

High-level OECD Conference
ICTs, THE ENVIRONMENT AND CLIMATE CHANGE
27-28 May 2009
Helsingør, Denmark

Key messages from the parallel sessions
Afternoon, 27th May and morning, 28th May

www.oecd.org/sti/ict/green-ict

These sessions were designed to analyse and discuss developments that can enhance the environmental performance of information and communications technologies (ICTs). They were divided into parallel streams focusing on ICTs and on the impacts of ICT applications across the economy, with the sessions in the afternoon of 27th May focusing on strategic issue areas and those in the morning of the 28th May focusing strategies for industry, public sector and individuals.

Session 1: Reducing environmental impacts during the ICT life cycle

Chair: Lorenz Erdmann, Project Manager, Institute for Futures Studies and Technology Assessment (Germany)

Life Cycle Assessment (LCA) is essential to develop practical applications and policy approaches to environmental challenges. The LCA-based system approach can provide realistic data on the environmental impacts of ICTs and identify problems that can be solved easily and those that are more intractable.

1. Support and strengthen LCAs on ICTs and the environment.
2. Compile a priority list of LCAs on ICTs and their environmental impacts and disseminate these to R&D and technology funding authorities and to ICT industry associations and consortia for implementation.
3. Establish a common platform and framework for LCAs on ICTs (e.g. generic inventory data and methodological issues, including third order behavioural impacts in LCAs, or screening environmental impacts of entire ICT product and service classes) .
4. Foster life cycle thinking not only on the environmental dimension of ICTs, but also on the social dimension (e.g. working conditions) and economic dimension (e.g. life cycle costing).

Session 2: Clean technologies for greener urban growth

Chair: Katherine Richardson, Chair, Danish Commission on Climate Change Policy; Vice Dean, Faculty of Science, University of Copenhagen

It has argued that the battle against global warming will be won or lost in cities – both because of the huge emissions of anthropogenic CO₂ coming from cities and the vulnerability of many cities to climate change. Projects have now been carried out or are underway that demonstrate the considerable potential of ICTs to reduce CO₂ emissions in urban environments.

1. The greatest potential of ICTs for emissions reduction is probably through driving behaviour changes by enabling information dissemination between various stakeholders.
2. There is a need for including workable digital strategies in sustainability action plans as well as a need to plan ICT infrastructure for cities (“ERP of cities”)
3. A software revolution is underway that can be compared to the Internet revolution. But here it is an “Internet of things” where objects and services are linked and communicate with each other, and where energy use becomes exchangeable information. This allows greater efficiency, not only for energy use, but also in other social variables linked to sustainable growth.
4. Pilot city projects are important for user behaviour change as they provide an experimental field for research and development.
5. Technology is not the missing ingredient in applying ICT to the sustainable growth of cities. There is a need for leadership and there are barriers in current infrastructures to the rapid implementation of much of the available technology. For example, the development of an “Internet of things” requires the linking of data from different sources. Who owns these data and what is the business model that encourages individual data owners to make data widely available? In the long run, consumer pressure for sustainable practices may provide the model. However, on the shorter term, there may be need for the development of regulation to facilitate this data exchange. Thus, there may be a role for governments to “kick-start” the software revolution necessary to realise the potential of ICT to reduce CO₂ emissions from cities.

Session 3: ICTs in pollution reduction and resource management

Chair: Daniela G. Battisti, Italian Agency for Inward Investments and Business Development; Chair, OECD Working Party on the Information Economy

ICTs can improve environmental performance in many areas beyond global warming. This includes developing systemic views of complex issues such as deforestation, biodiversity protection and water management.

1. It is important to have consistent cross nation-level expectations about what ICTs can do to reduce pollution – in terms of both tools and targets.
2. ICT applications can help bridge the gap between climate and ecological scientists, e.g. through common modeling and databases. They can also improve co-ordination of research and policy agendas between environmental and energy-saving experts or between public and private sector actors.
3. Environmental protection and use of ICTs requires a systems approach, taking into account that each eco-system consists of interconnected drivers and levers.
4. ICTs, and software in particular, are key to unlock complexity, to produce and treat real-time data, to improve remote sensing and monitoring and to implement simulations.

5. More transparency is needed to be able to compare pollution intensities of firms and products and related resource management. Metrics and labels are required that enable comparisons and empower consumers in making "green decisions".
6. Policy coordination and coherence across different government entities and at the international level is still imperfect. The role of ICTs and technology is not well appreciated in government policy dealing with energy, environment and climate change.

Session 4: Innovation and behavioural change

Chair: Per Morten Hoff, Secretary-General, ICT Norway

Widespread behavioural change is the key to tackling environmental challenges and building sustainable economies. ICTs can be a driving force of such system-wide change.

