RESEARCH NEEDS AND PRIORITY AREAS FOR ENHANCED CLIMATE CHANGE RESPONSE

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Pursue a stable climate change response strategy in a uncertain context

- A proposed or implemented climate change response policy or measure always means an inevitable modification of the existing industrial structure, and investment policy and operation framework;
- The climate system is a highly complex one. There still exist quite a few uncertainties in the understanding of climate change, including its causes and trends, impacts, and adaptation and mitigation measures;
- As decision-makers, it is necessary for them to pursue a stable climate change response strategy in a uncertain context as much as possible.

Research need and priority areas for enhanced climate change response

(1) The cause of climate change

- What is the sensitivity of global mean temperature to carbon dioxide concentration?
- To what extent do natural and human factors contribute to climate change respectively?
- Does there exist a threshold with the climate system?
- What are the trends of global and regional climate change in the future, especially in 2-3 decades ?
- What uncertainties are involved in these questions?

Need to provide a greater number of objective facts and research findings to prove the continued validity of the relationship between human activity and climate change .

Research need and priority areas for enhanced climate change response

(2) The relationship between climate change and extreme events

- **In particular, how do the top events relate to climate change?**
- **How will the intensity and frequency of disasters change?**
- **How will they affect developing countries?**
- **How about the adaptation technologies & measures to the impacts of extreme weather/climate events and associated disasters**(*early warning of and response system at regional and local levels)*:

With these questions in mind, we do look forward to the forthcoming IPCC special report to be released late this year.

Research need and priority areas for enhanced climate change response

(3)Dangerous GHG stabilization level

- What is the justification of designating a given concentration as a baseline for the study of dangerous GHG stabilization level?
- How about the impacts and adaptation capabilities under different GHG stabilization levels at regional and local level ?
- How uncertain is it?
- What is the technical potential for the realization of different concentration scenarios? What is the economic cost?
- What is the difference for countries in different development stages, contexts and conditions?

Research need and priority areas for enhanced climate change response

(4) Issues relating to adaptation:

- **What is the impact by climate change to agriculture, water, coastal ecology of regional scale?**
- **What are the adaptation options to deal with negative impacts and strengthen disaster risk management?**
- **Adaptation cost/benefit analysis at regional and local level?**
- **The mechanisms and barriers?**
- **Case studies and integrated demonstration.**

Research need and priority areas for enhanced climate change response

(5)GHG control technologies;

- **Energy saving and energy efficiency technologies**
- **New and renewable energy technologies**
- **Clean and efficient coal exploitation and utilization technologies**
- **Exploration and clean/efficient development and utilization technologies of Petroleum, natural gas and coal bed/mine methane**
- **CO2 capture, utilization and storage technologies**
- **Biological and engineering carbon sequestration technologies:**
- **GHG emission control technologies through good agricultural and land-use practices**

distribution of climate friendly technologies and their accessibility to developing countries, pathway of their transfer, their consolidated costs, and barriers to their transfer.

Concluding Remark

- An institutional arrangement for climate change response at international level must be supported with comprehensive, objective and clear information from the scientific community.

- The unremitting efforts of scientists around the world are essential to an objective analysis and assessment of climate change and its impact, to the availability of technically and financially feasible options to governments, and to the presentation of an equity based responsibility-sharing theory.

Concluding Remark

We believe that the scientific community, who bears in mind the scientific spirit of independence, will make available research findings in a more objective and comprehensive fashion in support of a correct, balanced and effective climate change response at national level.

Thank you!