

Making it sustainable



SUSTAINABILITY REPORT 2009

European Telecommunications Network Operators' Association

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Karl Falkenberg
Director-General of DG Environment
European Commission

Foreword

Changing our models: that is the challenge we are all having to face. The combination of the economic crisis and the deterioration in the environment make it quite clear that we cannot go on as before. Climate change is the big story, but just as serious are depletion of resources, loss of biodiversity, shortage of water and surfeit of waste.

We need to take a strategic long-term view. Fortunately the road to recovery from the economic crisis leads in the direction of real opportunities in terms of a low-carbon economy based on resource efficiency and careful use of the resources that are essential for the future of a healthy economy.

That is why the Recovery Plan of the European Union focuses on measures to green Europe's economy, boost energy efficiency, speed up investment in clean technologies and increase the uptake of green products. That is why the adoption and implementation of the measures under the Sustainable Production and Consumption Action Plan are an important priority. That is why eco-innovation is also high on the agenda.

And that is why the long-standing and continued efforts of ETNO to make ICT industries more sustainable are so important.

ICT industries do not operate in isolation. They are part of almost every sector: health care, the construction industry and the public sector, including the European Commission itself. Without ICT solutions we could not hold the videoconferences that reduce the amount of travel our work requires. Without ICT solutions, we would not be able to communicate with our citizens online, saving vast amounts of printed paper.

Providing these solutions sustainably and in cooperation with other actors in the sector is an imperative that ETNO has recognised. It is impressive that all Charter signatories include environmental considerations when developing new products and services, that 90% of them consider environmental impacts in their day-to-day activities by implementing an environmental management system, and that the overwhelming majority involve their suppliers in their sustainability efforts.

The results achieved by the ETNO network show how sustainability and business solutions can go hand in hand - and more importantly how environmental challenges can also open up exciting new opportunities. Congratulations on showing that sustainability is the way ahead!

Karl Falkenberg,
Director-General of DG Environment, European Commission



Introduction

Emerging from the crisis

The information and communications technologies (ICT) sector is key to the development of the overall economy of the European Union (EU), and its role is gaining increasingly importance in accelerating Europe's recovery from the crisis.

The EU's electronic communications (e-communications) infrastructure is a vital element for society and the economy as a whole and, as such, can contribute to the recovery. Corporate leaders, as well as policy-makers and politicians, have to take their responsibilities.

But there is another crisis we are facing – one which is getting much attention in the media but which has not been given enough consideration so far by most of those who have contributed to it: climate change.

E-communications are also a key enabler for reducing carbon emissions and improving energy efficiency across all sectors of the economy – a priority EU policy objective. We will be able to achieve the ambitious climate change objectives that the EU has set for 2020, only if the untapped potential of ICT is exploited.





Antonio Robalo de Almeida
ETNO Executive Board Chairman



Danilo Riva
ETNO WG Sustainability Chairman

ETNO member companies are ready to do their part to contribute to the new “smart, green growth” envisaged by President Barroso^[1] in which the EU will be investing and includes the “networks of the future.” And we can and want to play a leading role, since through their investments and their outreach ETNO member companies represent a considerable asset in the creation of a low carbon economy at European and global level.

ETNO has a long story of commitment to sustainability: its “Sustainability Charter” is a meaningful commitment and the progress demonstrated since 1996 by its signatories testifies its value. Two additional signatories joined in 2008, making a total of 22.

We encourage all ETNO members and other industry players in Europe to accept the challenge and join our efforts, committing to and promoting the principles on which both the “Sustainability Charter” and the “Global Compact,” to which ETNO committed in 2004, are based by embedding them in their businesses, with the objective of making them as sustainable as possible.

Antonio Robalo de Almeida - ETNO Executive Board Chairman
Danilo Riva – ETNO WG Sustainability Chairman

^[1] Speech 09-391, delivered in Strasbourg at the European Parliament in Plenary Session on 15 September 2009.

#2

Progress report

Sustainability Charter Signatories' progress report



2.1 Introduction

The "ETNO Sustainability Report," in its sixth edition here, provides ETNO with a means to communicate to its stakeholders the progress made collectively by the signatories of the Association's "Sustainability Charter."

Specific information about the performance of individual signatories can be found in company-own reports and/or dedicated pages available on their own web sites.

As in the previous editions, the Report is based on ETNO's collective reporting scheme which makes use of a set of qualitative and quantitative indicators. Information is gathered every year from each signatory which responds to the survey under its own responsibility.

All indicators used in the following sections refer to specific reporting boundaries, covering at least 80% of each company's operations in its home country. The 80% refers to the turnover and the number of employees. The turnover has been generally used as normalising factor for quantitative indicators. The aggregated turnover of Charter signatories considered in this report amounted to roughly €179.6 billion.

The number of Charter signatories taken into consideration was 20 in 2006 and 2007 and 22 in 2008. This may lead to indicator trend variation in 2008 compared with 2006-2007. Such variations are explained when required.

2.2 Managing Commitments

Commitments should be made responsibly and properly managed. Signing the "Sustainability Charter" is only a first step, but after that, actions must follow, starting with organisation and planning, then moving to deploying solutions, continuing with monitoring, seeking improvement, etc.

For the Charter to remain a meaningful and recognised reference document with a real impact on each company's value chain, its commitments must be converted into practical objectives and targets. A proper organisation must be established to manage all processes and ensure that they are consistent with business objectives and stakeholders' expectations. And, of course, compliance with the relevant national legislation is of paramount importance and represents the baseline of all commitments. Legislation might create constraints to companies' operations, but proper understanding and management can easily turn such constraints into opportunities in many cases.

This is why Charter signatories are asked to report on how they have organised themselves to manage their commitments properly and which level of transparency they have adopted in communicating their policies and objectives to stakeholders.

- 90% of Charter signatories have issued a formal corporate governance policy;
- All have an environmental policy approved at board level, which is made public for 86% of signatories and has been translated into specific objectives and targets for 95%;
- For 95% the policy includes broader corporate social responsibility (CSR) commitments, which are public for 81%, and which have been translated into objectives and targets for 86%;
- 95% of Charter signatories have appointed a manager responsible for coordinating programmes of environmental improvement; 81% of signatories gave to one of main board members specific responsibilities over company's sustainability performance, environmental and/or social policy;
- 90% of Charter signatories have an environmental management system (EMS) in place, 81% have it certified according to ISO 14001; 10% are currently building their own EMS. Typically, such a system covers the parts of a company that have a more specific environmental impact, e.g., its network or building management and technical services, and is integrated within its quality management system and sometimes also with other management systems. Such integration helps the two or more systems to reinforce one another and achieve a better degree of optimisation and efficiency.

2.3 Accountability and Communication

All signatories consider communication and constructive dialogue with stakeholders as the best way to understand their requirements and expectations and to let them know what companies do and can offer.

To be effective and to guarantee that needs are met on both sides, answers and solutions must be developed together with interested parties.

- All Charter signatories regularly produce a sustainability or CSR report which also covers environmental issues either as a separate document or as part of the company's annual report;
- Surveys among Charter signatories show that two-way dialogue on sustainability issues is strongly established with stakeholder groups, particularly employees and governments/institutions. Open and constructive dialogue with these two groups includes environmental issues (100% and 81% respectively) and social issues (86% and 71% respectively). Dialogue with unions is good regarding social issues (86%) and average regarding environmental subjects (57%), for instance. Dialogue with non-governmental organisations (NGOs) is good for environmental (76%) and social issues (86%). The companies' dialogue with the public and society at large is average on environmental issues (52%) and better on social issues (62%). In general positive consultative results increase whenever specific issues are addressed at local level. Shareholders and investors and financial rating agencies are increasingly interested in companies' CSR performance. Not surprisingly two-way dialogue with these specific stakeholders is increasing: 67% of Charter signatories have established a dialogue with shareholders on environmental issues and also 67% of them on social issues. As far as rating agencies are concerned, 81% of signatories have established a good two-way dialogue on both environmental issues and social issues.

Specific communication initiatives are undertaken internally and externally at local, national and international level, depending upon the audiences targeted. At the international level, companies can communicate via trade associations or other initiative(s) in which the associations participate, such as the Global e-Sustainability Initiative in which ETNO is a founding and active member. Such initiatives can take various forms, from technical meetings to public events with simple exchange of information via open communication channels or companies' web sites, and reports like this one.



To reach the general public, marketing campaigns can be used to communicate not only the technical features and benefits of ICT products and services, but also their impact on society and the environment. Such impact is deeply investigated in the development phase, and resources invested in the research of ever more advanced competitive and cost effective solutions.

- All Charter signatories include environmental considerations in the development of new products and services; 38% do this systematically; 86% communicate the positive impact on the environment of such products and services through their marketing campaigns;
- All Charter signatories take into account the impact on society of new products and services; 43% do this systematically; 86% communicate the positive social contribution of such products and services in their marketing campaigns.

2.4 Climate Change and Energy Efficiency

The Stern Review^[2] reads "The scientific evidence is now overwhelming: climate change is a serious global threat, and it demands an urgent global response." And it also determines that climate change is "the greatest example of market failure we have ever seen".

