

Strengthening green ICT: Stimulating investment, creating jobs



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Introduction

“To be or not to be” – Helsingør, the scene of Shakespeare’s Hamlet, is a place for posing existential questions. Not just in the past, but today as well. Just a stone’s throw away from the Kronborg Castle, the UNI europa ICT Forum sat down and debated the future of the Earth’s eco-system. 91 delegates from 17 European countries discussed the role played by the ICT sector in climate change and what opportunities there were to take counter-measures against the threatening scenarios for the future. It is no longer a question of whether hard-hitting action is needed or not. For trade unionists, the question is how they can meet up to their responsibility towards society, assuming a pro-active role in climate protection.

The ICT sector is a sector with great potential. Looking beyond the negative environmental effects produced by the industry itself, ICT has a key role to play in nearly all other industries. Its solutions can help to improve energy efficiency and reduce emissions in a number of fields, leading ultimately to opportunities for new “green” jobs. The trade unions see themselves confronted on the one hand by the task of strengthening innovative resources – leveraging the wide range of technological skills available within their own ranks. Yet at the same time, they are being called upon to help actively shape the necessary change processes and to safeguard social standards.

The fact that the ICT Forum took place near the Danish capital was no coincidence.

In December 2009, representatives from 193 nations came together in Copenhagen for the UN World Climate Summit with the intention of negotiating a follow-on agreement to the Kyoto Protocol limiting GHG emissions. The IPCC (Intergovernmental Panel on Climate Change) is demanding a maximum increase of 2° C in global temperatures relative to pre-industrial times. Even this would only mitigate, not prevent, floods, droughts and the continuing extinction of species. Countries, particularly in the southern hemisphere, are already beginning to suffer from frequent natural catastrophes, and the first islands will soon be doomed to sink below the waves. All relevant stakeholders are called upon to take quick and decisive action.

„The situation is completely clear. No employer will make money from a dead planet and no worker will gain from being part of a poisoned population“

Peter Skyte, Unite (UK)

1. Opening speeches

Environmental topics needed to occupy a firm place on trade unions' agendas, said **Tove Johansen, the President of UNI europa ICTS**¹: "We are concerned about the environment and the future of our children, and we want secure jobs for our members". Trade unions were called upon to use their negotiating power to limit the negative environmental effects of the ICT sector and to make use of its potential. It went without saying that ICT was one of the most effective climate protection instruments, being in a position to make available the tools needed to help combat environmental pollution – for example through the use of intelligent measurement and control systems.

Climate change affected everybody, including trade union members, underlined **Marie-Louise Knuppert from the Danish trade union LO**. A green restructuring of the economy was urgently needed. Even so, climate protection was not automatically social, as many jobs would be hit by its consequences. "It is our job to take care that the necessary change takes place with social considerations being taken into account". Intensive trade union involvement was needed to have the social dimension taken into account in all policies helping to protect the environment - for example in questions of skills and competences.

Akdogan Yildiz, social-democrat member of the Danish Parliament, called for concerted action on environmental protection. "We want all stakeholders involved to make their contribution". She saw increased research, a broad-based informa-

tion policy and public awareness campaigns as the cornerstones for any environmental-friendly development. All companies should establish environmental officers as fixed contact points. They could then make simple suggestions on how employees could change their behaviour. Computers left on all night were great energy consumers. "Just turning them off has a great effect."

1. The new ICTS (Information and Communication Technology and Services) department is the result of the amalgamation of UNI europa's previously separate departments IBITS (Industry, Business and IT Services) and Telecom in September 2009

2. The political framework: climate protection in the EU

The European Union saw itself as a front-runner when it came to international climate policy. In 2008, state and government leaders undertook to reduce GHG emissions by 20% by 2020 (relative to 1990 levels). In the same period of time, energy efficiency was supposed to increase by 20% and the share of renewable energy in the energy mix to rise to 20% (currently 8.5%). The EU Commission saw the ICT industry carrying a special responsibility. In a 2009 recommendation, the Commission called upon the sector to set itself ambitious and measurable emission objectives and to invest in intelligent technologies paving the way towards a more energy-efficient and lower-emission economy.

“The EU wants to be the world leader in climate protection”, explained **Britta Thomsen, Member of the European Parliament and of the Committee for Industry, Research and Energy**. To achieve the EU’s 20-20-20 target, regulations regarding energy efficiency and energy saving were being proposed. One important feature was the energy consumption of buildings. This had not just an ecological but also a social background, as “in a number of Eastern European countries, people are spending half of their income on heating in the winter”. Thomsen saw great potential in the use of “smart” technologies, as these made consumption patterns transparent and enabled efficient energy management. The topic was of immense interest for trade unions: “Lots of new jobs will be created in this area”. Thomsen saw a necessity for increasing investment in research into energy-related technologies: “I am convinced that we will be seeing a number of innovations in the near future”. At the same time she called for employees’

knowledge and creativity to be taken into account, referring to the Danish LO project “Employee driven innovation” as one positive example.

