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Potential of the UNFCCC's Technology Mechanism to foster RD&D towards realizing low carbon development

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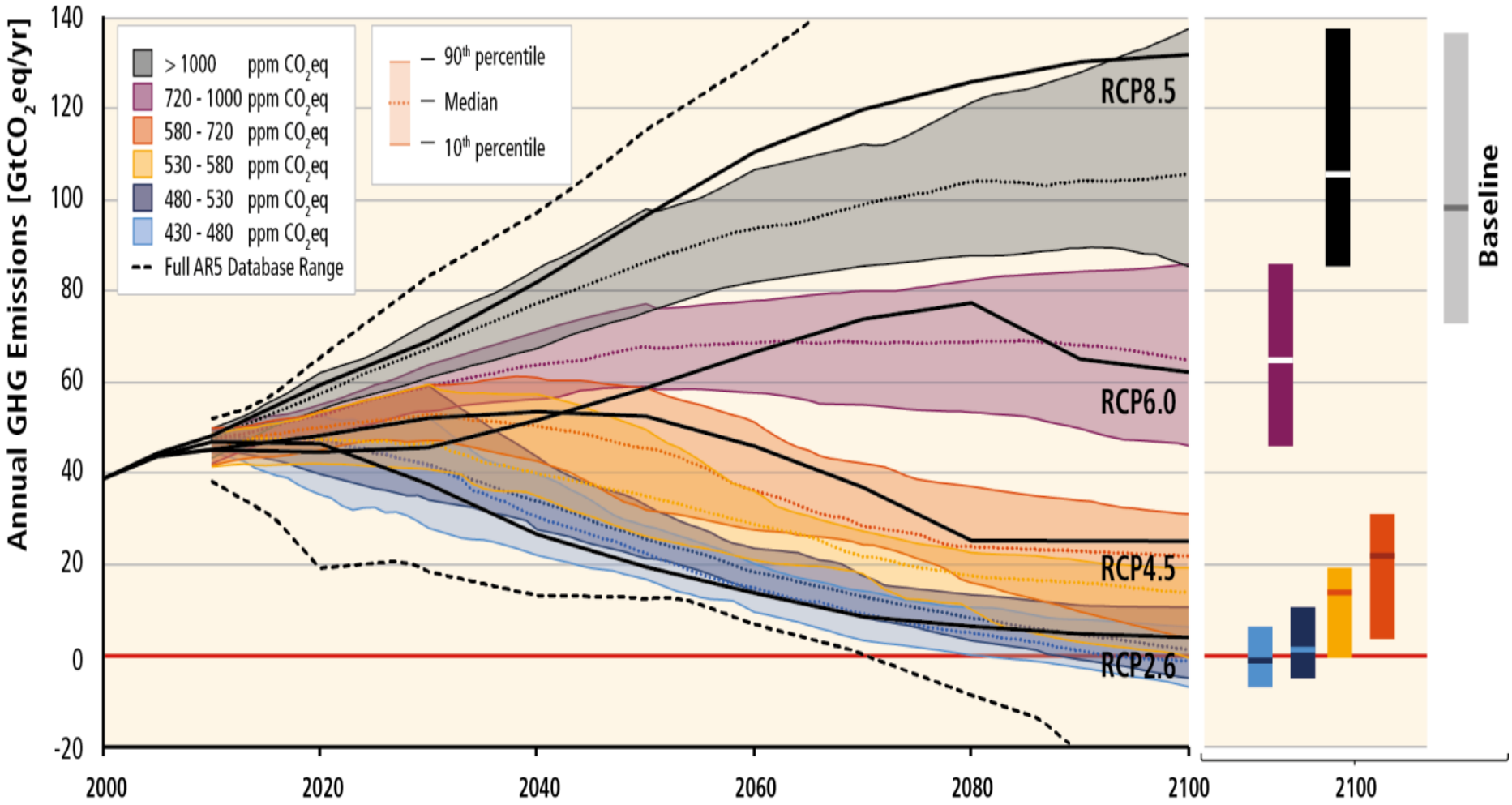
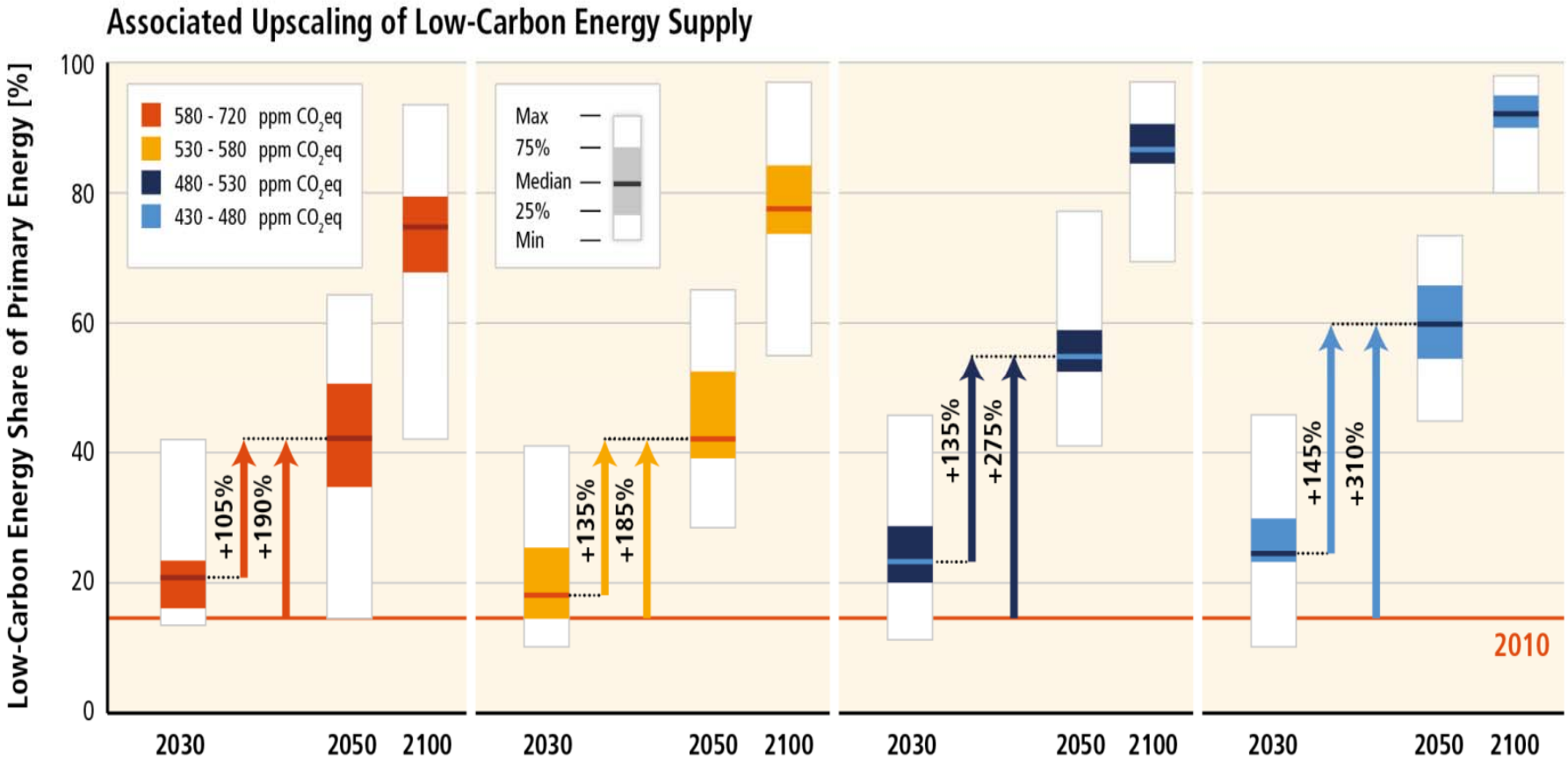
GHG Emission Pathways 2000-2100



