

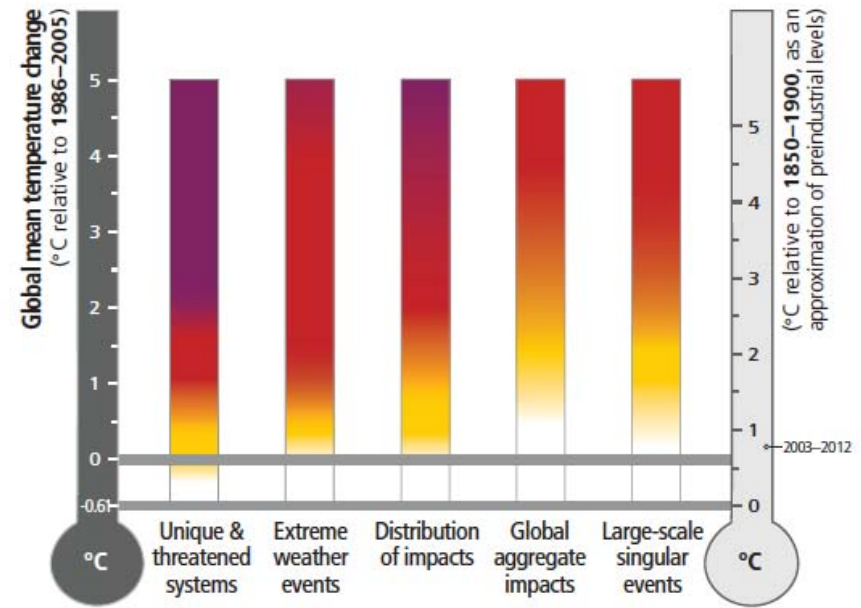
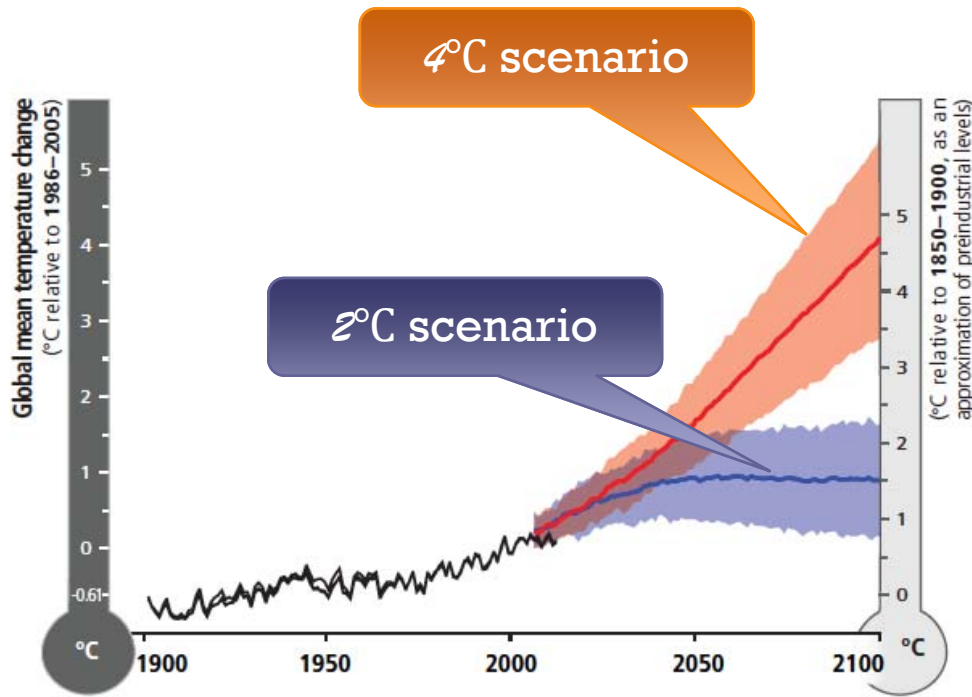
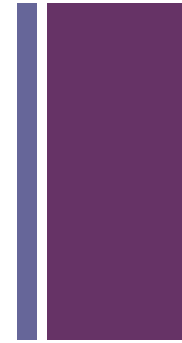


