ERICSSON

Date
2011-03-07

Reference
EIL/B-11:0141

Your Date
3 Feb 2011

Your Reference

Attending to this matter

Rajesh Kumar

Mr. Lav Gupta
Principal Advisor (TD)
Telecom Regulatory Authority of India
New Delhi 110 002

Response to TRAI Consultation Paper on Green Telecommunications dated 3rd Feb 2011

Reference: Response to TRAI Consultation Paper on GREEN TELECOMMUNICATIONS dated 3rd Feb 2011

Dear Sir,

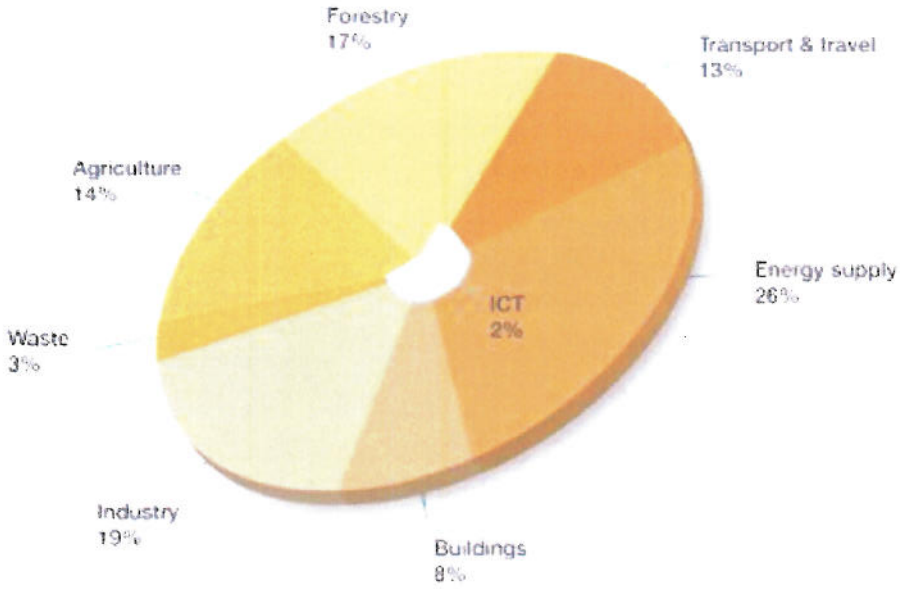
We would like to thank you for giving us this opportunity to provide inputs to the Consultation Paper on Green Telecommunications.

We see ICT as fundamental to industries and other areas of society, increasing efficiency and reducing carbon emissions. It is essential that we get ICT and telecom onto the global climate agenda, and promote broadband as a vital part of a more sustainable society.

The ICT sector can contribute to emissions reductions in many areas of society through their services. This contribution includes solutions such as virtual meetings, smart buildings, m-health, smart grids and dematerialization services. Combined, these solutions can help to reduce a significant part of the remaining 98% of global CO2 emissions that come from other sectors/areas. Thus, activities that are directly linked to emitting CO2 can contribute to an overall "greening with ICT" and have a net positive CO2 impact. An accelerated uptake of these kinds of services is needed and can be supported by a shift from a "product to service" perspective.

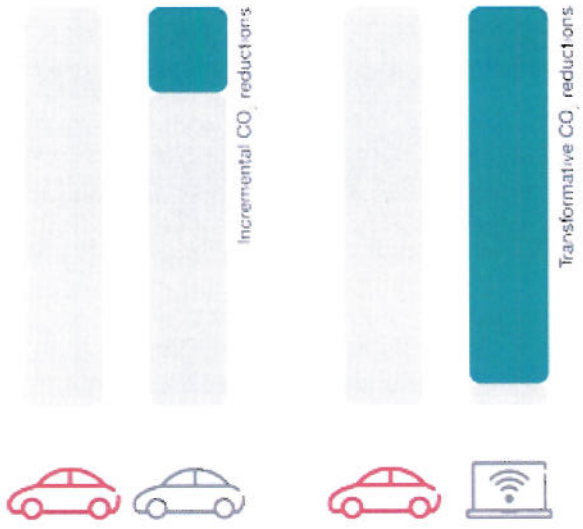
Fixed and mobile broadband solutions are already improving many of the necessities of life, such as transportation, energy supply, and the way we build and live in our homes and cities. They are allowing us to shift from dependency on a high-carbon 20th century physical infrastructure to a low-carbon 21st century information based infrastructure. By 2020, we see some 50 billion connected devices. This will revolutionize the way we live and work – and broadband will be the foundation upon which the new services will be based.