Another speaker underlining the growth opportunities for ICT companies focusing on climate protection was **Eleni Dapergola from the EU Commission’s DG Employment, Social Affairs and Equal Opportunities**. “The economic crisis and climate change should not be regarded as separate issues”. It was however important to give greater attention to social aspects when tackling climate change. “Restructuring measures are costly, even if they make sense in the long term - in certain areas jobs will at first disappear”. People not meeting up to the changed requirements would be the ones hardest hit. “We must work to prevent gaps appearing between people’s required and currently available skills. With its “New Skills for New Jobs” initiative, the EU Commission was developing an overview of the skill profiles expected to be needed in the future, thereby facilitating the forward-looking adaptation to new demands.

3. Background report: The role of ICT in climate change

Since the beginning of the crisis, there had often been talk about the failure of the markets – yet “climate change represents the biggest market failure of all”, said Journalist **Andrew Bibby** on presenting his **background report on “Green ICT”**.

To start with, the ICT sector itself was part of the problem - to a none too small degree: “The ICT sector is both greedy and wasteful.” Between 2002 and 2007 its GHG emissions had risen by 56%, and were now on a similar level to those of the aviation industry. All in all, the ICT sector contributed to some 2% of relevant global emissions, with the other 98% coming from other sectors. “Two percent – that doesn't sound much to start with, but it is still a whole lot of carbon dioxide”. Without taking any counteractive measures, this level was expected to almost double by 2020 (from 0.83 billion tonnes at present to 1.43 billion tonnes of CO₂-equivalents²). Yet emissions were but just one aspect of the ICT sector's dangerous legacies. Alongside GHG emissions, toxic materials (e.g. in cadmium-based batteries and mercury) and the high consumption of such resources as water and metals belonged to the negative environmental effects. In addition, any eco-balance needed to take the whole life cycle of products into account. Energy consumption and environmental pollution took place not just in the use phase of goods, but also to a great extent in their pre-use and post-use phases, gaining the required raw materials, producing the goods and disposing of them.

So far, “green” initiatives had mainly been

2. The effect of the various greenhouse gases is measured by converting them into so-called CO₂ equivalents. One CO₂ equivalent equals the effect of the emission of 1 kilogram of CO₂.

targeting the environmental effects of the ICT sector itself. These included efforts to reduce the energy consumption of ICT equipment or to increase the level of recycling. Data centres represented a further important focus - they were already responsible for 1.5% of total US energy consumption, with their numbers expected to rise further in the future. Green concepts for computing centres, for example through virtualisation, were not just a field of action with respect to climate protection but also offered attractive business opportunities.

However the ICT sector possessed much greater green leverage when it came to making other sectors - those responsible for 98% of total emissions - more environmentally friendly. “Information and communication technologies have the potential to play a leading role in climate protection”. Major fields of action were to be found in energy production, transport systems and buildings, areas responsible for a major part of air pollution. ICT could play a groundbreaking role in achieving greater across-the-board climate protection in industry and society. This involved the use of a whole row of “smart” technologies, enabling transparency and efficient energy management. These ranged from intelligent traffic management systems helping to fight traffic jams to the energy-optimised construction of buildings. “Intelligent electricity networks”, especially in combination with renewable energy sources, needed to be used to increase power distribution efficiency. Smart measuring devices could help end-users to manage and lower their individual consumption. Furthermore, information and communication technologies could help reduce physical mobility, for example through video-conferencing or teleworking.

When adopting such sustainable ap-

proaches, it was important to look at the whole process chain. Western industrial nations were beginning to export their environmental problems, for example when recycling electric or electronic appliances, which took place in developing countries under often miserable conditions.

Bibby also pointed to another undesirable – and certainly often underestimated – risk attached to green technology strategies. The ripple effects of technological innovations in the ICT field were complex. “There is a danger of emissions increasing, even when we improve our energy efficiency”. This effect, called “high carbon feedback” by the WWF, could be observed when increases in energy efficiency led to greater demand. As an example, decreasing telecommunication costs had led to an exponential rise in usage rates. “We must be aware of such ripple effects”, said Bibby.

For trade unions, the need for green ICT strategies opened up a new field of action – both for dialogue and negotiations with employers, and for campaigns and winning new members. Young people in particular were very open to the whole subject of sustainability. “The subject has the potential to bring a new generation of people dearly committed to environmental protection back into the trade unions”.

An Interview with **Gerhard Rohde**, head of UNI europa ICTS, on the background of the 2009 ICT Forum.

The ICT Forum is taking place at nearly the same time and place as the UN World Climate Summit in December in Copenhagen. Is it the intention of the trade unions to thereby set a signal?

We intentionally chose this venue. We want to make people aware of how important

this subject is for the trade unions, and call on stakeholders in the political arena to adopt ambitious targets and concrete action plans on climate protection. In putting our focus on “green ICT”, we want to demonstrate that it is not just a question of avoiding negative aspects, but also that green technologies offer great opportunities for a sustainable economic recovery.

Nearly everybody talks these days about sustainability. Why has this subject now been taken up by the trade unions?

Nobody can work properly in a world heading towards a climate catastrophe. On seeing the figures showing that the ICT sector was responsible for 2% of GHG emissions and at the same time in a position to greatly influence the other 98%, it became clear to us that the ICT sector had enormous leverage with respect to environmental protection, if it adopted the right direction. As trade unions, we see ourselves responsible for promoting sustainable solutions.

How do trade unions intend to introduce the subject of environmental protection into day-to-day work routine?