Climate change is certainly a unique challenge for economics, as the Stern Report puts it, but it is having a disrupting impact on people and economies all around the world since it will affect the basic elements of life – access to water, food production, health, and the environment. Hundreds of millions of people could suffer hunger, water shortages and coastal flooding as the earth's average temperature rises.

Scientists call for urgent action in response to this alarming situation. Among others, a recent study^[3] is showing that, due to the increase of fossil fuel emissions – by 29% between 2000 and 2008 – in conjunction with increased contributions from emerging economies, from the production and international trade of goods and services, and from the use of coal as a fuel source, the absorption capacity of natural carbon sinks is being reduced and the fraction of CO₂ which remains in the atmosphere is therefore constantly increasing – although uncertainties are still important.

But also ice loss from Arctic^[4] and Antarctic^[5] ice caps is leading to a progressive rise of sea levels with increased danger of flooding of coastal areas.

[2] Sir Nicholas Stern: "The Economics of Climate Change – the Stern Review" – January 2007

[3] Corinne Le Quéré et al.: "Trends in the sources and sinks of carbon dioxide" – Nature Geoscience (17 Nov. 2009)

[4] Catlin Arctic Survey preliminary findings - www.catlinarcticsurvey.com

[5] J.L. Chen et al.: "Accelerated Antarctic ice loss from satellite gravity measurements" – Nature Geoscience (Published online: 22 Nov. 2009)

In spite of the Review's clear demonstration that the benefits of strong early action can outweigh the costs, little has been done so far. Causes and consequences must be considered at global level; therefore, a global approach based on international and cross-sectoral cooperation is needed to tackle the problem. But strong political and economic constraints are continuously slowing down the process. Great expectations were placed on the UN Climate Change Conference in Copenhagen. For example, Conference president Connie Hedegaard^[6] said, "If the whole world comes to Copenhagen and leaves without making the needed political agreement... then it's the whole global democratic system not being able to deliver results in one of the defining challenges of our century."^[7]

Although deemed as "meaningful and historic", the agreement reached in Copenhagen did not meet such expectations and will not be sufficient to combat the threat of climate change since it lacks real binding rules and a clear timetable. Nevertheless Europe should continue to play its leading role and demonstrate commitment by providing examples and results, in particular in the energy field.

The world's energy demand is increasing, and production still based largely on fossil fuels. The recently unveiled report of the International Energy Agency^[8] shows that:

- although the global energy use is set to fall significantly in 2009 as a result of the financial and economic crisis, demand is set to resume its long-term upward trend once the economic recovery gathers pace. Assuming no change in government policies (the "Reference Scenario"), by 2030 the world primary energy demand will be 40% higher than in 2007. Non-OECD countries will account for over 90% of the increase, their share of global primary energy demand rising from 52% to 63%;
- fossil fuels remain the dominant sources of energy worldwide, accounting for 77% of the demand increase in 2007-2030;
- without a change in policy, the world is on a path for a rise in global temperature of up to 6°C, with catastrophic consequences for our climate. To avoid the most severe weather and sea-level rise and limit the temperature increase to about 2°C, the greenhouse-gas concentration needs to be stabilised at around 450 ppm CO₂-equivalent – the so called "450 Scenario";
- despite the impact of the financial crisis, global energy-related CO₂ emissions in the Reference Scenario still rise from 28.8 Gt in 2007 to 34.5 Gt in 2020 and 40.2 Gt in 2030. World GHG emissions, including non-energy related CO₂ and all other gases, are projected to grow from 42.4 Gt CO₂ - equivalent in 2005 to 56.5 Gt CO₂ - equivalent in 2030 – an increase of one-third.

Experts^[9] claim global emissions should fall by at least 50% compared to 1990 levels by 2050 to limit the grave risks associated with severe climate change.

[6] Later replaced by Danish Prime Minister Lars Løkke Rasmussen

[7] <http://en.cop15.dk/news/view+news?newsid=2257>

[8] International Energy Agency: "World Energy Outlook 2009"

[9] Sir N. Stern: "Key Elements of a Global Deal on Climate Change" - London School of Economics and Political Science, May 2008.



Nevertheless a transition to a low carbon economy is possible: the European Union continues to lead the debate and is committed to identify the right way forward. The European Commission is increasingly looking at the ICT sector as an important part of the solution, thanks to the "facts and figures" that the sector itself, and in particular ETNO and the Global e-Sustainability Initiative (GeSI)^[10], have been contributing via specific studies.^[11]

Energy efficiency is a global goal that can be achieved exploiting technological developments in energy production, distribution and use, as well as proper management of resources. ICTs can play a significant role enabling efficiencies and consistent green house gas (GHG) emission reductions.

The SMART^[12] 2020 Report, published by GeSI and The Climate Group^[13] in 2007, shows that ICT could deliver approximately 7.8 GtCO₂e of emissions savings in 2020, in all the sectors of the economy, throughout the world. This represents 15% of emissions in 2020 based on a 'business as usual' estimation. It represents a significant proportion of the reductions below 1990 levels^[14] that scientists and economists (see above) recommend by 2020 to avoid dangerous climate change. In economic terms, the ICT-enabled energy efficiency translates into approximately €600 billion of cost savings.

[10] www.gesi.org

[11] ETNO & WWF: "Saving the Climate @ the Speed of Light"; GeSI "SMART 2020 - Enabling the low carbon economy in the information age".

[12] SMART stands for Standardise, Monitor, Accountability, Rethink, Transformation

[13] www.theclimategroup.org

[14] The benchmark 1990 emission levels accepted by the Conference of the Parties of UNFCCC (3rd Session, 1997 – Article 3 and Decision 2/CP.3) were the values of «global warming potential» calculated for the IPCC Second Assessment Report. Total CO₂ emissions of Annex I parties (34 countries) in 1990 were about 13.7 Gt. Countries like China and India were not included in the list

In addition to these reductions, potential energy savings can be achieved from ICT-enabled dematerialisation, i.e., replacing high carbon physical products and services with virtual low carbon equivalents. The SMART 2020 Report indicates that using ICT-based solutions to dematerialise the way we work and operate across public and private sectors could deliver a reduction of 500 MtCO₂e in 2020 – the equivalent of the total ICT footprint in 2002.

The ICT sector is sometimes criticised for increasing energy demands caused by increased use of products and services and network enhancements. In 2007, according to Gartner, the ICT sector was responsible for 2% of global carbon emissions^[15], and data centres in particular accounted for 23% of such emissions^[16]. For 2009, Gartner estimated that PCs and associated peripherals contribute approximately 31% of worldwide information and ICT energy use^[17]. ETNO is not questioning such figures, which have become a widely used reference, but feels that further assessments are required.

The Commission Recommendation^[18] released in October 2009 invites the ICT sector to identify, by 2011, energy efficiency targets that aim to exceed the EU 2020 goals, already by 2015. Defining such targets across the sector may be extremely complicated due to the complexity and variety of business models within the ICT sector, supply chains and products.

And while ETNO generally agrees that the sector should be the first to 'walk the talk' by using its own potential to increase its energy efficiency and reduce its own energy consumption and emissions, the Association believes that a strong need exists for developing and agreeing on a common methodology not only at European but at global level, to systematically measure, quantify and verify progress towards such targets.

Nevertheless, most of ETNO member companies have long since set energy consumption and emission reduction targets; they are continuously investigating new technologies and solutions, looking at and sharing best practices and raising awareness among their own people, customers and society. The activity of the ETNO Energy Task Force is specifically focused on such activities.

To enable emissions reductions in other sectors, the ICT sector must demonstrate leadership in addressing climate change, voluntary actions must be encouraged and governments must provide the proper regulatory context.

^[15] www.gartner.com/it/page.jsp?id=503867

^[16] www.gartner.com/it/page.jsp?id=530912

^[17] www.gartner.com/it/page.jsp?id=941912

^[18] Commission Recommendation C(2009) 7604 Final of 9.10.2009 on mobilising Information and Communications Technologies to facilitate the transition to an energy-efficient, low-carbon economy

As the SMART 2020 Report points out, "The ICT sector can't act in isolation if it is to seize its opportunity to tackle climate change. It will need the help of governments and other industries. Smart implementation of ICTs will require policy support including standards implementation, secure communication of information within and between sectors and financing for research and pilot projects." A constructive dialogue should be established with the sectors where the still untapped potential of ICT can be fully exploited and where some of the biggest and most accessible opportunities for ICT to achieve the savings mentioned above do exist.

The opportunities identified by SMART 2020 are:

- smart motor systems;
- smart logistics;
- smart buildings;
- smart grids.

Such opportunities are about the same identified and investigated by the Ad Hoc Working Group on ICT and Energy Efficiency – where ETNO was invited to participate - convened in 2008 by the Commission's Directorate General for Information Society and Media. The final report^[19] sheds some light on ICT's role in sectors where energy efficiency is imperative. It also concludes that a shift in the overall behavioural paradigm is needed through a structural change where new ways of operating, living, working, learning and travelling become prevalent.

