

Profit

Planet

People



## Gineke van Dijk, CSR coordinator: 'Now is the time for targets'

*"Three years ago I was tasked with developing TenneT's CSR policy. In order to hear my colleagues' thoughts on the matter, I formed a work group with other staff who were enthusiastic about CSR. I also commissioned a study among TenneT employees. A digital survey showed that relatively little thought had been given to CSR. The study among employees served as a guideline for formulating issues from which TenneT can gain extensive social benefits, such as procurement and compensating for grid losses. But that's not all. We also play a key role in the transition to a sustainable energy supply. And we consider it extremely important that new connections can be integrated with a minimum of nuisance or adverse impact on the landscape."*

*"Following the internal study, we began to develop a CSR policy. During special workshops, eighteen focal points regarding CSR were identified by managerial staff, which we then set out in the CSR policy during the summer of 2008. After this, we indicated where we stood with regard to these 'spearheads'. We wanted to develop Key Performance Indicators (KPIs) in order to facilitate the measurement of CSR performance. These KPIs have since been defined. This was a crucial*

*step. Once the KPIs are there in black and white, it really sets the wheels in motion for discussion. The time has now come to start setting firm targets with regard to grid loss reduction, sustainable procurement policy, and so on. We can either accomplish this ourselves or adopt the existing standards applied by other organisations."*

*"Establishing firm targets is essential to the success of CSR policy. It's one thing to say that we are going to install Bird Flight Diverters on high-voltage pylons, or reduce paper consumption. That's fine as a starting point. However, it's another thing entirely to actually commit to achieving the targets set. This is why we say we are going to reduce bird deaths or paper consumption by such-and-such percent. You have to be able to quantify targets."*

*"Now that TenneT has established an internal CSR policy and formulated targets, it is time to publicise our efforts more widely. With our CSR Report and this brochure, we are making our CSR performance transparent to the public for the first time."*



# Corporate Social Responsibility at TenneT

TenneT TSO is the Transmission System Operator of the Netherlands. We are responsible for operating the national high-voltage grid and our strategy is focused on the development of a single European energy market. We are investing more than ever in expanding the high-voltage grid and constructing new cross-border interconnections. As such, we are interconnecting markets so that they operate more effectively. This is needed in order to guarantee the security of supply in the future, and to render the energy supply more sustainable. We monitor all investments to ensure that they are used to develop an efficient, sustainable and reliable electricity supply. As society and the economy are strongly dependent on an effective and reliable energy supply, we bear a particular responsibility for people, the environment and society. We are aware of this responsibility and act accordingly.

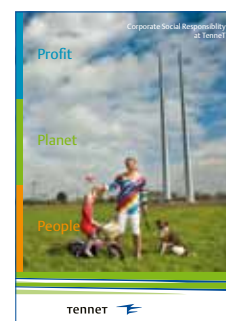
For TenneT, 2009 was marked by several acquisitions, including the purchase of the transmission grids of regional grid operators Enexis, Delta and Liander. We also purchased the transpower grid from E.ON. The acquisition of transpower in Germany represents an important step towards the formation of a single north-west European energy market. The first cross-border transmission grid in Europe is now a reality.

TenneT wishes to be at the forefront of Corporate Social Responsibility (CSR) in the north-west European energy market. Our ambitions go further than merely working towards a sustainable energy supply. We recognise the opportunities offered by sustainable purchasing and wish to implement supply chain responsibility.

In this brochure we aim to show the current state of affairs with regard to our CSR policy. We do so on the basis of three pillars: 'People', 'Planet' and 'Profit'. The policy is still under development. Over the coming period we will also be working hard towards making our performance measurable and further establishing the concept of CSR within the organisation. We aim to do so by introducing measures such as KPIs and by including CSR targets in TenneT's annual plans.

We are always willing to discuss CSR with our stakeholders, and readers' feedback is therefore very welcome. All questions and comments should be addressed to our CSR coordinator by e-mail ([mvo@tennet.org](mailto:mvo@tennet.org)) or via telephone (+31 26 373 1717).

This brochure provides an overview of Corporate Social Responsibility at TenneT and is a summary of our comprehensive CSR Report. You can find the complete report at <http://jaarverslag.tennet.org>.



The cover depicts the new, innovative 'Wintrack' pylons along the A12 motorway near Bleiswijk.

*Focus on human aspects*





Since its establishment in 1998, TeneT has placed considerable focus on the human aspects of its activities. A typical example of this is our strong emphasis on safety. Naturally, this is essential for an organisation that works with high-voltage electricity. Health and training represent two further aspects that we devote increased attention to. Examples of this include our staff sports programme Committed Power and the TeneT Academy.