1. Transparency and measurement of the ICT impact on environment are important conditions for achieving and managing systemic change. This includes immediate benefits from ICT applications and long-term socio-economic structural changes.
2. Policy environments should be designed to enable systematic change.
3. Both individuals and institutions/organisations need to change behaviours.
4. Simplicity facilitates choice and in consequence enables change (both individual and institutional).
5. Good practices and cooperation schemes involving a variety of stakeholders must be established and promoted (across sectors; involving government, business, and civil society).

Session 5: The ICT sector in focus

Chair: Takayuki Sumita, Director Information and Communication Electronics, Ministry of Economy, Trade and Industry (Japan)

The ICT industry can improve environmental performance of its products and processes through more efficient strategies for measurement, comparison and implementation. This can allow the sector to display leadership in the battle against climate change.

1. Measurement is the first step for improvement: a lot of activities are underway to establish standards and criteria in terms of measuring the impact of ICTs.
2. A life-cycle approach is essential in measuring the impact even if complete life cycle assessments are not easily undertaken.
3. Comparing concrete figures makes the impact of ICTs more visible. Major changes in the behaviour of users, consumers, industry can be achieved by comparing environmental impacts of traditional ways of doing things with new ways (applying ICTs).
4. There is room for policy-makers to devise an innovative policy mix to set up a regulatory framework. It should consist of punishing polluters, incentivising best practice, while using market power to finally raise the bar or create standards in the open marketplace.

Session 6: Fostering sustainable consumption and use

Chair: Ed Mayo, Chief Executive, Consumer Focus (United Kingdom)

ICTs and the Internet are a key component of strategies to minimise consumer environmental footprints. Consumption and use of ICT products themselves can be improved to lower environmental impacts.

1. The market for sustainable consumption is not yet mature, although there are numerous activities and much innovation.
2. To scale-up, there are benefits in developing a stable, forward-looking policy environment and related product roadmaps; one example is promoting the re-use of computers instead of just recycling.
3. There are standards that look to communicate with consumers, but there needs to be easier ways to simplify these in ways that connect with the busy lives and complex choices of consumers.
4. The ICT sector is a fast growing contributor to the climate impact of consumption. The greatest potential contribution to a low-carbon economy may be the use of information technology to support low-carbon consumption systems, in sectors such as transport and energy use.
5. There is an opportunity to build a web-based framework to transform the sustainability of people's homes, recognising that there are common services and existing standards in the home that can be built around high speed communication networks.

Session 7: Cleaner technologies and smarter ICT applications

Chair: John Higgins, Director-General, Intellect (United Kingdom)

Smart ICT applications have major potential for improving environmental performance in areas such as energy generation and management, smart grids, and smart buildings. Development and implementation of these applications has important implications for skills and employment.

1. We talk about ICT sector causing 2% of the carbon footprint. But this is a global share and can be misleading. In particular in the developed world this figure could be higher. More granularity of this figure is needed along with analysis before the figure is repeated too often.
2. Green ICTs are a tremendous business opportunity.
3. IP networks and broadband are now the fourth utility and should underpin every smart city.
4. Benefits of smart grids and meters will be hard enough to achieve in the developed world. An alignment of all stakeholders is needed, as well as proper accounting of costs and benefits and (open) standards. This needs shepherding and a wake-up call from governments or some unifying actor. The stimulus money allocated to smart grids and green ICTs is minuscule compared to the required investment. Money is spread too thinly.
5. In developing countries the deployment of smart grids might be even harder – and in some cases impossible. There is some potential for leapfrogging but also different drivers and challenges which have to be considered.
6. We need to think holistically to capture the carbon implications of our actions, including social and employment implications. Training and the development of green IT skills and employment are key factors for green growth.

Session 8: Governments paving the way

Chair: Richard Beard, Coordinator International Communications and Information Policy, United States Department of State

The public sector plays a key role in supporting basic research, infrastructure development and using innovative approaches to lower the environmental footprint of its own ICT applications. A number of governments have launched initiatives and demonstration projects. A smaller number also focus on creating incentives for development and widespread use of "Green ICT" applications.

1. Government should take advantage of the current crisis to combat climate change as some have done in their stimulus packages.
2. Government should lead by example by greening their ICTs and other obvious targets such as public buildings and any savings should be reinvested. Training government agents to increase their awareness is needed.
3. Government should promote R&D and in particular flagship projects targeting "low hanging" fruit such as buildings and transports.
4. A multi-stakeholder approach including all relevant government bodies, as well as ICT and non-ICT companies and research institutes is needed.
5. There is a need to promote global standardization.
6. Government should know how to measure the inputs and outputs of their policies and programmes, because what cannot be measured cannot be improved. Measurement is also needed to know who is responsible and who is accountable for what.