The actions that in ETNO's opinion are needed to drive the transition to a low-carbon economy are the following:

- promoting and demonstrating the effectiveness and advantages of behavioural changes in favour of sustainable alternatives where ICT is the enabler;
- promoting cross-sectoral knowledge transfers to enable the development and application of ICT solutions and favour the implementation of the technology;
- applying "smart" ICT solutions to global infrastructure and industry;
- creating a regulatory context that would allow the creation of proper market mechanisms exploring financial incentives and developing performance-based instead of technology-based policies;
- encouraging standards bodies to include considerations for energy consumption in technical standards from the beginning of their development;
- developing a sector-specific energy consumption/GHG emission measurement and accounting methodology;
- developing sustainable procurement strategies, in particular in the public sector;
- investing in and stimulating the use of renewable energy, creating the appropriate political and economic conditions to ensure it is widely available at reasonable prices.

The ETNO Energy Task Force

Energy consumption is the single largest environmental impact of all telecommunications operators and therefore of all ETNO member companies. The bulk of ETNO members' energy use is related to consumption of electricity, which is used to power and cool their communication networks. It is the responsibility of all operators to ensure that energy consumption is kept to a minimum and to seek environmentally friendly alternatives.

The ETNO Task Force on Energy was originally established in June 2004 as WG Sustainability's Energy Task Team. Since then, energy experts of ETNO member companies have met twice a year. Benchmarks have been carried out and case studies prepared. An ETNO energy policy has been developed that was recommended to all ETNO members, experiences have been shared, pilot projects have been initiated and codes of conduct developed. The first report on activities was released^[20] in 2008.

The overall objective of the Energy Task Force (ETF) is to encourage maximum efforts in improving environmental performance with relation to energy production and consumption. To achieve it the ETF will:

- contribute to national and global efforts to reduce GHG emissions through energy efficiency and use of renewable energy sources;
- improve knowledge sharing through the use of benchmarking and case studies;
- demonstrate the viability of voluntary actions;
- provide members with tools that allow them to:
 - use the most efficient network equipment;
 - scout for the most energy efficient network components;
 - apply the most efficient cooling systems;
 - run the most energy efficient data centres;
 - market the most efficient end-user equipments;
 - market the most Green House Gases friendly services and products;
 - use the most energy efficient buildings, cars, grids, logistics, etc.;
 - have the most energy conscious employees.

The ETF decided to organise itself in specific subgroups where each participant expert could contribute with his/her own experience and knowledge to issues, such as: Strategy; Cooling; Powering; Monitoring; Efficiency of TLC and ICT equipment; GHG & climate friendly telecom services.

Among the activities being carried out by the ETF, it is worth mentioning the following:

- inter-company benchmarking: it allows members companies to identify superior methodologies or innovative practices that can contribute to the improved performance of their own organization, usually recognized as best by all other peers. As an example, between the end of 2008 and the beginning of 2009, a benchmarking activity among the ETF members aimed at highlighting the most important Best Practices in energy efficiency (e.g., best Coefficient of Performance for central offices and street cabinets, best Uninterruptible Power Supply efficiency, Cooling Technologies) was carried out and further benchmarking is still in progress (Data Centres, general benchmark on energy efficiency).
- G.R.E.E.N. benchmark: the Green Router for Energy Efficient home-Networking (GREEN) is an initiative launched among suppliers in partnership with the Home Gateway Initiative^[21] (HGI) aiming to promote the development of solutions enabling low-power-state to reduce overall power consumption, based on technical specifications developed within the ETF. The results will be available in the beginning of 2010.
- Codes of Conduct on Energy Consumption and Energy Efficiency: equipment energy efficiency is promoted by the European Commission, through the Joint Research Centre (JRC) and with the involvement of ETNO, also via codes of conduct (CoC) aimed at minimising energy consumption without hampering the fast technological development and the quality of services provided. Different CoCs regarding energy efficiency have been developed with the support of members of the Energy Task Force: the CoC on Energy Consumption of Broadband Equipment and the CoC on Data Centre. The former has already been signed by the following ETNO members: Swisscom, TDC, Deutsche Telekom, Telecom Italia and TeliaSonera.
- Energy Policy: as already mentioned the ETNO Energy Task Force has developed a set of ETNO Guidelines – adopted as the Association's official energy policy – based on the best practices adopted by member companies for an efficient and effective energy management. Such guidelines require continuous monitoring of application and maintenance, to keep pace with technological development and energy requirements.

[20] www.etno.eu/Portals/34/ETNO%20Documents/Sustainability/2008%20Energy%20Report_final.pdf

[21] www.homegatewayinitiative.org

2.5 Energy consumption and CO₂ emissions

Overall energy consumption tends to increase, and the largest contribution comes from electrical power demand. In 2008 charter signatories used about 15.4 TWh electrical energy and over 20.1 TWh overall, including vehicle fuels and heating. The following sections provide a detailed breakdown of energy use and associated CO₂ emissions.

2.5.1 Electricity

Electrical power is crucial to operate and manage communication networks. Although electrical energy is produced in different ways across European countries where ETNO members operate, most of the energy used comes from combustion of fossil fuels. This causes high emissions of CO₂ and other pollutants. Charter signatories have strived to reduce their consumption, adopt more efficient solutions, optimise space and equipment use, and increase the use of electricity produced from renewable sources. The following analysis covers Scope 2 of the GHG Protocol.

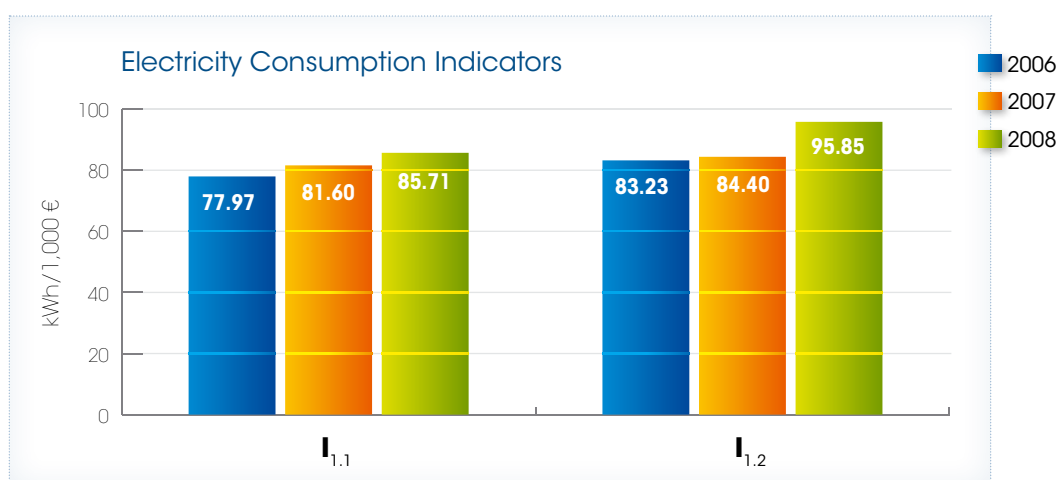
The graphs show the trend over time of the energy indicators, some of which have been used by ETNO since the start of its reporting scheme. Two indicators are related to electricity consumption: the first one, $I_{1,1}$, shows the trend of overall electricity consumption, where all signatories together are considered as one large single company. It is defined as follows:

$$I_{1,1} = \frac{\text{Overall amount of Electrical Energy used}}{\text{Total Turnover}}$$

The second one, $I_{1,2}$, is the average of individual electricity management efficiency indicators, which vary considerably among signatories, and is defined as follows:

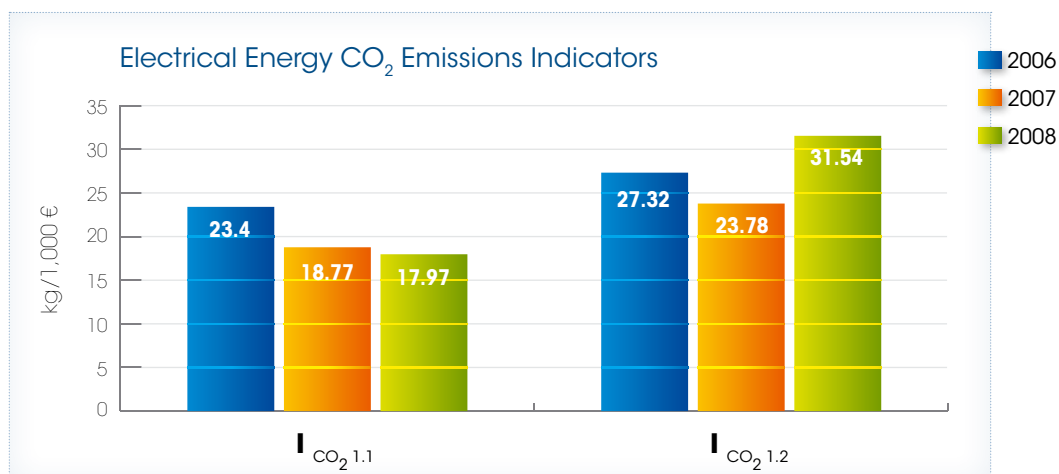
$$I_{1,2} = \frac{\sum (\text{Amount of Electrical Energy used by each Company/Company turnover})}{\text{Number of Signatories}}$$

In both cases turnover - either collective or individual - is used as a normalising factor to make calculations as independent as possible of companies' size. For all indicators the following applies: the lower the value of the indicator, the better the performance.