## People





### Workforce

The number of employees at TenneT is growing. Due to acquisitions and investments in the electricity grid, the workforce is expanding rapidly. At year-end 2009, 934 members of staff were employed at TenneT, an 11.5 percent increase compared to 2008. Approximately 20 percent of our staff was female in 2009. The average age of employees in 2009 was 43.1. With just 3.8 percent of staff leaving the company in 2009, employees are loyal to TenneT. The average length of service was 10.6 years, a figure that includes employment with TenneT's legal predecessors.

### Safety in the workplace

Working with high-voltage grids and system controls requires highly specialised knowledge and committed professionals. The safety of internal and hired employees is of paramount importance to us. We therefore see to it that rules of conduct (such as our Company Code of Conduct) are strictly adhered to. Our Transmission Operations business unit, responsible for carrying out work on the high-voltage grid, is SCC (Safety, Health & Environment Checklist for Contractors) certified. We also require this certification from contractors whom we employ. Furthermore, employees who work in high-voltage pylons must complete additional specialised training. TenneT implements guidelines for safe working conditions which must be followed by employees and contractors. We publish a number of comprehensive safety manuals. In the unlikely event that something does go wrong, we report and carefully record it. This applies to accidents, incidents and hazardous situations. They are registered in order to prevent such incidents from happening again.

### External safety

We attach similar importance to external safety. We commissioned the Netherlands Organisation for Applied Scientific Research (TNO) to conduct a study examining the external risks associated with one 150 kV and four 380 kV high-voltage substations. The study focused on two specific types of risk: external influences which may pose a threat to the substations themselves (such as hazardous substances) and the potential adverse impact on the surroundings. If necessary, we will take suitable preventive measures e.g. protective provisions and more stringent access requirements to sites.

### Health and sickness absence rate

We encourage our employees to take responsibility for their own health and fitness. An extensive official policy is in place which aims to address the individual requirements of employees wherever possible. As such, it is possible to request specially adapted office furniture. We also offer employees the opportunity to purchase ergonomic computer accessories to promote responsible computer usage.

In 2008 and 2009 TenneT offered all its employees the opportunity to undergo a voluntary preventive medical examination. Examinations were performed by KEMA Arbo, our occupational health service. Employees subsequently received advice or, in some cases, referral to a medical specialist. KEMA Arbo also conducted a number of collective assessments, the results of which will be followed up.

Partly due to our active prevention policy, the sickness absence rate at TenneT has been relatively low for years. In 2009, the absence rate was 3.2 percent. In the preceding three years, it fluctuated between 3.1 and 3.5 percent.

### Sports

As sport is relaxing, keeps employees fit and promotes team spirit, TenneT encourages staff to take part in sports-related activities. As such, we offer employees the opportunity to take advantage of the 'company sports' system. Under this system, TenneT partially reimburses the membership costs of a sports club. The scheme applies to all sports clubs in the Netherlands.

The idea behind our 'Committed Power' programme is to encourage staff to take part in sports as a group. For a small contribution, participants become proficient in cycling, running or Nordic walking. With assistance from a professional trainer, participants work towards a personal goal e.g. competing in a half marathon. Employees can request a personal training programme with guidance from a 'Health Manager'. The programme also includes dietary advice to tackle any weight problems, or to start leading a healthier lifestyle.

### Employee participation

TenneT welcomes comments, suggestions and ideas from staff, particularly with regard to improvements that can be made within the organisation. Employees may submit their views via the appropriate channels (e.g. the Works Council) or, in particular cases, via a confidential counsellor. TenneT has organised an employee survey since 2007 in order to gain a comprehensive picture of employees' views.

### Developing, training and recruiting talent

A rapidly expanding organisation must devote extra attention to new talent and to the ongoing training of existing staff. TenneT is no exception to this. We have therefore set up a trainee programme for recent graduates from Dutch universities of technology with a background in electrical engineering or energy management.

Knowledge must be kept up-to-date with the latest developments. The 'TenneT Academy' was therefore established in 2009 to provide training and lifelong learning opportunities tailored to the requirements of individual employees. Staff of the Finance department was the first to be introduced to the new scheme. It is hoped that all staff will be able to avail themselves of the new opportunities in 2010.



