipes.
- In Germany we have several company physicians who offer consultation hours for our employees. They also carry out obligatory screenings within occupational medicine.

5.5 Trainees, graduating students and work placement opportunities

TenneT pays a great deal of attention to creating places for trainees and graduating students. We do this on the one hand because we feel it is important to offer young people an opportunity to gain work experience and on the

TenneT in the society

other hand because it is important for TenneT to find (potential) employees and to bind them to the company.

Especially for technical positions it is difficult for TenneT to find staff with the right qualifications. This is due to the rather specific industry in which we operate and the constant shortage of experienced technical staff in particular. Our expectation is that this problem will increase over the next couple of years due to population ageing and the shrinking age group of under-35s; a relatively large number of older staff will retire and the number of students starting technical studies is insufficient to compensate for this. This problem is especially relevant in the field of technology, but in other areas good employees are also scarce.

Since 2008 TenneT has had an active traineeship policy in the Netherlands and we are now starting to benefit from this. During the past two years TenneT offered a group of around 30 students a traineeship or a graduation place in the Netherlands. Our objective is to always have a group of 15 trainees within the company.

Number of trainees and graduating students in the Netherlands:

2009	34
2010	33

A small number of our trainees and graduating students enter into TenneT's service in the Netherlands after their graduation. Recent graduates who have not been a trainee at TenneT are also invited to apply for a job, and we consciously try to increase the number of positions for recent graduates.

In addition to trainee places, TenneT makes available five work placement positions each year in the Netherlands. The target group for these positions mainly consists of young people who have difficulty finding a regular job. Youngsters receiving benefits under the Invalidity Insurance (Young Disabled Persons) Act are considered a special target group in this regard. For the participants in this project we will assess at the end of their work placement period, with due

regard for the current recruitment policy, whether it is possible for them to start in a regular job. In 2010 three work placement vacancies were fulfilled in the Netherlands. We intend to pay extra attention to this scheme in 2011 and we aim to fulfil all work placement vacancies.

Also in Germany, an apprenticeship at TenneT is a good starting point for young people's working life after school. Apprenticeship programs within the "Duales System" are special for Germany. It is a combination of going to a vocational school and working within a company. In 2010 we altogether offered 50 of the following apprenticeship training positions: Management Assistant for Office Communication; Industrial Business Management Assistant; Industrial Electronics Technicians, students in the German dual system for Bachelor of Engineering and Bachelor of Arts.

Furthermore we offer an internal qualification program in Germany which is called "Networker" for former apprentices as Industrial Electronics Technicians who passed their exams with good marks. The current program endures 13 months and at the end of 2010 it fostered 5 positions. For good former apprentices a financial award for their studies is granted in Germany. This program is called "Challenge for You" and currently advanced two Electrical Engineers in 2010.

In addition to the above, students can take part in practical trainings in Germany with a duration of one week to several months in which they learn about working life. Twenty-five students worked for TenneT in 2010 and made practical experiences. Some of them wrote their thesis in cooperation with TenneT. Additionally 22 students worked for TenneT in Germany to earn money during their studies.

Especially for graduates in Germany TenneT provides the so called "Trainee Programm". In 2010 4 graduate students took part in the 18 months enduring program. Within their training period they change the departments four times to get an extensive knowledge of the company and to create a personal network. The first five trainees

TenneT in the society

were already staffed in regular positions at TenneT in Germany.

6. TenneT and sustainable activities

'Planet' forms an important component of TenneT's regular activities. In everything we do and every time we perform necessary maintenance and/or building activities, we consider the environment and the possible inconvenience we may cause to the greatest extent possible.