We must start by increasing awareness. In my opinion, not everybody is aware of the consequences of what he or she does. It is often just a matter of simple things, like turning off a computer at night or substituting business trips by telecommunication. But of course we need to go one step further. The scope of trade unions really comes to bear when we are able to influence company policy through collective agreements. These can contain provisions regarding such aspects as sustainable skills, travel policy or the use of technologies.

Could the subject of sustainability be a way for trade unions to gain access to new groups of members?

In my mind, young people attach great significance to the subject – at the end of the

day, they have got to live in this world for a long time. Our success in getting them interested in trade unions is dependent on our credibility. We ourselves – especially as an international organisation - ultimately leave behind an ecological footprint. We need to set an example, practicing what we preach.

Are there positive examples in the business world?

A large number of companies are committed to protecting the environment, and green technologies offer interesting business opportunities. We must take care that all this leads to long-term sustainable solutions, with sustainability being more than just image-enhancing “bumper stickers”.

4. The status quo: how green are the unions?

How had trade unions members positioned themselves up to now with respect to sustainability? **Lorenzo De Santis** from UNI presented the **results of an online survey** conducted on the UNI website, focusing on trade unionists’ expectations and assessments regarding “green ICT” and their experiences up to now. 42 people from 17 countries had filled out the electronic questionnaire. Although undoubtedly not representative, this was enough for preliminary trends to emerge. Asked about green initiatives in the ICT sector, the large majority were of the opinion that efforts up to now were unsatisfactory. 90% of those interviewed thought that green ICT could be the source of new jobs. “This assessment corresponds completely to the EU’s projections, which foresee the creation of

thousands of new jobs through green technologies”, said De Santis. The interviewees were similarly positive in their assessment of the employment effects in other industries.

As for green trade union policies, the survey showed there was still a lot needing to be done. Asked about the environmental policies of their own trade unions, only six of the 42 interviewees were aware of any official policy programme. Twelve people stated that there was nothing available in this area. The remaining people stated that general statements did exist. Similar potential for improvement existed with regard to company-level environment-related agreements. Only seven interviewees were able to cite such agreements. There were hardly any companies with an employee representative responsible for environmental affairs. “In this area there is still a lot to be done”.

All in all the survey showed that most interviewees were very open towards green concepts, expecting positive employment effects. But in practice concrete measures remained seldom – it was often not even known whether one’s own trade union or employer was already pursuing any sustainability strategy.

Dennis Pamlin, working as a policy advisor for the WWF among others, called for a passionate **trade union commitment to environmental protection**. “Unions remain too reactive in the climate debate, abstaining from becoming front-runners – I hope this will change”. Unions were predestined to identify future-oriented projects and promote sustainable solutions. If trade unions were to harness all the knowledge available to their members and go on the offensive, instead of just reacting to (technological) developments, they could

become “part of a major, future-oriented movement”.

Whether talking about water or paper consumption, fertilisers or the use of fossil fuels, within the last century we had seen a number of exponential growth curves. “We are taking more out of our planet than it can provide. The question is whether we are intelligent enough to pull the plug or whether the planet does it for us”. The danger of the environment collapsing would increase if such developing economies as China or India were to follow Western production and consumption patterns. It was expected anyway that, by 2030, the world's population would have risen to 8 billion people, all needing to be provided for.

What were needed were intelligent solutions oriented towards the whole world. This meant, said Pamlin, revolutionary concepts. He ruled out non-ambitious reduction targets and change in small steps. “We don't need cars that produce just a little less pollution”. The focus had to be on radical improvements - for example reducing emissions by 90%. This required leaving well-trodden paths and establishing ambitious targets in the principal fields. Buildings, for example, at present responsible for 40% of global emissions, could implement zero-emission targets, while at the same time switching from being energy consumers to becoming suppliers of renewable energy.

Pamlin regarded the multiple use of ICT as an important basis for green innovation. Its key importance was not just to be found in “intelligent buildings” or “intelligent energy networks”, but also in electric cars like the Tesla. The performance of such vehicles was to a great extent attributable to contributions from IT experts. Such areas as

connectivity, miniaturisation and “augmented reality”³ were seen by Pamlin as important fields where trade unions should be investigating opportunities. “Smart devices” containing integrated IT enabled product transparency throughout the life cycle – from production to disposal -, thereby reinforcing the concept of sustainable product cycles (“cradle to cradle”⁴). However, Pamlin left aside the social risks involved in pervasive information and data protection issues.

Pamlin called for a truly global orientation for green concepts, saying that environmental protection should not be used just to ensure sustainable prosperity in Western countries. It was also important to talk with the Asian “tigers” (growth economies) eye to eye. As shown by the discussions at the ICT Forum, this needed to include such issues as the protection of human rights and the right to free unions throughout the world (though with special focus on China).

3. Augmented reality (AR) is a term for a live direct or indirect view of a physical real-world environment whose elements are merged with (or *augmented* by) virtual computer-generated imagery - creating a mixed reality. It has a large range of application, for example showing additional information to an object or revealing hidden layers like an x-ray.