To understand the impact of this transformation on sustainability, we talk about the "2 and the 98 percent".



The ICT industry is estimated to be responsible for about 2 percent of global CO_2 emissions today, and it is vital to decrease this footprint. The remaining 98 percent comes from other industries, such as energy production and supply, transport, or construction. The ways ICT can reduce CO_2 emissions can be surprising, and the results dramatic. Smart, low-carbon communications can provide both transformative and incremental solutions.

Transformative and incremental change Travel substitution – transporting information instead of products and people – and what is known as "dematerialization" – reducing the physical resources needed to provide a product or service – are the two main transformative effects of ICT.



A **five-step-plan** is proposed below following global climate negotiations in Copenhagen, to help policy makers to direct attention to ICT and telecom sectors that provide low carbon solutions and can create transformative reductions with low carbon feedback.

1. **Make ICT a central part of national and city strategies and targets for reducing CO2 emissions**

Identify a number of areas where low carbon ICT will be supported, and where dynamic, reinforcing effects from the use of the same underlying infrastructure can be realized.

- Targets for emission reductions should include medium-term targets in order to encourage transformative solutions and provide a clear direction for investments. Targets should be based on actual emission reductions (not from moving emitting companies elsewhere), and also consider embedded and export emissions.

- In order to move beyond incremental CO2 improvements to transformative savings, the positive potential of ICT services should be acknowledged in all key policy documents, e.g. transport policies should include the use of Intelligent Transport Systems and telework, not just focus on improved transport. Energy policies should include smart grids, not only focus on energy supply.

- Encourage universal access to ICT for all citizens. Mobile broadband can enable a multitude of low carbon services, including an inclusive and collaborative approach to travel substitution that allow for connectivity of rural areas. Support for solutions that enable synergies between rural and urban development are crucial.

2. **Shift focus from a 20th century physical infrastructure to a 21st century low carbon information infrastructure**

A 21st century infrastructure will require a well-functioning broadband network in order to enable services such as telework, virtual meetings, smart buildings, intelligent transport and dematerialization of products.

- ICT/telecom investments should be an integrated part of all major infrastructural investment plans. Governments should stimulate the uptake of broadband services that enable dematerialization, i.e. when goods can be provided in a digital form instead of a physical form.

- The possibility for new wireless solutions that do not depend on parallel infrastructure should always be explored, e.g. a new tower infrastructure for road safety and security might be unnecessary if wireless 3G networks could be used for the same purpose.

- The introduction of broadband enabled services should be incorporated in city planning, including control instruments to prevent low carbon solutions e.g., smart housing projects, from being penalized through higher taxes and complex administrative procedures.

3. **Encourage cross-sectoral partnerships with a focus on developing new and innovative Services**

Partnerships between industry sectors and other stakeholders to promote a green digital agenda should be promoted.

- Encourage solutions that provide CO 2 reductions of 90% or more in order to highlight transformative solutions. Focus on technology deployment that will deliver

widespread economies of scale and promote collaboration between nations. Developing countries should consider leap-frog possibilities from ICT.

- Support a common approach to measure the positive impact that transformative solution providers like ICT companies, can have. The actual development of the approach should take place in international bodies. Interoperability and standardization issues should also be considered between sectors as well as the opportunity for machine-to-machine (M2M) technology to deliver low carbon solutions.
- Motivate companies through public procurement processes. Ask companies how they can help reduce emissions in society through the solutions they provide, in addition to reducing emissions from their products and operations.

4. Lead by example and create a level playing field

Policy makers should provide positive examples of low carbon ICT use and ensure a level playing field where decisions in one policy area do not negatively impact emission reduction opportunities in other areas.

- Incentives to reduce CO2 emissions should be based on an understanding of how different policies can affect the scope for providing low carbon services. For example, when the goal is to reduce emissions from commuting all measures, from tax rebates for biofuel for cars to investment in broadband that enables telework, should be assessed together.