6.1 SF₆ emissions

TenneT uses sulphur hexafluoride (SF₆) as an insulating gas in high voltage switchgear. SF₆ is a potent greenhouse gas. Unfortunately, there is currently no safe and effective alternative. It is used in closed systems, but it may be released through small leaks and/or during maintenance work on the installation. We try to prevent leaks by imposing stringent requirements on the leak-proof properties of new switchgear, and also by training our staff in this area. In addition, our SF₆ recording system has been significantly improved recently. As a result, we now have a better understanding of the quantities of SF₆ in our installations, and of where there are leaks. In this way we are making every effort to deal with leaks in a responsible manner and to resolve them as soon as possible.

Each year, TenneT reports to the Dutch TSO branch organization "Netbeheer Nederland" on our use of SF₆ in the Netherlands. In 2010 the banked SF₆ quantity was 120,171 kg and the emission amounted to 1,217 kg (1.01%) in the Netherlands. Compared to last year the banked quantity increased, as did the emission. The emission and the emission factor in the Netherlands are based on the banked quantity of SF₆ (the total quantity of SF₆ that is present in the components) and the quantity of refilled SF₆.

In Germany, TenneT issues an annual report on its use of SF₆ to a commission of the German industry association *Verband der Elektrotechnik, Elektronik und Informationstechnik* (VDE). The total quantity of SF₆ amounted to 86,619 kg and the total emission was 547 kg

in Germany in 2010. This equals an emission factor of 0.6%. The emission and the emission factor in Germany are based on the total quantity of SF₆ and the emission factor as established nationally by VDE. This method was implemented in Germany in 2008 and legally enacted to reduce the administrative burden for grid operators in this area.

6.2 Volatile organic compounds (VOCs)

High-voltage pylons must be painted around once every 10 years to keep them in good condition. The paint used for this purpose contains volatile organic compounds (VOCs), which harm the ozone layer. We record on an annual basis how many pylons we have painted and how much paint we have used for this, allowing us to keep track of the quantity of VOCs that has been emitted during painting work.

The VOC emissions are based on the total amount of paint used and the percentage of VOCs in the paint used. In 2009 TenneT emitted 7,537 kg of VOCs in the Netherlands, whereas in 2010 we emitted 4,221 kg. This is a decrease of 44% caused by the fact that less painting took place in 2010. In Germany TenneT had a VOC emission of 1,238 kg in 2010. Because of the limited amount of primer applied by our activities in Germany and the use of water-based paint, the VOC emission in 2010 was relatively limited.

TenneT is investigating how we can reduce our VOC emission by testing other types of paint with a lower VOC content. In addition, we are looking into improved paint quality, so that we will need to paint the pylons less often, and we are improving our painting techniques, so that less paint will be required.

6.3 Waste

During the performance of activities at substations, connections and project locations, TenneT generates waste. This mainly concerns non-hazardous waste substances and, to a lesser degree, hazardous substances. Our waste is stored separately at the locations and collected by a recognised waste collection

TenneT in the society

company. We periodically record the amounts of waste generated by TenneT.

The table below provides an overview of the amounts of hazardous and non-hazardous waste generated and disposed of off-site. Examples of hazardous waste streams include contaminated soil and waste that contains oil. The differences between 2009 and 2010 for TenneT in the Netherlands can be explained by the fact that in 2010 it was first specified how much of the waste streams at the high-voltage substations we share with regional grid operators have been generated by TenneT. In other words, this is mainly an administrative difference.

The increase of non-hazardous waste in Germany from 2009 to 2010 consists mainly of waste metal and isolators which became obsolete due to improvement and

renovation of overhead connections. Furthermore, the decrease in hazardous waste during the same period in Germany is explained by the fact that a five-year program of integrity testing of transformers ended in 2009. As a consequence, the amounts of oil residuals and oil contaminated soils reduced significantly.

The waste data have been collected based on the records of the various waste collection companies. The difference between hazardous and non-hazardous waste is based on the EURAL codes. The data collected relate to high-voltage substations, office environments, project locations and other work places of TenneT. We do not have any detailed information yet about the waste streams of two office buildings in the Netherlands which are leased by TenneT; this mainly concerns household waste.