Green technology and low carbon development

Dr. Xiaohua ZHANG

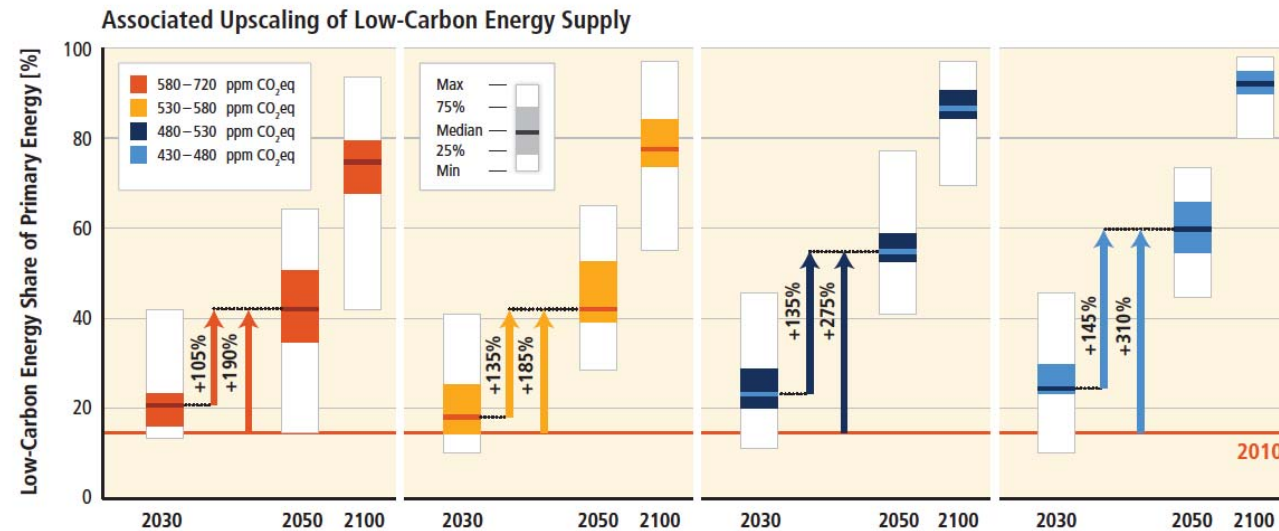
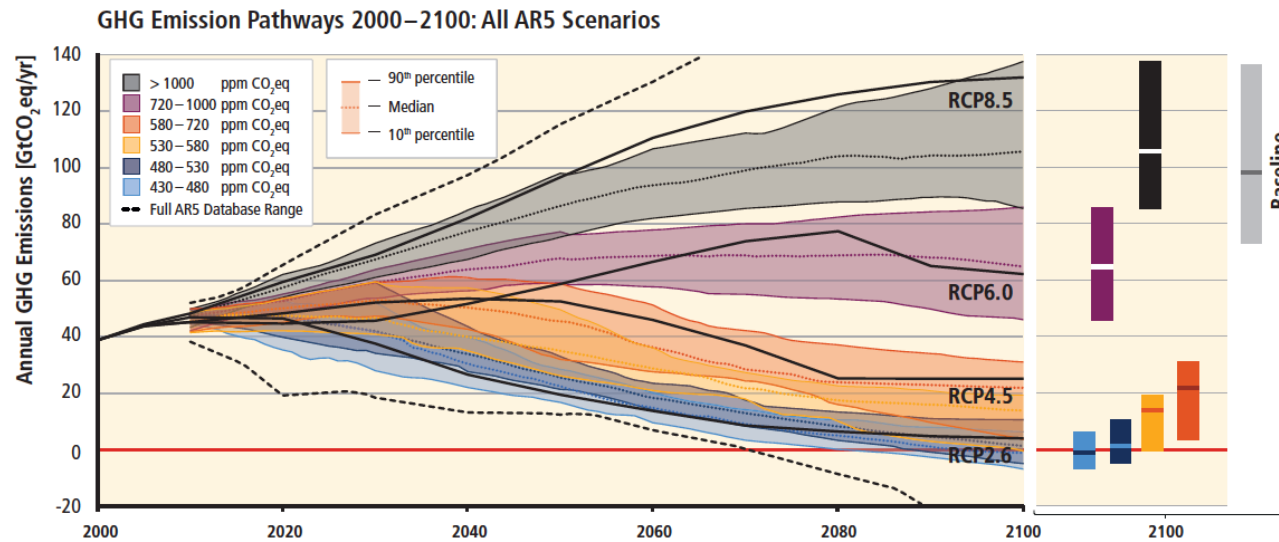
WTO regional workshop on IP and its role in the generational and diffusion of green technologies
11 November 2014 Hong Kong