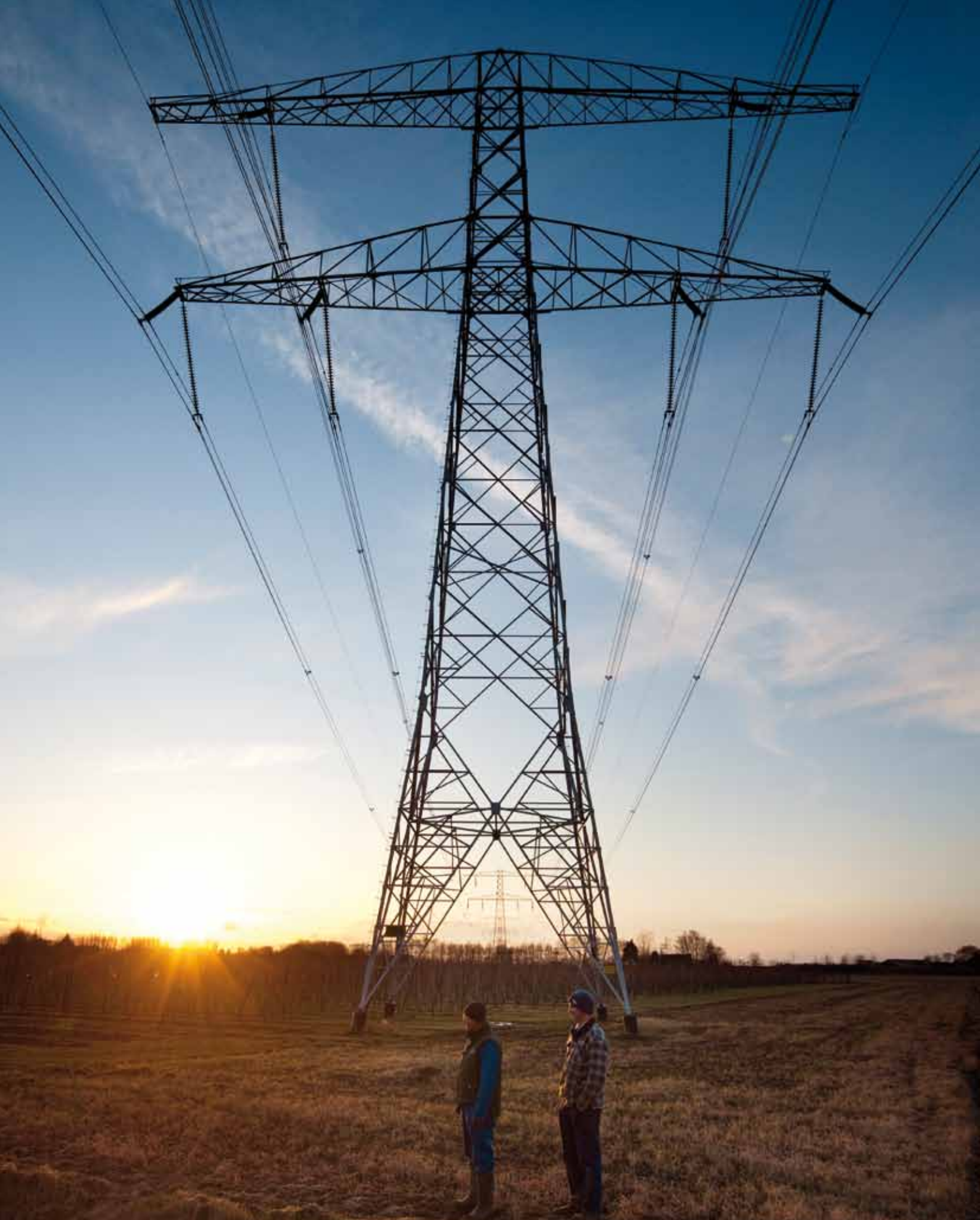
Last but not least, TenneT finds it important to get young people interested at an early stage in the positions we have to offer within the organisation. As such, we organise a study programme called 'Power Minor' in collaboration with several institutes for higher vocational education. Although recruitment is not a specific aim of the programme, 7 of the 22 students who participated in the first course year (2008/2009) were subsequently employed by TenneT.

### Innovation team

At TenneT, Corporate Social Responsibility and innovation are very much intertwined. Innovations in the electricity grid are almost always a response to the requirements of society as a whole. TenneT works around the clock towards improved integration of high-voltage pylons and lines whilst taking due account of the requirements of market parties and local residents. TenneT actively encourages innovation by means of knowledge platforms and the 'TennovuM' team, which is tasked with bringing innovative ideas to maturity more quickly. Innovation also requires external input, for which TenneT seeks cooperation with various organisations and individuals in the field. As such, an international TenneT Innovation Advisory Board was established in 2009. It comprises four external experts of various backgrounds who convene twice a year to assess TenneT's plans for innovation against governmental and social developments in the supply of energy both at home and abroad.

Since 2009, the IT Management Department has donated used computers to 'Close the Gap', an organisation that works with local talent on ICT solutions for developing countries.