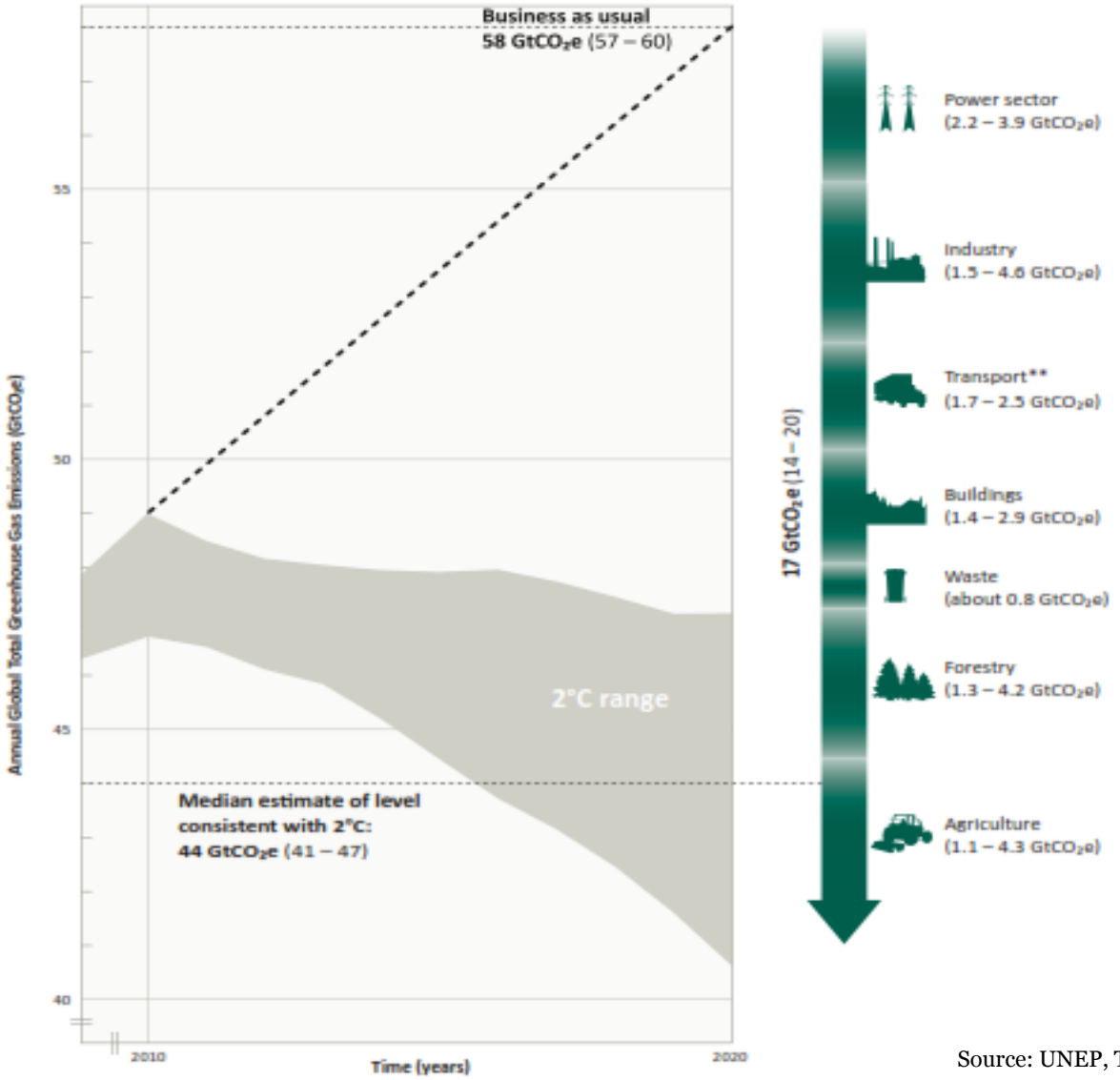
Mitigation requires major technological, institutional and behavioral changes