Table Waste data

		Tonnes		%	
		2009	2010	2009	2010
the Netherlands	Non-hazardous	286	363	20%	20%
	Hazardous	154	385	11%	21%
Germany	Non-hazardous	621	928	43%	50%
	Hazardous	378	179	26%	10%
	TOTAL	1,439	1,855	100%	100%

TenneT in the society

6.4 Paper consumption

TenneT's paper consumption is calculated on the basis of the total quantity of paper purchased for internal use (notepaper, copying paper etc.) and the printing work contracted out to third parties (customer information brochures, reports, etc.) These data have been obtained from the suppliers and converted to kilograms. It must be noted in this regard that one of the four suppliers to which TenneT the Netherlands used to contract out printing work was declared bankrupt in 2010. As a result, no data were available from this party.

In 2010 the paper consumption of TenneT amounted to 61,232 kg in the Netherlands, compared to 50,834 kg in 2009. This rise was due to an increase in the amount of printing work, partly because of the introduction of a new visual identity after the acquisition of transpower and partly because of the increased use of logo paper also in Germany since the end of 2010. In Germany TenneT consumed around 15,614 kg of paper in 2010. In total, this means that TenneT used 76,846 kg or around 42 kg per employee (FTE) in 2010.

6.5 Soil calamities

Oil is used in various high-voltage installations of TenneT, for instance for cooling (transformers) or insulation (cables). To prevent contamination of the environment, TenneT has taken several protective measures. We have, for instance, introduced oil drip trays below transformers and diesel tanks (for the stand-by generators). Rainwater coming from the transformers, which can contain oil residues, is discharged via an oil separator. We periodically have a recognised waste collection company remove the collected oil/sludge mixture as hazardous waste.

Despite all preventive measures, oil contamination does occur sometimes at one of our sites. In such cases TenneT ensures that the contamination is reported to the competent authority and is cleaned up as soon as possible. In 2010, 12 soil calamities were reported by TenneT in the Netherlands, five more than in 2009. In Germany there were two soil calamities in 2010, which both concerned (small-

scale) oil leakage. All calamities concerned oil leakage and were cleaned up immediately in accordance with the statutory requirements.

6.6 Oil cables

TenneT only uses cables in the Netherlands in the 110 kV and 150 kV grids (apart from sea cables). These cables can cause oil contamination. Usually this involves old cables that leak oil due to ageing. New high-voltage cables are made of plastic and do not contain oil. Oil cables are maintained under pressure and if there is a loss of pressure, this indicates a leak. To be able to guarantee that the cables remain in good condition, they must be kept pressurised. For this purpose, oil is inserted into the cables. We keep a record of the insertion of oil into the cables. In 2010 this amounted to 3,000 litres. This represents an increase of 26% compared to 2009. If a cable is leaking, the leak is localised as soon as possible, so that the problem can be resolved. At the same time, the contamination is cleaned up as quickly and effectively as possible.

6.7 Soil and groundwater contamination

TenneT deals with (possible) soil and groundwater contamination as thoroughly as possible by starting remediation as quickly and effectively as we can. In the majority of cases, the contamination is caused by oil cables. As oil cables are mainly used in urban areas in the Netherlands (in Germany, TenneT does not have onshore cables), it is not always possible to immediately remove the contaminated soil and/or groundwater in full. As a result, residual contamination sometimes remains. We keep a record of this and monitor it, so that the contamination can be remediated at a suitable moment. In 2010 TenneT remediated four contaminated sites or spots in the Netherlands in accordance with the Dutch statutory requirements; around 7,941 m³ of contaminated soil was removed and disposed of off-site. In addition, 11 contaminated sites or spots were monitored in the Netherlands in accordance with the statutory requirements to be able to detect any (potential) migration of the contaminants in a timely manner. In Germany no soil and/or groundwater contaminations occurred in 2010.