What $I_{1.1}$ shows is that there has been almost a steady increase in electric power demand over the 2006-2009 period: in 2008 the indicator value is 5% and 9.9% higher than in 2007 and 2006 respectively. Over the 3-year period, the total turnover considered has remained almost the same. $I_{1.2}$ shows a noticeable increase – 13.5% compared with 2007 – which can be explained by both the generally unchanged individual reference turnover and the increased individual energy demand which lead to a higher individual ratio.

The same approach is used to illustrate CO₂^[22] emissions originated by Electricity consumption via the two indicators, $I_{CO_2 1.1}$ and $I_{CO_2 1.2}$.



^[22] The emission factors used come mostly from national inventories. Where such factors were not available, those used are the most updated ones released by the GHG Protocol.

The overall amount of CO₂ per unit turnover has decreased over the 3-year period considered, thanks also to both the increased use of electricity generated by renewable sources purchased directly by some of the signatories and the improvement in “cleaner” energy production by power suppliers. In fact the value of $I_{CO_2\ 1.1}$ in 2008 is 23% and 4% lower than in 2006 and 2007 respectively. The mean value of the individual ratios $I_{CO_2\ 1.2}$ shows an increase of 15% and 32% compared with 2006 and 2007 respectively. Such ratios range from as low as 0 to as high as 94 in 2008, depending upon the way electrical energy is produced in each country and the availability of renewable sources. In particular, in the home countries of the Charter signatories that joined in 2008, fossil fuels are mostly used to produce electrical power.

2.5.2 Vehicle Fuels

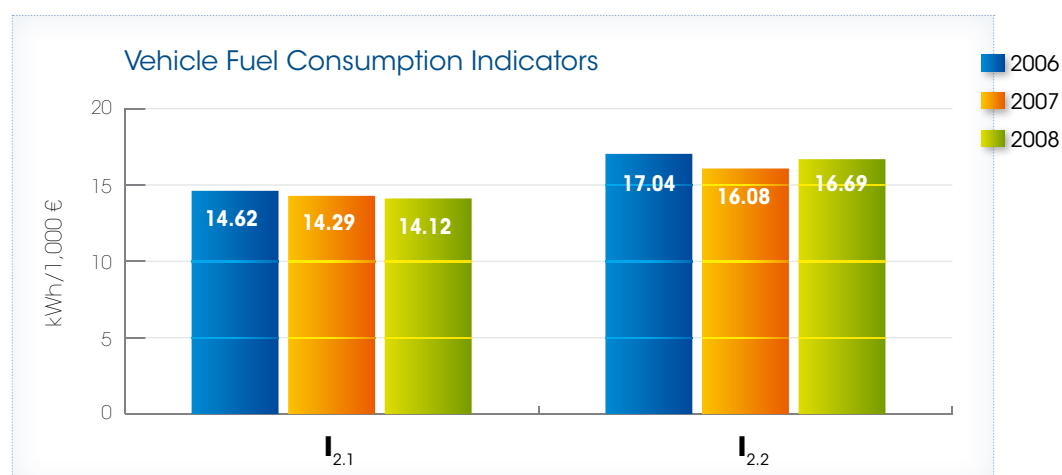
The approach followed to illustrate management of signatories’ vehicle fleet is exactly the same as for electricity. The two indicators used are:

$$I_{2.1} = \frac{\text{Overall amount of vehicle fuel energy}}{\text{Total Turnover}}$$

and

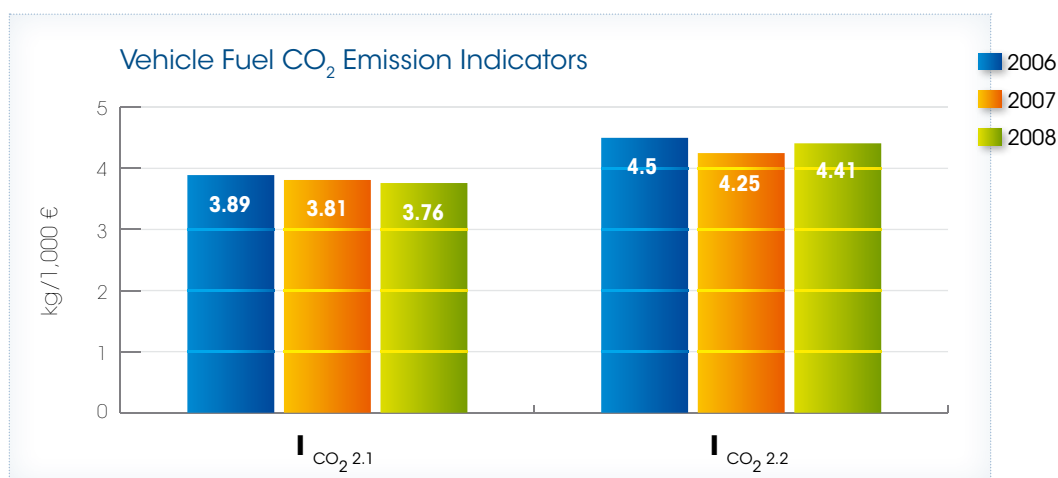
$$I_{2.2} = \frac{\sum (\text{Amount of vehicle fuel energy used by each Company/Company turnover})}{\text{Number of Signatories}}$$

The following analysis covers Scope 1 of the GHG Protocol.



The slight improvement in vehicle management efficiency observed over the 3-year period considered results from both optimisation of vehicle use and from the composition of company fleets (i.e., number of cars and their average consumption). Replacing old vehicles with new ones, which leads to lower fuel consumption and reduced emissions, combined with outsourcing fleet management and improved logistics planning have all contributed to higher efficiency. The value of the average individual vehicle fuel management efficiency indicator ($I_{2.2}$) seems to have reached a steady value averaging around 16.6. Also in this case the range of individual values is quite broad.

The approach is the same as the one used to illustrate CO₂^[23] emissions originated by electricity consumption via the two indicators, $I_{CO_2\ 2.1}$ and $I_{CO_2\ 2.2}$. The overall CO₂ emissions average ($I_{CO_2\ 2.1}$) tend to decrease slightly, while the average value of individual CO₂ emission efficiency ($I_{CO_2\ 2.2}$) seems to have reached a steady value averaging around 4.38.



2.5.3 Heating Fuels

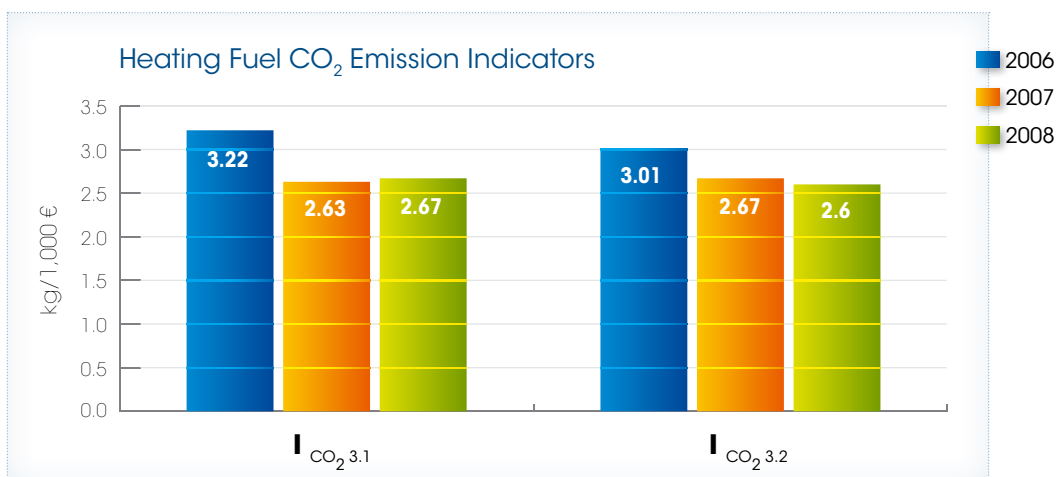
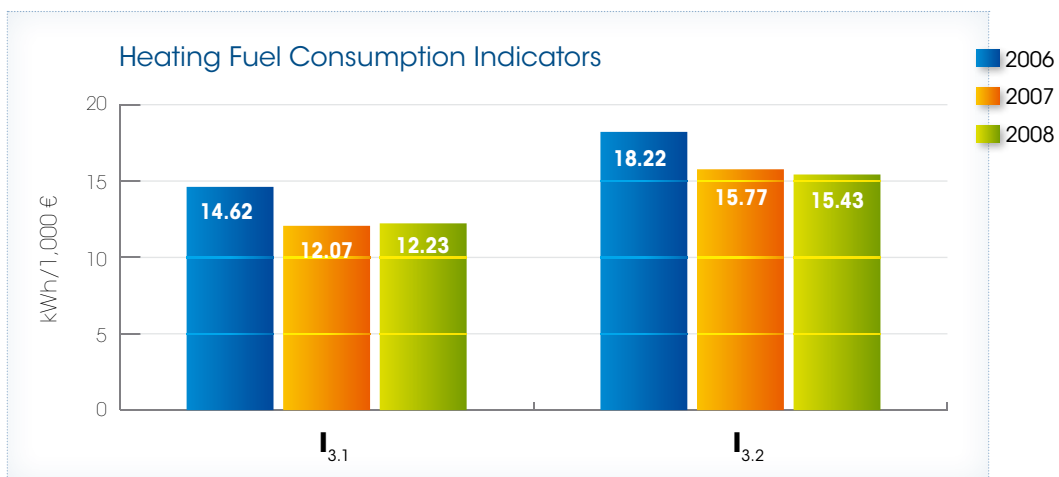
Use of heating depends on geographical location and meteorological conditions, therefore, the spread of individual efficiencies is quite large. As above, both approaches – “one single company” and the “arithmetic mean of summation of individual efficiencies” – were used.