*CSR initiatives developed by employees at TenneT*



*Listening to stakeholders*



# Planet

We realise that our activities sometimes have undesirable consequences for people and the environment. We try to minimise this wherever possible e.g. in the day-to-day usage and maintenance of our pylons, cables, power lines and substations. We make every effort to reduce and 'green' grid losses, for instance. In addition, we implement measures to prevent leaks and to reduce air emissions as much as possible. In developing and installing new connections (such as in the busy Randstad conurbation), we take the requirements of society into consideration by including the various effects on society in the decision-making process. This covers issues such as electromagnetic fields, visual pollution of the landscape, and possible threats to biodiversity. We work with stakeholders on solutions like underground high-voltage routes, so-called 'Bird Flight Diverters' and 'green' corridors. In cases such as these, it benefits to listen, leading to useful innovations like the Wintrack high-voltage pylon.





### Grid losses and 'greening'

When electricity is transmitted, some energy is always lost in transit. This is referred to as 'grid loss'. We are actively aiming to minimise these losses through effective maintenance, appropriate material choices, optimal infrastructure and innovative methods of connecting grids. We took expected grid losses into consideration in calling for tenders for a conductor in 2009. We opted for a conductor with wires made exclusively from aluminium alloy, as the higher conductivity of these wires reduces grid losses. In 2009, total grid losses on the 220 kV and 380 kV distribution grids amounted to 510 GWh. We are making every effort to chart grid losses on the 110 kV and 150 kV grids.

We purchase Guarantee of Origin certificates for a volume of electricity equivalent to the grid losses. This process is referred to as the 'greening' of grid losses. As in previous years, TenneT purchased Guarantees of Origin in 2009 for a volume equal to the grid losses on the high-voltage grid of 220 kV and higher. Starting in 2010, TenneT will also 'green' the grid losses from the 110 kV and 150 kV transmission grids.

### Emission of insulating gas from switches

TenneT uses sulphur hexafluoride (SF<sub>6</sub>) as an insulating gas in its high-voltage switchgear. SF<sub>6</sub> is one of the 'greenhouse gases'. Unfortunately, there is currently no safe and effective alternative. SF<sub>6</sub> is only used in closed systems. However, some leakage can occur, particularly during maintenance activities. It goes without saying that we make very effort to prevent the escape of SF<sub>6</sub> into the atmosphere by ensuring proper maintenance and detecting any leaks as soon as possible.

### Volatile Organic Compounds

Substantial volumes of paint are required for high-voltage pylons. These pylons can reach heights of up to 130 metres. During the complicated work involved in painting the pylons, Volatile Organic Compounds (VOCs) are emitted. These VOCs can harm the ozone layer. TenneT maintains a detailed record of the types and quantities of paint used. The VOC content turns out to be relatively high in relation to the total quantity of paint used. In order to reduce emissions, we are opting to use new types of paint which emit less VOCs thanks to improved composition. An additional advantage is that this paint frequently has a longer lifespan. As a result, the pylons do not have to be painted as often.

### Waste and paper consumption

Most of the waste produced by TenneT is non-hazardous. We separate the waste as much as possible. Rules and guidelines for doing so are in place.

### Soil and groundwater

TenneT's transformers contain oil which is pumped round in a closed system as a means of insulation and cooling. As TenneT has taken appropriate measures to protect the soil around the transformers, the likelihood of this oil leaking or leaching into the soil and/or groundwater is extremely small.

Cables can also be a potential source of soil pollution. Unlike new, synthetically insulated cables, many older underground cables contain oil. Their insulation is actually a layer of oil-soaked paper. If damaged, there is a risk that the oil will leach into the soil and/or groundwater. TenneT tries to promptly identify any leakages and take appropriate actions (clean up, remediation, etc.).

### Polychlorated Biphenyls (PCBs)

Oil containing Polychlorated Biphenyls (PCBs) has long been used in some oil-bearing components of the high-voltage grids. However, alternatives for this oil have since become available. TenneT already replaced all oil with a PCB content in its transformers some years ago. The applicable legislation has since been updated, whereupon TenneT has made a new inventory of its components. The results reveal that only a low percentage of components – no more than four percent – may still contain PCBs. Considering the closed system in question, this cannot be accurately verified without damaging components. From a cost point of view and due to the limited risk to the environment, we will only replace these components when it is necessary to do so. TenneT has yet to make an inventory of the recently acquired grids.

