



Elaine Weidman, Vice President Sustainability and Corporate Responsibility, Ericsson

‘Climate-positive’ ICT: green, greener, greening

The trend for Information and Communications Technology (ICT) to become ‘greener’ over time is well established – it has a proven track record of ever-improving performance and efficiency that has enabled it to do more using fewer materials and less energy. Globally, the ICT industry itself emits about two per cent of total emissions. But perhaps, the greatest contribution ICT can make to sustainability is through the reduction it can enable in the 98 per cent of global CO₂ emissions attributable to non-ICT sectors.”

With the COP15 United Nations Climate Change Conference taking place in Copenhagen this December, 2009 looks like being a pivotal year for climate change solutions. The ICT sector has a unique opportunity to establish itself as an important driver of both climate and industrial policies. Low-carbon ICT solutions can play a leading role in improving basic services while reducing CO₂ emissions – by replacing physical products through so-called dematerialization, by helping people to use resources more efficiently and by supporting ‘eco-smart’ consumption. For this to happen, ICT must be an integrated part of all major projects and initiatives from governments and businesses.

Society faces a huge challenge in reducing CO₂ emissions to targeted levels by 2050, a time in which the world economy will grow three-fold and the world’s population will grow some 50 per cent. On top of this, calls for dramatic action on climate change in the midst of an economic crisis may seem rather contrary. In reality, the current economic conditions represent an opportunity for the ICT sector to demonstrate how it enhances efficiency and makes a significant contribution to reducing carbon emissions at the same time.

Until now, most of the global policy focus has been on high-emission sectors, and on incremental improvements that entail additional costs. But to make real progress, we need to turn our attention to sectors that can provide positive solutions – solutions that lead

us towards a low-carbon economy without adding unnecessary costs, and address the fundamental issue rather than the symptoms of it.

Such solutions can help us move beyond merely becoming carbon-neutral, and focus on becoming ‘climate positive’ – that is, delivering products and services that enable a greater reduction in CO₂ emissions than they emit through their whole life cycle.

ICT and carbon emissions

The ICT sector encompasses not only IT and communication devices and applications – such as mobile phones, computers, network equipment, servers, software and satellite systems – but also the various services and applications associated with them, including collaboration tools such as room-based video and web-based conferencing, mobile health (m-health), e- and m-learning and services to support eco-smart decisions (instant information about eco-friendly and carbon-lean goods).

When people talk about ‘green ICT’ they are generally referring to ways of making ICT equipment and solutions more efficient in terms of their use of energy and materials, as a way of reducing direct CO₂ emissions by the sector. Up to two per cent of global CO₂ emissions come from the ICT sector today, and this is projected to increase somewhat by 2020. That is why the goal of every player in the ICT sector must be to continue to improve the efficiency of ICT systems and to target real carbon footprint reductions.

However, the biggest role that ICT can play in reducing overall CO₂ emissions is by helping other sectors – which produce 98 per cent of emissions – improve efficiency and sustainability. It can do this across many areas of society through solutions such as virtual meetings, smart buildings, e- and m-health, smart grids, e-and m-learning, smart consumption and dematerialization. Together, these solutions can help remove more than 15 per cent of the CO₂ emissions generated by non-ICT industries and the public.

Ericsson’s vision is to use telecommunications to foster a more carbon-lean society as a viable means of helping policy makers and governments reach their carbon emission targets. The opportunities for broadband to dematerialize and streamline the economy are almost unlimited.

Low-carbon economies

The ongoing urbanization and related investments being made around the world should be viewed as an opportunity for cities to turn the need to reduce CO₂ emissions into a driver for smart and carbon-lean development. Over the next 30 years more than USD200 trillion will be invested globally in physical infrastructure to provide us with basic services, such as roads, bridges and railways.

Intelligent transport systems are one way transport and ICT can combine and, when deployed and used in the right way, reduce emissions through a linked network of people, roads and vehicles that supports teleworking and dematerialization – as well as by communicating road descriptions, guides and traffic information.