+ Climate Change threaten sustainable development of human-being



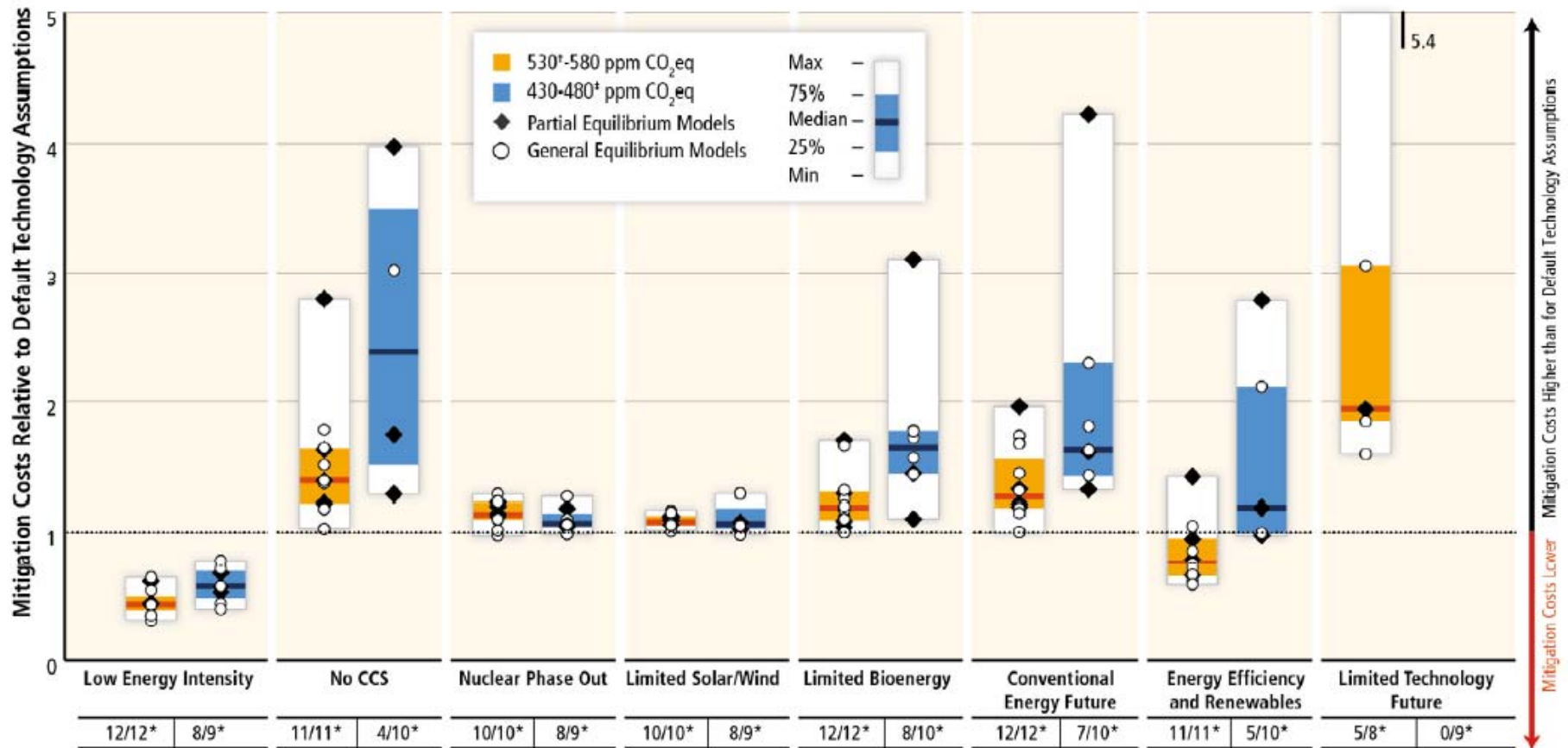
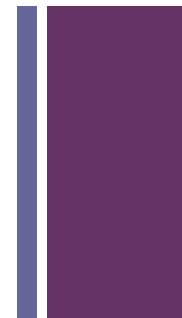


Low carbon development is required to address climate change



Deep decarbonization of energy supply is the only way to achieve 2°C target

+ Technology plays fundamental role to promote low carbon development



† Scenarios from one model reach concentration levels in 2100 that are slightly below the 530-580 ppm CO₂eq category