4. Cradle to Cradle Design (sometimes abbreviated to C2C or in some circles referred to as regenerative) is a biometric approach to the design of systems. It models human industry on nature's processes in which materials are viewed as nutrients circulating in healthy, safe metabolisms. It suggests that industry must protect and enrich ecosystems and nature's biological metabolism while also maintaining safe, productive technical metabolism for the high-quality use and circulation of organic and synthetic materials. Put simply, it is a holistic economic, industrial and social framework that seeks to create systems that are not just efficient but essentially waste free.

5. Climate protection initiatives: Reports from the field

Up to now, trade unions had not been active across the board in environmental protection. Nevertheless, there were a number of promising initiatives, with which they could bring up the environment in their discussions with employers, members and employees.

Sarah Pearce gave a report on the **activities of the British trade union umbrella organisation, the Trade Union Congress (TUC)**. Climate protection had had a fixed place on the TUC's agenda since 2005. The need was there. In spite of Great Britain's legal commitments on climate protection, a gap remained however between policy and practice. Numerous employers had missed the opportunity to take action. Even in cases where environmental programmes were available, there was a lack of information on them. With its "Green Workplaces" project, the TUC was trying to promote employee engagement for green topics at work, thereby strengthening trade union influence.

There was a whole row of projects being implemented by employers in all sorts of sectors, including the energy industry, health, public administration and education. A central element was skill development. Up to now not many trade union representatives had completed appropriate courses. Alongside technical knowledge on climate change, it was important to build up communication skills. "We need to learn how to convince others and to confront doubts or disinterest".

The "Green Workplaces" project contained a wide variety of activities, ranging from surveys to visits to power stations. Open days, where external experts came to companies to give lectures on environmental

topics, were being offered as one form of getting people involved. There was great interest on the part of employees. The course offerings belonging to the "Green Workplaces" project were also company-related and open to non-members. Participants included employees from all levels. The courses were not just leading to new energy concepts (such as turning off computers when not needed, or using the sun to heat water). They also helped improve the climate between management and trade unions: "Such projects tear down walls", as cooperation in environmental issues was seen as a joint non-confrontational field of action. It was also a way for trade unionists to address employees not normally enthusiastic about traditional confrontational trade union initiatives.

How **climate change** could be established **as a topic for the representation of collective interests** was explained by **Peter Skyte** from the British trade union Unite. Pressure on companies to reduce their carbon footprint was increasing, due both to political regulation and energy costs which were expected to continue rising. Employers were becoming increasingly aware that action needed to be taken: "It is sometimes more expensive to do nothing than to undertake something".

Even if green concepts were seen as promising with regard to the creation of new jobs, it was expected that they would at first have major effects on existing jobs: "There is no change without cost". For example, the consolidation of data centres, currently being pushed by companies under the flag of climate protection, went hand in hand with drastic job cuts. It was a key task of trade unions to help overcome such changes, protecting employees.

Environment-related collective agreements constituted an important structural instrument for trade unions with regard to climate protection. Such agreements needed to contain clear objectives on GHG emission reductions and clearly defined responsibilities. In addition they needed to contain clauses cementing the election of employee representatives for environmental issues, with clear rights and time budgets. Employee participation was an important element, as “the people on the shopfloor know best what is happening in any organisation”. Furthermore, environment-related agreements needed to be linked to existing employee representation structures and regulations.

Unite was putting forward a whole row of further recommendations on how to make workplaces greener. The starting point for effective climate policy was the availability of detailed information. “Does the organisation understand and explain its carbon footprint?” Up to now, lots of members and employees did not even know whether their employer had an environment programme at all.

One important aspect was the restructuring of work-related mobility, as about one half of work-related energy consumption was attributable to travel to and from work - and continuing to rise. Opportunities were available, in such areas as car-sharing or improved facilities for cyclists. (Voluntary) teleworking was another way of reducing physical mobility.

As eco balances, just as compliance with social standards, only made sense when applied to the whole product cycle, Skyte demanded that trade union representatives be involved throughout the supply chain – even when other countries were involved.

As a positive incentive, environment-

related targets needed to be part of all managers’ bonus-related assessment criteria. Furthermore, the public sector needed to link its procurement to suppliers’ compliance with environmental and social standards.

What **environmentally friendly travel to and from work** could look like was described by **Andrew Cassy** from the British trade union Connect. Cassy was Travel Manager at British Telecom’s (BT) Adastral Park in South-East England, where some 4,000 people worked – mainly BT employees. A travel plan had been developed, offering greener ways of getting to work. This was seen as a way of reducing BT’s carbon footprint and explicitly improving employees’ health and well-being. The programme had been started in June 2008. BT had become aware of Cassy during an environment action day organised by Connect. He was now responsible for sustainability on a full-time basis.

The plan contained a whole range of ways to get to work, either on foot, by bike, by car or by bus. One important objective was to reduce the number of single-person car trips. “Lots of people arrive at work with empty seats in their cars, meaning there is still great potential here”. There were a variety of offers aimed at making alternative forms of travel more attractive. There was a booth and a “Green Routes” website offering current travel information. There were reserved parking spaces for car-sharing, battery-charging stations for electric cars and a free bus shuttle to the station. There were lockers, showers and a drying room for workers coming to work on foot or by bike. Even in rainy weather, there was no need to for anybody not to use low-emission forms of travel. “There is a whole range of things that can be done at no great cost”.