**Berend Kielman works at the Transmission Operations Business Unit, where he is responsible for outsourcing painting work on high-voltage pylons. Berend developed his own spreadsheets in which he records the emissions of Volatile Organic Compounds which result from the painting work.**

*CSR initiatives developed by employees at TenneT*

### Asbestos

TenneT keeps a record of all materials containing and suspected of containing asbestos. Asbestos inventories have now been conducted at approximately half of TenneT's operational sites, including those of the recently acquired transmission grids.

### Environmental incidents

An 'environmental incident' is an unforeseen event which has the potential to cause adverse environmental impact. TenneT keeps a record of all such incidents.

### Electromagnetic fields

Electromagnetic fields form around the high-voltage lines, cables and substations. We can distinguish between an 'electric' field, the strength of which is expressed in kilovolts per metre (kV/m), and a 'magnetic' field, the strength of which is expressed in micro-Tesla ( $\mu$ T). TenneT employs the advisory standards of the Dutch Ministry of Housing, Spatial Planning and the Environment when constructing new power lines and cables.

### Integrating infrastructure into the landscape

High-voltage grids are a conspicuous feature of the landscape. It comes as no surprise then, that local residents frequently prefer high-voltage routes to be installed underground so that the landscape is not disturbed. In all grid expansion projects, TenneT tries to make full use of existing high-voltage overhead lines. The expansion of the national 110-150 kV grid will indeed largely be installed underground. Utilising extensive underground routes within the 220-380 kV grid can endanger the security of supply. Based on current technical and operational feasibility, 220 kV and 380 kV connections can be installed underground to a maximum distance of twenty kilometres. The Randstad 380 kV project is the first to use 380 kV high-voltage underground cables over this distance.



In expanding the grid, we try to avoid causing nuisance to local residents as much as possible and, if such nuisance is indeed unavoidable, to minimise it. TenneT communicates transparently about its projects with authorities and local residents starting when the search zone and potential routes are being decided on, i.e. long before the first spade is pushed into the ground. For this purpose we organise information evenings for local residents and other stakeholders. During such evenings we receive valuable responses and tips which we incorporate in the planning and implementation stages as much as possible.

| Underground cables | Total length in kilometers |
|--------------------|----------------------------|
| 110-150 kV         | 738                        |
| 220-380 kV         | 2*                         |
| Above-ground lines |                            |
| 110-150 kV         | 3,631                      |
| 220-380 kV         | 1,372                      |

\* Excluding the undersea NorNed cable, which is 580 km in length.



**The Communications Department promotes the collection of disposable plastic coffee cups. TenneT won an award for this initiative, with the prize money going to a charity.**

*CSR initiatives developed by employees at TenneT*

### Biodiversity

When installing new connections, TenneT takes the presence of plants and animals into consideration as much as possible. As such, in our current construction and expansion projects in the Randstad conurbation we try to include so-called 'green corridors' or dedicated 'flora and fauna zones' where possible in the planning process. The underlying idea of green corridors is to preserve or create ideal habitats for certain plant and animal species. In order to keep abreast of the current state of nature in the Netherlands, we are one of the first companies in the country to subscribe to the Dutch National Databank for Flora and Fauna. We exchange information with this Databank.

### Birds

TenneT tries to do all it can to minimise harm to the bird population. We suspend all activities during brooding season and only remove birds' nests from pylons if they have been abandoned. We must, however, make an exception in the case of work which is essential to ensure the security of supply or for reasons of safety.

We also strive to prevent bird casualties. In 2009 we trialled so-called Bird Flight Diverters. These are flags which are suspended from the highest earth wires between high-voltage pylons situated in the polders around Hazerswoude, an area notable for its large migrating bird population. If the trial proves successful, we will install Bird Flight Diverters in other areas with a high concentration of birds.

### CO<sub>2</sub> footprint

Various means have been applied to quantify TenneT's CO<sub>2</sub> footprint. They include closely monitoring energy consumption in our offices and fuel consumption by company vehicles. Additionally, our grid losses and air travel (insofar as they were booked through our central booking office) were included in the assessment. In calculating the CO<sub>2</sub> footprint, we have excluded (relatively limited) electricity consumption used for heating and other purposes in our high-voltage substations. TenneT's CO<sub>2</sub> footprint in 2009 was equivalent to 218,948 tonnes. As expected, grid losses account for the largest proportion by far. TenneT's CO<sub>2</sub> footprint corresponds to the average energy consumption of around 24,881 domestic households.

|             | CO <sub>2</sub> (tonnes) in 2009 | Percentage of total in 2009 |
|-------------|----------------------------------|-----------------------------|
| Grid losses | 210,630                          | 96%                         |
| Offices     | 6,068                            | 3%                          |
| Transport   | 2,250                            | 1%                          |
| Total       | 218,948                          | 100%                        |

### Innovations: Wintrack pylon

We take the initiative when it comes to innovations which may limit environmental damage. A good example is the Wintrack pylon. Designed by TenneT, the pylon will be used for the first time in the planned Randstad 380 kV expansion project. The pylons were installed in Bleiswijk in April 2010. The design consists of two slender, tapering poles that appear visually separate to the observer. The high-voltage wires (conductors) are closer together than in traditional pylons, thus generating a relatively small magnetic field along the line. Moreover, the simple structure and smooth surfaces of the Wintrack pylon make it less maintenance intensive, thus reducing the quantity of paint needed.