It is worth mentioning that more than 17% of the overall heating power used by signatories came from district heating in 2008. The amount of district heating used is included in consumption efficiency calculations, while CO₂ contributions from district heating have not been included in emission calculations since details on various combinations possible for heat generation were not available. Calculations were therefore limited to the emissions generated by fuel burnt directly in signatories’ heating plants at their premises, which cover Scope 1 of the GHG Protocol.

^[23] CO₂ emission coefficients for vehicle fuels are those released by GHG Protocol.

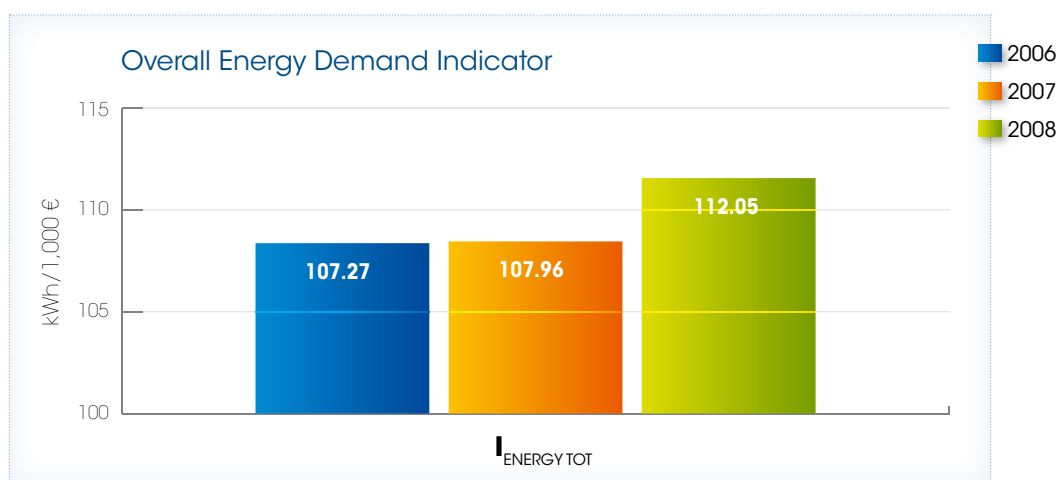
The consumption efficiency increased noticeably in 2007 compared with 2006 - in fact the value of I3.1 is 16% lower – and remained almost unchanged in 2008. I3.2 decreased by more than 13% in 2007 compared with 2006 and exhibits a further small reduction in 2008.

CO₂ emission efficiency shows an improvement in 2007 compared with 2006 and remained almost unchanged in 2008. I_{CO₂ 3.1} is in fact 18% lower in 2007 and in 2008 has about the same value as in the previous year.

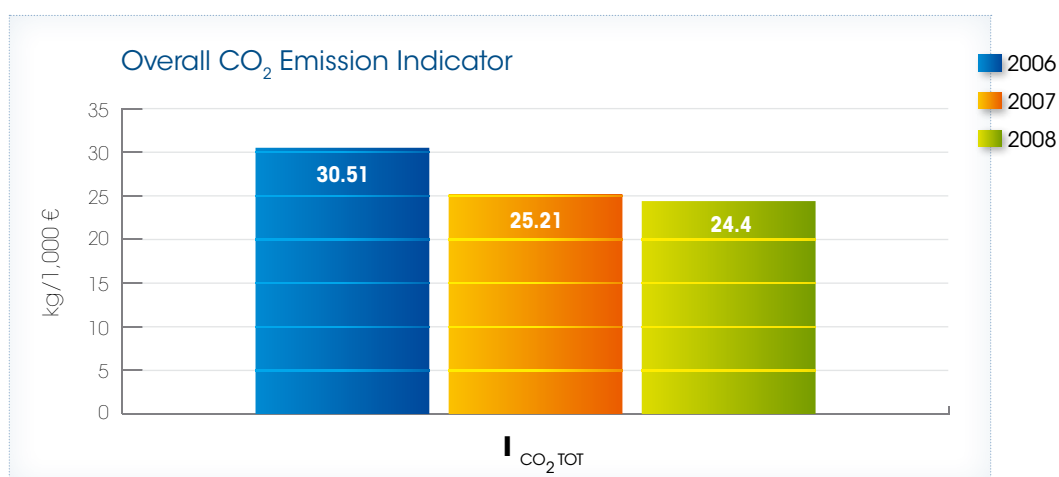


2.5.4 Overall Trends

If all sources are taken into consideration, we notice an increase in overall energy demand over the 3 year period considered, which is more evident in 2008 where it shows a value of $I_{\text{ENERGY TOT}}$ which is 3.8% higher than 2007 and 4.5% than 2006.



Looking at CO₂ emissions from all sources^[24] we see that emission efficiency tends to increase. The value of $I_{\text{CO}_2 \text{ TOT}}$ is over 17% lower in 2007 and 20% lower in 2008 compared with 2006.



^[24] As specified in the heating fuel section the contribution of district heating is not included.

2.6 Supply Chain

The supply chain plays an important role in each company's business strategy, and sustainability objectives as well as a company's reputation can be strongly affected by poor supply chain management.

The complexity of the ICT sector and its global dimension make it necessary to identify and understand potential risks and eliminate or reduce them. For ETNO member companies, it is not just a matter of poor service quality delivered to customers and consequent loss of competitive advantage.

Violation of human rights, exploitation of child labour, use of hazardous substances in product manufacturing, improper disposal of end-of-life equipment are just a few of the potential risks that companies should prevent across their supply chain. This can be achieved not only by evaluating suppliers' sustainability performance and selecting those that work according to ethical values and principles but also by building capability and exporting best labour and management practices where such risks may exist, and getting suppliers involved in programmes of continuous improvement of corporate responsibility standards.

- 90% of Charter signatories have involved their suppliers in active cooperation programmes aimed at improving performance and environmentally responsible development/management of purchased goods/services; 52% of such programmes cover more than 50% of total purchases;
- 81% check on the environmental performance of their suppliers;
- 86% of Charter signatories have involved their suppliers in active cooperation programmes designed to integrate corporate responsibility principles in the procurement process; 33% of such programmes cover more than 50% of total amount purchased;
- 67% check on the corporate responsibility performance of their suppliers.

A valid approach is the one developed by the Global e-Sustainability Initiative. The E-TASC^[25], which is a web based system developed specifically for ICT companies to help them manage corporate responsibility throughout their supply chains in an efficient manner, was launched by GeSI and the EICC^[26] at the end of 2007, and has already more than 300 subscribers. Issues like ethics, labour rights, health and safety, and environmental protection are addressed; potential risk areas and best practice examples are identified in a report which is generated at the end of the assessment.

^[25] Electronics-Tool for Accountable Supply Chains – www.e-tasc.com

^[26] Electronic Industry Citizenship Coalition – www.eicc.info



Some ETNO Charter signatories are already using E-TASC. This tool is becoming the industry-standard supply chain assessment tool, complemented with other initiatives, such as the introduction of specific requirements and targets. Such targets include, for example, energy efficiency and reduced environmental impact of products and proper waste management, as well as minimum expected standards as far as working conditions based on the Universal Declaration of Human Rights^[27] and the International Labour Organization Conventions^[28].

The overall spending power of ETNO Charter signatories can indeed influence suppliers' environmental and labour standards when they base their relationships with suppliers on the principles they have committed to.

[27] www.un.org/en/documents/udhr/

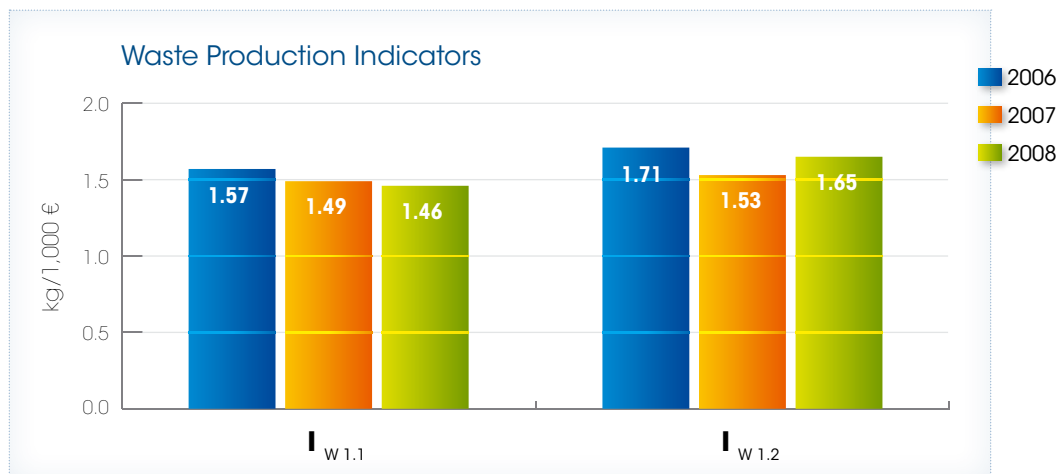
[28] www.ilo.org

2.7 Managing Waste Streams

Waste production, together with consumption of natural resources, also has a major impact on the environment. For telecoms operators the amount of waste produced may vary considerably from year-to-year, depending on specific disposal activities such as network equipment replacement and renewal.