TenneT in the society

It is important to TenneT that we can prevent soil and/or groundwater contamination and that if it does occur, we can confine it and clean it up as soon as possible. For this reason, TenneT is conducting a study into methods to ensure earlier detection of cable leakage locations in the field. Moreover, we have improved our recording of contaminations and developed a system to assess the severity of existing contaminations in the Netherlands (in accordance with Dutch laws and regulations). This system should help us make the right choices in our annual remediation and monitoring plans.

6.8 Polychlorinated biphenyls (PCBs)

In the 1930s, PCBs were introduced because of their favourable properties, like fire resistance. Because of these properties they were added to many oil products. In the 1980s, however, it appeared that PCBs also had harmful properties. They are toxic, they persist in the environment and they accumulate in food chains. Due to these harmful properties, it was decided to ban the use of PCBs a few decades ago.

Before the ban, PCBs were used in various high-voltage components, such as circuit breakers, current transformers, voltage transformers, feed-throughs, combined transformers and capacitor banks. In accordance with the applicable regulations, in the Netherlands we have replaced all oil of the circuit breakers several years ago. In the other components we did not do so, however, on the one hand because it was not required by the regulations at that time and on the other hand because it mainly concerned closed systems. However, in accordance with our statutory duties, TenneT has records of installed components in the Netherlands that (may) still contain PCBs. As it is no longer possible to test closed systems without damaging them, we have decided to designate them as being suspicious. When a suspicious component is revised or replaced, the oil must be tested for the presence of PCBs. If it turns out that it does contain PCBs, the component and the oil will be disposed of by a recognised waste collection company as

hazardous waste. In addition, the data on the suspicious components are recorded and kept up to date in a registration system.

In Germany we do not have any components that contain PCBs, as these were replaced around 10 years ago after an inspection.

6.9 Asbestos

In the past, asbestos was used often in the high-voltage sector because of its favourable properties (including fire resistance). When the use of asbestos containing materials became prohibited by law for health reasons, asbestos removal operations were performed at many substations. However, not all substations and/or locations were decontaminated. As asbestos is harmful for the health of our staff, it is important that we know where asbestos is present and where it is not. For this reason, TenneT makes new inventories each year in the Netherlands to chart the presence of asbestos (mainly at high-risk locations and locations where work has been or is being planned). Without prior investigation, no work is performed at locations where the presence of asbestos is suspected; if necessary, the asbestos will be removed or preventive measures will be taken first. Components suspected of containing asbestos are provided with warning stickers in accordance with the statutory requirements. Also in Germany warning stickers are attached to all such locations.

6.10 Carbon footprint

Our carbon footprint has been charted based on grid losses and SF₆ emissions. Grid losses occur as a result of the transmission of electricity and can be defined by the difference between the amount of energy fed into and the amount of energy taken from the high-voltage grid.

The grid losses in the Netherlands amounted to 828 GWh in 2010. This is 2.6% of the total capacity transmitted across the 110 kV, 150 kV, 220 kV and 380 kV high-voltage grid in the Netherlands. TenneT has purchased so-called guarantees of origin for a volume of electricity that is

TenneT in the society

equivalent to the losses in the Netherlands. This is referred to as the 'greening' of grid losses.

The grid losses in Germany amounted to 1,615 GWh in 2010. This is 1.8% of the total capacity transmitted across the 220 kV and 380 kV high-voltage grid managed by TenneT.

In the calculation of our carbon footprint we also took account of air travel of Dutch staff and energy consumption (electricity and gas) at the office environments in the Netherlands. Unfortunately, no such data were available for our German organization at the time of the footprint calculation.

As expected, grid losses form the largest share of TenneT's carbon footprint. Our carbon footprint corresponds with the average energy consumption of around 134,644 domestic households. The share of TenneT the Netherlands in the total footprint is around 40%.

The grid losses have been converted to CO₂ equivalents based on, respectively, the Dutch and German national energy production mix (sources: Senternovem and IEA).