A portrait of Ron van den Thillart, an Innovation Facilitator, is shown on the left side of the page. He is a young man with light brown, wavy hair, wearing a dark jacket over a light-colored collared shirt. He is looking directly at the camera with a slight smile. The background is a textured, brownish surface, possibly soil or a wall with a similar texture. The lighting is warm and directional, coming from the right, casting soft shadows on his face.

## Ron van den Thillart, Innovation Facilitator: **‘Anyone who is too slow will miss the boat’**

*“On behalf of the Transmission Operations business unit, I am involved in TennovUM, a team set up in 2008 to promote new innovations. In this capacity, I have noticed that social issues are increasing in importance. In the past, our focus was firmly on technology and reliability. Of course, these were and remain very important. However, we now devote far greater attention to innovations which respond directly to the needs and requirements of society. As a result, we are introducing high-voltage pylons with a vastly reduced magnetic field, as well as finding ways to reduce the number of birds which fly into overhead power lines. Furthermore, we will soon install the world’s longest underground 380 kV connection in order to minimise disruption to the landscape in the densely populated western part of the Netherlands.”*

*“TenneT is also making its presence felt when it comes to society’s need for a sustainable energy supply. There are major changes on the horizon. Anyone who is too slow or too conservative may miss the boat. This is why we are trying to stay ahead of developments as much as possible. Of the twelve innovative projects which our business unit is supervising, several are directly connected to energy transition. The most well-known of these is probably the ‘Substation at Sea’ project, a feasibility study for the integration of wind energy generated offshore. However, we are also conducting studies into innovative methods of energy transmission such as superconductors and Gas Insulated Lines (GIL).”*

*“Alongside the growing number of innovative projects prompted by social demands, I have noticed increased support for CSR throughout TenneT. It has now permeated areas such as purchasing and supply chain responsibility. As such, we will be collaborating (with the grid operator Alliander – ed.) on a study into the social and environmental impact of low, medium and high-voltage cables. The study comprises both a life cycle analysis and a social impact analysis. We don’t want to focus just on raw materials, but on aspects such as the working conditions of the people who actually produce the cables. The study could form a strong basis for a new and fully responsible purchasing policy. One of the points to be examined in the study is the use of lead. Though the metal has its advantages, including its waterproofing and anti-corrosive properties, it also has distinct drawbacks. It is thus useful to identify possible alternatives to this system, not only in the interests of CSR but because it is important to know all the options.”*



*Thinking ahead*



# Profit

The energy market is developing from a national to a north-west European market. Numerous changes are taking place, on both the national and European level. TenneT is playing an active role, for instance through the acquisition of the German grid operator transpower. In addition to this, we are contributing by constructing more cross-border links such as the interconnector between Doetinchem in the Netherlands and Wesel in Germany. Such connections are necessary not only to enhance the security of supply and the operation of the market, but also because they improve access to sustainable electricity supplies from hydroelectric plants and wind farms elsewhere in Europe. In the Netherlands we are developing new high-voltage connections such as the Randstad 380 kV project and the future North-West 380 kV and South-West 380 kV projects.

With these extensive changes to the electricity grid on the horizon, it is crucial to think ahead by developing concepts such as offshore wind energy. This is why we are discussing market liberalisation and sustainability in numerous forums, including the European grid operator's organisation ENTSO-E and the North Sea Group.





### Security of supply

Guaranteeing the security of the electricity supply by means of the high-voltage grid is one of TenneT's key tasks, and constitutes a major responsibility to society. Through effective maintenance of all grid components and 'smart' system management, we strive to ensure maximum security of supply at all times. Our responsibility in this regard informs all investment and maintenance decisions.

