OECD Working Party on the Information Economy

Towards Green ICT strategies:
Assessing Policies and Programmes on ICTs and the Environment

Governments and businesses have a wide range of initiatives dealing with the impacts of information and communication technologies (ICTs) on the environment and climate change.

Initiatives concentrate on greening ICTs rather than tackling global warming and environmental degradation through the use of ICT applications

Reducing the *direct* environmental impacts of ICTs is the most frequent objective of governments and businesses. Of 92 initiatives surveyed by the OECD, over two thirds focus on greening ICTs. Standards and labels such as U.S. Environmental Protection Agency's *ENERGY STAR* or the *Electronic Product Environment Assessment Tool* are examples. Encouraging R&D on resource efficient ICTs also ranks high (e.g. Japan's *Green IT Project* and the *Climate Savers Computing Initiatives*). In many cases, governments are taking the lead by greening their ICTs and implementing green procurement strategies (e.g. Denmark's *Action Plan for Green IT* and the United Kingdom's *Green ICT Strategy*).

Number of initiatives focusing on direct effects *(left)* and enabling effects *(right)* of ICTs by life cycle phase and environmental impact category
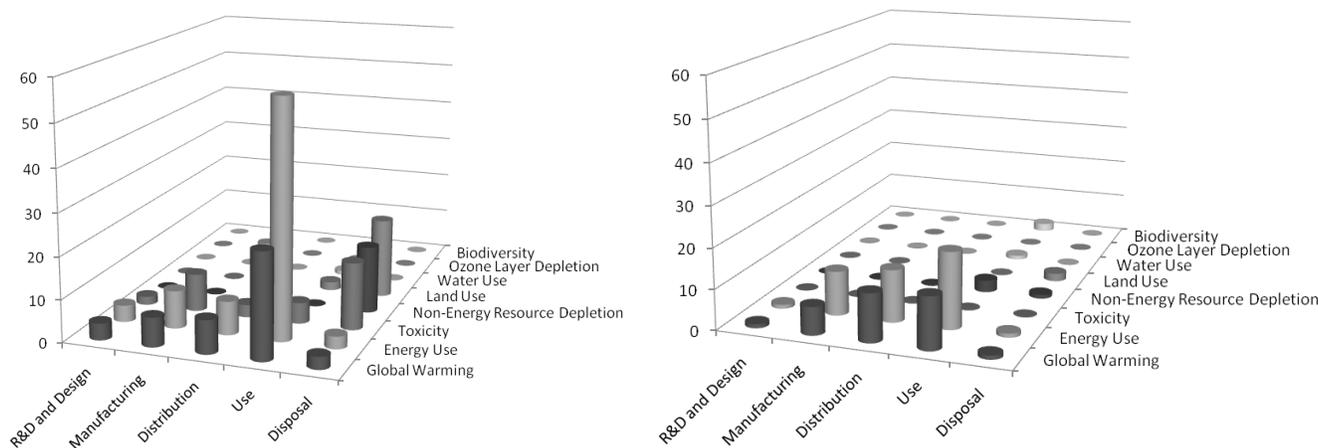
Less common is tackling global warming and environmental degradation by using ICT applications as *enablers* of change. Only one tenth of initiatives focus solely on using ICTs as an enabler, although almost one third of initiatives look at both greening ICT infrastructures as well as deploying ICT applications as enablers. Environmental information systems, smart transport and smart buildings are among the most frequently supported ICT-related applications. Very few business associations have strategies to apply ICTs outside of the ICT sector, although there are notable examples such as the *Global e-Sustainability Initiative* (GeSI) or *The Digital Energy Solutions Campaign*.

Policies to address environmental impacts over the complete ICT life-cycle need developing

Most policies aim at reducing environmental impacts during use, for example by reducing energy consumption. Very few target reducing environmental impacts over the complete life-cycle, even though manufacturing, distribution and disposal can have higher environmental impacts. One half of initiatives focus on reducing energy consumption during ICT use, in contrast to only one tenth targeting energy reduction during ICT manufacturing.

Initiatives targeting energy consumption may need strengthening if the global recession and low energy prices make investments in low-energy green technologies uneconomic

Most initiatives aim at reducing energy consumption and increasing energy efficiency of ICTs or by using ICT applications. The aim of reducing energy consumption has been driven by high energy prices as well as environmental considerations. However, energy prices have fallen sharply (in May 2009, oil prices were less than 40% of July 2008 prices), and capital and credit have tightened to choking point. Furthermore, venture capital investments in clean technologies in the United States were down by 87% in the first quarter of 2009 compared with the same quarter in 2008.

Empowering consumers

Consumers are a powerful ally in the fight against climate change. They can contribute to the reduction of carbon emissions by using energy more efficiently or moving to climate-safe ICT technologies. For this to happen, however, they need to be sensitised to the impact of their consumption patterns on the environment and have access to affordable clean technologies. But less than one-third of government initiatives directly aim at consumers and consumer education, and only one business initiative directly focuses on consumers (the *Consumer Electronics Association*). Nevertheless, almost one-third of government and business initiatives involve standards and eco-labels which will, if better co-ordinated, help inform consumer purchases and use.

Investments to support development and use of clean technologies are an important part of government economic stimulus packages

Many government economic stimulus packages are promoting green technologies and green growth to boost investment and support the recovery. "Smart" urban systems, transport systems and electricity grids all rely on ICTs. Korea has focused its KRW 50 trillion (EUR 26 billion) stimulus package almost entirely on development and use of green technologies, many with an ICT component, for example using ICTs in green transportation systems. The US *American Recovery and Reinvestment Act of 2009* provides USD 59 billion (EUR 45 billion) for green technologies, including USD 11 billion (EUR 8 billion) for a smart electricity grid. This new interest partly makes up for the previously low frequency of policies to support green ICT applications.

Better measurement of inputs and outputs will increase credibility and success of initiatives

Only about one-fifth of initiatives have measurable targets, with government programmes including them more frequently than business associations. Even fewer governments and business associations focus on measuring the quality and impact of their policies and programmes. The *Green ICT scorecard* used by the United Kingdom and GeSI's *GRI Telecom Supplement* are rare but promising examples.

This is a summary of the OECD report "Towards Green ICT Strategies. Assessing Policies and Programmes on ICT and the Environment", DSTI/ICCP/IE(2008)3/FINAL, May 2009. The analysis covers information on government policy and industry initiatives collected through 30 April 2009.