To account for waste production, two indicators were defined: $I_{w1,1}$, where signatories are considered as one large single company. This was calculated using the total amount produced normalised against total turnover; and $I_{w1,2}$, which is the mean value of individual waste production efficiencies (i.e., the ratio of individual waste production to individual turnover). The former shows an improvement of 5% in 2007 and of 7% in 2008 compared to 2006, while the latter has stabilised around an average value of 1.63 over the three years considered.





In general, Charter signatories sent 62% of their total waste for recycling in 2006, 69% in 2007 and 71 % in 2008. The percentage of waste being recycled is increasing year by year, demonstrating that right choices were made and policies adopted in the purchasing phase, and proper solutions are identified to manage the end-of-life of disposed items.



#3

A sustainable industry



3.1 Sponsorship and Charity

Most Charter signatories openly associate their brands to charitable initiatives and environment focused projects. Naming all of them, however, would require far more space than that planned for this report. But they all have something in common: money invested in society and in raising people's awareness – externally and internally - on serious issues affecting our and other people's lives is worth spending.

It is not just about advertising one company's products and services, it is about creating value by acting as good corporate citizen and calling stakeholders to action. Quite a few of such projects involve company's people directly: when they see and understand their company's commitments they engage willingly and are happy to contribute.

- 81% of Charter signatories take environmental considerations into account when sponsoring different kinds of projects, and 90% specifically sponsor projects with an environmental focus and benefits;
- All Charter signatories consider the impacts on society of the projects they are asked to sponsor, and all of them sponsor projects with specific focus on social improvement and development;
- 95% of Charter signatories have specific programmes in place to bridge the 'digital divide,' mainly in the geographical areas where they operate.

Broadband access to the Internet is a key enabling technology, but there are barriers to digital inclusion like limited availability of resources, illiteracy and also lack of confidence.

Many initiatives and projects have been launched by Charter signatories in their home country and in the countries where they run their businesses. They focus in particular on disadvantaged communities and groups with special needs, like elderly and disabled people^[29], and aim to empower them to use communication skills to improve the quality of their lives.

The responses are more than encouraging, and this means that bringing technology to people, educating them to make the best use of it and building capacity is the right approach.

^[29] See ETNO Facts & Figures, 4th Edition - October 2009, www.etno.eu/Default.aspx?tabid=1077

3.2 Sustainability in the Workplace

Human resources are key to the success of an enterprise. A sustainable enterprise is successful because it attracts the best skills and provides its employees with a workplace that is safe, stimulating and full of opportunities for professional growth. ETNO is actively working on employment and workplace related issues together with other sector's social partners.

3.2.1 Diversity at Work

Ensuring equal opportunities for all employees, encouraging better work/ life balance and promoting an open and diverse workforce enables EU telecoms operators to attract best talents and increase productivity. This was demonstrated in the "Diversity at Work" report developed jointly by ETNO and UNI^[30] and launched in 2007.

The report^[31], available in seven languages, identifies best practices among EU telecoms operators to avoid discrimination on the basis of sex, race, religion, age, disability, sexual orientation and to enable a better work life balance. Best practices outlined in the report include measures and special programmes to:

- raise employees' awareness about diversity through information campaigns, diversity awards and the appointment of "Diversity Champions";
- deal with employees' complaints through internal grievance procedures;
- allow a better work/ life balance through home working facilities, paid time off for parents with hospitalized children, flexible working hours for parents or nursing mothers, provision of paid parental leave for fathers;
- ensure equal representation of men and women in all grades, including equal pay audits and mentoring programmes;
- reflect ethnic and religious diversity of Europe's society through non-discriminatory recruitment policies, internal support programmes for employees from minority ethnic groups, creation of customers' services in minority languages;
- retain and develop the skills of senior employees and help them prepare for their retirement;
- facilitate participation of employees with disabilities through training programmes, adapting working facilities or sub-contracting specific tasks to companies employing disabled people;
- adapt services and marketing to disabled customers' needs;
- ensure no discrimination on the ground of sexual orientation, for example, by granting parental leave to employees living in same-sex partnerships.

This joint ETNO-UNI project has been supported by the European Commission as part of a campaign to promote diversity in the workforce, in the context of the European Year of Equal Opportunities for all.

[30] UNI is the Global Union for Skill and Services, representing 900 trade unions and 20 million workers worldwide.

More information at www.uniglobalunion.org.

[31] Electronic copy of the report can be downloaded from the ETNO web site, at www.etno.be/Default.aspx?tabid=1818.

3.2.2 Agreement on Corporate Social Responsibility

The social partners of the Telecommunications European Social Dialogue Committee signed a joint declaration^[32] at a session of the Telecommunications Social Dialogue Committee on 4 December 2007, thus calling on telecoms operators, trade unions and employee representatives to cooperate with all stakeholders to promote corporate social responsibility.

By signing the joint declaration, which encompasses and stems from ETNO's Sustainability Charter principles, the social partners, ETNO and UNI, jointly committed to:

- promote corporate social responsibility throughout daily business activities among ETNO member companies and UNI- Europa Telecom affiliates, with a special focus on new EU member states;
- raise awareness about CSR in the European telecom sector through dialogue, exchange of information, expertise, best practices and appropriate communication;
- inform on and further develop social dialogue between employers and employees and their trade unions at the European, national and company level, on CSR-related issues;
- disseminate existing good practices and initiatives among ETNO member companies and UNI-Europa Telecom affiliates.

Further actions are being discussed between the social partners.

3.2.3 Good Work-Good Health Project

ETNO and UNI Europa are undertaking a joint study on improving the mental wellbeing of workers within the telecommunications sector by defining good practice in the workplace. The project is partly funded by the European Commission, Directorate General for Employment, Social Affairs and Equal Opportunities.

The rationale of the project is based on the consideration that mental health is a major emerging economic and health and safety issue for Europe and its telecommunications sector, and traditional risk management is not well suited to the control of work-related problems and the much larger issue of supporting people with mental illness in the workplace requires a more holistic approach.

The social partners are well placed to build on recent research to develop practical solutions in this area and the telecommunications sector is particularly suited to address many of the issues in question.

^[32] The full text of the declaration can be downloaded from the ETNO web site, at www.etno.be/Default.aspx?tabid=2018

With a track record in earlier projects of successful partnership between ETNO and UNI, supported by the European Commission, this "Good Work – Good Health" project offers the prospect of producing ground breaking guidance with a major impact across the sector and beyond.

The overarching project will comprise five consecutive work streams:

- review of knowledge and practice;
- production of good practice guidelines;
- translation and accessibility of guidelines;
- dissemination of guidance;
- impact assessment following guideline publication and/or implementation.

The results of the project will be presented publicly to interested parties at a two-day conference in late 2010.

Individually Charter signatories apply important policies/initiatives in the workplace, e.g.:

- All Charter signatories apply a non-discrimination and equal opportunity policy to promote diversity as part of their corporate culture, i.e. recognising and respecting the individuality and pluralism of employees and using their potential for business success;
- All Charter signatories conduct periodical employee satisfaction surveys, though these may not be applied to the whole corporation;
- All Charter signatories evaluate periodically the performance of their employees and executives; for 76% of signatories this evaluation covers 100% of their people;
- 86% of Charter signatories have a work-life balance programme or a set of initiatives in place, recognising that there are tangible benefits to supporting flexible working practices, implementing family-friendly initiatives and assisting employees to achieve a balance in their work commitments and their life outside of work;
- All Charter signatories have a programme in place which is regularly carried out to present their company to graduates; for 67% of signatories this includes employing interested persons temporarily as trainees;
- 95% Charter signatories have written standards and procedures to ensure health and safety at work, and all of them carry out internal safety audits regularly.

3.3 ICT and Younger Generations

A decade ago, there were just 182 million people using the Internet globally — and almost all of them lived in the developed world.

By September 2009, however, there were over 1.7 billion estimated Internet users (equal to 380% growth compared with 2000)^[33], and almost 452 million of broadband subscribers worldwide^[34]. TeleGeography's^[35] GlobalComms Insight forecasts that by the end of 2013 the number of broadband subscribers across the world will have grown to over 700 million, while wireless subscriptions will have grown by well over two billion.

ICT can indeed offer valuable resources, but technology in general can have positive or negative outcomes. All depends just on the use people make of it. Not only should users be educated and informed about how to get maximum advantages from the use of ICT, but also on how to prevent threats to themselves and their dear ones.

As technology becomes more and more user friendly and online content increasingly accessible and affordable, the age of ICT users is continuously lowering. The International Telecommunications Union (ITU) reports that according to surveys, in the world over 60% of children and teenagers talk in chat rooms on a daily basis. Three in four children online are willing to share personal information about themselves and their family in exchange for goods and services. And one in five children will be targeted by a predator or paedophile each year.