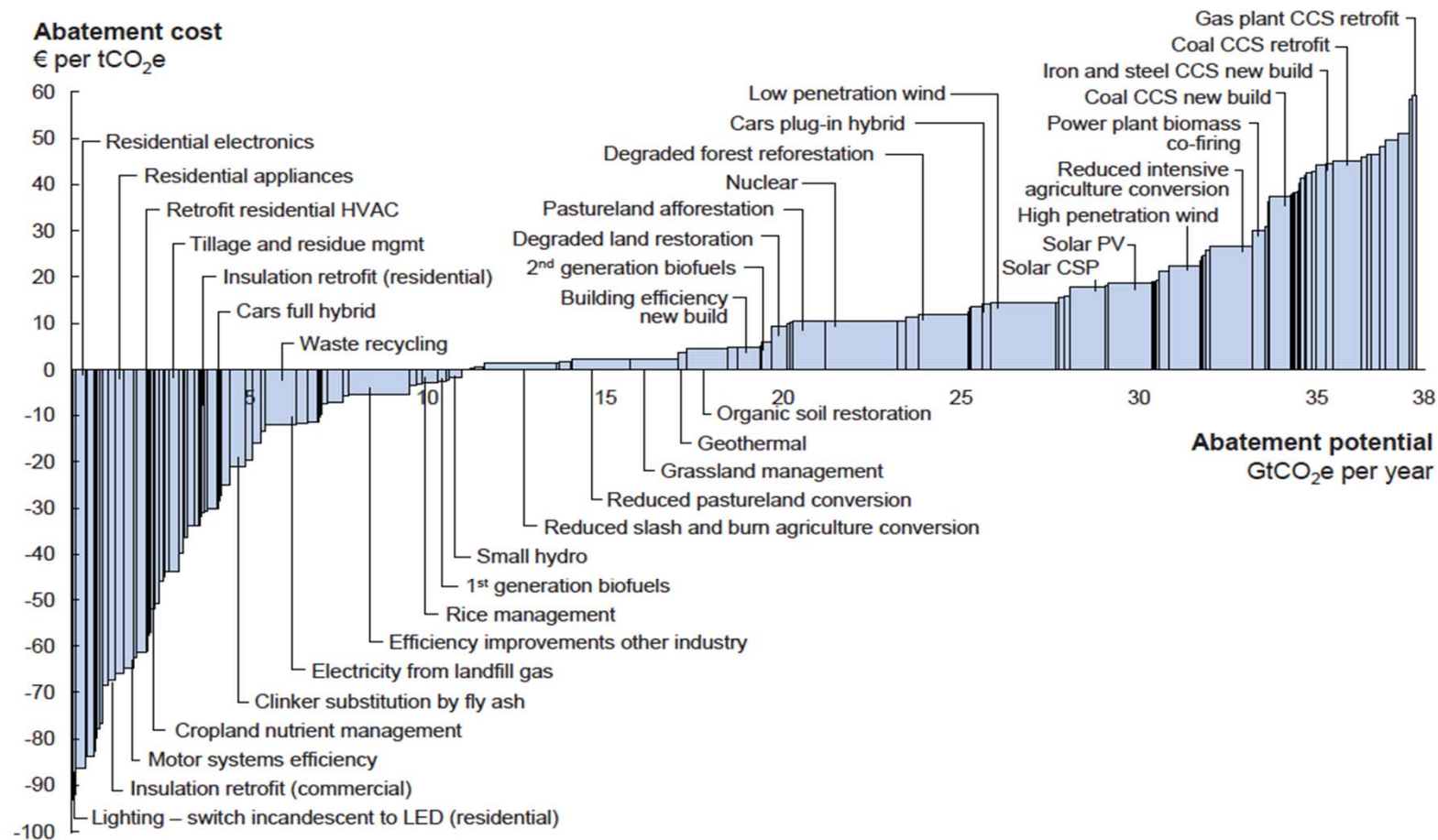
‡ Scenarios from two models reach concentration levels in 2100 that are slightly above the 430-480 ppm CO₂eq category.