The objectives also included ways of reducing the need for business travel, for example through the use of telephone or video conferences. There was also a need for more options with regard to the place of work, including flexible arrangements for working at home. "What we need are new office concepts".

Detailed records were made of how employees' mobility behaviour was changing. After one year, the Travel Manager was able to demonstrate measurable success. The number of single-person car users had gone down by 5%, with more people now sharing cars. Cycle use to get to work had increased. All in all, the new travel management had already led to a 10% reduction in GHG emissions. But there still remained a lot to do according to Cassy. At the end of the day, long-term fundamental changes in behaviour were needed.

6. Technical Innovation – a field of action for trade unions

With regard to technical solutions related to environmental protection, trade unions do not have to look far – they have lots of high-tech experts among their members. There are many examples documenting the innovative potential available within trade unions. All that is needed is to bundle the commitment and knowledge of these specialists.

Bjarke Fønnesbech from the Danish Society of Engineers (IDA) presented a report on the **international project "Future Climate"**, launched in September 2008 and bringing together the expertise of engineers from a large number of countries. The objective was to develop national plans for reducing GHG emissions. This involved looking for solutions that were both sustainable and technically feasible, and made economic sense. 13 trade associations and unions from several European countries, India, the USA, Australia and Japan had taken part.

In September 2009 each engineering organisation had presented a national climate plan, handing it over to the respective country's ambassador. "The plans demonstrate that it is possible to reduce greenhouse gases and at the same time promote economic growth. An important element involved energy saving. "The world is wasting energy. Energy efficiency is the simplest, most intelligent and cost-efficient way of achieving significant reductions in greenhouse gases".

The Danish team's climate plan foresaw a 90% reduction in Danish emissions up to 2050. The country's total energy requirement could be generated using renewable sources (wind, bio-mass, solar, hydro and

geothermal energy). The use of renewable energy sources made investment in intelligent electricity grids essential, as this was the only way to balance energy amounts, prices and availability in the light of the natural input fluctuations. This climate scenario was linked with a positive economic outlook – “The implementation of the climate plan could lead to 30,000 new jobs in the Danish energy sector alone”.

Fonnesbech remained optimistic: “We have the potential to curb climate change - we have the technologies needed”. The engagement of engineering associations was well-accepted. “The plans are based on our members’ knowledge. This gives them greater credibility than plans drawn up by consultants”. The approach of activating members’ knowledge and directing it in a common direction seemed very promising. There were plans to continue the project, extending it to further countries.

Mikkel Hammer Nonboe from the Danish trade union PROSA also gave a report on the engagement of **IT professionals and their trade union** for the environment. “Using our skills as IT experts, we would like to make our contribution to climate protection”. New methods of production, transport and trade needed developing. A survey had shown that a large majority of members supported their trade union’s activities.

PROSA was using a web-based competition to call on its members to submit their ideas on climate protection. The trade union then helped promising suggestions to become implemented. In general, there was no lack of creative ideas, though there was an implementation deficit. One IT specialist had developed a web-based product guide enabling environmentally friendly purchase decisions. PROSA was helping to promote this

sophisticated solution by looking for funding. Another solution, circumventing Microsoft’s energy-consuming hibernation mode, was also being promoted – “Many good ideas never leave the server room”.

PROSA would also be attending the Copenhagen Climate Summit. The organisation was going to give a lecture at the Alternative Climate Forum on climate-friendly consumption and hold a debate on the role of trade unions in the face of climate change. PROSA was convinced of the necessity for it, as a trade union, to play a role in protecting the environment. Ambitious climate protection commitments were being demanded from politicians: “This is the final call for action – there is no plan in reserve!”

How **trade unions could promote green innovation and environmentally friendly purchase decisions** was demonstrated by **Anna Pramborg** from **TCO Development**. The history of the TCO label, an internationally recognised certificate for office technology, went back to the 80’s. With a growing number of employees working with computers, complaints about ergonomic problems had begun piling up. “Employees had to make do with what they got from the manufacturers – but the latter were not open to negotiations”. TCO, the umbrella organisation of the 16 Swedish trade unions, had turned its attention to the problem, issuing a quality label for ergonomic, low-energy products. The intention behind the label was to motivate manufacturers to develop better office equipment. Since then, TCO Development has become an independent certification organisation, with products being tested in independent labs.

The first TCO label was issued in 1992 for

computer monitors. Since then, certification has been extended to notebooks, desktops, projectors and headsets. At a later date, the catalogue of certification criteria was expanded to include environmental aspects, with social standards becoming part of certification from 2009 onwards. A new label had been introduced in October 2009 for highly innovative products ("Certified Edge"). With regard to user or environmental friendliness, such products needed to be a long way ahead of competing products in at least one point. The TCO label had now become an important quasi-standard used by a number of office equipment manufacturers in their product development. In some countries it played a role in public procurement. "Asking whether a product is certified is a simple way of making purchasing more environmentally friendly".

Looking beyond the TCO label, Pramborg was pushing for a wider definition of "green ICT". This needed to include the whole life cycle of products – from their production to their disposal or recycling. Attention also needed to be paid to the services associated with a product. Something should only be considered "green" if it was better than existing offers on the market and had been tested by an independent organisation. "There are a number of products claiming to be green – but we should only believe claims which stand up to third-party testing".