- Luxury taxes on ICT that slow uptake of sustainable solutions should be avoided. For many years, a digital divide was created because the poor could not afford access to mobile phones. The same mistake should not be made with smart work and other low carbon solutions that also increase productivity and drive innovation.

- Public procurement should focus on shifting from products to services. For instance, a meeting service could be purchased instead of travel services.

5. Open innovation for low carbon solutions

The development of low carbon solutions should be promoted through innovative research and development activities.

- Increase financial support and incentives for research and development between different types of stakeholders that traditionally may not work together, such as ICT companies, health providers and city-planners to deliver low carbon solutions for society.

- Support innovative systems that result in more energy efficient goods. Such support could include the opportunity to purchase low carbon services such as e-reading subscriptions, video on demand, m-health and m-banking.

- Demonstration projects where low carbon solutions are implemented are needed. Stimulate innovative initiatives that encourage uptake of ICT services that enable transformative solutions such as smart buildings, m-health and smart grids. Deployment projects could include initiatives to develop interactive smart meters that could enable buildings becoming net producers of renewable energy.

We suggest that the Government should consider primarily ongoing standardization work with methodology for CO2e assessment, primarily in ITU-T SG5 Q18 (lifecycle impact of goods, networks, services and organizations in focus) and ETSI EE (life cycle impact of goods, networks and services in focus), as well as already available standards from ISO 14000-series.

Government should also have metrics and measurement methods for certifying a product or network as green. ITU-T SG5, ATIS and ETSI are working on metrics that can incrementally assess the effect of dynamic factors affecting energy efficiency. Standardized metrics for measurement and certification of products and services will be of immense value in India.

Additionally, it could also be of interest to consider and support initiatives such as GHG protocol, GeSI, NIST, and EARTH for more detailed guiding.

Indian government should consider incentivizing research in this subject of Green Telecom/Green Energy in the similar lines as adopted by European "EARTH" project, which is largely government funded and is studying trends in energy usage. One of their finding is the relationship between the data growth and CO2 emissions.

EARTH is a highly ambitious and unique project applying an integrated approach to investigate the energy efficiency of mobile communication systems. It is committed to the development of a new generation of energy efficient equipment, components, deployment strategies and energy aware network management solutions.

EARTH has 15 Partners from 10 European countries: Alcatel-Lucent (DE), Ericsson (SE), NXP (FR), DOCOMO (DE), Telecom Italia (IT), Ericsson (HU), CEA-LETI (FR), University of Surrey (UK), Technische Universität Dresden (DE), IMEC (BE), Instituto Superio Tecnico (PT), University of Oulu (FI), BME (HU), TTI Norte (ES), ETSI (FR).

Their main objective at present is Telecommunication networks and in particular mobile networks that are increasingly contributing to global energy consumption. The EARTH project tackles the important issue of energy saving by enhancing the energy efficiency of mobile broadband systems thereby reducing CO2 emissions and cost of operation. It is a highly ambitious and unique project, applying an integrated approach to investigate the energy efficiency of mobile systems. EARTH has mobilized a European consortium with serious efforts committed to the development of a new generation of energy efficient equipment, components, deployment strategies and energy aware network management solutions.

The project is industry driven with strong contribution by academia. The partners representing industries, operators, research institutions and universities bring in the full diversity of knowledge and complement each other in a way only a European large scale integrating project can. EARTH will investigate the energy efficiency limit that is theoretically and practically achievable whilst providing high capacity and uncompromised QoS. The target of EARTH is to enhance the energy consumption of mobile systems by a factor of at least 50%.

The substantial reduction of network energy consumption will yield large cost savings for mobile operators. Thereby the economical barrier to offer mobile broadband coverage will be substantially reduced.

Hence, EARTH will facilitate high speed mobile services to all European citizens including countryside areas which are not reached yet by mobile broadband services. This strengthens European industry and fulfils the growing demands of end-users.

When it comes to off-grid areas, there are also new developments in the area of Community Power that could be very beneficial in India--**using excess power from the BTS sites to electrify the villages.** Also that GSMA has a green power for mobile program with Community Power being one of its main initiatives which could be explored for roll-out in rural areas, serving the target of inclusive growth as well as helping in reducing CO2 emission.

Best Regards,

(P. Balaji)
Vice President - Communication, Corporate Affairs and Business Development
Ericsson India Private Limited