United Nations Framework Convention on Climate Change

# Information and communication technology in the context of technology development and transfer to address climate change

**Side Event: The Effective Use of Information and Communication Technologies (ICTs) and the Intellectual Property (IP) System for Mitigating Climate Change**

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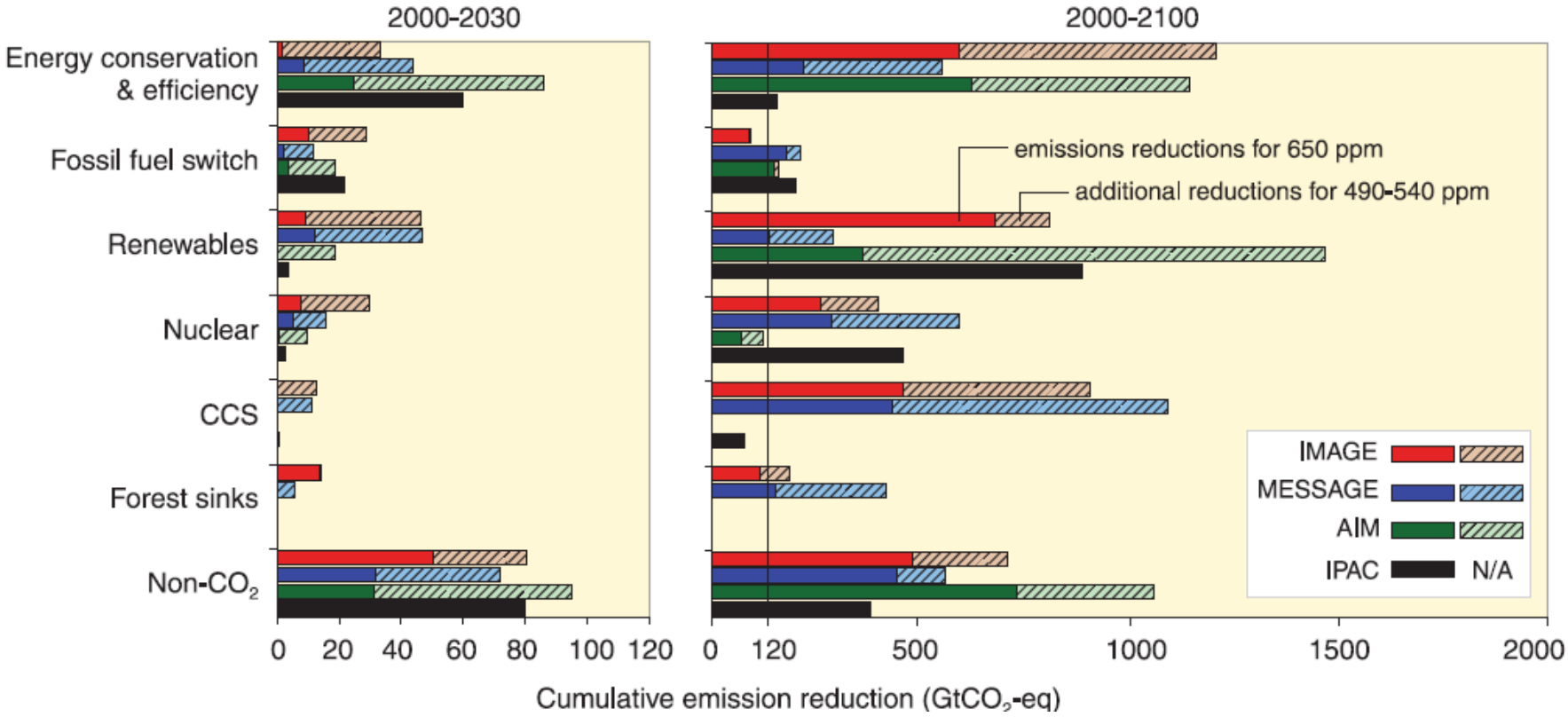
# Technology is central to address climate change

- To stabilize the GHG concentration at lower level, GHG emission should peak in the next two decades and further reduced thereafter.
- To achieve so, a portfolio of technologies that are currently available or expected to be commercialized in coming decades should be deployed worldwide
- Even though, the climate change will stay and therefore adaptation should enhanced which could significant reduce the risk of climate change