Interview with **Philip O'Rawe** from the British communications trade union Connect⁵ on the role of sustainability in the day-today operations of companies and trade unions.

How open are employers to green concepts?

At present, sustainability is mainly only interesting for companies when linked to a short-term benefit. Though we are conducting talks with a number of employers on environmental topics, not many firm commitments have yet emerged. For a lot of companies, current economic problems have priority.

What priority has Connect given to environmental protection up to now?

We are clear about the importance of the topic. But we are at present still at a very early stage. In a few large companies we have an informal network of trade union environmental officers – but as yet there are no formal collective agreements. What we are observing at present is that people are under extreme pressure at their workplaces. There are many redundancies, and it has become difficult to fulfil all requirements and objectives. But even so, we are trying hard to get the topic of environmental protection off the ground.

With what activities?

We are trying to increase awareness for environmental issues, for example by posters hung up at workplaces. We are encouraging members to exchange experiences, and looking for people working in key positions – for example managers of computing centres or procurement experts. These are the best people for providing us with the right arguments and concrete solutions. At the end of the day, very complicated technical issues are often involved. That's where we need the expert knowledge of our members.

5. Connect will be merging with the trade union Prospect in 2010.

7. Green employers? Pro-sustainability company strategies

In many companies, sustainability is a buzzword, though in most cases it is associated with cost cutting, a company's corporate image and good PR. But nevertheless there are examples of companies going beyond legal or economic requirements and giving environmental protection its own priority.

Initiatives being taken by the ICT industry with respect to protecting the environment were described by **Luis Neves**, a former colleague at UNI Telecom and now chairman of the Global eSustainability Initiative (GeSI). The GeSI was founded in 2001, bringing together ICT companies along the whole supply chain. Members included manufacturers and telecoms, such as AT&T and British Telecom, Cisco and Hewlett Packard, Microsoft, Nokia, Deutsche Telekom, Verizon – and many others. The initiative's credo was to be found in its threefold orientation, towards social responsibility, ecological sustainability and business success.

Topics in which the GeSI was currently involved included the effects of greenhouse gases, electronic waste, recycling and energy-efficiency standards. It was active in research consortia investigating intelligent energy networks and "smart cities". Furthermore it was involved in social responsibility throughout supply chains and working conditions in ore mining.

The ICT sector was in a position to contribute to cross-industry solutions to the most pressing environmental problems. "Without the ICT sector, we will not be able to achieve our climate targets", said Neves, pointing to the results of a current GeSI study: "With the help of ICT, up to 15% of worldwide emissions can be stopped. This

is equivalent to five times the industry's own GHG footprint". Economic growth without negative environmental consequences was being made possible by innovative products and services. "We need to uncouple economic growth from energy consumption".

The GeSI saw particularly effective opportunities in the use of intelligent systems in buildings, logistics, electricity grids and motors. In addition the dematerialisation of goods and activities needed to be promoted – i.e. the use of electronic instead of material alternatives (e.g. video conferences, eCommerce). Neves, who saw great business and job creation opportunities in the field of green ICT, wound up his presentation by saying that "ICT's contribution to nearly all other sectors is enormous".

The GeSI chairman was interested in dialogue with trade unions on sustainability. But in answer to delegates' questions, he stated that "how companies represented in the GeSI meet up to their social responsibility in concrete terms is up to them". Delegates had previously voiced their criticism that working conditions at certain GeSI members were causing problems and that members were refusing to enter into collective agreements.

Lineke Sneller used a look at another sector to demonstrate how a company could orient its **management system towards sustainability** using ICT solutions. Sneller, president of the Dutch computer association (Ngi), used to be the director responsible for IT and accounting at InterfaceFLOR, the carpet manufacturer. While there she was involved in the introduction of a sustainability concept.

InterfaceFLOR employed 5,000 people

worldwide and was market leader in carpet tiles. In 1994 the company's mission statement had been completely revised, with sustainable economic activity becoming an integral component of the company. The basis was formed by the "conviction that a company only has a long-term future when it evolves in all three directions: planet, people and profit". InterfaceFLOR had gone further than just "bumper stickers", initiating the "Mission Zero" with the verifiable target of eliminating all negative environmental effects by 2020.

Such concrete sustainability targets could not be achieved without corresponding measurement systems and management processes. The company's annual targets were therefore broken down to the individual units, becoming part of performance appraisals. Employees could earn "eco points" through environmentally friendly behaviour and a number of bonus payments were linked to the achievement of the respective environmental targets. Suppliers were also integrated into the sustainability strategy.

The project to cut the computing centre's energy consumption was one example demonstrating that ambitious environmental targets could be achieved. Using server virtualisation, the centre had managed to cut its energy requirements by 15%, even though computer usage had increased sharply. "Consuming less energy, while performing more is possible". Moreover the share of recycled and biological raw materials had increased significantly.

Increased dematerialisation was another way of curbing negative environmental effects. Business travel was being increasingly substituted by video conferences. When coordinating carpet designs with customers, InterfaceFLOR had stopped pro-

ducing sample tiles in China. Instead, customers were able to use simulation software to see how changed patterns or ways of laying the tiles affected the overall picture. "By just pushing a button, we are able to save time and transport costs – sample tiles used to be sent back and forth several times". Sending data instead of physical goods was seen by Sneller as one of ICT's major contributions to sustainable strategies.