* Number of models successfully vs. number of models attempting running the respective technology variation scenario

+ There is no single technology solution

Exhibit 1

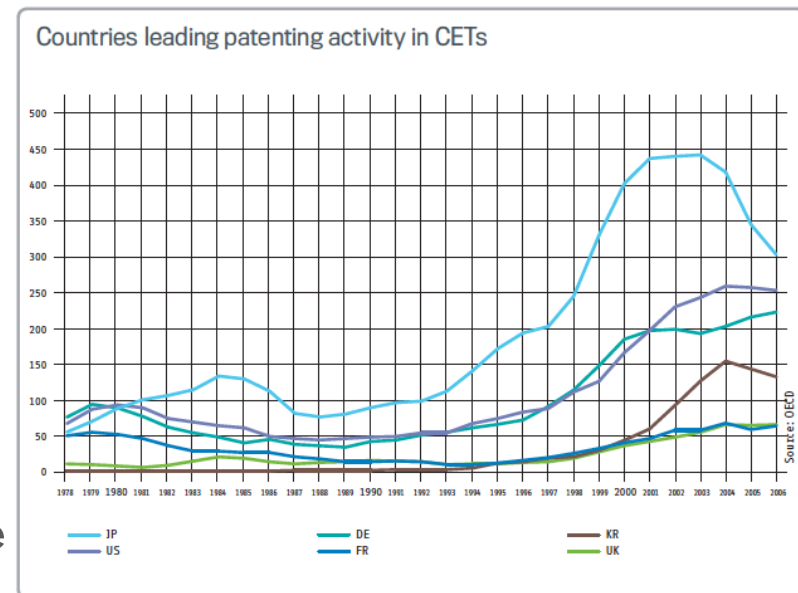
Global GHG abatement cost curve beyond business-as-usual – 2030



Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €60 per tCO₂e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.
Source: Global GHG Abatement Cost Curve v2.0

+ Both innovation and transfer of technology are required

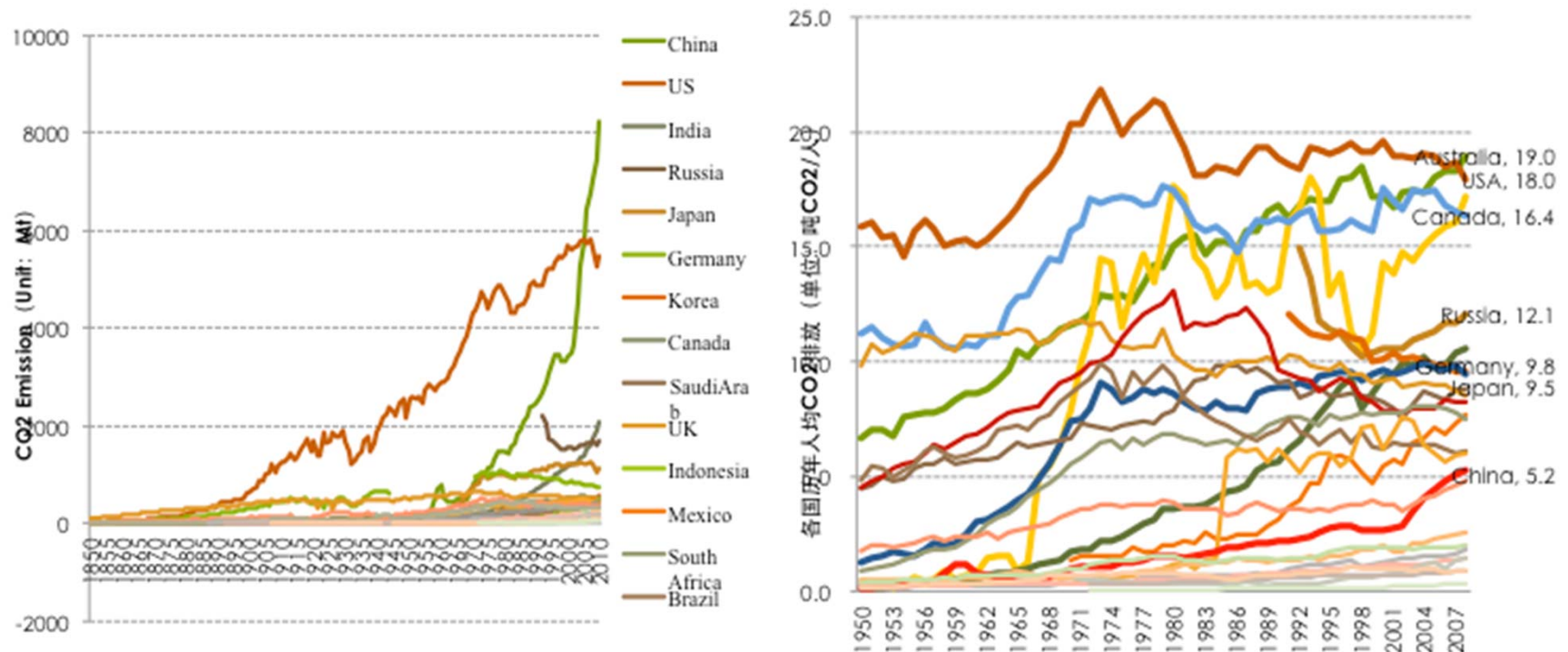
- Many key technologies still need further breakthrough
 - CCS, Bioenergy with CCS, energy storage technologies, etc.
- Not all existing technologies are evenly available among countries in particular between developed and developing countries
 - Energy efficiency, nuclear, wind power, NGCC, etc.
- Transfer and diffusion of existing technologies are essential to enhancing near term mitigation actions which can therefore give more flexibility for future innovation.