Research conducted by Ericsson shows that specific telemedicine services can reduce travel for hospital consultations by up to 50 per cent. Furthermore, integrated communication solutions for future smart grids will enable utilities to better manage, and meet, energy demand from households, while smart homes will allow for monitoring and automating energy consumption, lighting and surveillance.

Such low-carbon communication solutions will make a significant contribution to a low-carbon economy in several key ways.

First, with billions of people fighting poverty and a world population that will reach nine billion in a few decades, they will help reduce greenhouse gas emissions by being extremely resource-efficient. Because low-carbon communication solutions can provide transformative reductions without unnecessary costs, they can play a key role in bringing people out of poverty by enabling access to basic services and supporting economic development.

Second, ICT can reduce the carbon footprint of cities and reduce urbanization by enabling people to stay in rural areas with gainful employment. With more people than ever living in cities, rather than rural areas, incomes and resource-intensive lifestyles are on the increase, and the increasing carbon footprint of urban dwellers is adding to the urgency of implementing low-carbon solutions. Low-carbon ICT leads to smarter ways of working, while ensuring that basic needs are met. In China, 400 million people will move to cities over the next 20 years, the infrastructure of new and growing cities will be crucial to reach a low-carbon economy.

Third, as part of achieving a low-carbon economy, we can move away from dealing with problems after they have occurred. Low-carbon communication solutions enable us to deliver transformative results by acting proactively. Not only can they help deliver energy in a smart way, optimize transportation and increase reach and efficiency in areas of health and education, they can also help us shift to a ‘circular’ economy, in which natural resources are efficiently reused.

Finally, low-carbon solutions can form part of a long-term sustainable infrastructure that contributes to direct emissions reductions and paves the way to further reductions – stimulating a virtuous cycle of ‘low-carbon feedback’ in the process. For example, with the appropriate infrastructure in place to support flexi-working and

virtual meetings, such solutions will become attractive to more people as they experience better results. This will accelerate uptake, so accelerating CO₂ reductions.

Partnering initiatives

Ericsson is working to realize its vision for climate-positive solutions by working in partnership with Non-Governmental Organizations (NGOs), universities and other companies around the world to validate a life-cycle methodology for calculating the positive carbon impacts of ICT. These initiatives focus on encouraging the efficient use of telecom solutions across industries to reduce global CO₂ emissions.

Ericsson estimates that smart use of broadband-enabled services can reduce CO₂ emissions by a factor of between 10 and 100 – that is, the use of a telecom service that emits 1kg of CO₂ may enable a reduction of 10–100 kg of CO₂ elsewhere. Fixed and mobile broadband can play a leading role in improving basic services while reducing CO₂ emissions – both by replacing physical products with services, and by helping society to use resources more efficiently – and can accelerate the shift from physical to virtual infrastructure and services.

Ericsson and its partners are working together to promote climate-smart telecom solutions, and introduce the concept of being ‘climate-positive’ to solution-driven companies in the ICT sector. This work covers three key areas: establishing a methodology for calculating CO₂ savings from emission avoidance; the integration of low-carbon telecommunication solutions in climate strategies for cities; and a support platform for partnerships that promote a low-carbon economy.

If something cannot be measured, it can neither be managed nor supported. Establishing a methodological approach will make low-carbon ICT solutions visible and enable to be better supported. It is vital that the role of a well functioning broadband infrastructure is well understood.

By engaging in dialogue with central policymakers in key markets, we can ensure that the positive potential of low-carbon ICT solutions becomes an integral part of all major climate strategies. This will include publishing supporting facts and figures to guide companies and policymakers on how to make eco-smart decisions.

Together with users of ICT, we need to identify, quantify and validate selected telecom-related solutions that support a carbon-lean economy. In this way, we can support the implementation of technology and services that can make significant reductions in CO₂ emissions and ensure that low-carbon solutions are available on the market.

The ICT industry must approach the need for CO₂ reductions as an opportunity, and see the urgent need for change as a driver for innovation and profit. This is especially important during an economic crisis when significant resources are being allocated to infrastructure investments.