The company's results showed that its ecological orientation had no negative effect on profits. Several hundred million US dollars had already been saved, and InterfaceFLOR operated on the same level as its competitors with regard to profitability. One positive effect of the sustainable strategy was that staff fluctuation had dropped significantly - many employees felt they were positively inspired by the green strategy.

The project ENERGIT, presented by **Clementina Marinoni and Eugenio Capra** from the Fondazione Politecnico di Milano, focused on **computing centres' energy consumption**. In the project, launched in March 2009, scientists worked together with companies to raise the energy efficiency of data centres. These were spending a major share of their financial resources on energy. "Here we see companies operating more sustainably and cutting costs at the same time", said Capra.

The project saw potential for optimisation at all levels, beginning with the physical layout of data centres. Here it was a question of thermodynamics, as a major portion of energy was used for cooling and air-conditioning. Alongside the levels of system architecture and the processors, "green software" was playing an increasing role. To achieve comprehensive increases

in efficiency, players in all phases needed to be involved and provided with the appropriate skills.

The second component of the ENERGIT project therefore involved the development of skill profiles and training programmes. "If we want to decrease the energy consumption of data centres, we need to look at the whole chain with regard to skills", said Marinoni. This involved not just data centre staff, but also suppliers and users. The project team had detected a range of additional skills that would be needed in green data centres. These pertained, amongst others, to renewable energy sources, thermodynamics, green software and hardware, virtualisation and waste management. "This all involves a comprehensive understanding of green IT".

8. Breaking new ground: discussion and workgroups

For many trade unions, environmental protection represented new ground. Up to now, hardly any trade unions structures existed addressing the climate and sustainability. Environmental issues had no standard place in industrial relations. But at the same time there were encouraging examples of green trade union initiatives.

There was agreement among ICT Forum participants of the need for trade unions to take up responsibility for protecting the environment. "If we want to carry on playing an important role in modern society, we need to start getting involved", said one delegate from Switzerland. What trade unions needed to do was discussed from a number of various perspectives.

Green ICT: Saviour of the climate without side effects?

Forum delegates were convinced that green ICT had the potential to contribute both to ecological sustainability and economic growth. Investments in protecting the climate seemed to be not just an ethical imperative, but also rational from a members' point of view. Green ICT was seen as a future job machine, even if transitional problems were part of the bargain.

To arrive at really sustainable action plans, there was a need to expand knowledge on the possibilities and consequences of green ICT. "We are still at an early stage", said one participant from England. A number of the concrete long-term effects of green technologies remained open. Short-term technology-based optimism could, as indicated by the term "high-carbon feedback", put people and companies on the wrong

track, leading to even more environmental pollution - for example when efficiency gains led to increased consumption and emissions. What was needed were well-grounded analyses on the systemic effects of individual technologies. Furthermore, the social risks involved, such as the marginalisation of certain population groups or data protection issues, needed to be taken into account.

New ground in collective bargaining and social dialogue

As yet, climate protection had hardly any role to play in collective bargaining. **Environment-related agreements** with employers remained rare. To get sustainability issues onto the social dialogue agenda needed investment in convincing employers. "We need to build a bridge between green ICT and profit", said one Swedish delegate. This meant that trade unions needed new competences with regard to content. UNI europa could provide important input in this area, for example by providing discussion guidelines or sample agreements. The latter needed to include the following aspects: binding climate protection objectives between employers and trade unions, the election and release from work of trade union environment delegates with specific information and consultation rights, bonus payments related to environmental protection, travel to and from work, business trips, teleworking and vocational training.

When looking at these new fields of action, trade unions should not lose sight of their longstanding members and traditional fields of work such as **working conditions and training**. One very important aspect discussed by delegates was the adaptation of employees' skills. This required an an-

ticipatory definition of new job and skill profiles. At the same time measures were needed to prevent the weaker falling by the wayside: "We need to take care that change does not disadvantage those having more difficulties with change", remarked a Swiss delegate. Older employees were one example of such people.

Though **teleworking** represented a major opportunity to cut work-related travel and emissions, the topic led to a sometimes controversial discussion among delegates. There was concern that an increase in teleworking could lead to many employees becoming increasingly isolated, with a company losing its role as a social organisation – together with the associated consequences for employee representation. It was important here to stress the voluntary nature and implicit flexibility of teleworking, and for it not to be just dictated by company interests. When properly designed, teleworking could increase employees' range of choice, enabling new combinations of work at home and work on company premises.

Another agenda item was the development of **social dialogue on a European level**. "In the EU, policy is formed affecting 27 Member States - we need to become involved here", said a delegate from Great Britain. While UNI europa did have a social partner in the telecommunications sector on a European level – the employers' association ETNO -, there was as yet no such partner in the IT sector. Sustainability could be an appropriate field for starting up a dialogue with employers. One potential partner was the Global eSustainability Initiative GeSI. However any dialogue needed to be limited at first to ecological topics.