The security of supply offered by the Dutch high-voltage grid is extremely high. From 2007 to 2009, the annual outage duration of the 220-380 kV grid was zero minutes. The outage duration and frequency of service interruptions on the 110-150 kV grid were also marginal. In order to guarantee the future security of supply (with production of more sustainable energy and new power stations), the ring structure of the high-voltage grid in the Netherlands will be upgraded further. The Randstad 380 kV project already underway, and TenneT's planned North-West 380 kV and South-West 380 kV projects represent some of these upgrades.

|  | 2007  | 2008  | 2009  |
|--|-------|-------|-------|
| Frequency of service interruptions* (no. per connection) |       |       |       |
| 110-150 kV   | 0.000 | 0.023 | 0.050 |
| 220-380 kV   | 0.000 | 0.000 | 0.000 |
| Average duration of interruption (minutes)               |       |       |       |
| 110-150 kV   | 9     | 14    | 50    |
| 220-380 kV   | 0     | 42    | 0     |
| Annual outage duration (minutes per connection)*         |       |       |       |
| 110-150 kV   | 0.00  | 0.32  | 2.52  |
| 220-380 kV   | 0.00  | 0.00  | 0.00  |

\* In some cases, the frequency of service interruptions and the outage duration per connection has been rounded down to zero due to discounting the number of parties connected to the grid.

### Offshore wind energy in the Netherlands

TenneT must abide by legal requirements as established in the Electricity Act and the Grid Codes. This can make it difficult to take the lead in certain developments and optimally facilitate the market, although that is the role our stakeholders expect us to take.

A prime example is the planned offshore wind energy supply. The Dutch government has designated wind energy to be a key source of sustainable energy. The authorities are aiming for 6,000 MW of electricity to be generated by wind power by 2020. As the offshore grid operator, TenneT has been assigned to carry out the installation of the necessary infrastructure. Although we must wait for the Electricity Act to be revised before we can begin any construction work, we have already started preparing for the spatial planning procedures so that no time is wasted. The preliminary work comprises two initial memorandums for the envisaged shore landing points at IJmuiden and Borssele. We are also working on the technical specifications for the offshore installations and cable connections.

In order to reduce the large amount of junk mail, post room staff is sending back unwanted advertising material to the sender with a request for these deliveries to stop.

CSR initiatives developed by employees at TenneT

### Grid in the North Sea

TenneT's sustainable vision includes not only ensuring a robust onshore grid, but an offshore one as well, namely in the North Sea. Such an offshore grid will provide strong infrastructure, enabling sustainably produced offshore electricity to be connected to the national high-voltage grid on land.

With an offshore grid, we will not only be able to exploit new energy sources but also to optimise the use of existing (sustainable) energy sources in other countries such as Norway, Denmark and the United Kingdom. It will therefore further improve the security of supply. This is already of great importance, but will become even more so as sustainable energy sources continue to develop quickly. These forms of energy, particularly wind energy, are more susceptible to external influences than conventional sources. This may pose a threat to effective supply-demand balancing on the electricity grid. After all, wind turbines can only generate electricity if the wind is blowing. As soon as the wind stops, the turbines stop generating electricity. If we wish to succeed in integrating large-scale offshore wind energy into the European electricity supply, we must take appropriate measures. A power grid on the North Sea can be built to a modular design.



In constructing such a grid, the existing transmission grid and recently completed and planned expansions can be utilised. For example, the NorNed cable between Norway and the Netherlands (a collaboration between TenneT and its Norwegian counterpart Statnett) has been in operation since May 2008. Similar interconnections will follow. As such, we are constructing the BritNed cable between the United Kingdom and the Netherlands in collaboration with National Grid, the British grid operator. We have also been preparing to install a cable from the Netherlands to Denmark (the so-called COBRA cable) since mid-2009. Furthermore, we are already in talks with the Norwegian TSO about a possible second interconnection with Norway, as well as considering a joint venture with our German colleagues at transpower, who have carried out studies into the feasibility of an undersea cable link between Germany and Norway.

TenneT actively contributes to discussions regarding issues such as offshore wind energy, e.g. as part of ENTSO-E and the North Sea Group. The latter organisation was established to facilitate the large-scale offshore production of wind energy in the North Sea.

### Smart grids

It is expected that local sustainable energy sources (e.g. solar panels) will be used more and more. This means that households are likely to supply increasing amounts of electricity to the grid, besides consuming power in the traditional manner. Another scenario under consideration is that of electric cars becoming 'suppliers' as well as consumers of electricity. Grid operators will have to take these

developments into consideration when developing their grids. 'Smart grid' is a frequently used term for a grid designed in such a way as to regulate local supply and demand for energy in the most efficient manner possible.

In order to facilitate such developments, grid operators face the enormous challenge of adapting both the physical infrastructure and the way in which systems are managed. In fact it will largely be the operators of the low-voltage grids who face this particular challenge, as the high-voltage grid managed by TenneT is already 'smart'. The use of ring structures enables new (sustainable) sources of energy to be integrated with relative ease.