Table Composition of carbon footprint

Component	CO ₂ (tonnes) in 2010	Percentage of total in 2010
Grid losses	1,167,978	96%
SF₆ emissions	42,160	3%
Energy consumption of office buildings	1,052	1%
Air travel	606	~0%
Total	1,211,795	100%

TenneT in the society

6.11 Landscape integration

6.11.1 Overhead routes

High-voltage lines are a conspicuous feature of the landscape and are often experienced as having a negative impact on the landscape. During information evenings for local residents and other stakeholders it often becomes clear that the 'not in my back yard' (NIMBY) principle applies to our infrastructure. For this reason, TenneT pays a lot of attention to landscape integration in the Netherlands in particular when developing routes for overhead high-voltage connections by routing cleverly and using as many straight sections as possible. After all, a meandering route or a route with pylons that vary in height is much more noticeable in the landscape than a regular route. Moreover, the addition of small roads, plants and trees and hedgerows can improve the integration of a high-voltage line in the landscape. In the design of pylons (think of the innovative Wintrack concept), we have also taken the surrounding area into account and have created a slender pylon design.

6.11.2 Installation below ground

An underground high-voltage connection (cable) is not entirely invisible in the landscape. Because plants with deep roots cannot be present in the ground above the cable, there is often an open, green stretch with pump houses and distribution points above the connection. An underground cable is a lot less noticeable than an overhead line, however, and is usually regarded a lot more positively by local residents than an overhead line. TenneT is well aware of this and insofar as it is considered responsible in relation to the security of supply we install connections below ground in the Netherlands wherever this is possible and desired by local residents.

For the highest voltage level (220 and 380 kV), the maximum permissible total length of a cable connection has been set at 20 km, in view of the security of supply. The maximum length of 20 km of 380 kV cable has

been used in the Randstad 380 kV project in the Netherlands. This means that for this voltage level it is not possible to install any more connections which are part of the national high-voltage grid below ground (with the exception of offshore interconnectors). As regards the lower voltage levels (110 and 150 kV), it is more common practice to install new connections below ground, so that the impact on the landscape is reduced to a minimum. In addition, in the Netherlands, for each kilometre of new overhead connection at the highest voltage levels (220 kV and upwards) which cannot be combined with existing connections, one kilometre of existing overhead 110 or 150 kV line will be relocated below ground or will be decommissioned. As a result, the total number of kilometres of overhead high-voltage lines will not increase in the Netherlands, so that the landscape will be spared, while expansion of the national high-voltage grid will continue to be possible.

6.11.3 High-voltage substations

In 2010 TenneT commissioned an investigation into the possibilities to integrate high voltage substations into the landscape in the Netherlands by building them above, at or below ground level. The purpose of the study was to explore the possibilities for acting as a 'good neighbour' in the construction of the high-voltage substations and their integration into the landscape by taking people's perception of substations into consideration as much as possible. The conclusion of the study was that, depending on the type of landscape, it is possible to design substations that can be partly or wholly built below ground level. In this way the surrounding area will be optimally taken into account.

6.12 Electromagnetic fields

Electromagnetic fields arise anywhere where there is an electric current, which includes around high voltage lines, cables and substations. The maximum field intensity which the general public may be exposed to is 100 microtesla (μT). This value is currently not exceeded anywhere in the regular living environment. In 2005 the Dutch Ministry of Public Health, Spatial Planning and the

