

# Views on Enhancing Ambition Level to Address Climate Change: China's Perspectives

Prof. Zou Ji

Deputy Director General  
National Center for Climate Strategy and International Cooperation

Professor  
Renmin University of China

# Outline

- Mandate and ‘AMBITION’
- Huge potential of enhancing mitigation ambition from Annex I Parties’ low commitment level
- Needs for transformation of consumption style in developed economies
- Enhancing ambition level of technology transfer, financial assistance, and capacity building in developing countries
- Conclusions

# Mandate and AMBITION

In Decision 1/CP17, the COP

*8. Requests Parties and observer organizations to submit by 28 February 2012 their views on options and ways for further increasing **the level of ambition** and decides to hold **an in-session workshop at the first negotiating session in 2012** to consider options and ways for **increasing ambition** and possible further actions.*

**The ambition is a matter of not only mitigation, but also adaptation, technology, finance, and capacity building.**

# Mitigation ambition for Annex 1 Parties

- Huge potential of enhancing mitigation ambition is derived from Annex I Parties' low commitment level and
- unsatisfactory performance in achieving Kyoto Protocol Target
  - a significant contribution to emission cut comes from recession
  - rather than from innovation in such a major emitting sectors as transport and building, as well as change of high carbon lifestyle.

## About 50% of Annex 1 Parties cannot fulfill their KP Targets

- 16 Annex 1 parties have not reached KP targets and account for over 60% of emission from Annex 1 Parties
- 22 Annex 1 parties, 40% of emission, accomplished, among them, 12 come from EIT.

	Countries
Countries not accomplishing KP targets	Iceland, Canada, Australia, New Zealand Luxemburg, Liechtenstein, Austria, Spain, US, Denmark, Swiss, Slovenia, Norway, Japan, Italy, Ireland
Countries accomplishing KP targets	
EITs	Ukraine, Latvia, Estonia, , Romania, Bulgaria, Russia, Hungary, Slovakia, Poland, Check, Croatia
Others	Sweden, UK, (EU) , France, Monaco, Greece, Finland, Belgium, Germany, Portugal, Netherland
No target	Turkey, Malta, 白俄罗斯, Cyprus

# Needs for transformation of consumption style in developed economies

- Developed economies have had the advantages in
  - energy mix (more oil and gas than coal);
  - economic structure (transfer of CO<sub>2</sub> intensive manufacture sectors)
  - Technologies and finance
- Consumption plays a major role in emission in developed economies
- Importance to change consumption pattern and style in developed economies

## Enhancing ambition level of technology, finance and capacity building in developing countries

- The current ambition level is too low to meet the request for meeting the challenges of climate change
- This will lead serious lock-in effect and demonstrative effect
- The needs for technologies and financial resources are clear, it is high time to take action!

## Key Technology Needs

	Deployment & Diffusion (Near term)	Demonstration (Medium-term)	R&D (long term)
Power	USC; On-shore Wind power technology; 3rd generation large-scale Advanced pressurized water reactor; Geothermal- Conventional; High-efficiency natural gas fired power generation;	Coal Integrated Gasification Combined Cycle (IGCC); Off shore wind power; Solar Photovoltaic; Geothermal-Enhanced; 2nd Biomass;	Low cost CO2 capture and storage; Nuclear fusion; CSP; Power storage; Smart grid; 4th nuclear generation; Solar nanotechnology photovoltaic; Hydrogen production, storage and distribution; Fuel Cell
Steel	CDQ; CCPP; CMC; Power, heat and fuel recovery; Coal Injection of Blast Furnace; Energy management center;	COREX; FINEX; Advance EF; Smelting reduction technology; Waste Plastic Injection;	Direct Casting; CO2 capture and storage;
Transport	Enhance fuel economy of vehicles by improved engine/ transmission/ matching technology; Develop advanced diesel vehicles; Improve railway electrification; Aviate fuel economy management;	Hybrid vehicles; Enhance fuel economy of transport system by information & intelligent systems Improved road network;	Fuel cell vehicles; Electric-motor vehicles; Optimizing the construction and integration of transport capacity;
Cement	NSP cement kiln technology, especially the automatic control device and the overall operation level; Low-temperature cogeneration technology;	Eco-cement Alternative fuels and cement clinkers;	CCS;
Chemical	New type catalyst; Large-scaled Synthetic Ammonia equipment; Optimize structure of raw material for Ethylene;	Alternative fuels and raw materials;	CCS;
Buildings	Green Lighting; Technologies and materials of heat-insulation of external walls and roofs; Advanced efficiency electric devices ;	District energy system; Heat pump system; supervising and Monitoring of building energy consumption technologies; Heat-electricity-coal gas triple co-supply system	Energy storage technology ; Zero-emission buildings Building integrated photovoltaic solar power system; Advanced city plan;

