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ESCAP Technical Paper

Green ICT:

A “Cool” Factor in the Wake of Multiple Meltdowns

Turning threats into opportunities:

Promoting green ICT for socio-economic should be the least effecteded and could continue to get worse development in Asia and the Pacific

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Information and Communications Technology and
Disaster Risk Reduction Division

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Abstract

EXECUTIVE SUMMARY

In recent years, Asia and the Pacific has been rocked by a series of crises, ranging from sudden increases in food and fuel prices to the deep Economic Crisis in the context of growing threats of climate change. ESCAP member countries have been grappling with urgent measures, responses and actions to deal with all of them at the same time, while addressing other socio-economic development issues and poverty reduction. In order to address the current global Economic Crisis, a number of countries pledged stimulus packages and increased government spending to sustain economies. Some countries went a step further to announce what is labeled as a "Green Stimulus Package" to ensure that environmental aspects are taken into account in dispensing the packages.

This report is prepared to bring to the attention of decision and policy makers that ICT, in particular green ICT, has an important role to play in stimulating economic activities, advancing social development goals and promoting sustainable development. In this report, “Green and cool ICT” is defined as ICT which, as a result of usage, produce comparatively low levels of carbon emissions while having the potential to exponentially reduce emissions in other areas by catalyzing technological, institutional and behavioral change, while bringing forth socio-economic benefits.

Using the green growth premise of inter-linked social, economic, and environmental systems, this paper evaluates and analyses how “green and cool ICT” initiatives and applications, such as mobile communications, videoconferencing, e-government and dematerialization of content, can play a major role in reducing CO2 emissions, and ensuring sustainable development and green growth in order to meet development goals and improve quality of life in Asia and the Pacific. This report also takes into account requirements for socio-economic development among the Least Developed Countries (LDC), Landlocked Developing Countries (LLDC) and Small Island Developing Countries (SIDS) in the region.

Against this background, this report reviewed some of the findings from existing research on green and cool ICT, such as below, to base the discussion of this report on:

- Approximately 7.8 $GtCO_2e$ (Gigatonnes of CO_2 equivalent) emissions can be reduced by 2020 through proper ICT deployment; this is estimated to be 15% of emissions in 2020 based on BAU (business as usual) estimates which would amount to approximately $946.5 billion in cost savings.
- Using technology to dematerialize the way people work in public and private sectors has the potential to reduce 500 MtCO2e in 2020 which is equal to the total ICT carbon footprint in 2002.

At the same time, the report argues, among others, that

- Many countries in the region may not have taken into consideration environmental impacts – both positive and negative – in designing, implementing and evaluating ICT policies and initiatives in the region.

- Overall benefits of green and cool ICT would be realized with a critical mass of users, economies of scale for producers and service providers, and enabling policy environments.
- The potential cost savings of green and cool ICT applications, such as videoconferencing resulting from local and trans-border travel reductions, cannot be realized without having adequate infrastructure to make a conversation effective enough to make it a viable substitute.
- Taking into consideration the current ICT development and affordability, accessibility and relevance to LDCs, LLDCs and SIDS, the report reviewed mobile communication, e-government and video-conferencing as green and cool ICT which could bring environmental, social and economic gains.

The report then concludes with the following recommendations to accelerate the introduction of green and cool ICT to the mainstream of ICT for development in particular and overall development discourse in general. Conventionally, ICT initiatives have been designed to address socio-economic challenges of our member countries, ranging from providing better public services to under-serviced rural population to creating better business and employment opportunities through e-business and e-commerce. This report recommends that policy and decision makers should also include environmental concerns in designing, implementing and evaluating ICT initiatives, and those initiatives which address all socio-economic-environmental factors should be given a priority, to be included in green stimulus packages and government spending in the coming months and years.

1) Create an enabling ICT policy framework

It was concluded that government has a significant role to play in promoting green and cool ICT, including the following:

- Reflect environmental concerns, such as less use of materials and energy, in the ICT policy, strategy and initiatives
- Assess ICT infrastructure, products and services against socio-economic-environmental criteria when purchasing
- Prioritize mobile communication and applications and videoconferencing as green and cool ICT, wherever possible in government spending and ODA-funded projects
- Establish a Centre of Excellence
- Promote evaluation of ICT policies, strategies and initiatives against environmental concerns, including GHG emissions reduction
- Encourage investments in green and cool ICT infrastructure
- Support pilot projects

2) Support the business case when markets do not produce the desired outcome

Since green and cool ICT is a new concept, the private sector companies might not be aware of a need for taking into consideration environmental concerns. Thus, creating

incentives for the private sector to invest in green and cool ICT might accelerate the development of a market.

- Encourage more research and studies on other green and cool ICT at the national level
- Raise awareness on market potentials for green and cool ICT among the private sector companies
- Create right financial incentives to encourage the development of private sector specialized in green and cool IT products and services
- Encourage green and cool ICT procurement by the public and private sectors

3) Encourage positive behavioral change among end users

This report also highlighted that existing ICT initiatives and equipment could go a long way in reducing energy and material consumption if certain behavioral changes are introduced and conformed to by end users. On the other hand, introducing and expanding green and cool ICT applications, such as e-government, only to print out more forms and documents, would not bring the maximum benefits.

- Government agencies lead by example by setting a target in reducing use of materials and establishing necessary procedures, such as introducing travel substitution and more videoconferencing
- Government, academia and mass media facilitate and coordinate the sharing of information, good practices and lessons learned in ensuring awareness raising on green and cool ICT.

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ABBREVIATIONS

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
BAU	Business as Usual
CAGR	Compound Annual Growth Rate
CO2	Carbon dioxide
CIF	Climate Investment Funds
COAG	Council of Australian Governments
CTF	Clean Technology Fund
ESCAP	Economic and Social Commission for Asia and the Pacific
FEMA	Federal Emergency Management Agency
GDP	Gross Domestic Product
GHG	Green House Gas
GtCO2e	Gigatonnes of CO2 Equivalent
ICT	Information and Communication Technology
IP	Internet Protocol
IPCC	Intergovernmental Panel on Climate Change
ISDN	Integrated Services Digital Network
IT	Information Technology
ITU	International Telecommunication Union
Kbps	Kilobit Per Second
Kg	Kilogram
LAN	Local Area Networks
LCD	Liquid Crystal Display