Technological transformation required in the energy sector – IPCC WGIII

- From a technological perspective, at the global level, scenarios reaching 450 ppm CO_2eq are characterized by:
  - more rapid improvements of energy efficiency,
  - a tripling to nearly a quadrupling, by the year 2050, of the share of zero- and low-carbon energy supply, including:
    - renewables,
    - nuclear energy
    - fossil energy with carbon dioxide capture and storage (CCS),
    - bioenergy with CCS (BECCS)

The technological solution space

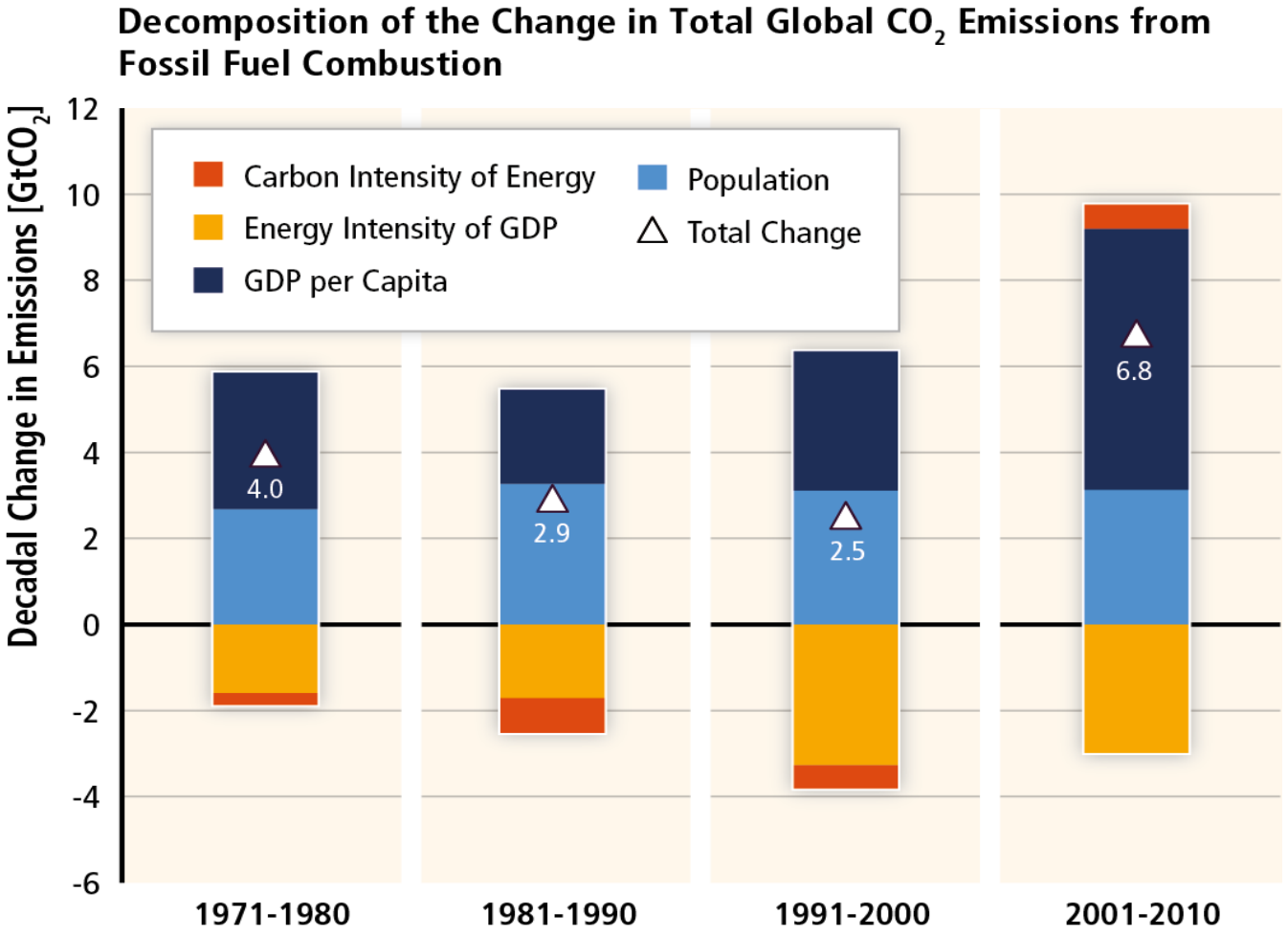


Source: UNEP, The Emissions Gap Report, 2010

Technological areas of research

- These latest findings of the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) show a number of areas where cooperative RD&D is necessary:
-
  - the continuing improvement in energy efficiency in the energy, transport, industrial and residential sectors,
  - improvements in renewable energies and their integration to the existing infrastructures, and
  - improvements in agriculture technologies and practices.

Drivers of energy-related CO2 emissions



Underlying drivers

- Secondly, underlying drivers were considered
  - defined as the processes, mechanisms, and characteristics of society that influence emissions through the factors

- For instance:
  - fossil fuels endowment and availability,
  - consumption patterns,
  - structural and technological changes, and
  - behavioural choices

- Underlying drivers are subject to policies and measures that can be applied to, and act upon them

Underlying drivers

- The effect of immediate drivers on GHG emissions can be quantified through a straight decomposition analysis;

- the effect of **underlying drivers**, however, is not straightforward and, therefore, difficult to quantify in terms of their ultimate effects on GHG emissions

Addressing climate change requires major technological, institutional and behavioral changes

- Potential areas of research include not only technological-related issues but also software and other organizational and managerial aspects of the economic, environmental, and social life of countries should they want to move towards sustainable development pathways.

Research areas beyond technology

- There is a clear need for a new macro-economics to include some account of the value of natural capital and ecosystem services
- In particular, there is a need to (re)search for ways to integrate the different dimensions of sustainability, economic, social and environmental, into the decision-making process of both governments and firms.