Green skills: “Basic knowledge for everyone”

Green ICT required new skills, including for example methods of measuring and calculating effects on the environment, but also communication capabilities, as sustainable ideas often needed to be put over with conviction. One way of getting green skills circulating was to train trade union members, who could then act as multipliers in companies. To get sustainability anchored at work meant that all employees - not just management or IT professionals – needed to have basic knowledge about environmental protection. The workgroup looking into the topic of “green skills” at the ICT Forum even went one step further, stating that children too needed to be introduced to climate protection.

Ecologically responsible company operations would necessarily lead to the creation of new professional roles, for example that of a “green project manager”. One general demand of the workgroup was to strengthen an overall view of a company. This could involve both workers on the shopfloor and managers with environmental responsibility rotating through the company or the establishment of “green efficiency teams” with an all-round perspective.

One long-term idea of the workgroup was to institute a university bachelor course specifically targeting green ICT. In addition, reputable training courses were needed for IT professionals, focusing on sustainability topics.

Eco-Labels: not without social standards

Green labels, ratings or even prizes were

ways of motivating companies to act more responsibly and promoting sustainable purchasing decisions. From a trade union point of view, eco labels needed to go beyond certifying just technical aspects. No company should be allowed to label products as eco-certified, if working conditions at the company were at the same time bad. “It must not become socially acceptable to wear a green badge and at the same time tread on social standards”, said a delegate from Switzerland. The whole aspect of social responsibility needed to be firmly rooted in green labels – as was now the case with the TCO label.

Labels also needed to take the whole life cycle of products and services into account, meaning that suppliers (even in other countries) along the whole process chain were included in the perspective. Trade unions wanted to become more involved in the awarding of labels. “We should be sitting on the award panels”, said a participant from Belgium, hitting the nail on its head.

Simple ways: promoting low-tech measures

Green ICT generally went hand in hand with complex solutions dependent on IT. Yet there was also a very simple side to environmental protection, involving changes in rooted behaviour patterns. Awareness campaigns and information work were ways for trade unions to greatly help increase employees’ awareness for such issues.

There was great energy-saving potential to be found for example in switching off computers, printers and office lights at night. Avoiding excessive printing or the use of disposable resources were other ways of

improving eco-balances. Yet it needed to be realised that often just simple changes in behaviour were the most difficult to accomplish, as they involved giving up established customs. The traffic concept used at the BT Adastral Park demonstrated that good solutions did not always have to be associated with major effort, but could be quite “low-tech” while at the same time contributing to a higher quality of life. Walking or cycling to work often served as a way of relaxing.

Setting an example: Trade unions are turning green

Looking into the mirror, delegates commented on the fact that many unions were trailing behind progressive companies when it came to protecting the environment. “We need to set an example, practicing what we preach”, said one participant. “How else can we negotiate on protecting the climate and encourage our members to act in a sustainable manner?”

A “green union” was basically guided by the same principles as an eco-responsible employer. One positive example was the British services union PCS with its dedicated environment policy, involving such aspects as greater recycling, energy-saving and sustainable procurement. PCS gave an account of its activities in its annual environment report.

To promote green products, trade unions needed to make greater use of their purchasing power: “We are important purchasers”. Another way was to cut down on business trips, especially in connection with the Union Network International. Airline tickets were piling up on numerous desks. There was however a question mark over whether the next ICT Forum would take

place virtually. The issue of simultaneous interpreting alone made it difficult to hold a virtual meeting.

UNI europa was requested to draw up a guideline containing suggestions on how trade unions could achieve a long-term reduction of their carbon footprints, with a special focus on international structures.

9. A green New Deal: What needs to be done

Resolution and action plan

The 91 delegates of the ICT Forum together adopted the draft resolution "Green ICT for Jobs". In it, they welcomed a "green New Deal", promoting the creation of new environmentally friendly high-tech jobs and at the same time helping in the fight against the economic crisis.

The delegates issued a recommendation addressed both to the UNI europa steering committee and to affiliated unions to use the opportunities presented by green ICT to anchor environmental topics within their own organisations and to widen social dialogue with employers.

An appeal was directed towards the Copenhagen Climate Summit to establish binding and ambitious climate objectives and to make use of the potential offered by green ICT to achieve them. At the same time, political stakeholders were called upon to follow sustainable objectives within the framework of social dialogue and to include issues related to employment policy.

Closing words: "A first step"

Climate change was not a vague future scenario conjured up by pessimists. Climate change was already taking place. Governments and companies, trade unions and individuals could not get round their responsibility. "We need to take action today. Many efforts currently being made by us will not show any effect until years later", said Peter Skyte in his closing words to conference delegates.

Though the ICT sector was itself a cause of GHG emissions, it also had the potential to act as a front-runner for greater climate

protection, thereby becoming part of the solution. To realise this potential and at the same time to improve people's quality of life, sound knowledge, innovative ideas and the power of unions to shape the future were called for.

The 2009 ICT Forum was a first step towards unions meeting up to the importance of protecting the climate. Concrete action was now needed: "As delegates, you represent thousands of other people. It is up to you to disseminate what we have learned here, and to turn it into concrete action plans. "We haven't got another planet. We can't afford any self-satisfaction".

"This Forum has opened the eyes of many of us. Though all trade unions are talking about the topic, what we now see is that we need to do a lot more".

Peter Hellberg, Unionen (Sweden)