Although our role is relatively limited, we are nevertheless closely involved in the developments affecting the low-voltage grid. For instance, we participate actively in various research and advisory bodies such as E-laad (a joint initiative of the Dutch grid administrators, including TeneT, which is specifically concerned with electric vehicles).



#### **Customer satisfaction**

TenneT attaches great importance to customer satisfaction. Each year, we ask our customers to evaluate our services. In 2009, customers awarded TenneT's basic service provision a score of 7.1, an improvement on the 6.9 (on a scale of 1 to 10) we received in 2008. However, we are not yet satisfied: we are aiming to achieve a 7.5 or higher in 2010. We are striving to attain this by improving our services e.g. shortening the response time for questions, complaints and new requests for new connections. Performance indicators will measure to what extent these methods succeed.

#### **Sustainable procurement policy**

Pursuing Corporate Social Responsibility within our own operational processes is not the only approach available. It is also possible to contribute to CSR by exerting our influence in our supply chain. In 2009, we took the first steps in implementing a sustainable procurement policy. The first phase involved the development and internal evaluation of a set of (draft) assessment criteria for suppliers. The criteria we intend to apply are based on various aspects of CSR such as reduction of our CO<sub>2</sub> footprint, safety and quality assurance.

## Caroline van Dalen, Safety & Security policy staff: 'TenneT has not lost its focus on people'

*"I deal with safety awareness on a day-to-day basis. My focus is therefore on people, and that applies equally to TenneT itself. Health, safety and integrity have been key values for as long as I have worked here, which is around twenty years now (Van Dalen previously worked for a predecessor of TenneT – ed.). TenneT shows due concern for individual employees' wishes, as demonstrated by the ongoing attention it devotes to ensuring a comfortable, ergonomically responsible workplace. TenneT is willing to listen to people's ideas rather than laying down the law."*

*"This concern for the human aspect has remained a constant in our corporate culture. Nevertheless, there have been some changes, especially of late. TenneT is growing rapidly. Many new people have joined the company and they all have to find their place within it. I ultimately believe that this will have a positive effect on the company. The influx of fresh blood will ensure new insights and increased orientation on the requirements of the market. We may have been too tied up in rules in the past."*

*"TenneT's crowning achievement has to be the Committed Power sports programme. It is the constant factor in our changing culture. The programme offers the opportunity to take part in running, cycling or Nordic walking under the guidance of professional trainers. I am an enthusiastic*

*participant. Committed Power is unique in terms of its scope and participation rate. No fewer than 530 people, both employees and partners, participated in 2009. This figure represents more than half of the workforce."*

*"The programme is more than just a way of staying healthy. It is also an enjoyable opportunity for networking within the company. You meet people from all across the entire organisation, allowing you to make new contacts easily. I think this is important now that TenneT is growing so quickly. The programme also does much to foster team spirit. I also think that Committed Power has made staff more aware of the need for regular exercise and a healthy diet, so that they can take up the challenge of meeting their personal goals in the programme – without overdoing it, of course."*

*"Every modern organisation needs an ambitious CSR policy. Corporate Social Responsibility has really taken off and will continue to grow in importance. What began as a small team of 'early adopters' is now a fully-fledged policy area in its own right. We must now draw up firm targets and encourage employees to commit to them. CSR is frequently a question of mentality. Take purchasing, for example, where there are still many gains to be made. The same applies to women in higher management. In other words, there should be more women occupying senior positions."*



## The 10 CSR spearheads at TenneT

TenneT will once again address Corporate Social Responsibility under the three main headings of People, Planet and Profit.

TenneT wants to continue to be an attractive and committed employer, demonstrating due regard for the people component. We will accomplish this by:

1. Encouraging staff to participate in new training and instruction programmes.
2. Offering all staff healthy and socially responsible menu options in the company's catering outlets.
3. Promoting the fitness and health of employees.

TenneT wants to minimise the negative environmental effects caused by its activities. We will accomplish this by:

4. Reducing and 'greening' grid losses.
5. Encouraging the development of knowledge and innovations which contribute to a decrease in negative environmental effects.
6. Taking into consideration the impact of our activities on the landscape.

TenneT wants to make a positive contribution to market developments currently ongoing in the Netherlands and throughout Europe. We will accomplish this by:

7. Upgrading the 'ring' structure of the onshore high-voltage grid.
8. Developing interconnections with neighbouring countries.
9. Facilitating the connection of offshore wind energy sources to the national high-voltage grid.
10. Actively contributing to national and international discussions regarding issues such as offshore wind energy.

In pursuing Corporate Social Responsibility, we ensure that all investments are in the interest of an effective, efficient, sustainable and reliable electricity supply.

**TenneT TSO B.V.**

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