In 2005, at the World Summit on Information Society, the ITU acknowledged its responsibility in connecting the world responsibly and, in particular, recognising the role of ICTs in the protection of children and in enhancing their development, committed to strengthen action to protect children from abuse and defend their rights in the context of ICTs and emphasised that the best interests of the child are a primary consideration^[36]. As a consequence in May 2007 ITU's Secretary General launched the Global Cybersecurity Agenda. In 2009, the Child Online Protection initiative was launched, with the aim to identify risks and vulnerabilities to children in cyberspace, create awareness, develop tools to help minimise risks and share knowledge and experiences^[37].

[33] Source: Internet World Stats – www.internetworldstats.com

[34] Source: Point Topic - point-topic.com

[35] www.telegeography.com

[36] WSIS 2005, Tunis Commitment

[37] www.itu.int/osg/csd/cybersecurity/gca/cop/index.html

More than two out of three European children aged between 10 and 11 have regular access to the Internet, according to the European Commission, with this proportion rising to 85% for 12 and 13-year-olds. Over half of them have a mobile phone and nearly 20% admit to having been bullied via these new technologies^[38]. Also, the rapid take up of social networking sites by minors is raising a number of concerns and challenges that can be addressed only by raising awareness on potential threats and education on how to use the net safely as well as through self-regulatory initiatives and making available points where to report abuses. These are basically the aims of the new Safer Internet Programme for the period 2009-2013 launched by the European Commission^[39].

As Europe's main providers of innovative fixed and mobile broadband services, ETNO member companies are continuously working to improve security in their networks and services beyond current regulations, and are ensuring that security is an in-built feature of their products to ensure safer internet use, in particular by most vulnerable parts of the population, such as:

- parental control features incorporated in Internet access services, IPTV and Video on Demand offerings;
- classification of Internet content allowing parents to filter and block inappropriate content for youngsters;
- restricted access for minors to mobile adult premium content;
- applications ensuring security of online transactions.

ETNO welcomed the launch of the "European Framework on Safer Mobile Use by Younger Teenagers and Children" in February 2007, signed by a total of 26 mobile operators – among which several ETNO member companies – and content providers, covering all 27 member states and serving 96% of the EU mobile customers. The related implementation report published in April 2009 shows indeed that the level of compliance in EU member states is good.

On its side, ETNO is committed to ensuring that the services its members provide are used properly and safely. As part of its broader commitment to sustainability, ETNO is also working specifically to identify and analyse potential risks and to look at solutions by sharing practices and experiences among its member companies.

[38] Source: Eurobarometer, 2008

[39] http://ec.europa.eu/information_society/activities/sip/index_en.htm



Making it more and more Sustainable...

Sustainability is high in ETNO's agenda. This report provides some insight into a few of the many activities which are being carried out within the Association, therefore it is not and cannot be exhaustive. More details of what Charter signatories do and their sustainability performance are provided with in their specific reports and dedicated web pages.

The overall development of telecommunications is per se a contribution to sustainability; social and environmental benefits are implicit in the use of many of our products and services. Nevertheless there are issues that need to be tackled, and more work is needed to demonstrate the still untapped ICT's full potential and make things happen.

A few years ago ETNO developed jointly with WWF its "Roadmap"^[40] to a European low carbon economy, based on the uptake of products and services with an inherent and demonstrated dematerialisation potential. Although the Roadmap is being considered as one of the reference documents in the assessment of the contribution of ICT to reducing CO₂ emissions, it still needs to be pushed forward. However, the fact that it is now complemented and enhanced by other studies (like SMART 2020) and that the European Commission is taking action and is fully including ICT in its overall strategy for a sustainable Europe seems promising.

Accountability is a key issue for ETNO, and the mechanism used to assess and report the sustainability performance of its Charter's signatories is kept under constant review to improve transparency and make it more and more compliant with internationally recognised standards, like the guidelines of the Global Reporting Initiative^[41].

ETNO member companies CEOs gathered in Seville in October 2009, joined by their peers from international telecom operators and equipment manufacturers, and released a joint declaration^[42] where they called for a spirit of co-operation between governments and industry to facilitate investment in next generation access networks (NGA), the state-of-the-art infrastructure essential for the European Union to become the leading 'Information Society'. They invite policy makers to promote the use of e-communications to drive broadband penetration and reduce carbon emissions, such as the implementation of ICT-enabled infrastructures (from energy grids to traffic management), 'digital literacy' campaigns and tax incentives for end-users.

[40] Saving the Climate @ the Speed of Light - <http://www.etno.eu/Default.aspx?tabid=1934>

[41] www.globalreporting.org

[42] See <http://www.etno.be/Default.aspx?tabid=2172>

And they declare, "Our companies are committed to sustainable investment for competitive, green 'Knowledge Society', one where all key stakeholders will work together to contribute to Europe's economic recovery and to make it grow in a sustainable way^[43]".

ETNO is committed. Its Sustainability Charter is part of the commitment. It will continue to be meaningful and will continue to show deeds after the words.

...and let's close with an invitation.

The Sustainability Charter is open to any responsible company whose business provides voice and data communications services over any kind of network across Europe. There is no requirement to be an ETNO member to join, and no specific entry level is required. A serious commitment to continuous improvement and demonstration of progress, this is all which is needed.

Better dialogue with European institutions, access to a strong information network of like-minded companies and individuals and to industry best practices, increased transparency and provision of benchmarking opportunities, enhanced reputation and credibility are just a few of the advantages that the Charter has offered its signatories over the years. And strong support was provided by ETNO itself.

Although responsible behaviour in business represents a real competitive advantage, other than a responsibility, sustainability in ETNO is a race where there is no competition, but where all participants belong to the same team, add their strength to the others' and share their knowledge and experience to help the team overcome hurdles as one. And in the end the team wins.

Competing together can make the difference. We know it. That's why the Sustainability Charter is open not only to ETNO members but also to all players active on the market. They are all welcome to join our team and the ETNO Office is there to help.

[43] <http://www.etno.be/Default.aspx?tabid=2172>

#5

The Sustainability Charter



The Sustainability Charter of the European Telecommunications Network Operators' Association

Our Vision

Sustainable development is a global strategic goal, which seeks to achieve economic growth that promotes a fair and just society while conserving the natural environment and the world's scarce, non-renewable resources for future generations. It is our belief we can play an important part in making this happen.

Corporate Social Responsibility also needs to be understood in the context of sustainable development:

- Corporate Social Responsibility is the business contribution to making sustainable development happen, through the proactive management of a company's environmental, social and economic impacts.

This Charter embodies our commitment to sustainable development via:

- a sustainable provision of products and services with significant environmental, social and economic benefits;
- a determined effort to integrate our business activities with environmental, social, and economic responsibilities — minimising, where practicable, any negative impact these activities may generate.

Our Approach

We believe, as do our employees, customers, shareholders and governments, that today's world demands close attention to business principles and ethics, employee relations, human rights, environmental management, community investment and general working conditions, within a company and regarding its outside suppliers.

Collectively, these activities form the basis for Corporate Social Responsibility (CSR).

CSR commitment demands regular performance assessment. Thus, our reports offer stakeholders a means to judge how effective our improvement programmes have been. Moreover, the spread and reach of telecommunications across contemporary society imposes on us, as responsible corporate citizens, the social obligation to demonstrate this commitment, to reflect how we run our businesses.

Collectively, our companies' combined turnover represents a significant proportion of European trade, which offers a unique opportunity for ETNO member companies to co-operate actively with policy-makers and Governments to make a real difference. Indeed, our CSR activities can offer a significant contribution to sustainable development.



Our Pledge

We, as Charter signatories, whether individually or collectively, are committed to continuous improvement and the sharing of best practice via action in the following areas:

1. AWARENESS

To acknowledge all the relevant environmental, social and economic impacts of our products and services: whether positive or negative. In particular we will build CSR aspects into company communications and training programmes.

2. REGULATORY COMPLIANCE

To achieve full compliance with all relevant legal requirements and, where appropriate, to exceed them.

3. RESEARCH AND DEVELOPMENT

To support research and development into the contributions that new telecommunication products and services can make to sustainable development.

4. PROCUREMENT

To implement efficient management of resources, energy use, waste, emissions reductions, environmentally friendly process and product requirements; eliminating use of hazardous materials; observation of human rights and labour conditions.

5. ACCOUNTABILITY

To make available to all stakeholders' material data, case-study examples and information about our environmental, social and economic performance, as accountability and transparency are key elements of CSR. To maintain an inclusive approach to stakeholder relationships, in order to reflect their aspirations and needs in our business activities.

6. COOPERATION

To co-operate constructively with governments, customers, industry partners, civil society and international organisations when investigating, developing and promoting the benefits that information and communications technologies generate for sustainable development.

7. MANAGEMENT SYSTEMS

To offer a statement of business principles, an environmental policy, the appointment of a management board member with specific CSR responsibilities, and a manager(s) with designated responsibility for co-ordinating programmes of continuous sustainability improvement.

Finally, to implement management systems that support development of appropriate and well-structured programmes on environmental protection, labour conditions, occupational health and safety and social accountability.

8. EMPLOYEE RELATIONS

To create work environments that promote the work-life balance, professional development, diversity and health and safety, maintaining a highly motivated and productive workforce.