TenneT in the society

Environment (now the Ministry of Infrastructure and the Environment) drew up a policy recommendation concerning long-term exposure to low field intensities (based on the precautionary principle), in which it recommended how to deal with magnetic fields in relation to so-called sensitive properties (homes, schools, crèches and day nurseries) when realising new overhead high-voltage lines or constructing new sensitive properties near existing high-voltage lines. In this context, the magnetic field zone was defined as the zone within which the annual average exposure exceeds 0.4 μ T. TenneT complies with this policy recommendation in the Netherlands. In the installation of new overhead lines in the Netherlands, TenneT therefore aims to avoid having sensitive properties in magnetic field zones wherever possible by carefully routing the connections. In this we conform to the Dutch government policy. In a densely populated country like the Netherlands, however, it is not always possible to keep all sensitive properties outside the magnetic field zones around overhead high-voltage lines. In such cases, by way of supplement to the Dutch government policy, TenneT offers residents in the Netherlands to buy their sensitive property if they want to sell it, so that these residents will not need to live in the magnetic field zone 'involuntarily'. After buying the properties concerned, TenneT puts them on the market.

Apart from overhead lines, TenneT also realises substations and cable connections and we reconstruct connections. Apart from the upper limit of 100 μ T there is no government policy that prescribes how to deal with magnetic field zones in relation to sensitive properties where it concerns cable connections and reconstructions. Nevertheless, TenneT clarifies to stakeholders in the Netherlands where the magnetic field zones of new cable connections, substations and reconstructions are. In this way we are fully transparent to our stakeholders.

6.13 Bird protection measures

Birds colliding with a high-voltage line can be electrocuted because of the development of a short circuit. In some

cases the number of bird casualties can be so high or the mortality of a certain bird species can be so sensitive that complaints and/or questions are submitted by the public, (national) media or politicians. In the opinion of TenneT, the number of bird casualties caused by electricity lines must be reduced to a minimum. For this reason, we take a number of measures at selected locations in high-voltage connections. The first measure comprises the suspension of wire coils from the earth wires. Studies performed in the past (in the mid-1980s) revealed that this measure can reduce the number of bird casualties by up to 90%. These studies were not focused on specific bird species, nor did they distinguish day and night or other factors that may play a role in the occurrence of collisions.

The second measure is the suspension of bird flight diverters (black and white strips of plastic that are moved by the wind) from the earth wires. Foreign studies have shown that the suspension of bird flight diverters from earth wires can reduce the number of bird casualties by up to 90%. Research performed in the context of the Randstad 380 kV project demonstrated that the suspension of bird flight diverters in an existing 150 kV connection near the Natura 2000 area of De Wilck caused a drop in the bird mortality ranging from 70% to 85% for mallards and wigeons. For bird species that fly during the day, the average reduction in the casualties caused by overhead lines is around 70%. An interesting aspect of the bird flight diverters is that they also have a positive effect during the night.

The third measure taken in the Netherlands consists of the installation of rotating bird flappers in the corner pylons of (lattice) 110 kV high-voltage towers to prevent birds from nesting in the pylons. Birds that nest in the pylons are at risk of electrocution. In the Netherlands the first bird flappers are being used in the 110 kV connection in the municipalities of Bronckhorst, Doesburg and Voorst as part of a rooks protection plan. It is not yet known how effective this measure is.

TenneT in the society

TenneT is currently drafting a knowledge document about bird casualties caused by overhead lines. This document will include conclusions regarding bird casualties based on an analysis of 172 articles published worldwide. The effectiveness of the coils and bird flight diverters will also be investigated.

TenneT pays special attention to birds in the brooding season. We suspend all our activities during the brooding season and only remove birds' nests from pylons if they have been abandoned. We must, however, make an exception for work that is essential to assure the security of supply or for safety reasons.

6.14 Land management assessment

During the realisation of assets (new routes, high-voltage substations, etc.) the land management value of the soil can be negatively affected. Examples of such effects are interference with layers of the soil, soil compaction, negative effects on micro-organisms, deterioration of the soil due to contamination or impoverishment, spreading of soil diseases or disturbance of plot drainage.

These negative effects can be prevented by making an advance assessment of the effects on the land management value of the soil, including establishment of the type of soil and the presence of any land management value. This is referred to as a land management assessment.