+ Efforts in China to promote low carbon development

■ National circumstance

- Largest country of energy use, emission and population. Second largest economy. Still on the way of rapid development.



+ Efforts in China to promote low carbon development

- Low carbon development is the only way to China to pursue sustainable development.
- Committed target under the Cancun Agreement
 - 40-45% reduction of GDP carbon intensity in 2005 by 2020
- Key plans
 - Work Plan for Controlling Greenhouse Gas Emissions During the 12th Five-Year Plan Period
 - 2014-2020 National Plan to Cope with Climate Changes

+ Key targets to develop low carbon energy system

Energy	Application/unit	2005	2010	2015	2020
Hydro power	Power generation (GW)	117	216	290	350
	Small hydropower (GW)	38	-	-	
Nuclear	Power generation (GW)	6.9	10.8	40	58
Wind power	Power generation (GW)	1.26	31.07	100	200
Solar energy	PV Power generation (MW)	70	800	21,000	100,000
	Solar thermal utilization (100 million m ²)	0.8	1.68	4	8
	Solar house(10,000 m ²)	1514.4	-		
	Solar oven (10,000 units)	68.6	-	200	
Biomass energy	Power generation (MW)	2,000	5,500	13,000	30,000
	Biomass ethanol(10,000 tonne)	102	180	400	
	Biodiesel(10,000 tonne)	5	50	100	
Methane	100 million cu.m				
Non-fossil fuel energy accounting for the total energy consumption(%)		6.7	8.5	11.4	15

+ Efforts in China to promote green technologies



10 key mitigation technologies

- High parameter ultra-super critical unit key technologies
- IGCC
- Unconventional natural gas exploit and development technologies
- Advanced solar, wind power and large scale storage and grid integration technologies
- New energy vehicle and low carbon alternative fuel technologies
- Passive house related technologies
- High energy efficiency process and residual energy and heat utilization technologies
- Energy efficiency technologies for urban energy supply and demand sides
- Carbon sink enhancement technologies
- CCUS

9 key adaptation technologies

- Extreme event early warning system
- Unconventional water resource utilization technologies
- Drought and high temperature resistance crops breeding technologies and anti pest technologies
- Protection and recovery technologies for typical climate change sensitive eco-system
- Climate impact and risk assessment technologies
- Security technologies for urban supply system under extreme event
- Human Weather technologies
- Vector disease prevent and control technologies
- Bio-diversity breeding and resource utilization technologies

+ Efforts in China to promote green technologies

- Low carbon technology catalogue promote diffusion
 - 34 low carbon technologies, covering 5 categories including non-fossil energy, alternative fuels and materials, process related non-CO₂, CCUS and carbon sink from 12 sectors
- EE technology catalogue
 - Published since 2008. Complement to low carbon technology catalogue

+ China's perspective on IPRs

- National IP strategy released in 2008
 - Develop IP system to promote transformation of economic development pathway
 - IP in accordance with national circumstance
 - Improve creation,utilization,protection and management of IP
 - Enhance protection and prevent abuse.
- How the IP system can facilitate low carbon development still need further exploration in China.

+ Understanding of the role of IPRs in the area of climate change

- IPRs was a controversial issue under the CC negotiation before Copenhagen
- Polarized views still exist.
- The focus should be put on the nature of the IP system but on how the IP as policy tool can facilitate the transfer of climate friendly technologies

+ A practical approach would be needed to deal with green technology related IPRs

- Learn from real practices
 - Examples from other MEA
- Cooperation with relevant international organizations and forums
- Case by case



Thanks a lot