The signatories

of the ETNO Sustainability Charter





Belgacom
(Belgium)



Croatian Telekom
(Croatia)



Telecom Italia
(Italy)



BT
(UK)



Koninklijke KPN
(The Netherlands)



Telefónica
(Spain)



Cyprus Telecommunications
Authority (Cyprus)



Magyar Telekom
(Hungary)



Telefónica O₂
(Czech Republic)



Deutsche Telekom
(Germany)



OTE
(Greece)



Telekom Austria
(Austria)



Eircom
(Ireland)



Portugal Telekom
(Portugal)



Telekom Slovenije
(Slovenia)



Orange
(France)



Slovak Telekom
(Slovakia)



Telenor
(Norway)



GO
(Malta)



Swisscom
(Switzerland)



TeliaSonera
(Sweden-Finland)



TDC
(Denmark)

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About ETNO

ETNO has been the voice of Europe's telecommunications network operators since 1992. Its 41 members in 35 countries collectively account for a turnover of more than € 270 billion and one million employees.



Michael Bartholomew, ETNO Director

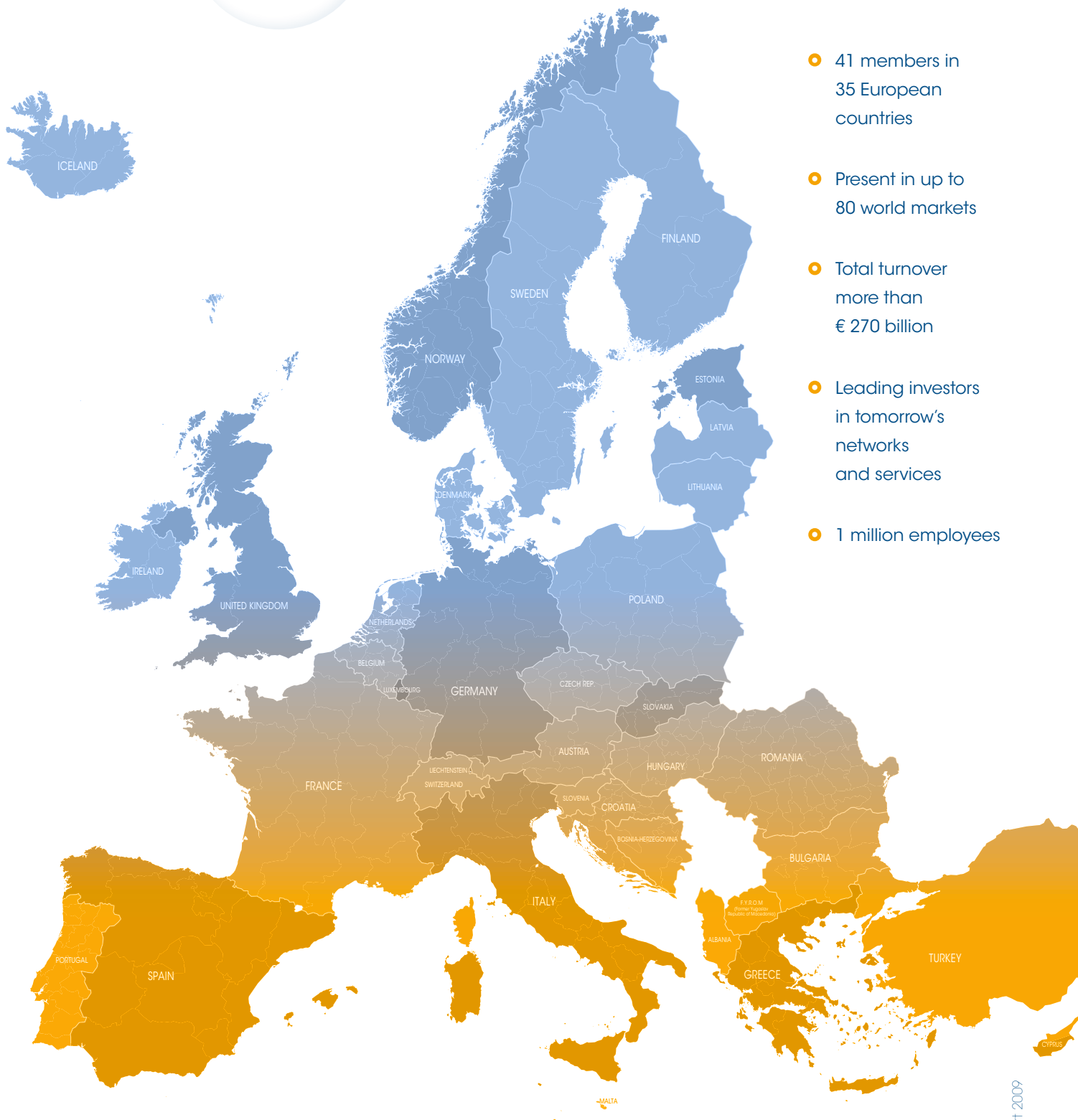
ETNO members also hold new entrant positions outside their national markets. ETNO brings together the main investors in innovative and high-quality e-communications platforms and services, representing 70% of total sector investment.

ETNO closely contributes to shaping the best regulatory and commercial environment for its members to continue rolling out innovative and high quality services and platforms for the benefit of European consumers and businesses.

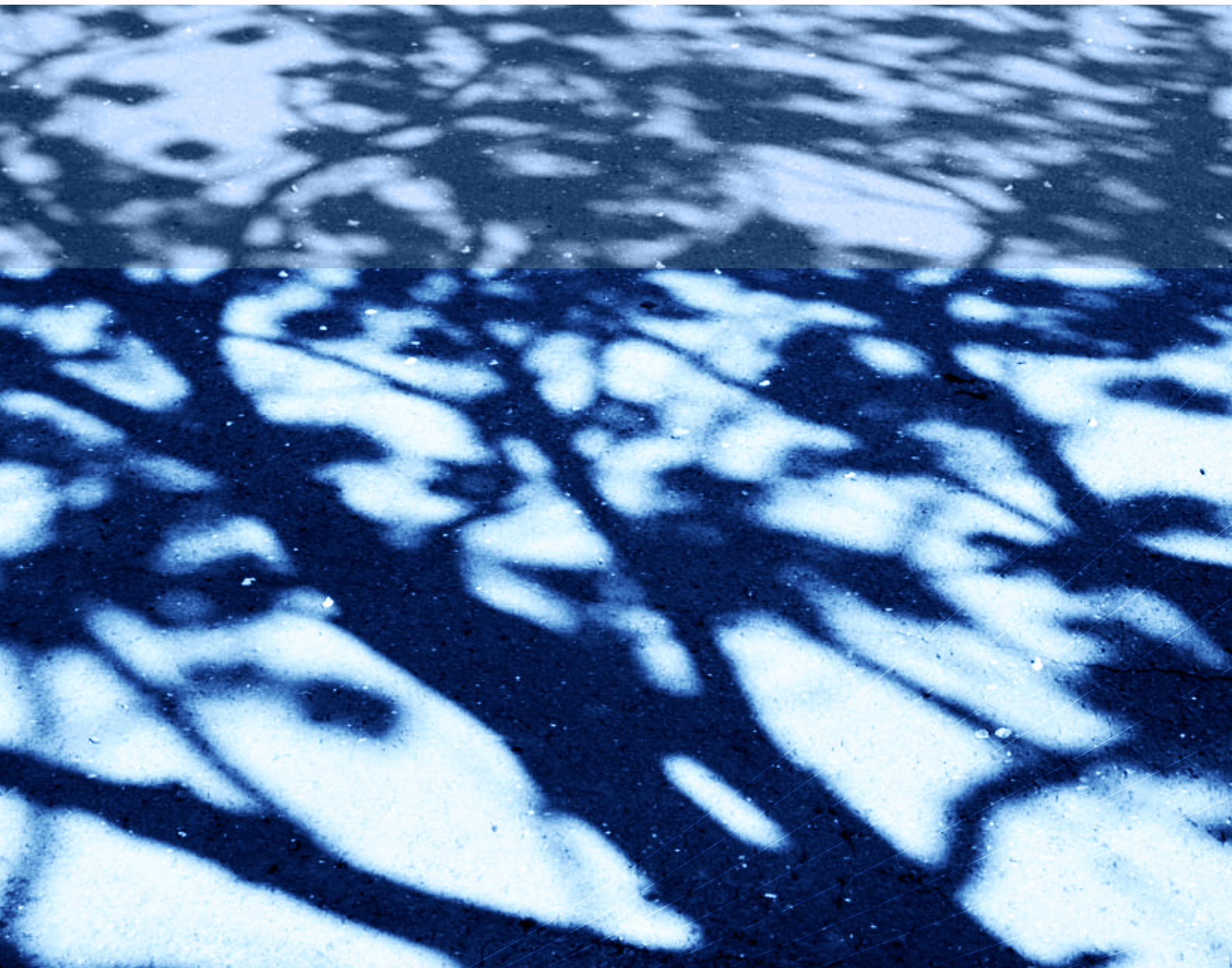
For more information, please visit: **www.etno.eu**



European Telecommunications Network Operators' Association



- 41 members in 35 European countries
- Present in up to 80 world markets
- Total turnover more than € 270 billion
- Leading investors in tomorrow's networks and services
- 1 million employees



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