# A portfolio of technologies is needed




- There is high agreement and much evidence that all stabilisation levels assessed can be achieved by deployment of a portfolio of technologies that are either currently available or expected to be commercialised in coming decades, ... {IPCC WGIII SPM}

# Technologies of adaptation are of same importance

- **Traditional technologies** consist of the many approaches that have been developed and applied to adapt to weather hazards in traditional societies.
- **Modern technologies** are those that have been newly created since the industrial revolution including many new, synthetic materials, new chemicals, new varieties of crops (e.g. hybrid corn) and new water use technology (e.g. drip irrigation).
- **High technologies** are some of the more recently developed technologies that derive from scientific advances in recent decades including information and communication technology, earth observation systems and geographic information systems (GIS), genetically modified organisms, and the like.
- **Future technologies** are those that are yet to be invented or developed. They might include a malaria vaccine, or various forms of geo-engineering to reduce climate impacts, or crops that need little or no water.

# Technology features strongly under the UNFCCC process

- Article 4.1(c)
  a) All Parties, …, shall: "Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, …"
- Article 4.5
  a) "The developed countries and other developed countries in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of or access to environmentally sound technologies and know how to other Parties, particularly developing country Parties,"…
- Article 4.7
  a) "The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments related to financial resources and transfer of technology…"

# Moving from negotiation to implementation

- A technology transfer framework was adopted in COP7 (2001) and expert group on technology transfer (EGTT) was constituted
- 92 non-Annex I Parties were funded by the GEF to conduct their national technology needs assessment
- A web-based technology information system (TT:CLEAR) was set up to facilitate information sharing
- Various activities were conducted including training on innovative financing to technology transfer project
- Poznan strategic programme was set up under the GEF to further strengthen implantation of DTT

# Enormous gaps still exist

- Decrease of RD budget over the last decade
- Significant scaling up and shift investment flow on ESTs are required
  a) A increase of USD 260-670 billion is needed annually by 2030
- Big potentials in developing countries which are lack of access to ESTs
  a) I&F flow (UNFCCC, 2007) concludes the investment flow needed by developing countries which accounts for 46% of the total could achieve 68% of global emission reductions
  b) Current financing support on technology transfer to developing countries is less than 2 billion per year.

# Technology needs a more revolutionary push

- All stages of technology development
  a) R&D, demonstration, deployment, diffusion and transfer
  b) Both financing and policy incentives
- Mobilizing finance
  a) Increase public fund
  b) Mobilize investment of private sector
  c) Innovative market mechanism
- Enhance technology transfer to developing countries
  a) Implementation oriented mechanism

# Technology Mechanism under elaboration

- Technology Mechanism consisting of:
  a) A Technology Executive Committee
  b) A Climate Technology Centre and Network
- Technology mechanism is highly expected to be formally established in Cancun
- Several issues still need more clarity in Tianjin and Cancun
  a) Interaction among Technology Mechanism and the new Fund as well as the overall managing body of the financial mechanism
  b) Relationship between the Technology Executive Committee and Climate Technology Center and Network
  c) Reporting and Accountability of the Technology Executive Committee and Climate Technology Center and Network
  d) Intellectual property rights

# Role of information and communication technology in addressing climate change - 1

- Advanced ICT could help to improve planning and dispatching therefore greatly improve the energy efficiency
  a) Intelligent Traffic Systems
  b) Process control and optimization system
  c) …
- Advanced ICT could help to change the modality of transportation therefore reduce the emissions
- Advanced ICT could help to adapt the climate change particular the extreme event
  a) Early warning system

# Role of information and communication technology in addressing climate change - 2

- Advanced ICT could help to disseminate the information of environmentally sound technologies to developing countries to address climate change
  a) Lack of technology information is one of barriers to access of ESTs by developing countries
  b) Technology information is one of the five themes of the technology transfer framework established by decision 4/CP.7
  c) A technology transfer clearing house has been developed and run by the UNFCCC secretariat
  d) The secretariat is seeking broad collaboration in this regard to strengthen the access of technology information by developing countries

# Role of information and communication technology in addressing climate change - 3

- Experiences on the development and transfer of ICT in the recent 20 years could be drawn upon to promote the ESTs
  a) What are the good practices on policy level in promote the development and transfer of ICT?
  b) What are the good practices on technical level in promote the development and transfer of ICT?
  c) To what extent that they could be taken advantage by climate change communities