This is followed by a recommendation which describes in detail how negative effects on the soil can be prevented. Until now, TenneT has been using the Gasunie guideline as its starting point for assessments for the construction of underground infrastructure: CSK – 25 N. However, in the Netherlands we have commissioned the preparation of a TenneT-specific guideline, which is expected to be ready by mid-2011. As a result, tendering conditions for projects may include the requirement that tendering parties must adhere to the TenneT guideline which has yet to be adopted.

6.15 Geological monuments

The status of geological monument is awarded in the Netherlands to areas or locations of special geological value. These can be elements of the landscape that say something about the natural origin of the area, such as drift-sand areas like Lange Duinen and Korte Duinen near the town of Soest and the barrier beach at Spaarnwoude in the Netherlands. Geologically valuable locations like Heimansgroeve quarry, the Van der Lijn boulder reserve near Urk, the boulder island near Maarn and the boulders of De Zandkoele in the province of Overijssel are also geological monuments (situated in the Netherlands).

Many areas or locations of special geological value are easily harmed by interventions. In several provinces, the protection of these areas has become an important part of the provincial landscape and soil protection policy. To this end the geological monuments and valuable areas are recorded on maps. This is done in an attempt to generate interest in the area and spread the knowledge of the area among a wider public. A geological monument does not have the status of a national or municipal monument, however, so that less or no statutory requirements are imposed on it.

In the Netherlands TenneT aims to protect geological monuments (locations of special geological value) as much as possible, regardless of whether they have any particular status, and applies the 'no, unless...' principle in this regard. The reason for this is that interference with the soil can have irreversible consequences for geological monuments. Therefore, desk research and, if necessary, field research is performed.

7. Safety

Safety is TenneT's number one priority. Our objectives are to reduce the risks for the business continuity in the areas of safety, health, environment, security, technical compliance and crisis management and to render account in the area of corporate social responsibility (CSR).

TenneT in the society

7.1 Accidents and incidents

It is important to TenneT to record accidents and incidents, so we can act adequately. Moreover, these records are important in order to investigate trends and take preventive action. Unforeseen events are documented, as are hazardous situations (which could have led to an accident or incident) and accidents causing injury or damage.

In November 2010 an employee of TenneT died in a tragic accident which occurred during maintenance work on a 380 kV power line between Bergrheinfeld and Grafenrheinfeld near Bamberg in Germany.

Examples of environmental incidents include spills of oil or other substances which is immediately taken care of using among others absorption materials, cleaning and proper disposal of waste.

Table Composition of carbon footprint

	NL	GER	Total
Fatalities	0	1	1
Lost time incidents	7	19	26
Total incidents without lost time	34	6	40
Environmental incidents	32	2	34

TenneT in the society

7.2 External safety

External safety entails that do everything we can to manage and prevent dangers for the outside world (both from the outside in and vice versa). These dangers arise when hazardous substances are released due to incidents at businesses or due to accidents during **transportation of hazardous substances** via railways, roads, waterways or pipelines (as well as wind turbines). Hazardous substances include flammable, explosive or toxic substances that pose a threat to public health or that can damage buildings and constructions. According to the applicable laws and regulations, there are no external safety risks for high-voltage substations (or any other assets) of TenneT. Because people nevertheless regularly ask whether there are really no residual risks relating to high-voltage substations, TenneT has had a study performed into this subject in the Netherlands. We asked TNO in 2010 to perform this study and they concluded that the laws and regulations regarding external safety do not apply to high-voltage substations in the Netherlands and that there are no other risks worth mentioning. TenneT can use this study in the future to formulate a well-founded response to questions about external safety risks for high-voltage substations and to remove any concerns that may exist in the Netherlands in particular.

GRI Table

The GRI cross reference table is available online through annualreport.tennet.eu.

Contact details

If you have any questions or suggestions for improvement of our reporting, or if you would like more information, please contact TenneT by sending an e-mail to CSR@tennet.eu or calling +31 (0)26 373 17 17.