- New indicators to measure economic performance of countries are needed since GDP fails to account for changes in the asset base:
  - depletion of the natural capital,
  - external costs of pollution and long-term environmental damage
  - social assets (e.g. education, ratio work/spare time, integration into society, health, well-being)
  - Examples of indicators include: WB's Adjusted Net Savings Index, Daly-Cobb's Index of Sustainable Economic Welfare/Genuine Progress Indicator, OECD's Beyond GDP initiative
- Development of solid and sound tools and methodologies is necessary for assessing policies and measures, actions and activities (e.g. multicriteria analysis, integrated balances, others?)

The need for reaching out…

- Policy makers
- Companies
- Media
- People

The Technology Mechanism of the UNFCCC

- The Technology Mechanism of the UNFCCC was established to enhance the development and transfer of technologies for the mitigation of and the adaptation to climate change.
- This mechanism is to foster a full range of activities across the technology cycle, including cooperative research, development and demonstration (RD&D) at international level.
- In fact, cooperative RD&D into innovative technologies among countries, firms or research institutions is the right step towards a more meaningful process leading to the development and transfer of technology that includes not only the buying and selling of hardware and software, but also the exchange of knowledge and experiences among participant countries.

The TM and the 2015 agreement

- The Technology Mechanism is already a useful tool and it should be the technology arm of the 2015 agreement
- The TM should be strongely linked to other bodies under the UNFCCC, in particular the financial mechanism
- The TM should be empowered and given the necessary financial resources to fulfill its functions, in particular the promotion of cooperative RD&D
- The TM should work closer to organizations outside the UNFCCC for cooperation and sinergies in advancing cooperative RD&D

- The Technology Mechanism of the UNFCCC, through its different channels, opens an enormous opportunity to create tools that can contribute to promote cooperative RD&D activities and to share knowledge and experiences among countries in North-South, South-South or triangular schemes.

Thank you

Grazie

Gracias

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