Source: UNDP China and PECE, 2010

## Messages on needs for investment/financial resources

	Global	China	Non Annex I Countries
IEA, World Energy Outlook 2011	Additional investment in low-carbon technologies and energy efficiency in the 450 Scenario, relative to the New Policies Scenario, amounts to a cumulative <b>\$15.2 trillion</b> from 2011 to 2035.		
IEA, Energy Technology Perspectives 2010	The BLUE Map scenario(450ppm scenario) envisages a need for investment USD <b>46 trillion</b> higher than the Baseline scenario from 2010 to 2050, <b>USD 13 trillion</b> from 2010 to 2030, <b>USD 33 trillion</b> is required after 2030	Achieving the 30% emissions reduction in the BLUE Map scenario in 2050 compared to 2007 will require additional investments of <b>USD 10.2 trillion</b> between 2010 and 2050. (in the same period, OECD Europe <b>USD 7.1 trillion</b> ; US <b>USD 5.8 trillion</b> )	
McKinsey, 2009		An average annual investment of €150–200 billion (or US\$200–260 billion, <b>in total US\$ 4-5.2 trillion</b> ) from 2010-2030 under the EA scenario	
PECE, NHDR 2009/10		China will need to invest <b>US \$9.5 trillion and US \$14.2 trillion</b> , respectively, under the emission control and emission abatement scenarios between 2010 and 2050.	
UNFCCC, Investment and financial flows: an update, 2009	Annual investment and financial flows in 2030: <b>USD \$200.5 to 210.5 billion.</b>		Annual investment and financial flows in 2030: <b>USD \$64.7 billion.</b>

Source:

IEA, 2010, 2011; Mckinsey, 2009; UNDP China and PECE, 2010, and UNFCCC, 2009

# Incremental Abatement Cost in China

	Incremental cost under EC			Incremental cost under EA		
	2020	2030	2050	2020	2030	2050
Emission per capita t-CO2	5.6	5.8	6.3	5.6	5.8	3.7
Emission intensity reduction (compared with 2005 level)	51	69	85	51	69	91
Emission reduction Gt-CO2	3.2	5.1	6.7	3.2	5.1	10.7
Incremental cost (billion US\$-2005/ year)	86	269	523	86	269	1584
Reduction cost(US\$-2005/t CO2)	27	56	78	27	56	148
Percent of GDP (%)	1.2%	2.2%	2%	1.2%	2.2%	6%
Cost of per household ( US\$-2005/ year)	182	538	1006	182	538	3046

Source: UNDP China and PECE, 2010

# Conclusions

- Developed countries' leading roles are crucial in terms of emission reduction and demonstrative effects
- Consumption will become a major arena for developed economies to cut their emission while there is a significant cut potential in the field of investment and export
- Technology, finance and capacity building are urgent, important and necessary for developing economies to shift into low carbon pathway of development

Thank you for your attention!

Prof. Zou Ji

[zouji61@126.com](mailto:zouji61@126.com)

China National Center for Climate Change  
Strategy and International Cooperation

School of Environment and Natural Resources  
Renmin University of China